

uCosminexus Application Server

System Setup and Operation Guide

3021-3-J02-10(E)

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Preface

For details on the prerequisites before reading this manual, see the *Release Notes*.

■ Non-supported functionality

Some functionality described in this manual is not supported. Non-supported functionality includes:

- Audit log functionality
- Compatibility functionality
- Cosminexus Component Transaction Monitor
- Cosminexus Reliable Messaging
- Cosminexus TPBroker and VisiBroker
- Cosminexus Web Service - Security
- Cosminexus XML Security - Core functionality
- JP1 linkage functionality
- Management Server management portal
- Remote installation functionality for the UNIX edition
- SOAP applications complying with specifications other than JAX-WS 2.1
- uCosminexus OpenTP1 linkage functionality
- Virtualized system functionality
- XML Processor high-speed parse support functionality

■ Non-supported compatibility functionality

"Compatibility functionality" in the above list refers to the following functionality:

- Basic mode
- Check of JSP source compliance (cjjsp2java) with JSP1.1 and JSP1.2 specifications
- Database connection using Cosminexus DABroker Library
- EJB client application log subdirectory exclusive mode
- J2EE application test functionality
- Memory session failover functionality
- Servlet engine mode
- Simple Web server functionality
- Switching multiple existing execution environments
- Using EJB 2.1 and Servlet 2.4 annotation

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1

Overview of System Setup and Operations

Application Server enables you to setup a system that executes online applications and batch operations. You can use the tools provided by the management functionality of Application Server to setup the system.

This chapter gives an overview of the operation management tools, the system setup, and the operations.

1.1 Operation management tool

The management functionality of Application Server provides the following tools. You can select which tools to use depending on the method you want to use (such as windows or commands) and the system configuration you want to set up. These tools operate as a part of the same management functionality, so you can also use different tools depending on the timing of the tasks (setup, operations), and the contents to be set.

- **Setup Wizard**

Use this tool for setup. You can set up the system by selecting or setting items in accordance with the dialog boxes displayed in the interactive wizard.

- **Management Portal (INTENTIONALLY DELETED)**

Use this tool for setup and operations. You can set up the system by selecting the items in GUI windows, or by entering text values.

- **Smart Composer functionality**

Use this tool for setup and operations. You can set up the system by setting the parameters in a file and applying the file contents by using commands.

When setting up a system that executes online operations, and allocates the Web server as well as the J2EE server, use the Setup Wizard for system setup and management portal for operations. Setup Wizard enables the smooth setup of a system with the functionality provided as default by Application Server; just by executing the interactive operations after installing the product. By using the management portal, you can start or stop all the systems in a batch, and confirm the operational status of system just by clicking items or buttons on the GUI window. Use the Smart Composer functionality to set up the system with detailed designing.

However, you cannot use the Setup Wizard to set up the system if the following requirement is fulfilled. In this case, set up the system by using the management portal or the Smart Composer functionality.

- To set up a system for executing the batch operation applications (batch applications).

1.1.1 Setup Wizard

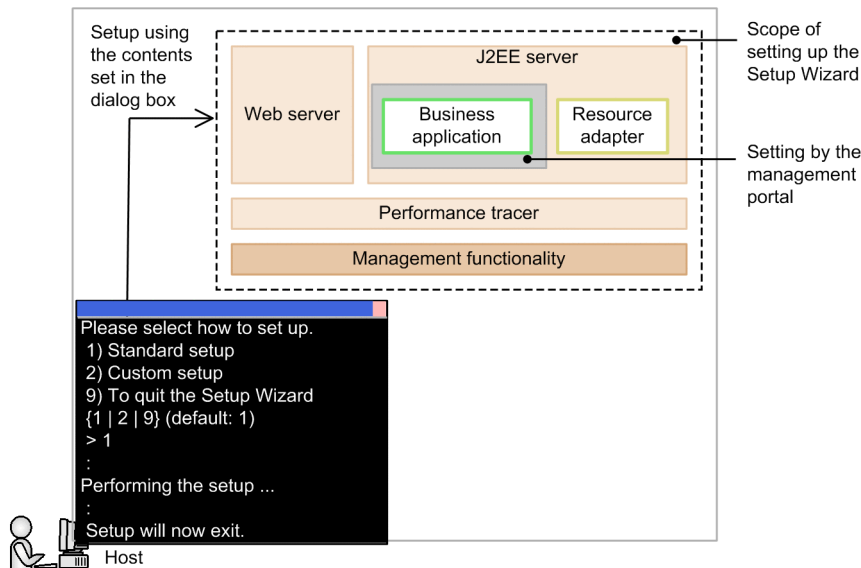
The *Setup Wizard* is a tool to setup the execution environment of J2EE applications by performing interactive operations in accordance with the instructions on the wizard. Tasks can be performed interactively by selecting the required settings in the dialog box and therefore determining the complex parameters or editing the definition files in advance is not required. This tool is suitable for setting up the Web front system (a system for allocating the Web server and the J2EE server) that is used to operate J2EE applications.

When the Application Server version is 11-00 or later, you cannot use compatibility mode when setting up the J2EE server in the Setup Wizard.

Also, you can specify minimum required procedures, and minimum required items to perform the setup in an environment where J2EE applications are to be operated and thereby reduce the time required to start the system after product installation. You can also tune the setup system. Initially, you can start the system operations with minimum settings, and then perform operations such as optimizing the system settings according to the operational status or enhancing the system configuration.

The following figure shows an example of system setup by using the Setup Wizard:

Figure 1–1: Image of the system setup by using the Setup Wizard



You can execute the following operations in a batch according to the instructions in the Setup Wizard dialog box.

1. Setting up the processes (management functionality) required for system operations
2. Setting up the processes (Web server, the J2EE server, and performance tracer) required for system execution
3. Setting up a resource adapter required for connecting to the database.
4. Starting the management functionality, Web server, the J2EE server, and performance tracer.

Note that you can set up and start the business applications by using the management portal after executing the Setup Wizard.

The Setup Wizard provides the following setup methods:

- **Standard setup**

A setup method to specify default values for all the settings. You can specify default values for the system that connects to the database, except for the settings of the database to be used. You can set up a system configured with Web server and the J2EE server.

- **Custom setup**

A setup method that allows you to change values such as the user who uses the management functionality, and the port number to be used in each server, to any value. You can use the default values as is for the items, if the setup values of those items are not to be changed. You can set up a system with Web server and the J2EE server, as well as a system with the J2EE server.

For the default values of Setup Wizard, see [Appendix A Parameters set up by using the Setup Wizard](#).

1.1.2 Management portal (INTENTIONALLY DELETED)

INTENTIONALLY DELETED.

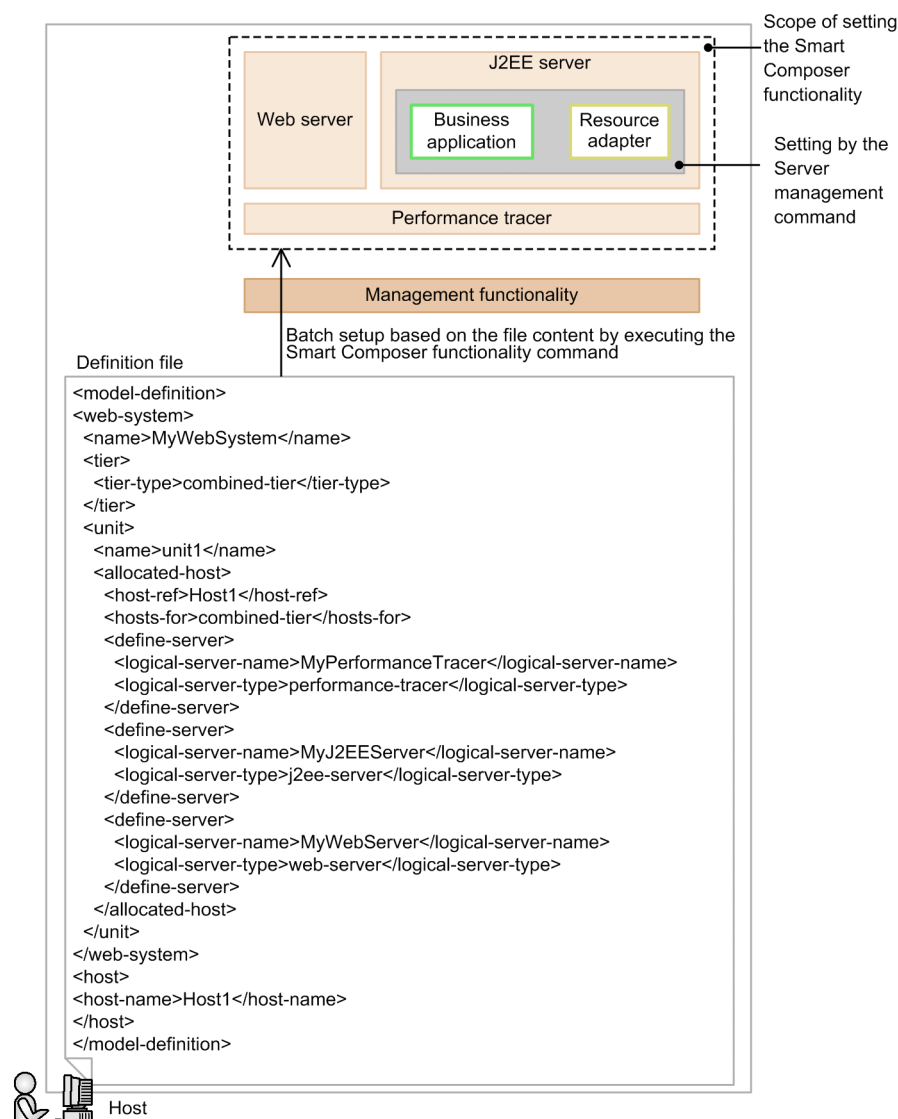
1.1.3 Smart Composer functionality

Smart Composer functionality is a tool for batch setup and operations of the execution environment of J2EE applications or batch applications, just by defining the configuration of multiple hosts or servers as well as the environment settings in a file and executing the commands. The templates of the XML format files that are used in the Smart Composer functionality are already provided. Also, you can set up the system by adding the settings decided upon in the detailed design. This is suitable for setting up the systems with a patterned configuration that have the same processes or settings.

As you set up the system using the files, you need not repeat the same setting operations for the number of times equal to the number of the hosts or servers. You can maintain the settings information of the set system as evidence. As you can perform tasks such as starting or stopping the system, changing the batch settings, expansion (scale-out), narrowing (scale-in), for each server in a batch, you can perform operations such as stopping only some operations, or expanding (scale-out) the system while performing the operations.

The following figure shows an example of the system set up by using the Smart Composer functionality:

Figure 1–2: Example of the system setup by using the Smart Composer functionality



Define a host or a server configuration and the environment settings for each server in the definition file of the Smart Composer functionality. You can set up a system by executing the Smart Composer functionality commands, with the Smart Composer functionality definition file as an input source. Set resource adapters and business applications

required for connecting to the database, using other commands (server management commands) after setting up the system by the Smart Composer functionality. You must set up the management functionality before using the Smart Composer functionality.

1.2 Overview of system setup

This section gives an overview of the system set up by using the Setup Wizard.

In the system setup, first, set up a single Web front system (a system that allocates Web server and the J2EE server to the same host). Then, change the settings or configuration of that system as and when required to set up a system that fulfills the system requirements.

The procedure to set up a system is as follows. Note that you can start the operations just by executing the following step 1. Execute step 2. and step 3. depending on the system requirements.

1. Set up a single Web front system. ([1.2.1](#))

Set up or change the system environment definition as and when required, so as to fulfill the system performance or reliability requirements.

2. Change the configuration of the Web front system to ensure availability. ([1.2.2](#))

Ensure availability by allocating multiple hosts with the same configuration.

3. Change the configuration of Web front system to support multi-tenancy. ([1.2.3](#) or [1.2.4](#))

Support multi-tenancy by allocating multiple J2EE servers or resource adapters.

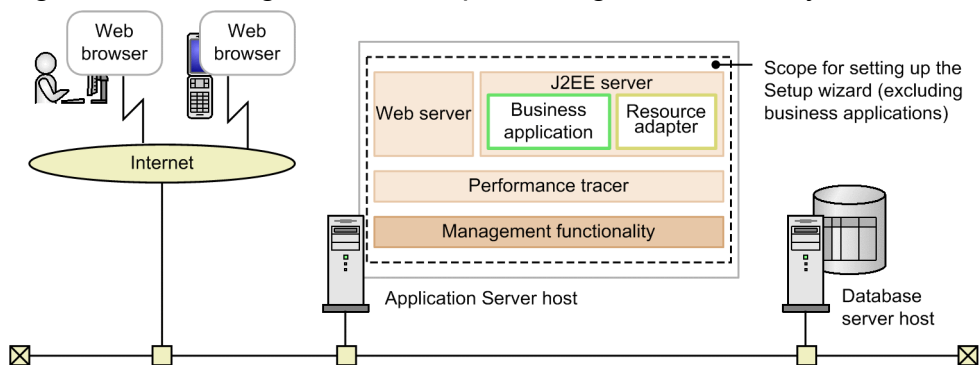
1.2.1 Setting up a single Web front system

The **single Web front system** allocates Web server and the J2EE server to the same host. You can set up this system by following the instructions on the Setup Wizard.

- **Example of system setup**

The following figure shows the configuration example of a single Web front system.

Figure 1–3: Configuration example of single Web front system



- **Tasks to be executed and their necessity**

The following table describes the tasks to be executed for configuring a single Web front system and necessity of these tasks.

Table 1–1: Tasks for configuring a single Web front system and necessity of these tasks

Tasks to be executed when setting up a single Web front system	Necessity of executing the task	Conditions for executing the tasks	Reference
Preparing a database	Y [#]	Connecting to the database	2.1.1

Tasks to be executed when setting up a single Web front system	Necessity of executing the task	Conditions for executing the tasks	Reference
Installing Application Server	Y	Mandatory (when the OS is Windows)	2.2.2
		Mandatory (when the OS is AIX)	2.2.3
		Mandatory (when the OS is Linux)	2.2.4
Installing the products used for connecting to the database	Y [#]	For connecting to the database	2.2.5
Setting up the system environment	Y	Mandatory	2.2.6
Timeout settings	A	Changing to a system environment definition that fulfills the system requirements	2.2.9
Setting up and starting business applications	Y	Mandatory	2.2.10

Legend:

Y: Mandatory tasks.

A: Tasks to be executed with the execution conditions are fulfilled

[#]: In the example of the system configuration described in this manual, connection with the database is a prerequisite. Therefore, this task is mandatory.

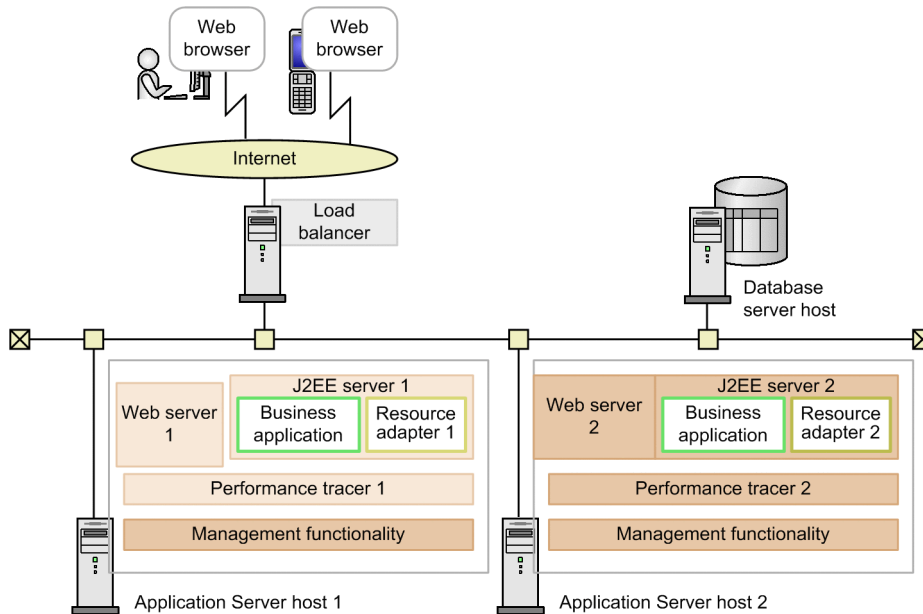
1.2.2 Ensuring availability by allocating multiple hosts with same configuration

You can allocate multiple hosts with the same configuration to use the load balancer, and to degenerate the operations just by stopping the faulty host, thereby ensuring the availability of the entire system. You can set up a **Web front system with assured availability by allocation of multiple hosts with same configuration** by adding duplicated hosts with the same configuration, and by allocating the load balancer, based on the single Web front system.

- **Example of system setup**

The following figure shows the configuration example of a Web front system with assured availability by allocating multiple hosts with the same configuration:

Figure 1–4: Configuration example of Web front system with assured availability by allocating multiple hosts with the same configuration



• Tasks and their necessity

The following table describes various tasks to be executed for setting up a Web front system with assured availability by allocating multiple hosts with same configuration and the necessity of these tasks:

Table 1–2: Allocating multiple hosts with same configuration and tasks to be executed when setting up the Web front system with assured availability and necessity of these tasks

Tasks to be executed for setting up a Web front system with assured availability by allocating multiple hosts with same configuration	Necessity of executing the task	Conditions for executing the task	References
Preparing a database	Y [#]	Connecting to the database	2.1.1
Installing Application Server	Y	Mandatory (when the OS is Windows)	2.2.2
		Mandatory (when the OS is AIX)	2.2.3
		Mandatory (when the OS is Linux)	2.2.4
Installing the products used for connecting to the database	Y [#]	For connecting to the database	2.2.5
Setting up the system environment	Y	Mandatory	2.2.6
Timeout settings	A	When changing to the system environment definition that fulfills the system requirements	2.2.9
Setting and starting business applications	Y	Mandatory	2.2.10
Settings to ensure availability	Y	Mandatory	2.3.1

Legend:

Y: Mandatory tasks.

A: Tasks to be executed with the execution conditions are fulfilled.

[#]: In the Example of system setup described in this manual, connection with the database is a prerequisite. Therefore, this task is mandatory.

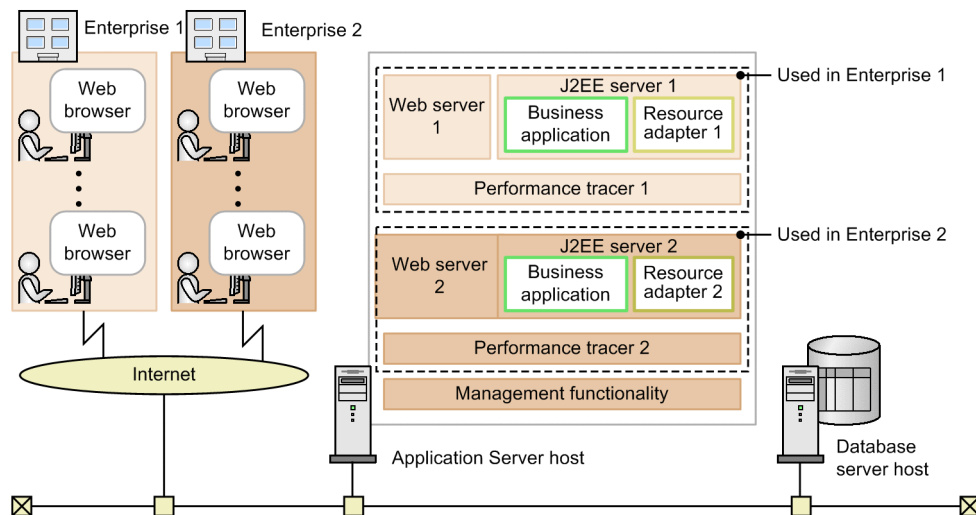
1.2.3 Supporting multi-tenancy by allocating multiple J2EE servers

If you allocate multiple J2EE servers, you can configure multi-tenancy with the business processes (applications) partitioned for every tenant by effectively utilizing the host resources. You can set up **Web front system that supports multi-tenancy by allocating multiple J2EE servers** and adding a group of logical servers, including J2EE server, based on the single Web front system.

- **Example of system configuration**

The following figure shows an example of configuring a Web front system that supports multi-tenancy by allocating multiple J2EE servers:

Figure 1–5: Example of configuring Web front system that supports multi-tenancy by allocating multiple J2EE servers



- **Tasks and their necessity**

The following table describes the tasks to be executed for configuring a Web front system that supports multi-tenancy by allocating multiple J2EE servers and necessity of these tasks.

Table 1–3: Tasks to be executed for configuring a Web front system that supports multi-tenancy by allocating multiple J2EE servers and necessity of these tasks

Tasks to be executed for configuring a Web front system that supports multi-tenancy by allocating multiple J2EE servers	Necessity of executing the task	Conditions for executing the task	References
Preparing a database	Y [#]	Connecting to the database	2.1.1
Installing Application Server	Y	Mandatory (when the OS is Windows)	2.2.2
		Mandatory (when the OS is AIX)	2.2.3
		Mandatory (when the OS is Linux)	2.2.4
Installing the products used for connecting to the database	Y [#]	For connecting to the database	2.2.5
Setting up the system environment	Y	Mandatory	2.2.6
Timeout settings	A	When changing to the system environment definition that fulfills the system requirements	2.2.9
Setting and starting business applications	Y	Mandatory	2.2.10
Allocating multiple J2EE servers	Y	Mandatory	2.4.1

Legend:

Y: Mandatory tasks.

A: Tasks to be executed with the execution conditions are fulfilled.

#: In the Example of system setup described in this manual, connection with the database is a prerequisite. Therefore, this task is mandatory.

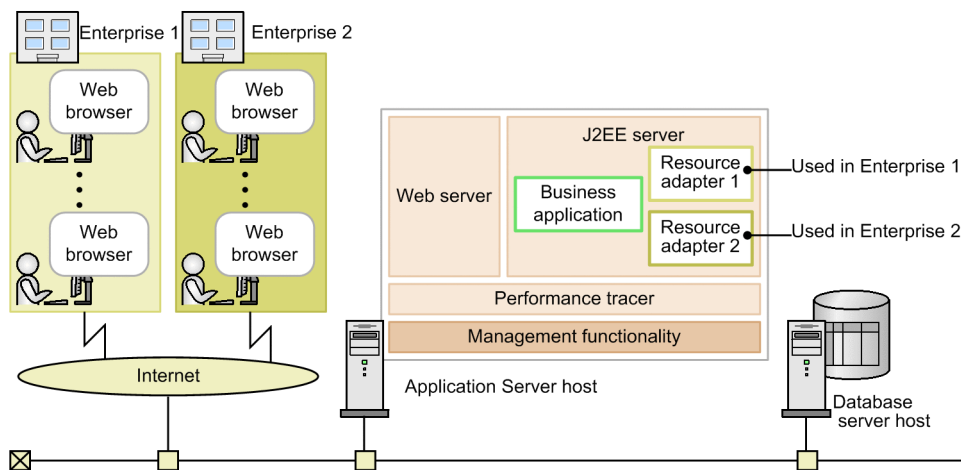
1.2.4 Supporting multi-tenancy by allocating multiple resource adapters

If you allocate multiple resource adapters, you can configure multi-tenancy by sharing the database (to restrain the increase in the number of databases) and partitioning the data for every tenant. You can set up **Web front system that supports multi-tenancy by allocating multiple resource adapters** and adding resource adapters to the J2EE server and enabling the reference of resource adapters from business applications.

• Example of system configuration

The following figure shows an example of configuring a Web front system that supports multi-tenancy by allocating multiple resource adapters:

Figure 1–6: Example of configuring Web front system that supports multi-tenancy by allocating multiple resource adapters



• Tasks and their necessity

The following table describes the tasks to be executed for configuring a Web front system that supports multi-tenancy by allocating multiple resource adapters and necessity of these tasks.

Table 1–4: Tasks to be executed for configuring a Web front system that supports multi-tenancy by allocating multiple resource adapters and necessity of these tasks

Tasks to be executed for configuring a Web front system that supports multi-tenancy by allocating multiple resource adapters	Necessity of executing the task	Conditions for executing the task	References
Preparing a database	Y [#]	Connecting to the database	2.1.1
Installing Application Server	Y	Mandatory (when the OS is Windows)	2.2.2
		Mandatory (when the OS is AIX)	2.2.3
		Mandatory (when the OS is Linux)	2.2.4
Installing the products used for connecting to the database	Y [#]	For connecting to the database	2.2.5
Setting up a system environment	Y	Mandatory	2.2.6

Tasks to be executed for configuring a Web front system that supports multi-tenancy by allocating multiple resource adapters	Necessity of executing the task	Conditions for executing the task	References
Timeout settings	A	When changing to the system environment definition that fulfills the system requirements	2.2.9
Setting and starting business applications	Y	Mandatory	2.2.10
Allocating multiple resource adapters	Y	Mandatory	2.4.2

Legend:

Y: Mandatory tasks.

A: Tasks to be executed with the execution conditions are fulfilled.

#: In the Example of system setup described in this manual, connection with the database is a prerequisite. Therefore, this task is mandatory.

1.3 Overview of system operations

Perform the operations for system maintenance such as replacing business applications and performance tuning using the statistical information, in the running system. You can classify the operations as normal operations, maintenance operations, and troubleshooting operations based on the execution timing and the contents. Use the management portal (GUI) or the Smart Composer functionality (CUI) tool for executing these operations.

Regular operations

Among the regular operations executed on Application Server, the following tasks are to be executed daily after starting the operations. Besides starting and stopping the system, execution of tasks such as confirming the operational status or status of logical servers that configure the system are also required for maintaining the stable operational status.

- Starting the system (starting business operations)
- Confirming the operational status of the system
- Stopping the system (ending business operations)

For details on the procedure of regular operations, see [3.1 Regular operations of Application Server](#).

Maintenance operations

Among the maintenance operations executed on Application Server, execute the following tasks according to the operating status. These tasks include tasks that must be executed according to the operational status, such as changing or replacing the settings of business applications in accordance with the methods provided by the service or the system maintenance, optimizing the operating environment by analyzing the data for operational status and adjusting the scale of maintenance operations.

- Replacing the business applications
- Performance tuning
- Changing the IP address
- Changing the database connection environment
- Setting up the system, and acquiring the definition information
- Removing the unwanted J2EE servers
- Changing the settings of the management user account of the management functionality

For details on the procedure of maintenance operations, see [3.2 Maintenance operations of Application Server](#).

Troubleshooting operations

If there is a failure in Application Server, you must collect the failure information, and restore the system to restart the operations. Such operations are called *troubleshooting operations*. After restarting the operations, analyze cause of the failure based on the collected information. Application Server functionality also provides operations for automatic restart and recovery of the process, if a process is down or a process hangs up (non-responding status). For details on prerequisite setting of the troubleshooting operations and failure information collection, see the *uCosminexus Application Server Maintenance and Migration Guide*.

1.4 Overview of operation format to be executed by the management portal or the Smart Composer functionality

This section describes the configuration of system that we recommend to be set up by using the management portal or the Smart Composer functionality.

You can set up a system with an operation format described in the following table by using the management portal or the Smart Composer functionality.

Table 1–5: Operation format of the system to be executed by the management portal or the Smart Composer functionality

No.	System operation format	Reference
1	Operation format for enhancing the system performance by allocating Web server to a separate host	4.1
2	Operation format for expanding the system scale by increasing the number of hosts (scale-out)	4.2
3	Operation format for reducing the system scale by decreasing the number of hosts (scale-in)	4.3
4	Operation format to output the configuration or definition information, and migrate the system environment to other host	4.4
5	Operation format for using the logical user server	4.5
6	Operation format for using the environment to execute the batch applications	4.6
7	Operation format for controlling the load balancer from the management functionality	4.7

You can also set up the following types of systems that use Application Server functionality

- Management server model (allocating the management functionality on a separate host)
- Scheduling functionality using CTM
- MQ model (TP1/Message Queue linkage)
- Reverse proxy

To use the other functionality, set up a system after performing detailed designing such as determining the system configuration suitable for the functionality to be used, and the parameter design. Setup this system as well using the management portal or the Smart Composer functionality. For details on systems that use the other functionality, see [4.8 Setting up the system using the other functions](#). For details on the other functionality, see the following functionality guides:

- *The uCosminexus Application Server Web Container Functionality Guide*
- *The uCosminexus Application Server EJB Container Functionality Guide*
- *The uCosminexus Application Server Common Container Functionality Guide*
- *The uCosminexus Application Server Expansion Guide*
- *The uCosminexus Application Server Security Management Guide*
- *The uCosminexus Application Server Operation, Monitoring, and Linkage Guide*
- *The uCosminexus Application Server Maintenance and Migration Guide*

1.5 Symbols used in examples and dialog box operations described in this manual

This section describes the symbols used in the examples and the dialog box operations described in this manual.

- **Symbols used in the definition examples and command execution examples**

The following table describes the symbols used in the definition examples and command execution examples in this manual.

Table 1–6: Symbols used in the definition examples and command execution examples

Symbol	Convention
< >	In syntax explanations, angular brackets indicate a variable. For example: <Property> means that the user enters a property name or a property name is displayed. <File name> means that the user enters a file name.

- **Symbols used in the descriptions of dialog box operations**

The following table describes the symbols used in the descriptions of dialog box operations in this manual.

Table 1–7: Symbols used in the descriptions of dialog box operations

Symbol	Convention
[]	Indicates the window name or items displayed in a window.
< >	Indicates that the item included within this symbol is a variable value.

1.6 Notes on using Windows (INTENTIONALLY DELETED)

INTENTIONALLY DELETED.

1.6.1 Operations that must be executed with administrator privileges (INTENTIONALLY DELETED)

INTENTIONALLY DELETED.

1.6.2 Notes on using Unicode supplementary characters included in JIS X0213:2004 (INTENTIONALLY DELETED)

INTENTIONALLY DELETED.

2

Setting up the System

This chapter describes a procedure for setting up a single Web front system as well as the procedure for changing a single Web front system to a system with assured availability, or to a system that supports multi-tenant.

For reference information about the windows, commands, and files, and the storage locations of the commands and files used in this chapter, see [5. Windows, Commands, and Files used in the System Setup and Operations](#).

2.1 Setting up the database server

Set up the database server for using a resource (database) on the J2EE server. This section describes the tasks to be executed on the database server.

2.1.1 Preparing the database

Install the database products by connecting to the database server.

You can connect to the following databases from the systems set up by using the Setup Wizard. Install one of the following products based on the environment in use. For details on the installation procedure of each product, see the respective *product manuals*.

- *HiRDB (HiRDB/Parallel Server Version 9 or later, and HiRDB/Single Server Version 9 or later)*
For details on the installation procedure and initial settings of the database server, see the *HiRDB Installation and Design Guide*.
- Oracle (Oracle 11g R2 or later)
For details on the installation procedure and initial settings of the database server, see the Oracle manual.

When setting up Application Server, specify the following information for setting up the database connection environment. Retain this information for when you set up the database server.

For HiRDB:

- Database host name
- Database port number
- User accessing the database
- Password for the user accessing the database

For Oracle:

- Database name (SID)
- Database host name
- Database port number
- User accessing the database
- Password for the user accessing the database

2.2 Setting up Application Server

This section describes the procedure for setting up Application Server for the single Web front system (a system where Web servers and J2EE servers are allocated to the same host) described in [1.2.1 Setting up a single Web front system](#). The file name and display name of the J2EE application used in the example are `MyApp1.ear` and `MyApp` respectively.

2.2.1 Installing Application Server

This subsection describes the types of Application Server installation methods. This subsection also describes the handling of the user environment when you install Component Container, which is one of the component software included in the Application Server products, and the dependence relationship of the component software supporting the products.

(1) Types of installation methods

The Application Server installation methods are as follows:

- **New installation**

With this method, you install Application Server in an environment where Application Server is installed. You can choose the component software you want to install from "Standard" and "Custom". If you choose "Standard", all the component software recommended for Application Server will be installed. If you choose "Custom", the component software selected from among the component software supporting Application Server will be installed. For details, see [2.2.2 Installing new Application Server \(In Windows\)](#), [2.2.3 Installing new Application Server \(In AIX\)](#), or [2.2.4 Installing new Application Server \(In Linux\)](#).

- **Update installation**

With this method, you install Application Server (same product) in an environment where Application Server is already installed. You can choose the component software you want to install from "Standard" and "Custom". If you choose "Standard", all the component software recommended for Application Server will be re-installed. If you choose "Custom", the component software selected from among the component software supporting Application Server will be re-installed. For details, see [Appendix F Update installation of Application Server](#).

The other installation methods are as follows:

- **Installation by using JP1/SC/DPM to replicate the disk**

With this method, you use JP1/SC/DPM to install a replication of the created disk image. For details, see [Appendix G Installation by using JP1/SC/DPM to replicate the disk](#).

- **Remote installation**

With this installation method, you use JP1/NETM/DM and Groupmax Remote Installation to distribute the software to the client via the network. For details, see [Appendix H Remote installation](#).

Note that the Application Server installation method described in this example is the new installation method.

(2) Handling the user environment when Component Container is installed

When you install Component Container, which is one of the component software included in the Application Server products, the user environment is handled differently for each type of installation. The following table describes the handling of the user environment for each installation type.

Table 2–1: Handling of the user environment for each installation type

Installation type		User definition of the J2EE server or batch server	User definition of the server management commands	Work directory of the server [#]
New installation		The installer sets up the default J2EE server or batch server, and creates the user definition.	The installer creates the default user definition.	The work directory is created when the J2EE server or batch server starts for the first time.
Update installation	Updating the same versions (overwrite)	The previous settings are inherited. If the definition directory (<i>Application-Server-installation-directory\CC\server\usrconf\ejb\host-name</i> , or <i>/opt/Cosminexus/CC/server/usrconf/ejb/host-name</i>) of the default server (server of the specified host name) does not exist, the definition file is automatically set up.	The previous settings are inherited.	The previous settings are inherited.
	Updating different versions (upgrading the version)	The previous settings are inherited.	The previous settings are inherited.	After installation, execute the <code>cjenvupdate</code> command (migration command for J2EE servers or batch servers) to migrate the work directory. The migration information is stored in the existing directory, and is used as is. For details, see <i>Chapter 10</i> in the manual <i>Application Server Maintenance and Migration Guide</i> .

#:

The work directory of the server varies for the J2EE servers and batch servers. For details on the J2EE server work directory, see [Appendix C.1 Work directory of the J2EE server](#). For details on the batch server work directory, see [Appendix C.2 Work directory of the batch server](#).

(3) Component software supporting the products

The component software included in each product supports the Application Server and BPM/ESB platform functionality. The functionality you can implement varies in accordance with the type of component software included in the product. The following table describes the mapping of the products and the component software. For details on the component software, see [2.2.2 Overview of the component software functionality](#) in the *uCosminexus Application Server Overview*.

Table 2–2: Mapping of the products and the component software

Component software name	Application Server		BPM/ESB platform		Optional products
	Application Server	Developer	Service Platform	Service Architect	Client
Application Development Plug-in	N	Y	N	Y	N
Component Container	Y	Y	Y	Y	N
Component Container - Client	N	N	N	N	Y
Component Container - Redirector	Y	N	Y	N	N

Component software name	Application Server		BPM/ESB platform		Optional products
	Application Server	Developer	Service Platform	Service Architect	Client
Component Transaction Monitor	Y	Y	Y	Y	N
Developer's Kit for Java	Y	Y	Y	Y	Y
HTTP Server	Y	Y	Y	Y	N
Performance Tracer	Y	Y	Y	Y	Y
Reliable Messaging	Y	Y	Y	Y	N
Service Coordinator	N	N	Y	Y	N
Service Development Plug-in	N	N	N	Y	N
TPBroker	Y	Y	Y	Y	Y
Web Services - Security	Y	Y	Y	Y	N
XML Processor	Y	Y	Y	Y	Y
HiRDB/Single Server Version 10	N	Y	N	Y	N

Legend:

Y: Included.

N: Not included.

Also, the component software has the dependence relationship described in the following table. Note this relationship when you install and un-install the software.

Table 2–3: Dependence relationship between component software

Component software subject to operations	Prerequisite component software
Application Development Plug-in	<ul style="list-style-type: none"> • Component Container • Developer's Kit for Java • XML Processor
Component Container	<ul style="list-style-type: none"> • Developer's Kit for Java • Performance Tracer • TPBroker • XML Processor
Component Container - Client	<ul style="list-style-type: none"> • Developer's Kit for Java • Performance Tracer • TPBroker
Component Container - Redirector	<ul style="list-style-type: none"> • Performance Tracer
Component Transaction Monitor	<ul style="list-style-type: none"> • Performance Tracer
Developer's Kit for Java	--
HTTP Server	--
Performance Tracer	--
Reliable Messaging	<ul style="list-style-type: none"> • Component Container

Component software subject to operations	Prerequisite component software
Service Coordinator	<ul style="list-style-type: none"> • Component Container • Component Transaction Monitor • Developer's Kit for Java • HTTP Server • Performance Tracer • Reliable Messaging • TPBroker • XML Processor
Service Development Plug-in	<ul style="list-style-type: none"> • Component Container • Developer's Kit for Java • Service Coordinator • XML Processor
TPBroker	<ul style="list-style-type: none"> • Developer's Kit for Java
Web Services - Security	<ul style="list-style-type: none"> • Component Container • Developer's Kit for Java • XML Processor
XML Processor	<ul style="list-style-type: none"> • Component Container[#] • Developer's Kit for Java
HiRDB/Single Server Version 10	--
HiRDB SQL Executer Version 9	--

Legend:

--: Indicates that this software does not have prerequisite component software.

#: Required for using the schema cache functionality in software other than Client. Not required for Client.

(4) Product media

The product media describes the procedure for a CD-ROM. If the product media is a DVD-ROM, replace CD-ROM with DVD-ROM.

2.2.2 Installing new Application Server (In Windows) (INTENTIONALLY DELETED)

INTENTIONALLY DELETED.

2.2.3 Installing new Application Server (In AIX) (INTENTIONALLY DELETED)

INTENTIONALLY DELETED.

2.2.4 Installing new Application Server (In Linux)

Connect to Application Server and install a new Application Server.

With a new installation, use the product media, PP installer. In Linux, the PP installer that installs Reliable Messaging, TPBroker, and Web Services - Security differs from the PP installer that installs the other component software and the common modules of the products.

This subsection describes the procedure for a new installation. The installation operation requires the root permission. For details on the notes on installation, see [Appendix I.1 Notes on the installation and un-installation of Application Server](#).

Add `/usr/bin` and `/bin` to the `PATH` environment variable before starting the installation process. Make sure that this setting remains in effect after installation.

You can give operating permissions for the Component Container component software to an ordinary user (Component Container Administrator) who does not have the superuser role. In such cases, you need to perform operations before and after installation. For details, see [4.1.3 Setting Component Container administrator \(For UNIX\)](#).

Procedure

1. Log in to Application Server with the root permission (superuser).

2. Make sure that the following packages are installed:

- `coreutils (x86_64)`
- `findutils (x86_64)`
- `gdb (x86_64)` ^{#1}
- `glibc (i686)` ^{#1}
- `glibc (x86_64)`
- `glibc-common (x86_64)`
- `glibc-devel (i686)` ^{#2}
- `glibc-devel (x86_64)`
- `glibc-headers (x86_64)`
- `glibc-utils (x86_64)` ^{#1}
- `gzip (x86_64)` ^{#4}
- `ksh (x86_64)` ^{#1}
- `libgcc (i686)` ^{#1}
- `libstdc++ (i686)` ^{#1}
- `lksctp-tools (x86_64)` ^{#1}
- `ncompress (x86_64)` ^{#1#4}
- `ncurses (x86_64)` ^{#4}
- `net-tools (x86_64)`
- `nscd (x86_64)` ^{#2}
- `nss-softokn-freebl(i686)` ^{#1}
- `procps-ng (x86_64)` ^{#1}
- `rpm (x86_64)`

- `sysstat (x86_64) #3`
- `tar (x86_64)`
- `tcsh (x86_64) #1`

#1: This package might not be installed by default on servers in environments running specific versions of Red Hat Enterprise Linux 7 (AMD/Intel 64) or Red Hat Enterprise Linux 8 (AMD/Intel 64).

#2: This package might not be installed by default on servers in environments running specific versions of Red Hat Enterprise Linux 7 (AMD/Intel 64).

#3: This package might not be installed by default on servers in environments running specific versions of Red Hat Enterprise Linux 8 (AMD/Intel 64).

#4: The PP installer requires the following packages:

- `ncompress` package or `gzip` package
- `ncurses` package

Execute the `rpm` command to check whether a package is installed. An example of command execution and an example of the execution result is as follows:

(Example of execution)

```
#rpm -q --qf '%{NAME}-%{ARCH}\n' ncurses
```

(Example of execution result)

```
ncurses-x86_64
```

This example indicates that the 64-bit `ncurses` package has been installed.

If the message **Package package-name is not installed** is displayed, this indicates that the package is not installed, so install the package specified in *package-name*. Note that as and when required during installation, install the related packages as well.

3. Check whether the language type for executing the PP installer matches with the language on the terminal where you want to execute the installer, and make sure that the languages match.

4. Set the product media in the CD-ROM drive.

5. If the product media is a CD-ROM, mount the CD-ROM file system.

An example of command execution is as follows. The underlined part specifies the mount directory name of the CD-ROM file system. Note that the mount directory name varies depending on the OS, hardware, and environment.

(Example of execution)

```
mount -r -o mode=0544 /dev/cdrom /mnt/cdrom
```

6. Start the setup program for installing Reliable Messaging, TPBroker, and Web Services - Security.

An example of command execution is as follows. The underlined part specifies the mount directory name of the CD-ROM file system.

(Example of execution)

```
/mnt/cdrom/linux/setup /mnt/cdrom
```

The CD-ROM setup program installs the PP installer and the resident process auto-start program on the hard disk, and the PP installer starts automatically.

Important note

The coded contents and how to display the contents for the CD-ROM directory and file names might differ depending on the computer environment. Check with the `ls` command, and enter the displayed file name as is.

7. In the main menu of the PP installer, press the **I** key.

The Install PP window appears.

8. Move the cursor to the program, and then press the **Space** key.

Select all the programs (Reliable Messaging, TPBroker and Web Services - Security). `<@>` appears on the left side of the selected program. Note that you can also select and install a program.

9. Make sure that `<@>` is displayed on the left side of all the programs, and then press the **I** key.

The message **Install PP? (y: install, n: cancel)**==> appears at the bottom of the window.

10. Press the **y** or **Y** key.

The installation process starts.

If you press the **n** or **N** key, the installation process is cancelled and you return to the Install PP window.

11. When the message indicating the end of installation is output, press the **Q** key.

You return to the main menu of the PP installer.

12. In the main menu of the PP installer, press the **Q** key.

The PP installer terminates.

13. Start the setup program for installing the common modules other than Reliable Messaging, TPBroker, and Web Services - Security.

An example of command execution is as follows. The underlined part specifies the mount directory name of the CD-ROM file system.

(Example of execution)

```
/mnt/cdrom/x64lin/setup /mnt/cdrom
```

The CD-ROM setup program installs the PP installer and the resident process auto-start program on the hard disk, and the PP installer starts automatically.

Important note

The coded contents and how to display the contents for the CD-ROM directory and file names might differ depending on the computer environment. Check with the `ls` command, and enter the displayed file name as is.

14. In the main menu of the PP installer, press the **I** key.

The Install PP window appears.

15. Move the cursor to the program, and then press the **Space** key.

Select all the programs (component software other than Reliable Messaging, TPBroker, and Web Services - Security supporting Application Server, and the common modules of the products). `<@>` appears on the left side of the selected program. Note that you can also select and install a program.

Important note

For details on the component software supporting the products, see [2.2.1\(3\) Component software supporting the products](#). The program names displayed by the products vary for the common modules of the products.

16. Make sure that <@> is displayed on the left side of all the programs, and then press the **I** key.
The message **Install PP? (y: install, n: cancel)**==> appears at the bottom of the window.
17. Press the **y** or **Y** key.
The installation process starts.
If you press the **n** or **N** key, the installation process is cancelled and you return to the Install PP window.
18. When the message indicating the end of installation is output, press the **Q** key.
You return to the main menu of the PP installer.
19. As and when required, press the **L** key in the main menu of the PP installer to check the installed programs.
The Display PP List window appears. If you press the **P** key, the list of installed programs is output to /tmp/hitachi_PPLIST. Press the **Q** key to return to the main menu of the PP installer.
20. In the main menu of the PP installer, press the **Q** key.
The new installation of Application Server finishes.
21. Apply patches.
A patch is a piece of software that makes improvements to a product after its official release.
After completing the installation of Application Server, download and apply the latest patches from the Software Support Services website.
If your environment does not allow access to the Software Support Services website, use the patch CD supplied with the product.

2.2.5 Installing the products for connecting to the database

Install the products for connecting to the database (HiRDB Run Time or Oracle JDBC Thin Driver) by connecting to Application Server.

For details on the installation procedure, see the *HiRDB UAP Development Guide* or the *Oracle documentation*.

2.2.6 Setting up the system environment (Setting up a single Web front system)

Set up the system environment for a single Web front system.

Reference note

For details on the reference locations of the commands used in the description, and the storage locations of the commands, see [5. Windows, Commands, and Files used in the System Setup and Operations](#).

To set up the system environment, use the Setup Wizard. For notes on setting up the system environment, see [2.2.7 Notes on setting up the system environment](#).

Important note

When you use the Setup Wizard to set up the system environment, the following items are automatically set up. If you want to set further details in the following items, use the management portal or Smart Composer functionality to set up the system environment.

- The computer name is already set in the host name, and you cannot change the name.
- The following names are set as the logical server name, and you cannot change the name.

Performance tracer: MyPerformanceTracer

J2EE server: MyJ2EEServer

Web server: MyWebServer

(1) Starting the Setup Wizard and setting up the system environment

Start Setup Wizard and set up the system environment.

1. Execute the `setupwizard` command with the command prompt to start the Setup Wizard.

A command execution example is as follows:

```
setupwizard
```

2. In the Welcome window, enter "1" and press the **Enter** key.
3. In the Select Setup Method window, enter "1" and press the **Enter** key.
4. In the Database Connection Environment Settings window, enter "y" and press the **Enter** key.
5. Enter the database to be used, ("1" for HiRDB, and "2" for Oracle), and press the **Enter** key.
6. Enter the connection information for the database as per the instructions on the window, and press the **Enter** key.
Enter the connection information related to the database, such as the database host name, port number, user accessing the database, and password for the user accessing the database; as per the instructions on the window.
The window for confirming the Current Settings appears once you have finished entering the items.
7. After confirming the Current Settings, enter "1", and press the **Enter** key.
The Setup Information window appears.

Reference note

If you find that the contents of Current Settings are incorrect, enter "2", and re-execute the setting from step 4 onwards.

8. In the Setup Information window, enter "1" and press the **Enter** key.
The setup process starts, and a message showing the setup execution status for each process appears.
When the setup is complete in all the processes, a message indicating the saving of setup information file and Easy Setup definition file, and also the closing of the Setup Wizard appears.

(2) Settings for automatically starting functionality concurrently with the startup of OS

Perform settings for automatically starting the Management functionality at the same time as the start of the OS.

1. Execute the `mngautorun` command with the command prompt to perform settings for starting the management functionality (Management Server or Administration Agent) at the same time as the start of the host.

A command execution example is as follows:

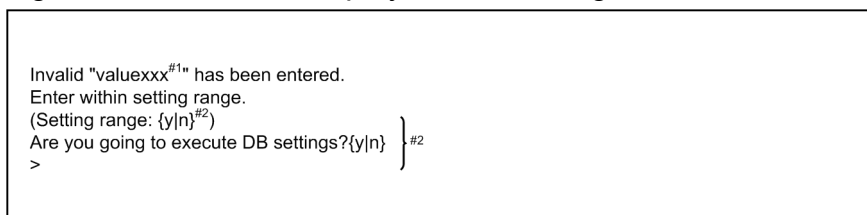
```
mngautorun both -sync
```

2.2.7 Notes on setting up the system environment

Note the following items when setting up the system environment:

- Only the following users are authorized to execute the Setup Wizard. If unauthorized users execute the Setup Wizard, an error occurs.
 - For Windows
Execute the commands as a user with administrator privileges.
 - For UNIX
Execute the commands as a user with root permission.
- Do not externally terminate the running command by using the **Ctrl+C** key.
- If an error occurs during the setup processing, the processing is stopped and the setup failure window appears. In such cases, delete the system being setup, and then execute the setup again. To delete the system being setup, execute `uninstall` by using the Setup Wizard. For details on the uninstallation procedure, see [3.3.1 Unsetup of the system environment](#).
- In the operations of the Setup Wizard, if you do not enter any value and press the **Enter** key even when you are prompted to enter setting value, the default value is set for that item. If you press the Enter key for the items having no default value, an error occurs and you are again prompted for entering a setting value.
- When you are prompted to enter a setting value, if you enter a value that cannot be set and press the Enter key, error occurs, and the following window appears.

Figure 2–1: Window displayed on entering a value that cannot be set



#1 Display the value entered.

#2 Display differs as per the setup contents.

- When you are prompted to enter a setting value for the item having value that can be set as "0 characters or more", and you press the **Enter** key without entering any value, null is set.

If you enter a value for the items for which some value is already set, the following window appears.

Figure 2–2: Window displayed on re-entering a value for items having the value that can be set as "0 characters or more"

Enter access user of database.#
 (Enter same value when previous input value is not to be changed)
 >

Display differs as per the settings.

When this window appears, if you do not enter any value, and press the Enter key, null is set in place of the already set value.

- You can use the Setup Wizard to set up a system environment only on hosts where the Setup Wizard is executed. You cannot set up a system environment on other hosts.
- If you execute the Setup Wizard using the standard setup, the system environment with the port numbers described in the following table is set up.

Table 2–4: Port numbers used in standard setup

Port number	Purpose
80	Port number of Web server
900	Port number of in-process Naming Service
8008	Port number of http
28008	Port number of management server
20295	Port number of Administration Agent
23152	Port number of RMI registry
28005	Port number for Management Server completion request reception
28009	Port number for Management Server internal communication
28080	HTTP port number for Management Server connection

If these port numbers are already in use, you cannot set up the system environment using the standard setup. In the Select Setup Method window, enter "2" (Custom setup), and set a unique port number in the following window:

- Management Functionality Settings window
- System Environment Settings window

To match the settings with standard setup except for the port numbers, enter "1" (default) in the Operation Management User Settings window, the J2EE Server Startup User Settings window (For UNIX), and the Select System Configuration window, and. then execute the set up.

- If the setup fails, enter "y" in the Setup failure window to automatically collect a snapshot log as the troubleshooting data.

The storage location of the snapshot log and the contents collected are as follows.

Storage location of snapshot log

- *<Setup Wizard log output destination>/snapshot.zip*

Contents collected in snapshot log

- Directory indicated in *<Cosminexus installation directory>/manager/config/snapshotlog.conf*
- *<Setup Wizard log output destination>/setupwizard<number of files>.log*
- *<Setup Wizard log output destination>/maintenance/setupwizard<Number of files>.log*
- *<Cosminexus installation directory>/manager/setup/config/*

- *<Cosminexus installation directory>/manager/setup/tmp/*

<Setup Wizard log output destination> is the output destination specified in *setup.log.dir* of *setup.cfg*. For *setup.cfg*, refer to 8.2.18 *setup.cfg (Setup file for the Setup Wizard)* of the *uCosminexus Application Server Definition Reference Guide*.

- The following table lists the files used in the Setup Wizard:

Table 2–5: List of files used in Setup Wizard

Classification	File name	Overview	Output destination
Setup information list	setupwizardlist.txt	This file is output after the successful completion of setup processing. This file is meant for checking the environment configured by using the Setup Wizard.	<ul style="list-style-type: none"> • For Windows <i><Cosminexus installation directory>\manager\setup\config</i> • For UNIX <i>/opt/Cosminexus/manager/setup/config</i>
Setup information file	setupwizard.dat	This file is output on selecting Save Setup Information in the Setup Information window. It can be used for batch setup.	
	setupwizard_success.dat	This file is automatically output after the (successful) completion of setup processing. It can be used for batch setup or system replication.	
	setupwizard_failed.dat	This file is automatically output after the (failed) completion of setup processing. It can be used for batch setup. However, when using this file for batch setup, you must remove the cause of failure in the setup processing.	
Log file	setupwizard<number of files>.log	Log of the Setup Wizard is output. You can specify the log file settings such as maximum file size and maximum number of files by using <i>setup.cfg</i> (setting file for Setup Wizard).	Any (output destination specified in <i>setup.log.dir</i> of <i>setup.cfg</i>)
Easy Setup definition file	cmxsetupwz.xml	This file is output after the (successful) completion of the setup process. This file is meant for checking the defined contents of the environment configured by using the Setup Wizard.	<ul style="list-style-type: none"> • For Windows <i><Cosminexus installation directory>\manager\setup\config</i> • For UNIX <i>/opt/Cosminexus/manager/setup/config</i>
Connector property file of DB Connector	DBConnector_HiRDB_Type4_CP_cfg.xml Or DBConnector_Oracle_CP_cfg.xml	This file is output after the (successful) completion of setup process. This file is meant for checking the defined contents of the DB Connector used in the environment configured by using the Setup Wizard.	
Settings file for Setup Wizard	setup.cfg	This file is provided for specifying the output destination of the Setup Wizard log file, maximum file size, and the maximum number of files.	

2.2.8 System environment definition

When setup of the system environment is complete, default values are set in the parameters of various definition files. For setting up a system environment that fulfills the system requirements, change the values set in the parameters of various definition files as and when required. This work item is called *Setting system environment definition*.

This subsection describes the task of setting timeout as a representative parameter set as per the system requirements.

- Setting the timeout

Objective of setting the timeout is to detect the error occurrence in the system, and to avoid the phenomenon of no response to the request, thereby releasing the proper resources. You can set timeout such as system timeout, transaction timeout, and database timeout. For the policy concerning the values to be set for timeout, see 8.6 *Setting a timeout* in the *uCosminexus Application Server System Design Guide*.

2.2.9 Setting the timeout

This subsection describes the procedure for setting the following timeouts:

- Method timeout of J2EE applications
- Communication timeout for response awaiting data
- Default transaction timeout period for a transaction
- Database timeout (For HiRDB)



Reference note

For details on the reference locations of the windows, commands, and files used in the description, and the storage locations of the commands and files, see 5. *Windows, Commands, and Files used in the System Setup and Operations*.

(1) Setting the method timeout for J2EE application

Use the execution time monitoring functionality of J2EE applications for setting the request processing waiting period in Web container.

1. Edit `cosminexus.xml` and store in the META-INF directory under *Any directory*.

Specify following in the `<war>` tag of `cosminexus.xml`.

- Specify the value of the J2EE application method timeout in `<servlet>`-`<method-observation-timeout>` tag.

If there are multiple `<servlet>` tags within `<war>` tag, specify the values in the respective tags.

2. Execute `jar` command with the command prompt, and set the `cosminexus.xml` edited in step 1, in J2EE application of archive format.

The command execution example is as follows:

```
jar uvf <MyApp1.ear file path> -C Directory where META-INF directory is placed <cosminexus.xml file path under META-INF directory>
```

Specify the path of the directory that stores J2EE application (MyApp1.ear), and the file name (MyApp1.ear) in *MyAppl.ear file path*. The *<Directory where META-INF directory is placed>* is *Any directory*, if the structure of the store destination of cosminexus.xml is as follows.

```
<Any directory>
- META-INF
- cosminexus.xml
```

Specify the path of META-INF directory where the cosminexus.xml is stored in step 1 and the file name (cosminexus.xml) in *<cosminexus.xml file path under META-INF directory>*.

(2) Setting communication timeout for response awaiting data

Set how long the reverse proxy registered in the Web server waits to receive data from the Web container.

1. Start the Web browser, connect to `http://localhost:28080/mngsvr/index.jsp`, and start the management portal.
2. Enter "admin" for the management user ID in the Login Management Server window and click the **Login** button.
3. Click **Logical server environment settings** in the Management Portal window.
4. On the **Server view** tab, select **DefaultDomain**, **Logical Web server**, **Web server**, and **MyWebServer**, and then click the **Reverse proxy** tab.
5. Enter the desired value in **Communication timeout** in the Setting the Reverse Proxy window, and then click the **Apply** button.
A message indicating the saving of environment settings appears.
6. Click the **Deploy the Settings** anchor.
7. Click the **Deploy All** button on the Deploy the Settings window.
The **Status** changes from "Blank" to "Deploying", and then to "Deployed".

Reference note

If there are logical servers having the **Status** as "Deployed", you can select and deploy only the logical servers having the **status** as "Blank". In such cases, insert check mark in **Deploy**, and then click the **Select and Deploy** button. The Status of the selected logical server changes to "Deployed".

8. Click **Start/Stop the Logical Server** on the Management Portal window.
9. In the **Server view** tab, Click **DefaultDomain** and then click the **Batch Restart** tab.
10. Click the **Execute** button in the Batch Restart window.
The request for a batch restart is received and the operational status of logical servers in the Operational Status of Logical Servers window successively changes from "Operating" to "Stopping", to "Stopped" then to "Starting" and then to "Operating".

(3) Default settings for transaction timeout period of transaction

Set the transaction timeout for the EJB container and the database.

1. Start the Web browser, connect to `http://localhost:28080/mngsvr/index.jsp`, and start the Management Portal.
2. Enter "admin" for the management user ID in the Login Management Server window and click the **Login** button.
3. Click **Logical Server Environment Settings** in the Management Portal window.
4. In the **Server View** tab, select **DefaultDomain - Logical J2EE Server - J2EE Server - MyJ2EEServer** and then click the **Services - Transaction** tab.
5. Set a value in the **Timeout period** in the Transaction Settings window and click the **Apply** button.
A message indicating the saving of the environment settings appears.
6. Click the **Deploy the Settings** anchor.
7. Click the **Deploy All** button in the Deploy the Settings window.
The **Status** changes from "Blank" to "Deploying", and then to "Deployed".



Reference note

If there are logical servers having the Status as Deployed, you can select and deploy only the logical servers having the status as Blank. In such cases, check Deploy and then click the **Select and Deploy** button. The **Status** of the selected logical server changes to "Deployed".

8. Click **Start/Stop the Logical Server** in the Management Portal window.
9. In the **Server View** tab, click **DefaultDomain** and then click the **Batch Restart** tab.
10. Click the **Execute** button in the Batch Restart window.
The request for a batch restart is received and the operational status of the logical servers in the Operational Status of Logical Servers window sequentially changes from "Operating" to "Stopping", to "Stopped", then to "Starting", and then to "Operating".

(4) Response timeout and request interval timeout settings (for HiRDB)

Set the timeout (response timeout) for detecting failures on the server side of the database system, and the timeout (request interval timeout) for detecting failures on the client side of the database system.

1. Start the Web browser, connect to `http://localhost:28080/mngsvr/index.jsp`, and start the Management Portal.
2. Enter "admin" for the management user ID in the Login Management Server window and click the **Login** button.
3. Click **Application Management of the Logical Server** on the Management Portal window.
4. Click **DefaultDomain - Logical J2EE server - J2EE server - MyJ2EEServer - Resources - Resource adapter**, and then click the **Start/Stop** tab.
5. Click the **Stop** anchor of **Operation**, if the **Status** on the Start/Stop Resource Adapter window is "Operating".
6. Click the **Yes** button on the Stop Resource Adapter window.
7. Click the **Back** anchor if "Success" is displayed in the **Execution result**.

If "Failure" is displayed in the **Execution result**, click the **Display log** tab, check the message in the Display Log window, remove the cause of failure and then stop the resource adapter again.

8. Click **DefaultDomain - Logical J2EE Server - J2EE Server - MyJ2EEServer - Resources - Resource Adapter**, and then click the **Property Settings** tab.
9. Click the **Basic settings** anchor of **Operation** in the Resource Adapter Property Settings window.
10. Set `PDCWAITTIME` and `PDSWAITTIME` values in HiRDB client environment variable (environmentVariables) in the Basic Settings of the Resource Adapter window and click the **Settings** button.
You can set the response timeout (`PDCWAITTIME`) and request interval timeout (`PDSWAITTIME`).
11. Check the message displayed in the Basic Settings of Resource Adapter window, and click the **Back** anchor.
If a failure message is displayed, remove the cause of failure and then set the property again.
12. Click the **Back** anchor.
13. Click the **Start/Stop** tab and then click the **Start** anchor of **Operation** in the Start/Stop Resource Adapter window.
14. Click the **Yes** button on the Start Resource Adapter window.
15. Click the **Back** anchor if "Success" is displayed in the **Execution result**.
If "Failure" is displayed in the **Execution result**, click the **Display log** tab, check the message in the Display Log window, remove the cause of failure, and then start the resource adapter again.

2.2.10 Setting and starting the business application (when using GUI)

To start an activity; you must upload the J2EE application on the Management Server, then import, and start. This subsection describes the procedure for uploading, importing, and starting the J2EE applications. Use the management portal for executing these tasks. Note that the business application described in this subsection is J2EE application (application in EAR format or ZIP format) in archive format that contains the `cosminexus.xml`.



Reference note

For details on the windows used in the description, see [5. Windows, Commands, and Files used in the System Setup and Operations](#).

(1) Startup and login of the management portal

If you have already logged in to the management portal, proceed to (2) *Starting the logical servers as a batch*.

1. Start the Web browser, connect to `http://localhost:28080/mngsvr/index.jsp`, and start the management portal.
2. Enter "admin" for the management user ID in the Login Management Server window and click the **Login** button.

(2) Starting the logical servers as a batch

1. Click **Start/Stop the Logical Server** on the Management Portal window.
2. Click **DefaultDomain** on the **Server view** tab.

3. Confirm the operational status of the logical server in the Operational Status of Logical Servers window.
4. If the status is "Stopped", click the **Batch Start** tab. If the status is "Operating", proceed to (3) *Business application settings (for GUI)*.
5. Click the **Execute** button in the Batch Start window.

The request for a batch start is received, and the operational status of the logical servers in the Operational Status of Logical Servers window changes from "Stopped" to "Starting", and then to "Operating".

(3) Business application settings (when using GUI)

1. Store the obtained J2EE application (MyApp1.ear) in *Any-directory* of Application Server.
2. Click **Application Management of the Logical Server** in the Management Portal window.
3. Click **DefaultDomain**.
4. Enter the J2EE application (MyApp1.ear) stored in *Any-directory* in step 1 for the **J2EE application files** in the Upload J2EE Application window. Then click the **Upload** button.
5. Check the displayed message, and click the **Back** anchor.

If a failure message is displayed, remove the cause of failure, and then upload the J2EE application again.
The file name (MyApp1.ear) of the J2EE application uploaded in step 4 is displayed in the **Upload directory files list**.
6. Click **DefaultDomain - Logical J2EE Server - J2EE Server - MyJ2EEServer - Application**, and then click the **Import** tab.
7. Select the file (MyApp1.ear) uploaded in step 4 from the **J2EE application files** in the Import J2EE Application window, and then click the **Execute** button.
8. Click the **Back** anchor if "Success" is displayed in the **Execution result**.

If "Failure" is displayed in the **Execution result**, click the **Display log** tab, check the message in the Display Log window, remove the cause of failure, and then import the J2EE application again.

(4) Starting the business application (when using GUI)

1. Click **Application Management of the Logical Server** in the Management Portal window.
2. Click **DefaultDomain - Logical J2EE Server - J2EE Server - MyJ2EEServer - Application**, and then click the **Start/Stop** tab.
3. Click the **Start** anchor of **Operation** for the display name (MyApp) of the J2EE application imported in (3) *Business application settings (for GUI)*, displayed in the **Import J2EE applications list** in the Start/Stop J2EE Application window.
4. Click the **Yes** button on the Start J2EE Application window.
5. Check the **Execution result**, and click the **Back** anchor.

If "Failure" is displayed in the **Execution result**, click the **Display log** tab, check the message in the Display Log window, remove the cause of failure, and then start the J2EE application again.
If "Success" is displayed in the **Execution result**, the **Status** in Start/Stop J2EE Application window changes to "Operating".

2.3 Changing to the system with assured availability

This section describes the procedure for changing a single Web front system to a system environment with assured availability.

2.3.1 Allocating multiple hosts of same configuration to ensure availability

This subsection describes the procedure for changing to a system environment where multiple hosts of the same configuration are allocated, and a load balancer is used for balancing the load, thereby ensuring the availability in a single Web front system. For system configuration, see [1.2.2 Ensuring availability by allocating multiple hosts with same configuration](#).

Use the Setup Wizard and replicate the hosts to create hosts of the same configuration. Use the load balancer to ensure availability. For notes on allocating multiple hosts of the same configuration, see [2.3.2 Notes on allocating multiple hosts of same configuration](#).



Reference note

For details on the reference locations of the commands and files used in the description, and the storage locations of the commands and files, see [5. Windows, Commands, and Files used in the System Setup and Operations](#).

(1) Output of the replication information

Output the information (Easy Setup definition file) for replicating the system in the replication source host.

1. Specify the `-export` option in the `setupwizard` command with the command prompt of the source host, and then execute to export the Easy Setup definition file to *Any-directory*.

Command execution example is as follows:

```
setupwizard -export -omd Export destination path of Easy Setup Definition file
```

Specify the file name and the path of the directory where the Easy Setup definition file is stored in *Export-destination-file-path-of-Easy-Setup-definition-file*. The Easy Setup definition file is in XML format.

(2) Setup using the replication information

Use the information for system replication (Easy Setup definition file), and the Setup Information file to execute the setup.

1. Prepare a new host as the target host (host after replication), and install the following products.
 - Application Server
 - HiRDB Run Time, or Oracle JDBC Thin Driver
2. Copy the following files to *Any-directory* of the replication target host.
 - Easy Setup definition file output in *(1) Output of replication information*
 - Setup Information file of the replication source host (`setupwizard_success.dat`)

The storage destination of the Setup Information file is as follows:

Type of OS	Storage destination
Windows	<i>Cosminexus installation directory\manager\setup\config\</i>
UNIX	<i>/opt/Cosminexus/manager/setup/config/</i>

3. In the command prompt of the target host, specify the Easy Setup definition file and Setup Information file copied in the step 2, with the `setupwizard` command, and then execute to replicate the system environment.

Command execution example is as follows:

```
setupwizard -f <file path of setup information file> -md <file path of Easy Setup Definition file>
```

Specify the storage destination of files copied in step 2, in *file-path-of-Setup-Information-file*, and *file-path-of-Easy-Setup-definition-file*.

4. In the Setup Information window, enter "1", and press the **Enter** key.
5. Set the business application in the target J2EE server (J2EE server after replication), and then start.

2.3.2 Notes on allocating multiple hosts of same configuration

Notes on allocating multiple hosts having the same configuration are as follows.

- If the tuning implemented in the source host cannot be replicated, the following operations take place in the replication source or target host, and replication might fail.
 - An error occurs while exporting the Easy Setup definition file in the replication source host.
 - The replication target host is replicated by ignoring the non-replicable tuning information. In such cases, the settings performed during the setup of source host are applied to the target host.

The following table describes the non-replicable tuning items, and the host operations.

Table 2–6: Non-replicable tuning items and the host operations

No.	Tuning items	Host operations
1	Management Server settings	<p>If you change the following items of Management Server settings, an error occurs while exporting, and the replication fails.</p> <ul style="list-style-type: none">• "Management user ID" and "Password" in the management user account settings• "HTTP port number for Management Server connection" in the network settings• "Port number for Administration Agent" in the host definition <p>If you change the any other setting information of Management Server, error does not occur while exporting. However, the settings performed during the setup of the replication source host are applied to the replication target host.</p>
2	Component Container Administrator settings	<p>Even if you change the settings of Component Container Administrator, error does not occur while exporting. However, the settings performed during the setup of the replication source host are applied to the replication target system.</p>
3	Web system settings	<p>If you change the items other than the following items of the Web system settings, an error occurs while exporting, and replication fails.</p> <ul style="list-style-type: none">• Logical server parameter settings performed by using the Easy Setup definition file of Smart Composer functionality• "Logical server environment settings" and "Start/ stop logical server" settings performed by using the management portal

No.	Tuning items	Host operations
4	Database connection settings	You can replicate the JDBC driver settings among the database connection settings. Even if you change the setting items other than JDBC driver, error does not occur while exporting. However, the settings performed during the setup of the replication source host are applied to the target host.

- The platform of the replication target host must be the same as that of the replication source host. Replication might fail if the platform is different than the replication source.
- Use the Easy Setup definition file exported with the setupwizard command in the replication target host. The replication might fail if you use the Easy Setup definition file exported without using the setupwizard command.

2.4 Changing to the system that supports multi-tenant

This section describes the procedure for changing a single Web front system to a system supporting the multi-tenant. You can change a single Web front system to support multi-tenant, with the following procedure.

- Allocating multiple J2EE servers
You can effectively use the resources of the host and distribute the business processing (application) to each tenant.
- Allocating multiple resource adapters
You can share the database (control the increase in the number of databases), and distribute the data to each tenant.

2.4.1 Allocating multiple J2EE servers for supporting multi-tenants

This subsection describes the procedure for changing a single Web front system to a system supporting the multi-tenant through the effective usage of host resources. For system configuration, see [1.2.3 Supporting multi-tenancy by allocating multiple J2EE servers](#).



Reference note

For details on the reference locations of the windows, commands, and files used in the description, and the storage locations of the commands and files, see [5. Windows, Commands, and Files used in the System Setup and Operations](#).

After replicating the Web system, create a host for allocating multiple J2EE servers, by adding the logical servers (Web server, J2EE server, and performance tracer), using Smart Composer functionality. In this subsection it is assumed that the same application is used in business applications operating on J2EE server to be added. The following table describes the settings used in the example.

Table 2–7: Settings used in the example (Web front system that supports the multi-tenant by allocating the multiple J2EE servers)

Item	Example of setting
Web system name	MyWebSystem
Name of the service unit to be added	unit2
Name of the logical Web server to be added	MyWebServer2
Name of the logical J2EE server to be added	MyJ2EEServer2
Name of the logical performance tracer to be added	MyPerformanceTracer2
Name of the Configuration Change definition file	MyWebSystemAddUnit.xml

(1) Replacing the Web system

1. Execute the `cmx_export_model` command with the command prompt to export the Easy Setup definition file to *Any-directory*.

Command execution example is as follows:

```
cmx_export_model -m localhost:28080 -u admin -o <Export destination file path of Easy Setup Definition file>
```

Specify the file name and the path of the Easy Setup definition file storage directory in *Export-destination-file-path-of-Easy-Setup-definition-file*. Easy Setup definition file is in XML format.

2. Execute the `cmx_delete_system` command with the command prompt to delete the system.

Delete the system already configured on the host as a preparation for the system replication.

Command execution example is as follows:

```
cmx_delete_system -m localhost:28080 -u admin -s MyWebSystem
```

3. Execute the `cmx_build_system` command with the command prompt, to replicate the Web system from the Easy Setup definition file exported in step 1.

Command execution example is as follows:

```
cmx_build_system -m localhost:28080 -u admin -f <file path of Easy Setup Definition file>
```

Specify the file name and path of the Easy Setup definition file storage directory (in step 1), in *file-path-of-Easy-Setup-definition-file*.

(2) Adding logical servers (Web server, J2EE server and performance tracer)

1. Copy the template file (`cmxaddcombinedmodel.xml`) of the Configuration Change definition file to any location and rename it with any name.

The template file of the Configuration Change definition file for adding the service units and the hosts is provided at the following location. In this case, rename the file as `MyWebSystemAddUnit.xml`.

For Windows

Cosminexus installation directory\manager\config\templates\cmxaddcombinedmodel.xml

For UNIX

/opt/Cosminexus/manager/config/templates/cmxaddcombinedmodel.xml

2. Use the text editor to edit the Configuration Change definition file copied in step 1.

Specify the definition of the service unit and the logical server to be added in the Configuration Change definition file. The name of the logical server to be added and the values specified in the configuration definition of logical server as described in the following table must be unique. The following table describes the unique configuration definitions to be set for each logical server.

Table 2–8: Unique configuration definitions to be set for each logical server

Type of logical server	Item	Specification value of param-name
Performance tracer	PRF identifier	PRFID
J2EE server	Fixed port number of the JTA recovery	ejbserver.distributedtx.recovery.port
	Port number of the management server	ejbserver.http.port
	Port number of in-process Naming Service	ejbserver.naming.port
	Port number of the RMI registry	ejbserver.rmi.naming.port
	Port number of NIO HTTP server	webserver.connector.nio_http.port

Type of logical server	Item	Specification value of param-name
Web server	http port number	Listen
	Port number of the worker	worker.<worker name>.port

Example of editing the Configuration Change definition file is as follows: The part that is **bold** and highlighted is the part to be edited.

```
<?xml version="1.0" encoding="UTF-8"?>
<unit-addition xmlns="http://www.cosminexus.com/mngsvr/schema/UnitAddition-2.5">
  <web-system>
    <name>MyWebSystem</name>

    <!--Specify the settings for the Service Unit to add.-->
    <unit>
      <name>unit2</name>
      <allocated-host>
        <host-ref>@myhost</host-ref>
        <hosts-for>combined-tier</hosts-for>
        <define-server>
          <logical-server-name>MyPerformanceTracer2</logical-server-name>
          <logical-server-type>performance-tracer</logical-server-type>
          <configuration>
            <param>
              <param-name>PRFID</param-name>
              <param-value>PRF_ID2</param-value>
            </param>
          </configuration>
        </define-server>
        <define-server>
          <logical-server-name>MyJ2EEServer2</logical-server-name>
          <logical-server-type>j2ee-server</logical-server-type>
          <configuration>
            <param>
              <param-name>ejbserver.distributedtx.recovery.port</param-name>
              <param-value>20303</param-value>
            </param>
            <param>
              <param-name>ejbserver.http.port</param-name>
              <param-value>8081</param-value>
            </param>
            <param>
              <param-name>ejbserver.naming.port</param-name>
              <param-value>901</param-value>
            </param>
            <param>
              <param-name>ejbserver.rmi.naming.port</param-name>
              <param-value>23153</param-value>
            </param>
            <param>
              <param-name>webserver.connector.nio_http.port</param-name>
              <param-value>8008</param-value>
            </param>
          </configuration>
        </define-server>
      </unit>
    </web-system>
  </unit-addition>
```

```

    <define-server>
      <logical-server-name>MyWebServer2</logical-server-name>
      <logical-server-type>web-server</logical-server-type>
    <configuration>
      <param>
        <param-name>Listen</param-name>
        <param-value>81</param-value>
      </param>
      <param>
        <param-name>worker.list</param-name>
        <param-value>worker1</param-value>
      </param>
      <param>
        <param-name>worker.worker1.port</param-name>
        <param-value>8008</param-value>
      </param>
    </configuration>
  </define-server>
</allocated-host>
</unit>
</web-system>
</unit-addition>

```

Note:

Delete the host definition (`<host>` tag).

3. Execute the `cmx_change_model` command and the `cmx_build_system` command with the command prompt, and add the logical server (Web server, the J2EE server, and performance tracer) from Configuration Change definition file edited in step 2.

Command execution example is as follows:

```

cmx_change_model -m localhost:28080 -u admin -f <file path of Configuration Change Definition file>
cmx_build_system -m localhost:28080 -u admin -s MyWebSystem

```

Specify the file name and the path of the Configuration Change definition file (`MyWebSystemAddUnit.xml`) storage directory in step 1 in *file-path-of-Configuration-Change-definition-file*.

(3) Startup and login of Management Portal

If you have already logged in to the management portal, proceed to (4) *Batch start of the added logical servers*.

1. Start the Web browser, connect to `http://localhost:28080/mngsvr/index.jsp`, and start the management portal.
2. Enter "admin" in the management user ID on the Login Management Server window, and click the **Login** button.

(4) Starting added logical servers as batch

1. Click **Start/Stop the Logical Server** on the Management Portal window.
2. In the **Server View** tab, click **DefaultDomain**, and then click the **Batch Startup** tab.
3. Click the **Execute** button on the Batch Start window.

The request for batch startup is received, and the operational status of logical servers in the Operational Status of Logical Servers window changes to "Operating".

(5) Setting and starting the resource adapter on the added J2EE server (MyJ2EEServer2)

1. Click **Application Management of the Logical Servers** on the Management Portal window.
2. Click **DefaultDomain - Logical J2EE Server - J2EE Server - MyJ2EEServer2 - Resources - Resource Adapter**, and then click the **Import** tab.
3. Set the information of the resource adapter to be imported to **MyJ2EEServer2** in the Import Resource Adapter window, and click the **Execute** button.
4. Click the **Back** anchor if "Success" is displayed in the **Execution result**.
If "Failure" is displayed in the **Execution result**, click the **Display log** tab, check the message in the Display Log window, remove the cause of failure, and then import the resource adapter again.
5. Click **DefaultDomain - Logical J2EE Server - J2EE Server - MyJ2EEServer - Resources - Resource Adapter**, and then click the **Property Settings** tab.
6. Click the **Basic Settings** anchor of **Operation** of the resource adapter imported in step 3, in the Resource Adapter Property Settings window.
7. Set the basic information and properties in the Basic Settings of Resource Adapter window, and click the **Settings** button.
8. Check the message displayed on the Basic Settings of Resource Adapter window, and click the **Back** anchor.
If a failure message is displayed, remove the cause of the failure and then set the property again.
9. Click the **Start** anchor of **Operation** in the Start/Stop Resource Adapter window.
10. Click the **Yes** button in the Start Resource Adapter window.
11. Click the **Back** anchor if "Success" is displayed in the **Execution result**.
If "Failure" is displayed in the **Execution result**, click the **Display log** tab, check the message in the Display Log window, remove the cause of failure, and then start the resource adapter again.

(6) Setting and starting the business application on the added J2EE server (MyJ2EEServer2)

1. Click **Application management of the Logical servers** on the Management Portal window.
2. Click **DefaultDomain - Logical J2EE Server - J2EE Server - MyJ2EEServer2 - Application** and then click the **Import** tab.
3. Select the same J2EE application (MyApp) from the **J2EE application files** on the Import J2EE Application window, and then click the **Execute** button.

Reference note

Import the uploaded J2EE application so that the same business application can also operate on the added J2EE server. For operating a different business application, first upload the J2EE application, and then import.

4. Click the **Back** anchor if "Success" is displayed in the **Execution result**.
If "Failure" is displayed in the **Execution result**, click the **Display log** tab, check the message in the Display Log window, remove the cause of failure, and then import the J2EE application again.
5. Click the **Start/Stop** tag.
6. Click the **Start** anchor of **Operation** for the application imported in step 3, existing in the **Import J2EE applications list** on the Start/Stop J2EE Application window.
7. Click the **Yes** button on the Start J2EE Application window.
8. Check the **Execution result**, and click the **Back** anchor.
If "Failure" is displayed in the **Execution result**, click the **Display log** tab, check the message in the Display Log window, remove the cause of failure, and then start the J2EE application again.
If "Success" is displayed in the **Execution result**, the **Status** of the Start/Stop J2EE Application window changes to "Operating".

2.4.2 Allocating multiple resource adapters for supporting multi-tenants

This subsection describes the procedure for changing a single Web front system to a system supporting multi-tenants by the sharing of the databases. For system configuration, see [1.2.4 Supporting multi-tenancy by allocating multiple resource adapters](#).

Reference note

For details on the reference locations of the windows, commands, and files used in the description, and the storage locations of the commands and files, see [5. Windows, Commands, and Files used in the System Setup and Operations](#).

Create a host for allocating multiple resource adapters by adding resource adapters using the management portal. In addition, associate the host with business applications that use the resource adapters. The following table describes the settings used in the example.

Table 2–9: Settings used in the example (Web front system that supports multi-tenants by allocating multiple resource adapters)

Item	Example of setting
Name of the resource adapter to be added	DB_Connector_for_HiRDB_Type4_2
RAR file to be imported	DBConnector_HiRDB_Type4_CP.rar

(1) Startup and login of Management Portal

If you have already logged in the management portal, proceed to (2) *Adding resource adapters*.

1. Start the Web browser, connect to `http://localhost:28080/mngsvr/index.jsp`, and start the management portal.
2. Enter "admin" in the management user ID in the Login Management Server window, and click the **Login** button.

(2) Adding resource adapters

1. Click **Application management of the Logical server** on the Management Portal window.
2. Click **DefaultDomain - Logical J2EE Server - J2EE Server - MyJ2EEServer - Resources - Resource Adapter**, and then click the **Import** tab.
3. Set the information of the resource adapter to be imported to `MyJ2EEServer` in the Import Resource Adapter window, and click the **Execute** button.
As the information of the resource adapter to be imported, select the **DB connector**, and then select the **RAR file** (`DBConnector_HiRDB_Type4_CP.rar`) to be imported from the pull-down menu. Next, select the resource adapter name, and specify the name of resource adapter (`DB_Connector_for_HiRDB_Type4_2`) to be added.
4. Click the **Back** anchor if "Success" is displayed in the **Execution result**.
If "Failure" is displayed in the **Execution result**, click the **Display log** tab, check the message in the Display Log window, remove the cause of failure, and then import the resource adapter again.
5. Click **DefaultDomain - Logical J2EE Server - J2EE Server - MyJ2EEServer - Resources - Resource Adapter**, and then click the **Property Settings** tab.
6. Click the **Basic Settings** anchor of **Operation** for the resource adapter imported in step 3, in the Resource Adapter Property Settings window.
7. Set the basic information and properties in the Basic Settings of Resource Adapter window, and click the **Settings** button.
8. Check the message displayed in the Basic Settings of the Resource Adapter window, and click the **Back** anchor.
If a failure message is displayed, remove the cause of failure, and then set the property again.

(3) Starting the resource adapter

1. Click **Application Management of the Logical Server** on the Management Portal window.
2. Click **DefaultDomain - Logical J2EE server - J2EE server - MyJ2EEServer - Resources - Resource adapter**, and then click the **Start/Stop** tab.
3. Click the **Start** anchor of **Operation** on the Start/Stop Resource Adapter window.
4. Click the **Yes** button on the Start Resource Adapter window.
5. Click the **Back** anchor if "Success" is displayed in the **Execution result**.
If "Failure" is displayed in the Execution result, click the **Display log** tab, check the message in the Display Log window, remove the cause of failure, and then start the resource adapter again.

(4) Settings for associating with business applications

(a) When using lookup in `java:comp/env`

If you specify `java:comp/env/<res-ref-name>-tag-specification-value` in the argument of the lookup method in the J2EE application, and then execute, use the management portal to replace the J2EE application with the edited properties, and then start

1. Edit the `cosminexus.xml`, and store in the META-INF directory under *Any-directory*.

Check the information necessary for name resolution of resource reference with the application developer, and specify the following in the `ejb-jar` tag, `war` tag, `entity` tag, or `message` tag in the `cosminexus.xml`.

For specifying in EJB-JAR property (in `ejb-jar` tag)

- Specify resource reference (`res-ref-name` tag) in the `session-resource-ref` tag.
- Specify the display name of the associated DB Connector in the `session-resource-ref-linked-to` tag.

For specifying in WAR property (in `war` tag)

- Specify resource reference (`res-ref-name` tag) in the `resource-ref` tag.
- Specify display name of the associated DB Connector in the `resource-ref-linked-to` tag.

For specifying in the property (in `entity` tag) of Entity Bean property

- Specify resource reference (`res-ref-name` tag) in the `resource-ref` tag.
- Specify display name of the associated DB Connector in the `resource-ref-linked-to` tag.

For specifying in the property (in `message` tag) of Message-driven Bean property

- Specify resource reference (`res-ref-name` tag) in the `resource-ref` tag.
- Specify display name of the associated DB Connector in the `resource-ref-linked-to` tag.

2. Execute the `jar` command with the command prompt, and set the `cosminexus.xml` edited in step 1, in the J2EE application of archive format.

Command execution example is as follows:

```
jar uvf file path of MyApp1.ear -C directory where META-INF directory is placed <file path of cosminexus.xml under META-INF directory>
```

Specify the path of the J2EE application (`MyApp1.ear`) storage directory, and the file name (`MyApp1.ear`) in *MyApp1.ear-file-path*. *directory-where-META-INF-directory-is-placed* is *Any-directory*, if the structure of the store destination of the `cosminexus.xml` is as follows:

```
<Any directory>
- META-INF
- cosminexus.xml
```

Specify the path of META-INF directory where the `cosminexus.xml` is stored in step 1, and the file name (`cosminexus.xml`) in *cosminexus.xml-file-path-under-META-INF-directory*.

3. Click **Application management of the Logical server** on the Management Portal window.
4. Click **DefaultDomain - Logical J2EE server - J2EE server - MyJ2EEServer - Application**, and then click the **Start/Stop J2EE application** tab.
5. Click the **Stop** anchor of **Operation** for the display name (`MyApp`) of application in the **Import J2EE applications list** on the Start/Stop J2EE Application window.

6. Click the **Yes** button on the Stop J2EE Application window.
7. Check the **Execution result**, and click the **Back** anchor.

If "Failure" is displayed in the **Execution result**, click the **Display log** tab, check the message in the Display Log window, remove the cause of failure, and then stop again.

If "Success" is displayed in the **Execution result**, the **Status** on Start/Stop J2EE Application window changes to "Stopped".
8. Click **DefaultDomain - Logical J2EE server - J2EE server - MyJ2EEServer - Application**, and then click the **Delete** tab.
9. Click the **Delete** anchor of **Operation** for the display name (MyApp) of application in the **Import J2EE applications list** on the Delete J2EE Application window.
10. Click the **Yes** button on the Delete J2EE Application window.
11. Check the **Execution result**, and click the **Back** anchor.

If "Failure" is displayed in the **Execution result**, click the **Display log** tab, check the message in the Display Log window, remove the cause of failure, and then delete the J2EE application again.

If "Success" is displayed in the **Execution result**, the application is deleted from the **Import J2EE applications list** in the Delete J2EE Application window.
12. Click **DefaultDomain**.
13. Enter the J2EE application (MyApp1.ear) recreated in step 2, in the **J2EE application files** in the Upload J2EE Application window, and then click the **Upload** button.
14. Check the displayed message, and click the **Back** anchor.

If a failure message is displayed, remove the cause of failure, and then upload again.

The J2EE application uploaded in step 13 is displayed in the **Upload directory files list**.
15. Click **DefaultDomain - Logical J2EE server - J2EE server - MyJ2EEServer - Application**, and then click the **Import** tab.
16. Select the file uploaded in step 13 from the **J2EE application files** in the Import J2EE Application window, and click the **Execute** button.
17. Click the **Back** anchor, if "Success" is displayed in the **Execution result**.

If "Failure" is displayed in the **Execution result**, click the **Display log** tab, check the message in the Display Log window, remove the cause of failure, and then import the J2EE application again.
18. Click **DefaultDomain - Logical J2EE server - J2EE server - MyJ2EEServer - Application**, and then click the **Start/Stop** tab.
19. Click the **Start** anchor of Operations for the application imported in step 16, existing in the Imported J2EE Applications List on the Start/Stop J2EE Application window.
20. Click the **Yes** button on the Start J2EE Application window.
21. Check the Execution Results, and click the **Back** anchor.

If "Failure" is displayed in the **Execution result**, click the **Display log** tab, check the message in the Display Log window, remove the cause of failure, and then start the J2EE application again.

If "Success" is displayed in the **Execution result**, the **Status** of the Start/Stop J2EE Application window changes to Operating.

(b) Using the lookup in names assigned by using the User-specified name space functionality

If you specify any name in the argument of the lookup method in the J2EE application while implementing, use the management portal, and set an optional name for the resource in the `Connector Property` file of the resource adapter. This subsection describes the example of specifying `jdbc/DataSource` as any name.

1. Click **Application management of the Logical server** on the Management Portal window.
2. Click **DefaultDomain - Logical J2EE server - J2EE server - MyJ2EEServer - Resources - Resource adapter**, and then click the **Property Settings** tab.
3. Click the **Edit Connector Property file** anchor of **Operation** for the resource adapter imported in (2) *Adding resource adapters* in the Resource Adapter Property Settings window.
4. Set the optional name of the resource in *resource-external-property-optional-name* tag in the **Edit connector property file** of Resource Adapter window, and click the **Settings** button.

Example of settings is as follows. The optional name of the resource is `jdbc/DataSource`.

```
<connector-runtime>
  <property>
    :
  </property>
  <resource-external-property>
    <optional-name>jdbc/DataSource</optional-name>
  </resource-external-property>
</connector-runtime>
```

5. Check the message displayed in the Basic Settings of Resource Adapter window, and click the **Back** anchor.
If a failure message is displayed, remove the cause of failure, and then set the property again.

3

Operating the System

This chapter explains the regular operations such as start and stop by using the Web front system set up in [2. *Setting up the System*](#). It also explains the maintenance operation procedures such as replacing an application and the performance tuning.

For more information on the references for windows, commands and files, and the storage locations of commands and files used in this chapter, see [5. *Windows, Commands, and Files used in the System Setup and Operations*](#).

3.1 Regular operations of Application Server

This section describes the following regular operations executed by Application Server.

- Starting the system (starting the operation)
- Checking the system operational status
- Stopping the system (ending the operation)

3.1.1 Starting the system to start the business (when using GUI)

This subsection describes the procedure for starting the business (application) by starting the system in stopped status. Use the management portal for starting the system, and the application. Because the operation management functionality (Management Server and Administration Agent) is started concurrently with the host, the host is assumed to be in started status.



Reference note

For details on the windows used in the description, see [5. Windows, Commands, and Files used in the System Setup and Operations](#).

(1) Startup and login of the management portal

Once you have logged in to the management portal, proceed to (2) *Starting logical server*.

1. Start the Web browser, connect to `http://localhost:28080/mngsvr/index.jsp`, and then start the management portal.
2. Enter "admin" in the management user ID on the Login to Management Server window, and click the **Login** button.

(2) Starting the logical server

1. Click **Start/stop logical server** on the Management Portal window.
2. Click **DefaultDomain** on **Server View** tab, and then click the **Batch Run** tab.
3. On the Batch Run window click the **Execute** button.

The request for batch start is received, and the operational status of the logical servers on the Operational Status of the Logical Server window changes from "Stopped" to "Starting", and then to "Operating".



Important note

If the resource adapter and the business application are stopped before stopping the logical J2EE Server; you must start the resource adapter and the business application after starting the logical server.

3.1.2 Checking the operational status of system (when using GUI)

After starting the system operation, check the operational status to confirm whether the logical servers such as J2EE servers are operating properly. Use the management portal to check the operational status of the system. In the management portal, you can check the operational status in management domain unit, host unit, and logical server unit. In the case of the logical server unit, you can check the operational status even in the logical server unit type.



Reference note

For details on the windows used in the description, see [5. Windows, Commands, and Files used in the System Setup and Operations](#).

(1) Startup and login of the management portal

Once you have logged in to the management portal, proceed to (2) *Checking the operational status of the logical server in management domain*, (3) *Checking the operational status of the logical server in host*, or (4) *checking the operational status of each logical server*.

1. Start the Web browser, connect to `http://localhost:28080/mngsvr/index.jsp`, and then start the management portal.
2. Enter "admin" in the management user ID on the Login to Management Server window, and then click the **Login** button.

(2) Checking the operational status of the logical server in management domain

1. Click the **Monitoring logical Server** on the Management Portal window.
2. Click **DefaultDomain** on the **Server View** tab.
The operational status of all the logical servers in the management domain is displayed on the Status Monitoring of the logical Server window.
3. Click **Logical Server Name** anchor on the Status Monitoring of the Logical Server window.
The operational status of the selected logical server type is displayed in the Monitoring the Operation Information of *Server type* window. For example, if you select logical J2EE server in *Types of the logical server* and J2EE Server in *Types of server*, Status Monitoring of J2EE Server window is displayed.

(3) Checking the operational status of the logical server in host

1. Click **Monitoring of the logical server** on the Management Portal window.
2. Click **Host-Host name** on the **Host View** tab.
The operational status of all logical servers in the host is displayed in the Status Monitoring of the logical Server window.

(4) Checking the operational status of each logical server

1. Click **Operation monitoring of the logical server** on the Management Portal window.
2. Click **DefaultDomain - Logical server type - Server type** in the **Server View** tab.

The operational status of the selected logical server is displayed in the Status Monitoring of *Server Type* window. For example, if you select logical J2EE server in *Types of the logical server* and J2EE Server in *Types of server*, the Status Monitoring of J2EE Server window is displayed.

3. Click **Logical server name** anchor on Status Monitoring of Server Type window.

Operational status of the selected logical server type is displayed in the Monitoring the Operation Information of *Server type* window. For example, if you select logical J2EE server in *Types of the logical server*, J2EE Server in *Types of server* and MyJ2EE Server in *Logical server name*, the Monitoring the Operation Information of J2EE Server window is displayed.

Reference note

Monitoring the Operation Information of *Server Type* window can also be displayed by clicking **DefaultDomain - Logical server type - Server type - Logical server name** in the **Server view** tab.

3.1.3 Stopping the system (when using GUI)

This subsection describes the procedure to stop Application Server by stopping the logical server and the management functionality during the operation. Use the management portal to stop the system. Do not stop operation in the resource adapter and the application. You can start the system concurrently with the logical server if you have stopped the system concurrently with the logical server.

Reference note

For details on the reference locations of the windows and commands used in the description, and the storage locations of the commands, see [5. Windows, Commands, and Files used in the System Setup and Operations](#).

(1) Startup and login of the management portal

Once you are have logged in to the management portal, proceed to (2) *Stopping logical server*.

1. Start the Web browser, connect to `http://localhost:28080/mngsvr/index.jsp`, and then start the management portal.
2. Enter "admin" in the management user ID on the Login to Management Server window, and the click the **Login** button.

(2) Stopping the logical server

1. Click **Start/stop the logical server** on the Management Portal window.
2. Click **DefaultDomain** on **Server View** tab, and then click **Batch Run** tab.
3. On Batch Run window click the **Execute** button.

The request for a batch start is received, and the operational status of the logical server on the Operational Status of the Logical Server window changes from "Operating" to "Stopping", and then to "Stopped".

(3) Stopping the management functionality

1. Once you have logged in the management portal, click the **Logout** anchor, check the message displayed, click the **Login** window, and close the Web browser.
2. Execute subcommand Stop of `mngsvrctl` command with the command prompt to stop Management Server.
Command execution example is as follows:

```
mngsvrctl stop -sync
```

3. Execute subcommand Stop of `adminagentctl` command with the command prompt to stop Administration Agent.
Command execution example is as follows:

```
adminagentctl stop -sync
```

3.2 Maintenance operations of Application Server

This section describes the maintenance operations executed on Application Server after starting the operation.

- Replacing the business application
- Performance tuning
- Changing the IP address
- Changing the database connection environment
- System setup, and acquiring the definition information
- Deleting unwanted J2EE servers
- Changing the management user account settings of the management functionality

3.2.1 Replacing the business application

This subsection describes the procedure for replacing a J2EE application with an archive format set in [2.2.10 Setting and starting the business application \(when using GUI\)](#) for executing version upgradation and maintenance of the business application after starting a system operation.



Reference note

For details on the windows used in the description, see [5. Windows, Commands, and Files used in the System Setup and Operations](#).

Normally, when replacing J2EE applications, stop J2EE application operating on J2EE server, and delete the same. You must start by importing a new J2EE application. Use the management portal for these operations. The business application used in the description is a J2EE application with an archive format that includes `cosminexus.xml`. The following table describes the setting contents used in the example:

Table 3–1: Setting contents used in example(replacing the business application)

Item	Setting example
File name of J2EE application before replacement	MyApp1.ear
File name of J2EE application after replacement	MyApp2.ear
Display name of J2EE application	MyApp

(1) Startup and login of the management portal

Once you have already logged in to management portal, proceed to [\(2\) Stopping J2EE application before replacement](#).

1. Start the Web browser, connect to `http://localhost:28080/mngsvr/index.jsp`, and then start the management portal.
2. Enter "admin" in the management user ID on the Login to Management Server window, and click the **Login** button.

(2) Stopping J2EE application before replacement

Once you are have logged in to the management portal, proceed to (3) *Deleting J2EE application before replacement*.

1. Click **Application management of the Logical server** on Management Portal window.
2. Click **DefaultDomain-Logical J2EE server- J2EE server- MyJ2EEServer- Application**, and then **Start/Stop J2EE Application** tab.
3. In the Start/Stop J2EE application window, click the **Stop** anchor of **Operation** for display name of the application before replacement (MYApp) in the **Import J2EE applications list**.
4. Click the **Yes** button in the Stop J2EE Application window.
5. Check the **Execution result**, and click the **Back** anchor.
If "Failure" is displayed in the **Execution result**, click the **Display log** tab, check the message in the Display Log window, remove the cause of the failure, and then stop the J2EE application again.
When "Success" is displayed in the **Execution result**, the **Status** on the Start/Stop J2EE Application window changes to "Stopped".

(3) Deleting J2EE application before replacement

1. Click **Application management of the logical server** on the Management Portal window.
2. Click **DefaultDomain - Logical J2EE Server - J2EE Server - MyJ2EEServer - Application**, and then click the **Delete** tab.
3. In the Delete J2EE application window, click the **Delete** anchor of **Operation** for display name of the application before replacement (MYApp) in the **Import J2EE applications list**.
4. Click the **Yes** button in the Delete J2EE Application window.
5. Check the **Execution result**, and click the **Back** anchor.
If "Failure" is displayed in the **Execution result**, click the **Display log** tab, check the message in the Display Log window, remove the cause of the failure, and then delete again.
If "Success" is displayed in the **Execution result**, the application is deleted from the **Import J2EE application list** in the Delete J2EE Application window.

(4) Setting J2EE Application after replacement

1. Store the replaced J2EE Application (MyApp2.ear) acquired in *Any-directory* of Application Server.
2. Click **Application management of the Logical server** on the Management Portal window.
3. Click the **DefaultDomain**.
4. Enter J2EE Application (MyApp2.ear) stored in *Any-directory* in Step 1 to **J2EE application file** on Upload J2EE Application window, and click the **Upload** button.
5. Check the messages displayed, and click the **Back** anchor.
If a message showing failure is displayed, remove the cause of the failure, and upload the J2EE application again.
J2EE Application file name (MyApp2.ear) uploaded in step 4 is displayed in the **Upload directory files list**.

6. Click **DefaultDomain - Logical J2EE server - J2EE server - MyJ2EEServer - Application**, and then click the **Import** tab.
7. Select the file (MyApp2.ear) uploaded in step 4 from **J2EE application files** in import J2EE Application window, and click the **Execute** button.
8. If "Success" is displayed in the **Execution result**, click the **Back** anchor.
If "Failure" is displayed in the **Execution result**, click the **Display log** tab, check the message in the Display Log window, remove the cause of the failure, and then import the J2EE application again.

(5) Starting J2EE application after replacement

1. Click **Application management of the logical server** on the Management Portal window.
2. Click **DefaultDomain - Logical J2EE server - J2EE server - MyJ2EEServer - Application**, and then click the **Start/Stop** tab.
3. In the Start/Stop J2EE Application window, click the **Start** anchor of **Operation** for the display name (MyApp) of J2EE applications imported in 4. *Settings J2EE application after replacement* in **Import J2EE applications list**.
4. Click the **Yes** button on the Start J2EE Application window.
5. Check the **Execution result** and click the **Back** anchor.
If "Failure" is displayed in the **Execution result**, click the **Display log** tab, check the message in the Display Log window, remove the cause of the failure, and then start again.
If "Success" is displayed in the **Execution result**, the **status** of the Start/Stop J2EE Application window changes to "Operating".

(6) Logout from the management portal

1. Click the **Logout** anchor.
2. Check the displayed message, click the Login window, and close the Web browser.

3.2.2 Performance tuning

Performance tuning means optimizing the system operating environment for the increased process performance and reliability of the system.

Optimum system performance and stable operations can be achieved by executing the performance tuning. This subsection describes the method for validating the parameter settings of the main performance tuning items, and optimizing their operation by executing the appropriate tuning.

- Memory tuning of JavaVM (Tuning of Java heap and Explicit heap)
The frequency and duration of GC depend on the memory size of the Java heap. You can increase the processing performance of a system by appropriately estimating this value. In addition, you can avoid triggering Full GC by securing an appropriate memory size for the explicit heap. For more details on the policy of tuning JavaVM, see *7.JavaVM Memory Tuning* in the *uCosminexus Application Server System Design Guide*.
- Optimizing number of the concurrent executions
If the number of requests from a client increases and exceeds the throughput of a system, it becomes difficult to provide a stable service. Controlling the number of concurrent executions of process for requests, such as a request to

access and process the requests from a client enables the stable operation of the system by avoiding the degradation of the performance with the increase in the requests. For policy on optimizing the number of concurrent executions, see, *8.3.Optimizing the number of concurrent executions* in the *uCosminexus Application Server System Design Guide*.

3.2.3 Applying the memory tuning of Java VM

This subsection describes the procedure to set the memory size of JavaVM for the following main items:

- Memory size of entire Java heap
- Memory size of Explicit heap
- Memory size of Metaspac area



Reference note

For details on the windows used in the description, see *5. Windows, Commands, and Files used in the System Setup and Operations*.

(1) Startup and login of the management portal

Once you have logged in to the management portal, proceed to *2.Setting the memory size of entire Java heap*, *3. Setting the memory size of Explicit heap*, or *4.Setting the memory size of Metaspac area*.

1. Start the Web browser, connect to `http://localhost:28080/mngsvr/index.jsp`, and then start the management portal.
2. Enter "admin" in the management user ID on the Login to Management Server window, and click the **Login** button.

(2) Setting the memory size of entire Java heap

1. Click **Environment settings of the logical server** on the Management Portal window.
2. On **Server view** tab click **DefaultDomain - Logical J2EE server - J2EE server - MyJ2EEServer**, and then click **JVM- Startup parameter** tab.
3. Specify the initial size and maximum size for **Memory usage** in the Setting the Startup Parameter window.
4. Click the **Apply** button.
The message showing the saving of environment settings appears and the memory size of entire Java heap is set up.
5. Click the **Deploy Settings** anchor.



Reference note

If you click the **Back** anchor to set up the other items in continuation, you return to the Setting the Startup Parameters window.

6. On the Deploy Settings window check **Deploy** of the logical server having the **Status** as "Blank", and then click the **Select and Deploy** button.
Status is changed from "Blank", to "Deploying", and then to "Deployed".

Reference note

If you click the **Deploy all** button, the settings are re-deployed even on the logical server having the **Status** as "Deployed".

(3) Setting the memory size of Explicit heap

1. Click **Environment settings of the logical server** on Management Portal window.
2. On **Server view** tab, click **DefaultDomain - Logical J2EE server - J2EE server - MyJ2EEServer**, and then click **JVM- Running Parameter** tab.
3. Specify the maximum size of the explicit heap area in the **Explicit Memory Management functionality**, on the **Setting the Startup Parameter** window.
4. Click the **Apply** button.
The message showing the saving of environment settings appears and the memory size of the Explicit heap is set up.
5. Click the **Deploy Settings** anchor.

Reference note

If you click the **Back** anchor to set up the other items in continuation, you return to the **Setting the Startup Parameters** window.

6. On the **Deploy Settings** window, insert check mark in **Deploy** of the logical server having the **Status** as "Blank", and then click the **Select and Deploy button**.
Status changes from "Blank" to "Deploying", and then to "Deployed".

Reference note

If you click the **Deploy all** button, the settings are re-deployed even on the logical server having the **Status** as "Deployed".

(4) Setting the memory size of Metaspace area

1. Click **Environment settings of the logical server** on the Management Portal window.
2. On **Server View** tab, click **DefaultDomain - Logical J2EE server - J2EE server - MyJ2EEServer**, and then click **JVM- Running parameter** tab.
3. In **Setting the Startup Parameter** window, set the following parameters in the **Extension startup parameters**, and insert check mark in **Enable**.
 - `-XX:MetaspaceSize=Value`
 - `-XX:MaxMetaspaceSize=Value`
4. Click the **Apply** button.
The message showing the saving of environment settings appears and the memory size of the Metaspace area is set up.
5. Click the **Deploy Settings** anchor.

Reference note

If you click the **Back** anchor to set up the other items in continuation, you return to the Setting the Startup Parameters window.

6. On the Deploy Settings window, insert check mark in the **Deploy** of the logical server having the **Status** as "Blank", and then click the **Select and Deploy** button.

The **Status** changes from "Blank", to "Deploying", and then to "Deployed".

Reference note

If you click the **Deploy all** button, the Settings are re-deployed even on the logical server having the **Status** as "Deployed".

(5) Restarting the logical server

1. Click **Start/Stop the Logical server** on the Management Portal window.
2. Click **DefaultDomain** on the **Server view** tab, and then click the **Batch Run** tab.
3. On the Batch run window click the **Execute** button.

The request for a batch start is received, and the operational status of logical servers on the Operational Status of the Logical Server window changes from "Operating", to "Stopping", to "Stopped", and then to "Operating".

(6) Logout from the management portal

1. Click the **Logout** anchor.
2. Check the displayed message, click the Login window, and close the Web browser.

3.2.4 Applying tuning for optimizing the number of concurrent executions

This subsection describes the procedure to set the number of concurrent executions for the following main items:

- Number of concurrent executions of the Web container and the Web Application unit
 - Maximum number of clients that can be concurrently connected
 - Number of server processes when starting the Web Server
 - Number of concurrent executions of a Web container that processes requests
 - Default pending queue size
 - Maximum threads in Web container unit
 - Default pending queue size
 - Concurrent execution count of Stateless Session Beans (Minimum instance value managed in pool)
 - Pool minimum value
 - Pool maximum value
- Concurrent execution count of URL group units

- Maximum threads in Web Application unit
- The number of dedicated threads of the Web application
- Default pending queue size in Web application unit
- Property of a request pending resource watcher in the Web Application unit
- Definition name of the maximum thread number control in URL group unit
- Maximum threads count in URL group unit
- The number of dedicated threads in URL group unit
- Default pending queue size in URL group unit
- URL pattern for controlling URL group unit
- Property for monitoring of the pending requests in URL group unit



Reference note

For details on the reference locations of the windows, commands, and files used in the description, and the storage locations of the commands and files, see [5. Windows, Commands, and Files used in the System Setup and Operations](#).

(1) Setting the number of concurrent executions in Web container or Web application unit

When a number of concurrent executions in the Web container or Web application is not set, proceed to (2) *Setting the number of concurrent executions in URL group unit*

1. Edit `cosminexus.xml` and store in *Any-directory* under META-INF directory.

Specify the following in `ejb-jar` tag in `cosminexus.xml`.

- Specify `session-stateless-pooled-instance-minimum` tag (Number of concurrent executions of Stateless Session Bean (Instance minimum value that can be managed in Pool))

In case of multiple `session` tags specify in each one of them.

2. Execute `jar` command by using the command prompt; overwrite `cosminexus.xml` edited in Step 1 in J2EE application with an archive format.

Command execution example is as follows:

```
jar uvf <File path of MyApp1.ear> -C <Directory in which META-INF director
y> <File path of cosminexus.xml under META-INF directory>
```

For *File path of MyApp1.ear* specify the path of the directory storing J2EE application (MyApp1.ear) and the file name (MyApp1.ear). In the case of the following structure of the `cosminexus.xml` storage location, *Directory in which META-INF directory* is placed is set as *Any-directory*.

```
<Any directory>
- META-INF
- cosminexus.xml
```

File path of cosminexus.xml under META-INF directory specifies META-INF directory and file path name (`cosminexus.xml`) stored in `cosminexus.xml` in Step 1.

3. Start the Web browser, connect to `http://localhost:28080/mngsvr/index.jsp`, and then run the management portal.

4. Enter "admin" in the management user ID on the Login to Management Server window, and click the **Login** button.
5. Click **Environment settings of the Logical server** on the Management Portal window.
6. On **Server View** tab, click **DefaultDomain - Logical Web server - Web server - MyWebServer**, and then click the **Settings** tab.

7. Set the following value in Setting the Web Server window and click the **Apply** button:

- **Server thread** (in Windows)
- **Concurrent connection client count** (In UNIX)
- **Number of server processes when starting the server** (In UNIX)

The message showing the saving of environment settings appears, and the value is set up.

8. Click the **Back** anchor.

9. On the **Server view** tab, select **DefaultDomain, Logical J2EE server, J2EE server**, and **MyJ2EEServer**, and then click the **HTTP Server - Communication and Thread Control** tab.

10. Set the following values in the Settings Related to Communication and Thread Control window, and then click the **Apply** button.

- **Maximum number of connections**
- **Maximum number of threads**

The message showing the saving of environment settings appears, and the value is set up.

Ignore the KEOS19237-W message even if displayed, and go to the next step. This message indicates that the default value (value added automatically by the J2EE server) is used in *server-ID-added-to-the-session-ID-of-HttpSession*.

Reference note

The KEOS19237-W message will not appear if you set the following value in the Settings Related to Communication and Thread Control window and click **Apply** button.

- *Server-ID-added-to-the-session-ID-of-HttpSession*

11. Click the **Deploy Settings** anchor.

Reference note

If you want to set additional items, you can return to the Settings Related to Communication and Thread Control window by clicking the **Back** anchor.

12. On the Deploy Settings window, insert check mark in **Deploy** of the logical server having **Status** as "Blank", and then click the **Select and Deploy** button.

The **Status** changes from "Blank", to "Deploying", and then to "Deployed".

Reference note

If you click **Deploy all** button, Settings are re-deployed even on the logical server having the **Status** as "Deployed".

13. Click **Start/Stop the Logical server** on the Management Portal window.

14. Click **DefaultDomain** on **Server View** tab, and then click the **Batch run** tab.
15. On Batch Run window click the **Execute** button.
The request for batch start is received, and the operational status of the logical server in the Operational Status of the Logical Server window changes from "Operating" to "Stopping", to "Stopped", and then to "Operating".
16. Click **Application management of the Logical server** on the Management Portal window.
17. Click **DefaultDomain - Logical J2EE server - J2EE server - MyJ2EEServer - Resource - Resource adapter**, and then click the **Start/Stop** tab.
18. When the **Status** of Start/Stop of Resource Adapter window is "Operating", click the **Stop** anchor of **Operation**.
19. Click the **Yes** button on Close the Resource Adapter window.
20. If "Success" is displayed in the **Execution result**, click the **Back** anchor.
If "Failure" is displayed in the **Execution result**, click the **Display log** tab, check the message in the Display Log window, remove the cause of the failure, and then stop the resource adapter again.
21. Click **Property Setting** tab and then click the **Basic settings** anchor of **Operation**.
22. On Basic Setting of the Resource Adapter window, click the **Setting** button.
 - Minimum pool value (MinPoolSize)
 - Maximum pool value (MaxPoolSize)
23. Check the message displayed on Basic Settings of Resource Adapter window, and click the **Back** anchor.
If a message showing failure is displayed, remove the cause of the failure, and then set the property again.
24. Click the **Start/Stop** tab, and then click the **Start** anchor of **Operation** on Start/stop the Resource Adapter window.
25. Click the **Yes** button on Start the Resource Adapter window.
26. If "Success" is displayed in the **Execution result**, click the **Back** anchor.
If "Failure" is displayed in the **Execution result**, click the **Display log** tab, check the message in the Display Log window, remove the cause of the failure, and then start the resource adapter again.

(2) Setting the number of concurrent executions in URL group unit

If you do not want to set the number of concurrent groups per URL, proceed to (3) *Startup and login of the management portal*.

1. Edit `cosminexus.xml`, and store in *Any-directory* under META-INF directory.
Specify the following in `war` tag of `cosminexus.xml`.
 - Specify `thread-control-thread-control-max-threads` tag (maximum threads in Web application unit)
 - Specify `thread-control-thread-control-exclusive-threads` tag (number of dedicated threads of Web application).
 - Specify `thread-control-thread-control-queue-size` tag (pending queue size of Web application unit).
 - Specify (Property of a request pending resource watcher in Web Application unit) under `thread-control-resource-watcher` tag.
 - Specify `thread-control-urlgroup-thread-control-urlgroup-thread-control-name` tag (definition name of number of maximum thread control of URL group unit)

- Specify `thread-control-urlgroup-thread-control-urlgroup-thread-control-name` tag (maximum thread number control of URL group unit)
 - Specify `thread-control-urlgroup-thread-control-urlgroup-thread-control-exclusive-threads` tag (number of dedicated threads of URL group unit)
 - Specify `thread-control-urlgroup-thread-control-urlgroup-thread-control-queue-size` tag (pending queue size of URL group unit)
 - Specify `thread-control-urlgroup-thread-control-urlgroup-thread-control-mapping` tag (URL pattern controlling URL group unit).
 - Specify (property for monitoring pending request count per URL group) under `thread-control-urlgroup-thread-control-stats-monitor-waiting-request-count` tag
2. Execute `jar` command by using the command prompt, set `cosminexus.xml` edited in Step 1 in J2EE application with an archive format.

Command execution example is as follows:

```
jar uvf <File path of MyApp1.ear> -C <Directory in which META-INF director
y> <File path of cosminexus.xml under META-INF directory>
```

For *File path of MyApp1.ear* specify the path of the directory storing J2EE application (`MyApp1.ear`), and the file name (`MyApp1.ear`). In the case of the following structure of `cosminexus.xml` storage location, *Directory in which META-INF directory* is placed is set as *Any-directory*.

```
<Any directory>
- META-INF
  - cosminexus.xml
```

File path of cosminexus.xml under META-INF directory specifies META-INF directory and file path name (`cosminexus.xml`) stored in `cosminexus.xml` in Step 1.

(3) Startup and login of the management portal

Once you have already logged in to management portal, proceed to (4) *Changing the settings of J2EE applications*.

1. Start the Web browser, connect to `http://localhost:28080/mngsvr/index.jsp`, and then run the management portal.
2. Enter "admin" in the management user ID on the Login to Management Server window, and click the **Login** button.

(4) Changing the settings of J2EE application

Upload and re-import J2EE Application (`MyApp1.ear`) recreated by editing `cosminexus.xml`.

1. Click **Application Management of the Logical server** on the Management Portal window.
2. Click **DefaultDomain - Logical J2EE server - J2EE server - MyJ2EEServer - Application**, and then click the **Start/Stop J2EE application** tab.
3. On the Start/Stop J2EE Application window, click the **Stop** anchor of **Operation** for the display name (`MyApp`) of the applications before replacement in the **Import J2EE applications list**.
4. Click the **Yes** button on Stop J2EE Application window.
5. Check the **Execution result**, and click the **Back** anchor.

If "Failure" is displayed in the **Execution result**, click the **Display log** tab, check the message in the Display Log window, remove the cause of the failure, and then stop again.

When "Success" is displayed in the **Execution result**, the **Status** of the Start/Stop J2EE Application window changes to "Stopped".

6. Click **DefaultDomain - Logical J2EE server - J2EE server - MyJ2EEServer - Application**, and then click the **Delete** tab.

7. In Delete J2EE Application window, click the **Delete** anchor of **Operation** for the display name (MyApp) of the applications before replacement in the **Import J2EE applications list**.

8. Click the **Yes** button on Delete J2EE Application window.

9. Check the **Execution result**, and click the **Back** anchor.

If "Failure" is displayed in the **Execution result**, click the **Display log** tab, check the message in the Display Log window, remove the cause of the failure, and then delete J2EE application again.

When "Success" is displayed in the **Execution result**, the application is deleted from the **Import J2EE applications list** on Delete J2EE Application window.

10. Click the **DefaultDomain**.

11. Enter "J2EE Application" (MyApp1.ear) re-created in (1) *Setting the number of concurrent executions in Web container or Web application unit* or (2) *Setting the number of concurrent executions in URL group unit* in **J2EE application file** on Upload J2EE Application window, and click the **Upload** button.

12. Check the displayed message, and click the **Back** anchor.

If a message showing failure appears, remove the cause of the failure and upload again.

The file name (MyApp1.ear) of J2EE application uploaded in Step 11 is displayed in the **Upload directory files list**.

13. Click **DefaultDomain - Logical J2EE server - J2EE server - MyJ2EEServer - Application**, and then click the **Import** tab.

14. Select the file (MyApp1.ear) uploaded in Step 11 from **J2EE application files** in Import J2EE Application window and then click the **Execute** button.

15. If "Success" is displayed in the **Execution result**, click the **Back** anchor.

If "Failure" is displayed in the **Execution result**, click the **Display log** tab, check the message in the Display Log window, remove the cause of the failure, and then import J2EE application again.

16. Click **DefaultDomain - Logical J2EE server - J2EE server - MyJ2EEServer - Application**, and then click the **Start/Stop** tab.

17. In the Start/Stop J2EE Application window, click the **Start** anchor of **Operation** for display name (MYApp) of J2EE applications imported in step 14. in the **Import J2EE applications list**.

18. Click the **Yes** button in the Start J2EE Application window.

19. Check the **Execution result**, and click the **Back** anchor.

If "Failure" is displayed in the **Execution result**, click the **Display log** tab, check the message in the Display Log window, remove the cause of failure, and then start the J2EE application again.

If "Success" is displayed in the **Execution result**, **Status** of the Start/Stop J2EE Application window changes to "Operating".

(5) Logout from the management portal

1. Click the **Logout** anchor.
2. Check the displayed message, click the Login window, and close the Web browser.

3.2.5 Changing the IP address

The procedure for changing the IP address of the host operated by the system is as follows.



Reference note

For details on the reference locations of the windows, commands, and files used in the description, and the storage locations of the commands and files, see [5. Windows, Commands, and Files used in the System Setup and Operations](#).

(1) Startup and login of the management portal

Once you have logged in to management portal, proceed to *(2) Stopping the logical server*.

1. Start the Web browser, connect to `http://localhost:28080/mngsvr/index.jsp`, and then run the management portal.
2. Enter "admin" in the management user ID on the Login to Management Server window, and click the **Login** button.

(2) Stopping the logical server

1. Click **Start/Stop the Logical server** on the Management Portal window.
2. Click **DefaultDomain** on **Server view** tab, and then click **Batch Run** tab.
3. On Batch Run window click the **Execute** button.

The request for batch start is received, and the operational status of logical servers on the Operational Status of the Logical Server window changes from "Operating", to "Stopping", and then to "Stopped".

(3) Stopping the management functionality

1. Once you have logged in to the management portal, click the **Logout** anchor, check the displayed message, click the Login window and then close the Web browser.
2. Execute `mngautorun` command with the command prompt to delete the settings started concurrently with the startup of Management Server and Administration Agent.

Command execution example is as follows:

```
mngautorun -d
```

3. Execute the sub command `Stop of mngsvrctl` command with command prompt to stop the Management Server.
- Command execution example is as follows:

```
mngsvrctl stop -sync
```

4. Execute the sub command `stop` of `adminagentctl` command with the command prompt to stop the Administration Agent.

Command execution example is as follows:

```
adminagentctl stop -sync
```

(4) Changing the settings of IP address

1. Change the IP address as per the OS procedure. Restart the system as and when required.
2. Set the post-change IP address at the location where IP address is set in the files used with Manager.
For details on the files used with Manager, see 8. *Files Used with Cosminexus Manager* in the *uCosminexus Application Server Definition Reference Guide*.

3. Delete all the files included the following directories:

For Windows

- <Installation directory of Cosminexus>\manager\tmp
- <Installation directory of Cosminexus>\manager\spool\lsinfo

For UNIX

- /opt/Cosminexus/manager/tmp
- /opt/Cosminexus/manager/tmp

(5) Starting the system and deploying the settings

1. Execute the sub command `start` of `adminagentctl` command with the command prompt to start the Administration Agent.

Command execution example is as follows:

```
adminagentctl start -sync
```

2. Execute the sub command `start` of `mngsvrctl` command with the command prompt to start the Management Server.

Command execution example is as follows:

```
mngsvrctl start -sync
```

3. Execute `mngautorun` command with the command prompt, and set such that the Management Server and Administration Agent are started concurrently with the host.

Command execution example is as follows:

```
mngautorun both -sync
```

4. Start the Web browser, connect to `http://localhost:28080/mngsvr/index.jsp`, and then run the management portal.
5. Enter "admin" in the management user ID on the Login to Management Server window, and click the **Login** button.
6. In the Management Portal window, click **Configuring the logical server environment**.

7. On **Server View** tab, click **DefaultDomain - Logical J2EE server - J2EE server - MyJ2EEServer**, and then click the **Deploy Settings** anchor.
8. On the Deploy Settings window, insert check mark in the **Deploy** of the logical server having the **status** as "Blank", and then click the **Select and Deploy** button.
Status changes from "Blank", to "Deploying", and then to "Deployed".

Reference note

If you click the **Deploy all** button, the Settings are re-deployed even on the logical server having the **Status** as "Deployed".

9. Click **Start/Stop the Logical server** on the Management Portal window.
10. Click **DefaultDomain** on **Server view** tab, and then click the **Batch Run** tab.
11. On Batch Startup window click the **Execute** button.
The request for batch startup is received and the operational status of logical servers on the Operational Status of the Logical Server window changes from "Stopped", to "Starting", and then to "Operating".

(6) Logout from the management portal

1. Click the **Logout** anchor.
2. Check the displayed message, click the Login window, and close the Web browser.

3.2.6 Changing the database connection environment

This subsection describes the procedure for tuning the database connection environment, and changing the settings to optimize the database accessing method after the system operations are started. For the concept of tuning the database connection environment, see 8.5. *Optimizing the database access method* in the *uCosminexus Application Server System Design Guide*.

The procedure for setting the tuning parameters of the connection pooling for the following main items is as follows.

- Minimum connection value that pools in the connection pool
- Maximum connection value that pools in the connection pool

Reference note

For details on the windows used in the description, see 5. *Windows, Commands, and Files used in the System Setup and Operations*.

(1) Startup and login of the management portal

Once you have logged in to management portal, proceed to (2) *Stopping the resource adapter*.

1. Start the Web browser, connect to `http://localhost:28080/mngsvr/index.jsp`, and then run the management portal.

2. Enter "admin" to management user ID on the Login to Management Server window, and click the **Login** button.

(2) Stopping the resource adapter

1. Click **Application Management of the Logical server** in the Management Portal window.
2. Click **DefaultDomain - Logical J2EE server - J2EE server - MyJ2EEServer - Resource - Resource adapter** and then click the **Start/Stop** tab.
3. When **Status** on the Start/Stop the Resource Adapter window is "Operating", click the **Stop** anchor of **Operation**.
4. Click the **Yes** button on Stop the Resource Adapter window.
5. If "Success" is displayed in the **Execution result**, click the **Back** anchor.
If "Failure" is displayed in the **Execution result**, click the **Display log** tab, check the message in the Display Log window, remove the cause of the failure, and then stop the resource adapter again.

(3) Changing the property settings of resource adapter

1. Click **Application Management of the logical server** in the Management Portal window.
2. Click **DefaultDomain - Logical J2EE server - J2EE server - MyJ2EEServer - Resource - Resource adapter**, and then click the **Property setting** tab.
3. In the **Property setting of the resource adapter**, click the **Basic Settings anchor** of **Operation**.
4. In the Basic Settings of Resource Adapter window, specify the following values, and then click the **Settings** button:
 - Minimum pool value (MinPoolSize)
 - Maximum pool value (MaxPoolSize)
5. Check the message displayed in the Basic Settings of Resource Adapter window, and then click the **Back** anchor.
If a message showing failure appears, remove the cause of failure and then reset the property.
6. Click the **Back** anchor in the Basic Settings of Resource Adapter window.
You return to the Property Settings of the Resource Adapter window.

Reference note

For specifying the tuning parameters not existing in the Basic Settings of Resource Adapter window, click the **Edit connector property file** anchor, and set the parameter directly in the file, through the Edit Connector Property File of Resource Adapter window.

(4) Starting the resource adapter

1. Click the **Application Management of the Logical server** on the Management Portal window.
2. Click **DefaultDomain - Logical J2EE server - J2EE server - MyJ2EEServer - Resource - Resource adapter**, and then click the **Start/Stop** tab.
3. In the Start/stop the Resource adapter window, click the **Start** anchor of **Operation**.

4. Click the **Yes** button on the Start the Resource Adapter window.
5. If "Success" is displayed in the **Execution result**, click the **Back** anchor.
If "Failure" is displayed in the **Execution result**, click the **Display log** tab, check the message in the Display Log window, remove the cause of the failure, and then start the resource adapter again.

(5) Logout from the management portal

1. Click the **Logout** anchor.
2. Check the displayed message, click the Login window, and close the Web browser.

3.2.7 System setup and definition information

System setup and definition information is the definition file that describes the type of logical server assigned to the setup system, and the setup of the resource adapter. This definition file also sets the operation environment for the management functionality. The following are typical examples of definition files:

Files related to system setup

- Easy Setup definition file
This file defines a Web system that is setup with the command of the Smart Composer functionality. It also defines the timeout time that applies to requests and responses sent and received between the reverse proxy and the Web container.
- Connector Property file
This file defines the properties of the resource adapter.
- cosminexus.xml (Cosminexus Application Property file)
This file defines the definition information related to EJB-JAR, Session Bean, Entity Bean, Message-driven Bean, WAR, folder, servlet/JSP and the resource adapter. It defines the definition information unique to Application Server.

Definition file for the operating environment of the management functionality

- manager.cfg (Manager Setting file)
This file specifies Management Server, Administration Agent, the properties common to the components and commands that operate on the Management Server as well as Administration Agent respectively. manager.cfg (Manager setting file) is used in the common settings of log output destination and number of files.
- adminagent.properties (Administration Agent Property file)
This file specifies the properties of Administration Agent. This file is used in the settings of the operation check level of the logical server, and the collection destination of the snapshot log.
- mserver.properties (Management Server Environment Setting file)
This file specifies the properties of Management Server. This file is used in the environment settings of the Management Server and the settings for operations of commands during error detection.

If you acquire these files in the host different from Application Server when setting up a system or changing the settings, you can use these files to check the previous setup and definition information settings in case of an error occurrence.

3.2.8 Acquiring the system setup and the definition information

This subsection describes the procedure to acquire the system setup and the definition information.

Reference note

For details on the reference locations of the windows, commands, and files used in the description, and the storage locations of the commands and files, see [5. Windows, Commands, and Files used in the System Setup and Operations](#).

(1) Acquiring the system definition information through snapshot logs

1. Acquire the system definition information, by executing `mngsvrutil` command with the command prompt.

You can acquire the definition file related to the operation environment of the management functionality.

Command execution example is as follows:

```
mngsvrutil -m <Host name of Management Server> -u admin -t <Host name> -k  
host collect snapshot
```

Specify a host name for operating the Management Server in *Host name of Management Server*, and host name of Application Server in *Host name*.

Confirm the file name of the acquired snapshot log in the displayed message. The default storage location of the snapshot log is as follows:

OS type	Storage location
Windows	<Output directory of Manager log>#1\snapshot\snapshot-<Host name>-log-<date#2>.zip
	<Output directory of Manager log>#1\snapshot\snapshot-<Host name>-log-<date#2>.2.zip
UNIX	<Output directory of Manager log>#1/snapshot/snapshot-<Host name>-log-<date#2>.zip
	<Output directory of Manager log>#1/snapshot/snapshot-<Host name>-log-<date#2>.2.zip

#1 <Output directory of Manager log> shows the directory specified in `manager.cfg` (Manager log setting file). Default value is <Installation directory of Cosminexus>\manager\log.

#2 The date format is one of the following:

- `yyyyMMddHHmmss`
- `yyyyMMddHHmmss+hhmm`
- `yyyyMMddHHmmss-hhmm`

(2) Acquiring Easy Setup definition file

1. Export the Easy Setup definition file by executing `cmx_export_model` command with the command prompt.

Command execution example is as follows:

```
cmx_export_model -m localhost:28080 -u admin -o <File path of Easy Setup d  
efinition file>
```

In <File path of Easy Setup definition file>, specify the path of the directory in which the Easy Setup definition file is stored and the file name. Easy Setup definition file is in XML format.

(3) Acquiring Connector Property file

1. Start the Web browser, connect to `http://localhost:28080/mngsvr/index.jsp`, and then run the management portal.
2. Enter "admin" in the management user ID on the Login to Management Server window and click the **Login** button.
3. Click the **Application Management of the logical server** on the Management Portal window.
4. Click **DefaultDomain - Logical J2EE server - J2EE server - MyJ2EEServer - Resource - Resource adapter**, and then click the **Property Settings** tab.
5. In the **Property settings of resource adapter**, click the **Edit Connector property file** anchor of **Operation**.
6. Copy the file contents displayed in the Edit Connector Property File of Resource Adapter window, and save those with `<Any file name>` in *Any-directory*.
Connector property file is in XML format.
7. Click the **Logout** anchor.
8. Check the displayed message, click the Login window, and close the Web browser.

(4) Acquiring Cosminexus Application Property file (cosminexus.xml)

1. Acquire `cosminexus.xml` stored in META-INF directory under *Any-directory*, and then store in *Any-directory*.

3.2.9 Deleting unwanted J2EE servers

This subsection describes the procedure to delete the unwanted J2EE Servers, such as in case of reducing the business scale or reducing the number of tenants during the system operations.

Delete J2EE servers using Smart Composer functionality.

Reference note

For details on the reference locations of the commands used in the description, and the storage locations of the commands, see [5. Windows, Commands, and Files used in the System Setup and Operations](#).

(1) Checking the contents of system environment to be deleted

1. Check the name of the system environment to be deleted by executing `cmx_list_model` command with the command prompt.

Command execution example is as follows:

```
cmx_list_model -m localhost:28080 -u admin -modeltype SERVEREX -all
```

List of Web systems and logical servers set up on Application Server is output.

Check the following names:

- Name of the Web system for allocating J2EE Server to be deleted.
- Name of the Service unit for allocating J2EE Server to be deleted.

- Logical Web Server name of the Web Server in the Web system to be deleted.
- Name of the Logical J2EE Server of J2EE Server to be deleted

(Example of command execution result)

```
MyPerformanceTracer,PRF,<Host name>,combined-tier,unit1,MyWebSystem
MyJ2EEServer,J2EEServer,<Host name>,combined-tier,unit1,MyWebSystem
MyWebServer,Webserver,<Host name>,combined-tier,unit1,MyWebSystem
MyPerformanceTracer2,PRF,<Host name>,combined-tier,unit2,MyWebSystem
MyJ2EEServer2,J2EEServer,<Host name>,combined-tier,unit2,MyWebSystem
MyWebServer2,Webserver,<Host name>,combined-tier,unit2,MyWebSystem
```

In any instance where the logical J2EE server name of J2EE Server to be deleted is MyJ2EEServer2, the respective names to be used will be as follows:

Item	Name
Name of the Web system where J2EE Server to be deleted is allocated	MyWebSystem
Name of the Service unit where J2EE Server to be deleted is allocated	unit2
Name of the Logical Web Server of the Web Server in the Web system to be deleted	MyWebServer2

(2) Web Server to be deleted, stopping J2EE Server and performance tracer

1. Stop the Service unit (unit2) where J2EE Server to be deleted is allocated, by executing `cmx_stop_target` command with the command prompt.

Command execution example is as follows:

```
cmx_stop_target -m localhost:28080 -u admin -s MyWebSystem -unit unit2 -mode ALL
```

Specify the Service unit name and the name of the Web system for allocating J2EE Server to be deleted, checked in (1) *Checking the contents of system environment to be deleted*.

(3) Deleting Web Server, J2EE Server, and Performance Tracer

1. Delete the Service unit (unit2) where J2EE Server to be deleted is allocated, by executing `cmx_delete_system` command with the command prompt.

Command execution example is as follows:

```
cmx_delete_system -m localhost:28080 -u admin -s MyWebSystem -unit unit2
```

Specify the Service unit name and the name of Web system where J2EE Server to be deleted is allocated, checked in (1) *Checking the contents of system environment to be deleted*.

2. Delete the Web Server environment, by executing `hwsserveredit` command with the command prompt.

Command execution example is as follows:

```
hwsserveredit -delete HWS_MyWebServer2
```

Specify with the format in which HWS_ is attached to the name of the Logical Web Server of the Web server within the Web system to be deleted, checked in (1) *Checking the contents of system environment to be deleted*

3. Delete J2EE Server environment, by executing `cjsetup` command with the command prompt.

Command execution example is as follows:

```
cjsetup -d MyJ2EESEServer2
```

Specify the Logical J2EE server name of J2EE Server to be deleted, checked in (1) *Checking the contents of system environment to be deleted*.

3.2.10 Changing the management user account settings of management functionality

This subsection describes the procedure for changing the settings of a Management user account to be entered when logging in to the management portal. In the Web front system, the password for the management user ID is not set. The following is an example of setting the management user ID password (adminpw).



Reference note

For details on the windows used in the description, see [5. Windows, Commands, and Files used in the System Setup and Operations](#).

(1) Startup and login of the management portal

Once you have logged in to the management portal, proceed to (2) *Changing the settings of Management user account*.

1. Start the Web browser, connect to `http://localhost:28080/mngsvr/index.jsp`, and then run the management portal.
2. Enter "admin" in the management user ID in the Login to Management Server window, and click the **Login** button.

(2) Changing the settings of management user account

1. Click **Cosminexus Management Server Settings** on the Management Portal window.
2. Click **Cosminexus Management Server settings - Management User Account Settings**.
3. On the Management User Account Settings window, specify `adminpw` in **Password** and **Input confirmation**, and then click the **Apply** button.
If a message showing failure appears, remove the cause of the failure, and then set Management user account again.
4. Click the **Back to Login Window** anchor.
From next time, in Login to Management Server window, enter `admin` in the Management User ID and `adminpw` in the password, and then click the **Login** button.

3.3 Unsetup of the system environment and uninstalling Application Server

This section describes the operations to unset up the existing system environment and uninstalling Application Server for re-set up of a system environment due to a failure in operations.

3.3.1 Unsetup of the system environment

This subsection describes the procedure to unset up the unwanted system environment. Use the Setup Wizard to unset up the system environment.

Reference note

For details on the reference locations of the commands used in the description, and the storage locations of the commands, see [5. Windows, Commands, and Files used in the System Setup and Operations](#).

Execute the following procedure for unset up.

- Stopping and deleting the management functionality, and initializing the settings
- Stopping and deleting the system environment (Logical Server)
- Cancelling the settings of the management user (Management user account of Management Server)
- Cancelling the settings of an activated user of J2EE server (Component Container Administrator) (For UNIX)

1. Delete the unwanted system environment, by executing `setupwizard` command with the command prompt, Command execution example is as follows:

```
setupwizard -clean
```

Message for unsetup confirmation is displayed.

2. Enter `y`, and click the **Enter** key.

A message showing the completion is displayed after display of a message showing the in-progress status of the unset up process.

3.3.2 Uninstalling Application Server (In Windows)

Connect to Application Server to un-install Application Server.

Important note

If there are other products that are no longer required apart from Application Server, these products will also be un-installed.

The two types of un-installation methods are as follows:

- When the un-installer of the product is used

- When a program is un-installed or changed

You can un-install all the component software of the product or you can select and un-install the component software. The un-installation operation requires Administrator permissions. For details on the notes on un-installation, see [Appendix I.1 Notes on the installation and un-installation of Application Server](#), and for details on the error codes used during un-installation, see [Appendix I.6 List of error codes for Application Server installation and un-installation \(In Windows\)](#).

Important note

The description of Windows menu names in this manual presumes Windows Server 2019.

(1) When the un-installer of the product is used

The procedure for using the un-installer of the product is as follows. This subsection describes the procedure for un-installing all the component software of the product.

Procedure

1. Make sure that none of the component software processes are running. If any process is running, stop the process.
2. From the Start menu, select **Cosminexus**, and then **Un-install uCosminexus Application Server**.
A window confirming the component software to be un-installed (**Do you want to un-install uCosminexus Application Server completely? Choose [No] to select the programs you want to un-install.**) appears.
3. Click the **Yes** button.
The Start Un-installation dialog box appears.

Reference note

You can also select and un-install the component software of the product. In such cases, click the **No** button. In the Select Program dialog box that is displayed, select the component software (program) you want to un-install, and then click the **Next** button.

For details on the component software supporting the products, see [2.2.1\(3\) Component software supporting the products](#).

4. Check the specified contents, and if the contents are correct, click the **Next** button.
The un-installation starts. When the un-installation finishes, the Setup Complete dialog box appears.
5. Click the **Finish** button.
The un-installation of Application Server finishes.

(2) When a program is un-installed or changed

The procedure of un-installing Application Server by un-installing or changing a program is as follows. This subsection describes the procedure for un-installing all the component software of the product.

Procedure

1. Make sure that none of the component software processes are running. If any process is running, stop the process.
2. From the **Start** menu, select **Control Panel** and then **Programs and Functionality**.

The Un-install or Change a Program dialog box appears.

3. Select **uCosminexus Application Server**, right click, and then click the **Un-install and change** button.

A window confirming the component software to be un-installed (**Do you want to un-install uCosminexus Application Server completely? Choose [No] to select the programs you want to un-install.**) appears.

4. Click the **Yes** button.

The Start Un-installation dialog box appears.

Reference note

You can also select and un-install the component software of the product. In such cases, click the **No** button. In the Select Program dialog box that is displayed, select the component software (program) you want to un-install, and then click the **Next** button.

For details on the component software supporting the products, see [2.2.1\(3\) Component software supporting the products](#).

5. Check the specified contents, and if the contents are correct, click the **Next** button.

The un-installation starts. When the un-installation finishes, the Setup Complete dialog box appears.

6. Click the **Finish** button.

The un-installation of Application Server finishes.

3.3.3 Un-installing Application Server (in AIX)

Connect to Application Server to un-install Application Server.

Important note

If there are other products that are no longer required apart from Application Server, these products will also be un-installed.

With un-installation, use the product media, PP installer.

This subsection describes the procedure for un-installation. The un-installation operation requires the root permission. For details on the notes on un-installation, see [Appendix I.1 Notes on the installation and un-installation of Application Server](#).

Procedure

1. Make sure that none of the component software processes are running. If any process is running, stop the process.
2. Log in to Application Server with the root permission (superuser).
3. Enter the following command to start the PP installer:

```
/etc/hitachi_setup
```

4. In the main menu of the PP installer, press the **D** key.

The Delete PP window appears.

5. Move the cursor to the program, and then press the **Space** key.
Select all the programs (component software supporting Application Server, and the common modules of the products). <@> appears on the left side of the selected program. Note that you can also select and un-install a program.
6. Make sure that <@> is displayed on the left side of all the programs, and then press the **D** key.
The message **Delete PP? (y: delete, n: cancel)**==> appears at the bottom of the window.
7. Press the **y** or **Y** key.
The un-installation process starts.
If you press the **n** or **N** key, the un-installation process is cancelled and you return to the Delete PP window.
8. When the message indicating the end of un-installation is output, press the **Q** key.
You return to the main menu of the PP installer.
9. In the main menu of the PP installer, press the **Q** key.
The un-installation of Application Server finishes.

3.3.4 Un-installing Application Server (in Linux)

Connect to Application Server to un-install Application Server.



Important note

If there are other products that are no longer required apart from Application Server, these products will also be un-installed.

With un-installation, use the product media, PP installer.

This subsection describes the procedure for un-installation. The un-installation operation requires the root permission. For details on the notes on un-installation, see [Appendix I.1 Notes on the installation and un-installation of Application Server](#).

Procedure

1. Make sure that none of the component software processes are running. If any process is running, stop the process.
2. Log in to Application Server with the root permission (superuser).
3. Enter the following command to start the PP installer:

```
/etc/hitachi_x64setup
```

4. In the main menu of the PP installer, press the **D** key.
The Delete PP window appears.
5. Move the cursor to the program, and then press the **Space** key.
Select all the programs (component software supporting Application Server, and the common modules of the products). <@> appears on the left side of the selected program. Note that you can also select and un-install a program.
6. Make sure that <@> is displayed on the left side of all the programs, and then press the **D** key.

The message **Delete PP? (y: delete, n: cancel)**==> appears at the bottom of the window.

7. Press the **y** or **Y** key.

The un-installation process starts.

If you press the **n** or **N** key, the un-installation process is cancelled and you return to the Delete PP window.

8. When the message indicating the end of un-installation is output, press the **Q** key.

You return to the main menu of the PP installer.

9. In the main menu of the PP installer, press the **Q** key.

The un-installation of Application Server finishes.

3.4 Notes on operating the system

This section describes the notes on operating the system.

3.4.1 Notes on J2EE Server management

(1) Notes on the RMI registry

For, Management Server monitors J2EE Server with the RMI registry operating on J2EE server. Thus, if the information of the RMI registry managed by the Management Server does not match with the information of the RMI registry of the actually operating J2EE server, then monitoring might fail. Information of the RMI registry managed by the Management Server is updated at the following timings. Note that the information must not differ from that of the RMI registry operating on J2EE Server.

- When you perform a recovery of component information with **Cosminexus Management Server settings** of the management portal
- When you click the **Apply** button in the **Environment settings of the logical server** on the management portal
- When reading the server settings from the **Environment Settings of the logical server** on the management portal
- When `cmx_build_model.exe` command is executed
- When `cmx_change_model.exe` command is executed

For operations of the management portal, see the following points in the *uCosminexus Application Server Management Portal User Guide*.

- 8. Cosminexus Management Server settings
- 10. Environment settings of the Logical server

For details on each command, see the following points in the *uCosminexus Application Server Command Reference Guide*.

- `cmx_build_model` (Generating information model of Web system)
- `cmx_change_model` (Changing information model of Web system)

(2) Notes on starting J2EE applications when you start the J2EE server

The J2EE applications, which are running when the J2EE server stops, auto-start when the J2EE server starts. However, if an error occurs when a J2EE application starts while the J2EE server is being started, the J2EE application might fail to start. In such cases, the J2EE application stops. Even if the J2EE server is restarted in this state, the J2EE application remains in the stopped state and does not start.

For example, in a J2EE application for which servlet error reporting has been set up, if an exception occurs during servlet initialization, the J2EE application fails to start and the application stops. For details on the error report settings, see *9.16 Error notification settings for servlets and JSPs* in the *uCosminexus Application Server Application Setup Guide*.

Use one of the following methods to check whether a J2EE application has started normally and to take action:

- Check the status of the J2EE application.
- Detect the failure in starting the J2EE application and then start the J2EE application manually.

3.4.2 Notes on names to be specified in commands

When executing commands in operations, specify the following 4 names in accordance with the command in use. Use command or Easy Setup definition file to confirm the mapping of each name.

- **Web system name**

Specify in the command of Smart Composer functionality.

Example: `cmx_start_target -s <Web system name>`

- **Service unit name**

Specify in the command of Smart Composer functionality.

Example: `cmx_start_target -s <Web system name> -unit <Service unit name>`

- **Logical server name**

Specify in the Management command (mngsvrutil).

Example: `mngsvrutil start -t <Logicle server name>`

- **Real server name**

Specify in the Server Management command.

Example: `cjstartsv <Real server name>`

Use the following method to confirm the mapping of each name.

1. Confirm the mapping of the following names by executing `cmx_list_model` command with the command prompt:

- Host name
- Web system name
- Service unit name
- Logical Server name

Execution example:

```
cmx_list_model -m localhost:28080 -u admin -modeltype SERVEREX -all
cmx_sample-system_unit1_PRF_01,PerformanceTracer,host1,combined-tier,un
it1,sample-system
cmx_sample-system_unit1_J2EE_01,J2EEServer,host1,combined-tier,unit1,sa
mple-system
cmx_sample-system_unit1_HTTP_01,WebServer,host1,combined-tier,unit1,sam
ple-system
cmx_sample-system_unit2_PRF_01,PerformanceTracer,host2,combined-tier,un
it2,sample-system
cmx_sample-system_unit2_J2EE_01,J2EEServer,host2,combined-tier,unit2,sa
mple-system
cmx_sample-system_unit2_HTTP_01,WebServer,host2,combined-tier,unit2,sam
ple-system
```

2. Confirm the mapping of the following names with the Easy Setup definition file:

- Logical server name (logical-server-name)
If a logical server name is not defined, the name is automatically generated.
- Real server name (realservername)
When a real server name is not defined, a name same as the logical server name is set.

3.4.3 Constraints on accessing the network drives (in Windows)

In Windows, the access to the network drives by the component software listed in the following table is restricted. The following table describes the constraints for the component software.

Also, note that the access to the network drives is restricted for a program started from a service depending on the Windows specifications.

Table 3–2: Constraints on accessing the network drives

Component software	Constraints
Component Transaction Monitor	When you use a Windows service to start Component Transaction Monitor, do not specify a network drive path in the CTMSPOOL environment variable.
HTTP Server	The network drives cannot be accessed from the HTTP server.
Performance Tracer	When you use a Windows service to start Performance Tracer, do not specify a network drive path in the PRFSPOOL environment variable.
Reliable Messaging	Do not specify the files and directories on a network drive in the following Reliable Messaging configuration properties: <ul style="list-style-type: none">• QueueConfigFileName• QueueMakeFileName• RMTRTransferControlDir
TPBroker	Do not specify a network drive or the files on a network drive in the environment variables and properties used with the ORB functionality.
HiRDB/Single Server Version 10	The network drives are not connected when the power is input, so HiRDB Embedded Server Version 8 cannot be started by using a Windows service. For this reason, do not install HiRDB/Single Server Version 10 or set up the database environment on a network drive.

3.4.4 Notes on temporary files

- In Windows, while the program is running, Component Container creates temporary files in the directory specified in the TMP or TEMP environment variable, or in the temporary directory allocated by the OS to the user.

Therefore, to operate a program normally, the user must have the write permission for the directory where the temporary file is created. Also, do not delete the temporary file and the directory where the temporary file is created while the program is running.

- In UNIX, Application Server creates and uses the following temporary file to communicate with other processes:

```
/tmp/hsperfdata_user-name/process-ID
```

Therefore, to operate Application Server normally, the user must have the write permission for /tmp.

Also, the operations when the access permissions for the created temporary file and directory are changed and when a temporary file is deleted while JavaVM is running are not guaranteed.

3.4.5 Notes on correcting the system time

Note the following points when you use the NTP program (in Windows, Windows Time service, and in UNIX, commands such as the ntpd command and ntpdate command) to correct the system time. For details on system time correction, see the documentation for the OS in use.

- Use the product in the slew mode range that gradually corrects the shift in time so that the time is not skipped.
- If a large time correction is required, involving several seconds or more at a time, stop the product processes and then correct the time.
- If the system time is turned back or advanced due to the time correction, the following events might occur. Design the system and the timeout considering these events.
 - The timeout is delayed or advanced compared to the time assumed for a transaction, communication, and system monitoring
 - The log and history time-series collapses
- With some of the component software, if the time is turned back, the operation might become invalid from the point of view of the function properties.

4

Operational Format to be Implemented in the Management Portal or the Smart Composer functionality

This chapter describes the procedure for setting up and operating a system implemented in the management portal or the Smart Composer functionality.

For details on the references used for windows, commands, files, and the storage locations of commands and files used in this chapter, see [5. Windows, Commands, and Files used in the System Setup and Operations](#).

4.1 System setup for improving machine performance by allocating Web Server to a different host

This section describes the procedure for setting up a system having a Web Server and the J2EE server allocated to different hosts.

4.1.1 To allocate Web Server to different host

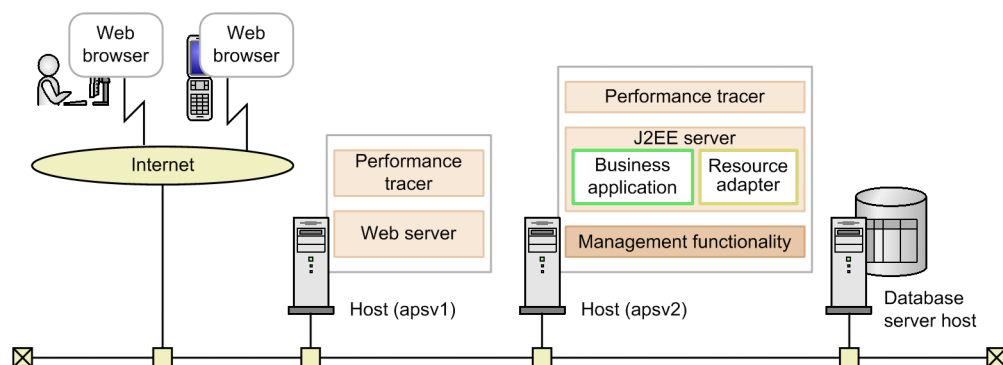
In a system where the Web Server is allocated to a different host, the performance is improved by separating the host, for allocating static contents such as HTML file from the host executing business applications.

In the Smart Composer functionality, set up the system by using commands from the Easy Setup definition file for defining the environment settings of the logical server, the host (http-tier) for allocating the Web Server, and the host (j2ee-tier) for allocating the J2EE server. In the management portal, set up the system by allocating a logical server (such as Web Server, the J2EE server) to the respective hosts, and by deploying the settings of each logical server to the host.

- **System configuration example**

The following figure shows an example of the system setup where the Web Server is allocated to a different host. Note that in this system the Management Server, serving as the Management functionality, is allocated to the host for allocating the J2EE server. Also, in the following Setup example, the network is a single setup (configuration that does not separate Workstation LAN and Management LAN), and each host uses one physical NIC.

Figure 4–1: System configuration example of a system that allocates Web Server to a different host.



The following table describes the settings used in the example.

Table 4–1: Settings used in the example (Setup of the system where the Web Server is allocated to a different host)

Classification	Item	Set up example
Host for allocating the Web Server	Host name	apsv1
	IP Address (Management IP address) ^{#1}	192.168.100.11
	Name of the logical Web Server	MyWebSystem_HTTP01
	Name of the logical performance tracer	MyWebSystem_PRFO1
Host for allocating the J2EE server ^{#2}	Host name	apsv2
	IP Address (Management IP address) ^{#1}	192.168.100.12
	Name of the logical J2EE server	MyWebSystem_J2EE01

Classification	Item	Set up example
	Name of the logical performance tracer	MyWebSystem_PRFO2
	File name of J2EE applications	MyApp.ear
	Display name of J2EE applications	MyApp
	Management user ID of the management functionality	cosmi_admin
	Management user password of the Management functionality	cosmi_admin_passwd

#1

For unit configuration of the network, the IP address serves as both the activity IP address and the management IP address.

#2

The Management functionality (Management Server) is allocated to the host for allocating the J2EE Server.

- **Tasks to be implemented and their necessity**

The following table describes the tasks to be implemented for setting up the system in which the Web Server is allocated to a different host, and the necessity of these tasks, for every set up tool used.

Table 4–2: Tasks for setting up the system where the Web Server is allocated to a different host, and necessity of these tasks (when using management portal)

Tasks to be implemented for setting up a system where the Web Server is allocated to a different host	Necessity of the task	Task implementation conditions	References	Section
Preparing the database	A	For connecting to the database	<i>This manual</i>	2.1.1
Setting up the database environment (setting of Oracle)	A	For connecting to the database (Oracle)		4.1.2
Setting up Component Container Administrator (For UNIX)	A	When OS is UNIX and you want to assign operation permission to a general user		4.1.3
Installing Application Server	Y	Mandatory (when the OS is Windows)		2.2.2
		Mandatory (when the OS is AIX)		2.2.3
		Mandatory (when the OS is Linux)		2.2.4
Installing products used for connecting to the database	A	For connecting to the database		2.2.5
Symbolic link supported in Application Server (For UNIX)	A	When OS is UNIX		4.1.5
Setting up the database connection environment	A	For connecting to the database (HiRDB)		4.1.6
		For connecting to the database (Oracle)		4.1.7
		For connecting to the database (SQL Server)		4.1.8
Setting up the environment variable of the system	Y	Mandatory		4.1.11

Tasks to be implemented for setting up a system where the Web Server is allocated to a different host	Necessity of the task	Task implementation conditions	References	Section
Setting up the environment variable of the logical server	A	When changing environment variable while installing		4.1.12
Setting up the Management functionality	Y	Mandatory	Management portal	2.2
Starting the Administration Agent	Y	Mandatory		4.1.2
Starting the Management Server	Y	Mandatory		4.1.2
Setting up the system environment	Y	Mandatory		3.2
Setup of the system environment	Y	Mandatory		
Starting the system (startup of the logical server)	Y	Mandatory		4.1.2
Setting up the resource adapter	A	When connecting a resource with the resource adapter (DB Connector)		3.3
		When connecting a resource with the resource adapter (Other than DB Connector)		
Starting the resource adapter	A	When connecting a resource using the Resource adapter		4.1.2
Setting and starting the business application	Y	Mandatory		3.4 , 4.1.2
Changing the system environment definition	A	As and when required in operations		4.2
Changing the settings of the business application.	A	As and when required in operations		4.2 , 4.3
Changing the settings of the resource adapter	A	As and when required in operations		4.2
Stopping the system (Stopping the logical server)	A	As and when required in operations		4.1.4
Stopping the Management Server	A	As and when required in operations		4.1.4
Stopping the Administration Agent	A	As and when required in operations		4.1.4
Deleting the system environment	A	As and when required in operations		3.6

Legend:

Management portal: Shows the *uCosminexus Application Server Management Portal User Guide*

Y: Mandatory tasks.

A: Tasks to be performed on satisfying the task implementation conditions.

Table 4–3: Tasks to be implemented for setting up the system where the Web Server is allocated to a different host, and the necessity of these tasks (when using the Smart Composer functionality)

Tasks to be implemented for setting up a system where the Web Server is allocated to a different host	Necessity of the task	Task implementation conditions	Section
Preparing the database	A	For connecting to the database	2.1.1
Setting up the environment of the database (Setting Oracle)	A	For connecting to the database (Oracle)	4.1.2
Setting up Component Container Administrator (For UNIX)	A	When OS is UNIX and you want to assign the operation permission to a general user	4.1.3
Installing Application Server	Y	Mandatory (when the OS is Windows)	2.2.2
		Mandatory (when the OS is AIX)	2.2.3
		Mandatory (when the OS is Linux)	2.2.4
Installing products used for connecting to the database	A	For connecting to the database	2.2.5
Symbolic link supported in Application Server (For UNIX)	A	When OS is UNIX	4.1.5
Setting up the database connection environment	A	When connecting to the database (HiRDB)	4.1.6
		When connecting to the database (Oracle)	4.1.7
		For connecting to the database (SQL Server)	4.1.8
Setting up the environment variable of the system	Y	Mandatory	4.1.11
Setting up the environment variable of the logical server	A	When changing the environment variable while installing	4.1.12
Setting up the Management functionality	Y	Mandatory	4.1.14
Starting the Administration Agent	Y	Mandatory	4.1.17
Starting the Management Server	Y	Mandatory	4.1.18
Setting up the system environment (Setting the Easy Setup definition file)	Y	Mandatory	4.1.20
Setup of the system environment (Setup)	Y	Mandatory	4.1.23
Starting the system	Y	Mandatory	4.1.24
Setting up the resource adapter	A	When connecting a resource with the resource adapter (DB Connector)	4.1.26
		When connecting a resource with the resource adapter (Other than DB Connector)	4.1.27
Starting the resource adapter	A	When connecting a resource with the resource adapter	4.1.28
Setting and starting the business application	Y	Mandatory	4.1.29
Changing the system environment definition	A	As and when required in operations	4.1.31
Changing the settings of the business application	A	As and when required in operations	4.1.32
Changing the settings of the resource adapter	A	As and when required in operations	4.1.33

Tasks to be implemented for setting up a system where the Web Server is allocated to a different host	Necessity of the task	Task implementation conditions	Section
Stopping the system	A	As and when required in operations	4.1.34
Stopping the Management Server	A	As and when required in operations	4.1.35
Stopping the Administration Agent	A	As and when required in operations	4.1.36
Deleting the system environment	A	As and when required in operations	4.1.37

Legend:

Y: Mandatory tasks.

A: Tasks to be performed on satisfying the task implementation conditions

4.1.2 Setting the database environment (Setting Oracle)

This section describes the settings that must be specified on the database side if you are using Oracle JDBC Thin Driver. For more information, see the Oracle documentation.

- **Granting the permissions necessary to perform transaction recovery**

The following permissions must be granted to users who connect to Oracle Database for such users to be able to use global transactions:

- `SELECT` permission of `SYS.DBA_PENDING_TRANSACTIONS`
- `FORCE ANY TRANSACTION` permission
- Permission to `EXECUTE` the `SYS.DBMS_SYSTEM`

For details on how to give permission, see *Oracle* manual.

- **Setting access permission for dynamic performance view**

User connecting to Oracle must have permission to access the dynamic performance view. Set the permission to access the dynamic performance view for the users connecting to Oracle with one of the following methods:

- Run `GRANT SELECT_CATALOG_ROLE TO User name;`
- Run `GRANT SELECT ON V_$INSTANCE TO User name;`, `GRANT SELECT ON V_$PROCESS TO User name;` and `GRANT SELECT ON V_$SESSION TO User name;`

- **Setting Timeout**

Set in the `DISTRIBUTED_LOCK_TIMEOUT` parameter of the Oracle Server definition.

Note that other than the `DISTRIBUTED_LOCK_TIMEOUT` parameter, settings of the `SesTmm` parameter of `XAOpenString` affect the timeout; however, this parameter cannot be tuned.

For details, see the following subsections or manuals:

- *8.6.6 Setting the database timeout in the uCosminexus Application Server System Design Guide*
- *8.6.8 Tuning parameters for setting the timeout in the uCosminexus Application Server System Design Guide*
- *Oracle* manual

4.1.3 Setting Component Container administrator (For UNIX)

For UNIX, a super user can perform operations such as setup, start, and stop. However, even a general user can perform these operations, if he is granted the required permission. This user is called as *Component Container Administrator*.

With this, even a general user can setup and operate the system. Implement these settings on each host (host for allocating the J2EE Server).

This subsection describes the procedure for setting up Component Container Administrator. When you set up Component Container Administrator, you need to perform operations before and after a new installation or update installation. For details on the notes on setting up Component Container Administrator, see [4.1.4 Notes on setting Component Container administrator \(For UNIX\)](#).

1. Log in to Application Server with the root permission (superuser).
2. Register the group (Component Container Administrator group) to which Component Container Administrator will be registered.

For details on how to register a group, see the OS documentation.

3. Register Component Container Administrator to the group that was registered in step 2.

For details on how to register Administrator, see the OS documentation.

4. Implement new installation or update installation.

For new installation

For AIX, see [2.2.3 Installing new Application Server \(In AIX\)](#), and for Linux, see [2.2.4 Installing new Application Server \(In Linux\)](#).

For update installation

See [Appendix F.2 Update installation of Application Server \(In UNIX\)](#).

5. Change the owner and the group of the Component Container installation directory to Component Container Administrator and Component Container Administrator group that were registered in step 2 and 3 respectively.

6. Execute the `cjenvsetup` command to set up Component Container Administrator.

The setup of Component Container Administrator is complete. After the setup is completed, excluding some operations, the operations that can be implemented by Component Container Administrator cannot be implemented by the superuser. Implement the operations such as setting up, starting, and stopping the J2EE servers and batch servers with Component Container Administrator.

4.1.4 Notes on setting Component Container administrator (For UNIX)

Note that after setting Component Container Administrator, the super user cannot perform the same operations, except for a few that can be implemented by Component Container Administrator.

The following table describes the operations that can be implemented by the super user and Component Container Administrator when Component Container Administrator is set.

Table 4–4: Operations that can be implemented on setting Component Container Administrator.

Operation	Super user	Component Container Administrator
Installing Cosminexus Component Container	Y	N
Setting up Component Container Administrator (<code>cjenvsetup</code> command)	Y	N
Migrating the work directory and the user definition file (<code>cjenvupdate</code> command, <code>cjrarupdate</code> command)	N	Y

Operation	Super user	Component Container Administrator
Setting up/Unsetting the J2EE server or batch server (<code>cjsetup</code> command)	N	Y
Starting/Stopping the J2EE server or batch server (<code>cjstartsv</code> command, <code>cjstopsv</code> command)	N	Y
Executing the server management commands	Y	Y
Acquiring the thread dump (<code>cjdumps</code> command)	Y	Y
Acquiring OS status information (<code>cjgetsysinfo</code> command)	Y	Y
Executing the batch application (<code>cjexecjob</code> command) [#]	Y	Y
Forced termination of the batch application (<code>cjkilljob</code> command) [#]	Y	Y
Display the batch application information list (<code>cjlistjob</code> command) [#]	Y	Y

Legend:

Y: Executable

N: Non-executable

[#] Commands that can be used in batch applications. Batch applications operate on the batch server.

When you do not set a Component Container Administrator, the super user becomes the Administrator and performs the operations of Component Container Administrator as well.

Reference note

There is no effect on the execution of a management command even if Component Container Administrator is set.

You can execute the operations and commands during system operation with the Management user ID set during the Management Server setup.

Notes on the settings of Component Container Administrator and operations of Component Container Administrator are as follows:

- **Component Container Administrator Account**

You can register only one Component Container Administrator account on the host for installing Cosminexus Component Container, and therefore you cannot register multiple accounts as Component Container Administrators. You can use only the account for logging in the OS as the account to be used as Component Container Administrator.

- **Server to be managed by Component Container Administrator**

Component Container Administrator is the owner of not only the J2EE Server and batch server that is setup with the `cjsetup` command; but also the server of the host name setup by default during installation. You cannot set up a separate Component Container Administrator for each server.

- **Changing port number during operations by Component Container Administrator.**

For starting CORBA naming service with Component Container Administrator (including starting in-process), change the port number settings using the Easy Setup definition file. You must set a value of 1,024 or higher for the port number in the `ejbserver.naming.port` parameter inside the `<configuration>` tag for the logical J2EE server (`j2ee-server`). When starting the CORBA naming service with the default port number (900) or a port number from 0 to 1,023, manually start the CORBA naming service by super user.

Note that Component Container Administrators without the root permission cannot open the port numbers of 0 to 1,023. Therefore, when you are setting Component Container Administrator, and then operating, change also the port number other than CORBA naming service to 1,024 or above.

- **Changing the attributes of the Component Container installation directory**

When you change the attributes (owner/ group) of the Component Container installation directory, do not operate the server (setup/ un-setup, and start or stop) until the execution of the Component Container Administrator setup command is complete.

- **Changing Component Container Administrator**

When Component Container Administrator is set, the same user becomes Component Container Administrator even after an update installation. When you want to change Component Container Administrator, change the owner and the group of the installation directory (/opt/Cosminexus/CC) of Cosminexus Component Container, and then set up Component Container Administrator.

Use the same method when you want to restore Component Container Administrator to the super user.

- **Changing owner of directory and file**

You can change and use the following directory in the <configuration> tag of the logical J2EE server (j2ee-server) of the Easy Setup definition file.

Changeable directory	How to specify
Output destination directory for the JavaVM log of the product (called <i>JavaVM</i> hereafter)	Specify JavaVM starting parameters. Specification details of the JavaVM starting parameters are as follows: <param-name>tag add.jvm.arg <param-value>tag -XX:HitachiJavaLog:Directory name
Log output directory of the J2EE server or the batch server	Specify in ejb.server.log.directory parameter.
Temporary directory for JSP	Specify in Web Server.work.directory parameter.
Trace output destination directory of Cosminexus TPBroker	Specify in vbroker.orb.htc.tracePath parameter.
Output destination directory for operation information files	Specify in ejbserver.management.stats_file.dir parameter.

If you are changing, and then using the directories, execute either of the following after setting up Component Container Administrator.

- Change the owner of each directory and file to Component Container Administrator.
- Set the writing permission for Component Container Administrator in each directory and file.
- **Property of a directory when Component Container Administrator is set**
When Component Container Administrator is set, the property (owner/group) of the subdirectory and file under the following directory changes to Component Container Administrator/Component Container Administrator group.
 - /opt/Cosminexus/CC
 - Work directory/ejb/
 - Work directory/web/

Note that the property of certain files under /opt/Cosminexus/CC (such as /opt/Cosminexus/CC/server/bin/cjenvsetup, /opt/Cosminexus/CC/server/bin/cjgetsysinfo and install log) do not change.

- **Setting access permission for the log output destination directory of EJB client application**

When Component Container Administrator is set, the property (owner/group) of the file and directory under the installation directory (/opt/Cosminexus/CC) of Cosminexus Component Container change to Component Container Administrator /Component Container Administrator group. Therefore, default /opt/Cosminexus/CC/client/logs are used in the log output destination of EJB client application, and when the account of the executing user of Component Container Administrator and EJB client application differ, errors might occur in the log output of EJB client application. In such cases, set the mode of the log file output to the log output destination directory, such as to allow writing to a group or all other users. For details on setting access permissions, see 3.8.5 *Setting access permission of the log output destination directory* in the *uCosminexus Application Server EJB Container Functionality Guide*.

- **Setting the access permissions for the Management Agent log file**

Management Agent outputs log files with the following name in the /opt/Cosminexus/manager/log directory:

- mngagent-domain-name-Agent-name.[n].log

Note: In the [n] part of the file name, a serial number is allocated from 1 to the specified number of log files.

After you set up Component Container Administrator, execute one of the following operations:

- Change the log file owner to Component Container Administrator.
- Set the write permission for Component Container Administrator in the log file.

- **Message when Component Container Administrator is set**

When Component Container Administrator is set and you want to import applications and various resources, the following message might be output if there is no read permission for the files to be imported. In such cases, check the access permission of the files to be imported.

When the setting of the access permission is invalid, KDJE37324-E is output in the message.

- **Setting up the J2EE servers or batch servers when Component Container Administrator is set up**

When Component Container Administrator is set up, do not set up a J2EE server or batch server with the same name as the server name of Management Server. Note that Component Container sets up the J2EE server or batch server using the host name during installation, so do not set up the server name of Management Server in the host name.

The execution information for the Component Container Administrator setup (cjenvsetup command) is output to the message log and the text file. The following table describes the output contents and the output destination of the execution information.

Table 4–5: List of output contents and output destinations of the execution information for the Component Container Administrator setup (cjenvsetup command)

Command execution information	Output contents	Output destination file name ^{#1}
Command execution message	The following messages are output: <ul style="list-style-type: none"> • KDJE40074-I • KDJE40040-I (if normal) • KDJE40041-E (if error) 	cjenvsetupmessage*.log
File (directory) information before change	List of files (directories) ^{#2} subject to change of owner before the command is implemented ^{#3} .	before_cjenvsetup_files*.txt
File (directory) information after change	List of files (directories) ^{#2} subject to change of owner after the command is implemented ^{#3} . Note that if an error occurs, the results are output during the process of error occurrence (when the command ends).	after_cjenvsetup_files*.txt

^{#1}

The output directory is *Component-Container-installation-directory*/logs/.

#2

The files (directories) subject to change of owner are all the files beneath *Component-Container-installation-directory*, beneath *work-directory/ejb*, and beneath *work-directory/web*. Note that if the link destination of the symbolic link file is a directory, the files beneath the symbolic link destination directory are also subject to change of owner.

#3

The time at which the file (directory) list is output appears on the first line and the list of files (directories) is output on the second and subsequent lines. An example of output is as follows:

```
Mon Dec 10 12:00:00 JST 2012 <- Time at which file (directory) list is out
put
/opt/Cosminexus/CC: <- List of files (directories)
total 16
drwxr-xr-x 2 0 0 256 Dec 10 11:00 adapters
drwxr-xr-x 2 0 0 256 Dec 10 11:00 admin
...
...
...
```

Note that the format of the file (directory) list information varies as per the OS version and settings.

4.1.5 Symbolic links supported by Application Server (For UNIX)

UNIX supports the symbolic links of the following directories:

- /opt/Cosminexus/CC
- /opt/Cosminexus/CCR
- /opt/Cosminexus/manager
- /opt/Cosminexus/c4web

Note that symbolic links to directories lower than these directories in the hierarchy and to directories other than the those specified are not supported.

Symbolic links to the application directory of a J2EE application in an application directory structure and its subordinate directories are also not supported.

4.1.6 Setting the database connection environment (setting HiRDB)

Use DB Connector as the resource adapter to connect to the database from J2EE application on the J2EE server. The JDBC driver that supports the database is necessary to connect to the database by using DB Connector.

This subsection describes the database connection environment settings required for connecting to HiRDB by using DB Connector. The JDBC driver uses HiRDB Type4 JDBC Driver. Implement these settings on the host for allocating the J2EE server.

For details on the notes on setting up a database, see [4.1.9 Notes on setting up a database](#).

(1) Preparing HiRDB Type4 JDBC Driver

This section describes the preparation of HiRDB Type4 JDBC Driver.

1. Prepare the JAR files for HiRDB Type4 JDBC Driver.

For details on the JAR files, see the *HiRDB UAP Development Guide*.

2. Set the path of the JAR file for HiRDB Type4 JDBC Driver, prepared in step 1, in the Easy Setup definition file.

Add the following settings in the `configuration` tag in the J2EE server definition of physical tier definition (definition of `tier` tag) when creating an Easy Setup definition file.

Specification value for <param-name> tag	Specification value for the <param-name> tag
<code>add.class.path</code>	<i>Class-path-of-JAR-file</i>

For details on creating an Easy Setup Definition file, see [4.1.20 Setting the Easy Setup definition file](#). For details on settings, see [4.3 Easy Setup definition file](#) in the *uCosminexus Application Server Definition Reference Guide*.

(2) Creating HiRDB client environment variable group setting file

Create a setup file of the HiRDB client environment variable group to use the HiRDB client environment variable group. In such cases, specify the path of the created setup file in the part specifying the HiRDB client environment variable group name in the property definition of DB Connector. For details on how to create the setup file, see the *HiRDB UAP Development Guide*.

You must set the HiRDB client environment variable group for using the global transaction. When you are not using the global transaction, using the HiRDB client environment variable group is optional.

(3) Setting up the system properties

You can also specify the HiRDB settings as system properties. The property name begins with `HiRDB_for_Java_`. Specify the system properties for the J2EE server in the user property file for J2EE servers (`usrconf.properties`).

(For example) `HiRDB_for_Java_UPDATECOUNT_BEHAVIOR=TRUE`

For details on the HiRDB system properties, see the *HiRDB UAP Development Guide*.

Do not set up the properties that can be specified in the Hitachi Connector property file and the setup file of the HiRDB client environment variable group, with the system properties.

(4) Setting Timeout

You can set the HiRDB timeout by adding the following HiRDB client environment variable to the environment variables property of DB Connector or the setup file of HiRDB client environment variable group.

- `PDSWAITTIME`
- `PDCWAITTIME`
- `PDNBLOCKWAITTIME`

Set the timeout for establishing connection in the `loginTimeout` property of DB Connector. However, even when you set the value in the `setLoginTimeout` method of HiRDB Type4 JDBC Driver, timeout during login might not be executed.

Set the property of DB Connector when deploying a resource adapter before or after the system setup. For details on deploying a resource adapter, see [4.1.26 Setting DB Connector \(when using CUI\)](#) or [4.1.27 Setting resource adapters other than DB Connector \(when using CUI\)](#).

Also, for details on setting a timeout, see [8.6.6 Setting the database timeout](#) in the *uCosminexus Application Server System Design Guide*. For details on setting the property of DB Connector, see [4.2.2 Defining the DB Connector properties](#) in the *uCosminexus Application Server Application Setup Guide*.

4.1.7 Setting the database connection environment (setting Oracle)

Use DB Connector as the resource adapter to connect to the database from J2EE application. JDBC driver that supports the database is necessary to connect to the database using DB Connector.

This subsection describes the settings of the database connection environment necessary for connecting to Oracle by using DB Connector. JDBC driver uses Oracle JDBC Thin Driver. Execute these settings on the host for allocating the J2EE Server.

For details on the notes on setting up a database, see [4.1.9 Notes on setting up a database](#).

(1) Preparing Oracle JDBC Thin Driver

This subsection describes the necessary settings on the J2EE server when using Oracle JDBC Thin Driver. Note that when using Oracle JDBC Thin Driver, no environment variable is to be added to the J2EE Server.

Acquire the JAR file of Oracle JDBC Thin Driver of the version supported by Application Server. Information on how to install the Oracle client on the machine that operates the J2EE Server is available as an actual example of how to acquire Oracle JDBC Thin Driver. The following is the outline of the procedure to install the Oracle client:

1. Install the Oracle client of the version number supported by Application Server, on the machine that operates the J2EE Server.

In such cases, Oracle JDBC Thin Driver is also installed.

2. Apply the patch of the patch level (patch number) supported by Application Server.

3. Specify the path of the JAR file of Oracle JDBC Thin Driver in the Easy Setup definition file.

Add the path of the JAR file of Oracle JDBC Thin Driver in the `configuration` tag in the J2EE server definition of physical tier definition (*definition of tier* tag) when creating the Easy Setup definition file. For details on creating the Easy Setup definition file, see [4.1.20 Setting the Easy Setup definition file](#). For details on settings, see [4.3 Easy Setup definition file](#) in the *uCosminexus Application Server Definition Reference Guide*.

4. Import DB Connector for Oracle JDBC Thin Driver to the J2EE Server.

For details on importing DB Connector, see [4.1.26 Setting DB Connector \(when using CUI\)](#).

There are 2 types of DB Connector for Oracle JDBC Thin Driver. Select either of the following files depending on the transaction management method:

`DBConnector_Oracle_CP.rar`

Select `DBConnector_Oracle_CP.rar` when you are using without local transaction or transaction management (when specifying `LocalTransaction` or `NoTransaction` in the support level of transaction). Connect to the database by using the `ConnectionPoolDataSource` of Oracle JDBC Thin Driver.

DBConnector_Oracle_XA.rar

Select DBConnector_Oracle_XA.rar when you are using a global transaction (When specifying XATransaction in the support level of transaction) Connect to the database by using XADatasource of Oracle JDBC Thin Driver.

For details on the transaction management method, see *3.4 Transaction Management* in the *uCosminexus Application Server Common Container Functionality Guide*.

4.1.8 Setting the database connection environment (Setting SQL Server)

Use DB Connector as the resource adapter to connect to a database from a J2EE application. Also, to connect to a database by using DB Connector, you need a JDBC driver that supports the database.

This subsection describes the settings for the database connection environment required for connecting to SQL Server by using DB Connector. Use the JDBC driver for SQL Server as the JDBC driver. Implement these settings on the host to which the J2EE server is allocated.

For the notes on setting up a database, see [4.1.9 Notes on setting up a database](#).

(1) Database settings

When using a DB Connector to connect to SQL Server, install SQL Server on the database machine and complete the initial settings. For details, see the SQL Server documentation. You must also set the authentication mode to connect to SQL Server. You specify the authentication mode during installation, but you can change this mode even after the installation.

The authentication mode of SQL Server that can be specified in Application Server is classified into two types, mixed mode and Windows authentication mode, depending on the authentication method that can be set by you. This section describes the authentication mode and authentication method for each type.

Authentication mode

- **Mixed mode**

An authentication mode that can use both Windows authentication and SQL Server authentication methods

- **Windows authentication mode**

An authentication mode that can use Windows authentication

Authentication methods

- **Windows authentication**

This is one of the mechanisms for verifying the trial connection to the SQL Server. While connecting, the user is identified based on the Windows user or the group.

- **SQL Server authentication**

This is one of the mechanisms for verifying the trial connection to SQL Server. To connect, you must specify the login ID and password of SQL Server. First, check that the combination of the login ID and password specified by you in the instance of SQL Server is valid, and then connect.

(2) J2EE server settings (for SQL Server JDBC Driver)

Acquire the JAR file of the SQL Server JDBC Driver of the version supported by Application Server, and then specify the class path of the J2EE server. This section describes how to acquire the JAR file and specify the class path.

1. Download the SQL Server JDBC Driver Version number supported by Application Server from the Microsoft company homepage.
2. Install the downloaded SQL Server JDBC Driver on the machine that operates the J2EE server.
3. Specify the JAR file in the user class path of the J2EE server.

The specified JAR file is the JAR file of the JDBC driver, under the *SQL-Server-JDBC-Driver-installation-directory\sqljdbc_version\<language>* directory.

In the Easy Setup definition file, add the settings of JAR file in the `configuration` tag with the definition of the J2EE server of the physical tier definition (definition of the `tier` tag). For specifications, see 4.3 *Easy Setup definition file* in *uCosminexus Application Server Definition Reference Guide*.

```
<?xml version="1.0" encoding="UTF-8"?>
<model-definition xmlns="http://www.cosminexus.com/mngsvr/schema/ModelDefinition-2.5">
  <!-- Web system attribute definition -->
  <web-system>
    <name>MyWebSystem</name>
    :
    <!-- physical tier (combined-tier) definition -->
    <tier>
      <tier-type>combined-tier</tier-type>
      <!-- Setting for using SQL server -->
      <configuration>
        <logical-server-type>j2ee-server</logical-server-type>
        <param>
          <param-name>add.class.path</param-name>
          <param-value>Specify-path-of-JAR-file-for-SQL-Server-JDBC-Driver
        </param-value>
        <!-- Setting for using Windows authentication -->
        <param-name>add.library.path</param-name>
        <param-value>Specify-path-of-directory-storing-dll-file-for-SQL-
Server-JDBC-Driver</param-value>
        </param>
      </configuration>
    </tier>
    :
  </web-system>
  <host>
    :
  </model-definition>
```

Note: The part that is **bold** and highlighted is the part to be edited.

When using the Windows authentication, you must execute the following settings in addition to the JAR file settings. This section describes the settings required when using the Windows authentication.

4. Specify the directory that contains the dll file stored in the search path of the library for JNI of the container extension library of the J2EE server.

The directory to be specified is *SQL-Server-JDBC-Drive-installation-directory\sqljdbc_version\language\auth\x64* directory.

5. Import the DB Connector for SQL Server in the J2EE Server (DBConnector_SQLServer_CP.rar).

For details on DB Connector see 3.6 *Connecting to the database* in the *uCosminexus Application Server Common Container Functionality Guide*.

Import DBConnector_SQLServer_CP.rar by using the `cjimportres` command.

(3) Timeout settings

Set the timeout of SQL Server as and when required. For details on the timeout settings, see 8.6.6 *Setting the database timeout* in the *uCosminexus Application Server System Design Guide*.

4.1.9 Notes on setting up a database

When you use DB Connector, set up the JAR file of the JDBC driver used with DB Connector as the container extension library. If the JAR file is included in an application, delete the file from the application.

4.1.10 Environment variables

An environment variable set on Application Server includes environment variables referenced by Application Server and logical server set up by using the Management Server. The environment variable referenced by Application Server is called as *Environment variable of a system* and environment variable referenced by the logical server is called as *Environment variable of a logical server*.

4.1.11 Setting environment variables of the system

To set up a system by using Management Server, specify the following system environment variables. For details on how to set the system environment variables, see the OS documentation. Implement these settings on each host.

- CJMEMDUMP_PATH (for Windows)

This environment variable specifies the output destination directory for the user dump created when the logical J2EE server is forcibly terminated.

The user dump file (`cjmemdump.dmp`) is created under the directory specified in this environment variable.

(Example) `C:\temp` is set in the environment variable CJMEMDUMP_PATH

`C:\temp\cjmemdump.dmp`

Note the following points when you set up this environment variable:

- Specify `true` in the `adminagent.forcestop.threaddump` key of `adminagent.properties` (Administration Agent property file). If `true` is not specified, the user dump is not output even if the environment variable CJMEMDUMP_PATH is set up.
 - Specify an existing directory in the environment variable CJMEMDUMP_PATH. If the directory does not exist, the user dump is not output.
 - If `cjmemdump.dmp` exists in the directory specified in the environment variable CJMEMDUMP_PATH, that file is overwritten.
- TZ (Common to OSs)

This environment variable specifies the time zone. Normally, specify `JST-9`. You can also specify other values.



Important note

(for Windows)

The environment variable `ComSpec` is set up as the system environment variable when Windows is installed. If the environment variable `ComSpec` does not exist, problems, such as failure of PRF to start, occur. Make sure that the environment variable `ComSpec` is set up, and if the environment variable does not exist, specify the full path of the command line interpreter (such as `cmd.exe`).

4.1.12 Setting environment variables of the logical server

When using Management Server, you can set environment variables in the logical server at the following definition locations. Implement these settings on each host. For check points when setting environment variables of the logical server, see [4.1.13 Check points on setting environment variables of the logical server](#)

1. `user.env.variable` parameter of the Easy Setup definition file or the Configuration Change definition file, or Setting Environment Variable window of the management portal.
2. `adminagent.xml` (Administration Agent setup file)
3. Environment variable of OS (System environment variable for Windows, environment variable in the shell that starts the Administration Agent for UNIX)

When identical environment variables are set in the respective definition locations, then these variables are set in the logical server in the sequence of 1, 2, 3.

The environment variables are set in `2.adminagent.xml` at the time of installation. Even if you set the environment variables set in `2.adminagent.xml`; in 3.Environment variable of OS, the settings are not enabled. Therefore, we recommend that you set the environment variables of logical server in 1.*Easy Setup definition file, Configuration Change definition file, Management portal*) or *2.adminagent.xml*.

4.1.13 Check points on setting environment variables of the logical server

The environment variables of the logical server automatically set by the Management Server are set in `adminagent.xml` (Administration Agent Setup file) at the time of installation. The following table describes the environment variables of the logical server set automatically by the Management Server, for each OS.

Table 4–6: Environment variables of logical server set automatically by Management Server (for Windows)

Logical server	Environment variable	Setup value
Logical performance tracer	Path	<code>\${cosminexus.home}\PRF\bin;%{Path}</code>
Logical Smart Agent	Path	<code>\${cosminexus.home}\TPB\bin;%{Path}</code>
	TPDIR	<code>\${cosminexus.home}\TPB</code>
	VBROKER_ADM	<code>\${cosminexus.home}\TPB\adm</code>
Logical naming service	CLASSPATH	Not set.
	Path	<code>\${cosminexus.home}\jdk\bin;\${cosminexus.home}\TPB\bin;%{Path}</code>
	TPDIR	<code>\${cosminexus.home}\TPB</code>

Logical server	Environment variable	Setup value
	VBROKER_ADM	\${cosminexus.home}\TPB\adm
Logical CTM domain manager	CTMDIR	\${cosminexus.home}\CTM
	Path	\${cosminexus.home}\CTM\bin;\${cosminexus.home}\TPB\bin;\${Path}
	TPDIR	\${cosminexus.home}\TPB
	VBROKER_ADM	\${cosminexus.home}\TPB\adm
Logical CTM	CTMDIR	\${cosminexus.home}\CTM
	Path	\${cosminexus.home}\CTM\bin;\${cosminexus.home}\TPB\bin;\${Path}
	TPDIR	\${cosminexus.home}\TPB
	VBROKER_ADM	\${cosminexus.home}\TPB\adm
Logical J2EE server	Path	\${cosminexus.home}\CTM\bin;\${cosminexus.home}\jdk\bin;\${cosminexus.home}\TPB\bin;\${cosminexus.home}\PRF\bin;\${Path}
	TPDIR	\${cosminexus.home}\TPB
	VBROKER_ADM	\${cosminexus.home}\TPB\adm
Logical Web Server	Path	\${cosminexus.home}\PRF\bin;\${PATH}

Table 4–7: Environment variables of logical server set automatically by Management Server (For UNIX)

Logical server	Environment variable	Setup value
Logical performance tracer	PATH	\${cosminexus.home}/PRF/bin:\${PATH}
	Library path ^{#1}	\${cosminexus.home}/PRF/lib:\${library path ^{#1} }
	AIXTHREAD_SCOPE ^{#2}	S
	EXTSHM ^{#2}	ON
	LDR_CNTRL ^{#2}	MAXDATA=0x40000000
	NODISCLAIM ^{#2}	true
	PSALLOC ^{#2}	early
Logical smart agent	PATH	\${cosminexus.home}/TPB/bin:/bin:/usr/bin:\${PATH}
	TPDIR	\${cosminexus.home}/TPB
	VBROKER_ADM	\${cosminexus.home}/TPB/adm
	Library path ^{#1}	\${cosminexus.home}/TPB/lib:/opt/hitachi/common/lib:\${library path ^{#1} }
	AIXTHREAD_COND_DEBUG ^{#2}	Not set.
	AIXTHREAD_MUTEX_DEBUG ^{#2}	Not set.
	AIXTHREAD_RWLOCK_DEBUG ^{#2}	Not set.
	AIXTHREAD_SCOPE ^{#2}	S

Logical server	Environment variable	Setup value
	NODISCLAIM ^{#2}	true
	PSALLOC ^{#2}	early
Logical naming service	CLASSPATH	Not set.
	PATH	<ul style="list-style-type: none"> • For AIX <code>\${cosminexus.home}/jdk/bin:\${cosminexus.home}/TPB/bin:/usr/bin:\${PATH}</code> • For Linux <code>\${cosminexus.home}/jdk/bin:\${cosminexus.home}/TPB/bin:/bin:/usr/bin:\${PATH}</code>
	TPDIR	<code>\${cosminexus.home}/TPB</code>
	VBROKER_ADM	<code>\${cosminexus.home}/TPB/adm</code>
	Library path ^{#1}	<code>\${cosminexus.home}/TPB/lib:\${library path^{#1}}</code>
	AIXTHREAD_SCOPE ^{#2}	S
	NODISCLAIM ^{#2}	true
	PSALLOC ^{#2}	early
Logical CTM domain manager	CTMDIR	<code>\${cosminexus.home}/CTM</code>
	PATH	<code>\${cosminexus.home}/CTM/bin:\${cosminexus.home}/TPB/bin:%{PATH}</code>
	TPDIR	<code>\${cosminexus.home}/TPB</code>
	VBROKER_ADM	<code>\${cosminexus.home}/TPB/adm</code>
	Library path ^{#1}	<code>\${cosminexus.home}/CTM/lib:\${cosminexus.home}/TPB/lib:\${library path^{#1}}</code>
	AIXTHREAD_SCOPE ^{#2}	S
	EXTSHM ^{#2}	ON
	LDR_CNTRL ^{#2}	MAXDATA=0x40000000
	PSALLOC ^{#2}	early
	NODISCLAIM ^{#2}	true
Logical CTM	CTMDIR	<code>\${cosminexus.home}/CTM</code>
	PATH	<code>\${cosminexus.home}/CTM/bin:\${cosminexus.home}/TPB/bin:%{PATH}</code>
	TPDIR	<code>\${cosminexus.home}/TPB</code>
	VBROKER_ADM	<code>\${cosminexus.home}/TPB/adm</code>
	Library path ^{#1}	<code>\${cosminexus.home}/CTM/lib:\${cosminexus.home}/TPB/lib:\${library path^{#1}}</code>
	AIXTHREAD_SCOPE ^{#2}	S
	EXTSHM ^{#2}	ON

Logical server	Environment variable	Setup value
	LDR_CNTRL ^{#2}	MAXDATA=0x40000000
	PSALLOC ^{#2}	early
	NODISCLAIM ^{#2}	true
Logical J2EE server	CSCCFJ_SERVER_HOME	\${cosminexus.home}/CC
	PATH	\${cosminexus.home}/jdk/bin:\${cosminexus.home}/TPB/bin:\${cosminexus.home}/PRF/bin:/bin:/usr/bin:\${PATH}
	TPDIR	\${cosminexus.home}/TPB
	VBROKER_ADM	\${cosminexus.home}/TPB/adm
	Library path ^{#1}	\${cosminexus.home}/TPB/lib: \${cosminexus.home}/PRF/lib:\${cosminexus.home}/CTM/lib:/opt/hitachi/common/lib:\${library path ^{#1} }
	AIXTHREAD_COND_DEBUG ^{#2}	OFF
	AIXTHREAD_MUTEX_DEBUG ^{#2}	OFF
	AIXTHREAD_RWLOCK_DEBUG ^{#2}	OFF
	AIXTHREAD_SCOPE ^{#2}	S
	EXTSHM ^{#2}	ON
	NODISCLAIM ^{#2}	true
	PSALLOC ^{#2}	early
Logical Web Server	PATH	\${cosminexus.home}/PRF/bin:\${PATH}
	Library path ^{#1}	\${cosminexus.home}/PRF/lib:\${library path ^{#1} }
	NODISCLAIM ^{#2}	true
	PSALLOC ^{#2}	early

#1 Name of the environment variables specified in the library path differs for each OS:

- For AIX :LIBPATH
- For Linux : LD_LIBRARY_PATH

#2 It is AIX specific environment variable. Not applicable to OS other than AIX.

4.1.14 Setting the management functionality

This subsection describes the procedure for setting up the Management functionality by the Management Server setup. For the information that is used when setting up the management functionality, see [4.1.15 Information to be set for using Management Server](#) and [4.1.16 Information to be set for using Administration Agent](#). Implement these settings on the host for allocating the Management Server. In this case, the Management Server is allocated to the host for allocating the J2EE server. Also, the settings are such that the Management Server and the Administration Agent start concurrently with the host startup.

1. Start the command prompt on the host for allocating the J2EE server.

- Execute the subcommand `setup` of the command `mngsvrctl`, to setup the Management Server.

The following is an example of command execution. In this example, `cosmi_admin` is to be set in Management user ID and `cosmi_admin_passwd` is to be set in Management user password.

```
mngsvrctl setup -u cosmi_admin -p cosmi_admin_passwd
```

- Execute the `mngautorun` command, and perform settings for starting the Management Server and Administration Agent concurrently with the host startup.

The following is an example of command execution:

```
mngautorun both -sync
```

Reference note

You can also perform the settings to automatically restart the Management Server and Administration Agent when failure occurs. Also, you can perform the settings to stop the Management Server and Administration Agent concurrently with the host. For details on auto-restart and auto-stop settings of the Management Server and Administration Agent, see the following subsections of the *uCosminexus Application Server Operation, Monitoring, and Linkage Guide*.

- [2.6.4 Setting up automatic re-start](#)
- [2.6.5 Setting up automatic stop](#)

- Setting the Management Server environment.

The information specified for using Management Server includes the following. See [4.1.15 Information to be set for using Management Server](#) to set up the information.

- Port number used by Management Server
- Host that is allowed to access Management Server
- User account that will use Management Server
- Log-related information output by Management Server

- Setting the Administration Agent environment.

The information specified for using Administration Agent includes the following. See [4.1.16 Information to be set for using Administration Agent](#) to set up the information.

- Port number used by Administration Agent
- Information for monitoring the logical servers by Administration Agent (such as operation verification level and operation verification interval)
- Information for verifying the HTTP Server operations

4.1.15 Information to be set for using Management Server

This section describes the information to be set for using the Management Server. You can use the Management Server without setting the Management user account.

(1) Setting properties of the Management Server

You can specify the port number used by the Management Server and host that allows access to the Management Server in the property file of Management Server (`mserver.properties`).

The following are the keys specified in `mserver.properties`. For details on the keys, and the keys that are not described in this sub-section, see 8.2.6 *mserver.properties (Management Server environment settings file)* in the *uCosminexus Application Server Definition Reference Guide*.

- `adminagent.connector.comm.state.cache_max_time`
Specify the maximum time to cache the status of communication with the Administration Agent.
- `webserver.connector.ajp13.port`
Specify the port number for internal communications in the Management Server.
- `webserver.connector.http.port`
Specify the HTTP port number for connecting to the Management Server.
- `webserver.shutdown.port`
Specify the port number for receiving the Management Server end request.
- `webserver.connector.http.permitted.hosts`
Specify the IP address or host name of the host that allows access to the Management Server, and the host on which the Administration Agent operates.
- `mngsvr.myhost.name`
Specify the IP address that can be accessed by the host (Application Server) for allocating the Logical Server or the host name that shows the said IP address, in the host for allocating the Management functionality (Management Server). Specify this key, if the host to which the Management functionality (Management Server) is allocated has multiple IP addresses and the host name might not be converted to the intended IP address.

Other than these keys, you can perform the following settings in `mserver.properties`:

- You can set the keys for snapshot log collection, and for acquiring data by using commands in case of fault detection. For details on snapshot log collection settings, and the settings to obtain data by using commands in case of fault detection, see the following subsections of the *uCosminexus Application Server Maintenance and Migration Guide*:
 - 3.3.1 *Settings for obtaining data with commands in case of fault detection (systems executing J2EE applications)*
 - 3.3.2 *Settings for obtaining data with commands in case of fault detection (systems executing Batch applications)*
 - 3.3.3 *Snapshot log collection settings (Systems executing J2EE applications)*
 - 3.3.4 *Snapshot log collection settings (Systems executing Batch applications)*
- You can log in to the Management Server without setting the Management user account. In such cases, omission functionality of the Management user account is enabled. For details on settings of the functionality, see (3) *Settings when Management User account is not set*.

Also, as and when required, set the environment for execution of the commands used by the Smart Composer functionality in `cmxserver.properties` (Server Setup Property file).

The keys to be specified in `cmxserver.properties` are as follows:

- `cmx.max_wait_time`
Specify the maximum waiting time when waiting for completion of the already executed command. This maximum waiting time is valid in the command executed by specifying the common option `-wait`. The default waiting time is set to 180 seconds.

(2) Setting the operating environment of the Management Server

Set the operating environment of the Management Server such as account information of the user using the Management Server, log information output by the Management Server, in the `mngsvrctl` command, or the Management Server property.

The following table describes the settings of the operating environment of the Management Server.

Table 4–8: Settings of the operating environment of the Management Server

Settings	Setting contents	Necessity of the Settings
Management user account settings	When the Management user account is not set when setting up the Management Server, either set by specifying the argument <code>setup</code> in the <code>mngsvrctl</code> command or set on the Setting Management User Account window of the Management portal.	Y [#]
Log settings	Specify the log level, number of files, and size of the log output by the Management Server, in the <code>mserver.properties</code> or on the Setting Log window of the Management portal. Specify the following keys: <ul style="list-style-type: none">Specify the output level of the Management Server log in the <code>com.cosminexus.mngsvr.log.level</code> keySpecify the number of files of the Management Server log in the <code>com.cosminexus.mngsvr.log.rotate</code> key.Specify the file size of the Management Server log in the <code>com.cosminexus.mngsvr.log.size</code> key.	A
Settings for startup	Specify whether to run the logical server in a batch when you are starting the Management Server, in the <code>mserver.properties</code> or in the Settings for Startup window of the Management portal. This setting is required for a batch run.	A
Trace based performance analysis collection settings	Set the number of trace based performance analysis files maintained on the Management Server in <code>com.cosminexus.mngsvr.trace</code> key, in the <code>mserver.properties</code> or in the Setting Trace Based Performance Analysis Collection window of the Management portal.	A
Setting the JP1 linkage	Specify whether to publish the Management Server failure information (detected error or the Logical server start notification) as JP1 event in <code>com.cosminexus.mngsvr.jp1event.enabled</code> key, in the <code>mserver.properties</code> or in the Setting the JP1 linkage window of the Management portal. Other than this, perform settings in the keys starting with <code>com.cosminexus.mngsvr.jp1event</code> , to notify the Management Server failure information to JP1. This setting is required when using the functionality to link with JP1. For linkage with JP1, see <i>12. Operating a JP1 Integrated System in the uCosminexus Application Server Operation, Monitoring, and Linkage Guide</i> .	A

Legend:

Y: Perform settings.

A: Set when using a specific functionality to change the default settings.

#

When the Management user account is already set at the time of setting up the Management Server; you need not set this account again. However, when you want to change the set Management user account during the setup, reset the Management user account by using the `mngsvrctl` command.

(3) Settings when the management user account is not set

A *Management user account* is the user permission used to login to the Management portal and to execute the commands (Example: `mngsvrutil` command) for the Management Server. Although you implement the Management user account settings during the setup of the Management Server, you can also use the Management Server without setting

the Management user account. If you do not set the Management user account, the following phenomenon might occur when performing management portal operations or executing commands for Management Server.

- Login window of the Management portal is not displayed. By specifying the URL you can use the Management portal without login.
- When executing commands for the Management Server, you need not specify `-u`(Management user ID) and `-p` (Management user password). You can execute the commands without specifying these options.

When you do not set the Management user account, specify `false` in `com.cosminexus.mngsvr.management_user_account.enabled` key of `mserver.properties`. However, if the Management user account is not set, anyone can operate the Management Server through Management portal and command execution. If the operational environment allows the operations in the Management Server by multiple users we recommend that you set the Management user account.

4.1.16 Information to be set for using Administration Agent

This subsection describes the information to be set for using the Administration Agent.

(1) Setting the Administration Agent property

You can specify the information such as the port number used by the Administration Agent in the Administration Agent Property file (`adminagent.properties`).

- `adminagent.adapter.port`

Specify the port number used by the Administration Agent for communicating with the Management Server.

In addition to this, you can also set the collection destination for a snapshot log. For details on the settings of the collection destination of a snapshot log, see the following subsections in the *uCosminexus Application Server Maintenance and Migration Guide*:

- *3.3.3 Setting Snapshot Log Collection (Systems executing J2EE applications)*
- *3.3.4 Setting Snapshot Log Collection (Systems executing Batch applications)*

(2) Settings for the monitoring of logical servers by Administration Agent

When operating the system, you can use the management command (`mngsvrutil`) of the Management Server to check the status of logical servers, and learn about the start/stop status of the logical server. When using the Management Server to manage the logical servers, the Administration Agent periodically monitors the process and checks the operations for the logical server, and notifies the logical sever status to the Management Server. The Administration Agent can change the level and interval settings when checking the operations of the logical servers. Set the items related to the operation check of the logical servers in the `adminagent.properties`, as and when required. For details on the auto-restart of the logical server in the event of failure, see *2.4.3 Automatic restart of logical server* in the *uCosminexus Application Server Operation, Monitoring, and Linkage Guide*.

Reference note

When using the Management Server for operation check of Web Servers, a separate log for operation check can be output, along with the normal logs (error log, access log, and request log). For details on how to set, see *3.3.8 Settings for Acquiring the Web Server Log* in the *uCosminexus Application Server Maintenance and Migration Guide*.

- **Setting the level of operation check for logical servers**

In the Administration Agent, you can determine whether the logical server is operating normally, by checking the process existence or by accessing the logical server. Specify the level of operation check for logical servers in the `adminagent.type-of-logical-server.watch.level` key. Change the level of operation check for the logical servers, as and when required. You can specify only 1 or 2. If you specify 1, the operations of the logical server are checked only by confirming the process existence, whereas if you specify 2, the operations are checked by confirming the process existence and by actually accessing the logical server. The value that can be specified differs depending on the type of the logical server. Note that if only SSL communication is enabled on the Web Server, change the level of operation check for logical Web Server (Set `adminagent.hws.watch.level=1`) to only confirming the process existence.

- **Setting the interval for operation check of logical servers**

Specify the interval (seconds) for operation check of logical servers in the `adminagent.type-of-logical-server.watch.interval` key. The default value is 10 seconds. You can change the operation check interval of the logical server as needed.

When changing the operation check interval of the logical server, make sure that the operation check interval of the logical server (in seconds) is shorter than the stop monitoring time (in minutes) or forced stop monitoring time (in minutes). If the operation check interval is longer than the monitoring time of the logical server, attempts to stop or forcibly stop the logical server might be unsuccessful.

- **Setting timeout for the operation check of logical servers**

Specify the timeout period (seconds) for operation check of logical servers in the `adminagent.type-of-logical-server.watch.timeout` key. The default value is 60 seconds. Change the timeout period for the operation check of logical servers, as and when required.

- **Setting retry count for the operation check of logical servers**

Specify the number of retries for operation check of logical servers in the `adminagent.type-of-logical-server.watch.retry_count` key. The default value is one.

You can also specify whether to retry the timeout, in the `adminagent.watch.retry_timeout.enabled` key. The default value is `false` (do not retry). Note that during new installations, `true` (retry) is specified.

Change the retry settings for the operation check of logical servers, as and when required.

- **Setting start time for the operation check of logical servers**

Specify the time (seconds) from the start of the logical server up to starting the operation check (operation check level 2) in the `adminagent.type-of-logical-server.watch.start_time` key. The default value differs depending on the type of the logical server. Change the start time for the operation check of the logical servers, as and when required.

When changing the start time for operation check of the logical server, make sure that the "Start time for operation check of the logical server (seconds) < Time to monitor the start of the logical server (minutes)" is set. You can set the time to monitor the start of the logical server by using the Start/Stop Settings window of the Start/ Stop Logical Server in Management portal. The logical server fails to start if the startup monitoring time is smaller than the start time of the operation check.

(3) Setting the operation check for Cosminexus HTTP Server

In the Management Server, you can manage the Cosminexus HTTP Server as a Web Server. Verification of HTTP Server operation is achieved by sending a request via HTTP to the port whose port number is specified by the last `Listen` directive in the web server definition file (`httpsd.conf`).

Therefore, if the last `Listen` directive is set to enable SSL, HTTP Server operation cannot be verified.

Make sure that the last `Listen` directive is set to disable SSL.

If all `Listen` directives in the web server definition file (`httpsd.conf`) are set to enable SSL, a client that accesses the HTTP Server only checks for the existence of the process and skips verification of HTTP Server operation.

This section describes the settings of HTTP method for operation check, and the URL settings for Cosminexus HTTP Server operation check. However, you can set the URL for Cosminexus HTTP Server operation check, only if `HEAD` is specified in the HTTP method settings for operation check.

- **Setting HTTP method for the operation check**

Specify the HTTP method for Cosminexus HTTP Server operation check when 2 (to check the operations by confirming the process existence and by actually accessing the logical server) is specified in the level of operation check for the logical servers (`adminagent.type-of-logical-server.watch.level` key). You can specify `HEAD` or `OPTIONS` only. If you specify `HEAD`, system checks whether the response is sent by accessing the URL set in the URL for Cosminexus HTTP Server operation check (`adminagent.hws.watch.url` key). Also, if you specify `OPTIONS`, system checks whether the Web Server is in a condition to receive the HTTP method.

If you specify `OPTIONS`, and the access to the root directory from all hosts is prohibited in the Cosminexus HTTP Server settings, then the access that is required for the operation check from the Administration Agent is also denied. As a result, you cannot judge operations correctly, and Cosminexus HTTP Server fails to start. In such cases, the permission to access from the loop back address (fixed IP address if the hosts are fixed) needs to be given. Note that the you cannot judge operations correctly even if the access is restricted such as when basic authentication settings are done.

- **URL settings for Cosminexus HTTP Server operation check**

The Administration Agent determines whether the Cosminexus HTTP Server is operating normally, by periodically performing dummy access to the set URL. In situations where the response to dummy access is not received (not responding condition), the Administrator Agent judges the Cosminexus HTTP Server as abnormal, and detects the failure. Therefore, when using a Web Server set a URL that can actually be accessed as the URL for operation check. Specify the URL for Cosminexus HTTP Server operation check in the `adminagent.hws.watch.url` key.

Specify an absolute path starting with "http", or a relative path from the root context as the URL. The default value is the root context (`http://localhost:port-number/`). Specify the relative path for setting up multiple Web Servers on the same host.

Example:

- The following is an example of specifying `http://HostA:80/index.html` as the URL for operation check:

```
adminagent.hws.watch.url=http://HostA:80/index.html
```

- The following is an example of specifying `http://localhost:port-number/index.html` as the URL for operation check (for multiple Web Servers):

```
adminagent.hws.watch.url=index.html
```

4.1.17 Starting the Administration Agent

Start the command prompt, execute the `adminagentctl` command, and start the Administration Agent for each Application Server. For Windows, you can start the Administration Agent from the service as well.

The following is an example of command execution:

```
adminagentctl start -sync
```

4.1.18 Starting the Management Server

Start the command prompt on the host (host for allocating the J2EE server) where the Management Server is set up, execute the `mngsvrctl` command, and start the Management Server. For Windows, you can start the Management Server from the service as well.

The following is an example of command execution:

```
mngsvrctl start -sync
```

4.1.19 Easy Setup definition file (when using J2EE applications)

Easy Setup definition file is an XML format file for defining the Web systems set up by using the Smart Composer functionality commands.

(1) Configuration of easy setup definition file

Set the following configuration of a Web system in the Easy Setup definition file:

- Web system property definition (definition of the `<web-system>` tag)
- Load balancer definition (definition of the `<load-balancer>` tag)^{#1}
 - Cookie switching definition (definition of the `<cookie-switching>` tag of the `<load-balancer>` tag)^{#2}
 - Virtual server definition (definition of the `<virtual-server>` tag of the `<load-balancer>` tag)
- Physical tier definition (definition of the `<tier>` tag)
 - Definition for each type of logical server belonging to the physical tier (definition of the `<configuration>` tag of the `<tier>` tag)
 - Definition for using the database (definition of the `<configuration>` tag of the `<tier>` tag)^{#3}
- Service unit definition (definition of the `<unit>` tag)
 - Definition of the hosts constituting the service unit (definition of the `<allocation-host>` tag of the `<unit>` tag)
 - Definition for each logical server of the physical tier to which the hosts belong (definition of the `<define-server>` tag of the `<allocation-host>` tag of the `<unit>` tag)
- Definition of hosts (definition of the `<host>` tag)

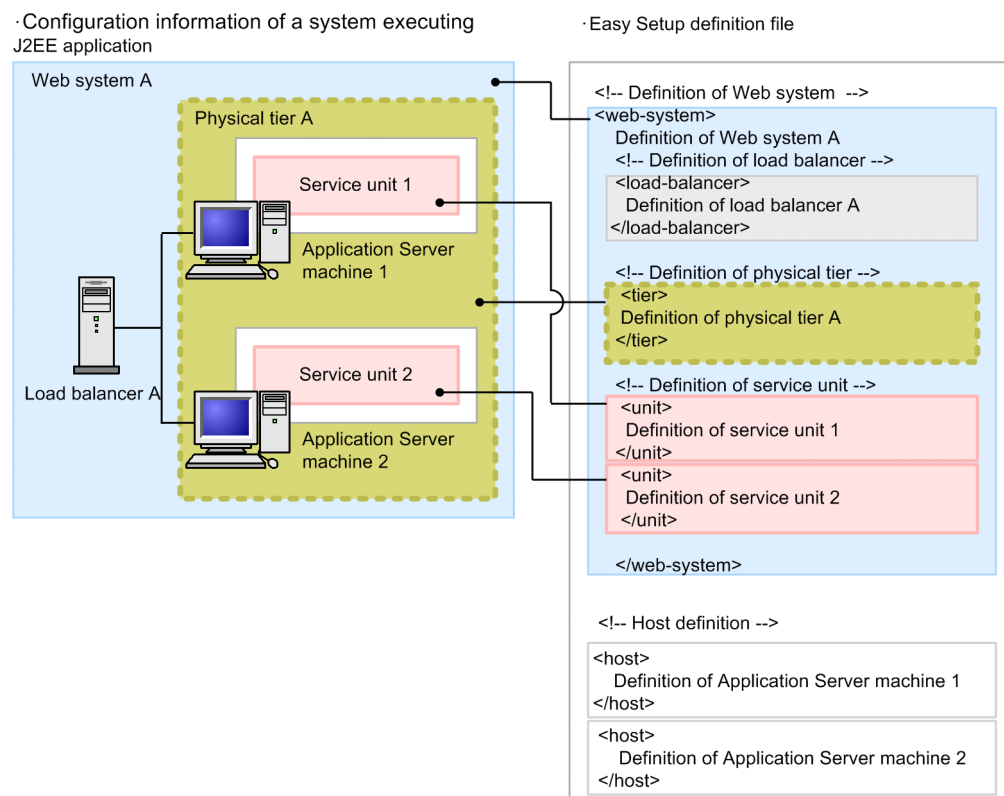
^{#1} You need not describe the definition of load balancer (definition of the `<load-balancer>` tag) if you do not perform the load balancer settings, or the start/close of the actual server port by using the Smart Composer functionality.

^{#2} Definition of cookie switching is necessary when using the Cookie switching functionality of the load balancer. Due to this setting, a series of HTTP requests are processed on one Web Server or the J2EE server. Also, if you are using the Cookie switching functionality of the load balancer, specify `WebServer.container.server_id.enabled=true` in the Web container settings of the J2EE server in the physical tier definition (`<tier>` tag).

#3 For the definition to use the database, see [4.1.6 Setting the database connection environment \(setting HiRDB\)](#), [4.1.7 Setting the database connection environment \(setting Oracle\)](#), or [4.1.8 Setting the database connection environment \(Setting SQL Server\)](#).

The following figure shows the mapping between the configuration information of the system for executing the J2EE applications, and the definition of the Easy Setup definition file:

Figure 4–2: Mapping between the configuration information of the system for executing J2EE applications, and definition of Easy Setup definition file



As shown in the above figure, in addition to the configuration and environment settings of the logical server you can also define the load balancer and hosts in the Easy Setup definition file. You can opt not to specify the host definition when using the hosts of a configured Web system.

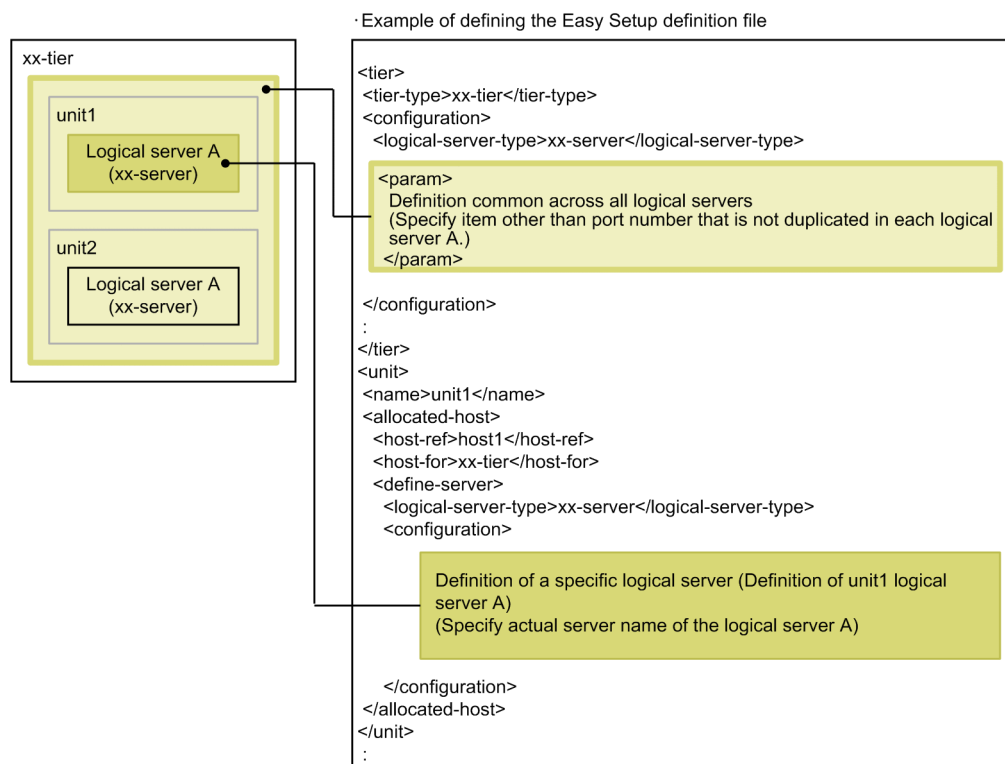
For details on tags and parameters of the Easy Setup definition file, see [4.3 Easy Setup definition file](#) in the *uCosminexus Application Server Definition Reference Guide*.

(2) Tags used in configuration definitions and scope of application

Define the settings for operations of the logical server and for using the functions in the configuration of the logical server. You can define the logical server configuration for all logical servers as well as for each logical server. To set a common definition for all the logical servers, define in the physical tier, and to set the definition for each logical server, define in the service unit. If you define in the physical tier, a common configuration is set for all the logical servers allocated to the hosts belonging to that particular physical tier. If you specify same parameters in the configuration definition of physical tier and service unit, the parameters are applied in the preference order of service unit definition, and then physical tier definition. For the contents automatically set by the Management Server, see [Appendix E Contents Set Automatically by Management Server](#).

The following figure shows the scope of application of the configuration definition of the logical servers:

Figure 4–3: Scope of application of the configuration definition of logical servers



The following table describes the main tags of the Easy Setup definition file used in the configuration definition.

Table 4–9: Main tags of Easy Setup Definition file used in logical server configuration definition

Tag name	Explanation
<configuration>	<p>Set the operation environment of the logical server. Specify the type of the logical server for setting the operation environment in the <logical-server-type> tag.</p> <p>You can set the <configuration> tag in physical tier definition (in <tier> tag), and in service unit definition (in <unit> tag). The scope of the logical server for applying the settings differs depending on whether you perform settings in the <configuration> tag in the <tier> tag or the <unit> tag.</p> <p>To change the settings that are common to all logical servers, edit the <configuration> tag in the <tier> tag, and to change the settings of a particular logical server, edit the <configuration> tag in the <unit> tag.</p>
<logical-server-type>	<p>Define the type of the logical server for setting the operation environment by using the <configuration> tag. The types of logical servers are as follows:</p> <ul style="list-style-type: none"> Logical Web Server: Web Server Logical J2EE server: j2ee-server Logical performance tracer: performance-tracer Logical CTM domain manager: ctm-domain-manager Logical CTM: component-transaction-monitor Logical smart agent: smart-agent Logical user server: user-server (cannot be defined in the <tier> tag)
<param>	Define the parameters (combination of parameter names and values) used for setting the operation environment of the logical server. Enclose each parameter within the <param> tag.
<param-name>	Define the name of the parameter used for setting the operation environment of the logical server.
<param-value>	Define the setup value of the parameter specified in the <param-name> tag.

If you do not set the parameter name (<param-name> tag) and the value (<param-value> tag) in the <configuration> tag of each logical server, default values are set for the operation environment of the logical server. There is no need to define if you want to continue using the default settings. Add or change the settings of the parameter and value if you want to change the operations set by default, or to enable the functions of Application Server.

4.1.20 Setting the Easy Setup definition file

This subsection describes the procedure to set up the Easy Setup definition file. For notes on setting the Easy Setup definition file, see [4.1.21 Notes on setting the Easy Setup definition file \(when using J2EE applications\)](#).

1. Copy the template file of the Easy Setup definition file (cmxdefcombinedmodel.xml) to any location.

The template file of the Easy Setup Definition file is available in the following location:

For Windows

`Cosminexus-installation-directory\manager\config\templates\cmxdefcombinedmodel.xml`

For UNIX

`/opt/Cosminexus/manager/config/templates/cmxdefcombinedmodel.xml`

Important note

When using compatibility mode, read `cmxdefcombinedmodel.xml` as `cmxdefcombinedmodel_v9.xml`.

Reference note

The character encoding of the template file is UTF-8. The system configuration described in the template file is same as the one set up by selecting Standard Setup in the Setup Wizard; without setting the database connection environment.

2. Rename the template file in step 1. with any name.

Use the text editor to define the information from step 3 to step 7 in the Easy Setup definition file.

3. Define the name, and the display name of the Web system operating on the Management Server.

Define 1 Web system in the range from the <web-system> tag to the </web-system> tag.

4. When using the load balancer, add the <load-balancer> tag, and define the type of load balancer, or the IP address for management.

For systems not using the load balancer, definition of the load balancer is not required.

5. Define the physical tier according to the functions used in the system configuration and the J2EE application. Define the common configuration for all logical servers, as and when required.

The logical servers that are required for the realization of those functions are determined depending on the functions used in the system configuration and the J2EE application, The Smart Composer functionality defines the set of hosts (server) with the same deployment (logical server allocations, and definition setting) for each physical tier. The physical tier defines the type of physical tier and common configuration for all logical servers, in the range from the <tier> tag to the </tier> tag.

6. Define the hosts for allocating the logical servers (service units). Define the configuration for each logical server, as and when required.

The Smart Composer functionality defines a set of logical servers for each service unit. For service units, define the host for allocating the service unit, the physical tier to which the host belongs, and the configuration of each logical server, in the range from the `<unit>` tag to the `</unit>` tag.

7. Define the host.

Define the names of the hosts belonging to the physical tier, and the host of the Administration Agent. The hosts do not depend on the Web system. When using the hosts defined in the Management Server, you can opt not to define the host. Define the hosts in the range from the `<host>` tag to the `</host>` tag.

8. Save the information defined in step 3 to step 7.

4.1.21 Notes on setting the Easy Setup definition file (when using J2EE applications)

This subsection describes the notes on setting up the Easy Setup definition file.

(1) Settings for enabling functions of Application Server

Default values are set in the configuration definition of the Easy Setup definition file. The default settings might include the disabled items depending on the functions of Application Server to be used. In such cases, add or change the parameters or values of the Easy Setup definition file to enable the functions. You cannot define some of the items in the settings items set for using the functions by using the Easy Setup definition file. Define the items that cannot be set using the Easy Setup definition file, by using a different user definition file.

For example, if you want to change the settings of naming services, transactions, connections, containers, logs, and security of the J2EE server, or if you want to change the start options for JavaVM of the J2EE server, change the settings by using the Easy Setup definition file. Use the text editor to set the parameter name to be changed and the changed values in the Easy Setup definition file. However, you cannot change the settings of the security policy of the J2EE server and the property of the Web application by using the Management Server. Use the text editor for editing the User definition files (`server.policy`, `hitachi_web.properties`) other than the Easy Setup definition file, and change the operation settings.

Important note

For editing the `server.policy`, or the `hitachi_web.properties`, the setup of the J2EE server to be edited needs to be complete. Also, to change the operation settings in UNIX, the root permissions (when Component Container Administrator is not set), or Component Container Administrator permissions (when Component Container Administrator is set) are required.

(2) Direct settings of `httpsd.conf` in the AllText parameter

This section describes the notes on direct setting of `httpsd.conf` in the AllText parameter, if you specify text for the SetBy parameter in the `<configuration>` tag of the logical web server (Web Server) while creating the Easy Setup definition file.

- The Management Server checks the operation of the Web Server by using the value of Listen directive described at the end of `httpsd.conf`. When you describe multiple Listen directives in the AllText parameter, describe the values used for checking the operations at the end.

- You might need to set the `HWSGracefulStopTimeout` directive. For details, see [4.8.4 Notes on setting the HWSGracefulStopTimeout directive and the Manager stop watch time.](#)
- Edit the snapshot log collection definition file, and not the `AllText` parameter, to change the items of the Web Server for which you want to collect the snapshot log. The default item for the log collection is: `Cosminexus-HTTP-Server-installation-directory/servers/HWS_actual-server-name-of-logical-Web Server/logs`.
- If you specify the following `Include` directive in the `AllText` parameter, a warning message is output when setting up the Web system. If you specify `text` by using the `SetBy` parameter, do not specify the following `Include` directive:

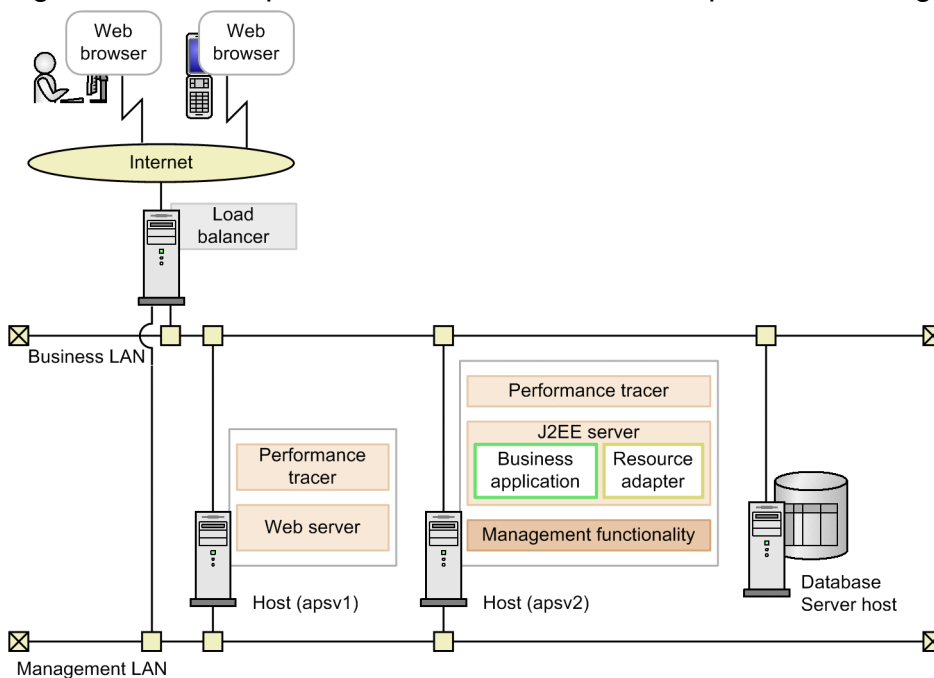
```
Include Cosminexus-HTTP-Server-installation-directory/servers/HWS_actual-server-name-of-logical-Web Server/conf/httpsd_manager.conf
```

(3) Notes on environment settings to connect the host to multiple network segments

This section describes the notes on the environment settings for connecting the host to multiple network segments.

As the following figure shows, if a host is connected to multiple network segments and possesses multiple IP addresses, then ensure that the IP addresses or the host names are set properly.

Figure 4–4: Example of a host connected to multiple network segments



If the system configuration is same as in the figure above, specify the following settings in the host definition of the Easy Setup definition file:

- Set one of the following in the `<host-name>` tag:
 - IP address of the network for server-to-server communication, or for communication between the server and the load balancer
 - Host name of the network for server-to-server communication, or for communication between the server and the load balancer
- Set one of the following in the `<agent-host>` tag:

- IP address of the network for the communication between the Management Server and other servers
- Host name of the network for the communication between the Management Server and other servers
- Specify the host name or the IP address by using the parameters in the following table and determine the network segment to be used. The following table describes the fixed parameters used in the respective logical servers

Table 4–10: Parameters to be fixed

Target logical servers	Parameters	Target hosts [#]
Web server	Listen	Operational host
J2EE server	mngagent.connector.host	Management host
	vbroker.se.iiop_tp.host	Operational host
	webserver.connector.http.bind_host	Operational host
	webserver.connector.nio_http.bind_host	Operational host
Naming Service	ns.bind.host	Operational host or management host (selected by user)
CTM	ctm.NsBindHost	Operational host

[#] The operational host is the host specified in the <host-name> tag of the Easy Setup Definition file. The management host is the host specified in the <agent-host> tag of the Easy Setup Definition file.

4.1.22 Example of creating an Easy Setup definition file

This subsection describes an example of creating an Easy Setup definition file to set up a system used for allocating the Web Servers to different hosts. The following table describes the settings used in the example.

Table 4–11: Settings used in the example (example of creating an Easy Setup definition file)

Classification	Item	Set up example
Entire system	Name of the Easy Setup definition file	MyWebSystemDef.xml
	Web system name	MyWebSystem
	Service unit name	unit1
Host for allocating the Web Server	Host name	apsv1
	IP Address (Management IP address) [#]	192.168.100.11
	Name of the logical Web Server	MyWebSystem_HTTP01
	Name of the logical performance tracer	MyWebSystem_PRF01
Host for allocating the J2EE server	Host name	apsv2
	IP Address (Management IP address) [#]	192.168.100.12
	Name of the logical J2EE server	MyWebSystem_J2EE01
	Name of the logical performance tracer	MyWebSystem_PRF02

[#] If the network consists of a single configuration, the IP address server becomes both the business IP address and management IP address.

Example of creating MyWebSystemDef.xml

```

<?xml version="1.0" encoding="UTF-8"?>
<model-definition xmlns="http://www.cosminexus.com/mngsvr/schema/ModelDefinition-2.5">
  <web-system>
    <name>MyWebSystem</name>
    <display-name>MyWebSystem</display-name>
    <description>This is a sample.</description>

    <!--Specify the configurations for the Tier.-->
    <tier>
      <tier-type>http-tier</tier-type>
    </tier>
    <tier>
      <tier-type>j2ee-tier</tier-type>
    </tier>

    <!--Specify the hosts for each Service Unit.-->
    <unit>
      <name>unit1</name>
      <allocated-host>
        <host-ref>apsv1</host-ref>
        <hosts-for>http-tier</hosts-for>
        <define-server>
          <logical-server-name>MyWebSystem_HTTP01</logical-server-name>
          <logical-server-type>web server</logical-server-type>
        </define-server>
        <define-server>
          <logical-server-name>MyWebSystem_PR01</logical-server-name>
          <logical-server-type>performance-tracer</logical-server-type>
        </define-server>
      </allocated-host>
      <allocated-host>
        <host-ref>apsv2</host-ref>
        <hosts-for>j2ee-tier</hosts-for>
        <define-server>
          <logical-server-name>MyWebSystem_J2EE01</logical-server-name>
          <logical-server-type>j2ee-server</logical-server-type>
        </define-server>
        <define-server>
          <logical-server-name>MyWebSystem_PR02</logical-server-name>
          <logical-server-type>performance-tracer</logical-server-type>
        </define-server>
      </allocated-host>
    </unit>
  </web-system>

  <!--Specify the settings for the host.-->
  <host>
    <host-name>apsv1</host-name>#
    <agent-host>apsv1</agent-host>#
  </host>
  <host>
    <host-name>apsv2</host-name>#
    <agent-host>apsv2</agent-host>#
  </host>
</model-definition>

```

To reduce the impact caused by change in IP address, we recommend that you specify the host name and not the IP address for the <host-name> tag and the <agent-host> tag. However, if the host name changes, specify the IP address for the <host-name> tag and the <agent-host> tag. If you use the Smart Composer functionality to change the host name of a set up system, you need to set up the system again.

4.1.23 Setting the system environment

When you want to set up the entire system in one batch, use one single command to generate the information model, to set up the Web Server and the J2EE Server based on the created information model, and to set up the environment for all the logical servers involved.

Start the command prompt on the host (apsv2(192.168.100.12)) for allocating the management functionality (Management Server), execute the `cmx_build_system` command, and set up the system in a batch. Specify the Easy Setup definition file for the `-f` option of the `cmx_build_system` command.

The following is an example of command execution. The name of the Easy Setup definition file used in the example is `MyWebSystemDef.xml`.

```
cmx_build_system -m 192.168.100.12 -u cosmi_admin -p cosmi_admin_passwd -f MyWebSystemDef.xml -file-path
```

Specify the directory path for storing `MyWebSystemDef.xml` and the file name (`MyWebSystemDef.xml`) in `MyWebSystemDef.xml-file-path`.

4.1.24 Starting the system (when using CUI)

Once the system is running, the logical servers in the service unit are started and then the requests are received or processed.



Reference note

We recommend that you use default settings for the starting order of logical servers. Note that you can set the starting order of logical servers by using the `mstartup.no` parameter in the <configuration> tag for each logical server in the Easy Setup definition file.

Start the command prompt on the host (apsv2(192.168.100.12)) for allocating the management functionality (Management Server), execute the `cmx_start_target` command, and set all service units in the Web system to running state. Specify ALL in the `-mode` option to set the service units to the operating state.

The following is an example of command execution. The name of Web system used in the example is `MyWebSystem`.

```
cmx_start_target -m 192.168.100.12 -u cosmi_admin -p cosmi_admin_passwd -s MyWebSystem -mode ALL -strict
```

Specify the Web system name set in the <name> tag of the <web-system> tag in the Easy Setup definition file (`MyWebSystemDef.xml`), in the `-s` option of the `cmx_start_target` command.

4.1.25 Resource adapter settings

Use the resource adapter for connecting to the database from the J2EE application on the J2EE server. Other than the database, you can use resources such as OpenTP1, SMTP server, and JavaBeans resources on the J2EE server. Depending on the type of resource, the resource adapter might or might not be used for connection. For details on the types of resources and how to connect, see *3.3.1 Method for connecting to resources* in the *uCosminexus Application Server Common Container Functionality Guide*.

Also, the method of acquiring the Connector Property file differs, depending on whether DB Connector or any other resource adapter is used for connecting to the resource. If you use DB Connector, you can use the template of the Connector Property file for editing before you start the system. If you use a resource adapter other than DB Connector, you can edit by acquiring the Connector Property file after starting the system. Also, use the server management commands to import and start the resource adapter. For details on how to operate the resource adapter by using the server management commands, see *4. Setting Resource Adapter* in the *uCosminexus Application Server Application Setup Guide*.

4.1.26 Setting DB Connector (when using CUI)

This subsection describes the setup procedure when using DB Connector as the resource adapter. Implement these settings on the host for allocating the J2EE server. The following table describes the settings used in the example.

Table 4–12: Settings used in the example (DB Connector settings)

Item	Setup example
Name of the resource adapter file	DBConnector_HiRDB_Type4_CP.rar [#]
Display name of the resource adapter	DB_Connector_for_HiRDB_Type4
Name of the Connector Property file	MyDBConnectorAttr.xml
Name of the J2EE server for importing resource adapter	MyWebSystem_J2EE01

[#] RAR file for connecting to HiRDB using the HiRDB Type4 JDBC Driver when there are no local transactions or when transactions are not managed.

For details on the types of available RAR files and their proper usage, see *3.6.4 Types of DB Connector (RAR file)* in the *uCosminexus Application Server Common Container Functionality Guide*.

(1) Acquiring and editing the Connector Property file

1. Acquire the Connector Property file.

The template of Connector Property file of DB Connector is available in Application Server. The storage location of the template file is as follows:

For Windows

Cosminexus-installation-directory\CC\admin\templates

For UNIX

/opt/Cosminexus/CC/admin/templates

If you are using DB Connector_HiRDB_Type4_CP.rar, acquire DB Connector_HiRDB_Type4_CP_cfg.xml.

For notes on the template of the Connector Property file, and the template file, see *4.1 HITACHI Connector Property file* in the *uCosminexus Application Server Application and Resource Definition Reference Guide*.

2. Edit the Connector Property file.

Save the acquired Connector Property file at any location. Save the Connector Property file as `MyDBConnectorAttr.xml`.

Define the necessary items such as settings for connecting to the database, in the saved Connector Property file.

(2) Setting the resource adapter

1. Start the command prompt on the host for allocating the J2EE server.

2. Execute the `cjimportres` command to import the resource adapter to the J2EE server.

The following is an example of command execution:

```
cjimportres MyWebSystem_J2EE01 -nameserver corbaname::192.168.100.12:900  
-type rar -f DBConnector_HiRDB_Type4_CP.rar-file-path
```

DBConnector_HiRDB_Type4_CP.rar-file-path is *Cosminexus-installation-directory\CC\DBConnector\DBConnector_HiRDB_Type4_CP.rar* for Windows, and */opt/Cosminexus/CC/DBConnector/DBConnector_HiRDB_Type4_CP.rar* for UNIX.

3. Execute the `cjdeployrar` command to deploy the resource adapter on the J2EE server.

The following is an example of command execution:

```
cjdeployrar MyWebSystem_J2EE01 -nameserver corbaname::192.168.100.12:900  
-resname DB_Connector_for_HiRDB_Type4
```

4. Execute the `cjsetrarprop` command for applying the Connector Property file edited in point (1) *Acquiring and editing the Connector Property file*, to the resource adapter.

The following is an example of command execution:

```
cjsetrarprop MyWebSystem_J2EE01 -nameserver corbaname::192.168.100.12:900  
-resname DB_Connector_for_HiRDB_Type4 -c MyDBConnectorAttr.xml-file-path
```

Specify the directory path storing `MyDBConnectorAttr.xml` as mentioned in (1) *Acquiring and editing the Connector Property file*, and the file name (`MyDBConnectorAttr.xml`) in *MyDBConnectorAttr.xml-file-path*.

(3) Connection test of the resource adapter (for DB connector)

1. Execute the `cjtestres` command to check the connections of the resource adapter.

The following is an example of command execution:

```
cjtestres MyWebSystem_J2EE01 -nameserver corbaname::192.168.100.12:900 -re  
sname DB_Connector_for_HiRDB_Type4
```

4.1.27 Setting resource adapters other than DB Connector (when using CUI)

This subsection describes the setup procedure when using a resource adapter other than DB Connector. Implement these settings on the host for allocating the J2EE server. The following table describes the settings used in the example.

Table 4–13: Settings used in the example (Settings for resource adapters other than DB Connector)

Item	Setup example
Name of the resource adapter file	MyResourceAdapter.rar
Display name of the resource adapter	MyResourceAdapter
Name of the Connector Property file	MyResourceAdapter.xml
Name of the J2EE server importing the resource adapter	MyWebSystem_J2EE01

For details on the types of available RAR files and their proper usage, see 3.3.2 *Types of resource adapters* in the *uCosminexus Application Server Common Container Functionality Guide*.

(1) Setting a resource adapter

1. Start the command prompt on the host for allocating the J2EE server.
2. Execute the `cjimportres` command for importing the resource adapter to the J2EE server.

The following is an example of command execution:

```
cjimportres MyWebSystem_J2EE01 -nameserver corbaname::192.168.100.12:900
-type rar -f MyResourceAdapter.rar-file-path
```

Specify the directory path storing the `MyResourceAdapter.rar` and the file name (`MyResourceAdapter.rar`) in *MyResourceAdapter.rar-file-path*.

3. Execute the `cjdeployrar` command for deploying the resource adapter on the J2EE server.

The following is an example of command execution:

```
cjdeployrar MyWebSystem_J2EE01 -nameserver corbaname::192.168.100.12:900
-resname MyResourceAdapter
```

(2) Acquiring and editing the Connector Property file

1. Start the command prompt on the host for allocating the J2EE server.
2. Execute the `cjgetrarprop` command and acquire the Connector Property file.

The following is an example of command execution:

```
cjgetrarprop MyWebSystem_J2EE01 -nameserver corbaname::192.168.100.12:900
-resname MyResourceAdapter -c acquisition-destination-file-path-of-Connector-Property-file
```

Specify the directory path storing the Connector Property file and the file name (`MyResourceAdapter.xml`) in *acquisition-destination-file-path-of-Connector-Property-file*.

3. Edit the Connector Property file.

Edit the necessary items, such as the settings for connecting to the database, in the acquired Connector Property file.

4. Execute the `cjsetrarprop` command for applying the edited Connector Property file to the resource adapter.

The following is an example of command execution:


```
cjsetrarprop MyWebSystem_J2EE01 -nameserver corbaname::192.168.100.12:900  
-resname MyResourceAdapter -c acquisition-destination-file-path-of-Connect  
or-Property-file
```

Specify the path of the directory storing the Connector Property file edited in step 3, and the file name (MyResourceAdapter.xml) in *acquisition-destination-file-path-of-Connector-Property-file*.

(3) Connection test of the resource adapter

1. Execute the `cjtestres` command to check the connections of the resource adapter.

The following is an example of command execution:

```
cjtestres MyWebSystem_J2EE01 -nameserver corbaname::192.168.100.12:900 -re  
sname MyResourceAdapter
```

4.1.28 Starting the resource adapter (when using CUI)

This subsection describes the steps for starting the set resource adapter. Start the resource adapter on Application Server where the resource adapter is set and the J2EE server is running.

Execute the `cjstartrar` command by using the command prompt of Application Server, and start the resource adapter. In the example, DB Connector (DB_Connector_for_HiRDB_Type4) is to be started as the resource adapter.

The following is an example of command execution:

```
cjstartrar MyWebSystem_J2EE01 -nameserver corbaname::192.168.100.12:900 -res  
name DB_Connector_for_HiRDB_Type4
```

4.1.29 Setting and starting the business application (when using CUI)

For starting the business, you must import and start the J2EE application. Use the server management commands to import and start the J2EE application. Set the business application on Application Server where you set the J2EE application. The J2EE server also runs on this Application Server. For details on how to operate the J2EE application by using the server management commands, see the following section and subsection in the *uCosminexus Application Server Application Setup Guide*.

- 8.1 Importing J2EE applications
- 10.2.1 Starting J2EE applications

The J2EE application described in this subsection must be created as an application that includes the `cosminexus.xml`. The following table describes the settings used in the example.

Table 4–14: Settings used in the example (Setting and starting the J2EE application)

Item	Settings
File name of the J2EE application	MyApp.ear
Display name of the J2EE application	MyApp

Item	Settings
Name of the J2EE server importing the J2EE application	MyWebSystem_J2EE01

1. Start the command prompt on the host for allocating the J2EE server.
2. Execute the `cjimportapp` command for importing the J2EE application to the J2EE server.

The following is an example of command execution:

```
cjimportapp MyWebSystem_J2EE01 -nameserver corbaname::192.168.100.12:900
-f MyApp.ear
```

3. Execute the `cjstartapp` command to start the J2EE application.

The following is an example of command execution:

```
cjstartapp MyWebSystem_J2EE01 -nameserver corbaname::192.168.100.12:900 -n
ame MyApp
```

4.1.30 Check points for operating the resource adapter or the business application (when using CUI)

(1) Information set when executing the server management commands

Use the server management commands to set up and start the resource adapter or the business application. Specify the actual server name when specifying the server name in the arguments, in the server management command. The actual server name is same as the logical server name, if you do not specify the actual server name when creating the Easy Setup definition file. If you do not specify the logical server name, the logical server name is defined in the `cmx_Web-system-name_service-unit-name_type_serial-number` format. The following table describes the correspondence between the type and classification of the logical server:

Table 4–15: Correspondence between the type and classification of logical server

Type of logical server	<Classification>
Logical Web Server	HTTP
Logical J2EE server	J2EE
Logical performance tracer	PRF
Logical CTM domain manager	CTMDM
Logical CTM	CTM
Logical Smart Agent	SA
Logical user server	USER

Usually 01 is set for the *serial-number*. However, in case of multiple allocations of logical servers such as in the systems using CTM, unique numbers are assigned. Use the `cmx_list_model` command to check the *serial-number*.

(2) Operations using the server management commands

Execute the operations using the server management commands for each service unit.

The service unit is one example of the system described in this manual. When setting multiple service units, change the J2EE server name and the specification value for `-nameserver` used in the example of command execution for each service unit and execute the server management command.

(3) Properties of J2EE applications

Use `cosminexus.xml` for the property setting of the J2EE application described in this manual. Therefore, include the `cosminexus.xml` created beforehand, along with EJB-JAR, and WAR in the J2EE application and then use the file.

In the following cases, you can set the properties of J2EE applications in the property file (Application Integrated Property file).

- For editing the properties of an imported J2EE application
- For applications not including `cosminexus.xml`

For details on how to set, see *9.2 Property settings using the HITACHI Application Integrated Property File* in the *uCosminexus Application Server Application Setup Guide*.

4.1.31 Changing the system environment definition (parameters in the Easy Setup definition file) (when using CUI)

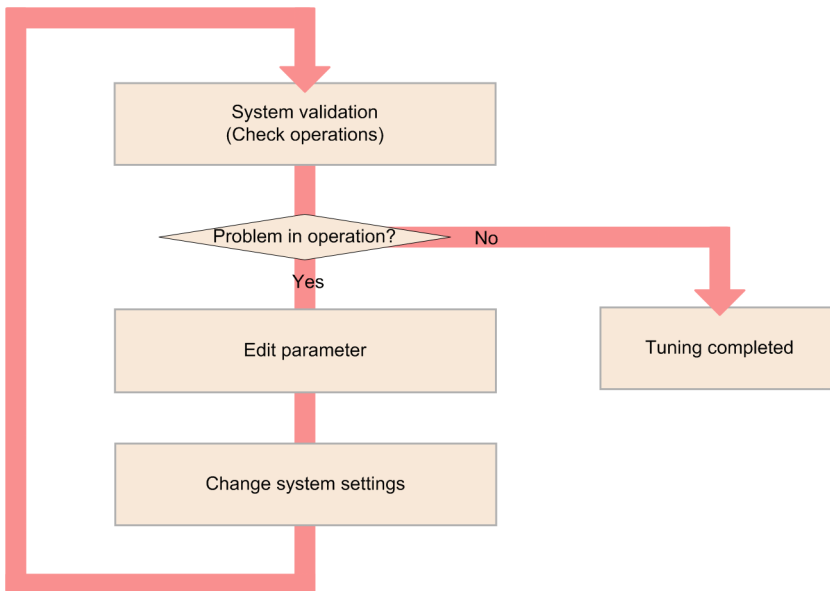
This subsection describes the tuning procedure when editing only the parameters of the Easy Setup definition file. The following table describes the settings used in the example.

Table 4–16: Settings used in the example (Changing the system environment definition)

Item	Set up example
Web system name	MyWebSystem
Name of the Easy Setup definition file	MyWebSystemDef.xml
Host for allocating the management functionality (Management Server)	apsv2 (192.168.100.12)

The following figure shows the flow of tuning for editing only the parameters in the Easy Setup definition file.

Figure 4–5: Flow of tuning for editing only the parameters in the Easy Setup definition file



(1) Editing parameters

Edit the parameter values (logical server parameters specified with the `<param>` tag) in the Easy Setup definition file (`MyWebSystemDef.xml`) to execute the tuning. For details on the items that can be tuned and performance tuning, see the following locations in the *uCosminexus Application Server System Design Guide*.

- 8.1.3 Items that can be tuned for each type of application
- 8.2 Methods of tuning

(2) Changing the system settings

Execute the `cmx_build_system` command on the host for allocating the management functionality (Management Server), and change the system information model on the Management Server. Apply the changed information model to the actual system.

1. Start the command prompt on the host for allocating the management functionality (Management Server).
2. If the system is operating, execute the `cmx_stop_target` command to stop the system.

Set all service units in the system to Stopped status. Specify ALL in the `-mode` option to stop all service units.

The following is an example of command execution:

```
cmx_stop_target -m 192.168.100.12 -u cosmi_admin -p cosmi_admin_passwd -s MyWebSystem -mode ALL
```

3. Execute the `cmx_build_system` command to change the information model of the system and to extract that information model to the actual system.

Change the information model of system on the Management Server, and set up the system using the changed information model. Specify the Easy Setup definition file wherein the performance is tuned, in the `-f` option. Specify the `-change` option to apply the contents of the file specified in the `-f` option, to the system.

The following is an example of command execution:

```
cmx_build_system -f MyWebSystemDef.xml -file-path -change -m 192.168.100.12 -u cosmi_admin -p cosmi_admin_passwd -s MyWebSystem
```

Specify the path of storage destination directory of the Easy Setup definition file edited in (1) *Editing parameters*, and the file name (MyWebSystemDef.xml) in *MyWebSystemDef.xml-file-path*.

4. Execute the `cmx_start_target` command to start the system with changed configuration.
Set all service units in the system to operating status. Specify ALL in the `-mode` option to set the service units to operating status.
The following is an example of command execution:

```
cmx_start_target -m 192.168.100.12 -u cosmi_admin -p cosmi_admin_passwd
-s MyWebSystem -mode ALL -strict
```

4.1.32 Change the business application settings (when using CUI)

This subsection describes the tuning procedure when changing the J2EE application settings. The following table describes the settings used in the example:

Table 4–17: Settings used in the example (changing the business application settings)

Item	Setup example
Web system name	MyWebSystem
File name of the J2EE application	MyApp.ear
Display name of the J2EE application	MyApp

Implement on Application Server on which you change the J2EE application settings and on which the J2EE Server operates.

1. Edit the property of J2EE application in the `cosminexus.xml`, and store in the META-INF directory under *Any-directory*.
2. Execute the `jar` command by using the command prompt, and overwrite the `cosminexus.xml` edited in step 1 by the J2EE application of archive format.

The following is an example of command execution:

```
jar uvf MyApp.ear-file-path -C directory-where-META-INF-directory-is-placed cosminexus.xml-file-path-under-META-INF-directory
```

Specify the directory path storing the J2EE application (MyApp.ear), and the file name (MyApp.ear) in *MyApp.ear-file-path*. *Directory where META-INF-directory-is-placed* is *Any-directory*, when the structure of the store destination of the `cosminexus.xml` is as follows:

```
Any-directory
|_META-INF
|_cosminexus.xml
```

Specify the path of META-INF directory storing the `cosminexus.xml` in step 1 and the file name (`cosminexus.xml`), in *cosminexus.xml-file-path-under-META-INF-directory*.

3. If the system is stopped, start the command prompt on the host (192.168.100.12) for allocating the management functionality (Management Server), and execute the `cmx_start_target` command, to start the system.
Set all service units in the system to Ready status. Specify READY in the `-mode` option to set the service units to Ready status.

The following is an example of command execution:

```
cmx_start_target -m 192.168.100.12 -u cosmi_admin -p cosmi_admin_passwd  
-s MyWebSystem -mode READY
```

4. Start the command prompt on the host for allocating the J2EE server.
5. Execute the `cjreplaceapp` command and deploy the recreated J2EE application again.

The following is an example of command execution:

```
cjreplaceapp MyWebSystem_J2EE01 -nameserver corbaname::192.168.100.12:900  
-name MyApp -f file-path-of-recreated-J2EE-application
```

Specify the path of the directory storing the recreated `MyApp.ear` and the file name (`MyApp.ear`), in *file-path-of-recreated-J2EE-application*.

6. Execute the `cjstartapp` command, and start the J2EE application.

The following is an example of command execution:

```
cjstartapp MyWebSystem_J2EE01 -nameserver corbaname::192.168.100.12:900 -n  
ame MyApp
```



Reference note

You can change the properties of an imported J2EE application by using the property file (Application Integrated Property file) as well. For details on how to change, see *9.2 Property settings using the HITACHI Application Integrated Property File* in the *uCosminexus Application Server Application Setup Guide*.

7. Start the command prompt on the host (192.168.100.12) for allocating the management functionality (Management Server) and execute the `cmx_start_target` command to start the system.
Set all service units in the system to running status. Specify `ALL` in the `-mode` option to set the service units to running status.
The following is an example of command execution:

```
cmx_start_target -m 192.168.100.12 -u cosmi_admin -p cosmi_admin_passwd  
-s MyWebSystem -mode ALL -strict
```

4.1.33 Changing the resource adapter settings (database connection environment) (when using CUI)

This subsection describes the tuning procedure when changing the resource adapter settings. The following table describes the settings used in the example:

Table 4–18: Settings used in the example (changing the resource adapter settings)

Item	Setup example
Web system name	MyWebSystem
Display name of the resource adapter	DB_Connector_for_HiRDB_Type4
Name of the Connector Property file	MyDBConnectorAttr.xml

Item	Setup example
Name of the J2EE server importing the resource adapter	MyWebSystem_J2EE01

Implement on Application Server on which you change the resource adapter settings and on which the J2EE application server is running.

1. If the system is stopped, start the command prompt on the host (192.168.100.12) for allocating the management functionality (Management Server), and execute the `cmx_start_target` command to start the system.

Set all service units in the system to Ready status. Specify `READY` in the `-mode` option to set the service units to Ready status.

The following is an example of command execution:

```
cmx_start_target -m 192.168.100.12 -u cosmi_admin -p cosmi_admin_passwd
-s MyWebSystem -mode READY
```

2. Start the command prompt on the host for allocating the J2EE server.
3. Execute the `cjgetrarprop` command to acquire the Connector Property file.

The following is an example of command execution:

```
cjgetrarprop MyWebSystem_J2EE01 -nameserver corbaname::192.168.100.12:900
-resname DB_Connector_for_HiRDB_Type4 -c acquisition-destination-file-path
-of-Connector-Property-file
```

Specify the directory path storing the Connector Property file and the file name (`MyDBConnectorAttr.xml`) in *acquisition-destination-file-path-of-Connector-Property-file*.

4. Edit the Connector Property file.

Edit the necessary items such as settings for connecting to the database in the acquired Connector Property file.

5. Execute the `cjsetrarprop` command and apply the edited Connector Property file to the resource adapter.

The following is an example of command execution:

```
cjsetrarprop MyWebSystem_J2EE01 -nameserver corbaname::192.168.100.12:900
-resname DB_Connector_for_HiRDB_Type4 -c acquisition-destination-file-path
-of-Connector-Property-file
```

Specify the directory path storing the Connector Property file edited in step 4, and the file name (`MyDBConnectorAttr.xml`) in *acquisition-destination-file-path-of-Connector-Property-file*.

6. Execute the `cjstartrar` command and start the resource adapter.

The following is an example of command execution:

```
cjstartrar MyWebSystem_J2EE01 -nameserver corbaname::192.168.100.12:900 -r
esname DB_Connector_for_HiRDB_Type4
```

7. Start the command prompt on the host (192.168.100.12) for allocating the management functionality (Management Server), and execute the `cmx_start_target` command to start the system.

Set all service units in the system to Running status. Specify `ALL` in the `-mode` option to set the service units to Running status.

The following is an example of command execution:

```
cmx_start_target -m 192.168.100.12 -u cosmi_admin -p cosmi_admin_passwd  
-s MyWebSystem -mode ALL -strict
```

4.1.34 Stopping system (when using CUI)

If any task is running, stop the logical servers in the service unit after the processing of all requests is completed.

Start the command prompt on the host (apsv2 (192.168.100.12)) for allocating the management functionality (Management Server), and execute the `cmx_stop_target` command to stop all service units with Stopped status on the Web system. Specify `ALL` in the `-mode` option to stop all service units.

1. Start the command prompt on the host for allocating the management functionality (Management Server).
2. After processing of the running requests is completed, execute the `cmx_stop_target` command to stop all service units on the system in a batch.
Set all service units on the system to Stopped status. Specify `ALL` in the `-mode` option to set all service units to stopped status.

The following is an example of command execution:

```
cmx_stop_target-m 192.168.100.12 -u cosmi_admin -p cosmi_admin_passwd -s M  
yWebSystem -mode ALL
```

All the logical servers in the service unit are stopped.

4.1.35 Stopping the Management Server

Start the command prompt on the host (host for allocating the management functionality) with the setup of Management Server, and execute the `mngsvrctl` command to stop the Management Server. In Windows, you can stop the management server from the service as well.

The following is an example of command execution:

```
mngsvrctl stop -sync
```

4.1.36 Stopping the Administration Agent

Start the command prompt on each Application Server, and execute the `adminagentctl` command to stop the Administration Agent. In Windows, you can stop the Administration Agent from the service as well.

The following is an example of command execution:

```
adminagentctl stop -sync
```


4.1.37 Removing system environment

To remove the systems that are no longer required:

1. Stop the J2EE application and the resource adapter.

Use the server management command to stop the J2EE application and the resource adapter.

2. Start the command prompt.

Implement the steps from 2 to 6 for both, host to which the Web servers are allocated, and host to which the J2EE servers are allocated. Note that the implementation order for the hosts is random.

3. Stop the following processes, if they are running:

- Processes of CTM and OTM (TPBroker Object Transaction Monitor) started without using Management Server

4. In UNIX, execute the `mngautorun` command if auto restart is set in the Administration Agent or Management Server, cancel the auto restart settings, and then restart the OS.

The following is an example of command execution:

```
mngautorun -d
```

5. Execute the `mngunsetup` command, check the displayed message, and enter "y".

A message for confirming the execution of unset up appears.

On entering "y" the next processing is executed:

- Stopping the Administration Agent, or stopping and removing the Management Server
- Auto restart, and cancelling the auto start of the Administration Agent and Management Server
- Stopping the logical server

Stop logical performance tracer, logical Smart Agent, logical Naming Service, logical CTM domain manager, logical CTM (including the concurrently started naming services), logical J2EE server, logical Web Server, and logical user server[#]. Management Server forcefully stops the logical server that does not stop even after the stop monitoring time elapses. Note that the value specified when you start the logical server is enabled as the stop monitoring time for each logical server (`mstartup.watchtime` parameter in the Easy Setup Definition file).

[#] Logical user server stops the processes that are to be monitored. If the stop command is specified, the stop command is used to stop the processes, and if the command is not specified, and if the start type is a direct start, stop the processes of the start command, and for an indirect start, stop the processes acquired by using the process ID acquisition commands defined in the logical user server.

- Stopping the logical server forcefully
Forcefully stops the logical performance tracer, logical Smart Agent, logical Naming Service, logical CTM domain manager, logical CTM (including the concurrently started naming services), logical J2EE server, logical Web Server, and logical user server[#]. Management Server forcefully stops the logical server processes that do not stop even after the forced stop monitoring time elapses. Note that the value specified when you start the logical server is enabled as the forced stop monitoring time for each logical server (`mstartup.force.watchtime` parameter in the Easy Setup Definition file).
[#] The logical user server forcefully stops the processes to be monitored. If the forced stop command is specified, the forced stop command is used to stop the processes. If the command is not specified, and if the start type is a direct start, the processes of the start command will be stopped, and if the start type is an indirect start, the processes acquired with the process ID acquiring command, defined in the logical user server, will be stopped.
- Removing the environment (actual server) of the logical J2EE server, and the logical Web Server, and deleting the information of the logical CTM domain manager

- Initialization of the information managed by the Management Server (configuration or settings information of the logical server and management user account information)
- Canceling the settings of Component Container administrator (for UNIX)
The settings are cancelled and the user (owner)/ group of super users are set. Following are the values for each OS.
For AIX: root/system
For Linux: root/root

6. On UNIX, execute the `mngenvsetup` command, and cancel the settings of Management Server management group, as and when required.

The following is an example of command execution:

```
mngenvsetup -mng -d
```

Important note

Even if unset up is successful, the processes running on the Cosminexus might be retained, depending on the system environment. In such cases the uninstallation of the Cosminexus might fail. After unsetup, if Cosminexus cannot be uninstalled, see [Appendix I.6 List of error codes for Application Server installation and un-installation \(In Windows\)](#), or [Appendix I.7 Installation and un-installation log of Component Container and Redirector functionality \(In UNIX\)](#) and take the necessary measures for the error, and then uninstall Cosminexus again.

Reference note

If you execute the `mngunsetup` command, the Management Server and the Administration Agent will also be unset up. If you want to remove only the set up system environment (logical server or host), stop the J2EE applications or resources, and then execute the following steps. In this example, the names of the Web system and the host for allocating the management functionality (Management Server) are `MyWebSystem` and `apsv2 (192.168.100.12)` respectively.

1. Start the command prompt on the host for allocating the management functionality (Management Server).
2. Execute the `cmx_stop_target` command to stop the system.

Stop the system to be removed.

The following is an example of command execution:

```
cmx_stop_target -m 192.168.100.12 -u cosmi_admin -p cosmi_admin_passwd -s MyWebSystem -mode ALL
```

3. Use the `cmx_delete_system` command to remove the system from the Management Server.
Delete the information model of the system managed by the Management Server.

The following is an example of command execution:

```
cmx_delete_system -m 192.168.100.12 -u cosmi_admin -p cosmi_admin_passwd -s MyWebSystem
```

4. Unset up the environment of Web Server or J2EE server.

You cannot unset up the server environment by using the `cmx_delete_system` command. Use the following methods to unset up the environment of Web Servers and J2EE servers on the host:

- Unset up of the Web Server environment

Use the `hwsserveredit` command of Cosminexus HTTP Server to unset up the Web Server. Specify the logical server name[#] of Web Server attached with "HWS" in the `hwsserveredit` command of Cosminexus HTTP Server.

- Unset up the J2EE server environment

Use the `cjsetup` command to unset up the J2EE server. Specify the logical server name[#] of the J2EE server in the `cjsetup` command.

#

You can check the logical server name by using the `cmx_list_model` command. Check the logical server name before executing the `cmx_delete_system` command.

However, if you have specified the actual server name of Web Server and J2EE server when setting up the system, specify the actual server name during unset up process as well. Specify the actual server name in the `realservername` parameter of the physical tier in the Easy Setup definition file.

For details on the server name specified during unset up, see *cjsetup (set up or unsetup J2EE server)* in the *uCosminexus Application Server Command Reference Guide*.

Example of the command execution to unset up the J2EE server without specification of the actual server name

```
cjsetup -d MyWebSystem_J2EE01
```

4.2 System operations to expand the system scale by increasing the number of hosts (scale out)

Scale out refers to the procedure of increasing the number of hosts with the objective of improving the processing performance of the entire system. When you scale out the system, you can expand the system and change the configuration without stopping all the operations.

4.2.1 Expanding the system scale by increasing hosts (scale out)

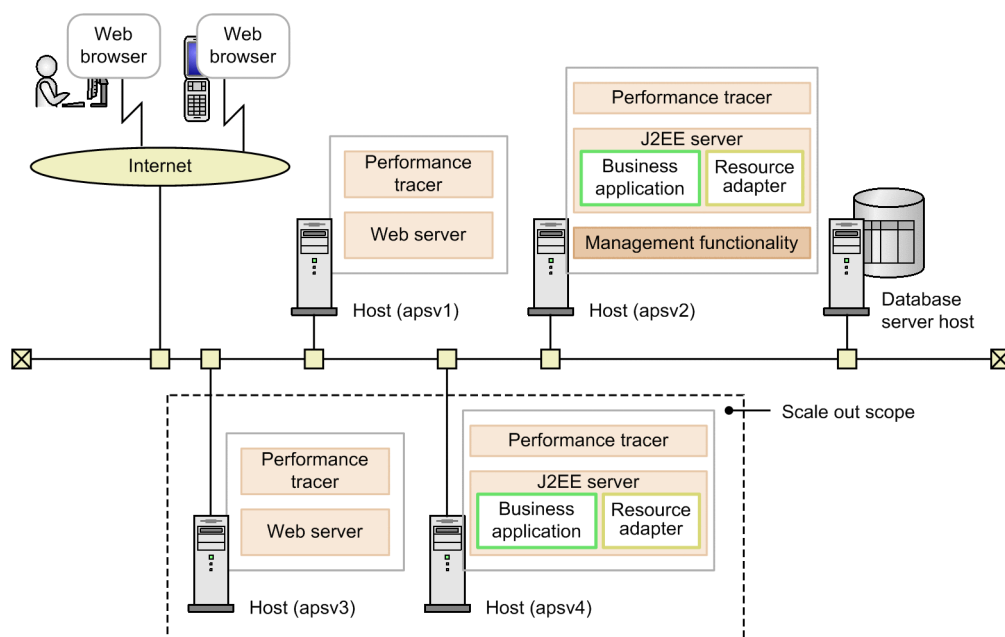
In the scale out operation, the processing performance of the entire system can be improved by increasing the number of hosts, thereby expanding the system scale.

In the Smart Composer functionality, you can increase the hosts and logical servers in batch for each service unit. In the management portal, you can also increase the hosts and the logical servers separately by using respective windows of the Management Portal window.

- **Example of system operations**

The following figure shows an example of the system operations of expanding the scale by increasing the number of hosts. The system used in this example is set up in [4.1 System setup for improving machine performance by allocating Web Server to a different host](#).

Figure 4–6: Example of the system operations of the expanding the scale by increasing the number of hosts



The following table describes the settings used in the example:

Table 4–19: Settings used in the example (System scale out)

Classification	Item	Example of settings
Entire system	Name of the configuration change definition file	MyWebSystemAdd.xml
	Name of the Web system	MyWebSystem
	Name of the service unit to be added	unit2

Classification	Item	Example of settings
Host for allocating the Web server to be added	Host name	apsv3
	IP address (management IP address) [#]	192.168.100.13
	Name of the logical Web server	MyWebSystem_HTTP02
	Name of the logical performance tracer	MyWebSystem_PRFO3
Host for allocating the J2EE server to be added	Host name	apsv4
	IP address (management IP address) [#]	192.168.100.14
	Name of logical J2EE server	MyWebSystem_J2EE02
	Name of logical performance tracer	MyWebSystem_PRFO4
	Name of resource adapter file	DBConnector_HiRDB_Type4_CP.rar
	Display name of resource adapter	DB_Connector_for_HiRDB_Type4
	Name of the Connector property file	MyDBConnectorAttr.xml
	File name of J2EE application	MyApp.ear
	Display name of J2EE application	MyApp

[#] If the network consists of one configuration, the IP address serves as both the business IP address and the management IP address.

- **Tasks to be executed and necessity of the tasks**

The following table describes the tasks to be executed during system scale out and the necessity of these tasks. Use the Smart composer functionality to implement the system scale out.

Table 4–20: Tasks to be executed during system scale out and the necessity of the tasks (when using the Smart Composer functionality)

Tasks to be implemented when the system is to be scaled out	Necessity of the task	Conditions for executing the task	References
Setting up the system	Y	Mandatory	4.1
Preparing the host to be added	Y	Mandatory	4.2.2(1)
Creating the configuration change definition file	Y	Mandatory	4.2.2(2)
Changing the system information model	Y	Mandatory	4.2.2(3)
Adding the service unit	Y	Mandatory	4.2.2(4)

Legend:

Y: Mandatory task

4.2.2 Scaling out the system environment (when using CUI)

This subsection describes the steps to scale out the system by adding service unit (`unit2`) using the Smart Composer functionality.

(1) Preparing the host to be added

Before scaling out the system, set up the OS or the applications on the Application Server to be added. The following table describes the tasks to be executed in the hosts to be added, and the necessity of the tasks:

Table 4–21: Tasks to be executed in the hosts to be added, and necessity of the tasks

Tasks to be implemented in the hosts to be added	Necessity of the tasks	Conditions for executing the tasks	References
Setting up Component Container Administrator (For UNIX)	A	When assigning operation permissions to the general users in UNIX OS	4.1.3
Installing Application Server	Y	Mandatory (when the OS is Windows)	2.2.2
		Mandatory (when the OS is AIX)	2.2.3
		Mandatory (when the OS is Linux)	2.2.4
Installing products used for connecting to the database	A	For connecting to the database	2.2.5
Symbolic link supported in the Application Server (For UNIX)	A	When the OS is UNIX	4.1.5
Setting up the database connection environment	A	When connecting to the database (HiRDB)	4.1.6
		When connecting to the database (Oracle)	4.1.7
		For connecting to the database (SQL Server)	4.1.8
Setting up the environment variables for the system	Y	Mandatory	4.1.11
Setting up the environment variables for the logical server	A	When changing the environment variables during installation	4.1.12
Starting the Administration Agent	Y	Mandatory	4.1.17

Legend:

Y: Mandatory task

A: Tasks to be executed with the execution conditions are fulfilled.

If you change the Web system configuration, you must also change the resources required to operate the Web system. For estimating the resources necessary for the operations of the Web system, see *5. Estimating Resources to be Used (J2EE Application Execution Platform)* in the *uCosminexus Application Server System Design Guide*.

(2) Creating the configuration change definition file

Copy the configuration change definition file for adding a service unit or host to any location, and then edit the file contents.

1. Copy the template file (`cmxaddcombinedmodel.xml`) for Configuration Change Definition file to any location.

The template for configuration change definition file for adding the service unit or host is available at the following location:

For Windows

`Cosminexus-installation-directory\manager\config\templates\cmxaddcombinedmodel.xml`

For UNIX

`/opt/Cosminexus/manager/config/templates/cmxaddcombinedmodel.xml`

2. Rename the template mentioned in step 1 to any name.

In the following example the file is renamed as `MyWebSystemAdd.xml`.

3. Use the Text editor to define the service units and hosts to be added to the configuration change definition file.

Example of creating `MyWebSystemAdd.xml`

```

<?xml version="1.0" encoding="UTF-8"?>
<unit-addition xmlns="http://www.cosminexus.com/mngsvr/schema/UnitAddition-2.5">
  <web-system>
    <name>MyWebSystem</name>

    <!--Specify the settings for the Service Unit to add.-->
    <unit>
      <name>unit2</name>
      <allocated-host>
        <host-ref>apsv3</host-ref>
        <hosts-for>http-tier</hosts-for>
      </allocated-host>
      <allocated-host>
        <host-ref>apsv4</host-ref>
        <hosts-for>j2ee-tier</hosts-for>
      </allocated-host>
    </unit>
  </web-system>

  <!--Specify the settings for the host to add.-->
  <host>
    <host-name>apsv3</host-name>
    <agent-host>apsv3</agent-host>
  </host>
  <host>
    <host-name>apsv4</host-name>
    <agent-host>apsv4</agent-host>
  </host>
</unit-addition>

```

Note: The part that is **bold** and highlighted is the part to be edited.

(3) Changing the system information model

Apply the contents of the created configuration change definition file to the system information model registered in the Management Server.

1. Start the command prompt on the host for allocating the Management functionality (Management Server).
2. Execute the `cmx_change_model` command to change the system information model registered in the Management Server.

Command execution example is as follows:

```

cmx_change_model -m 192.168.100.12 -u cosmi_admin -p cosmi_admin_passwd
-f MyWebSystemAdd.xml -file-path

```

Specify the path of the directory storing `MyWebSystemAdd.xml`, and the file name (`MyWebSystemAdd.xml`) in `MyWebSystemAdd.xml-file-path`.

(4) Adding the service unit

Apply the information model of the changed system to the actual system to add a service unit.

1. Start the command prompt on the host for allocating the Management functionality (Management Server).

2. Execute the `cmx_build_system` command to deploy the information model of the changed system to the actual system.

Command execution example is as follows:

```
cmx_build_system -m 192.168.100.12 -u cosmi_admin -p cosmi_admin_passwd  
-s MyWebSystem
```

3. Execute the `cmx_start_target` command to start the added service unit.

Set the added service unit `unit2` to Operating status. To set the service unit to Operating status, specify `ALL` in the `-mode` option.

```
cmx_start_target -m 192.168.100.12 -u cosmi_admin -p cosmi_admin_passwd  
-s MyWebSystem -unit unit2 -mode ALL -strict
```

4. Start the command prompt on the host for allocating the J2EE server existing in the added service unit.

5. Set up and start the resource adapter.

Command execution example is as follows:

```
cjimportres MyWebSystem_J2EE02 -nameserver corbaname::192.168.100.14:900  
-type rar -f DBConnector_HiRDB_Type4_CP.rar -file-path  
  
cjdeployrar MyWebSystem_J2EE02 -nameserver corbaname::192.168.100.14:900  
-resname DB_Connector_for_HiRDB_Type4  
  
cjsetrarprop MyWebSystem_J2EE02 -nameserver corbaname::192.168.100.14:900  
-resname DB_Connector_for_HiRDB_Type4 -c MyDBConnectorAttr.xml# -file-path  
  
cjtestres MyWebSystem_J2EE02 -nameserver corbaname::192.168.100.14:900 -re  
sname DB_Connector_for_HiRDB_Type4  
  
cjstartrar MyWebSystem_J2EE02 -nameserver corbaname::192.168.100.14:900 -r  
esname DB_Connector_for_HiRDB_Type4
```

Use the Connector property file applied to the resource adapter of the service unit to be scaled out. If the Connector property file is not saved, use the server management command (`cjgetrarprop`) from the resource adaptor deployed on the service unit to be scaled out; to acquire the Connector property file. Edit the acquired Connector property file as and when required.

6. Set up and start the J2EE application.

Command execution example is as follows:

```
cjimportapp MyWebSystem_J2EE02 -nameserver corbaname::192.168.100.14:900  
-f MyApp.ear  
  
cjstartapp MyWebSystem_J2EE02 -nameserver corbaname::192.168.100.14:900 -n  
ame MyApp
```


Classification	Item	Example of settings
Host for allocating the J2EE server to be deleted	Name of the logical Web server	MyWebSystem_HTTP02
	Name of the logical performance tracer	MyWebSystem_PRF03
	Host name	apsv4
	IP address (management IP address)#	192.168.100.14
	Name of the logical J2EE server	MyWebSystem_J2EE02
	Name of the logical performance tracer	MyWebSystem_PRF04

If the network consists of one configuration, the IP address serves as both the business IP address and the management IP address.

• Tasks to be executed and necessity of the tasks

The following table describes the tasks to be executed for the system scale in operation and the necessity of these tasks. Use the Smart Composer functionality to implement the system scale in.

Table 4–23: Tasks to be executed for the system scale in and the necessity of these tasks (when using the Smart Composer functionality)

Tasks to be implemented for the system scale in	Necessity of the tasks	Conditions for executing the tasks	References
Stopping the service unit	Y	Mandatory	4.3.2(1)
Deleting the service unit and unsetup of logical server environment	Y	Mandatory	4.3.2(2)

Legend:

Y: Mandatory task.

4.3.2 Scaling in the system environment (when using CUI)

This subsection describes the steps to scale in the system by deleting the service unit (`unit2`) using the Smart Composer functionality.

Before scaling in the system, also change the resources required to operate the Web system as and when required. For estimating the resources required to operate the Web system, see *5. Estimating Resources to be Used (J2EE Application Execution Platform)* in the *uCosminexus Application Server System Design Guide*.

(1) Stopping the service unit

1. Start the command prompt on the host for allocating the Management functionality (Management Server).
2. Execute the `cmx_stop_target` command to stop the service unit `unit2` to be deleted.
Set the service unit to be deleted to Stopped status. To set the service unit to Stopped status; specify ALL in the `-mode` option.

Command execution example is as follows:

```
cmx_stop_target -m 192.168.100.12 -u cosmi_admin -p cosmi_admin_passwd -s
MyWebSystem -unit unit2 -mode ALL
```

(2) Deleting the service unit and removing the logical server environment setup

1. Execute the `cmx_delete_system` command to delete the service unit.

Stop the service unit to be deleted and delete the service unit from the system information model registered in the Management Server.

```
cmx_delete_system -m 192.168.100.12 -u cosmi_admin -p cosmi_admin_passwd  
-s MyWebSystem -unit unit2
```

2. Remove the setup of the Web server or the J2EE server environment

`cmx_delete_system` command does not remove the server environment setup. Remove the setup of the Web server, and the J2EE server environment using the following methods.

- Removing the setup of Web server environment

Use the `hwsserveredit` command of Cosminexus HTTP Server to remove the setup of the Web server.

Specify the logical server name[#] of the Web server to which HWS_ is added, in the `hwsserveredit` command of the Cosminexus HTTP Server.

- Removing the setup of the J2EE server environment

Use the `cjsetup` command to remove the setup of the J2EE server. Specify the logical server name[#] of the J2EE server in the `cjsetup` command.

#

If you specify the actual server name of the Web server or the J2EE server while setting up the system, then specify the actual server name while removing the set up of the system as well.

4.4 System operations by which the configuration and definition information is output and the system environment is migrated to a different host

System environment migration refers to the migration of the settings of a set up system to a different environment such as the case of migrating a system set up in a test environment to production environment.

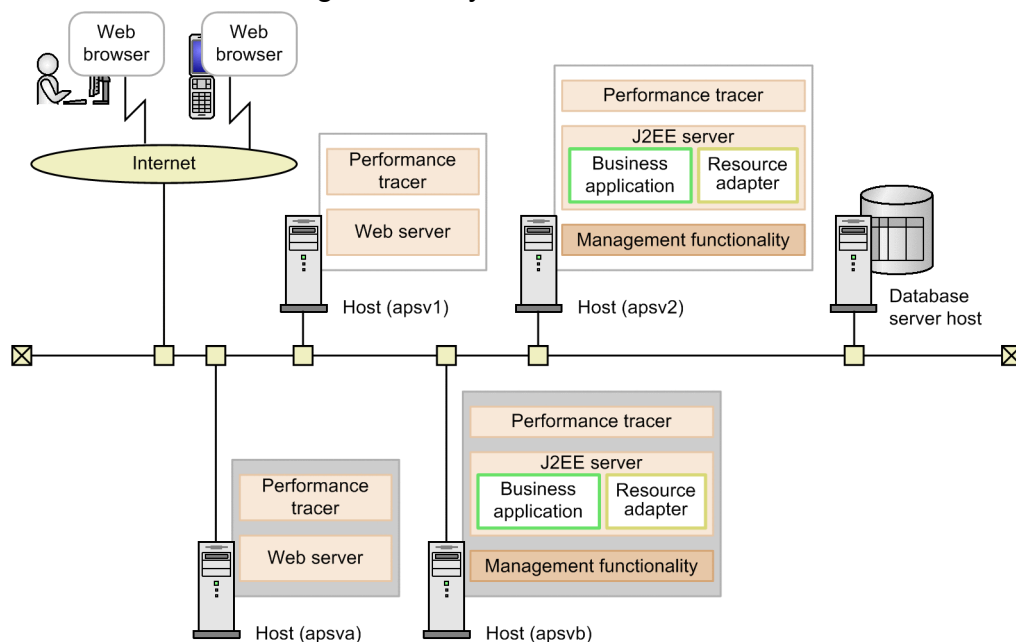
4.4.1 Migrating the system environment to a different host

Migration of the system environment enables you to curtail the time required for setting up and operating the system in other environments.

- **Example of system operations**

The following figure shows an example of the system operations to output the configuration and definition information, and to migrate the system to a different host. The system used in this example as the source environment of migration, is set up in [4.1 System setup for improving machine performance by allocating Web Server to a different host](#).

Figure 4–8: Example of the system operations to output configuration and definition information, and to migrate the system environment to other host



Legend:

: Indicates migration destination environment.

The following table describes the settings used in the example.

Table 4–24: Settings used in the example (migrating system environment)

Classification		Item	Example of settings
Entire system		Name of the Easy Setup definition file to output the migration information	MyWebSystemexport.xml
Source environment	Host for allocating the Web server	Host name	apsv1

Classification		Item	Example of settings
	Host for allocating the J2EE server ^{#2}	IP address (management IP address) ^{#1}	192.168.100.11
		Host name	apsv2
		IP address (management IP address) ^{#1}	192.168.100.12
Target environment	Host for allocating the Web server	Host name	apsva
		IP address (management IP address) ^{#1}	192.168.100.21
	Host for allocating the J2EE server ^{#2}	Host name	apsvb
		IP address (management IP address) ^{#1}	192.168.100.22

#1

If the network has single configuration, the IP address serves as both the business IP address and the management IP address.

#2

Allocate the Management functionality (Management Server) to the host for allocating the J2EE server.

• Tasks to be executed and necessity of the tasks

The following table describes the tasks to be executed for migrating the system environment and the necessity of these tasks. Use Smart Composer functionality to migrate the system environment.

Table 4–25: Tasks to be executed for migrating the system environment and necessity of the tasks (when using Smart Composer functionality)

Tasks to be executed for migrating the system environment	Necessity of the tasks	Conditions for executing the tasks	References
Setting up the source system environment	Y	Mandatory	4.1
Preparing the host in the target environment	Y	Mandatory	4.4.2(1)
Output of the configuration and definition information	Y	Mandatory	4.4.2(2)
Setting up the target system environment	Y	Mandatory	4.4.2(3)

Legend:

Y: Mandatory task.

4.4.2 Outputting the configuration and definition information and migrating the system environment

This subsection describes steps to migrate the already setup system environment to a different environment; using Smart Composer functionality. For contents of the configuration and definition information used for migrating the system environment, see [4.4.3 Configuration and definition information used during migration](#). Also, for notes on migrating the system environment, see [4.4.4 Notes on outputting the configuration and definition information and the system migration](#).

(1) Preparing the host in the target environment

1. Prepare a host in the target environment, install the product, perform initial settings and configure the Management functionality.

The Management Server must be running on the target system. The installation and initial settings must be complete. The following table describes the tasks to be implemented in the target hosts and necessity of these tasks.

Table 4–26: Tasks to be executed in the target hosts and necessity of these tasks

Tasks to be executed in the target hosts	Necessity of the task	Conditions for executing the tasks	References
Setting up Component Container Administrator (For UNIX)	A	When assigning the operation permissions to general users in UNIX OS	4.1.3
Installing Application Server	Y	Mandatory (when the OS is Windows)	2.2.2
		Mandatory (when the OS is AIX)	2.2.3
		Mandatory (when the OS is Linux)	2.2.4
Installing products used for connecting to the database	A	For connecting to the database	2.2.5
Symbolic link supported by Application Server (For UNIX)	A	When the OS is UNIX	4.1.5
Setting up the database connection environment	A	When connecting to the database (HiRDB)	4.1.6
		When connecting to the database (Oracle)	4.1.7
		For connecting to the database (SQL Server)	4.1.8
Setting up the environment variables for the system	Y	Mandatory	4.1.11
Setting up the environment variables for the logical server	A	When changing the environment variables during installation	4.1.12
Setting up the Management functionality	Y	Mandatory	4.1.14
Starting the Administration Agent	Y	Mandatory	4.1.17
Starting the Management Server	Y	Mandatory	4.1.18

Legend:

Y: Mandatory task.

A: Tasks to be executed with the execution conditions are fulfilled.

(2) Outputting the configuration and definition information

1. Start the command prompt on the host (apsv2 (192.168.100.12) for allocating the Management functionality (Management Server) of the source environment.
2. Execute the `cmx_export_model` command, and output the settings of the set up system to the Easy Setup definition file.

Command execution example is as follows: In this example, the name of the Easy Setup definition file to be output is `MyWebSystemexport.xml`.

```
cmx_export_model -m 192.168.100.12 -u cosmi_admin -p cosmi_admin_passwd
-o MyWebSystemexport.xml -file-path
```

Specify the path of the directory for storing `MyWebSystemexport.xml`, and the file name (`MyWebSystemexport.xml`) in `MyWebSystemexport.xml-file-path`.

(3) Setting up the target system environment

1. Start the command prompt on the host (apsvb (192.168.100.22) for allocating the Management functionality (Management Server) of the target environment.

2. Execute the `cmx_build_system` command and set up the system same as the system set up in the target environment.

Command execution example is as follows: Specify the Easy Setup definition file output in (2) *Output of configuration and definition information*, in the `-f` option of `cmx_build_system` command.

```
cmx_build_system -m 192.168.100.22 -u cosmi_admin -p cosmi_admin_passwd  
-f MyWebSystemexport.xml -file-path
```

4.4.3 Configuration and definition information used during migration

This subsection describes the contents output when you use the `cmx_export_model` command to output the settings of the already set up system.

(1) Version of XML schema

The latest version of XML schema is output. If settings of the systems set up by using the older versions of Easy Setup definition file are output, the tag names are converted to the latest names as per the latest version of XML schema.

(2) Configuration of the physical tier

If you use the Smart Composer functionality for setting up the system, the settings are output in the physical tier (`combined-tier`, `http-tier`, `j2ee-tier`, or `ctm-tier`) defined in the Easy Setup definition file. If you do not use Smart Composer functionality for setting up the system, the settings are output in the free-tier. For example, if system is set up using the management portal, the settings are output in the free-tier. The following logical servers are output in the free-tier depending on the system configuration:

- Logical Web server
- Logical J2EE server
- Logical performance tracer
- Logical CTM domain manager
- Logical CTM
- Logical smart agent
- Logical user server
- Logical Naming Service

For parameters of the logical server that are output, see *4.8.1 Building a system for executing J2EE applications* in the *uCosminexus Application Server Definition Reference Guide*.

(3) Parameters set in configuration of the logical server

Output rules

- Deprecated parameters are converted to recommended parameters.
- Parameters with the specified value are output. Parameters without a specified value are not output.
- If default values are set for the parameters in Easy Setup definition file, or if default values are set for the keys in the management portal, those parameters are output.

Output order

The output order depends on the type of the parameters for each type of logical servers. Further, the parameters with the same type are output in the order of parameter names. The following table describes the output order of the parameters:

Table 4–27: Output order of the parameters

Server for setting the parameter	Output order	Parameter type
J2EE server	1	Parameters that can be specified in common to all the logical servers
	2	Option definition parameters for the J2EE server
	3	User property parameters for the J2EE server
Web server	1	Parameters that can be specified in common to all logical servers
	2	Cosminexus HTTP Server definition parameters
Other logical server	1	Parameters that can be specified in common to all the logical servers
	2	Parameters of the corresponding logical server

Setting destination

The setting destination of the parameters differs depending on the logical server of the set up system. The following table describes the settings destination of parameters. Note that in free-tier, the parameters cannot be set in the physical tier definition. Hence all the parameters are set in the service unit definition.

Table 4–28: Setting destination of parameters

Number of same type of logical servers	Values specified in the parameters	Setting destination of the parameters
1	--	Definition of the physical tier
2 to n	Same for all the logical servers	Definition of the physical tier
	Different for each logical server	Definition of the service unit

Legend:

--: None

- If there is only 1 logical server of its type in the system, all the parameters are set in the physical tier definition.
- If there are multiple logical servers of the same type in the system, and same values are specified in the respective parameters in the logical servers of the same type, then the parameter values are set to the respective physical tier definition.
- If there are multiple logical servers of the same type in the system, and different values are specified in the respective parameters in the logical servers of the same type, then the parameters are set to the respective service unit definition.

(4) Output example

Output example of Easy Setup definition file is as follows.

This example describes the output example of the system settings where the management portal is used to add the host (host1), the logical J2EE server (j2ee01) and the logical performance tracer (prf01) to the combined-tier configuration system set up using Easy Setup definition file.

Output example of the Easy Setup definition file

```
<?xml version="1.0" encoding="UTF-8" ?>
<model-definition xmlns="http://www.cosminexus.com/mngsvr/schema/ModelDefinition-2.5">
  <web-system>
```



```

<name>sample-system</name>
<tier>
  <tier-type>combined-tier</tier-type>
  <configuration>
    <logical-server-type>j2ee-server</logical-server-type>
    <param>
      <param-name>ejbserver.http.port</param-name>
      <param-value>8085</param-value>
    </param>
  </configuration>
</tier>
<unit>
  <name>unit1</name>
  <allocated-host>
    <host-ref>apsv1</host-ref>
    <hosts-for>combined-tier</hosts-for>
  </allocated-host>
</unit>
</web-system>
<web-system>#1
  <tier>
    <tier-type>free-tier#2</tier-type>
  </tier>
  <unit>#1
    <allocated-host>
      <host-ref>host1</host-ref>
      <hosts-for>free-tier</hosts-for>
      <define-server>
        <logical-server-name>prf01</logical-server-name>
        <logical-server-type>performance-tracer</logical-server-type>
      </define-server>
      <define-server>
        <logical-server-name>j2ee01</logical-server-name>
        <logical-server-type>j2ee-server</logical-server-type>
        <configuration>
          <param>#3
            <param-name>ejbserver.server.prf.PRfid</param-name>
            <param-value>PRF_ID</param-value>
          </param>
        </configuration>
      </define-server>
    </allocated-host>
  </unit>
</web-system>
<host>
  <host-name>apsv1</host-name>
</host>
<host>
  <host-name>host1</host-name>
</host>
</model-definition>

```

#1

free-tier does not include Web system name and the service unit name.

#2

If a system has a configuration that does not fit into any other physical tier configuration, that particular configuration is output as free-tier configuration.

#3

In free-tier, as the parameters cannot be set in the tier definition, those are set in the service unit definition.

4.4.4 Notes on outputting the configuration and definition information and the system migration

The following are the notes on output of the configuration and definition information, and migration of a set up system.

- You can use the commands of Smart Composer functionality to execute the following operations, if the system environment after migration contains free-tier:
 - Start and stop of the system
 - Status monitoring of the logical servers in the system
 - Execution status display for `cmx_build_system` command of the logical servers in the system

Use the management portal or server management command to perform other operations for the systems containing free-tier.

- Among the various system environment contents, you can output only the information that can be defined in Easy Setup definition file; to the Easy Setup definition file using Smart Composer functionality commands. If you directly edit files other than Easy Setup definition file, the edited contents are not reflected.
- While setting up the system containing the logical server not associated with the Web system, use the following steps to set up a system same as an already set up system, in the target environment.

1. Execute the `cmx_export_model` command in the source environment to output the settings of already set up system to Easy Setup definition file.

Command execution example is as follows: In this example, the name of Easy Setup Definition file to be output is `MyWebSystemexport.xml`.

```
cmx_export_model -m 192.168.100.12 -u cosmi_admin -p cosmi_admin_passwd  
-o MyWebSystemexport.xml -file-path
```

2. Execute the `cmx_build_model` command in the target environment, and set up a system information model from the Easy Setup definition file output in step 1.

Command execution example is as follows:

```
cmx_build_model -m 192.168.100.22 -u cosmi_admin -p cosmi_admin_passwd -f  
MyWebSystemexport.xml -file-path
```

3. Execute the `cmx_build_system` in the target environment, and based on the system information model set up a system containing logical server not associated with the Web system. Command execution example is as follows: If the system to be set up contains logical server associated with the Web system, specify the Web system name in the `-s` option, and execute the `cmx_build_system` command again. In the following example, `MyWebSystem` serves as the Web system.

- If the system to be set up contains only the logical server not associated with the Web system:

```
cmx_build_system -m 192.168.100.22 -u cosmi_admin -p cosmi_admin_passwd -ns
```

- If the system to be set up contains both, the logical server not associated with the Web system, and the logical server associated with the Web system

```
cmx_build_system -m 192.168.100.22 -u cosmi_admin -p cosmi_admin_passwd -s MyWebSystem
```

```
cmx_build_system -m 192.168.100.22 -u cosmi_admin -p cosmi_admin_passwd -ns
```

4.5 Setting up a system to allocate the logical user server

Logical user server means defining any user defined process (user server) as a logical user server. When you define a specific service or a process as a logical user server, that service or process can be brought under the control of the Management Server, and can be managed in a batch like any other logical server.

A user server operates on Application Server. You can also allocate a user server to any other host, if the said host has Application Server installed on it. You must then allocate administration agent to these hosts.

4.5.1 Allocating the logical user server

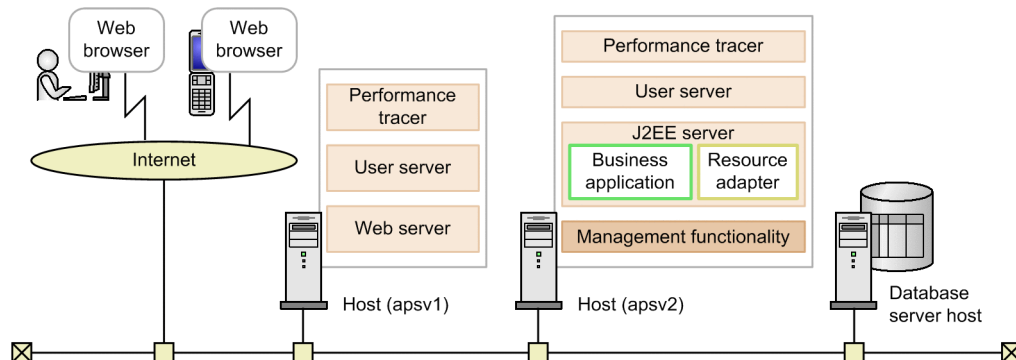
Use of a logical user server enables the Management Server to manage any user defined process.

When you use Smart Composer functionality, define the logical user server in the Easy Setup definition file. You cannot define a logical user server in the Management Portal. However, you can perform operations like Start, Stop, and Monitoring for the defined logical user server. To use logical user server on the Management portal, you must first define the logical user server in a file, and then based on the file, set up the logical user server by using the management command.

- **System configuration example**

Following figure shows the configuration example of the system to which the logical user server is to be allocated. The subsection describes the method of allocating logical user server to the system set up in [4.1 System setup for improving machine performance by allocating Web Server to a different host](#).

Figure 4–9: Configuration example of the system for allocating the logical user server



Following table describes the settings used in the example.

Table 4–29: Settings used in the example (Logical user server allocation)

Classification	Item	Example of settings
Entire system	Easy Setup definition file name	MyWebSystemDef.xml
	Web system name	MyWebSystem
	Service unit name	unit1
Host for allocating the Web server	Host name	apsv1
	IP Address (Management IP Address) [#]	192.168.100.11
	Logical user server name	UserServer1
Host for allocating the J2EE server	Host name	apsv2

Classification	Item	Example of settings
	IP Address (Management IP Address) [#]	192.168.100.12
	Logical user server name	UserServer2

#

In a single network configuration, the same IP address serves as the business IP address and the management IP address.

• Tasks and their necessity

The following table describes the tasks to be executed when setting up a system for allocating to the logical user server, and the necessity of the tasks:

Table 4–30: Tasks to be executed when setting up a system for allocating to the logical user server (when using the Management Portal) and necessity of these tasks

Tasks to be executed when setting up a system for allocating the logical user server	Necessity of the task	Conditions for executing the tasks	Reference manual	Reference
Preparing the database	A	For connecting to the database	This manual	2.1.1
Setting up the database environment (Oracle settings)	A	For connecting to the database (Oracle)		4.1.2
Setting up Component Container Administrator (for UNIX)	A	When the OS is UNIX and you want to permit operational access to general users.		4.1.3
Installing Application Server	Y	Mandatory (when the OS is Windows)		2.2.2
		Mandatory (when the OS is AIX)		2.2.3
		Mandatory (when the OS is Linux)		2.2.4
Installing products used for connecting to the database	A	For connecting to the database		2.2.5
Symbolic links supported by Application Server (for UNIX)	A	When the OS is UNIX		4.1.5
Setting up the database connection environment	A	For connecting to the database (HiRDB)		4.1.6
		For connecting to the database (Oracle)		4.1.7
		For connecting to the database (SQL Server)		4.1.8
System environment variable settings	Y	Mandatory	Management Portal	4.1.11
Logical server environment variable settings	A	If you want to change the environment variables during installation.		4.1.12
Setting up the Administration functionality	Y	Mandatory		2.2
Starting Administration Agent	Y	Mandatory		4.1.2
Starting Management Server	Y	Mandatory		4.1.2
System environment settings	Y	Mandatory		3.2

Tasks to be executed when setting up a system for allocating the logical user server	Necessity of the task	Conditions for executing the tasks	Reference manual	Reference
System environment setup	Y	Mandatory		
Logical user server settings	Y	Mandatory		3.2.4
System startup (Logical server startup)	Y	Mandatory		4.1.2
Resource adapter settings	A	For resource connection by using a resource adapter (DB Connector)		3.3
		For resource connection by using a resource adapter (Other than a DB Connector)		
Starting a resource adapter	A	For resource connection by using a resource adapter		4.1.2
Setting and starting a business application	Y	Mandatory		3.4, 4.1.2

Legend:

Management Portal: Indicates the *uCosminexus Application Server Management Portal User Guide*.

Y: Mandatory task

A: Tasks to be executed with the execution conditions are fulfilled

Table 4–31: Tasks to be executed when setting up a system for allocating the logical user server (when using Smart Composer functionality) and necessity of these tasks

Tasks to be executed when setting up a system for allocating the logical user server	Necessity of the task	Conditions for executing the tasks	Reference
Preparing the database	A	For connecting to the database	2.1.1
Database environment settings (Oracle settings)	A	When the database is Oracle	4.1.2
Component Container Administrator settings (for UNIX)	A	When the OS is UNIX and you want to assign operational rights to general users.	4.1.3
Installing Application Server	Y	Mandatory (when the OS is Windows)	2.2.2
		Mandatory (when the OS is AIX)	2.2.3
		Mandatory (when the OS is Linux)	2.2.4
Installing products used for connecting to the database	A	For connecting to the database	2.2.5
Symbolic links supported by Application Server (for UNIX)	A	When the OS is UNIX	4.1.5
Setting up the database connection environment	A	When the database is HiRDB	4.1.6
		When the database is Oracle	4.1.7
		For connecting to the database (SQL Server)	4.1.8
Setting the system environment variable	Y	Mandatory	4.1.11
Setting the logical server environment variables	A	If you want to change the environment variables during installation	4.1.12
Setting up the Administration functionality	Y	Mandatory	4.1.14
Starting the Administrator agent	Y	Mandatory	4.1.17
Starting Management Server	Y	Mandatory	4.1.18

Tasks to be executed when setting up a system for allocating the logical user server	Necessity of the task	Conditions for executing the tasks	Reference
Setting up the system environment (Easy Setup definition file settings)	Y	Mandatory	4.1.20 , 4.5.2
System environment setup (Setup)	Y	Mandatory	4.1.23
System startup	Y	Mandatory	4.1.24
Setting up the resource adapter	A	For connecting with DB Connector	4.1.26
		For connecting with the connector other than DB Connector	4.1.27
Starting the resource adapter	A	For connecting to a resource	4.1.28
Setting and starting the business application	Y	Mandatory	4.1.29

Legend:

Y: Mandatory task

A: Tasks to be executed with the execution conditions are fulfilled

4.5.2 Setting the logical user server with Easy Setup definition file (When using CUI)

This section describes the example of Easy Setup definition file creation when you use the Smart Composer functionality to add the logical user server.

If you associate logical user server with a particular service unit, you can start or stop the user server concurrently with the start/stop of the service unit. You can connect multiple user servers to one service unit; however you cannot connect one user server to multiple service units.

Creation example of `MyWebSystemDef.xml`

```
<?xml version="1.0" encoding="UTF-8"?>
<model-definition xmlns="http://www.cosminexus.com/mngsvr/schema/ModelDefinition-2.5">
  <web-system>
    <name>MyWebSystem</name>
    <display-name>MyWebSystem</display-name>
    <description>This is a sample.</description>

    <!--Specify the configurations for the Tier.-->
    <tier>
      <tier-type>http-tier</tier-type>
    </tier>
    <tier>
      <tier-type>j2ee-tier</tier-type>
    </tier>

    <!--Specify the hosts for each Service Unit.-->
    <unit>
      <name>unit1</name>
      <allocated-host>
        <host-ref>apsv1</host-ref>
        <hosts-for>http-tier</hosts-for>
        <define-server>
```

```

        <logical-server-name>UserServer1</logical-server-name>
        <logical-server-type>user-server</logical-server-type>
        <configuration>
            <param>
                <!-- Server startup command -->
                <param-name>start.arg</param-name>
                <param-value>c:/test/start.exe</param-value>
            </param>
        </configuration>
    </define-server>
</allocated-host>
<allocated-host>
    <host-ref>apsv2</host-ref>
    <hosts-for>j2ee-tier</hosts-for>
    <define-server>
        <logical-server-name>UserServer2</logical-server-name>
        <logical-server-type>user-server</logical-server-type>
        <configuration>
            <param>
                <!-- Server startup command -->
                <param-name>start.arg</param-name>
                <param-value>c:/test/start.exe</param-value>
            </param>
        </configuration>
    </define-server>
</allocated-host>
</unit>
</web-system>

<!--Specify the settings for the host.-->
<host>
    <host-name>apsv1</host-name>
    <agent-host>apsv1</agent-host>
</host>
<host>
    <host-name>apsv2</host-name>
    <agent-host>apsv2</agent-host>
</host>
</model-definition>

```

Note; you cannot set logical user server parameters in the definition of the physical tier. You can set these logical user server parameters in the definition of the service units. In this definition example, the command to start up a server is specified to start the user server concurrently with the service unit.

4.6 Setting up a system for executing batch applications

The system for executing the batch applications enables the execution of batch operations involving the batch processing of typical and routine tasks. A batch application runs on the batch server and is meant for executing the batch operations. You cannot set up this system using the Setup Wizard. Use Smart Composer functionality or the Management Portal to set up the system.

4.6.1 Executing batch applications

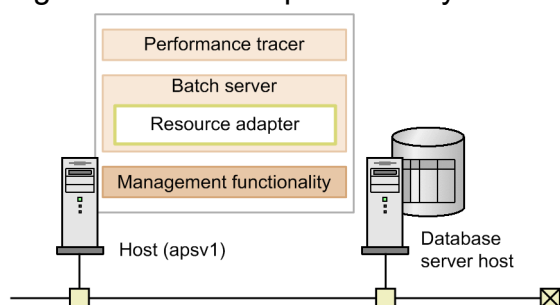
Set up the system that executes batch applications, based on the Application Server on which the batch server is allocated. Also, depending on the business purpose, you can allocate specific program to automatically execute the batch operations, or set the Application Server functionality for scheduling the execution of the batch applications.

If you are using Smart Composer functionality, set up the system by using commands from Easy Setup definition file that defines the environment settings of logical server, or the host (j2ee-tier) to which the batch server is allocated. If you use the Management Portal, allocate the logical server (batch server) to the respective hosts on each window of the Management Portal, and set up the system by distributing the settings of each logical server to the host.

- **Example of system configuration**

The following figure shows the configuration example of a system for executing batch applications. In a system for executing batch applications, set the host, to which the batch server is allocated, as Administrator (Management Server). Moreover, this configuration example shows a single network configuration (workstation LAN and management LAN are not separated), and each host uses one physical NIC.

Figure 4–10: Example of the system configuration for executing batch applications



- **Tasks to be implemented and their necessity**

The following table describes the tasks to be executed when setting up the system for executing batch applications and necessity of these tasks for each setup tool. Note that the "J2EE server" in the reference manuals is to be read here as "batch server".

Table 4–32: Tasks to be executed when setting up the system for executing batch applications and necessity of these tasks (when using Management Portal)

Tasks to be executed when setting up the system for executing batch applications	Necessity of the task	Conditions for executing the tasks	Reference manual	Reference
Preparing the database	A	For connecting to the database	This manual	2.1.1
Setting up the database environment (Oracle settings)	A	For connecting to the database (Oracle)		4.1.2
Setting up Component Container Administrator (for UNIX)	A	When the OS is UNIX and you want to assign		4.1.3

Tasks to be executed when setting up the system for executing batch applications	Necessity of the task	Conditions for executing the tasks	Reference manual	Reference
		operational rights to general users.		
Installing Application Server	Y	Mandatory (when the OS is Windows)		2.2.2
		Mandatory (when the OS is AIX)		2.2.3
		Mandatory (when the OS is Linux)		2.2.4
Installing products used for connecting to the database	A	For connecting to the database		2.2.5
Symbolic links supported by Application Server (for UNIX)	A	When the OS is UNIX		4.1.5
Setting up the database connection environment	A	For connecting to the database (HiRDB)		4.1.6
		For connecting to the database (Oracle)		4.1.7
		For connecting to the database (SQL Server)		4.1.8
Setting up the System environment variables	Y	Mandatory		4.1.11
Setting the logical server environment variables	A	When you want to change the environment variables during installation		4.1.12
Setting up the Administration functionality	Y	Mandatory	Operation management portal	2.2
Starting Administrator agent	Y	Mandatory		4.1.2
Starting Management Server	Y	Mandatory		4.1.2
System environment settings	Y	Mandatory		5.2
Setting up the System environment	Y	Mandatory		
System startup (Starting the Logical server)	Y	Mandatory		6.1.2
Setting a resource adapter	A	For resource connection by using a resource adapter (DB Connector)		5.3
		For resource connection by using a resource adapter (other than a DB Connector)		
Starting a resource adapter	A	For resource connection by using a resource adapter		6.1.2
Changing the system environment settings	A	As and when required in the operation		6.2
Changing the resource adapter settings	A	As and when required in the operation		6.2
Stopping the system (stopping the Logical server)	A	As and when required in the operation		6.1.4

Tasks to be executed when setting up the system for executing batch applications	Necessity of the task	Conditions for executing the tasks	Reference manual	Reference
Stopping Management Server	A	As and when required in the operation		4.1.4
Stopping Administrator agent	A	As and when required in the operation		4.1.4
Deleting the system environment	A	As and when required in the operation		5.4

Legend:

Management Portal: Indicates the *uCosminexus Application Server Management Portal User Guide*

Y: Mandatory task.

A: Tasks to be executed with the execution conditions are fulfilled

Table 4–33: Tasks to be executed when setting up the system for executing batch applications and the necessity of these tasks (when using Smart Composer functionality)

Tasks to be executed when setting up the system for executing batch applications	Necessity of the task	Conditions for executing the tasks	Reference
Preparing the database	A	For connecting to the database	2.1.1
Setting up the database environment (Oracle settings)	A	When the database is Oracle	4.1.2
Setting up Component Container Administrator (for UNIX)	A	When the OS is UNIX and you want to assign operational rights to general users.	4.1.3
Installing Application Server	Y	Mandatory (when the OS is Windows)	2.2.2
		Mandatory (when the OS is AIX)	2.2.3
		Mandatory (when the OS is Linux)	2.2.4
Installing products used for connecting to the database	A	For connecting to the database	2.2.5
Installing Application Server	Y	Mandatory	2.2.1
Symbolic links supported by Application Server (In UNIX)	A	When the OS is UNIX	4.1.5
Setting up the database connection environment	A	When the database is HiRDB	4.1.6
		When the database is Oracle	4.1.7
		For connecting to the database (SQL Server)	4.1.8
Setting the system environment variables	Y	Mandatory	4.1.11
Setting the logical server environment variables	A	When you want to change the environment variables during installation.	4.1.12
Setting up the Administration functionality	Y	Mandatory	4.1.14
Starting Administrator agent	Y	Mandatory	4.1.17
Starting Management Server	Y	Mandatory	4.1.18
Setting up the system environment (Easy Setup definition file settings)	Y	Mandatory	4.1.20, 4.6.2
Setting up the system environment (setup)	Y	Mandatory	4.1.23
System startup	Y	Mandatory	4.1.24
Setting up a resource adapter	A	For connecting by using a DB Connector	4.1.26

Tasks to be executed when setting up the system for executing batch applications	Necessity of the task	Conditions for executing the tasks	Reference
		For connecting by using a connector other than a DB Connector	4.1.27
Starting a resource adapter	A	For connecting to the resource	4.1.28
Changing the system environment definitions	A	As and when required in the operation	4.1.31
Changing the resource adapter settings	A	As and when required in the operation	4.1.33
Stopping the system	A	As and when required in the operation	4.1.34
Stopping Management Server	A	As and when required in the operation	4.1.35
Stopping Administrator agent	A	As and when required in the operation	4.1.36
Deleting the system environment	A	As and when required in the operation	4.1.37

Legend:

Y: Mandatory task

A: Tasks to be executed with the execution conditions are fulfilled

Note: For the points to be considered while operating the system on which the batch server runs, see [4.6.3 Notes on operating the system that executes batch applications](#).

4.6.2 Notes on setting up Easy Setup definition file (when using batch applications)

This section describes the notes on setting the Easy Setup definition file when creating a system for executing batch applications.

- Settings for operating as batch server**

You must specify the settings to set up and operate the server processes as a batch server. Define batch server as the logical J2EE server. Set the batch server in the *configuration* tag of the logical J2EE server (j2ee-server).

The following table describes various definitions related to the batch server:

Table 4–34: Definitions related to a batch server

Item	Parameter	Settings	Mandatory or Optional
Settings required for setting up the server as a batch server	<code>batch.service.enabled</code>	Specifies whether to configure a server as batch server. You must specify the parameter value as <code>true</code> .	Mandatory
Settings for not using the SecurityManager	<code>use.security</code>	Specifies whether to use the SecurityManager when starting the batch server. You must specify the parameter value as <code>false</code> .	Mandatory
Settings to enable the Light Transaction functionality	<code>ejbserver.distributed tx.XATransaction.enabled</code>	Specifies whether to use the global transaction. You cannot use the global transaction for batch server. Use local transaction instead. Use Light Transaction functionality that provides an optimized environment for local transactions. You must specify the parameter value as <code>false</code> . Do not make any changes as the default setting of this parameter is <code>false</code> .	Optional
Settings to disable Explicit Memory Management functionality	<code>add.jvm.arg</code>	Specifies whether to use Explicit Memory Management functionality. If you do not intend to use Explicit Memory Management functionality in the batch server, we recommend that you disable the functionality. Specify the parameter	Optional

Item	Parameter	Settings	Mandatory or Optional
		value as <code>-XX:-HitachiUseExplicitMemory</code> to disable Explicit Memory Management functionality. By default, Explicit Memory Management functionality is enabled (<code>-XX: +HitachiUseExplicitMemory</code>).	
Setting the real server name	<code>realservername</code>	Specify the real server name of the batch server. The real server name must be unique within the host. If you do not specify the name, logical server name is used.	Optional
Settings for JavaVM operations when Exit Java VM method is called	<code>ejbserver.batch.application.exit.enabled</code>	Specify whether to end the JavaVM when following Exit JavaVM methods are called by batch applications: <ul style="list-style-type: none"> <code>java.lang.System.exit(int)</code> <code>java.lang.Runtime.exit(int)</code> <code>java.lang.Runtime.halt(int)</code> Default is <code>true</code> (exits the batch application thread without exiting JavaVM.). If you specify the parameter value as <code>false</code> , JavaVM exits along with the batch server when Exit JavaVM method is called. For details, see 2.3.7 <i>Implementing a batch application (Batch application creation rules)</i> in the <i>uCosminexus Application Server Expansion Guide</i> .	Optional

Legend:

Mandatory: Must be specified.

Optional: Specify as and when required.

- **Settings for using the Scheduling functionality of batch applications**

To use the Scheduling functionality of batch applications, define `ctm-tier` as the physical tier type. In addition to the settings to operate the server as batch server, you must also set the Scheduling functionality of batch applications. Specify these settings in the *configuration* tag of each logical server.

The following table describes definitions for the batch server and the Scheduling functionality of batch applications:

Table 4–35: Definitions related to batch server and the Scheduling functionality of batch applications

Logical server type	Item	Parameter	Contents	Mandatory or Optional
Logical CTM (component-transaction-monitor)	Settings for using the ORB Gateway functionality	<code>ctm.Agent</code>	Specifies whether to use ORB Gateway functionality of CTM Regulator. When using the Scheduling functionality, use ORB Gateway functionality of CTM Regulator. You must specify the parameter value as <code>1</code> .	Mandatory
	Settings for identifying CTM	<code>ctmid</code>	Specifies CTM identifier. You must set a unique value in the Operation Management Domain. You can omit the settings of CTM identifier.	Optional
Logical J2EE Server (j2ee-server)	Settings required for setting up a server as the batch server	<code>batch.service.enabled</code>	Specifies whether to set up a server as the batch server. You must specify the parameter value as <code>true</code> .	Mandatory
	Settings for not using SecurityManager	<code>use.security</code>	Specifies whether to use the SecurityManager for starting the batch server. You must specify the parameter value as <code>false</code> .	Mandatory

Logical server type	Item	Parameter	Contents	Mandatory or Optional
	Settings to enable the Light Transaction functionality	<code>ejbserver.distributedtx.XATransaction.enabled</code>	Specifies whether to use the global transaction. You cannot use the global transaction for the batch server. Use local transaction instead. Use Light Transaction functionality that provides an optimized environment for local transactions. You must specify the parameter value as <code>false</code> . Do not make any changes as the default setting of this parameter is <code>false</code> .	Mandatory
	Settings for using Smart Agent	<code>vbroker.agent.enableLocator</code>	Specifies whether to use Smart Agent. If you want to use the Scheduling functionality, you must also use Smart Agent. You must specify the parameter value as <code>true</code> .	Mandatory
	Settings to disable Explicit Memory Management functionality	<code>add.jvm.arg</code>	Specifies whether to use Explicit Memory Management functionality. If you do not intend to use Explicit Memory Management functionality in the batch server, we recommend that you disable the functionality. Specify the parameter value as <code>-XX:-HitachiUseExplicitMemory</code> to disable Explicit Memory Management functionality. By default, Explicit Memory Management functionality is enabled (<code>-XX: +HitachiUseExplicitMemory</code>).	Optional
	Setting the real server name	<code>realservername</code>	Specifies the real server name of the batch server. The real server name must be unique within the host. If you do not specify the name, logical server name is used.	Optional
	Settings for JavaVM operations when Exit Java VM method is called	<code>ejbserver.batch.application.exit.enabled</code>	Specifies whether to end the JavaVM when the following Exit JavaVM methods are called by batch applications: <ul style="list-style-type: none"> <code>java.lang.System.exit(int)</code> <code>java.lang.Runtime.exit(int)</code> <code>java.lang.Runtime.halt(int)</code> Default is <code>true</code> (exits the batch application thread without exiting JavaVM.) If you specify the parameter value as <code>false</code> , JavaVM exits along with the batch server when Exit JavaVM method is called. For details, see <i>2.3.7 Implementing a batch application (Batch application creation rules)</i> in the <i>uCosminexus Application Server Expansion Guide</i> .	Optional
	Schedule Group name settings	<code>ejbserver.batch.schedule.group.name</code>	Specifies the schedule group name of the batch server group managed by CTM. The default group name is <code>JOBGROUP</code> . CTM schedules the execution of batch applications for every schedule group. When you want to use multiple schedule groups and divide the schedule queues, you need to specify a schedule group name for every batch server.	Optional
	Schedule queue length settings	<code>ejbserver.batch.queue.length</code>	Specifies the length of the schedule queue created by CTM. The default value is 50.	Optional

Legend:

Mandatory: Must be specified.

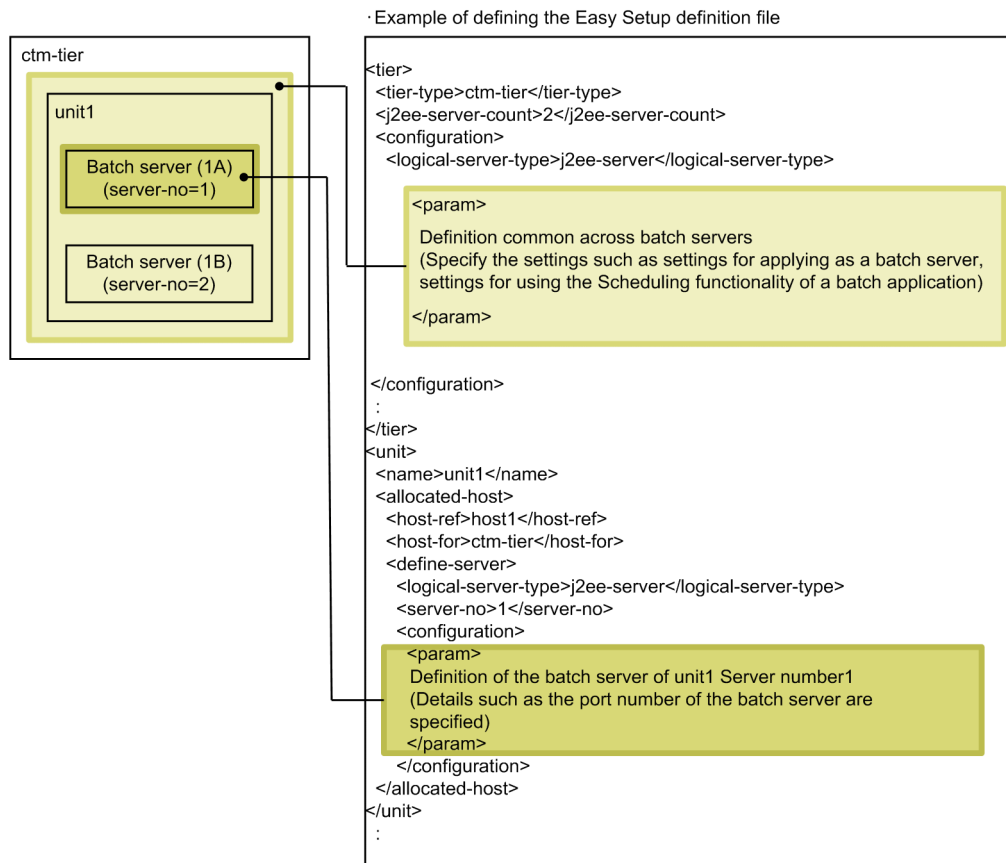
Optional: Specify as and when required.

- **Notes on allocating multiple batch servers**

While using batch application Scheduling functionality, define the number of batch servers to be allocated to one host in the physical tier definition; in order to allocate the multiple batch servers.

Even when allocating multiple batch servers, you can define the server configuration within the physical tier and service unit definitions. The following figure shows the applicability of the configuration definition of the batch server.

Figure 4–11: Applicability of configuration definition of the batch server



The following table describes the configuration definition applied to each batch server within a service unit; in case of the above figure.

Table 4–36: Configuration definition applied to each batch server of the service unit

Service unit	Batch server	Applicable configuration settings
unit1	Batch server(1A)	<ul style="list-style-type: none">• Service unit definition (definition of a specific batch server)• Physical tier definition (definition common to all the batch servers)
	Batch server(1B)	Physical tier definition (definition common to all the batch servers)

As described in the table above, when multiple configuration definitions are applied to each batch server and when you specify the same parameter in each of the definitions, the definitions are applied in the following priority order:

1. Service unit definition (definition of a specific batch server)
2. Physical tier definition (definition common to all the batch servers)

- **Definitions that are not used in the batch server**

Load Balancer (*load-balancer* tag) is not used in the batch server.

4.6.3 Notes on operating the system that executes batch applications

The system that executes batch applications supports the operations similar to the system that executes J2EE application. You must however note the following points:

"J2EE server" in the reference manuals means "batch server" in this context.

- You cannot change the number of batch servers to be allocated to a single host while changing the Web system configuration.
- You cannot alter the scale of a system (ctm-tier) for using the batch application Scheduling functionality.
- When changing the settings of a system for executing batch applications, do not change values of the following parameters:
 - `batch.service.enabled` (batch server extended parameter)
 - `use.security` (parameters for setting the usage of SecurityManager)
- Because the global transaction is not available, you cannot use RAR file of the global transaction as RAR file of DB Connector.
- In case you connect a batch application to a resource, set an optional name for the resource adapter by using User-specified Namespace functionality. To look up the resource adapter from the batch application, use the optional name set by using User-specified Namespace functionality. Set the optional lookup name created by using User-specified Namespace functionality in Connector Property file.

4.7 Setting up the system for controlling load balancer from management functionality

Load balancer is a device that centrally receives requests from Web browser, and distributes those requests to each server by transferring those to multiple servers having the same functions. You can use load balancer to distribute the traffic efficiently, and thus improve the performance. You can control the load balancer from the management functionality in Application Server. You must use the Smart Composer functionality to set up the system for controlling the load balancer from the management functionality. You use the management portal to configure this system.

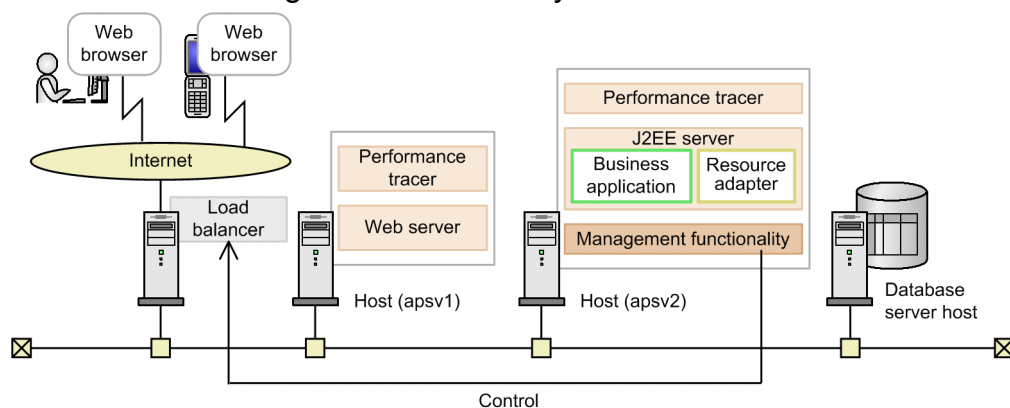
4.7.1 Controlling the load balancer from management functionality

To control the load balancer from management functionality on a system that uses the Smart Composer functionality, you must arrange the load balancer, and also set up an environment to connect to the load balancer on the host for allocating the management functionality.

- **System configuration example**

Following figure shows an example of system configuration for controlling the load balancer from the management functionality. This subsection describes the settings to enable the control of load balancer from the management functionality by allocating load balancer to the system built in *4.1 System setup for improving machine performance by allocating Web Server to a different host*.

Figure 4–12: Configuration example of the system for controlling the load balancer from the management functionality



The following table describes the settings used in the example:

Table 4–37: Settings used in the example (controlling the load balancer from the management functionality)

Classification	Item	Example of settings
Entire system	Easy Setup definition file name	MyWebSystemDef.xml
	Web system name	MyWebSystem
	Service unit name	unit1
Load balancer	Load balancer name	MyAX2000
	Load balancer type	ACOS
	Management IP address of the load balancer	192.168.100.10
	Virtual server name	www.sample.com

Classification	Item	Example of settings
	IP address of a virtual server	192.168.1.10
	Port number of virtual server	80
Host for allocating Web server	Host name	apsv1
	IP address (Management IP Address)#	192.168.100.11
Host for allocating J2EE server	Host name	apsv2
	IP address (Management IP Address)#	192.168.100.12

In a single network configuration, the same IP address serves as the business IP address and the management IP address.

• Tasks to be executed and their necessity

Following table describes the tasks to be executed when setting up a system for controlling the load balancer from the management functionality, and the necessity of these tasks. You can use the Smart Composer functionality to control the load balancer from the management functionality.

Table 4–38: Tasks to be executed when setting up the system for controlling load balancer from the management functionality and necessity of these tasks (when using the Smart Composer functionality)

Tasks to be executed when setting up the system for controlling load balancer from the management functionality	Necessity of the task	Conditions for executing the tasks	Reference
Preparing the database	A	For connecting to the database	2.1.1
Setting up the database environment (Oracle settings)	A	For connecting to the database (Oracle)	4.1.2
Setting up the load balancer	Y	Mandatory	4.7.3
Setting up Component Container Administrator (for Unix)	A	When the OS is UNIX and you want to assign operational rights to general users.	4.1.3
Installing Application Server	Y	Mandatory (When the OS is Windows)	2.2.2
		Mandatory (When the OS is AIX)	2.2.3
		Mandatory (When the OS is Linux)	2.2.4
Installing products used for connecting to the database	A	For connecting to the database	2.2.5
Symbolic links supported by Application Server (for Unix)	A	When the OS is UNIX	4.1.5
Setting up the database connection environment	A	For connecting to the database (HiRDB)	4.1.6
		For connecting to the database (Oracle)	4.1.7
		For connecting to the database (SQL Server)	4.1.8
Setting up the system environment variable	Y	Mandatory	4.1.11
Setting up the logical server environment variable	A	When you want to change environment variables during installation	4.1.12
Setting up the management functionality	Y	Mandatory	4.1.14
Starting Administration Agent	Y	Mandatory	4.1.17
Starting Management Server	Y	Mandatory	4.1.18
Setting up connections to the load balancer	Y	Mandatory	4.7.5(1)

Tasks to be executed when setting up the system for controlling load balancer from the management functionality	Necessity of the task	Conditions for executing the tasks	Reference
System environment settings (setting Easy Setup definition file)	Y	Mandatory	4.1.20 , 4.7.5(2)
Setting up the system environment (setup)	Y	Mandatory	4.1.23
System startup	Y	Mandatory	4.1.24
Resource adapter settings	A	For resource connection by using the resource adapter (DB Connector)	4.1.26
		For resource connection by using the resource adapter (other than a DB Connector)	4.1.27
Starting the resource adapter	A	For resource connection by using the resource adapter	4.1.28
Setting and starting the business application	Y	Mandatory	4.1.29

Legend:

Y: Mandatory task

A: Tasks to be executed with the execution conditions are fulfilled

Note:

For notes on controlling the load balancer from the management functionality, see [4.7.6 Notes on controlling the load balancer](#).

4.7.2 Load balancer

You can use the load balancer to improve the processing performance by distributing traffic efficiently. The load balancing functionality controls multiple servers with a single virtual IP address. You can use BIG-IP (BIG-IP v9, BIG-IP v10.1, BIG-IP v10.2, or BIG-IP v11) or ACOS (AX2000, AX2500, BS320) as load balancers.

You can use the **Cookie switching functionality** of the load balancer to operate the system set up with the Smart Composer functionality. The cookie switching functionality maintains sessions by using the cookies. Even if you cannot identify the client from the source IP address via proxy, you can cast a series of HTTP requests from the same client to the same service unit.

Reference note

Switching mode

- In 08-53 or later versions, only the Insert mode among the Cookie switching function of BIG-IP is supported as a switching mode by the Smart Composer functionality.
- ACOS sets up cookies against the responses from the server. Format of cookies to be set is as follows:
cookie-name-virtual-port=real-server-IP-address_real-port

Also, in a system set up by using the Smart Composer functionality, you can share the load balancer among different Web systems or among the same Web system having different management domains, or allocate the load balancer with redundant configuration to a single Web system.

Important note

You cannot deploy the load balancer if you use the `free-tier` pattern or the pattern that does not use Web server integration (`j2ee-tier`).

(1) Controlling the load balancer

Use the CLI command or APIs to control the load balancer from Application Server. For that, set the connection information of the load balancer in the `lb.properties` (load balancer definition property) file. For details on the procedure to set the connection information, see [4.7.5 Setting up environment for connecting to the load balancer](#).

(2) Sharing the load balancer among Web systems

You can share same (single) load balancer among different Web systems set up by using the Smart Composer functionality. Note that when sharing a single load balancer among different Web systems allocated to a single host, you must separate the virtual server of the load balancer for each Web system.

For notes on sharing a load balancer, see [4.7.6 Notes on controlling the load balancer](#).

(3) Load balancer redundancy

In the Web systems set up using Smart Composer functionality, you can allocate the load balancer with redundant configuration (active and standby configuration) in a single Web system. You can allocate maximum two load balancers. If you allocate the load balancer with redundant configuration, and the running system (active) of the load balancer fails, request casting automatically switches to the standby system (standby), and the operation continues. For notes on the load balancer redundancy, see [4.7.6 Notes on controlling the load balancer](#).

Reference note

When you want to change the load balancer of the existing Web system to the load balancer with redundant configuration, you must first delete the existing Web system, and then re-set up the Web system with the load balancer redundancy.

4.7.3 Preparing the load balancer

You can use BIG-IP or ACOS as the load balancer in the Smart Composer functionality. In the case of BIG-IP, you can use BIG-IP v9, BIG-IP v10.1, BIG-IP v10.2, or BIG-IP v11, and in the case of ACOS, you can use AX2000, AX2500, or BS320.

The method of connecting to Application Server differs depending on the load balancer you use.

- For BIG-IP (BIG-IP v9, BIG-IP v10.1, BIG-IP v10.2, or BIG-IP v11)
It is a method of direct connection using APIs (SOAP architecture). For notes on using APIs, see [4.7.4 Notes on connecting using APIs](#).

Reference note

In the case of BIG-IP v9, BIG-IP v10.1, and BIG-IP v10.2, you can also use the direct connection method using the `ssh` protocol. If you choose this method, you must do the prior settings on the host for allocating Management Server. For details on settings, see [Appendix J.2 \(2\) For BIG-IP v9, BIG-IP v10.1, or BIG-IP v10.2](#).

- For ACOS (AX2000 or BS320)

This is the method of direct connection using the `telnet` protocol.

- For ACOS (AX2500)

This is the method of direct connection using APIs (REST architecture). For notes on using APIs, see [4.7.4 Notes on connecting using APIs](#).

4.7.4 Notes on connecting using APIs

If you use APIs to connect to the load balancer, you must set up the connection environment in advance on the host for allocating Management Server. For details on the method of settings, see [8.4 Load balancer access environment setup](#) in the *uCosminexus Application Server Security Management Guide*.

4.7.5 Setting up environment for connecting to the load balancer

To control the load balancer using Smart Composer functionality, you must set up a connection with the load balancer. Additionally, you must define the load balancer (`load-balancer` tag definition) in Easy Setup definition file.

(1) Load balancer connection settings

Use Smart Composer functionality to define type of the load balancer, connection method and the other connection information required for accessing the load balancer. Define the information in the `lb.properties` (load balancer definition property) file on the host for allocating the management functionality. The settings include information unique to the load balancer as well as common information.

The following example describes the method of setting the `lb.properties` file to directly connect to load balancers (AX2000, BS320) using `telnet`. For an example of setting the load balancer to connect directly using APIs, see [8.5 Load balancer connection information setup with Management Server \(Smart Composer functionality\)](#) in the *uCosminexus Application Server Security Management Guide*.

```
lb.list=192.168.100.10
lb.enable_passwd.192.168.100.10=adminpw

lb.connect_type.192.168.100.10=telnet
#lb.telnet.port.192.168.100.10=23
lb.telnet.user.192.168.100.10=user01
lb.telnet.passwd.192.168.100.10=user01pw
lb.telnet.user_prompt.192.168.100.10="AX login: "
lb.telnet.passwd_prompt.192.168.100.10="Password: "
lb.telnet.login_prompt.192.168.100.10=>
#lb.telnet.login_timeout.192.168.100.10=10
#lb.telnet.command_timeout.192.168.100.10=10
```

The `lb.properties` file contains information such as user name and password used for connecting to the load balancer. Assign appropriate access permissions to maintain the confidentiality of the information.

(2) Easy Setup definition file settings

Define following tags (*load-balancer* tags) in the definition of the load balancer of Easy Setup definition file.

- Defining cookie switching (define *cookie-switching* tag of the *load-balancer* tag)[#]
- Defining virtual server (define *virtual-server* tag of the *load-balancer* tag)

#

These tags are necessary for using Cookie Switching functionality of the load balancer. These settings enable a single Web server or the J2EE server to process a series of HTTP requests. Also, when using Cookie Switching functionality of the load balancer, set the J2EE server Web container as `webserver.container.server_id.enabled=true` in the physical tier definition (*tier* tag).

Following example shows the method to create Easy Setup definition file, and describes the contents of definition in the *load-balancer* tag defining the load balancer.

Definition example of the *load-balancer* tag of Easy Setup definition file

```
<!--Specify the settings of load balancer.-->
<load-balancer>
  <name>MyAX2000</name>
  <load-balancer-type>ACOS</load-balancer-type>
  <management-host>192.168.100.10</management-host>
  <virtual-server>
    <virtual-server-name>www.sample.com</virtual-server-name>
    <ip-address>192.168.1.10</ip-address>
    <http-port>80</http-port>
  </virtual-server>
</load-balancer>
```

4.7.6 Notes on controlling the load balancer

• Notes on batch setup of systems (when controlling the load balancer)

Smart Composer functionality sets only the basic settings (such as virtual server or a real server definition, binding between virtual server port and real server port) of the load balancer. When you set up the system, this information is used as a base for creating a virtual server or a real server in the load balancer. After completing the batch setup of systems, manually perform settings to support a specific network configuration.

For details on APIs and the CLI commands of the load balancer executed by the Smart Composer functionality, see [Appendix J CLI Commands or APIs of the Load Balancer Executed by the Smart Composer Functionality](#).

• Notes on sharing the load balancer

When sharing a single load balancer among different Web systems, you must divide virtual server of the load balancer used in each Web system.

You must take precautions regarding the following definitions in Easy Setup definition file.

- Load balancer definition
Set the same IP address for the load balancer on each Web system.
- Virtual server definition (load balancer definition)

Set unique virtual server name, virtual server IP address, and port number for each Web system.

For ACOS, you must also perform the settings (using Auto Translation functionality) for automatically converting the ports with any of the following 2 configuration conditions are fulfilled.

1. If the port number set to the virtual server or real server is greater than 1023 (when it is not well-known)
2. If the port number of the real server and that of the corresponding virtual server are different
(Example) If the port number of the virtual server is 80, while that of the casting destination is 8081.

Set the auto translation functionality for the load balancer in advance. For details on settings, see the *ACOS documentation*.

- **Notes on the load balancer redundancy**

In a configuration with redundant load balancers, you must perform settings for connecting to each of the load balancers. Perform the connection settings required for connecting to each of the two load balancers in the `lb.properties` file. The `lb.connect_type` of each load balancer must be the same.

The following example illustrates the setting example of `lb.properties` in case of the configuration with redundant load balancers (AX2000, BS320) used for direct connection using the `telnet`. In this example, load balancers LB1 and LB2 are used, with the management IPs as "192.168.1.100" and "192.168.1.101" respectively.

```
lb.list=192.168.1.100,192.168.1.101

# Settings for the load balancer LB1 having redundant configuration
lb.enable_passwd.192.168.1.100=adminpw
lb.connect_type.192.168.1.100=telnet
lb.telnet.user.192.168.1.100=user01
lb.telnet.passwd.192.168.1.100=user01pw
lb.telnet.user_prompt.192.168.1.100="AX login: "
lb.telnet.passwd_prompt.192.168.1.100="Password: "
lb.telnet.login_prompt.192.168.1.100=>

# Settings for the load balancer LB2 having redundant configuration
lb.enable_passwd.192.168.1.101=adminpw
lb.connect_type.192.168.1.101=telnet
lb.telnet.user.192.168.1.101=user01
lb.telnet.passwd.192.168.1.101=user01pw
lb.telnet.user_prompt.192.168.1.101="AX login: "
lb.telnet.passwd_prompt.192.168.1.101="Password: "
lb.telnet.login_prompt.192.168.1.101=>
```

Note: Set the **bold** and highlighted parts to the same value.

Reference note

When sharing the redundant load balancer among multiple Web systems, set the same IP address in the `management-host` tag and the `redundant-management-host` tag in the definition of the load balancer of each Web system.

4.8 Setting up the system using the other functions

The other functionality is the Application Server functionality that have not been described in the previous sections. This section describes the procedure to set up a system using the other functions.

4.8.1 Using the other functions

For setting up a system using the other functions, first, decide the system configuration by determining the required logical server according to the functions to be used. To determine the functionality you want to use, see the following functionality guides:

- The *uCosminexus Application Server Web Container Functionality Guide*
- The *uCosminexus Application Server EJB Container Functionality Guide*
- The *uCosminexus Application Server Common Container Functionality Guide*
- The *uCosminexus Application Server Expansion Guide*
- The *uCosminexus Application Server Security Management Guide*
- The *uCosminexus Application Server Operation, Monitoring, and Linkage Guide*
- The *uCosminexus Application Server Maintenance and Migration Guide*

Then, set the respective logical server environments according to the functionality to be used, and set up the system. Also, change the environment settings of the logical server as and when required, because the default settings include the valid and invalid functionality.

The following table describes the tasks to be executed when setting up a system using the other functions, and the necessity of these tasks for each setup tool used.

Table 4–39: Tasks to be executed when setting up a system using the other functions, and necessity of these tasks (when using the management portal)

Tasks to be executed when setting up a system using the other functions	Necessity of the task	Conditions for executing the tasks	Reference manual	Reference point
Preparing the system design	Y	Mandatory	<i>Design</i>	Chapter 2
Determining the system configuration	Y	Mandatory		Chapter 3
Estimating the resources to be used	Y	Mandatory		Chapter 5
Preparing the database	A	For connecting to the database	<i>This manual</i>	2.1.1
Setting up the database environment (Oracle settings)	A	For connecting to the database (Oracle)		4.1.2
Setting up Component Container Administrator (for Unix)	A	When the OS is UNIX and you want to assign operational rights to general users.		4.1.3
Installing Application Server	Y	Mandatory (When the OS is Windows)		2.2.2
		Mandatory (When the OS is AIX)		2.2.3

Tasks to be executed when setting up a system using the other functions	Necessity of the task	Conditions for executing the tasks	Reference manual	Reference point
		Mandatory (When the OS is Linux)		2.2.4
Installing products used for connecting to the database	A	For connecting to the database		2.2.5
Symbolic links supported by Application Server (for Unix)	A	When the OS is UNIX		4.1.5
Setting up the database connection environment	A	For connecting to the database (HiRDB)		4.1.6
		For connecting to the database (Oracle)		4.1.7
		For connecting to the database (SQL Server)		4.1.8
Setting up the system environment variables	Y	Mandatory		4.1.11
Setting up the logical server environment variables	A	If you want to change the environment variables during installation		4.1.12
Setting up the management functionality	Y	Mandatory	<i>Management Portal</i>	2.2
Starting Administrator agent	Y	Mandatory		4.1.2
Starting Management Server	Y	Mandatory		4.1.2
System environment settings	Y	Mandatory		3.2
Setting up the system environment	Y	Mandatory		
System startup	Y	Mandatory		4.1.2
Setting the resource adapter	A	For resource connection using a resource adapter (DB Connector)		3.3
		For resource connection using a resource adapter (other than DB Connector)		
Starting the resource adapter	A	For resource connection using a resource adapter (DB Connector)		4.1.2
Starting J2EE applications	A	For executing on-line business (J2EE applications)		3.4, 4.1.2

Legend:

Design: Indicates the *uCosminexus Application Server System Design Guide*.

Management portal: Indicates the *uCosminexus Application Server Management Portal User Guide*.

Y: Mandatory task

A: Tasks to be executed with the execution conditions are fulfilled

Table 4–40: Tasks to be executed when setting up a system using the other functions, and necessity of these tasks (when using the Smart Composer functionality)

Task to be executed when setting up a system using the other functions	Necessity of the task	Conditions for executing the tasks	Reference manual	Reference point
Preparing the system design	Y	Mandatory	Design	<i>Chapter 2</i>
Determining the system configuration	Y	Mandatory		<i>Chapter 3</i>
Estimating the resources to be used	Y	Mandatory		<i>Chapter 5</i>
Preparing the database	A	For connecting to the database	<i>This Manual</i>	<i>2.1.1</i>
Setting up the database environment (Oracle settings)	A	For connecting to the database (Oracle)		<i>4.1.2</i>
Setting up Component Container Administrator (for Unix)	A	When the OS is UNIX and you want to assign operational rights to general users.		<i>4.1.3</i>
Installing Application Server	Y	Mandatory (When the OS is Windows)		<i>2.2.2</i>
		Mandatory (When the OS is AIX)		<i>2.2.3</i>
		Mandatory (When the OS is Linux)		<i>2.2.4</i>
Installing products used for connecting to the database	A	For connecting to the database		<i>2.2.5</i>
Symbolic links supported by Application Server (for Unix)	A	When the OS is UNIX		<i>4.1.5</i>
Setting up the database connection environment	A	For connecting to the database (HiRDB)		<i>4.1.6</i>
		For connecting to the database (Oracle)		<i>4.1.7</i>
		For connecting to the database (SQL Server)		<i>4.1.8</i>
Setting up the system environment variables	Y	Mandatory		<i>4.1.11</i>
Setting up the environment variables of the logical server	A	If you want to change the environment variables during installation		<i>4.1.12</i>
Setting up the management functionality	Y	Mandatory		<i>4.1.14</i>
Starting Administrator agent	Y	Mandatory		<i>4.1.17</i>
Starting Management Server	Y	Mandatory		<i>4.1.18</i>
System environment settings (Easy Setup definition file setting)	Y	Mandatory		<i>4.1.20, 4.8.2[#]</i>
Setting up the system environment (Setup)	Y	Mandatory		<i>4.1.23</i>
System startup	Y	Mandatory		<i>4.1.24</i>

Task to be executed when setting up a system using the other functions	Necessity of the task	Conditions for executing the tasks	Reference manual	Reference point
Setting the resource adapter	A	For resource connection using a resource adapter (DB Connector)		4.1.26
		For resource connection using a resource adapter (other than DB Connector)		4.1.27
Starting the resource adapter	A	For resource connection using a resource adapter (DB Connector)		4.1.28
Setting up and starting business applications	A	For executing on-line business (J2EE applications)		4.1.29

Legend:

Design: Indicates the *uCosminexus Application Server System Design Guide*.

Y: Mandatory task

A: Tasks to be executed with the execution conditions are fulfilled

#: Reference these sections when you want to set up a system that uses the following functionality:

- Scheduling functionality using CTM
- NIO HTTP server functionality (when not using Web server integration)

4.8.2 Notes on setting Easy Setup definition file (when using other functionality)

This subsection describes the notes on setting a system for using the following functions of Application Server in Easy Setup definition file by using the Smart Composer functionality.

- Scheduling functionality using CTM
- NIO HTTP server functionality (when not using Web server integration)

(1) When using CTM based Scheduling functionality in the system for executing J2EE applications

If the system uses CTM, you must define a client that sends requests to CTM. Besides Web front system that is set up by using the Smart Composer functionality or the management portal, you can use EJB client, or a unique user-defined Web system, as a client.

You must define the integrated naming scheduler server and Application Server with the Easy Setup definition file when you use the integrated naming scheduler server (host to which the global CORBA Naming Service is allocated) to set up a system with the integrated naming scheduler server model. Define the integrated naming scheduler server and Application Server respectively on different Web systems. Also, if you want to use a Web front system set up by using the Smart Composer functionality, as a system for sending the requests to CTM; you must define a Web system different from the Web system used in the scheduling functionality.

You must define the following items in Easy Setup definition file for each Web system.

(a) Web system for Application Server (CTM)

This Web system defines Application Server.

- Defining the properties of the Web system
Define Web system for setting up Application Server.

- Defining the load balancer
You cannot define the load balancer. If you define the load balancer, an error occurs.

- Defining the physical tiers
Define `ctm-tier` as the type of the physical tier.

You can allocate multiple servers with Application Server. For allocating multiple J2EE servers, set the number of J2EE servers to be allocated to a single host in the definition of the physical tier. Note that you cannot change the number of J2EE servers to be allocated to a single host while changing the configuration of the Web system.

Besides setting the configuration of CTM domain manager, CTM, Smart Agent, and the Performance Tracer, you can also set a configuration common to all the J2EE servers in `ctm-tier`. When you allocate multiple servers, you can specify common configuration for J2EE servers having the same number (`server-no` tag).

If there are multiple applicable configuration definitions for each J2EE server, and you set the same parameters in each definition, the definitions are applied in the following priority order

1. Service unit definition (defining a specific J2EE server)
2. Physical tier definition (common definition for J2EE servers having the same number)
3. Physical tier definition (common definition for all the J2EE servers)

Set the same value as that of the integrated naming scheduler server for the following parameters to define the relationship with the integrated naming scheduler server.

- CTM domain name (`ctmdomname` of the logical CTM Domain Manager) to which CTM Domain Manager belongs
- Port number to be used in CTM domain manager (`cdm.port` of the logical CTM Domain Manager)
- Port number to be used in Smart Agent (`smartagent.port` of the logical Smart Agent)

- Defining a service unit

Define a service unit for allocating the processes related to CTM, and the J2EE server.

Besides setting the configuration of CTM domain manager, CTM, Smart Agent, and Performance Tracer, you can set the configuration of a specific J2EE server for each service unit. When allocating multiple J2EE servers, specify J2EE servers within a service unit by using a number (`server-no` tag).

You must set a unique value for CTM identifiers (`ctmid`) to identify CTM within a management domain. You can opt not to set a CTM identifier (`ctmid`).

- Defining a host

Define Application Server for allocating the processes related to CTM, and the J2EE server.

(b) Web system for integrated naming scheduler server

This Web system is required when you set up a system with the integrated naming scheduler server model. This Web system defines the integrated naming scheduler server (computer to which the global CORBA Naming Service is allocated).

- Defining the properties of Web system
Define the Web system for setting up the integrated naming scheduler server.
- Defining the load balancer

You cannot define the load balancer. If you define the load balancer, an error occurs.

- Defining the physical tiers

Define `ctm-tier` as the type of the physical tier.

Set the number of J2EE servers to 0 in the `ctm-tier`, because no J2EE server is allocated in an integrated naming scheduler server.

You can configure CTM domain manager, CTM, Smart Agent, and Performance Tracer with `ctm-tier`.

- Defining a service unit

Define a service unit for allocating the processes related to CTM.

- Defining a host

Define the integrated naming scheduler server.

(2) When using NIO HTTP server functionality (when not using Web server integration)

You must define the following items in Easy Setup definition file. Note that you cannot use the load balancer in the `j2ee-tier`. Therefore, delete the load balancer definition. If you want to use the load balancer, use the management portal to set up the system.

- Defining the physical tiers

Define `j2ee-tier` as the type of the physical tier. Also define the setting that enables the NIO HTTP server functionality in `j2ee-tier`.

- Defining a service unit

Define a service unit in which to deploy the J2EE server. Define the port number to be used by the NIO HTTP server.

(3) Notes common for each functionality

You can allocate multiple service units to a single host when using any of the functionalities. You however cannot allocate multiple service units of the same CTM domain to the same host. Following are the notes on allocating multiple service units to a single host:

(a) Notes on logical server settings

If you allocate multiple service units to a single host, multiple logical servers of the same type exist within the same host. Therefore, while creating Easy Setup definition file, do not specify a duplicate value for the following items in the configuration of each logical server.

Table 4–41: Items to be set without duplicating the values for each logical server

Logical server type	Item	param-name specification value
Web server	http port number	<code>Listen</code>
J2EE server	Port number of NIO HTTP server	<code>webserver.connector.nio_http.port^{#1}</code>
	Port number of ajp13	<code>webserver.connector.ajp13.port^{#2}</code>
	Port number of in-process naming service	<code>inprocess.ns.port</code>
	Port number of in-process HTTP server	<code>webserver.connector.inprocess_http.port^{#2}</code>
	Fixed port number of JTA recovery	<code>ejbserver.distributedtx.recovery.port</code>

Logical server type	Item	param-name specification value
	Port number of RMI registry	<code>ejbserver.rmi.naming.port</code>
	Port number of the management server	<code>ejbserver.http.port</code>
	Request-reception port number when acquiring operation information	<code>ejbserver.rmi.remote.listener.port</code>
Performance Tracer	PRF identifier	<code>PRFID</code>
Smart agent	Port number monitored by the smart agent	<code>smartagent.port</code>
CTM domain manager	CTM domain name to which the CTM domain manager belongs	<code>ctmdomname</code>
	CTM execution environment directory	<code>ctmspool</code>
	Port number used by CTM domain manager to exchange CTM domain configuration information	<code>cdm.port</code>
CTM	CTM identifier	<code>ctmid^{#3}</code>
	Port number used by CTM	<code>ctm.port</code>
	Port number of the naming service corresponding to CTM	<code>ctm.ns.port</code>

#1

This item is used in recommended mode. If recommended mode is not used, this item is ignored on the Management Server.

#2

This item is used in V9 compatibility mode. If V9 compatibility mode is not used, this item is ignored on the Management Server.

#3

You can opt not to set `ctmid`. If you do not set `ctmid`, Management Server automatically sets a value that is unique across the hosts.

Reference note

You can set the same value to the same type of the logical server in each service unit, when you do not want to concurrently run multiple service units on a single host.

The definition configuration of setting items differs depending on the Web system to which the service unit allocated to the host belongs.

- When allocating service units of the same Web system to the same host:
Specify in the `configuration` tag within the logical server definition (`define-server` tag) of each service unit.
- When allocating service units of different Web systems to the same host:
Specify in the `configuration` tag within the physical tier definition (`tier` tag) of each Web system.

(b) Notes on the port numbers of Web server

When you allocate multiple service units to a service machine, there are following limitations for changing the port numbers of the Web server. Note that these limitations are equally applicable when multiple service units exist on the same Web system or on different Web systems.

- When same port number is set for Web servers of multiple service units**
You can set the same port number for Web servers of each service unit, when you do not want to concurrently run multiple service units on a single server machine.

Use any of the following procedures to do the changes:

- Concurrently change the port numbers of Web servers of all the service units.
- Change the port numbers of the Web servers of some service units first, and then of other service units.

Important note

If you change the port numbers of Web servers of some service units, the port numbers of other service units get deleted, and you can no more use those Web servers. Be sure to change the port numbers of Web servers of other service units later.

• When different port numbers are set for the Web servers of multiple service units

In the following example, the port number of the Web server of service unit 1 (unit1) is 80, while that of service unit 2 (unit2) is 81. The following table describes how to change the settings of a port number and also the possibility of doing the changes:

Table 4–42: How to change a port number, and the possibility of doing the changes

Method to change the port number	Settings to be done in the Configuration Change definition file used for changing the parameters of the logical server	Changed port number of the Web server		Change possibility (Y/N)
		unit1	unit2	
Changing the port number of the Web server of each service unit to the same number	Set port number 81 in the Web server of service unit 1.	81	81	Y
	Set port number 80 in the Web server of service unit 2.	80	80	Y
Replacing the port number of the Web server of each service unit	Set port number 81 in the Web server of service unit 1 and 80 in the Web server of service unit 2.	81	80	N
Changing the port number of the Web server of one service unit to the port number of the other service unit, and changing the Web server of the other service unit to the unused port number (example: 82)	Set port number 81 in the Web server of service unit 1 and 82 in the Web server of service unit 2.	81	82	N
	Set port number 82 in the Web server of service unit 1 and 80 in the Web server of service unit 2.	82	80	N
Change the port number of the Web server of a service unit to an unused port number (example: 82)	Set port number 82 in the Web server of service unit 1.	82	81	Y
	Set port number 82 in the Web server of service unit 2.	80	82	Y

Legend:

Y: Change is possible

N: Change is not possible

Reference note

You cannot change the preset port number with a single operation. You must execute a set of operations such as setting an unused port number once and then switching to the preset number, and changing the port number in multiple steps.

4.8.3 WebSocket settings for using WebSocket

(1) Settings for outputting WebSocket log data

If you run an application that uses WebSocket in an environment in which a logical Web server links with a J2EE server via a reverse proxy, set the `HWSWebSocketLog` directive on the logical Web server. The following table shows an example of setting the `HWSWebSocketLog` directive.

Table 4–43: Example of setting the `HWSWebSocketLog` directive

No.	OS	Setting example
1	Windows	<code>HWSWebSocketLog " \"\"Application-Server-installation-directory#/httpsd/sbin/rotatelog.exe\" \"Application-Server-installation-directory#/httpsd/servers/HWS_logical-Web-server's-real-server-name/logs/hws_websocket_log\" log-splitting-time-interval -fnum number-of-files -diff time-difference-from-GMT\""</code>
2	UNIX	<code>HWSWebSocketLog " /opt/hitachi/httpsd/sbin/rotatelog /opt/hitachi/httpsd/servers/HWS_logical-Web-server's-real-server-name/logs/hws_websocket_log log-splitting-time-interval -fnum number-of-files -diff time-difference-from-GMT"</code>

#: Use an absolute path to specify the file or directory.

For details about the `HWSWebSocketLog` directive, see the *uCosminexus Application Server HTTP Server User Guide*.

If you specify settings from Smart Composer, use the `AppendDirectives` (directive addition) parameter. For details about the `AppendDirectives` parameter, see *4.10.2 Parameters used for setting up the definitions for the Web server* in the *uCosminexus Application Server Definition Reference Guide*.

4.8.4 Notes on setting the `HWSGracefulStopTimeout` directive and the Manager stop watch time

Set the `HWSGracefulStopTimeout` directive on a logical Web server according to the conditions in the following table.

Table 4–44: Notes on setting the `HWSGracefulStopTimeout` directive

No.	Cosminexus Component Container version	Whether WebSocket is used	Notes
1	Earlier than 11-00-01	--	You do not need to set the directive. ^{#1}
2	11-00-01 or later	Not used	To set the stop watch time to a value that is equal to or larger than the default value of the <code>HWSGracefulStopTimeout</code> directive, set 0 or a value larger than the stop watch time for the directive. ^{#2, #3, #5}
3		Used	For the <code>HWSGracefulStopTimeout</code> directive, set 1 or a larger value, or a value smaller than the stop watch time. ^{#2, #4, #5}

^{#1}: The Manager automatically sets 0 for the `HWSGracefulStopTimeout` directive.

^{#2}: Setting 0 for the stop watch time means that no timeout occurs. Do not set 0 for both the stop watch time and the `HWSGracefulStopTimeout` directive. If you do so, the system waits indefinitely if the Cosminexus HTTP Server cannot stop normally.

^{#3}: The purpose of this setting is to prevent the Cosminexus HTTP Server from timing out before the stop watch time expires when the Manager stops by itself.

#4: The purpose of this setting is to prevent the Manager from forcibly stopping the Cosminexus HTTP Server if the Cosminexus HTTP Server does not time out before the stop watch time expires when the Manager stops by itself.

#5: For the `KeepAliveTimeout` directive, set a value smaller than the stop watch time.

If you specify settings from Smart Composer, use the `KeepAliveTimeout` parameter. For details about the `KeepAliveTimeout` parameter, see *4.10.2 Parameters used for setting up the definitions for the Web server* in the *uCosminexus Application Server Definition Reference Guide*.

4.9 Notes on operations

- If all the following conditions are satisfied when Manager is used in a non-Japanese locale, the messages output to the log file are corrupted:
 - Japanese is specified in a value of an item specified in the management portal, and that value is output to the log
 - A Japanese value is specified in a logical server configuration parameter in the Easy Setup Definition file and change configuration definition file, and that value is output to the log
- In UNIX, unify the locales for Management Server, Administration Agent, and the following commands:
 - `mngsvrutil` command
 - `snapshotlog` command
 - Commands used with the Smart Composer functionality (commands beginning with `cmx_`)
- If access to the Management Server occurs by running, for example, the management command (`mngsvrutil`) or a Smart Composer function immediately after the Administration Agent or Management Server starts, either of the following actions must be taken beforehand:
 - Enable the `-sync` option when the Administration Agent or Management Server starts so that startup of the Administration Agent or Management Server is immediately followed by command execution.
 - Use the `mngsvrutil check` or `adminagentcheck` command to confirm that the Management Server or Administration Agent has already started.

5

Windows, Commands, and Files used in the System Setup and Operations

This chapter describes the windows, commands and files of the management portal used for the system setup and operations.

5.1 Windows used for system setup and operations

This section describes the Management Portal windows used for the system setup and operations.

Table 5–1: Management Portal windows used for the system setup and operations

Window Name	Explanation of Window	Reference points in Management Portal User Guide [#]
[Settings of Cosminexus Management Server] window	Settings route for Cosminexus Management Server.	8.1
[Upload J2EE Applications] window	Uploads J2EE applications to the Management Server operating host	12.2.1
[Import J2EE Applications] window	Imports J2EE applications in the archive format to the logical J2EE server.	12.3.3
[Start/Stop J2EE Applications] window	Starts J2EE applications imported to the logical J2EE server.	12.3.1
[Start J2EE Applications] window		
[Delete J2EE Applications] window	Deletes the imported J2EE applications in the stopped status	12.3.5
[Set JP1 Linkage] window	Enables publishing of Cosminexus error information as a JP1 event.	8.2.7
[Login to Management Server] window	Specifies whether to log in to the management portal.	7.1.2
[Set Web Container] window	Specifies the options at the time of Web container startup.	10.8.4
[Set Web Server] window	Sets information required to operate Web Server.	10.9.1
[Batch Startup] window	Enables batch startup of all the logical servers in the management domain.	11.3.2
[Batch Restart] window	Enables batch restart of all the logical servers in the management domain.	11.3.4
[Batch Stop] window	Enables batch stopping of all the logical servers in the management domain.	11.3.3
[Management Portal] window	This is the top page of management portal.	7.2
[Settings in case of startup] window	Sets whether to start logical server in a batch during the startup of Management Server	8.2.5
[Set the environment variable] window	Sets the information of the environment variable at the time of server startup	10.8.27
[Set Management User Account] window	Sets the management user account to login to Management Server.	8.2.1
[Monitor Operating Information of <Types of Servers>] window	Enables monitoring of the operating information of J2EE container or Java VM in J2EE server.	13.3
[Monitor the Status of <Types of Servers>] window	Enables the status monitoring of the selected logical server.	13.2.3

Window Name	Explanation of Window	Reference points in Management Portal User Guide [#]
[Set performance analysis trace collection] window	Specifies the number of Performance Analysis Trace files that can be compressed in ZIP format.	8.2.6
[Deploy Setup Information] window	Deploys the specified information to each server.	10.10.1
[Set Transaction] window	Sets the transaction information.	10.8.6
[Edit connector property file of the resource adapter] window	Displays or specifies the contents of the Connector Property file.	12.4.5
[Import the resource adapter] window	Imports the resource adapter to the relevant logical J2EE server.	12.4.4
[Start the resource adapter] window	Starts the resource adapter imported to logical J2EE server.	12.4.1
[Start/Stop the resource adapter] window		
[Standard Settings of the resource adapter] window	Displays or specifies standard settings of properties of the resource adapter.	12.4.5
[Stop Resource Adapter] window	Stops the running resource adapter.	12.4.2
[Set Resource Adapter Property] window	Displays or specifies properties to connect to the database, from the resource adapter, imported to the logical J2EE server.	12.4.5
[Log Settings] window	Sets the log information output by Management Server.	8.2.3
[Display Log] window	Enables the listing and referencing of the execution results related to the logical servers, J2EE applications, and resource adapters in the management domain, as a log.	10.10.2, 11.3.6, 12.3.6, 12.4.7
[Operational Status of Logical Server] window	Enables the checking of operational status of all the logical servers in the management domain, in a list form.	11.3.1
[Monitor the Status of Logical Server] window	Enables monitoring of the status of all the logical servers in management domain.	13.2.2

#

Indicates the reference locations in the *uCosminexus Application Server Management Portal User Guide*.

5.2 Commands used for system setup and operations

This section describes the types of commands used for system setup and operations as well as the location to store the commands for each OS.

Table 5–2: Commands used for system setup and operations

Command name	Explanation of command	Storage location of command	Reference locations for commands ^{#1}
adminagentctl	Starts and stops the administration agent	<ul style="list-style-type: none">• For Windows <i>Cosminexus-installation-directory\manager\bin\</i>• For UNIX <i>/opt/Cosminexus/manager/config/</i>	7.2
cjdeployrar	Deploys the resource adapter	<ul style="list-style-type: none">• For Windows <i>Cosminexus-installation-directory\CC\admin\bin\</i>• For UNIX <i>/opt/Cosminexus/CC/admin/bin/</i>	2.4
cjgetrarprop	Acquires properties of RAR file	<ul style="list-style-type: none">• For Windows <i>Cosminexus-installation-directory\CC\admin\bin\</i>• For UNIX <i>/opt/Cosminexus/CC/admin/bin/</i>	
cjimportapp	Imports J2EE applications	<ul style="list-style-type: none">• For Windows <i>Cosminexus-installation-directory\CC\admin\bin\</i>• For UNIX <i>/opt/Cosminexus/CC/admin/bin/</i>	2.3
cjimportres	Imports the resources	<ul style="list-style-type: none">• For Windows <i>Cosminexus-installation-directory\CC\admin\bin\</i>• For UNIX <i>/opt/Cosminexus/CC/admin/bin/</i>	2.4
cjreplaceapp	Replaces applications	<ul style="list-style-type: none">• For Windows <i>Cosminexus-installation-directory\CC\admin\bin\</i>• For UNIX <i>/opt/Cosminexus/CC/admin/bin/</i>	2.3
cjsetrarprop	RAR property settings	<ul style="list-style-type: none">• For Windows <i>Cosminexus-installation-directory\CC\admin\bin\</i>• For UNIX <i>/opt/Cosminexus/CC/admin/bin/</i>	2.4
cjsetup	Setup and unsetup of J2EE server	<ul style="list-style-type: none">• For Windows <i>Cosminexus-installation-directory\CC\server\bin\</i>• For UNIX <i>/opt/Cosminexus/CC/server/bin/</i>	2.2

Command name	Explanation of command	Storage location of command	Reference locations for commands#1
cjstartapp	Starts J2EE applications	<ul style="list-style-type: none"> • For Windows <i>Cosminexus-installation-directory\CC\admin\bin\</i> • For UNIX <i>/opt/Cosminexus/CC/admin/bin/</i> 	2.3
cjstartrar	Starts the resource adapter	<ul style="list-style-type: none"> • For Windows <i>Cosminexus-installation-directory\CC\admin\bin\</i> • For UNIX <i>/opt/Cosminexus/CC/admin/bin/</i> 	2.4
cjtestres	Resource connection test	<ul style="list-style-type: none"> • For Windows <i>Cosminexus-installation-directory\CC\admin\bin\</i> • For UNIX <i>/opt/Cosminexus/CC/admin/bin/</i> 	
cmx_build_model	Generates the information model of the Web system	<ul style="list-style-type: none"> • For Windows <i>Cosminexus-installation-directory\manager\bin\</i> • For UNIX <i>/opt/Cosminexus/manager/config/</i> 	
cmx_build_system	Configures the Web system	<ul style="list-style-type: none"> • For Windows <i>Cosminexus-installation-directory\manager\bin\</i> • For UNIX <i>/opt/Cosminexus/manager/config/</i> 	8.3
cmx_change_model	Changes the Web system information model	<ul style="list-style-type: none"> • For Windows <i>Cosminexus-installation-directory\manager\bin\</i> • For UNIX <i>/opt/Cosminexus/manager/config/</i> 	
cmx_delete_system	Removes the Web system	<ul style="list-style-type: none"> • For Windows <i>Cosminexus-installation-directory\manager\bin\</i> • For UNIX <i>/opt/Cosminexus/manager/config/</i> 	
cmx_export_model	Outputs Easy Setup definition file	<ul style="list-style-type: none"> • For Windows <i>Cosminexus-installation-directory\manager\bin\</i> • For UNIX <i>/opt/Cosminexus/manager/config/</i> 	
cmx_list_model	Acquires the Web system information model	<ul style="list-style-type: none"> • For Windows <i>Cosminexus-installation-directory\manager\bin\</i> 	

Command name	Explanation of command	Storage location of command	Reference locations for commands#1
		<ul style="list-style-type: none"> • For UNIX /opt/Cosminexus/ manager/config/ 	
cmx_start_target	Starts the Web system or the service unit	<ul style="list-style-type: none"> • For Windows Cosminexus-installation- directory\manager\bin\ • For UNIX /opt/Cosminexus/ manager/config/ 	
cmx_stop_target	Stops the Web system or the service unit	<ul style="list-style-type: none"> • For Windows Cosminexus-installation- directory\manager\bin\ • For UNIX /opt/Cosminexus/ manager/config/ 	
hwsserveredit	Generates the multiple Web server environments	<ul style="list-style-type: none"> • For Windows Cosminexus-installation- directory\httpds\admin\bin\ • For UNIX /opt/hitachi/httpds/admin/bin/ 	--#2
jar	Sets HITACHI Cosminexus Application Property file to application	<ul style="list-style-type: none"> • For Windows Cosminexus-installation- directory\jdk\bin\ • For UNIX /opt/Cosminexus/jdk/bin/ 	--
mngautorun	Sets up/unsets up the automatic start and automatic restart	<ul style="list-style-type: none"> • For Windows Cosminexus-installation- directory\manager\bin\ • For UNIX /opt/Cosminexus/ manager/config/ 	7.2
mngenvsetup	Sets the management group	<ul style="list-style-type: none"> • For Windows Cosminexus-installation- directory\manager\bin\ • For UNIX /opt/Cosminexus/ manager/config/ 	
mngsvrctl	Starts/stops/sets up Management Server	<ul style="list-style-type: none"> • For Windows Cosminexus-installation- directory\manager\bin\ • For UNIX /opt/Cosminexus/ manager/config/ 	
mngsvrutil	Management command of Management Server	<ul style="list-style-type: none"> • For Windows Cosminexus-installation- directory\manager\bin\ • For UNIX 	

Command name	Explanation of command	Storage location of command	Reference locations for commands ^{#1}
		/opt/Cosminexus/ manager/config/	
setupwizard	System setup, unsetup, and replication	<ul style="list-style-type: none"> • For Windows Cosminexus-installation- directory\manager\setup\bin\ • For UNIX /opt/Cosminexus/manager/ setup/bin/ 	

Legend:

--: Not applicable

^{#1}

Indicates the reference locations in the *uCosminexus Application Server Command Reference Guide*.

^{#2}

For the `hwsserveredit` command, see *4.12.1 Generating multiple Web server environment (hwsserveredit command)* in the *uCosminexus Application Server HTTP Server User Guide*.

5.3 Files used for system setup and operations

This section describes the file types and the template files used for system setup and operations as well as the file storage location for each OS.

Table 5–3: Files used for the setup and operations of the system operating environment

File name	Explanation of file	File storage location	Reference locations for definitions (Server definitions)#1
adminagent.properties	Administration Agent Property file	<ul style="list-style-type: none">• For Windows <i>Cosminexus-installation-directory\manager\config\</i>• For UNIX <i>/opt/Cosminexus/manager/config/</i>	8.2.1
adminagent.xml	Administration Agent Setup file	<ul style="list-style-type: none">• For Windows <i>Cosminexus-installation-directory\manager\config\</i>• For UNIX <i>/opt/Cosminexus/manager/config/</i>	8.2.4
Connector Property File	Property file used in the settings of resources	--	--#2
cosminexus.xml	Cosminexus Application Property file	<i>Route--EAR/META-INF/cosminexus.xml</i>	--#3
lb.properties	Load Balancer Definition Property file	<ul style="list-style-type: none">• For Windows <i>Cosminexus-installation-directory\manager\config\</i>• For UNIX <i>/opt/Cosminexus/manager/config/</i>	4.2.4
manager.cfg	Manager Configuration file	<ul style="list-style-type: none">• For Windows <i>Cosminexus-installation-directory\manager\config\</i>• For UNIX <i>/opt/Cosminexus/manager/config/</i>	8.2.9
mngagent.real-server-name.properties	Management Agent property file	<ul style="list-style-type: none">• In Windows <i>Application-Server-installation-directory\manager\config\</i>• In UNIX <i>/opt/Cosminexus/manager/config/</i>	8.2.5
mserver.properties	Management Server Environment Setup file	<ul style="list-style-type: none">• For Windows <i>Cosminexus-installation-directory\manager\config\</i>• For UNIX <i>/opt/Cosminexus/manager/config/</i>	8.2.6

File name	Explanation of file	File storage location	Reference locations for definitions (Server definitions) ^{#1}
<code>mevent.logical-server-name.properties</code>	Property file for issuing Management events	<ul style="list-style-type: none"> • In Windows <i>Application-Server-installation-directory</i>\manager\config\ • In UNIX /opt/Cosminexus/manager/config/ 	8.2.11
<code>.mngsvrutilrc</code>	Client-side definition file for the mngsvrutil command	Home directory of the OS users	8.2.14
<code>mngsvrutilcl.properties</code>	Client-side common definition file for the mngsvrutil command	<ul style="list-style-type: none"> • In Windows <i>Application-Server-installation-directory</i>\manager\config\ • In UNIX /opt/Cosminexus/manager/config/ 	8.2.16
<code>setupwizard_success.dat</code>	Setup Information file	<ul style="list-style-type: none"> • For Windows <i>Cosminexus-installation-directory</i>\manager\setup\config\ • For UNIX /opt/Cosminexus/manager/config/ 	-- ^{#4}
Easy Setup Definition file	Files used in Smart Composer functionality	<ul style="list-style-type: none"> • For Windows <i>Cosminexus-installation-directory</i>\manager\config\templates\cmxdefcombinedmodel.xml^{#5} • For UNIX /opt/Cosminexus/manager/config/templates/cmxdefcombinedmodel.xml^{#5} 	4.3
Configuration Change Definition file	Files used in Smart Composer functionality	<ul style="list-style-type: none"> • For Windows <i>Cosminexus-installation-directory</i>\manager\config\templates\cmxmodcombinedmodel.xml^{#5} <i>Cosminexus-installation-directory</i>\manager\config\templates\cmxaddcombinedmodel.xml^{#5} • For UNIX /opt/Cosminexus/manager/config/templates/cmxmodcombinedmodel.xml^{#5} /opt/Cosminexus/manager/config/templates/cmxaddcombinedmodel.xml^{#5} 	4.4

Legend:

--: Not applicable

^{#1}

Indicates the reference locations in the *uCosminexus Application Server Definition Reference Guide*.

#2

For the HITACHI Connector Property file, see *4.1 HITACHI Connector Property file* in the *uCosminexus Application Server Application and Resource Definition Reference Guide*.

#3

For the `cosminexus.xml`, see *2. Cosminexus Application Property File (cosminexus.xml)* in the *uCosminexus Application Server Application and Resource Definition Reference Guide*.

#4

For `setupwizard_success.dat`, see *2.2.7 Notes on setting up the system environment*.

#5

Indicates the template file.



Appendixes

A. Parameters set up by using the Setup Wizard

When you setup a system with the Setup Wizard, the following values are used for each of the system parameters:

1. Parameters for which values are set with a dialog box

The set values are used.

2. Parameters for which values are not set with a dialog box

The default values of the parameters specifiable in the Easy Setup definition file are used.

For details on the parameters that are specifiable in the Easy Setup definition file and default values of the parameters, see 4.3 *Easy Setup definition file* in the *uCosminexus Application Server Definition Reference Guide*.

However, values other than the default values might be set for the parameters in point 2.

This section describes such parameters from among the parameters in point 2, where values other than the default values are set. The description is according to the set logical server.

A.1 Parameters for which values other than the default values are set using the Setup Wizard (logical Web server)

The following table describes parameters set to the logical Web server, from among the parameters for which the values other than the default values are set by using the Setup Wizard. For details on the parameters, see 4.10 *Parameters applicable to logical Web servers* in the *uCosminexus Application Server Definition Reference Guide*.

Table A–1: Parameters for which values other than the default values are set (logical Web server)

Parameter name	Default parameter value	Value set by using a Setup Wizard	Explanation
HWSKeepStartServers ^{#1}	Off	On	Maintains a number of processes running on the server.
KeepAliveTimeout	15	3	Specifies 3 (unit: seconds) as a request wait time for KeepAlive connection.
Listen	--	80	Specifies 80 as a port number for receiving requests. When you set a port number of the Web server in the System Environment Settings dialog box of the custom setup, the set value becomes valid.
MaxClients.worker ^{#1}	400	20	Specifies 20 as the maximum number of clients that can be concurrently connected.
StartServers.worker ^{#1}	2	1	Specifies 1 as the number of server processes when starting a Web server.
ThreadsPerChild ^{#2}	50	20	Specifies 20 as the number of threads to be started as a server. Note that the specified number of threads indicates the maximum number of concurrent connections to the server.
HttpsdErrorMethod	Div	Wrap	Outputs the error log of the Cosminexus HTTP Server by using a wrap-around method.
ThreadsPerChild.worker ^{#1}	400	20	Specifies 20 as the number of server threads to be generated per server process.

Legend:

--: Not applicable

#1

The specified value takes effect only if the OS is UNIX.

#2

The specified value takes effect only if the OS is Windows.

A.2 Parameters for which the values other than the default values are set by using the Setup Wizard (logical J2EE server)

The following table describes the parameters that are set to the logical J2EE server, from among the parameters for which values other than the default values are set, by using the Setup Wizard. For details on the parameters, see *4.11 Parameters applicable to logical J2EE servers* in the *uCosminexus Application Server Definition Reference Guide*.

Table A–2: Parameters for which values other than the default values are set (logical J2EE server)

Parameter Name	Default parameter value	Value set with a Setup Wizard	Explanation
<code>ejbserver.connectionpool.applicationAuthentication.disabled</code>	false	true	Enables the optimization functionality of the container management sign-on.
<code>ejbserver.ext.method_observation.interval</code>	0	10	Uses the J2EE application execution time monitoring functionality. Also, specifies 10 (unit: seconds) as a time interval for executing timeout and method cancellation with different threads.
<code>ejbserver.jta.TransactionManager.defaultTimeout</code>	180	60	Specifies 60 (unit: seconds) as a transaction timeout value for transactions started on the J2EE server.
<code>ejbserver.logger.channels.define.WebServletLogFile.filesize</code>	4194304	16777216	Specifies 16777216 (unit: bytes) as the size of the Web servlet log file.
<code>add.jvm.arg</code>	--	<code>-Xms512m</code>	Specifies 512 (unit: megabytes) as the initial size of the Java heap memory area.
	--	<code>-Xmx512m</code>	Specifies 512 (unit: megabytes) as the maximum size of the Java heap memory area.
	--	<code>-XX:MetaspaceSize=128m</code>	A value used for calculation when changing the Full GC threshold of the Metaspace area, this value specifies the low end of the threshold. The default size is 128 (MB).
	--	<code>-XX:MaxMetaspaceSize=128m</code>	Specifies 128 (unit: megabytes) as the maximum size of the Metaspace area.
	--	<code>-XX:+HitachiVerboseGC</code>	Outputs the extension <code>verbosegc</code> information.
	--	<code>-XX:HitachiVerboseGCIntervalTime=0</code>	Specifies 0 (unit: seconds) as a time interval to output the extension <code>verbosegc</code> information.

Parameter Name	Default parameter value	Value set with a Setup Wizard	Explanation
	--	- XX:+HitachiVerboseGCPrintCause	Outputs the cause of GC to the end of the extension verbosegc information.
	--	- XX:+HitachiOutputMilliTime	Outputs the date and time up to milliseconds to the Java VM log file.
	--	- XX:+HitachiCommaVerboseGC	Outputs the extension verbosegc information in comma format to retrieve the information in CSV file.
	--	- XX:HitachiJavaLogFileSize=4096k	Specifies 4096 (unit: kilobytes) as the maximum size of the JavaVM log file to be created.
	--	- XX:HitachiJavaLogNumberOfFile=4	Specifies 4 as the maximum number of JavaVM log files to be created.
webserver.connector.nio_http.port	8080	80	This parameter applies when you select the system configuration (j2ee-tier) that consists only of a J2EE server. It specifies the standard port number as the port number of the NIO HTTP server.
ex.properties	--	sun.nio.cs.map=W indows-31J/ Shift_JIS	Specifies the Shift_JIS compatibility option [#]
cpp.library.version	For Linux (64-bit): 6 For all other Linux environments: 5	6	Specifies the version of the C++ library. This parameter is only set in Linux environments (excluding 64-bit editions).
use.security	true	false	Does not use the Security Manager.

Legend:

--: Not applicable

#

If you specify the Shift_JIS compatibility option, an encoding name "Shift_JIS" is used as an alternate name of "MS932".

A.3 Parameters for which values other than the default values are set by using the Setup Wizard (logical performance tracer)

The following table describes parameters set to the logical performance tracer, from among the parameters for which the values other than the default values are set by using the Setup Wizard. For details on the parameters, see *4.12 Parameters applicable to logical performance tracers* in the *uCosminexus Application Server Definition Reference Guide*.

Table A–3: Parameters for which values other than the default values are set (logical performance tracer)

Parameter name	Default parameter value	Value set by using a Setup Wizard	Explanation
mstartup.retry wait	0	60	Specifies 60 (unit: seconds) as a retry interval for automatic restart.

Parameter name	Default parameter value	Value set by using a Setup Wizard	Explanation
PrfTraceLevel	STANDARD	00140000	<p>Specifies the trace collection level of the performance tracer as follows:</p> <ul style="list-style-type: none"> • JCA/DB Connector Details • Other functionality layer Standard

B. Post-Installation Directory Configuration

This section describes the post-installation directory configuration of Application Server. The section also describes the directory configuration of Cosminexus Component Container, among the component software of Application Server.

The installation directory is described as follows:

- Windows installation directory (default)
OS-installation-drive: \Program Files\Hitachi\Cosminexus
- UNIX installation directory
/opt/Cosminexus

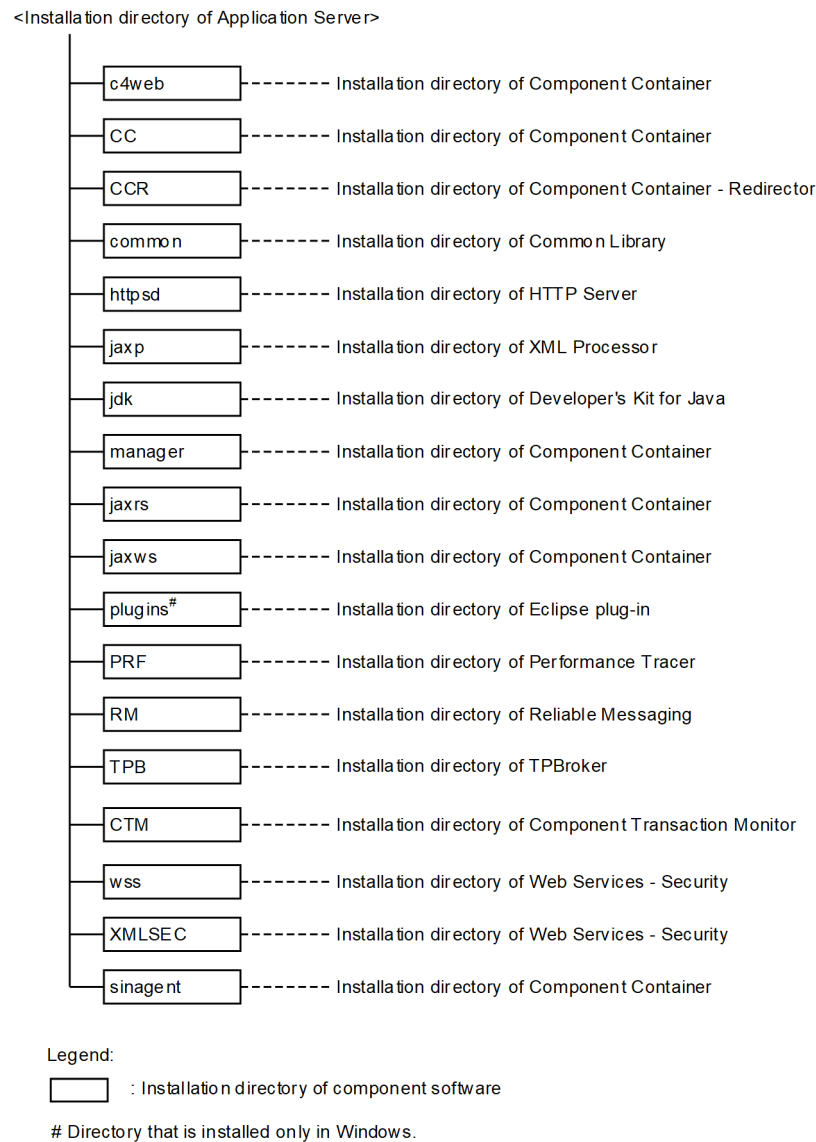
B.1 Directory structure of application server

This section describes the directory structure of Application Server for each OS.

- **For Windows**

The following figure shows the directory structure of Application Server for Windows. Note that "Cosminexus" is omitted from the name of the component software in the figure.

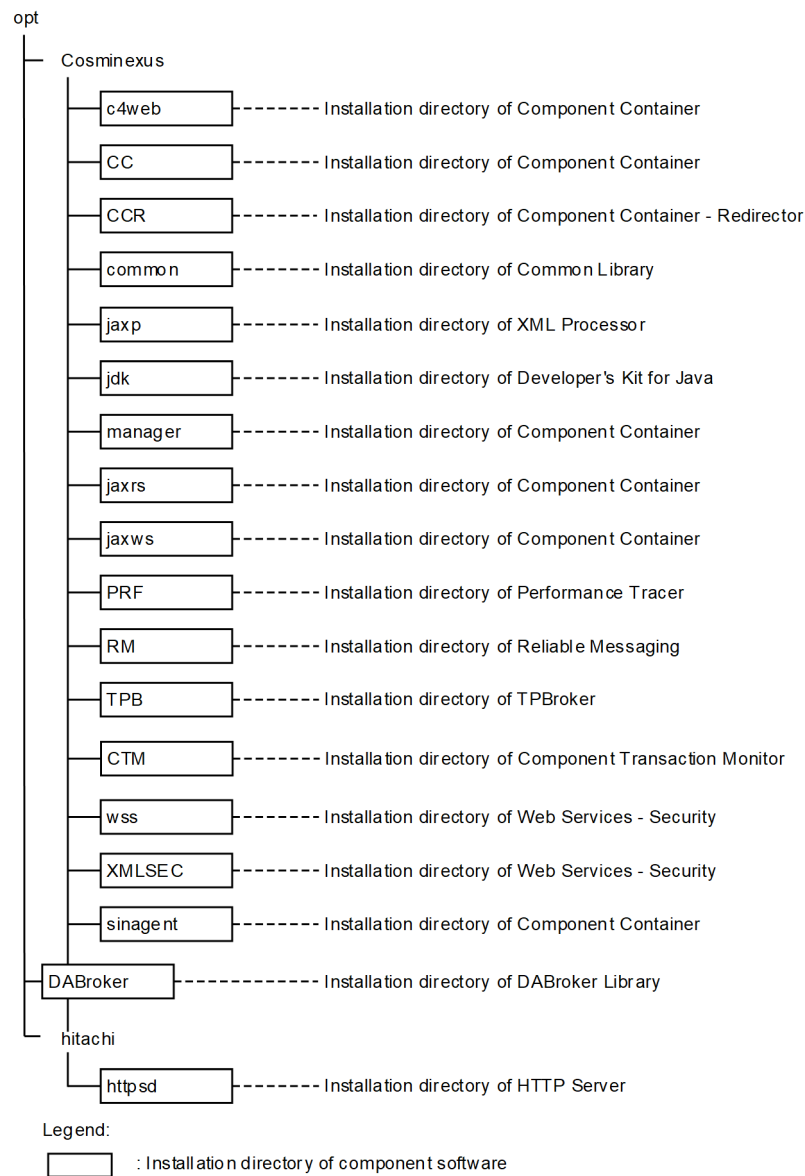
Figure B–1: Directory structure of Application Server (for Windows)



• **For UNIX**

The following figure shows the directory structure of Application Server for UNIX. Note that "Cosminexus" is omitted from the name of the component software in the figure.

Figure B–2: Directory structure of Application Server (for UNIX)



Important note

Installation directory

If you install Application Server, the directory attributes of /opt or /opt/Cosminexus might be changed.

B.2 Directory structure of Cosminexus Component Container

The following table describes the structure of each directory under Cosminexus Component Container directory in Figure Appendix B.1.

- **CC directory**

This directory provides the functions of the platforms such as container, from among the functions provided by Cosminexus Component Container. The directory is *Cosminexus-installation-directory* \CC (for windows), or /opt/Cosminexus/CC (for Unix).

Table B–1: Directory structure of Cosminexus Component Container (CC directory)

Directory				Explanation
adapters	--			A directory for storing the adapters
	OpenTP1			A directory for storing the TP1 inbound adapters
admin	--			J2EE server management directory
	bin			A directory for storing the server management command
	dtds			A directory for storing the DTD files for CUI
	logs			A directory for storing a log of the server management command
	sysconf			A directory for storing the system definition files of the server management command. However, you cannot modify the directory.
	templates			A directory for storing the property file templates
	usrconf			A directory for storing the user definition files of the server management command (Customized).
batch	--			A directory for batch applications
	bin			A directory for storing the execution files of batch applications
	logs			A directory to output a log of batch applications
	sysconf			A directory for storing the system definition files of batch applications. However, you cannot modify the directory.
	templates			A directory for storing the templates of user definition files of batch applications
cjmsp	--			A directory for Cosminexus JMS provider
	bin			A directory for storing the Cosminexus JMS provider commands
	lib	--		A directory for storing the library files and the RAR files of Cosminexus JMS provider
		props	--	A directory for storing the property files of Cosminexus JMS provider
			broker	A directory for storing the broker property files of Cosminexus JMS provider
		templates		A directory for storing the templates of Connector property files of the CJMSP resource adapter
	var	--		A default directory of Cosminexus JMS provider
		admin	--	A directory for management command of Cosminexus JMS provider
			config	A directory for storing the management command properties of Cosminexus JMS provider

Directory			Explanation	
		instances	A directory for storing the instances of Cosminexus JMS provider	
client	--		A directory for EJB client applications	
	bin		A directory for storing the execution files of EJB client applications	
	lib		A directory for storing the JAR files of EJB client applications	
	logs		A directory to output a log of EJB client applications	
	sysconf		A directory for storing the system definition files of EJB client applications. However, you cannot modify the directory.	
	templates		A directory for storing the templates of user definition files of EJB client applications	
DBConnector	--		A directory for storing the RAR files of DB Connector	
	ReliableMessaging		A directory for storing the RAR files of DB Connector for Cosminexus RM	
	ClusterPool		A directory for storing the RAR files when using the connection pool clustering functionality (compatibility functionality).	
examples			A directory for storing the sample programs	
lib			A directory for storing the class library files for Cosminexus Component Container	
logs			A directory for storing the log during installation	
server	--		--	
	bin		A directory for storing the command tools for the J2EE server	
	lib	--		A directory for storing the library files for the J2EE server
		dtds		A directory for storing the DTD files used in Cosminexus Component Container. However, you cannot modify the directory.
		schemas		A directory for storing the DD schema definition files
	public		A default work directory of the J2EE server	
	repository		A temporary work directory.	
	sysconf		A directory for storing the system definition files. However, you cannot modify the directory.	
	templates		A directory for storing the templates of configuration files or property files	
	usrconf	--		--
		ejb	--	--
			local-host-name	A directory for storing the user definition files of the J2EE server (Customized)
spool	--		A temporary directory	

Directory			Explanation
web	--		--
	redirector	--	A directory for storing the redirector (compatibility functionality) program and its definition files
		logs	A directory for storing the log data that is output from the redirector (compatibility functionality)

Legend:

--: Not applicable

- **Manager directory**

This directory provides the operation management functions of Application Server, from among the functions provided by Cosminexus Component Container.

Table B–2: Directory structure of Cosminexus Component Container (manager directory)

Directory				Explanation			
bin				A directory for storing the commands that are used in the management functionality			
config	--			A directory for storing the commands that are used in the management functionality			
	templates			A directory for storing the definition files that are used in the operation management functionality			
containers	--			--			
	m	--		--			
		usrconf		A directory for storing the user authentication information definition files			
		webapps	--		--		
			mngsvr		A directory for storing the performance files of Management Server		
			WEB-INF		A directory for storing the web.xml		
			vmxsvr	--		A directory for storing the virtual server manager GUI login JSP files	
				image		A directory for storing the header titles log of the virtual server manager	
	WEB-INF			A directory for storing the files that map the URL and servlet class			
examples				A directory for storing the user management samples			
lib				A directory for storing the library files			
log				A log output destination directory			
modules				A directory for storing the custom login modules of the integrated user management framework			
spool	--			A directory for log collection			
	mibs			A directory for storing the MIB			

Directory			Explanation
tmp			A temporary work directory
apps			A directory for default application registration
externals	--		--
	jpl	--	A directory for storing the JPL linkage files. Note that this directory is used in Windows.
		ajs3_custom_jobs	A directory for storing custom jobs. Note that this directory is used in Windows.
		mngsvrmonitor	A directory for storing the monitor start commands. Note that this directory is used in Windows.
		ScenarioTemplate	A directory for storing the scenario templates
compat3	--		A directory for storing the performance files of Management Server of the old version Note that this directory is used in Windows, AIX, and Solaris.
	bin		A directory for storing the commands used in the operation management functionality
	config	--	A directory for storing the definition files used in the operation management functionality
		Administrator	A directory for storing the user password or user registration
	fwj		A directory for storing the property files for each business
	log		A directory for storing the trace files
	tmp		A temporary work directory
setup	--		A Setup Wizard directory
	bin		--
	config		A directory for storing the setup files for the Setup Wizard and the files that maintain the setup information
	lib		--
	log		A directory for the trace files of the Setup Wizard
	tmp		A temporary work directory of the Setup Wizard
vmx	--		A directory for storing the files used in the virtual server manager of 08-50 mode. Also, the URL files to login to the virtual server manager GUI are stored under this directory.
	bin		A directory for storing the commands used in the virtual server manager of 08-50 mode

Directory		Explanation
	config	A directory for storing the definition files used in the virtual server manager of 08-50 mode
	log	A directory for storing the trace files of the virtual server manager of 08-50 mode
	spool	A directory for storing the processing data of the virtual server manager of 08-50 mode
	templates	A directory for storing the templates of the definition files used in the virtual server manager of 08-50 mode
vmi	--	A directory for storing the files used in the virtual server manager
	bin	A directory for storing the commands used in the virtual server manager
	config	--
		lb
	spool	A directory for storing the processing data of the virtual server manager
	templates	A directory for storing the templates of the definition files used in the virtual server manager

Legend:

--: Not applicable

- **c4web directory**

This directory provides the functions of the SOAP application execution platform among the functions provided by Cosminexus Component Container.

- **jaxrs directory**

This directory provides the JAX-RS functions among the functions provided by Cosminexus Component Container.

- **jaxws directory**

This directory provides the JAX-WS engine functions among the functions provided by Cosminexus Component Container.

- **sinagent directory**

This directory provides the functions of the server communication agent among the functions provided by Cosminexus Component Container.

C. Work Directory

Work directory is a directory specified in the `ejb.public.directory` key of `usrconf.cfg` (option definition file for the J2EE server) or `usrconf.cfg` (option definition file for the batch server).

C.1 Work directory of the J2EE server

The J2EE server creates directories and files by using server names, display names of applications, and the files in EAR files in a work directory. The directory names, file names, and path length have an upper limit and the J2EE server cannot operate normally if an entire work directory does not fit into the entire path. This section describes a structure of a work directory and formulas to estimate the path length of a work directory.

(1) Structure of the work directory of the J2EE server

The work directory of the J2EE server is the work area required for operating the J2EE server. This work area stores information such as user password information, information of imported resource adapters, EAR files, EJB-JAR files, WAR files, and created J2EE applications.

- The J2EE server has an exclusive directory structure for each J2EE server under the work directory. This allows you to specify common directories for multiple J2EE servers.
- If you start the J2EE server, by changing the work directory, you cannot use the existing J2EE applications.
- If you move the work directory to another machine, the J2EE server on another machine cannot recognize the work directory.
- In a work directory, you cannot use a path name containing a two-byte code.
- The default work directories are as follows:
 - **For Windows**
`Cosminexus-installation-directory\CC\Server\public`
 - **For Unix**
`/opt/Cosminexus/CC/Server/public`

You can change the work directory with the `ejb.public.directory` parameter in the `configuration` tag of the logical J2EE server (`j2ee-server`) of the Easy Setup definition file.

J2EE server has the following work directories:

- J2EE application (configuration related)
- J2EE application (deployment related)
- J2EE resource
- J2EE resource adapter (configuration related)
- J2EE resource adapter (deployment related)
- Web application (JSP related)
- Web application (others)

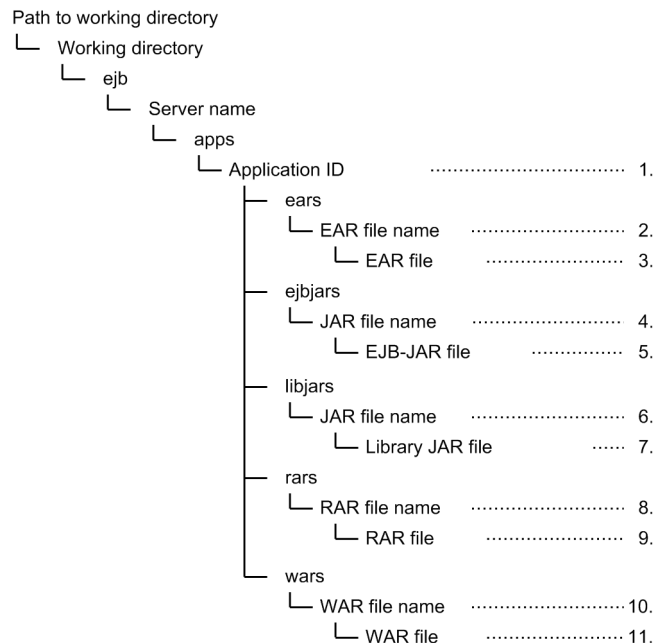
The following subsection describes the directory structure of each of the above-mentioned work directory. The subsection also describes the directory structure after executing the migration command.

A directory structure is shown in the figure and each directory is described. The numbers mentioned in the figure correspond to the numbers mentioned in the explanation. Also, if the same directory contains various types of files, only the longest file name is listed.

(a) J2EE application (configuration related)

The following figure shows the directory structure of the J2EE application (configuration related).

Figure C–1: Directory structure of the J2EE application (configuration related)

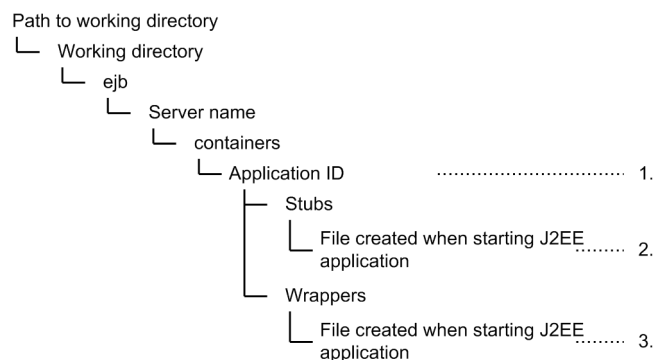


1. This directory is created for each J2EE application.
2. This directory is created on importing the EAR file. The directory name is given on based on the EAR file name.
3. The EAR file is stored with a 17 digit number . ear file name.
4. This directory is created for each EJB-JAR file. The directory name is given based on the EJB-JAR file name.
5. The EJB-JAR file is stored with a 17 digit number . jar file name.
6. This directory is created for each library JAR file. The directory name is given based on the library JAR file name.
7. The library JAR file is stored with a 17 digit number . jar file name.
8. This directory is created for each RAR file. The directory name is given based on the RAR file name.
9. The RAR file is stored with a 17 digit number . rar file name.
10. This directory is created for each WAR file. The directory name is given based on the WAR file name.
11. The WAR file is stored with a 17 digit number . jar file name.

(b) J2EE application (deployment related)

The following figure shows the directory structure of the J2EE application (deployment related).

Figure C–2: Directory structure of the J2EE application (deployment related)

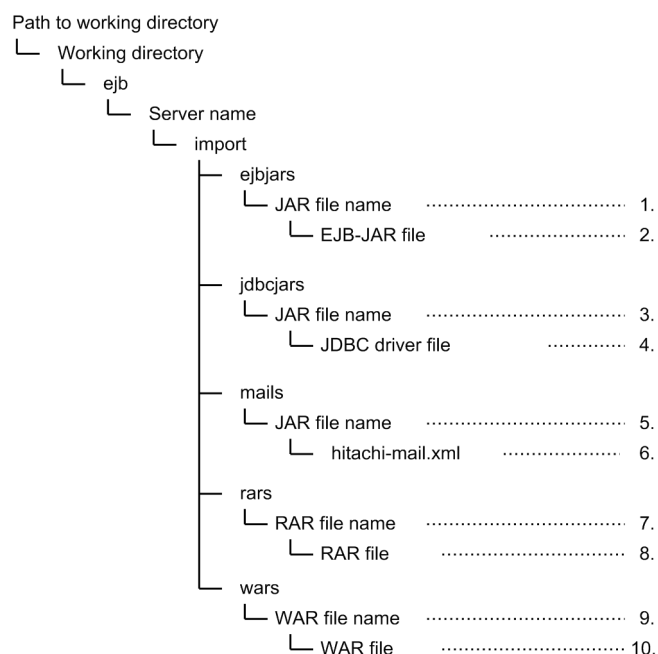


1. This directory is created for each J2EE application.
2. This file is created when you start the J2EE application. If the J2EE application includes the home interface, remote interface, and interfaces implementing `java.rmi.Remote`, the files are created based on their package names or class names.
3. This file is created when you start the J2EE application. If J2EE application includes home, remote, local, and local home interfaces, the files are created based on their package names or class names.

(c) J2EE resource

The following figure shows the directory structure of the J2EE resources.

Figure C–3: Directory structure of the J2EE resources



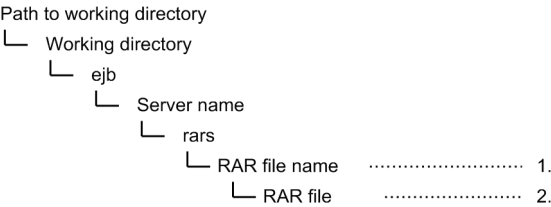
1. This directory is created for each EJB-JAR file. The directory name is given based on the EJB-JAR file name.
2. The EJB-JAR files are stored with a 17 digit number .jar file name.
3. This directory is created for each data source. The directory name is given based on the JDBC driver file name.
4. The JDBC driver files are saved with a 17 digit number .jar file name.
5. This directory is created for each JavaMail setting. The directory name is given based on `ejbmail`.
6. The files storing the JavaMail settings are saved at this location.

- 7. This directory is created for each RAR file. The directory name is given based on the RAR file name.
- 8. The RAR files are stored with a 17 digit `number.rar` file name.
- 9. This directory is created for each WAR file. The directory name is given based on the WAR file name.
- 10. The WAR files are stored with a 17 digit `number.jar` file name.

(d) J2EE resource adapter (configuration related)

The following figure shows the directory structure of the J2EE resource adapter (configuration related).

Figure C–4: Directory structure of the J2EE resource adapter (configuration related)

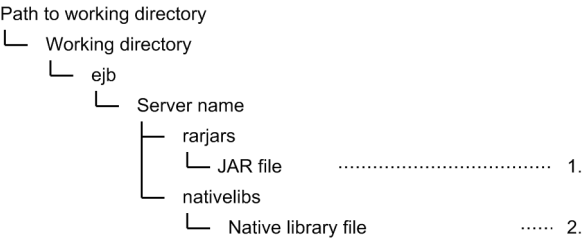


- 1. This directory is created for each RAR file. The directory name is given based on the RAR file name.
- 2. The RAR files are stored with a 17 digit `number.rar` file name.

(e) J2EE resource adapter (deployment related)

The following figure shows the directory structure of the J2EE resource adapter (deployment related). Also, in the figure, if the same directory contains various types of files, only the longest file name is listed.

Figure C–5: Directory structure of the J2EE resource adapter (deployment related)

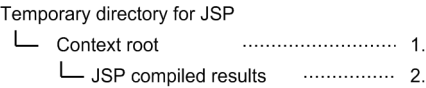


- 1. The JAR files in the RAR files are stored with a 17 digit `number.jar` file name.
- 2. The native library file in the RAR file is stored at this location.

(f) Web application (JSP related)

The following figure shows the directory structure of the Web application (JSP related).

Figure C–6: Directory structure of the Web application (JSP related)

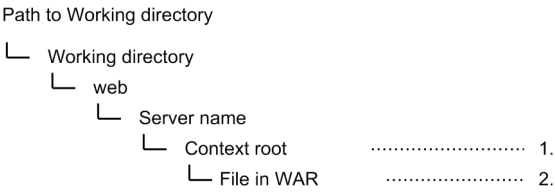


- 1. This directory is created with the name specified in the context root. If the name contains a forward slash (/), the slash is replaced with a string of 3 characters.
- 2. A class file created by compiling the JSPs is stored at this location. If characters other than alphanumeric characters are included in the JSP file name, each character is replaced with a string of 6 characters. Also, if the file name begins with a number, 1 character is added.

(g) Web application (others)

The following figure shows the directory structure of the Web application (others).

Figure C–7: Directory structure of the Web application (others)

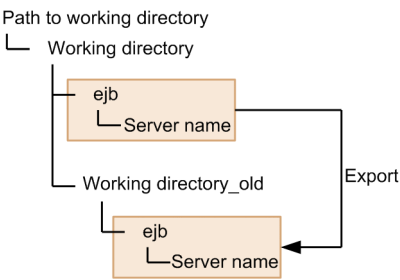


- 1. This directory is created with the name specified in the context root. If the name contains a forward slash (/), the slash is replaced with a string of 3 characters.
- 2. The files included in the WAR file are extracted at this location.

(h) Directory structure of the J2EE server or Web container server (compatibility functionality) after executing migration command

When you execute the migration command of the J2EE server or the Web container server, a directory with the name `work_directory_old` is created under the work directory, and the files in the work directory of the earlier version are saved in that created directory. For future upgrade installation, the path length must have a space for `work_directory_old`. The following figure shows the directory structure of the J2EE server or the Web container server, after executing the migration command.

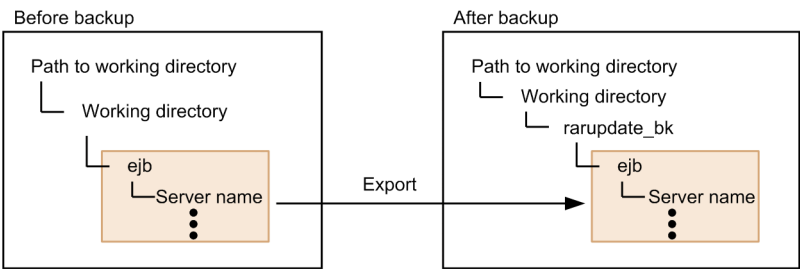
Figure C–8: Directory structure of the J2EE server or the Web container server after executing the migration command



(i) Directory structure of the resource adapter after executing the migration command

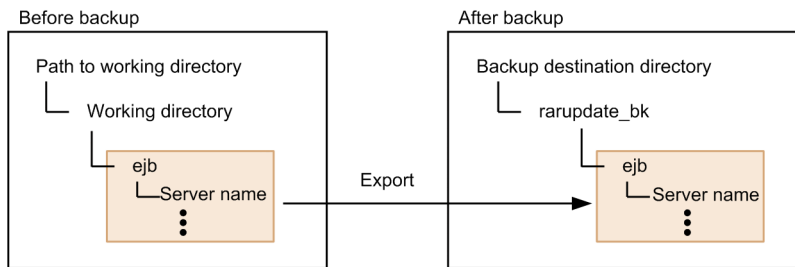
When you execute the migration command of the resource adapter, a directory with the name `rarupdate_bk` is created, and resource adapter files of each J2EE server are stored here. If the work directory is `... \directory-name`, or `... /directory-name`, the backup RAR directory is set as `... \directory-name \rarupdate_bk`, or `... /directory-name /rarupdate_bk`. The following figure shows the directory structure of the resource adapter after executing the migration command.

Figure C–9: Directory structure of the resource adapter after executing the migration command



If there is no space for adding the path length of `rarupdate_bk` under the work directory, you can specify a backup destination directory by using the `-backupto` option when executing the migration command, and store the files to the area having a space for path length. The following figure shows the directory structure of the resource adapter after executing the migration command when using the `-backupto` option.

Figure C–10: Directory structure of the resource adapter after executing the migration command (when a backup destination directory is specified by using the `backupto` option)



(2) Formulas for estimating path length of the work directory

The following are the formulas for estimating the path length of the work directory (unit: bytes). Adjust various parameters so that all of these formulas are satisfied. Also, the *Maximum Path Length* used in these formulas is the path length limit that is specified for the OS. For details on the path length limit of the OS, check your OS documents.

Note that the maximum path length in Windows is 259 bytes.

- $A + 2 \times B + C + D + E + 58 \leq \text{maximum path length}$
- $A + 2 \times B + C + E' + 61 \leq \text{maximum path length}$
- $A + 2 \times B + C + E'' + 50 \leq \text{maximum path length}$
- $A + 2 \times B + C + D + (\text{greater value of } F + 37 \text{ or } M + 68) + 23 \leq \text{maximum path length}$ (If $F \leq 35$, convert to 35)
- $A + 2 \times B + C + G + 22 \leq \text{maximum path length}$ (if $G \leq 18$, convert to 18)
- $A + B + C + H + I + 8 \times 123 \leq \text{maximum path length}$
- $A + 2 \times B + C + J + 34 \leq \text{maximum path length}$
- $J + K + 18 \leq \text{maximum path length}$
- $A + 2 \times B + C + L + 43 \leq \text{maximum path length}$ (when using Cosminexus RM)
- $K + L + 27 \leq \text{maximum path length}$ (when using Cosminexus RM)
- $A + 2 \times B + C + H + L + I + N + 22 \leq \text{maximum path length}$
- $A + 2 \times B + C + H + L + O + N + 39 \leq \text{maximum path length}$
- $P + H + I + N + 3 \leq \text{maximum path length}$
- $O + H + M + N + 20 \leq \text{maximum path length}$

Legend:

- A: Path length up to the work directory
- B: Length of the work directory name
- C: Length of the longest server name
- D: Length of the longest J2EE application name

E: Length of the longest file name from among the imported EJB-JAR files, WAR files, RAR files, library JAR, and EAR file names (including the files in the EAR files)

E': Length of the longest file name from among the imported EJB-JAR files, WAR files, RAR files, JDBC drivers, and mails (including the files in the EAR file) (convert the mail to 7)

E'': Length of the longest file name from among the imported RAR file names

F: Length of the longest file name from among the EJB interface classes, interfaces or classes implementing `java.emi.Remote`, and EJB component classes contained in the J2EE applications (including package names).

G: Length of the longest file name from among the native library files

H: Length of the longest context root (when / is involved replace with / × 3)

I: Length of the longest path in the WAR files

J: Length of the longest resource adapter display name

K: Length of the log file output directory path (value specified with the `ejb.Server.log.directory` parameter in the `configuration` tag of the logical J2EE server (j2ee-server) of the Easy Setup definition file

L: Length of the longest Cosminexus RM display name

M: Length of the longest class name from among the EJB Bean classes contained in the J2EE applications (not including the package names)

N: Length of the longest class name of JSP/tag file compilation

O: Length of the longest package name of the tag file

P: Length of the path to the temporary directory for JSP

C.2 Work directory of the batch server

A batch server creates directories or files by using the server names in a work directory. The directory names, file names and the path length have an upper limit, and the batch server cannot operate normally if the entire work directory does not fit into the entire path. This section describes the structure of a work directory and the formulas used to estimate the path length of a work directory.

(1) Structure of the work directory of the batch server

The work directory of the batch server is the work area required for operating the batch server. Information such as user password information and information of the imported resource adapter is stored in this work area.

- A batch server has an exclusive directory structure for each batch server under the work directory. This allows you to specify common directories for multiple batch servers.
- If you move the work directory to another machine, the batch server on another machine cannot recognize the work directory.
- In a work directory, you cannot use a path name containing a two-byte code.
- The default work directories are as follows:
 - **For Windows**
`Cosminexus-installation-directory\CC\server\public`
 - **For Unix**
`/opt/Cosminexus/CC/server/public`

You can change the work directory by using the `ejb.public.directory` parameter in the `configuration` tag of the logical J2EE server (j2ee-server) of the Easy Setup definition file.

A batch server has the following work directories:

1. J2EE resource
2. J2EE resource adapter (configuration related)
3. J2EE resource adapter (deployment related)

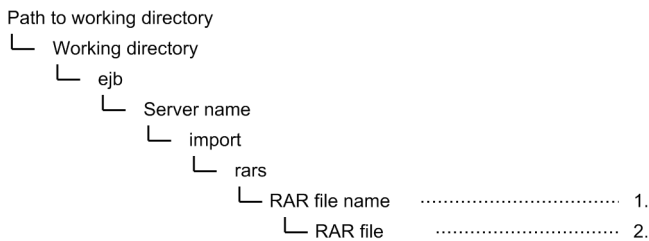
Note that 2. and 3. are same as that of the J2EE server. For details see, [Appendix C.1 \(1\)\(d\) J2EE resource adapter \(configuration related\)](#) and [Appendix C.1 \(1\) \(e\) J2EE resource adapter \(deployment related\)](#).

The following subsection describes the structure of the work directory of the J2EE resource. The subsection also describes the directory structure after executing the migration command.

(a) J2EE resource

The following figure shows the directory structure with the description of each directory. The numbers mentioned in the figure correspond to the numbers mentioned in the description. Also, if the same directory contains various types of files, only the longest file name is listed.

Figure C–11: J2EE resource directory structure



1. This directory is created for each RAR file. The directory name is given based on the RAR file name.
2. The RAR files are stored with a 17 digit number .rar file name.

(b) Directory structure of batch server after executing migration command

When you execute the migration command of the batch server, a directory with the name `work_directory_old` is created under the work directory, and the files in the work directory of the earlier version are saved in that directory. This directory structure is same as the directory structure after executing the migration command of the J2EE server. For details, see [Appendix C.1 \(1\) \(h\) Directory structure of the J2EE Server or Web container server \(compatibility functionality\), after executing the migration command](#). In this case, read the term "J2EE server" as "batch server".

(c) Directory structure of resource adapter after executing migration command

When you execute the migration command of the resource adapter, a directory with the name `rarupdate_bk` is created, and resource adapter files of each batch server are saved in that directory. For details on the directory structure of a resource adapter after executing the migration command, see [Appendix C.1\(1\)\(i\) Directory structure of the resource adapter after executing migration command](#).

(2) Formulas for estimating the path length of the work directory

The following are the formulas for estimating the path length of the work directory (unit: bytes). Adjust various parameters so that all of these formulas are satisfied. Also, the *maximum path length* used in these formulas is the path length limit specified for the OS. For details on the path length limit of the OS, check your OS documents.

Note that the maximum path length in Windows is 259 bytes.

- $A + 2 \times B + C + D + 61 \leq \text{maximum path length}$
- $A + 2 \times B + C + E + 34 \leq \text{maximum path length}$
- $E + F + 18 \leq \text{maximum path length}$

Legend:

A: Path length up to the work directory

B: Length of the work directory name

C: Length of the longest server name

D: Length of the longest file name among the imported RAR file names

E: Length of the longest resource adapter display name

F: Length of the log file output directory path (value specified with the `ejb.Server.log.directory` parameter in the `configuration` tag of the logical J2EE server (`j2ee-server`) of the Easy Setup definition file

C.3 Notes on the work directory

Notes on the operations of the work directory are as follows:

- With the J2EE applications and client applications, do not use the directories and files that are used by the products in the work directory. Also, do not change the directory and file configuration beneath the work directory.

An exception might occur when you start a J2EE server or batch server.

- You can input and output specific files with J2EE applications in the current directory[#] of a J2EE server or batch server. However, make sure that the names are not similar to the directory and file names used with the product.

[#]: The current directory of the J2EE server is *work-directory/*`ejb/J2EE-server-name`, and the current directory of the batch server is *work-directory/*`ejb/batch-server-name`.

D. Troubleshooting in Management Portal Operations

If a message or log indicating an error occurrence in the operation of a management portal appears, then you must re-execute the operation after checking the message and removing the causes of error occurrence. The following steps describe troubleshooting during the operation of the management portal:

1. Click the **Log display** tab, and confirm the time of the error message display on the Log Display window.
2. Reference the following log files to check the contents of the error message corresponding to the time confirmed in step 1, and identify the causes of error occurrence.

The following table describes the log file to be checked. Note that the messages in the log file are output according to the earlier order of time. For messages, see the manual *uCosminexus Application Server Messages*.

Table D–1: Log files to be checked

Classification	Contents to be checked	File name
Server management command	Operation log	<ul style="list-style-type: none">• For Windows <i>Cosminexus-installation-directory</i>\CC\admin\logs\cjmessage[n].log• For Unix <i>/opt/Cosminexus/CC/admin/logs/cjmessage[n].log</i>
	Exception information when error occurs	<ul style="list-style-type: none">• For Windows <i>Cosminexus-installation-directory</i>\CC\admin\logs\cjexception[n].log• For Unix <i>/opt/Cosminexus/CC/admin/logs/cjexception[n].log</i>
J2EE server	Operation log	<ul style="list-style-type: none">• For Windows <i>ejb-server-log-directory</i>^{#1}\cjmessage[n].log• For Unix <i>ejb-server-log-directory</i>^{#1}/cjmessage[n].log
	Exception information when error occurs	<ul style="list-style-type: none">• For Windows <i>ejb-server-log-directory</i>^{#1}\cjexception[n].log• For Unix <i>ejb-server-log-directory</i>^{#1}/cjexception[n].log
	Web servlet log	<ul style="list-style-type: none">• For Windows <i>ejb-server-log-directory</i>^{#1}\web_servlet[n].log• For Unix <i>ejb-server-log-directory</i>^{#1}/web_servlet[n].log
	User output log	<ul style="list-style-type: none">• For Windows <i>ejb-server-log-directory</i>^{#1}\user_out[n].log• For Unix <i>ejb-server-log-directory</i>^{#1}/user_out[n].log
	User error log	<ul style="list-style-type: none">• For Windows <i>ejb-server-log-directory</i>^{#1}\user_err[n].log• For Unix <i>ejb-server-log-directory</i>^{#1}/user_err[n].log
	JavaVM maintenance information and GC log	<ul style="list-style-type: none">• For Windows <i>ejb-server-log-directory</i>^{#1}\javalog[nn].log• For Unix

Classification	Contents to be checked	File name
		<i>ejb-server-log-directory</i> ^{#1} /javalog[nn].log
	Error report file (For Windows) ^{#2}	<i>work-directory\ejb\server-name\hs_err_pid process-ID-of-server-process.log</i>

#1:

`ejb.server.log.directory` indicates the directory specified in the `ejb.server.log.directory` parameter in the configuration tag of the logical J2EE server (`j2ee-server`) of the Easy Setup definition file. The default value is *Cosminexus-installation-directory\CC\server\public\ejb\server-name\log*.

#2:

Data to be sent to the Maintenance Service.

3. Fix the error by removing the causes of errors identified in step 2.

E. Contents Set Automatically by Management Server

The contents set in the configuration definition or environment settings of the logical server are automatically applied to options or user definition files of the CTM demon startup command by using Management Server functionality.

E.1 User definition files created automatically by Management Server

This section describes the user definition files generated from contents set in configuration definitions or environment settings of the logical server by using Management Server functionality. The description is divided into description of the systems executing the J2EE applications and systems executing the batch applications. A user definition file is generated by the target host for building a system.

Important note

To maintain consistency of the system, perform even minor changes in settings with Management Server functionality (such as Smart Composer functionality, Management portal) used during the configuration. When editing the files directly by using text editor, you must take precautions for spelling mistakes.

- **For system executing J2EE applications**

The following table describes user definition files generated from contents set in configuration definitions or environment settings of the logical server.

Table E–1: User definition files generated from the contents set in the configuration definitions or the environment settings of the logical server (for a system executing J2EE applications)

Logical server	Generated user definition file name	File overview	Storage location of the file
J2EE Server	auto_explicit_memory.cfg	Automatic allocation settings file used for the automatic allocation functionality of the Explicit Memory Management functionality.	<ul style="list-style-type: none">• For Windows <i>Cosminexus-installation-directory</i>\CC\server\usrconf\ejb\server-name\• For UNIX /opt/Cosminexus/CC/server/usrconf/ejb/server-name/
	userprf.cfg	User extension performance based trace analysis settings file used in the user extension performance based trace analysis.	
	usrconf.cfg	File that has the definition of the J2EE server activation option. This file also defines the JavaVM activation option.	<ul style="list-style-type: none">• For Windows <i>Cosminexus-installation-directory</i>\CC\server\usrconf\ejb\server-name\• For UNIX /opt/Cosminexus/CC/server/usrconf/ejb/server-name/
	usrconf.properties	File for specifying the JavaVM system property required to activate the J2EE server	
	mngagent. <i>real-server-name</i> .properties	File for setting the Management Agent required for monitoring in the J2EE server.	<ul style="list-style-type: none">• For Windows <i>Cosminexus-installation-directory</i>\manager\config\• For UNIX /opt/Cosminexus/manager/config/
	mevent. <i>real-server-name</i> .properties	File for specifying the property required to issue a management event in the J2EE server.	

Logical server	Generated user definition file name	File overview	Storage location of the file
	manager. <i>real-server-name</i> .properties	File for specifying the property required to issue a JPI event in the J2EE server.	
Web Server	httpsd.conf	File that consists of the information required to operate the Web server.	<ul style="list-style-type: none"> For Windows <i>Cosminexus-HTTP-server-installation-directory</i>\servers\HWS_<i>server-name</i>\conf\ or <i>Cosminexus-HTTP-server-installation-directory</i>\conf\ For UNIX /opt/hitachi/httpsd/servers/HWS_<i>server-name</i>/conf/or/opt/hitachi/httpsd/conf/
	mod_jk.conf	File that specifies the redirector definition (such as log levels) and URL mapping for HTTP Server when linking with the J2EE server in V9 compatibility mode.	<ul style="list-style-type: none"> For Windows <i>Cosminexus-installation-directory</i>\CC\web\redirector\servers\<i>server-name</i>\ or <i>Cosminexus-installation-directory</i>\CC\web\redirector\ For UNIX /opt/Cosminexus/CC/web/redirector/servers/<<i>server-name</i>/or/opt/Cosminexus/CC/web/redirector/
	workers.properties	File that specifies the worker definition and the parameters of each worker when linking with the J2EE server in V9 compatibility mode.	

• **For system executing batch applications**

The following table describes the user definition files generated from the contents set in the configuration definitions or the environment settings of the logical server.

Table E–2: User definition files generated from the contents set in the configuration definitions or the environment settings of the logical server (for a system executing the batch applications)

Logical server	Generated user definition file name	File overview	Storage location of the file
Batch Server	auto_explicit_memory.cfg	Automatic allocation settings file used for the automatic allocation functionality of the Explicit Memory Management functionality.	<ul style="list-style-type: none"> For Windows <i>Cosminexus-installation-directory</i>/CC/server/usrconf/ejb/<i>server-name</i>/ For UNIX /opt/Cosminexus/CC/server/usrconf/ejb/<i>server-name</i>/
	userprf.cfg	User extension performance based trace analysis settings file used in the user extension performance based trace analysis.	
	usrconf.cfg	File having the definition of the batch server activation option. This file is also used to define the JVM activation option.	<ul style="list-style-type: none"> For Windows <i>Cosminexus-installation-directory</i>\CC\server\usrconf\ejb\<i>server-name</i>\ For UNIX
	usrconf.properties	File for specifying the JVM system property required to activate the batch server	

Logical server	Generated user definition file name	File overview	Storage location of the file
			/opt/Cosminexus/CC/server/usrconf/ejb/server-name/
	mngagent. <i>real-server-name</i> .properties	File for setting the Management Agent required for monitoring in the batch server	<ul style="list-style-type: none"> For Windows <i>Cosminexus-installation-directory</i>\manager\config\ For UNIX /opt/Cosminexus/manager/config/
	mevent. <i>real-server-name</i> .properties	File for specifying the property required to issue a management event in the batch server	
	manager. <i>real-server-name</i> .properties	File for specifying the property required to issue a JPI event in the batch server	

E.2 Contents set automatically by Management Server in the CTM domain manager

The following table describes the contents set automatically by Management Server in the options related to the settings of the CTM domain manager, of the CTM demon startup command (ctmdmstart):

Table E–3: The contents set automatically by Management Server (for CTM domain manager)

Startup command	Option
ctmdmstart	-CTMMyHost <i>IP-address-of-the-host-defining-the-CTM-domain-manager-in-the-logical-server-configuration-definition</i>
	-CTMAutoForce
	-Dvbroker.orb.isNTService=true [#]

#

This value is set for Windows.

E.3 Contents set automatically by Management Server in CTM

The following table describes the contents that are automatically set by Management Server in the option related to the setting of CTM of the startup command of CTM demon (ctmstart):

Table E–4: Contents that are automatically set by Management Server (for CTM)

Startup command	Option
ctmstart	-CTMMyHost <i>IP-address-of-the-host-defining-the-CTM-in-the-logical-server-configuration-definition</i>
	-CTMClientConnectCount <i>number-of-CTM-regulator-processes + number-of-OTM-gateway-processes</i> ^{#1}
	-Dvbroker.orb.isNTService= true ^{#2}

#1

If the total of the number of CTM regulator processes and OTM gateway processes is less than 256, the setup value of the CTMClientConnectCount option becomes 256.

#2

This value is set for Windows.

E.4 Contents set automatically by Management Server to the J2EE server

The following table describes the contents set automatically by Management Server to the user definition file related to the J2EE server.

Table E–5: The contents set automatically by Management Server (for the J2EE server)

User definition file	Set contents
usrconf.properties	ejbserver.manager.agent.Agent.conf= <i>position-of-the mngagent.real-server-name.properties file-created-in-environment-settings</i>
	ejbserver.manager.agent.Agent.enabled=true
	ejbserver.ctm.CTMMHost= <i>Host-name-defined-in-the-Configuration-definition-of-the-management-domain</i>
	manager.j2ee.compat= <i>whether-J2EE-server-compatibility-mode-is-used</i>
usrconf.cfg	add.jvm.arg=-XX:HitachiAutoExplicitMemoryFile: <i>Cosminexus-installation-directory</i> /CC/server/usrconf/ejb/ <i>real-server-name</i> /auto_explicit_memory.cfg ^{#1}
	add.jvm.arg=-Djvm.userprf.File= <i>Cosminexus-installation-directory</i> /CC/server/usrconf/ejb/ <i>real-server-name</i> /userprf.cfg ^{#2}
mngagent. <i>real-server-name</i> .properties	mngagent.domain_name= <i>management-domain-name (internal name)</i>
	mngagent.agent_name= <i>logical-server-name-of-the-relevant-node</i>
mevent. <i>real-server-name</i> .properties	manager.mevent.send.host= <i>host-name-or-IP-address-of-the-Management-Server</i>
	manager.mevent.send.port= <i>HTTP-port-number-of-the-Management-Server</i>
	manager.mevent.logical_server_name= <i>logical-server-name</i>
manager. <i>real-server-name</i> .properties	manager.jplevent.logical_server_name= <i>logical-server-name</i>
	manager.jplevent.domain_name= <i>management-domain-name</i>

#1

This value is set when you specify the contents of the automatic allocation set up file used for the automatic allocation functionality of the Explicit Memory Management functionality in the management portal or the Smart Composer functionality.

#2

This value is set when you specify the contents of the user extension performance based trace analysis settings file of the user extension performance based trace analysis in the management portal or the Smart Composer functionality.

E.5 Contents set automatically by Management Server to batch server

The following table describes the contents set automatically by Management Server to the user definition file related to the batch server.

Table E–6: The contents set automatically by Management Server (for the batch server)

User definition file	Set contents
usrconf.properties	ejbserver.manager.agent.Agent.conf= <i>position-of-the mngagent.real-server-name.properties file-created-in-environment-settings</i>
	ejbserver.manager.agent.Agent.enabled=true

User definition file	Set contents
	<code>ejbserver.ctm</code> , <code>CTMMyHost=host-name-defined-in-the Configuration-definition-of-the-management-domain</code>
<code>mngagent.real-server-name.properties</code>	<code>mngagent.domain_name=management-domain-name (internal name)</code>
	<code>mngagent.agent_name=logical-serve-name-of-the-relevant-node</code>
<code>mevent.real-server-name.properties</code>	<code>manager.mevent.send.host=HTTP-port-number-of-the-Management-Server</code>
	<code>manager.mevent.send.port=host-name-or-IP-address-of-the-Management-Server</code>
	<code>manager.mevent.logical_server_name=logical-server-name</code>
<code>manager.real-server-name.properties</code>	<code>manager.jplevent.logical_server_name=logical-server-name</code>
	<code>manager.jplevent.domain_name=management-domain-name</code>

E.6 Contents set automatically by Management Server to Web server

The following table describes the contents set automatically by Management Server to the user definition file related to the Web Server.

Table E–7: The contents set automatically by Management Server (for the Web server)

User definition file	Set contents	
<code>httpsd.conf^{#1}</code>	For Windows	Include <i>Cosminexus-installation-directory</i> <code>/CC/web/redirector/servers/logical-server-name/mod_jk.conf^{#4}</code>
		Include <i>Cosminexus-HTTP-Server-installation-directory</i> <code>/servers/HWS_real-server-name-of-logical-Web-server/conf/httpsd_manager.conf^{#2}</code>
		<code>ThreadLimit same-value-as-ThreadsPerChild</code>
	For UNIX	Include <code>/opt/Cosminexus/CC/web/redirector/servers/logical-server-name/mod_jk.conf^{#4}</code>
		Include <i>Cosminexus-HTTP-Server-installation-directory</i> <code>/servers/HWS_real-server-name-of-logical-Web-server/httpsd_manager.conf^{#2}</code>
		<code>ThreadLimit same-value-as-ThreadsPerChild^{#5}</code>
		<code>ServerLimit MaxClients-value-divided-by-ThreadsPerChild-value^{#5}</code>
		<code>MinSpareServers 5^{#6}</code>
<code>mod_jk.conf^{#4}</code>	For Windows	<code>LoadModule jk_module Cosminexus-installation-directory</code> <code>/CC/web/redirector/mod_jk-file-name^{#3}</code>
		<code>JkWorkersFile Cosminexus-installation-directory</code> <code>/CC/web/redirector/servers/logical-server-name/workers.properties</code>
	For UNIX	<code>LoadModule jk_module /opt/Cosminexus/CC/web/redirector/mod_jk-file-name^{#3}</code>

User definition file	Set contents
	JkWorkersFile /opt/Cosminexus/CC/web/redirector/servers/ <i>logical-server-name</i> /workers.properties

#1

When operating a Web Server, you must match the contents of the `httpsd.conf` file to the operation environment and make the appropriate settings. For the contents to be set and how to set those contents, see the *uCosminexus Application Server HTTP Server User Guide*.

#2

This value is set if you specify the values for the `AppendDirectives` parameter of the logical Web Server (web-server) in the Easy Setup definition file, or for the `Additional directives` of the `Item-wise setup` in the Web Server Settings dialog box of the management portal.

#3

`mod_jk-file-name` differs depending on the OS.

#4

This value is set when linking with the J2EE server in V9 compatibility mode.

#5

This value is set only if the J2EE server is linked via a reverse proxy.

#6

This value is set only if the following conditions are met: 1) The J2EE server is linked via a redirector, and 2) `MinSpareServers` is not set in `httpsd.conf`.

F. Update installation of Application Server

This appendix describes the procedure for the update installation of Application Server. *Update installation* implies installing Application Server (same product) in an environment where Application Server is already installed.

With update installation, how the update processing is performed varies depending on the versions of the product to be installed and the product that is already installed. If both the products are of the same version, the installed product is overwritten; and if both the products are of different versions (such as when you install 11-00 in an environment where 09-00 is already installed), the version of the installed product is upgraded.

Also, if Component Container is installed and when you perform update installation of Component Container, an installer is used to migrate the user environment. For details on the handling of the user environment during an update installation, see [2.2.1\(2\) Handling the user environment when Component Container is installed](#).

F.1 Update installation of Application Server (In Windows) (INTENTIONALLY DELETED)

INTENTIONALLY DELETED.

F.2 Update installation of Application Server (In UNIX)

With an update installation, use the product media, PP installer.

This subsection describes the procedure for an update installation. The installation operation requires the root permission. For details on the notes on an update installation, see [Appendix I.1 Notes on the installation and un-installation of Application Server](#).

Note that the update installation operations differ depending on the presence or absence of the Component Container Administrator settings. For details, see [4.1.4 Notes on setting Component Container administrator \(For UNIX\)](#).

Procedure

1. Log in to Application Server with the root permission (superuser).
2. Make sure that none of the component software processes are running. If a process is running, stop the process.
3. Set the product media in the CD-ROM drive.

4. If the product media is a CD-ROM, mount the CD-ROM file system.

An example of command execution is as follows. The underlined parts specify the device special file name, and the mount directory name of the CD-ROM file system. Note that these names vary depending on the OS, hardware, and environment.

(Example of execution in AIX)

```
mount -r -v cdrfs /dev/cd0 /cdrom
```

(Example of execution in Linux)

```
mount -r -o mode=0544 /dev/cdrom /mnt/cdrom
```

5. Start the setup program.

An example of command execution is as follows. The underlined part specifies the mount directory name of the CD-ROM file system. In Linux, the PP installer that installs Reliable Messaging, TPBroker, and Web Services - Security differs from the PP installer that installs the other component software and the common modules of the products.

(Example of execution in AIX)

```
/cdrom/aix/setup /cdrom
```

(Example of execution in Linux)

```
/mnt/cdrom/x64lin/setup /mnt/cdrom
```

The CD-ROM setup program installs the PP installer and the resident process auto-start program on the hard disk, and the PP installer starts automatically.

Important note

The coded contents and how to display the contents for the CD-ROM directory and file names might differ depending on the computer environment. Check with the `ls` command, and enter the displayed file name as is.

6. In the main menu of the PP installer, press the **I** key.

The Install PP window appears.

7. Move the cursor to the program, and then press the **Space** key.

Select all the programs (component software supporting Application Server, and the common modules of the products). `<@>` appears on the left side of the selected program. Note that you can also select and install a program.

Important note

For details on the component software supporting the products, see [2.2.1\(3\) Component software supporting the products](#). The program names displayed by the products vary for the common modules of the products.

8. Make sure that `<@>` is displayed on the left side of all the programs, and then press the **I** key.

The message **Install PP? (y: install, n: cancel)**==> appears at the bottom of the window.

9. Press the **y** or **Y** key.

The installation process starts.

If you press the **n** or **N** key, the installation process is cancelled and you return to the Install PP window.

10. When the message indicating the end of installation is output, press the **Q** key.

You return to the main menu of the PP installer.

11. In the main menu of the PP installer, press the **Q** key.

The update installation of Application Server finishes.

For details on the operations to be performed after an update installation, see *Chapter 10* in the *uCosminexus Application Server Maintenance and Migration Guide*.

G. Installation by using JP1/SC/DPM to replicate the disk

This appendix describes the procedure for installation by using JP1/SC/DPM to replicate the disk. *Installation by using JP1/SC/DPM to replicate the disk* implies that the replicated disk image created by using JP1/SC/DPM is installed. Whether the method of installation by using JP1/SC/DPM to replicate the disk is available varies depending on the products of the Application Server and BPM/ESB platform.

Important note

In AIX, installation by using JP1/SC/DPM to replicate the disk is not supported with Application Server and Service Platform. The procedure of using a replicated disk installation is as follows:

Procedure

1. Un-install the installed product (Application Server or Service Platform).
For details on how to un-install a product, see [3.3.3 Un-installing Application Server \(in AIX\)](#).
2. Install the replicated disk.
For details on the operations for replicated disk installation and how to perform the operations, see the documentation for JP1/ServerConductor/Deployment Manager.
3. Install the product (Application Server or Service Platform).
For details on how to install a product, see [2.2.3 Installing new Application Server \(In AIX\)](#).

G.1 Replicated disk installation of Application Server (In Windows) (INTENTIONALLY DELETED)

INTENTIONALLY DELETED.

(1) For Application Server and Service Platform (INTENTIONALLY DELETED)

INTENTIONALLY DELETED.

(2) For Developer, Service Architect, and Client (INTENTIONALLY DELETED)

INTENTIONALLY DELETED.

G.2 Replicated disk installation of Application Server (In Linux)

Application Server and Service Platform support installation by using JP1/SC/DPM to replicate the disk. You can use the replicated disk installation functionality of JP1/SC/DPM, and the replication functionality based on image filing provided in the virtual environment.

Note that there are prerequisites that apply when installing the following component software by using JP1/SC/DPM to replicate the disk. Check the following prerequisites before performing a replicated disk installation.

- **Component Container (when using a system (J2EE server) that runs J2EE applications)**

You cannot perform replicated disk installation on a machine that runs EJB client applications.

- **TPBroker**

For details on how to link TPBroker with JP1/SC/DPM, see the manual *TPBroker Operation Guide*.

To perform a replicated disk installation of Application Server:

Procedure

1. Set up Application Server on the disk replication source.

On the disk replication source on which you installed Application Server, first set up the system environment. You can then customize various settings and set up business applications.

2. For each piece of component software of Application Server and Service Platform, perform the preparatory work required for the replicated disk installation.

For details on the work you need to perform, see *Work to perform before replication* for each piece of component software in *I.4 Notes on replicated disk installation and on using the replication functionality provided by the virtual platform (In Linux)*.

3. Perform the replicated disk installation using JP1/SC/DPM.

For details on the operations for installation by using JP1/SC/DPM to replicate the disk and how to perform the operations, see the documentation for JP1/ServerConductor/Deployment Manager. For details on the replication functionality based on image filing provided in the virtual environment, see the documentation for the virtualization software.

4. For each piece of component software of Application Server and Service Platform, perform the follow-up work required for the replicated disk installation.

For details on the work you need to perform, see *Work to perform after replication* for each piece of component software in *I.4 Notes on replicated disk installation and on using the replication functionality provided by the virtual platform (In Linux)*.

5. On the machine that connects to the destination machine of replicated disk installation, customize various settings to suit the system requirements.

The following are some examples of these settings. Change the values according to the system requirements.

- The configuration of the load balancer allocated to the front end of the system configuration
- DBMS-related settings
- Settings related to the J2EE servers or Web container servers allocated to the back end in the system configuration

H. Remote installation

This appendix describes the procedure for using a remote installation. *Remote installation* is a method by which JP1/NETM/DM and Groupmax Remote Installation are used to allocate the software to a client via the network.

H.1 Remote installation of Application Server (In Windows) (INTENTIONALLY DELETED)

INTENTIONALLY DELETED.

H.2 Remote installation of Application Server (In UNIX)

Application Server and Service Platform support remote installation (software allocation) using JP1/NETM/DM. By operating JP1/NETM/DM on the server where each product is operated, you can perform new installation and update installation for the products. For details on the remote installation method using JP1/NETM/DM, see the documentation for JP1/NETM/DM.

I. Notes on installation and un-installation

This appendix describes the notes on the installation and un-installation of Application Server and component software.

I.1 Notes on the installation and un-installation of Application Server

This subsection separately describes the notes on the installation and un-installation of Application Server for the times at which the operations are performed.

(1) Items to be checked before operations

Classification	Notes	New installation	Update installation	Un-installation
Common to OSs	All the directories other than those storing the customized files, such as user-defined files, are deleted. Therefore, do not store required files in the product directory. The directories to be deleted are deleted unconditionally. Therefore, do not store user-specific files in these directories.	--	--	Y
	If you install and un-install this product version or the evaluation version, and then install an earlier product version, make sure that the environment (Application-Server-installation-directory\CC, or /opt/Cosminexus/CC) created with this version does not remain in the installation destination. If the environment created with this version is retained, the version is not migrated to the earlier version; therefore, the product operations and the update installation performed later might not function properly. If the environment created with this version is retained, change the installation destination, or delete or migrate the environment created with this version, and then install the product.	Y	--	--
	When you perform an update installation (migration from a previous version) or overwrite installation of Application Server, the installer initializes the files that Application Server provides. For this reason, we recommend that you back up any necessary files under <i>Application-Server-installation-directory\jdk</i> before running the installer. Note that files under <i>Application-Server-installation-directory\jdk</i> that are not related to Application Server will be left in place. Delete or move these files as needed. For information about how this version of the installer differs from past versions and other details about update and overwrite installations, see <i>10. Migrating from Application Server of Earlier Versions (In the J2EE Server Mode)</i> in the <i>Application Server Maintenance and Migration Guide</i> .	--	Y	--
Common to Windows	This product cannot be installed in an environment where an earlier Application Server product considered as a successor product, is installed. In this case, un-install the installed earlier products and then install this product.	Y	--	--
	Before you install the product, check the disk space at the installation destination, and make sure that the space required for installation is allocated.	Y	--	--
	For the update installation of the product, make sure that you make a backup for the required files, such as the user-created files, before installation.	--	Y	--

Classification	Notes	New installation	Update installation	Un-installation
	Also, in the case of an update installation to a different version (the version is upgraded), if you copy and operate the files provided with the product to another directory, copy the newly installed files after update installation and then perform the operations.			
	Before you install and un-install the product, terminate the running applications. Terminate the resident programs as well.	Y	Y	Y
	If this product is installed or un-installed while the programs and services provided by this product are running, an error might occur. Install or un-install this product after stopping the programs and services provided by this product and the programs and services that are no longer required.	Y	Y	Y
	If this product is installed or un-installed while the files provided by this product are in use, an error might occur. Install or un-install this product when the files provided by the product are not in use.	Y	Y	Y
	With an environment where the Hitachi Web Server service is registered, stop the Hitachi Web Server service before you perform update installation with the same version (overwrite).	--	Y	--
	When you start the installation and un-installation of the product and component software, a dialog box indicating the preparation of setup is displayed. Do not click the Cancel button in this dialog box.	Y	Y	Y
	Do not perform an update installation that will lead to the installation of an earlier version.	--	Y	--
	Do not specify accounts other than the default local system account in the logon accounts of the Management Server and Administration Agent services. However, when network resources are accessed from a J2EE application, specify settings so that the logon account of the Administration Agent service belongs to the Administrators group of the local host.	Y	Y	--
	You cannot install HTTP Server in an environment where a stand-alone Web Server is installed. Un-install the stand-alone Web Server and then install HTTP Server.	--	Y	--
	Before you un-install a stand-alone Web Server, make a backup of the required files.	--	--	Y
	To install the product in an environment where a stand-alone Web Server is installed, migrate the files (config files such as httpsd.conf, and the user-created contents) used with the stand-alone Web Server, and make the necessary corrections so that the files correspond to the new installation directory.	Y	--	--
	Do not specify the files and directories beneath system-drive:\Windows\System32 directory in the installation destination.	Y	--	--
Common to UNIX	<p>To use the following products, make sure that the common modules of the products are installed:</p> <ul style="list-style-type: none"> • Application Server • Service Platform <p>Also, if Common Library of Application Server Version 6 or earlier is already installed, un-install Common Library, and then install the common modules of the products.</p>	Y	--	--

Classification	Notes	New installation	Update installation	Un-installation
	Use the PP installer for installing and un-installing the products. The root permissions are required for installation and un-installation.	Y	Y	Y
	Un-install Trace Common Library as and when required, when the component software of the products is un-installed. However, if the un-installation of Trace Common Library fails and a message is displayed, you can also execute a command to un-install Trace Common Library alone. To un-install, execute the following command: <code>/opt/hitachi/HNTRLib2/etc/hntr2setup</code> The menu is displayed. Select 9 for a normal un-installation and 0 for a forceful un-installation.	--	--	Y
	If the installation directory is changed, the installation becomes a new installation.	--	Y	--
	After OS installation, the host name is set up for the IP address 127.0.0.1 in the <code>/etc/hosts</code> file by default. To use TPBroker for communication, the host name must be set up for the IP address allocated to the network interface. Therefore, specify an appropriate IP address, allocated to the network interface, for the host name in the <code>/etc/hosts</code> file.	Y	--	--
	After OS installation, the host name is set up for the IP address 127.0.0.1 in the <code>/etc/hosts</code> file by default. To use Performance Tracer, the host name must be set up for the IP address allocated to the network interface. Therefore, specify an appropriate IP address, allocated to the network interface, for the host name in the <code>/etc/hosts</code> file.	Y	--	--
	For Application Server and Service Platform, check whether disk space is available at the installation destination. For details on the disk occupancy, see the <i>Release Notes</i> .	Y	--	--
	For Application Server and Service Platform, check whether disk space is available in the temporary directory (<code>/tmp</code>). For details on the disk occupancy, see the <i>Release Notes</i> . If there is no space in <code>/tmp</code> , specify a directory with space in the environment variable <code>TMPDIR</code> and then install the products.	Y	--	--

Legend:

Y: Applicable.

--: Not applicable.

(2) Items to be checked during operations

Classification	Notes	New installation	Update installation	Un-installation
Common to Windows	With an environment where the Hitachi Web Server service is registered, if an error (such as a registry access error) occurs when you perform an update installation with the same version (overwrite), un-install and then re-install the service.	--	Y	--
	When you use an installer for installation, make sure that you do not remove the product media from the CD-ROM drive and that you do not terminate the installer forcefully. If you perform these operations, the installation information might	Y	Y	--

Classification	Notes	New installation	Update installation	Un-installation
	become inconsistent and you might not be able to execute subsequent installation and un-installation.			
	To complete the installation processing, make sure you restart the OS after the installation is complete. Note that even when you un-install the product after installation, restart the OS to complete installation, and then un-install the product.	Y	Y	Y
	When you un-install the product, or un-install the component software included in the product, make sure you restart the OS to complete the un-installation.	--	--	Y
	With the product and component software included in the product, the installation termination processing might take some time. Wait until installation is complete and the control moves to the next window.	Y	Y	--
	If you cancel a process during installation, the installation processing after the cancelled component software is cancelled. The component software for which processing was completed before the cancelled component software remains installed. Also, even if you cancel a process during un-installation, the un-installation processing after the cancelled component software is cancelled. The component software for which processing was completed before the cancelled component software remains un-installed.	Y	Y	Y
	If you un-install the product after executing update installation with the same version multiple times, without un-installing even once along the way, an error occurs and the operation might fail. In this case, execute un-installation once again. Some of the directories and files might not be deleted, but this does not affect the installation process executed the next time.	--	--	Y
	During installation, the installation processing sometimes hangs up without terminating the <code>conime.exe</code> process invoked from the installer. If the installation processing hangs up with the <code>conime.exe</code> process still existing, use the task manager (<code>Taskmgr.exe</code>) to terminate the running <code>conime.exe</code> process.	Y	Y	--

Legend:

Y: Applicable.

--: Not applicable.

(3) Items to be checked after operations

Classification	Notes	New installation	Update installation	Un-installation
Common to OSs	If installation fails, check the following points: <ul style="list-style-type: none"> Are there any running services or files and directories that are being accessed? Are the file and directory access permissions being rejected? 	Y	Y	--
	When the environment is migrated by performing an update installation to a different version (version upgrade), the directory that was used in the earlier version is inherited and used as the work directory. Make sure you do not delete the earlier work directory version by mistake.	--	Y	--

Classification	Notes	New installation	Update installation	Un-installation
	The Administration Agent setup file, <code>adminagent.xml</code> , is overwritten during installation, and the existing file is stored as <code>adminagent.xml.bak</code> . If you are editing and operating <code>adminagent.xml</code> , re-edit the previously edited items in the newly installed file.	--	Y	--
	The list files subject to snapshot log collection, <code>snapshotlog.conf</code> and <code>snapshotlog.2.conf</code> , are overwritten during installation, and the existing files are stored as <code>snapshotlog.conf.bak</code> , and <code>snapshotlog.2.conf.bak</code> . If you are editing and operating the files subject to snapshot log collection, re-edit the previously edited items in the newly installed files.	--	Y	--
Common to Windows	With an environment where the Hitachi Web Server service is registered, the Hitachi Web Server service remains as is after you perform an update installation with the same version (overwrite). The Cosminexus HTTP Server service is not registered.	--	Y	--
	With an environment where the Hitachi Web Server service is registered, when you perform an update installation (version upgrade) from a version that is different from the Web Server version, the files, directories, and utilities related to the HTML manuals and GUI server management functionality might remain behind without being deleted. These files cannot be used with the updated version.	--	Y	--
Common to UNIX	<p>Only a user who has the root permission can update the installation destination directories and files. Therefore, when Component Container Administrator is set up, specify the Component Container Administrator write permission for the following directories and files:</p> <ul style="list-style-type: none"> • <code>/opt/Cosminexus/c4web/attachments</code> directory • Files beneath the <code>/opt/Cosminexus/c4web/conf</code> directory • <code>/opt/Cosminexus/c4web/logs</code> directory <p>Also, if the directory for storing the attachments and the directory to output the trace files are specified, set up the attributes of these directories as well.</p> <p>Note that when you perform an update installation with the same version (overwrite), the directory and file attributes return to the default status. In this case, change the directory and file attributes in accordance with the operations.</p>	Y	Y	--

Legend:

Y: Applicable.

--: Not applicable.

I.2 Notes on the installation and un-installation of component software

This subsection separately describes the notes on the installation and un-installation of component software for the times at which the operations are performed.

(1) Items to be checked before operations

Classification	Component software	Notes	New installation	Update installation	Un-installation
Common to OSs	Component Container	<p>If the installation directory has been created during the new installation of Component Container, make sure that there are no files in the installation directory.</p> <p>If there is a file or directory with the same name as the file or directory installed by the product, the file or directory is overwritten. As and when required, move the directory and files, create a backup, or change the installation destination.</p> <p>In Windows (Default)</p> <ul style="list-style-type: none"> <i>OS-installation-drive</i>: \Program Files\Hitachi\Cosminexus\CC <i>OS-installation-drive</i>: \Program Files\Hitachi\Cosminexus\manager <i>OS-installation-drive</i>: \Program Files\Hitachi\Cosminexus\c4web <i>OS-installation-drive</i>: \Program Files\Hitachi\Cosminexus\plugins <p>In UNIX (Fixed)</p> <ul style="list-style-type: none"> /opt/Cosminexus/CC 	Y	--	--
		<p>When you perform an update installation with a different version (version upgrade) for Component Container, the following directories are deleted. If there are required files in these directories, save these files before update installation.</p> <p>In Windows</p> <ul style="list-style-type: none"> <i>Application-Server-installation-directory</i>\CC\admin\help <i>Application-Server-installation-directory</i>\CC\examples <i>Application-Server-installation-directory</i>\CC\gui <p>In UNIX</p> <ul style="list-style-type: none"> /opt/Cosminexus/CC/admin/help /opt/Cosminexus/CC/examples /opt/Cosminexus/CC/gui 	--	Y	--
		When you perform an update installation with a different version (version upgrade) for Component Container, allocate double or more free space than the amount of disk space used by the work directory.	--	Y	--
		To install or un-install Component Container, stop HTTP Server. If you perform the installation or un-installation operation without stopping HTTP Server, you cannot update or un-install the redirector and Performance Tracer normally.	Y	Y	Y
		To install or un-install Component Container, Component Container, stop the J2EE server, Web container server, and CORBA Naming Service.	Y	Y	Y
		<p>When you perform an update installation with a different version (version upgrade) for Component Container, un-install the following component software if installed. However, in order to inherit the environment, do not delete the directories of the un-installed component software.</p> <ul style="list-style-type: none"> Component Library Manager Web Services - Base 	--	Y	--

Classification	Component software	Notes	New installation	Update installation	Un-installation
	Component Container - Redirector	To install or un-install the redirector functionality, stop HTTP Server. If you perform the installation or un-installation operation without stopping HTTP Server, you cannot update or un-install the redirector and Performance Tracer normally.	Y	Y	Y
Common to Windows	Component Container	When you install Component Container, do not specify a path containing # (hash mark) in the name of the Application Server installation directory.	Y	Y	--
	Component Transaction Monitor	To install Component Transaction Monitor, you require the size specified in the disk occupancy. This size includes the temporary area required for the installation operation. If an attempt is made to install Component Transaction Monitor on a disk where this size has not been allocated, the installation processing will be interrupted when the free disk space becomes 5% or less. At this time, you can either allocate the free disk area, or cancel the installation operation. If you allocate the free disk area, the installation terminates normally. If you cancel the installation operation, delete all the files that are partially installed. Depending on the progress of the installation operation, you must un-install Component Transaction Monitor, or manually delete everything under the installation directory of Component Transaction Monitor.	Y	--	--
	Developer's Kit for Java	<p>When you perform an update installation for Developer's Kit for Java, the files under <i>Application-Server-installation-directory\jdk\</i> are initialized. Save the required files in advance.</p> <p>However, the following files need not be saved because the files before update installation are stored in the same directory with optional names (<i>file-name_version-number_date-time</i>):</p> <ul style="list-style-type: none"> <i>Application-Server-installation-directory\jdk\lib\security\cacerts</i> <i>Application-Server-installation-directory\jdk\conf\logging.properties</i> <i>Application-Server-installation-directory\jdk\conf\net.properties</i> <i>Application-Server-installation-directory\jdk\conf\sound.properties</i> <i>Application-Server-installation-directory\jdk\conf\management\jmxremote.access</i> <i>Application-Server-installation-directory\jdk\conf\management\management.properties</i> <i>Application-Server-installation-directory\jdk\conf\security\java.policy</i> <i>Application-Server-installation-directory\jdk\conf\security\java.security</i> <p>To restore the file contents after an update installation, return the file stored with the optional name to the original file name, or import the contents of the file stored with the optional name into the initialized file.</p>	--	Y	--
	HTTP Server	<p>Before the following HTTP Server operations, stop the Cosminexus HTTP Server service:</p> <ul style="list-style-type: none"> Before performing an update installation with the same version (overwrite) Before un-installation 	--	Y	Y
		Before un-installing HTTP Server, delete the services registered with the <code>httpspd</code> command.	--	--	Y

Classification	Component software	Notes	New installation	Update installation	Un-installation
		With the un-installation of HTTP Server, even the files with read-only attributes are deleted.	--	--	Y
	Performance Tracer	To install Performance Tracer, you require the size specified in the disk occupancy. This size includes the temporary area required for the installation operation. If an attempt is made to install Performance Tracer on a disk where this size has not been allocated, the installation processing will be interrupted when the free disk space becomes 5% or less. At this time, you can either allocate the free disk area, or cancel the installation operation. If you allocate the free disk area, the installation terminates normally. If you cancel the installation operation, delete all the files that are partially installed. Depending on the progress of the installation operation, you must un-install Performance Tracer, or manually delete everything under the installation directory of Performance Tracer.	Y	--	--
Common to UNIX	Component Container	The Component Container installation directory is fixed to /opt/Cosminexus/CC.	Y	--	--
		When you install Component Container, some files are affected by umask. Specify an appropriate umask.	Y	--	--
		When you perform an update installation for Component Container, and if the installation directory is changed, this installation becomes a new installation.	--	Y	--
	Component Container - Redirector	The installation directory of the redirector functionality is fixed to /opt/Cosminexus/CCR.	Y	--	--
		When you install the redirector functionality, some files are affected by umask. Specify an appropriate umask.	Y	--	--
	Developer's Kit for Java	When you perform an update installation for Developer's Kit for Java, all the files in opt/Cosminexus/jdk are deleted. Save the required files in advance. However, the following files need not be saved because the files before update installation are stored in the same directory with optional names (<i>file-name_version-number_date-time</i>): <ul style="list-style-type: none"> /opt/Cosminexus/jdk/lib/security/cacerts /opt/Cosminexus/jdk/conf/logging.properties /opt/Cosminexus/jdk/conf/net.properties /opt/Cosminexus/jdk/conf/sound.properties /opt/Cosminexus/jdk/conf/management/jmxremote.access /opt/Cosminexus/jdk/conf/management/management.properties /opt/Cosminexus/jdk/conf/security/java.policy /opt/Cosminexus/jdk/conf/security/java.security To restore the file contents after an update installation, return the file stored with the optional name to the original file name, or import the contents of the file stored with the optional name into the initialized file.	--	Y	--
	HTTP Server	To re-install HTTP Server in a system where the server is already installed, you can perform an update installation (overwrite) with the same version. At this time, before you install HTTP Server, end the operations for all the programs and related files of HTTP Server.	--	Y	--

Classification	Component software	Notes	New installation	Update installation	Un-installation
		If the config file already exists when you install HTTP Server, the server is installed with a version number-assigned optional name.	Y	Y	--
		If /opt/hitachi/httpsd/htdocs/index.html already exists when you install HTTP Server, the file is overwritten.	Y	Y	--
		When you perform an update installation with the same version (overwrite) for HTTP Server, we recommend that you save the files to be used after re-installation (config files such as httpsd.conf and sslc.cnf, and user-created contents) in advance.	--	Y	--
		If an HTTP Server installation using the PP installer fails, confirm whether the operations for all the programs and related files of HTTP Server are terminated and then re-install HTTP Server. Also, if there is a file with the same name as a directory provided with HTTP Server, the installation might fail. Make sure that a file with the same name does not exist in /opt/hitachi/httpsd, and then re-install HTTP Server.	Y	--	--
		When you perform an update installation with a different version (version upgrade) from Web Server to HTTP Server, the files, directories, and some utilities related to the HTML manuals and GUI server management functionality of the previous version might remain behind without being deleted. The use of these files is not supported.	--	Y	--
		When you un-install HTTP Server, all the files under /opt/hitachi/httpsd are deleted. Save the required files in advance.	--	--	Y
	Web Services - Security	If XML Security version 6 or earlier is already installed in an environment where you install Web Services - Security, un-install XML Security, and then install Web Services - Security.	Y	--	--
	XML Processor	When you perform an update installation with the same version (overwrite) for XML Processor, delete all the files in /opt/Cosminexus/jaxp once. Therefore, save the files required after overwrite installation in advance.	--	Y	--

Legend:

Y: Applicable.

--: Not applicable.

(2) Items to be checked during operations

Classification	Component software	Notes	New installation	Update installation	Un-installation
Common to Windows	HTTP Server	When performing an update installation with the same version (overwrite) for HTTP Server, if an error (such as a registry access error) occurs, un-install and then re-install HTTP Server.	--	Y	--

Legend:

Y: Applicable.

--: Not applicable.

(3) Items to be checked after operations

Classification	Component software	Notes	New installation	Update installation	Un-installation
Common to OSs	Component Container	When the environment is migrated by performing an update installation with a different version (version upgrade) for Component Container, the directory that was used in the earlier version is inherited and used as the work directory. Make sure you do not delete the earlier work directory version by mistake.	--	Y	--
		If HTTP Server is un-installed and then re-installed without deleting the logical Web server on Management Server, the logical Web server managed by Management Server is not deleted, but the real server (Web server (HTTP Server)) is deleted. Therefore, after re-installation, the applicable logical Web server must be re-set up with Management Server. In this case, use the management portal to set up and allocate the logical Web server again. Also, a new <code>httpsd.conf</code> file is created or the existing file is overwritten when the logical Web server settings are allocated with the management portal. Therefore, if the <code>httpsd.conf</code> file was corrected manually, after you allocate the logical Web server settings with the management portal, correct the <code>httpsd.conf</code> file again, as and when required. Note that if the contents of the <code>httpsd.conf</code> file are edited and allocated with the Web Server Settings window of the management portal, the corrections are unnecessary.	Y	--	--
		Even if you perform an update installation with the same version (overwrite) for Component Container, DB Connector that is imported and allocated on Application Server is not updated. To update the imported and deployed DB Connector, execute the <code>cjrarupdate</code> command. The execution format of the <code>cjrarupdate</code> command is as follows: <code>/opt/Cosminexus/CC/server/bin/cjrarupdate -type dbconnector</code> For details, see <i>cjrarupdate (update resource adapter version)</i> in the <i>uCosminexus Application Server Command Reference Guide</i> .	--	Y	--
		If there is no change in DB Connector when you execute the <code>cjrarupdate</code> command, the KDJE42249-W message is output. The output of this message is not a problem.	--	Y	--
		The existing RMI-IIOP stubs and interfaces for J2EE applications become unavailable when Component Container is installed. After running the <code>cjstartapp</code> command, run the <code>cjgetstubsjar</code> command to re-obtain the RMI-IIOP stubs and interfaces for J2EE applications. For details, see <i>cjgetstubsjar (get RMI-IIOP stub and interface for application)</i> in the <i>uCosminexus Application Server Command Reference Guide</i> .	Y	Y	--
	Reliable Messaging	If you perform an update installation for Reliable Messaging, the request timeout value of the commands provided by Reliable Messaging returns to the default value (<u>0</u>). If you edit the batch files or shell script existing in the <i>Application-Server-installation-directory</i> /RM/bin directory, and change the request timeout value, set the value again.	--	Y	--
		If you execute the Reliable Messaging commands, the command runtime log is output to <i>Application-Server-installation-directory</i> /RM/logs. During un-installation, the log directory and files existing under this directory might remain behind.	--	--	Y

Classification	Component software	Notes	New installation	Update installation	Un-installation
Common to Windows	Developer's Kit for Java	Even if you un-install Developer's Kit for Java, some of the files and directories might remain under <i>Application-Server-installation-directory\jdk</i> without being deleted. Manually delete the files and directories that are not deleted.	--	--	Y
		During the update installation of Developer's Kit for Java, the installer does not delete the files stored with the optional names even if un-installed. Also, if you implement update installation repeatedly, the files stored with the optional names are created for the number of times the update installation is repeated. As and when required, delete the unnecessary files and directories.	--	Y	Y
	HTTP Server	With a new installation of HTTP Server, the startup type of the Cosminexus HTTP Server service is registered with "Manual".	Y	--	--
		With the un-installation of HTTP Server, the files and config files created after installation are not deleted. Also, the other files and directories might be retained without being deleted.	--	--	Y
Common to UNIX	Component Container	The <i>/opt/Cosminexus/CC/spool</i> directory is not removed when you uninstall Component Container. Remove this directory manually after uninstalling Component Container.	--	--	Y

Legend:

Y: Applicable.

--: Not applicable.

I.3 Notes on replicated disk installation and on using the replication functionality provided by the virtual platform (In Windows)

This subsection separately describes notes that apply to each piece of component software when performing replicated disk installation.

(1) Notes on Component Container

The notes on Component Container are as follows. For Component Container, the work you need to perform differs according to the system configuration you are setting up.

(a) When a system (J2EE server) executing J2EE applications is used

This subsection describes the notes on Component Container when a system (J2EE server) executing J2EE applications is used.

- **Work to perform before replication**

The following explains the work you need to perform on the replication source machine before performing replication.

Implement steps 1 and 2 on the replication source machine. If you are using Management Server, implement step 3 as well.

Procedure

1. Stop the following programs on the replication source machine:

- J2EE servers (if you are using global transactions, settle any pending transactions before closing the J2EE server programs.)

- Web container servers
 - Administration Agent
 - Management Server
 - HTTP Server, or Microsoft IIS
2. On the replication source machine, delete any files in the following directories. Do not delete the directories themselves.
- *Application-Server-installation-directory*\CC\admin\logs*
 - *Application-Server-installation-directory*\CC\admin\logs\CC\maintenance*
 - *Application-Server-installation-directory*\CC\admin\logs\CC\maintenance\mmap*
 - *Application-Server-installation-directory*\CC\admin\logs\CC\rmi*
 - *Application-Server-installation-directory*\CC\admin\logs\CC\rmi\mmap*
 - *Application-Server-installation-directory*\CC\admin\logs\mmap*
 - *Application-Server-installation-directory*\CC\admin\logs\TPB\logj\comtrc*
 - *Application-Server-installation-directory*\CC\admin\logs\TPB\logj\mdltrc*
 - *Application-Server-installation-directory*\CC\admin\logs\TPB\logj*
 - *Application-Server-installation-directory*\CC\client\logs*
 - *Application-Server-installation-directory*\CC\client\logs\mmap*
 - *Application-Server-installation-directory*\CC\client\logs\system\ejbcl\mmap*
 - *Application-Server-installation-directory*\CC\client\logs\system\ejbcl*
 - *Application-Server-installation-directory*\CC\client\logs\system\TPB\logj\comtrc*
 - *Application-Server-installation-directory*\CC\client\logs\system\TPB\logj\mdltrc*
 - *Application-Server-installation-directory*\CC\client\logs\system\TPB\logj*
 - *Application-Server-installation-directory*\CC\web\containers\server-name\logs\TPB\logj\comtrc*
 - *Application-Server-installation-directory*\CC\web\containers\server-name\logs\TPB\logj\mdltrc*
 - *Application-Server-installation-directory*\CC\web\containers\server-name\logs\TPB\logj*
 - *Application-Server-installation-directory*\CC\web\containers\server-name\logs*
 - *Application-Server-installation-directory*\CC\web\Redirector\servers\server-name\logs*
 - *Application-Server-installation-directory*\CC\web\Redirector\servers\server-name\logs\mmap*
 - *Application-Server-installation-directory*\CC\web\Redirector\logs*
 - *Application-Server-installation-directory*\CC\web\Redirector\logs\mmap*
 - *Application-Server-installation-directory*\manager\spool\default*
 - *Application-Server-installation-directory*\manager\spool\lsinfo*
 - *Application-Server-installation-directory*\manager\tmp*
 - *Application-Server-installation-directory*\manager\setup\log*
 - *Application-Server-installation-directory*\manager\setup\log\maintenance*
 - *Work-directory*\ejb\server-name\logs\watch*
 - *Work-directory*\ejb\server-name\logs\CC\maintenance*
 - *Work-directory*\ejb\server-name\logs\CC\rmi*
 - *Work-directory*\ejb\server-name\logs\connectors*
 - *Work-directory*\ejb\server-name\logs\connectors\application-display-name*

- *Work-directory\ejb\server-name\logs\connectors\TEST#application-display-name**
- *Work-directory\ejb\server-name\logs\TPB\logj\mdltrc**
- *Work-directory\ejb\server-name\logs\TPB\logj\comtrc**
- *Work-directory\ejb\server-name\logs\TPB\logj**
- *Work-directory\ejb\server-name\logs\http\comm**
- *Work-directory\ejb\server-name\logs\http\thr**
- *Work-directory\ejb\server-name\logs\http**
- *Work-directory\ejb\server-name\logs**
- *Manager-log-output-directory\maintenance**
- *Manager-log-output-directory\maintenance\mmap**
- *Manager-log-output-directory\message**
- *Manager-log-output-directory\message\mmap**
- *Manager-log-output-directory\trace**
- *Manager-log-output-directory\trace\mmap**
- *Manager-log-output-directory**
- *Manager-log-output-directory\snapshot-log-output-destination-directory**
- *Audit-log-output-directory**
- *Message-log-output-directory-of-audit-log**
- *Message-log-output-directory-of-audit-log\mmap**
- *Exception-information-output-directory-of-audit-log**
- *Exception-information-output-directory-of-audit-log\mmap**



Reference note

The default directories are as follows:

- *Work-directory*: *Application-Server-installation-directory\CC\server\public*
- *Manager-log-output-directory*: *Application-Server-installation-directory\manager\log*
- *snapshot-log-output-destination-directory*: *Manager-log-output-directory\snapshot*
- *Audit-log-output-directory*: *Application-Server-installation-directory\auditlog*
- *Message-log-output-directory-of-audit-log*: *Application-Server-installation-directory\auditlog*
- *Exception-information-output-directory-of-audit-log*: *Application-Server-installation-directory\auditlog*

3. When using Management Server, modify the settings in the property files on the replication source machine. The work you need to perform differs according to whether Management Server is running on the replication source machine.

If Management Server is not running on the replication source machine

If the replication destination machine is a multihomed host, specify `adminagent.adapter.bind_host=regular-expression-matching-management-IP-address-of-replication-destination` in the Administration Agent property file (`adminagent.properties`) on the replication source machine.

If Management Server is running on the replication source machine

Set up the properties described in the following table:

File name	Property	Value
.cmxrc and cmxclient.properties	cmx.lb	keepvs
adminagent.properties	adminagent.adapter.allowedHosts	If the mngsvr.myhost.name property of mserver.properties is set up, specify the same value. If the mngsvr.myhost.name property of mserver.properties is not set up, specify the regular expression matching with the management IP address for the host.
mserver.properties	mngsvr.myhost.name	If the replication destination machine is a multihomed host, specify a <i>regular-expression-matching-management-IP-address-of-replication-destination</i> .
	webserver.connector.http.bind_host	
adminagent.properties	adminagent.adapter.bind_host	
.mngsvrutilrc and mngsvrutilcl.properties	mngsvrutil.connect.host	If a value other than the loopback address is set up, specify a <i>regular-expression-matching-management-IP-address-of-replication-destination</i> .
	mngsvrutil.target_name	
.cmxrc and cmxclient.properties	cmx.connect.host	

• Work to perform after replication

The following explains the work you need to perform on the replication destination machine after performing replication.

Implement steps 1 and 2 on the replication destination machine. If you are using Management Server, implement step 3 as well.

Procedure

- If any of the following properties are specified in the user property file for J2EE servers (usrconf.properties) or the user property file for server management commands (usrconf.properties), change the values on the replication destination machine.
Change to an appropriate value for each property.
 - vbroker.se.iioptp.host
 - ejbserver.ctm.CTMMHost
 - ejbserver.naming.host
- If any of the following properties are specified in the user property file for J2EE servers (usrconf.properties) or the user property file for Web container servers (usrconf.properties), change the values on the replication destination machine.
Change the value of each property to the IP address of the replication destination.
 - webserver.connector.http.bind_host
 - webserver.connector.nio_http.bind_host
 Reset each property value to a unique value for each J2EE server or Web container server.
 - webserver.container.server_id.value
 - webserver.session.server_id.value
- When using the Management Server, perform the following operations on the replication destination machine:
 - Defining the host added by the replication process

2. Deleting the definition of the replication source host from the replication destination host (only when replicating the computer on which Management Server is running)
3. Defining the logical server added by the replication process
4. Setting up the logical server added in 3 (specifying the real server name)
5. Reading the setup file of the logical server added in 3
6. Allocating the setup file of the logical server added in 3
7. Re-allocation after the EAR and RAR files are deleted with the server management commands (only when the application management functionality of J2EE servers is used)

(b) When a system (batch server) executing batch applications is used

This subsection describes the notes on Component Container when a system (batch server) executing batch applications is used.

• Work to perform before replication

The following explains the work you need to perform on the replication source machine before performing replication.

Implement steps 1 and 2 on the replication source machine. If you are using Management Server, implement step 3 as well.

Procedure

1. Stop the following programs on the replication source machine:
 - Batch servers (You can terminate the batch servers while the resource adapters are running)
 - Administration Agent
 - Management Server
2. On the replication source machine, delete any files in the following directories. Do not delete the directories themselves.
 - *Application-Server-installation-directory*\CC\admin\logs*
 - *Application-Server-installation-directory*\CC\admin\logs\CC\maintenance*
 - *Application-Server-installation-directory*\CC\admin\logs\CC\maintenance\mmap*
 - *Application-Server-installation-directory*\CC\admin\logs\CC\rmi*
 - *Application-Server-installation-directory*\CC\admin\logs\CC\rmi\mmap*
 - *Application-Server-installation-directory*\CC\admin\logs\mmap*
 - *Application-Server-installation-directory*\CC\admin\logs\TPB\logj\comtrc*
 - *Application-Server-installation-directory*\CC\admin\logs\TPB\logj\mdltrc*
 - *Application-Server-installation-directory*\CC\admin\logs\TPB\logj*
 - *Application-Server-installation-directory*\CC\client\logs*
 - *Application-Server-installation-directory*\CC\client\logs\mmap*
 - *Application-Server-installation-directory*\CC\web\containers\server-name\logs*
 - *Application-Server-installation-directory*\manager\spool\default*
 - *Application-Server-installation-directory*\manager\spool\lsinfo*
 - *Application-Server-installation-directory*\manager\tmp*
 - *Application-Server-installation-directory*\manager\setup\log*
 - *Application-Server-installation-directory*\manager\setup\log\maintenance*
 - *Work-directory*\ejb\server-name\logs\watch*
 - *Work-directory*\ejb\server-name\logs\CC\maintenance*

- *Work-directory\ejb\server-name\logs\CC\rmi**
- *Work-directory\ejb\server-name\logs\connectors**
- *Work-directory\ejb\server-name\logs\TPB\logj\mdltrc**
- *Work-directory\ejb\server-name\logs\TPB\logj\comtrc**
- *Work-directory\ejb\server-name\logs\TPB\logj**
- *Work-directory\ejb\server-name\logs**
- *Manager-log-output-directory\maintenance**
- *Manager-log-output-directory\maintenance\mmap**
- *Manager-log-output-directory\message**
- *Manager-log-output-directory\message\mmap**
- *Manager-log-output-directory\trace**
- *Manager-log-output-directory\trace\mmap**
- *Manager-log-output-directory**
- *snapshot-log-output-destination-directory**
- *Audit-log-output-directory**
- *Message-log-output-directory-of-audit-log**
- *Message-log-output-directory-of-audit-log\mmap**
- *Exception-information-output-directory-of-audit-log**
- *Exception-information-output-directory-of-audit-log\mmap**



Reference note

The default directories are as follows:

- *Work-directory: Application-Server-installation-directory\CC\server\public*
- *Manager-log-output-directory: Application-Server-installation-directory\manager\log*
- *snapshot-log-output-destination-directory: Manager-log-output-directory\snapshot*
- *Audit-log-output-directory: Application-Server-installation-directory\auditlog*
- *Message-log-output-directory-of-audit-log: Application-Server-installation-directory\auditlog*
- *Exception-information-output-directory-of-audit-log: Application-Server-installation-directory\auditlog*

3. When using Management Server, modify the settings in the property files on the replication source machine. The work you need to perform differs according to whether Management Server is running on the replication source machine.

If Management Server is not running on the replication source machine

If the replication destination machine is a multihomed host, specify `adminagent.adapter.bind_host=regular-expression-matching-management-IP-address-of-replication-destination` in the Administration Agent property file (`adminagent.properties`) on the replication source machine.

If Management Server is running on the replication source machine

Set up the properties described in the following table:

File name	Property	Value
adminagent.properties	adminagent.adapter.allowedHosts	If the mngsvr.myhost.name property of mserver.properties is set up, specify the same value. If the mngsvr.myhost.name property of mserver.properties is not set up, specify the regular expression matching with the management IP address for the host.
mserver.properties	mngsvr.myhost.name	If the replication destination machine is a multihomed host, specify a <i>regular-expression-matching-management-IP-address-of-replication-destination</i> .
	webserver.connector.http.bind_host	
adminagent.properties	adminagent.adapter.bind_host	
.mngsvrutilrc and mngsvrutilcl.properties	mngsvrutil.connect.host	If a value other than the loopback address is set up, specify a <i>regular-expression-matching-management-IP-address-of-replication-destination</i> .
	mngsvrutil.target_name	
.cmxrc and cmxclient.properties	cmx.connect.host	

- **Work to perform after replication**

The following explains the work you need to perform on the replication destination machine after performing replication.

Implement step 1 on the replication destination machine. If you are using Management Server, implement step 2 as well.

Procedure

1. If any of the following properties are specified in the user property file for batch servers (usrconf.properties) or the user property file for server management commands (usrconf.properties), change the values on the replication destination machine.
Change to an appropriate value for each property.
 - vbroker.se.iiop_tp.host
 - ejbserver.naming.host
2. When using the Management Server, perform the following operations on the replication destination machine:
 1. Defining the host added by the replication process
 2. Deleting the definition of the replication source host from the replication destination host (only when replicating the computer on which Management Server is running)
 3. Defining the logical server added by the replication process
 4. Setting up the logical server added in 3 (specifying the real server name)
 5. Reading the setup file of the logical server added in 3
 6. Allocating the setup file of the logical server added in 3
 7. Re-allocation after the RAR files are deleted with the server management commands (only when the application management functionality of J2EE servers is used)

(2) Notes on Component Container - Redirector

This subsection describes the notes on Component Container - Redirector.

- **Work to perform before replication**

The following explains the work you need to perform on the replication source machine before performing replication.

Implement steps 1 and 2 on the replication source machine.

Procedure

1. Stop the following program on the replication source machine:
 - HTTP Server, or Microsoft IIS
2. On the replication source machine, delete any log files in the following directories. Do not delete the directories themselves.
 - *Application-Server-installation-directory*\CCR\web\redirector\servers\server-name\logs*
 - *Application-Server-installation-directory*\CCR\web\redirector\servers\server-name\logs\mmap*
 - *Application-Server-installation-directory*\CCR\web\redirector\logs*
 - *Application-Server-installation-directory*\CCR\web\redirector\logs\mmap*

(3) Notes on Reliable Messaging

This subsection describes the notes on Reliable Messaging.

- **Work to perform before replication**

The following explains the work you need to perform on the replication source machine before performing replication.

Implement steps 1 and 2 on the replication source machine.

Procedure

1. Deploy Reliable Messaging on the J2EE server. If Reliable Messaging is running, stop Reliable Messaging on the J2EE server.
2. On the replication source machine, delete any log files in the following directories. Do not delete the directories themselves.
 - *Work-directory*\ejb\server-name\logs\RM\maintenanceThe default *work-directory* is *Application-Server-installation-directory*\CC\server\public.

- **Work to perform after replication**

The following explains the work you need to perform on the replication destination machine after performing replication.

Implement steps 1 to 5 on the replication destination machine.

Procedure

1. If you changed the host name or IP address for the replicated system, update the following Reliable Messaging settings:
 - Update the settings for the environment variable HRM_CMD_HOST to the host name or IP address of the replicated system.
 - If you change the host name or IP address of the transmit destination system by using the transmit between queues functionality, use the following procedure to re-create the address existing in the transmit source system and the transmit queue, which uses that address:
 1. Make sure there are no messages in all the transmit queues that are using the transmit source system address.
 2. Delete all the transmit queues that are using the transmit source system address.
 3. Delete the transmit source system address.
 4. Specify the changed host name or IP address and create a new transmit source system address.
 5. Create a new transmit queue for using the transmit source system address.

2. Change the configuration property `RMSysName` and the environment variable `HRM_SYSTEM_NAME` so that the Reliable Messaging system name is unique.
3. Create a management information table corresponding to the system name changed in step 2.
For details on how to create a management information table, see the manual *Cosminexus Reliable Messaging*.
4. When you use HiRDB as DBMS and the configuration uses an XA transaction, change the configuration properties `description` and `XAOpenString` of the integration destination DB Connector so that `XAOpenString` of the integration destination DB Connector for Reliable Messaging is unique among the resource adapters connected to the same HiRDB.
5. Start Reliable Messaging and create the required queues.

(4) Notes on Component Transaction Monitor

This subsection describes the notes that apply to Component Transaction Monitor.

- **Work to perform after replication**

After performing replication, delete the entire contents of the directory specified in the `CTMSPPOOL` environment variable from the replication destination machine.

(5) Notes on Performance Tracer

After performing replication, delete the entire contents of the directory specified in the `PRFSPOOL` environment variable from the replication destination machine.

(6) Notes on HTTP Server

This subsection describes the notes on HTTP Server.

- **Work to perform before replication**

Before performing replication, stop all HTTP Server programs on the replication source machine and any pending operations on related files.

- **Work to perform after replication**

The following explains the work you need to perform on the replication destination machine after performing replication.

Implement steps 1 to 3 on the replication destination machine.

Procedure

1. As needed, change the directive settings after replication.

- Network-related directives

`ServerName`, `<VirtualHost>`, `BindAddress`, `Listen`, and `NameVirtualHost`

- File system-related directives

`<Directory>`, `<DirectoryMatch>`, `Alias`, `AliasMatch`, `AuthGroupFile`, `AuthUserFile`, `CustomLog`, `DocumentRoot`, `ErrorLog`, `HWSRequestLog`, `HWSTraceIdFile`, `HWSTraceLogFile`, `Include`, `LoadFile`, `LoadModule`, `PidFile`, `QOSResponse`, `ScriptAlias`, `ScriptAliasMatch`, `ScriptLog`, `ServerRoot`, `SSLCACertificateFile`, `SSLCertificateFile`, `SSLCertificateKeyFile`, `SSLCertificateKeyPassword`, `SSLCLDERPath`, `SSLCLPEMPath`, `TransferLog`, `TypesConfig`, and `UserDir`

2. If a file specified in the `PidFile` directive is copied, delete the file before you start HTTP Server.
3. If the log-related files are copied, delete the unnecessary files as and when required.

(7) Notes on TPBroker

This subsection describes the notes on TPBroker.

- **Work to perform after replication**

The following explains the work you need to perform after replication. Implement step 1 and step 2.

Procedure

1. If you are using the replication functionality based on image filing provided by the virtual platform, and if the following settings are specified, change the specified host name and IP address in accordance with the system:
 - `agentaddr` file (can also be specified in the environment variable `OSAGENT_ADDR_FILE` or property `vbroker.agent.addrFile`)
 - `localaddr` file (can also be specified in the environment variable `OSAGENT_LOCAL_FILE` or property `vbroker.agent.localFile`)
 - `htc.clienthandleraddr` file (can also be specified in the environment variable `HVI_OSAGENT_CLIENTHANDLERADDR_FILE`)
 - Property `vbroker.agent.addr`
 - Property `vbroker.se.server-engine.host`
 - Property `vbroker.se.server-engine.proxyHost`
 - Property `vbroker.orb.initRef`
 - Property `vbroker.orb.defaultInitRef` (only C++)
 - Command line option `ORBInitRef`
 - Command line option `ORBDefaultInitRef` (only C++)
 - Command line option `ORBagentAddr`
 - `osagent` command line option `-a`
 - Environment variable `OSAGENT_ADDR`Also, after you change the host name and IP address, re-create and re-allocate the IOR file that was created before you changed the host name and IP address.
2. If you are using the replication functionality in the virtual environment, and if a global transaction is used, delete the status file of the in-process transaction service if present, so that the virtual environment replication source does not include the status file of the in-process transaction service.

(8) Notes on Service Coordinator

This subsection describes the notes on Service Coordinator.

- **Work to perform before replication**

The following explains the work you need to perform on the replication source machine before performing replication.

Implement steps 1 and 2 on the replication source machine.

Procedure

1. From the *uCosminexus Service Platform Setup and Operation Guide*, implement the operations until *Setting up the software required for the execution environment*.
2. Implement the "Work to perform before replication" for the following component software:
 - Component Container
 - Reliable Messaging
 - HTTP Server

- TPBroker

- **Work to perform after replication**

The following explains the work you need to perform after replication. Implement step 1 and step 2.

Procedure

1. On the replication destination machine, perform the "Work to perform after replication" for the following component software:
 - Component Container
 - Reliable Messaging
 - Component Transaction Monitor
 - Performance Tracer
 - HTTP Server
 - TPBroker
2. On the replication source and destination machines, perform the work from *Setting up an HCSC server* onward in the *uCosminexus Service Platform Setup and Operation Guide*.

(9) Notes on using DABroker Library (compatibility function)

This subsection describes the notes on using DABroker Library.

- **Work to perform before replication**

The following explains the work you need to perform on the replication source machine before replication.

Implement step 1 on the replication source machine.

Procedure

1. On the replication source machine, delete the DABroker Library temporary files, log files, and trace files from the following directories:
 - *Application-Server-installation-directory*/DAB/tmp/*
 - *Application-Server-installation-directory*/DAB/spool/*.txt
 - *Application-Server-installation-directory*/DAB/spool/*.txt.lock
 - *Application-Server-installation-directory*/DAB/spool/*.log
 - *Application-Server-installation-directory*/DAB/spool/*.log.lock
 - *Application-Server-installation-directory*/DAB/spool/*.lock
 - *Application-Server-installation-directory*/DAB/spool/db_access/*
 - *Application-Server-installation-directory*/DAB/spool/dabcltrc/*
 - *Application-Server-installation-directory*/DAB/spool/dabdump/*

I.4 Notes on replicated disk installation and on using the replication functionality provided by the virtual platform (In Linux)

This subsection separately describes notes that apply to each piece of component software when performing replicated disk installation.

(1) Notes on Component Container

The notes on Component Container are as follows. For Component Container, the work you need to perform differs according to the system configuration you are setting up.

(a) When a system (J2EE server) executing J2EE applications is used

This subsection describes the notes on Component Container when a system (J2EE server) executing J2EE applications is used.

• Work to perform before replication

The following explains the work you need to perform on the replication source machine before performing replication.

Implement steps 1 and 2 on the replication source machine. If you are using Management Server, implement step 3 as well.

Procedure

1. Stop the following programs on the replication source machine:

- J2EE servers (if you are using global transactions, settle any pending transactions before closing the J2EE server programs.)
- Web container server
- Administration Agent
- Management Server
- HTTP Server

2. On the replication source machine, delete any files in the following directories. Do not delete the directories themselves.

- /opt/Cosminexus/CC/admin/logs/*
- /opt/Cosminexus/CC/admin/logs/CC/maintenance/*
- /opt/Cosminexus/CC/admin/logs/CC/maintenance/mmap/*
- /opt/Cosminexus/CC/admin/logs/CC/rmi/*
- /opt/Cosminexus/CC/admin/logs/CC/rmi/mmap/*
- /opt/Cosminexus/CC/admin/logs/mmap/*
- /opt/Cosminexus/CC/admin/logs/TPB/logj/comtrc/*
- /opt/Cosminexus/CC/admin/logs/TPB/logj/mdltrc/*
- /opt/Cosminexus/CC/admin/logs/TPB/logj/*
- /opt/Cosminexus/CC/client/logs/*
- /opt/Cosminexus/CC/client/logs/mmap/*
- /opt/Cosminexus/CC/client/logs/system/ejbcl/mmap/*
- /opt/Cosminexus/CC/client/logs/system/ejbcl/*
- /opt/Cosminexus/CC/client/logs/system/TPB/logj/comtrc/*
- /opt/Cosminexus/CC/client/logs/system/TPB/logj/mdltrc/*
- /opt/Cosminexus/CC/client/logs/system/TPB/logj/*
- /opt/Cosminexus/CC/web/containers/*server-name*/logs/TPB/logj/comtrc/*
- /opt/Cosminexus/CC/web/containers/*server-name*/logs/TPB/logj/mdltrc/*
- /opt/Cosminexus/CC/web/containers/*server-name*/logs/TPB/logj/*
- /opt/Cosminexus/CC/web/containers/*server-name*/logs/*
- /opt/Cosminexus/CC/web/redirector/servers/*server-name*/logs/*
- /opt/Cosminexus/CC/web/redirector/servers/*server-name*/logs/mmap/*
- /opt/Cosminexus/CC/web/redirector/logs/*
- /opt/Cosminexus/CC/web/redirector/logs/mmap/*

- /opt/Cosminexus/manager/spool/default/*
- /opt/Cosminexus/manager/spool/lsinfo/*
- /opt/Cosminexus/manager/tmp/*
- /opt/Cosminexus/manager/setup/log/*
- /opt/Cosminexus/manager/setup/log/maintenance/*
- *Work-directory*/ejb/*server-name*/logs/watch/*
- *Work-directory*/ejb/*server-name*/logs/CC/maintenance/*
- *Work-directory*/ejb/*server-name*/logs/CC/rmi/*
- *Work-directory*/ejb/*server-name*/logs/connectors/*
- *Work-directory*/ejb/*server-name*/logs/connectors/*application-display-name*/*
- *Work-directory*/ejb/*server-name*/logs/connectors/TEST#*application-display-name*/*
- *Work-directory*/ejb/*server-name*/logs/TPB/logj/mdltrc/*
- *Work-directory*/ejb/*server-name*/logs/TPB/logj/comtrc/*
- *Work-directory*/ejb/*server-name*/logs/TPB/logj/*
- *Work-directory*/ejb/*server-name*/logs/http/comm/*
- *Work-directory*/ejb/*server-name*/logs/http/thr/*
- *Work-directory*/ejb/*server-name*/logs/http/*
- *Work-directory*/ejb/*server-name*/logs/*
- *Manager-log-output-directory*/maintenance/*
- *Manager-log-output-directory*/maintenance/mmap/*
- *Manager-log-output-directory*/message/*
- *Manager-log-output-directory*/message/mmap/*
- *Manager-log-output-directory*/trace/*
- *Manager-log-output-directory*/trace/mmap/*
- *Manager-log-output-directory*/*
- *snapshot-log-output-destination-directory*/*
- *Audit-log-output-directory**
- *Message-log-output-directory-of-audit-log**
- *Message-log-output-directory-of-audit-log*\mmap*
- *Exception-information-output-directory-of-audit-log**
- *Exception-information-output-directory-of-audit-log*\mmap*

Reference note

The default directories are as follows:

- *Work-directory*: /opt/Cosminexus/CC/server/public
- *Manager-log-output-directory*: /opt/Cosminexus/manager/log
- *snapshot-log-output-destination-directory*: *Manager-log-output-directory*/snapshot
- *Audit-log-output-directory*: /opt/Cosminexus/auditlog
- *Message-log-output-directory-of-audit-log*: /opt/Cosminexus/auditlog
- *Exception-information-output-directory-of-audit-log*: /opt/Cosminexus/auditlog

- When using the Management Server, modify the settings in the property files on the replication source machine.

The work you need to perform differs according to whether Management Server is running on the replication source machine.

If Management Server is not running on the replication source machine

If the replication destination machine is a multihomed host, specify `adminagent.adapter.bind_host=regular-expression-matching-management-IP-address-of-replication-destination` in the Administration Agent property file (`adminagent.properties`) on the replication source machine.

If Management Server is running on the replication source machine

Set up the properties described in the following table:

File name	Property	Value
<code>.cmxrc</code> and <code>cmxclient.properties</code>	<code>cmx.lb</code>	<code>keepvs</code>
<code>adminagent.properties</code>	<code>adminagent.adapter.allowedHosts</code>	If the <code>mngsvr.myhost.name</code> property of <code>mserver.properties</code> is set up, specify the same value. If the <code>mngsvr.myhost.name</code> property of <code>mserver.properties</code> is not set up, specify the regular expression matching with the management IP address for the host.
<code>mserver.properties</code>	<code>mngsvr.myhost.name</code>	If the replication destination machine is a multihomed host, specify a <i>regular-expression-matching-management-IP-address-of-replication-destination</i> .
	<code>webserver.connector.http.bind_host</code>	
<code>adminagent.properties</code>	<code>adminagent.adapter.bind_host</code>	
<code>.mngsvrutilrc</code> and <code>mngsvrutilcl.properties</code>	<code>mngsvrutil.connect.host</code>	If a value other than the loopback address is set up, specify a <i>regular-expression-matching-management-IP-address-of-replication-destination</i> .
	<code>mngsvrutil.target_name</code>	
<code>.cmxrc</code> and <code>cmxclient.properties</code>	<code>cmx.connect.host</code>	

• Work to perform after replication

The following explains the work you need to perform on the replication destination machine after performing replication.

Implement steps 1 and 2 on the replication source machine. If you are using Management Server, implement step 3 as well.

Procedure

- If any of the following properties are specified in the user property file for J2EE servers (`usrconf.properties`) or the user property file for server management commands (`usrconf.properties`), change the values on the replication destination machine.
Change to an appropriate value for each property.
 - `vbroker.se.iiop_tp.host`
 - `ejbserver.ctm.CTMMHost`
 - `ejbserver.naming.host`
 - `ejbserver.rmi.naming.host`
- If any of the following properties are specified in the user property file for J2EE servers (`usrconf.properties`) or the user property file for Web container servers (`usrconf.properties`), change the values on the replication destination machine.

Change the value of each property to the IP address of the replication destination.

- `webserver.connector.http.bind_host`
- `webserver.connector.nio_http.bind_host`

Reset each property value to a unique value for each J2EE server or Web container server.

- `webserver.container.server_id.value`
- `webserver.session.server_id.value`

3. When using the Management Server, perform the following operations on the replication destination machine:

1. Defining the host added by the replication process
2. Deleting the definition of the replication source host from the replication destination host (only when replicating the computer on which Management Server is running)
3. Defining the logical server added by the replication process
4. Setting up the logical server added in 3 (specifying the real server name)
5. Reading the setup file of the logical server added in 3
6. Allocating the setup file of the logical server added in 3
7. Re-allocation after the EAR and RAR files are deleted with the server management commands (only when the application management functionality of J2EE servers is used)

(b) When a system (batch server) executing batch applications is used

This subsection describes the notes on Component Container when a system (batch server) executing batch applications is used.

• Work to perform before replication

The following explains the work you need to perform on the replication source machine before performing replication.

Implement steps 1 and 2 on the replication source machine. If you are using Management Server, implement step 3 as well.

Procedure

1. Stop the following programs on the replication source machine:
 - Batch servers (you can stop batch servers without shutting down the resource adapters.)
 - Administration Agent
 - Management Server
2. On the replication source machine, delete any files in the following directories. Do not delete the directories themselves.
 - `/opt/Cosminexus/CC/admin/logs/*`
 - `/opt/Cosminexus/CC/admin/logs/CC/maintenance/*`
 - `/opt/Cosminexus/CC/admin/logs/CC/maintenance/mmap/*`
 - `/opt/Cosminexus/CC/admin/logs/CC/rmi/*`
 - `/opt/Cosminexus/CC/admin/logs/CC/rmi/mmap/*`
 - `/opt/Cosminexus/CC/admin/logs/mmap/*`
 - `/opt/Cosminexus/CC/admin/logs/TPB/logj/comtrc/*`
 - `/opt/Cosminexus/CC/admin/logs/TPB/logj/mdltrc/*`
 - `/opt/Cosminexus/CC/admin/logs/TPB/logj/*`
 - `/opt/Cosminexus/CC/client/logs/*`
 - `/opt/Cosminexus/CC/client/logs/mmap/*`

- `/opt/Cosminexus/CC/web/containers/server-name/logs/*`
- `/opt/Cosminexus/manager/spool/default/*`
- `/opt/Cosminexus/manager/spool/lsinfo/*`
- `/opt/Cosminexus/manager/tmp/*`
- `/opt/Cosminexus/manager/setup/log/*`
- `/opt/Cosminexus/manager/setup/log/maintenance/*"`
- `Work-directory/ejb/server-name/logs/watch/*`
- `Work-directory/ejb/server-name/logs/CC/maintenance/*`
- `Work-directory/ejb/server-name/logs/CC/rmi/*`
- `Work-directory/ejb/server-name/logs/connectors/*`
- `Work-directory/ejb/server-name/logs/TPB/logj/mdltrc/*`
- `Work-directory/ejb/server-name/logs/TPB/logj/comtrc/*`
- `Work-directory/ejb/server-name/logs/TPB/logj/*`
- `Work-directory/ejb/server-name/logs/*`
- `Manager-log-output-directory/maintenance/*`
- `Manager-log-output-directory/maintenance/mmap/*`
- `Manager-log-output-directory/message/*`
- `Manager-log-output-directory/message/mmap/*`
- `Manager-log-output-directory/trace/*`
- `Manager-log-output-directory/trace/mmap/*`
- `Manager-log-output-directory/*`
- `snapshot-log-output-destination-directory/*`
- `Audit-log-output-directory*`
- `Message-log-output-directory-of-audit-log*`
- `Message-log-output-directory-of-audit-log\mmap*`
- `Exception-information-output-directory-of-audit-log*`
- `Exception-information-output-directory-of-audit-log\mmap*`



Reference note

The default directories are as follows:

- `Work-directory`: `/opt/Cosminexus/CC/server/public`
- `Manager-log-output-directory`: `/opt/Cosminexus/manager/log`
- `snapshot-log-output-destination-directory`: `Manager-log-output-directory/snapshot`
- `Audit-log-output-directory`: `/opt/Cosminexus/auditlog`
- `Message-log-output-directory-of-audit-log`: `/opt/Cosminexus/auditlog`
- `Exception-information-output-directory-of-audit-log`: `/opt/Cosminexus/auditlog`

- When using the Management Server, modify the settings in the property files on the replication source machine. The work you need to perform differs according to whether Management Server is running on the replication source machine.

If Management Server is not running on the replication source machine

If the replication destination machine is a multihomed host, specify `adminagent.adapter.bind_host=regular-expression-matching-management-IP-address-of-replication-destination` in the Administration Agent property file (`adminagent.properties`) on the replication source machine.

If Management Server is running on the replication source machine

Set up the properties described in the following table:

File name	Property	Value
<code>adminagent.properties</code>	<code>adminagent.adapter.allowedHosts</code>	If the <code>mngsvr.myhost.name</code> property of <code>mserver.properties</code> is set up, specify the same value. If the <code>mngsvr.myhost.name</code> property of <code>mserver.properties</code> is not set up, specify the regular expression matching with the management IP address for the host.
<code>mserver.properties</code>	<code>mngsvr.myhost.name</code>	If the replication destination machine is a multihomed host, specify a <i>regular-expression-matching-management-IP-address-of-replication-destination</i> .
	<code>webserver.connector.http.bind_host</code>	
<code>adminagent.properties</code>	<code>adminagent.adapter.bind_host</code>	
<code>.mngsvrutilrc</code> and <code>mngsvrutilcl.properties</code>	<code>mngsvrutil.connect.host</code>	If a value other than the loopback address is set up, specify a <i>regular-expression-matching-management-IP-address-of-replication-destination</i> .
	<code>mngsvrutil.target_name</code>	
<code>.cmxrc</code> and <code>cmxclient.properties</code>	<code>cmx.connect.host</code>	

• Work to perform after replication

The following explains the work you need to perform on the replication destination machine after performing replication.

Implement step 1 on the replication destination machine. If you are using Management Server, implement step 2 as well.

Procedure

- If any of the following properties are specified in the user property file for batch servers (`usrconf.properties`) or the user property file for server management commands (`usrconf.properties`), change the values on the replication destination machine.
Change to an appropriate value for each property.
 - `vbroker.se.iioptp.host`
 - `ejbserver.naming.host`
 - `ejbserver.rmi.naming.host`
- When using the Management Server, perform the following operations on the replication destination machine:
 - Defining the host added by the replication process
 - Deleting the definition of the replication source host from the replication destination host (only when replicating the computer on which Management Server is running)
 - Defining the logical server added by the replication process
 - Setting up the logical server added in 3 (specifying the real server name)
 - Reading the setup file of the logical server added in 3
 - Allocating the setup file of the logical server added in 3
 - Re-allocation after the RAR files are deleted with the server management commands (only when the application management functionality of J2EE servers is used)

(2) Notes on Component Container - Redirector

This subsection describes the notes on Component Container - Redirector.

- **Work to perform before replication**

The following explains the work you need to perform on the replication source machine before performing replication.

Implement steps 1 and 2 on the replication source machine.

Procedure

1. Stop the following program on the replication source machine:
 - HTTP Server
2. On the replication source machine, delete any files in the following directories. Do not delete the directories themselves.
 - `/opt/Cosminexus/CCR/web/redirector/servers/server-name/logs/*`
 - `/opt/Cosminexus/CCR/web/redirector/servers/server-name/logs/mmap/*`
 - `/opt/Cosminexus/CCR/web/redirector/logs/*`
 - `/opt/Cosminexus/CCR/web/redirector/logs/mmap/*`

(3) Notes on Reliable Messaging

This subsection describes the notes on Reliable Messaging.

- **Work to perform before replication**

The following explains the work you need to perform on the replication source machine before performing replication.

Implement steps 1 and 2 on the replication source machine.

Procedure

1. Deploy Reliable Messaging on the J2EE server. If Reliable Messaging is running, stop Reliable Messaging on the J2EE server.
2. On the replication source machine, delete any log files in the following directories. Do not delete the directories themselves.
 - `Work-directory/ejb/server-name/logs/RM/maintenance`The default *work-directory* is `/opt/Cosminexus/CC/server/public`.

- **Work to perform after replication**

The following explains the work you need to perform on the replication destination machine after performing replication.

Implement steps 1 to 5 on the replication destination machine.

Procedure

1. If you changed the host name or IP address for the replicated system, update the following Reliable Messaging settings:
 - Update the settings for the environment variable `HRM_CMD_HOST` to the host name or IP address of the replicated system.
 - If you change the host name or IP address of the transmit destination system by using the transmit between queues functionality, use the following procedure to re-create the address existing in the transmit source system and the transmit queue, which uses that address:
 1. Make sure there are no messages in all the transmit queues that are using the transmit source system address.

2. Delete all the transmit queues that are using the transmit source system address.
 3. Delete the transmit source system address.
 4. Specify the changed host name or IP address and create a new transmit source system address.
 5. Create a new transmit queue for using the transmit source system address.
2. Change the configuration property `RMSysName` and the environment variable `HRM_SYSTEM_NAME` so that the Reliable Messaging system name is unique.
 3. Create a management information table corresponding to the system name changed in step 2.
For details on how to create a management information table, see the manual *Cosminexus Reliable Messaging*.
 4. When you use HiRDB as DBMS and the configuration uses an XA transaction, change the configuration properties `description` and `XAOpenString` of the integration destination DB Connector so that `XAOpenString` of the integration destination DB Connector for Reliable Messaging is unique among the resource adapters connected to the same HiRDB.
 5. Start Reliable Messaging and create the required queues.

(4) Notes on Component Transaction Monitor

- **Work to perform after replication**

After performing replication, delete the entire contents of the directory specified in the `CTMSPool` environment variable from the replication destination machine.

(5) Notes on Performance Tracer

After performing replication, delete the entire contents of the directory specified in the `PRFSPOOL` environment variable from the replication destination machine.

(6) Notes on HTTP Server

This subsection describes the notes on HTTP Server.

- **Work to perform before replication**

Before performing replication, stop all HTTP Server programs on the replication source machine and any pending operations on related files.

- **Work to perform after replication**

The following explains the work you need to perform on the replication destination machine after performing replication.

Implement steps 1 to 3 on the replication destination machine.

Procedure

1. As needed, change the directive settings after replication.

- Network-related directives

`ServerName`, `<VirtualHost>`, `BindAddress`, `Listen`, and `NameVirtualHost`

- File system-related directives

`<Directory>`, `<DirectoryMatch>`, `AccessFileName`, `Alias`, `AliasMatch`, `AuthGroupFile`, `AuthUserFile`, `CoreDumpDirectory`, `CustomLog`, `DocumentRoot`, `ErrorLog`, `HWSRequestLog`, `HWSTraceIdFile`, `HWSTraceLogFile`, `Include`, `LoadFile`, `LoadModule`, `PidFile`, `QOSResponse`, `ScriptAlias`, `ScriptAliasMatch`, `ScriptLog`, `ServerRoot`, `SSLCACertificateFile`, `SSLCACertificatePath`, `SSLCacheServerPath`, `SSLCacheServerPort`, `SSLCacheServerRunDir`,

SSLCertificateFile, SSLCertificateKeyFile, SSLCertificateKeyPassword, SSLCRLDERPath, SSLCRLPEMPath, TransferLog, TypesConfig, and UserDir

2. If a file specified in the PidFile directive is copied, delete the file before you start HTTP Server.
3. If the log-related files are copied, delete the unnecessary files as and when required.

(7) Notes on TPBroker

This subsection describes the notes on TPBroker.

- **Work to perform after replication**

The following explains the work you need to perform after replication. Implement step 1 and step 2.

Procedure

1. If you are using the replication functionality based on image filing provided by the virtual platform, and if the following settings are specified, change the specified host name and IP address in accordance with the system:
 - agentaddr file (can also be specified in the environment variable OSAGENT_ADDR_FILE or property vbroker.agent.addrFile)
 - localaddr file (can also be specified in the environment variable OSAGENT_LOCAL_FILE or property vbroker.agent.localFile)
 - htc.clienthandleraddr file (can also be specified in the environment variable HVI_OSAGENT_CLIENHANDLERADDR_FILE)
 - Property vbroker.agent.addr
 - Property vbroker.se.server-engine.host
 - Property vbroker.se.server-engine.proxyHost
 - Property vbroker.orb.initRef
 - Property vbroker.orb.defaultInitRef (only C++)
 - Command line option ORBInitRef
 - Command line option ORBDefaultInitRef (only C++)
 - Command line option ORBagentAddr
 - osagent command line option -a
 - Environment variable OSAGENT_ADDRAlso, after you change the host name and IP address, re-create and re-allocate the IOR file that was created before you changed the host name and IP address.
2. If you are using the replication functionality in the virtual environment, and if a global transaction is used, delete the status file of the in-process transaction service if present, so that the virtual environment replication source does not include the status file of the in-process transaction service.

(8) Notes on Service Coordinator

This subsection describes the notes on Service Coordinator.

- **Work to perform before replication**

The following explains the work you need to perform on the replication source machine before performing replication.

Implement steps 1 and 2 on the replication source machine.

Procedure

1. From the *uCosminexus Service Platform Setup and Operation Guide*, implement the operations until *Setting up the software required for the execution environment*.
2. Implement the "Work to perform before replication" for the following component software:
 - Component Container
 - Reliable Messaging
 - HTTP Server
 - TPBroker

- **Work to perform after replication**

The following explains the work you need to perform after replication. Implement step 1 and step 2.

Procedure

1. On the replication destination machine, perform the "Work to perform after replication" for the following component software:
 - Component Container
 - Reliable Messaging
 - Component Transaction Monitor
 - Performance Tracer
 - HTTP Server
 - TPBroker
2. On the replication source and destination machines, perform the work from *Setting up an HCSC server* onward in the *uCosminexus Service Platform Setup and Operation Guide*.

I.5 Notes on remote installation

The following table describes the notes on remote installation.

Table I–1: Notes on remote installation

Classification	Notes	New installation	Update installation
Windows	When you perform a remote installation for the component software of each product, make sure you implement remote installation for the product before you perform remote installation for the component software. The remote installation of the component software is implemented according to the specified product installation destination.	Y	Y
	Depending on the specification, the installation destination for a new installation is as follows: If both drive and path are omitted (default value is used) The <i>name-of-drive-where-system-is-installed</i> : \Program Files\Hitachi\Cosminexus directory is created, and the product or component software is installed. If the drive is specified The \Program Files\Hitachi\Cosminexus directory is created in the specified drive, and the product or component software is installed. If the path is specified The product or component software is installed in the specified path.	Y	--
	Update installation is performed to the same directory as the existing version of the product.	--	Y

Legend:

Y: Applicable.

--: Not applicable.

I.6 List of error codes for Application Server installation and un-installation (In Windows)

This subsection describes the codes used for reporting errors during installation and un-installation.

- **Product-specific return code and component software-specific error code**

The following table describes the meaning and action for the codes specific to the products and component software. If the code is not specified in the following table, see the common return codes for products and the common error codes for component software described in [Table I-3](#). Note that if the return code and error code cannot be obtained, ** is output.

Table I–2: Meaning and action of codes specific to the product and component software

Name of the product or component software	Code	Meaning	Action
Application Server	04	The installation of Application Server terminated normally, but an error occurred while a patch was being applied to the product.	Check the error code for patch application, output after <code>PATCH END</code> in <i>Application-Server-installation-directory\install.log</i> , and then take the action described in Table I-4 .
	90	A user who does not have the Administrator permission executed the installation or un-installation operation.	A user who has the Administrator permission must install the product.
	91	The installation was executed on an unsupported platform.	Install the product on a platform that is supported by Application Server.
	92	A product other than Application Server is already installed.	Un-install the product other than Application Server that is already installed, and then install Application Server.
	93	A new Application Server version is already installed.	Check the Application Server version you are trying to install.
	94	An error occurred during the transmission of the common module files.	Contact maintenance personnel.
	95	An error occurred when the installer of the component software was being started.	Contact maintenance personnel.
	96	An error occurred during the processing of the installer of the component software.	See the component software error code, remove the cause of the error, and then re-install the product.
	97	Other error has occurred.	If an error occurs during the installation and un-installation of HiRDB/Single Server Version 10, the return code is output in the "97, XX, YY" format. For YY, see the error codes for HiRDB/Single Server Version 10. In cases other than the above, contact maintenance personnel.
	98	The number of characters in the installation destination directory name exceeded the limit.	The installation destination directory name must be 50 or less single-byte characters.

Name of the product or component software	Code	Meaning	Action
	99	A timeout occurred during the un-installation of Application Server.	Contact maintenance personnel.
Client	04	The installation of Client terminated normally, but an error occurred while a patch was being applied to the product.	Check the error code for patch application, output after <code>PATCH END</code> in <i>Client-installation-directory\install.log</i> , and then take the action described in Table I-3 .
	90	A user who does not have the Administrator permission executed the installation or un-installation operation.	A user who has the Administrator permission must install the product.
	91	The installation was executed on an unsupported platform.	Install the product on a platform that is supported by Client.
	92	A product other than Client is already installed.	Un-install the product other than Client that is already installed, and then install Client.
	93	A new Client version is already installed.	Check the Client version you are trying to install.
	94	An error occurred during the transmission of the common module files.	Contact maintenance personnel.
	95	An error occurred when the installer of the component software was being started.	Contact maintenance personnel.
	96	An error occurred during the processing of the installer of the component software.	See the component software error code, remove the cause of the error, and then re-install the product.
	97	Other error has occurred.	If an error occurs during the installation and un-installation of HiRDB/Single Server Version 10, the return code is output in the "97, XX, YY" format. For YY, see the error codes for HiRDB/Single Server Version 10. In cases other than the above, contact maintenance personnel.
	98	The number of characters in the installation destination directory name exceeded the limit.	The installation destination directory name must be 50 or less single-byte characters.
	99	A timeout occurred during the un-installation of Client.	Contact maintenance personnel.
Developer	04	The installation of Developer terminated normally, but an error occurred while a patch was being applied to the product.	Check the error code for patch application, output after <code>PATCH END</code> in <i>Developer-installation-directory\install.log</i> , and then take the action described in Table I-3 .
	90	A user who does not have the Administrator permission executed the installation or un-installation operation.	A user who has the Administrator permission must install the product.
	91	The installation was executed on an unsupported platform.	Install the product on a platform that is supported by Developer.
	92	A product other than Developer is already installed.	Un-install the product other than Developer that is already installed, and then install Developer.
	93	A new Developer version is already installed.	Check the Developer version you are trying to install.
	94	An error occurred during the transmission of the common module files.	Contact maintenance personnel.

Name of the product or component software	Code	Meaning	Action
	95	An error occurred when the installer of the component software was being started.	Contact maintenance personnel.
	96	An error occurred during the processing of the installer of the component software.	See the component software error code, remove the cause of the error, and then re-install the product.
	97	Other error has occurred.	If an error occurs during the installation and un-installation of HiRDB/Single Server Version 10, the return code is output in the "97, XX, YY" format. For YY, see the error codes for HiRDB/Single Server Version 10. In cases other than the above, contact maintenance personnel.
	98	The number of characters in the installation destination directory name exceeded the limit.	The installation destination directory name must be 50 or less single-byte characters.
	99	A timeout occurred during the un-installation of Developer.	Contact maintenance personnel.
Service Architect	04	The installation of Service Architect terminated normally, but an error occurred while a patch was being applied to the product.	Check the error code for patch application, output after PATCH END in <i>Service-Architect-installation-directory\install.log</i> , and then take the action described in Table I-3 .
	90	A user who does not have the Administrator permission executed the installation or un-installation operation.	A user who has the Administrator permission must install the product.
	91	The installation was executed on an unsupported platform.	Install the product on a platform that is supported by Service Architect.
	92	A product other than Service Architect is already installed.	Un-install the product other than Service Architect that is already installed, and then install Service Architect.
	93	A new Service Architect version is already installed.	Check the Service Architect version you are trying to install.
	94	An error occurred during the transmission of the common module files.	Contact maintenance personnel.
	95	An error occurred when the installer of the component software was being started.	Contact maintenance personnel.
	96	An error occurred during the processing of the installer of the component software.	See the component software error code, remove the cause of the error, and then re-install the product.
	97	Other error has occurred.	If an error occurs during the installation and un-installation of HiRDB/Single Server Version 10, the return code is output in the "97, XX, YY" format. For YY, see the error codes for HiRDB/Single Server Version 10. In cases other than the above, contact maintenance personnel.
	98	The number of characters in the installation destination directory name exceeded the limit.	The installation destination directory name must be 50 or less single-byte characters.
	99	A timeout occurred during the un-installation of Service Architect.	Contact maintenance personnel.

Name of the product or component software	Code	Meaning	Action
Service Platform	04	The installation of Service Platform terminated normally, but an error occurred while a patch was being applied to the product.	Check the error code for patch application, output after <code>PATCH END</code> in <i>Service-Platform-installation-directory\install.log</i> , and then take the action described in Table I-3 .
	90	A user who does not have the Administrator permission executed the installation or un-installation operation.	A user who has the Administrator permission must install the product.
	91	The installation was executed on an unsupported platform.	Install the product on a platform that is supported by Service Platform.
	92	A product other than Service Platform is already installed.	Un-install the product other than Service Platform that is already installed, and then install Service Platform.
	93	A new Service Platform version is already installed.	Check the Service Platform version you are trying to install.
	94	An error occurred during the transmission of the common module files.	Contact maintenance personnel.
	95	An error occurred when the installer of the component software was being started.	Contact maintenance personnel.
	96	An error occurred during the processing of the installer of the component software.	See the component software error code, remove the cause of the error, and then re-install the product.
	97	Other error has occurred.	If an error occurs during the installation and un-installation of HiRDB/Single Server Version 10, the return code is output in the "97, XY, YY" format. For YY, see the error codes for HiRDB/Single Server Version 10. In cases other than the above, contact maintenance personnel.
	98	The number of characters in the installation destination directory name exceeded the limit.	The installation destination directory name must be 50 or less single-byte characters.
	99	A timeout occurred during the un-installation of Service Platform.	Contact maintenance personnel.
Application Development Plug-in	90	A new version of the product is already installed.	Check the product version you are trying to install.
Component Container	8C	The installation was refused due to one of the following reasons: 1. When an individual product installer is started directly without using the installer 2. When a user who does not have the Administrator permission executes the setup	For 1. Use the installer setup program (<code>HCD_INST.EXE</code>). For 2. Log in with a user who has the Administrator permission, and re-execute the setup.
	90	Cosminexus Server Component Container for Java 01-00 or 01-01 is already installed.	Un-install Cosminexus Server Component Container for Java 01-00 or 01-01, and then install the product.
	91	Component Server for Java 01-00 is already installed.	Un-install Component Server for Java 01-00 and then install the product.
	92	The version might be downgraded. • If a new version of the product is already installed	Check the already installed product version and the version of the product you want to install.

Name of the product or component software	Code	Meaning	Action
		<ul style="list-style-type: none"> When a normal version is installed while an evaluation version is already installed 	
	93	An attempt to execute the command failed.	Contact maintenance personnel.
	95	The start of a service was detected.	Stop all the running product services, and then re-execute the setup.
	97	A running program or file was detected.	Stop all the running Component Container programs, and the related programs such as Web servers, and then re-execute the setup.
	98	The update was reserved after the OS was restarted, but a currently non-updated program or file was detected.	Restart the OS, and after the program or file is updated, re-execute the setup.
	99	SI Navigation System - Agent is installed.	Un-install SI Navigation System - Agent, and then re-install the product.
Component Container - Client	8C	<p>The installation was refused due to one of the following reasons:</p> <ol style="list-style-type: none"> When an individual product installer is started directly without using the installer When a user who does not have the Administrator permission executes the setup 	<p>For 1.</p> <p>Use the installer setup program (HCD_INST.EXE).</p> <p>For 2.</p> <p>Log in with a user who has the Administrator permission, and re-execute the setup.</p>
	90	Cosminexus Server Component Container for Java 01-00 or 01-01 is already installed.	Un-install Cosminexus Server Component Container for Java 01-00 or 01-01, and then install the product.
	91	Component Server for Java 01-00 is already installed.	Un-install Component Server for Java 01-00 and then install the product.
	92	<p>The version might be downgraded.</p> <ul style="list-style-type: none"> If a new version of the product is already installed When a normal version is installed while an evaluation version is already installed 	Check the already installed product version and the version of the product you want to install.
	97	A running program or file was detected.	Stop all the running Component Container programs, and the related programs such as Web servers, and then re-execute the setup.
	98	The update was reserved after the OS was restarted, but a currently non-updated program or file was detected.	Restart the OS, and after the program or file is updated, re-execute the setup.
	99	SI Navigation System - Agent is installed.	Un-install SI Navigation System - Agent, and then re-install the product.
Component Container - Redirector	8C	<p>The installation was refused due to one of the following reasons:</p> <ol style="list-style-type: none"> When an individual product installer is started directly without using the installer When a user who does not have the Administrator permission executes the setup 	<p>For 1.</p> <p>Use the installer setup program (HCD_INST.EXE).</p> <p>For 2.</p> <p>Log in with a user who has the Administrator permission, and re-execute the setup.</p>
	90	Cosminexus Server Component Container for Java 01-00 or 01-01 is already installed.	Un-install Cosminexus Server Component Container for Java 01-00 or 01-01, and then install the product.

Name of the product or component software	Code	Meaning	Action
	91	Component Server for Java 01-00 is already installed.	Un-install Component Server for Java 01-00 and then install the product.
	92	The version might be downgraded. <ul style="list-style-type: none"> If a new version of the product is already installed When a normal version is installed while an evaluation version is already installed 	Check the already installed product version and the version of the product you want to install.
	97	A running program or file was detected.	Stop all the running Component Container programs, and the related programs such as Web servers, and then re-execute the setup.
	98	The update was reserved after the OS was restarted, but a currently non-updated program or file was detected.	Restart the OS, and after the program or file is updated, re-execute the setup.
	99	SI Navigation System - Agent is installed.	Un-install SI Navigation System - Agent, and then re-install the product.
Component Transaction Monitor	--	No specific error code.	--
Developer's Kit for Java	90	A new Developer's Kit for Java version is already installed.	Un-install Developer's Kit for Java, and then install the product.
	91	An attempt to copy the file failed.	Check whether the disk capacity at the installation destination is sufficient and whether the access permissions are specified correctly.
	97	A running program or file was detected.	Terminate all the running Developer's Kit for Java programs, and the programs accessing the related files, and then re-install the product.
HTTP Server	83	The HTTP Server service is running or an error occurred during the registry operations.	Check whether HTTP Server is running. If the server is running, stop the server and then re-execute the operations. If the server is not running, contact maintenance personnel.
	90	A user who does not have the Administrator permission executed the installation or un-installation operation.	A user who has the Administrator permission must install the product.
	91	The installation was executed on an unsupported platform.	Install the software on a platform that is supported by the product.
	94	The product was installed in an environment where a stand-alone Web Server is already installed.	Un-install the stand-alone Web Server and then install the product.
Performance Tracer	--	No specific error code.	--
Reliable Messaging	90	An error occurred while the version was being checked.	Un-install the installed Reliable Messaging and then re-install the product.
	91	An error occurred during file transmission.	Re-install the product.
Service Coordinator	90	This is a downgraded installation.	Check the product version you are trying to install.
Service Development Plug-in	90	A new version of the product is already installed.	Check the product version you are trying to install.

Name of the product or component software	Code	Meaning	Action
TPBroker	90	A new version of the product is already installed.	Check the product version you are trying to install. If you need to re-install, install the same version as the installed product version, or install a new product version.
	91	A user who does not have the Administrator permission executed the installation or un-installation operation.	A user who has the Administrator permission must install the product.
	93	An internal error occurred.	Terminate all the programs, or restart the OS, and then re-install the product.
	94	An attempt to delete a file provided in the earlier version has failed.	Terminate all the programs, or restart the OS, and then re-install the product.
	95	An error occurred in the registry operation.	Terminate all the programs, or restart the OS, and then re-install the product.
	96	An error occurred during the system environment check.	Terminate all the programs, or restart the OS, and then re-install the product.
	97	An attempt to copy a file failed.	Check whether the disk capacity is sufficient and whether the access permissions are specified correctly. If there are no problems here, terminate all the programs, or restart the OS, and then re-install the product.
	98	An attempt to set up the registry information failed.	Terminate all the programs, or restart the OS, and then re-install the product.
Web Services - Security	90	A user who does not have the Administrator permission executed the installation or un-installation operation.	A user who has the Administrator permission must install the product.
	93	A new version of the product is already installed.	Check the product version you are trying to install.
XML Processor	90	A new version of the product is already installed.	Check the product version you are trying to install.
HiRDB/Single Server Version 10	92	This OS is not applicable.	Install the software on a platform that is supported by the product.
	94	The embedded HiRDB service of the identical setup identifier (_CS0) is not stopped.	Stop the started service and then install the product.
	95	The embedded HiRDB of the identical setup identifier (_CS0) is not installed.	Contact maintenance personnel.
	96	The embedded HiRDB of the identical setup identifier (_CS0) is already installed.	Contact maintenance personnel.
	9C	A running process is left behind.	For installation, restart the OS and then re-execute the operation. For un-installation, after un-installation restart the OS immediately.

Name of the product or component software	Code	Meaning	Action
DABroker Library (compatibility function)	90	This is a downgraded version installation.	Check the product version you are trying to install.
	93	DABroker Library cannot be installed because the library is in use.	Terminate all the programs that are accessing DABroker Library, and then install the product.

Legend:

--: Not applicable.

Note: For details on the products, and the component software included in the product, see [2.2.1\(3\) Component software supporting the products](#).

• Common return codes for products and the common error codes for component software

The following table describes the meaning and action for the common codes of the products and component software.

Table I–3: Meaning and action for the common codes of the products and component software

Code	Meaning	Action
00	The processing terminated normally.	No action needed.
01	The following processing terminated normally: <ul style="list-style-type: none"> Update installation with a different version (version upgrade) Un-installation of an un-installed environment 	No action needed.
82	An error occurred during the following post-installation processing: <ul style="list-style-type: none"> Icon addition Group addition 	Contact maintenance personnel.
84	Memory insufficient for installation.	Allocate the memory, such as by terminating other programs, and then re-execute the operation.
85	An error occurred while accessing the disk.	Contact maintenance personnel.
88	The startup parameter is incorrect. A possible cause is that an update installation was specified, but the applicable program is not installed.	If the applicable program is not installed with an, re-execute the process with a new installation. In cases other than above, contact maintenance personnel.
8A	A new installation of the component software cannot be executed.	Contact maintenance personnel.
8C	Installation was refused. A possible cause is that a prerequisite program does not exist.	If a prerequisite program does not exist, install the prerequisite program, and then re-execute the operation. In cases other than above, contact maintenance personnel.
80, 81, 87, 89, 8B, 8D, 8E, 8F	Installation ended abnormally.	Contact maintenance personnel.
9A	Installation was cancelled.	No action needed.
9B	The supporting products are not installed.	Install the 11-00 products, and then re-execute remote installation.
9C	An attempt to obtain the product information failed.	Make sure the product is installed properly, and then re-execute installation.
9D	An attempt to output the installation log file or installation status file has failed.	Check whether the disk capacity is sufficient and whether the access permissions are specified correctly. If there are no problems here, terminate all the programs, or restart the OS, and then re-install the product.

• Error codes for patch application

With the Application Server and BPM/ESB platform products, when you install a product and after the installation terminates normally, a patch is applied for that product. If an error occurs during the application of the patch, the error code is output after `PATCH END` in `product-installation-directory\install.log`. The following table describes the meaning and action for the error codes during patch application.

Table I–4: Meaning and action for the error codes during patch application

Code	Meaning	Action
0 or 1	No patch is applicable or the patch was applied normally.	No action needed.
129	Memory is insufficient for applying the patch.	Allocate the memory, such as by terminating other programs, and then re-execute the operation.
134	The disk space is insufficient for applying the patch.	Allocate the hard disk space, and then re-execute the operation.
144	Patch application failed because a program or service is running.	Stop the product-related programs or services, and then re-execute the operation. If the same error occurs even after you stop the programs or services, the product media might be invalid, so contact maintenance personnel.
Other than above	The product media might be invalid.	Contact maintenance personnel.

I.7 Installation and un-installation log of Component Container and Redirector functionality (In UNIX)

The execution status of the installation and un-installation of Component Container and the redirector functionality is output to the following installation log:

- For Component Container: `/opt/Cosminexus/CC/logs/install.log`
- For the redirector functionality: `/opt/Cosminexus/CCR/logs/install.log`

Maximum four backup files, `install1.log` to `install4.log`, are created for the installation log, and the latest installation log is always `install.log`.

If an error occurs during installation and un-installation, take action based on the installation log contents. If the cause of the error is not determined, send the files listed in the following table and a query to maintenance personnel.

Table I–5: Files to be sent when errors occur during installation and un-installation

Output target	Timing of error	
	During installation	During un-installation
Component Container	<ul style="list-style-type: none"> • <code>/opt/Cosminexus/CC/logs/install.log</code> (including backup files) • <code>/etc/.hitachi/.install.log</code> (including backup files) 	<ul style="list-style-type: none"> • <code>/opt/Cosminexus/CC/logs/install.log</code> (including backup files) • <code>/etc/.hitachi/.uninstall.log</code> (including backup files)
Redirector functionality	<ul style="list-style-type: none"> • <code>/opt/Cosminexus/CCR/logs/install.log</code> (including backup files) • <code>/etc/.hitachi/.install.log</code> (including backup files) 	<ul style="list-style-type: none"> • <code>/opt/Cosminexus/CCR/logs/install.log</code> (including backup files) • <code>/etc/.hitachi/.uninstall.log</code> (including backup files)

- **Output format**

The format of the installation log is as follows:

```
MM-DD-YYYY/hh:mm:ss/rc=y/msg=zz...zz
```

- **Output items**

The following table describes the items specified in the installation log format.

Table I–6: Output items (Installation log of Component Container and redirector functionality)

Output items	Meaning
MM	Month (01 to 12)
DD	Date (01 to 31)
YYYY	Year (2003 or later)
hh	Hours (00 to 23)
mm	Minutes (00 to 59)
ss	Seconds (00 to 59)
rc	Label indicating the return code
y	Return code contents (decimals)
msg	Label indicating the log message contents
zz...zz	Contents of the trace information and error information <ul style="list-style-type: none">• If the prefix is [I:]: Trace information• If the prefix is [E:]: Error information

- **Contents of the trace information and error information**

This subsection describes the contents of the trace information and error information. The following table describes the variable values used in the description of the trace information and error information.

Table I–7: Variable values used in the description of the trace information and error information

Variable value	Contents
aa...aa	<ul style="list-style-type: none">• started: Start• ended: End
bb...bb	Bundle name <ul style="list-style-type: none">• Cosminexus Component Container• Cosminexus Component Container - Redirector
cc...cc	Command name
dd...dd	File name
ee...ee	Directory name
ff...ff	File or directory name
gg...gg	Contents of the definition to be added
hh...hh	Old version (Version already set up in the system)
ii...ii	Old SI version (SI version already set up in the system)
jj...jj	New version (Product version already set up in the system)
kk...kk	New SI version (Product SI version already set up in the system)
ll...ll	Information 1 (Additional information such as arguments)

Variable value	Contents
<i>mm...mm</i>	Information 2 (Additional information such as arguments)
<i>nn...nn</i>	Information 3 (Additional information such as arguments)
<i>oo...oo</i>	Return value of command
<i>rr...rr</i>	Service name (only output for Component Container)

The following table describes the content and meaning of the trace information for the output item *zz...zz*.

Table I–8: Content and meaning of the trace information (Installation log of Component Container and redirector functionality)

No.	Content of y	Content of <i>zz...zz</i>	Meaning
1	0	I: Setup of HNTRLib2 has <i>aa...aa</i> .	The setup of HNTRLib2 has <i>aa...aa</i> .
2	0	I: Extraction processing for HNTRLib2 has <i>aa...aa</i> .	The expansion processing of HNTRLib2 has <i>aa...aa</i> .
3	0	I: Installation of HNTRLib2 has <i>aa...aa</i> .	The installation of HNTRLib2 has <i>aa...aa</i> .
4	0	I: Registration processing for the HNTRLib2 daemon has <i>aa...aa</i> .	The registration processing for the HNTRLib2 daemon has <i>aa...aa</i> .
5	0	I: Startup processing of the HNTRLib2 daemon has <i>aa...aa</i> .	The startup processing of the HNTRLib2 daemon has <i>aa...aa</i> .
6	0	I: Registration of the bundled program product <i>bb...bb</i> into HNTRLib2 has <i>aa...aa</i> .	The registration of the bundled PP name [<i>bb...bb</i>] to HNTRLib2 has <i>aa...aa</i> .
7	0	I: The command has <i>aa...aa</i> . (Command = <i>cc...cc</i>)	The command <i>cc...cc</i> has <i>aa...aa</i> .
8	0	I: The file to be copied already exists in the copy destination. (file = <i>dd...dd</i>)	The file with the same name as the file to be copied already exists in the copy destination.
9	0	I: The directory to be copied already exists in the copy destination. (directory = <i>ee...ee</i>)	The directory with the same name as the directory to be copied already exists in the copy destination.
10	0	I: The directory to be created already exists. (directory = <i>ee...ee</i>)	The directory to be created already exists.
11	0	I: The file or directory to be deleted does not exist. (file or directory = <i>ff...ff</i>)	The file or directory to be deleted does not exist.
12	0	I: The file or directory to be copied does not exist. (file or directory = <i>ff...ff</i>)	The file or directory you are trying to copy does not exist.
13	0	I: The specified directory does not exist. (directory = <i>ee...ee</i>)	The specified directory does not exist.
14	0	I: The specified definition already exists.[File= <i>dd...dd</i> ,Define= <i>gg...gg</i>]	The definition <i>gg...gg</i> to be added already exists in the file <i>dd...dd</i> .
15	0	I: The specified bundle name is already registered. (bundle name = <i>bb...bb</i>)	The specified bundle name <i>bb...bb</i> is already registered.
16	0	I: The specified name has already been de-registered. (bundle name = <i>bb...bb</i>)	The specified bundle name <i>bb...bb</i> is already de-registered.
17	0	I: HNTRLib2 was not uninstalled because other applications are registered in it.	HNTRLib2 was not un-installed because another PP is registered in HNTRLib2.
18	0	I: Cancellation processing of the HNTRLib2 daemon has <i>aa...aa</i> .	The de-registration processing of the HNTRLib2 daemon has <i>aa...aa</i> .
19	0	I: Uninstallation of HNTRLib2 has <i>aa...aa</i> .	The un-installation of HNTRLib2 has <i>aa...aa</i> .

No.	Content of y	Content of zz...zz	Meaning
20	0	I: An overwrite installation will be performed. (version = <i>hh...hh</i> , SI version = <i>ii...ii</i>)	An overwrite installation of version <i>hh...hh</i> or SI version <i>ii...ii</i> will be executed.
21	0	I: An upgrade installation will be performed. (earlier version = <i>hh...hh</i> , new version = <i>jj...jj</i> , new SI version = <i>kk...kk</i>)	An overwrite installation of new version <i>jj...jj</i> or SI version <i>kk...kk</i> will be executed for the earlier version <i>hh...hh</i> .
22	0	I: An upgrade installation will be performed. (earlier version = <i>hh...hh</i> , earlier SI version = <i>ii...ii</i> , new version = <i>jj...jj</i> , new SI version = <i>kk...kk</i>)	An overwrite installation of new version <i>jj...jj</i> or SI version <i>kk...kk</i> will be executed for the earlier version <i>hh...hh</i> or SI version <i>ii...ii</i> .
23	0	I: Version information was acquired from the file <i>dd...dd</i> . (version = <i>hh...hh</i>)	The version information <i>hh...hh</i> was obtained from the file <i>dd...dd</i> .
24	0	I: Version information was acquired from the file <i>dd...dd</i> . (version = <i>hh...hh</i> , SI version = <i>ii...ii</i>)	The version information <i>hh...hh</i> or SI version <i>ii...ii</i> was obtained from the file <i>dd...dd</i> .
25	0	I: The shift processing to a version <i>jj...jj</i> from a version <i>hh...hh</i> is <i>aa...aa</i> .	The migration processing to the new version <i>jj...jj</i> from the earlier version <i>hh...hh</i> is <i>aa...aa</i> .
26	0	I: The upgrade from the earlier version to the new version was not performed because the earlier version had already been uninstalled. (earlier version = <i>jj...jj</i> , new version = <i>hh...hh</i>)	Because the earlier version of the product had already been uninstalled, the installer could not upgrade from the earlier version <i>jj...jj</i> to the new version <i>hh...hh</i> .
27	<i>oo...oo</i>	I: The command has executed. (command = <i>cc...cc</i>)	The command <i>cc...cc</i> was executed.

The following table describes the error information content, meaning, and action for the output item *zz...zz*.

Table I–9: Error information contents, meaning, and action (Installation log of Component Container and redirector functionality)

No.	Content of y	Content of zz...zz	Meaning	Action
1	1	E: The specified file does not exist. (file = <i>dd...dd</i>)	The file to be edited does not exist.	Check whether the operation is being executed with the appropriate permissions, and then re-execute the setup.
2	1	E: The specified directory does not exist. (directory = <i>ee...ee</i>)	The specified directory does not exist.	Check whether the operation is being executed with the appropriate permissions, and then re-execute the setup.
3	92	E: A downgrade installation cannot be performed. (installed version = <i>hh...hh</i> , installed SI version = <i>ii...ii</i> , version to be installed = <i>jj...jj</i> , SI version to be installed = <i>kk...kk</i>)	A downgrade installation cannot be performed. The already installed version is = <i>hh...hh</i> , or SI version <i>ii...ii</i> , new version to be set up = <i>jj...jj</i> or SI version = <i>kk...kk</i> .	The installed product version is newer than the version you are trying to set up. Check the version of the product you want to set up. To install an earlier product version, un-install the new product version that is currently installed, and then install the earlier version.
4	92	E: A downgrade installation cannot be performed. (installed version = <i>hh...hh</i> , new version to be installed = <i>jj...jj</i> , new SI version to be installed = <i>kk...kk</i>)	A downgrade installation cannot be performed. Installed version = <i>hh...hh</i> , new version to be set up = <i>jj...jj</i> or SI version = <i>kk...kk</i> .	The installed product version is newer than the version you are trying to set up. Check the version of the product you want to set up. To install an earlier product version, un-install the new product version that is currently installed, and then install the earlier version.
5	92	E: Upgrade of this version is not supported. (installed version = <i>hh...hh</i> , new version to be installed = <i>jj...jj</i> , new SI version to be installed = <i>kk...kk</i>)	Upgrade from the installed version = <i>hh...hh</i> to the new version to be set up = <i>jj...jj</i> or SI version = <i>kk...kk</i> is not supported.	An earlier product, for which upgrades are not supported, exists. Before you set up this product, un-install the earlier product, and then re-execute the setup.
6	92	E: Upgrading this version is not supported. (installed version =	Upgrade from the installed version = <i>hh...hh</i> or SI version <i>ii...ii</i> to the	An earlier product, for which upgrades are not supported, exists. Before you set up this

No.	Content of y	Content of zz...zz	Meaning	Action
		<i>hh...hh</i> , installed SI version = <i>ii...ii</i> , version to be installed = <i>jj...jj</i> , SI version to be installed = <i>kk...kk</i>)	new version to be set up = <i>jj...jj</i> or SI version = <i>kk...kk</i> is not supported.	product, un-install the earlier product, and then re-execute the setup.
7	94	E: An attempt to install the Cosminexus Component Container has failed. #	An attempt to install Component Container has failed.	Un-install and then re-install the applicable product.
8	95	E: An attempt to perform setup failed because the <i>rr...rr</i> service is running. #	An attempt to perform setup failed because the <i>rr...rr</i> service is running.	Stop the service and then re-execute the setup.
9	97	E: An executing or locked file was detected. (file = <i>dd...dd</i>)	A busy (executing) or locked file <i>dd...dd</i> was detected.	Stop the Component Container programs and the related Web servers, and then re-execute the setup.
10	<i>oo...oo</i>	E: The command returned an error. (command = <i>cc...cc</i>)	The command <i>cc...cc</i> returned an error.	Take action based on the command name and error information, and then re-execute the setup.
11	<i>oo...oo</i>	E: The command returned an error. (command = <i>cc...cc</i> , information 1 = <i>ll...ll</i>)	The command <i>cc...cc</i> returned an error. Information 1= <i>ll...ll</i>	Take action based on the command name and error information, and then re-execute the setup.
12	<i>oo...oo</i>	E: The command returned an error. (command = <i>cc...cc</i> , information 1 = <i>ll...ll</i> , information 2 = <i>mm...mm</i>)	The command <i>cc...cc</i> returned an error. Information 1= <i>ll...ll</i> , Information 2= <i>mm...mm</i>	Take action based on the command name and error information, and then re-execute the setup.
13	<i>oo...oo</i>	E: The command returned an error. (command = <i>cc...cc</i> , information 1 = <i>ll...ll</i> , information 2 = <i>mm...mm</i> , information 3 = <i>nn...nn</i>)	The command <i>cc...cc</i> returned an error. Information 1= <i>ll...ll</i> , Information 2= <i>mm...mm</i> , Information 3= <i>nn...nn</i>	Take action based on the command name and error information, and then re-execute the setup.

#

Installation log output for Component Container. Not output with the redirector functionality.

J. CLI Commands or APIs of the Load Balancer Executed by the Smart Composer Functionality

When you are executing the commands provided by the Smart Composer functionality, set a load balancer by connecting to Management Server. A load balancer is to be set to sort the business requests to the Web server, create a virtual server and a real server, connect a virtual server and a real server, and specify start/stop of sorting of the requests to the real server. This section describes the CLI commands and APIs of the load balancer executed by the Smart Composer functionality. The following products are used:

- Products using APIs of the load balancer
BIG-IP v9[#], BIG-IP v10.1[#], BIG-IP v10.2[#], BIG-IP v11, ACOS (AX2500)
- Products using the CLI commands of the load balancer
ACOS (AX2000, BS320)

[#]: You can also use the CLI commands for a load balancer.

J.1 APIs of the load balancer executed by the Smart Composer functionality

For details on APIs of the load balancer executed by the Smart Composer functionality, see *8.3 Load balancer APIs executed using the operation management functionality* in the *uCosminexus Application Server Security Management Guide*.

J.2 CLI commands of the load balancer executed by Smart Composer functionality

This section describes the CLI commands of the load balancer for each product that are executed by the Smart Composer functionality. For details on CLI commands of load balancer, see the documents of the product in use.

(1) For AX2000 or BS320

For AX2000 or BS320, you can use direct connections using the `telnet` protocol as a connection method of the load balancer.

The following table describes the CLI commands of the load balancer that are executed by the Smart Composer functionality, when using ACOS (AX2000 or BS320) as a load balancer. For details on the CLI commands of ACOS, see the documents of the product in use.

Table J–1: CLI commands of load balancer executed by the Smart Composer functionality (For AX2000 or BS320)

Smart Composer functionality commands	CLI commands of load balancer
Common	<code>enable</code> <code>config</code> <code>show version</code> <code>exit</code>

Smart Composer functionality commands		CLI commands of load balancer
cmx_build_system (when configuring a Web system)	Without cookie switching ^{#1}	slb server <i>real-server-name</i> <i>real-server-IP-address</i> port <i>real-port</i> tcp
		slb service-group <i>virtual-server-name</i> tcp member <i>real-server-name:real-port</i> disable
		slb virtual-server <i>virtual-server-name</i> <i>virtual-server-IP-address</i> port <i>virtual-port</i> http service-group <i>virtual-server-name</i>
		write memory
	With cookie switching ^{#1}	slb server <i>real-server-name</i> <i>real-server-IP-address</i> port <i>real-port</i> tcp
		slb service-group <i>virtual-server-name</i> tcp member <i>real-server-name:real-port</i> disable
		slb template persist cookie <i>virtual-server-name</i> name <i>cookie-name</i> expire 0
		slb virtual-server <i>virtual-server-name</i> <i>virtual-server-IP-address</i> port <i>virtual-port</i> http service-group <i>virtual-server-name</i> template persist cookie <i>virtual-server-name</i>
		write memory
	cmx_build_system (when performing scale out)	
	slb server <i>real-server-name</i> <i>real-server-IP-address</i> port <i>real-port</i> tcp	
	slb service-group <i>virtual-server-name</i> tcp member <i>real-server-name:real-port</i> disable	
	write memory	
cmx_build_system (when changing the real port)		
slb server <i>real-server-name</i> <i>real-server-IP-address</i> port <i>real-port-after-change</i> tcp exit no port <i>real-port</i> tcp		
slb service-group <i>virtual-server-name</i> tcp member <i>real-server-name:real-port-after-change</i> disable		
write memory		
cmx_delete_system (when deleting the service unit) ^{#2}		
slb server <i>real-server-name</i> <i>real-server-IP-address</i> no port <i>real-port</i> tcp		
write memory		
cmx_delete_system (when performing scale in of the host unit model) ^{#3}		
no slb server <i>real-server-name</i>		
write memory		
cmx_delete_system (when deleting a Web system)	Without cookie switching	no slb virtual-server <i>virtual-server-name</i>
		no slb service-group <i>virtual-server-name</i>
		no slb server <i>real-server-name</i>

Smart Composer functionality commands		CLI commands of load balancer
		write memory
	With cookie switching	no slb virtual-server <i>virtual-server-name</i>
		no slb service-group <i>virtual-server-name</i>
		no slb server <i>real-server-name</i>
		no slb template persist cookie <i>virtual-server-name</i>
		write memory
cmx_start_target		slb service-group <i>virtual-server-name</i> tcp member <i>real-server-name:real-port</i> enable
		write memory
cmx_stop_target		slb service-group <i>virtual-server-name</i> tcp member <i>real-server-name:real-port</i> disable
		write memory

- #1
Execute the same CLI commands even if the virtual server is not initialized (when you specify `-lb keepvs`).
- #2
If there is another service unit shared by the real server, do not execute the deletion for each server.
- #3
If there is no other service unit shared by the real server, perform deletion for each server.



Reference note

For ACOS, use the virtual server name as the service group name and the template name.

(2) For BIG-IP v9, BIG-IP v10.1, or BIG-IP v10.2

For BIG-IP v9, BIG-IP v10.1, or BIG-IP v10.2, you can use direct connections that use the `ssh` protocol as a connection method for the load balancer. Note that for version 09-00 or later version, you can use direct connections that use APIs as connection methods of the load balancer.

If you directly connect by using the `ssh` protocol, you must set the client environment of the `ssh` on the host for deploying Management Server. The following points describe how to setup the `ssh` client environment for each OS:

- For Windows
You must have the `ssh` client program on the host for deploying Management Server. The available `ssh` client program is the CLI commands of PuTTY. Obtain PuTTY beforehand and then install. Also, add the folder under the PuTTY installation folder that stores the `plink` command, to the system environment variable `PATH`. You can download PuTTY from the applicable page (<http://www.chiark.greenend.org.uk/~sgtatham/putty/>).
- For UNIX
When you use the `ssh` command for the first time, execute the query request of the connection confirmation. Connect to the load balancer by executing the `ssh` command, with the user having `root` permission and respond **yes** for the query request (**Are you sure you want to continue connecting (yes/no)?** of the connection confirmation. When replying with **yes**, the `ssh` command can no longer execute the query request of the connection confirmation.

Important note

In AIX, if you select the direct usage of `ssh` as the connection configuration with the load balancer, the `ssh` command is required. Obtain the software required for using the `ssh` command in advance.

The following points describe the CLI commands of BIG-IP executed by the Smart Composer functionality for each product. For details on CLI commands of BIG-IP, reference the documents of the product in use.

(a) For BIG-IP v9 or BIG-IP v10.1

The following table describes the CLI commands of the load balancer that are executed by the Smart Composer functionality, when using BIG-IP v9 or BIG-IP v10.1 as a load balancer:

Table J–2: CLI commands of load balancer executed by the Smart Composer functionality (For BIG-IP v9 or BIG-IP v10.1)

Smart Composer functionality commands		CLI commands of load balancer to be executed
Common		b save b version
cmx_build_system (when configuring a Web system)	Without cookie switching	b pool <i>virtual-server-name</i> {member <i>real-server-IP-address</i> : <i>real-port</i> }
		b pool <i>virtual-server-name</i> member <i>real-server-IP-address</i> : <i>real-port</i> add
		b pool <i>virtual-server-name</i> member <i>real-server-IP-address</i> : <i>real-port</i> session disable
		b virtual <i>virtual-server-name</i> {destination <i>virtual-server-IP-address</i> : <i>virtual-port</i> pool <i>virtual-server-name</i> profile http enable}
	With cookie switching	b pool <i>virtual-server-name</i> {member <i>real-server-IP-address</i> : <i>real-port</i> }
		b pool <i>virtual-server-name</i> member <i>real-server-IP-address</i> : <i>real-port</i> add
		b pool <i>virtual-server-name</i> member <i>real-server-IP-address</i> : <i>real-port</i> session disable
		b profile persist <i>virtual-server-name</i> {mode cookie cookie mode insert cookie name <i>cookie-name</i> }
		b virtual <i>virtual-server-name</i> {destination <i>virtual-server-IP-address</i> : <i>virtual-port</i> pool <i>virtual-server-name</i> profile http persist <i>virtual-server-name</i> enable}
	cmx_build_system (when performing scale out)	
cmx_build_system (when changing the real port)		b pool <i>virtual-server-name</i> member <i>real-server-IP-address</i> : <i>real-port-after-change</i> add b pool <i>virtual-server-name</i> member <i>real-server-IP-address</i> : <i>real-port-after-modification</i> session disable b pool <i>virtual-server-name</i> member <i>real-server-IP-address</i> : <i>real-port</i> delete
cmx_build_system (when configuring a Web system without installing	Without cookie switching	b pool <i>virtual-server-name</i> member <i>real-server-IP-address</i> : <i>real-port</i> add

Smart Composer functionality commands		CLI commands of load balancer to be executed
a virtual server of the load balancer)		b pool <i>virtual-server-name</i> member <i>real-server-IP-address</i> : <i>real-port</i> session disable
		b virtual <i>virtual-server-name</i> {destination <i>virtual-server-IP-address</i> : <i>virtual-port</i> pool <i>virtual-server-name</i> profile http enable}
	With cookie switching	b pool <i>virtual-server-name</i> member <i>real-server-IP-address</i> : <i>real-port</i> add
		b pool <i>virtual-server-name</i> member <i>real-server-IP-address</i> : <i>real-port</i> session disable
		b profile persist <i>virtual-server-name</i> {mode cookie cookie mode insert cookie name <i>cookie-name</i> }
cmx_delete_system (when deleting service units, and performing scale in of the host unit management model)		b virtual <i>virtual-server-name</i> delete
		b pool <i>virtual-server-name</i> delete
cmx_delete_system (when deleting a Web system)	Without cookie switching	b node <i>real-server-IP-address</i> delete
		b virtual <i>virtual-server-name</i> delete
		b pool <i>virtual-server-name</i> delete
	With cookie switching	b node <i>real-server-IP-address</i> delete
		b virtual <i>virtual-server-name</i> delete
		b pool <i>virtual-server-name</i> delete
		b node <i>real-server-IP-address</i> delete
		b profile persist <i>virtual-server-name</i> delete
cmx_start_target		b pool <i>virtual-server-name</i> member <i>real-server-IP-address</i> : <i>real-port</i> session enable
cmx_stop_target		b pool <i>virtual-server-name</i> member <i>real-server-IP-address</i> : <i>real-port</i> session disable

Reference note

For BIG-IP v9 and BIG-IP v10.1, use the virtual server name as the pool name.

(b) For BIG-IP v10.2

The following table describes the CLI commands of the load balancer that are executed by the Smart Composer functionality when using BIG-IP v10.2 as a load balancer.

Table J–3: CLI commands of load balancer executed by the Smart Composer functionality (For BIG-IP v10.2)

Smart Composer functionality commands	CLI commands of load balancer to be executed
Common	b save b version

Smart Composer functionality commands		CLI commands of load balancer to be executed
cmx_build_system (when configuring a Web system)	Without cookie switching	b pool <i>virtual-server-name</i> {member <i>real-server-IP-address</i> : <i>real-port</i> }
		b pool <i>virtual-server-name</i> member <i>real-server-IP-address</i> : <i>real-port</i> add
		b pool <i>virtual-server-name</i> member <i>real-server-IP-address</i> : <i>real-port</i> session user disabled
		b virtual <i>virtual-server-name</i> {destination <i>virtual-server-IP-address</i> : <i>virtual-port</i> pool <i>virtual-server-name</i> profile http enable}
	With cookie switching	b pool <i>virtual-server-name</i> {member <i>real-server-IP-address</i> : <i>real-port</i> }
		b pool <i>virtual-server-name</i> member <i>real-server-IP-address</i> : <i>real-port</i> add
		b pool <i>virtual-server-name</i> member <i>real-server-IP-address</i> : <i>real-port</i> session user disabled
		b profile persist <i>virtual-server-name</i> {mode cookie cookie mode insert cookie name <i>cookie-name</i> }
		b virtual <i>virtual-server-name</i> {destination <i>virtual-server-IP-address</i> : <i>virtual-port</i> pool <i>virtual-server-name</i> profile http persist <i>virtual-server-name</i> enable}
	cmx_build_system (when performing scale out)	
		b pool <i>virtual-server-name</i> member <i>real-server-IP-address</i> : <i>real-port</i> session user disabled
cmx_build_system (when changing the real port)		b pool <i>virtual-server-name</i> member <i>real-server-IP-address</i> : <i>real-port-after-change</i> add
		b pool <i>virtual-server-name</i> member <i>real-server-IP-address</i> : <i>real-port-after-change</i> session user disabled
		b pool <i>virtual-server-name</i> member <i>real-server-IP-address</i> : <i>real-port</i> delete
cmx_build_system (when configuring a Web system without installing a virtual server of the load balancer)	Without cookie switching	b pool <i>virtual-server-name</i> member <i>real-server-IP-address</i> : <i>real-port</i> add
		b pool <i>virtual-server-name</i> member <i>real-server-IP-address</i> : <i>real-port</i> session user disabled
		b virtual <i>virtual-server-name</i> {destination < <i>virtual-server-IP-address</i> : <i>virtual-port</i> pool <i>virtual-server-name</i> profile http enable}
	With cookie switching	b pool <i>virtual-server-name</i> member <i>real-server-IP-address</i> : <i>real-port</i> add
		b pool <i>virtual-server-name</i> member <i>real-server-IP-address</i> :< <i>real-port</i> session user disabled
		b profile persist <i>virtual-server-name</i> {mode cookie cookie mode insert cookie name <i>cookie-name</i> }
		b virtual <i>virtual-server-name</i> {destination <i>virtual-server-IP-address</i> : <i>virtual-port</i> pool <i>virtual-server-name</i> profile http persist <i>virtual-server-name</i> enable}
cmx_delete_system (when deleting a service unit, and performing scale in of the host unit management model)		b pool <i>virtual-server-name</i> member <i>real-server-IP-address</i> : <i>real-port</i> delete
		b node <i>real-server-IP-address</i> delete
cmx_delete_system (when deleting a Web system)	Without cookie switching	b virtual <i>virtual-server-name</i> delete
		b pool <i>virtual-server-name</i> delete

Smart Composer functionality commands		CLI commands of load balancer to be executed
		b node <i>real-server-IP-address</i> delete
	With cookie switching	b virtual <i>virtual-server-name</i> delete
		b pool <i>virtual-server-name</i> delete
		b node <i>real-server-IP-address</i> delete
		b profile persist <i>virtual-server-name</i> delete
cmx_start_target		b pool <i>virtual-server-name</i> member <i>real-server-IP-address</i> : <i>real-port</i> session user enabled
cmx_stop_target		b pool <i>virtual-server-name</i> member <i>real-server-IP-address</i> : <i>real-port</i> session user disabled



Reference note

For BIG-IP v10.2, use the virtual server name as the pool name.

K. Setting up XDM/RD E2

This section describes the settings for connecting to XDM/RD E2 by using HiRDB Type4 JDBC Driver. When using XDM/RD E2 as a database, install XDM/RD E2, and complete the initial setting. For details, see the manual *HiRDB XDM/RD E2 Connection Functionality*. For details on the settings of HiRDB Type4 JDBC Driver, see [4.1.6 Setting the database connection environment \(setting HiRDB\)](#).

Reference note

For details on the settings for using HiRDB, Oracle, or SQL Server as a database, see the following points:

- For HiRDB
For details on the settings when using HiRDB Type4 JDBC Driver for connection, see [4.1.6 Setting the database connection environment \(setting HiRDB\)](#).
- For Oracle
For details on the settings when using Oracle JDBC Thin Driver for connection, see [4.1.7 Setting the database connection environment \(setting Oracle\)](#).
- For SQL Server
For details on the settings when SQL Server is used for connection, see [4.1.8 Setting the database connection environment \(Setting SQL Server\)](#).

This section describes the necessary settings when using the J2EE resources in XDM/RD E2:

- Environment variable settings
- Registering an environment variable group
- Timeout settings

K.1 Environment variable settings

You must set the following environment variables. For details, see the manual *HiRDB XDM/RD E2 Connection Functionality*, and the *HiRDB UAP Development Guide*.

PDHOST

Specify the host name or the IP address of the database.

PDUSER

Specify the username and password of the database.

PDNAMEPORT

Specify the server schedule number of the DB connection server.

PDSRVTYPE

Specify VOS3 (fixed value) as the server type.

PDCLTRDNODE

Specify RD node name (example: XRAA) as an identifier of the XDM/RD E2 database to be connected.

PDXAMODE

Specify 0 (fixed value) because the migration functionality of the transaction is not used.

PDCWAITTIME

Specify a value greater than the transaction timeout value as the response timeout.

K.2 Registering an environment variable group

To register the environment variable group:

- **For Windows**

Select **System group** in the HiRDB client environment variable registration tool to register the environment variable group. In this case, specify the group name that you have registered here in the property definition of the DB Connector.

- **For UNIX**

Register the environment variable group in the settings file of the HiRDB client environment variable group. In this case, specify the path of the settings file of the registered environment variable group in the property definition of DB Connector.

For details on registering an environment variable group, see the *HiRDB UAP Development Guide*.

K.3 Timeout settings

Set the timeout of XDM/RD E2 to the client environment variable of HiRDB, or to the control space start control statement/server space start control statement of the DB connection server. The following table describes the tuning parameters for setting the timeout of H-1 XDM/RD E2.

Table K–1: Tuning parameters for setting the timeout of XDM/RD E2

Types of timeout	Setting location	Method of setting (parameter name)	Settings
Response timeout	HiRDB client environment variable	PDCWAITTIME	Specify any value. #1
SQL execution CPU time timeout	Control area start control statement/server area start control statement of DB connection server	SQLCTIME	Specify any value. #2
SQL execution elapsed time timeout	Control area start control statement/server area start control statement of DB connection server	SQLETIME	Specify any value. #2
Transaction elapsed time timeout	Control area start control statement/server area start control statement of DB connection server	SVETIME	Specify any value. #2
Interval time of server processing request	Control area start control statement/server area start control statement of DB connection server	SVINTERVAL	Specify 0 when using the connection pooling functionality. #2

#1

For details, see the manual *HiRDB XDM/RD E2 Connection Functionality*.

#2

For details, see the manual *VOS3 Database Connection Server*.

For the timeout settings, see 8.6.6 *Setting the database timeout* in the *uCosminexus Application Server System Design Guide*.

L. Sample programs provided by Application Server

Application Server provides the following sample programs:

- Sample program of Enterprise Bean (EJB2.0)
- Sample program of Enterprise Bean (Annotations)
- Sample program of Enterprise Bean (Timer Service)
- Sample program of Java Beans resource
- Sample program of User log functionality
- Sample program of Web application
- Sample program of TP1 inbound linking functionality
- Sample program of JSF
- Sample of Bean Validation and CDI integration application

Important note

To prioritize the clarity of the provided sample programs, error handling and processes to avoid the issue of security vulnerability are omitted in the many of the introduced codes. Therefore, when a malicious third party attacks a sample program, it might lead to a serious problem. You do not use sample programs in the production environment. If you use sample programs in the production environment, they may cause errors.

This section gives an overview and describes the execution procedure and execution example of each sample. Execution procedure and execution example of sample programs are explained with the server management commands.

Important note

When using the sample program in UNIX environment, replace the text as follows.

- Replace the directory (*Cosminexus-installation-directory*\) for Windows with the directory `/opt/Cosminexus/` for UNIX.
- Batch file used in the Windows environment serves as the shell script in the UNIX environment. Remove the extension.

For example, for the Windows environment: `testClient.bat`; for the UNIX environment: `testClient`

When you run sample programs provided by the Application Server, we recommend that you use the sample program by copying to another directory having the write permission.

L.1 Configuration and operation procedure of the sample execution environment by server management commands

This section describes the operation procedure and configuration of the J2EE server to execute sample programs with server management commands. This procedure is required to execute all the sample programs described from Appendix I.2 onwards.

(1) Setting the J2EE server

Enter the `cjsetup` command in the command prompt to set up the J2EE server. The following execution example shows the setup procedure. In the execution example, the J2EE server called "MyServer" is set up.

```
C:\> cd Program Files\Hitachi\Cosminexus\CC\server\bin
C:\Program Files\Hitachi\Cosminexus\CC\server\bin>cjsetup MyServer
KDJE40001-I The setup for the J2EE server has finished successfully. Server
name = MyServer
C:\Program Files\Hitachi\Cosminexus\CC\server\bin>
```

(2) Customizing the J2EE server

Specify the settings to access the application. Use any of the following methods to access the application:

- Link the application to the Web server.
- Directly access the NIO HTTP server of the J2EE server.

The following explains a method of directly accessing the NIO HTTP server of the J2EE server that is easy to set up and use.

Important note

Use the default port 8008 in the NIO HTTP server. Change the port number by defining the `webserver.connector.nio_http.port` property key in the user definition file (`usrconf.properties`).

In the following example, 8081 is defined in the port used in the NIO HTTP server.

```
webserver.connector.nio_http.port=8081
```

(3) Starting the J2EE server

Start the J2EE server, already set up with the `cjstartsv` command.

```
C:\> cd Program Files\Hitachi\Cosminexus\CC\server\bin
C:\Program Files\Hitachi\Cosminexus\CC\server\bin>cjstartsv MyServer
<The start log is displayed>
:
KDJE30028-I The J2EE server has started. Server name = MyServer
```

(4) Setting the resource adapter

Set the resource adapter by the following procedure:

1. Import the resource adapter with the `cjimportres` command.
2. Deploy the resource adapter with the `cjdeployrar` command.
3. Acquire the Connector property file by using the `cjgetrarprop` command, edit the file and apply the edited contents with the `cjsetrarprop` command.

4. Test the resource adapter with the `cjtestres` command.
5. Start the resource adapter with the `cjstartrar` command.

(5) Importing, setting and starting the application

Use the batch file (`deployApp.bat`) provided in the sample to execute the application. This batch file imports, sets up and starts the application on the J2EE server.

The process executed by this batch file is as follows:

1. The `cjimportapp` command is executed and the application is imported to the J2EE server.
2. The `cjstartapp` command is executed and the application is started.
3. The `cjlistapp` command is executed and the status of applications on the J2EE server is displayed in a list. The operation status (operating) of the application can be confirmed in this list.

(6) Stopping and deleting the application

Use the batch file (`unDeployApp.bat`) provided in the sample to execute the application. This batch file stops, and deletes the application from the J2EE server.

The process executed by this batch file is as follows:

1. The `cjstopapp` command is executed and the application is stopped.
2. The `cjdeleteapp` command is executed and application is deleted from the J2EE server.
3. The `cjlistapp` command is executed and the status of the application on the J2EE server is displayed in a list. Deletion of the application can be confirmed by referencing this list.

(7) Stopping the J2EE server

Stop the J2EE server with the `cjstopsv` command.

- The `cjstopsv` command console:

```
> cd Program Files\Hitachi\Cosminexus\CC\server\bin
C:\Program Files\Hitachi\Cosminexus\CC\server\bin>cjstopsv MyServer
C:\Program Files\Hitachi\Cosminexus\CC\server\bin>
```

- J2EE server console:

```
C:\> cd Program Files\Hitachi\Cosminexus\CC\server\bin
C:\Program Files\Hitachi\Cosminexus\CC\server\bin>cjstartsv MyServer
<The boot log is displayed>
:
KDJE30028-I The J2EE server has started. Server name = MyServer
:
<The end log is displayed>
C:\Program Files\Hitachi\Cosminexus\CC\server\bin>
```

L.2 Enterprise Bean (EJB2.0) sample program

Sample programs used with Enterprise Bean (EJB2.0) are stored in the following directory:

Cosminexus-installation-directory\CC\examples\ejb\ejb20

This section describes the list of sample programs, execution example and overview of each sample program.

(1) List of Enterprise Bean (EJB2.0) sample programs

This section provides a list of sample programs and notes on running the sample program. The list of sample programs is split into two lists, one that explains the types of Enterprise Bean and operation contents, and another that summarizes the technology and resources used by each program.

Important note

For Enterprise Bean sample programs use the version, or the revision of the product in use. Operations of old version or old revision sample programs are not guaranteed.

(a) List of sample programs (types of Enterprise Bean and operation contents)

Table L–1: List of sample programs (types of Enterprise Bean and operation contents)

Sample name	Types of Enterprise Bean	Persistence	Transaction	Overview of operations
account	Entity Bean	BMP	N	Calculates the balance according to deposits and withdrawals and updates the database.
adder	Stateful Session Bean	N	CMT	Calculates the total of the entered numerical values and displays on the browser.
bank	Stateful Session Bean	N	CMT	Transfers the funds from current account to savings account and updates the database.
cart	Stateful Session Bean	N	CMT	Adds the books to be purchased in the shopping cart, and generates an exception when a book not existing in the cart is attempted to be taken out from that cart.
checker	Stateful Session Bean	N	CMT	Calculates the amount after discount on the basis of discount rate, when the discounted amount is exceeded, and specifies the discounted amount and the discount rate in the Enterprise Bean environment entry.
cmp20product	Entity Bean	CMP2.0	N	Registers the product information into the database and searches the information of registered products. This sample uses CMP 2.0 type Enterprise Bean.
confirmer	Stateless Session Bean	N	CMT	Sends a confirmation mail for the products order.
converter	Stateless Session Bean	N	CMT	Converts the currency from Dollar to Yen and from Yen to Euro.
enroller	Stateless Session Bean	N	CMT	Adds students and subjects, registers lectures and updates the database.
	Entity Bean	BMP	N	
jsptag[#]	Stateless Session Bean	N	CMT	Converts the currency from Dollar to Yen, and from Yen to Euro, and displays the result on the browser by using JSP.

Sample name	Types of Enterprise Bean	Persistence	Transaction	Overview of operations
jsptobean	Entity Bean	BMP	N	Calculates the balance according to deposits and withdrawals, and updates the database. Then displays the balance on the browser by using JSP.
localadder	Stateful Session Bean	N	CMT	Calculates the total of the entered numerical values and displays on the browser. This sample calls Enterprise Bean from the servlet by using the local interface.
message	Stateless Session Bean	N	CMT	Uses the JMS queue to send and receive messages.
	Message - driven Bean	N	CMT	
order	Entity Bean	BMP	N	Searches and displays the order number and corresponding product information. Manages the order number and product information in the database.
product	Entity Bean	CMP	N	Registers the product information in the database and searches the information on the registered product.
salesrep	Entity Bean	BMP	N	Adds customers, modifies the sales representative in-charge, and updates the database.
shipper	Stateful Session Bean	N	CMT	Calculates the inventory of products against the order and updates the database. Calls the provision process if the inventory of the specified products is low.
	Entity Bean	BMP	N	
storagebin	Entity Bean	BMP	N	Searches the information and inventory of corresponding parts from the parts information table and the parts inventory information table in the database.
teller	Stateful Session Bean	N	BMT	Withdraws money from the current account from a bank terminal and calculates the balance.
warehouse	Stateless Session Bean	N	CMT	Updates the product inventory and the status of the ordered products.

Legends:

N: Not applicable

#: EAR file (`converter.ear`) with the compiled and archived jsptag sample is also provided

(b) List of sample programs (connected resources and types of clients)

The following table describes the list of sample programs, connected resources, and types of clients.

Table L–2: List of sample programs (Connected resources and types of clients)

Sample	Connected resource ^{#1}			Types of client ^{#2}	
	Database	Mail	JMS	EJB client application	Web browser
account	Y	N	N	Y	N
adder	N	N	N	N	Y
bank	Y	N	N	Y	N
cart	N	N	N	Y	N
checker	N	N	N	Y	N
confirmer	N	Y	N	Y	N

Sample	Connected resource ^{#1}			Types of client ^{#2}	
	Database	Mail	JMS	EJB client application	Web browser
converter	N	N	N	Y	N
enroller	Y	N	N	Y	N
jsptag	N	N	N	N	Y
jsptobean	Y	N	N	N	Y
order	Y	N	N	Y	N
product	Y	N	N	Y	N
salesrep	Y	N	N	Y	N
shipper	Y	N	N	Y	N
storagebin	Y	N	N	Y	N
teller	Y	N	N	Y	N
warehouse	Y	N	N	Y	N
message	N	N	Y	Y	N
cmp20product	Y	N	N	Y	N
localadder	N	N	N	N	Y

Legend:

Y: Applicable

N: Not applicable

#1 There are required settings for each resource to be connected. For the applicable details on the connected resources, see [Appendix L.2\(1\)\(c\) Setting the database used in sample programs](#), [Appendix L.2\(1\)\(d\) Setting the mails used in sample programs](#) or [Appendix L.2\(1\)\(e\) Setting JMS used in sample programs](#).

#2 Execution methods change according to the type of client. For details, see [Appendix L.2\(1\)\(f\) Types of the clients of sample programs](#).

(c) Setting the database used in sample programs

This section describes the settings of the database used in sample programs.

Use the database as a resource in sample programs marked as "Y" in the "Database" column of Table L-2. Ensure the proper setting of the database and database connectivity before running sample programs.

You can use Oracle or HiRDB as the database.

The required settings are as follows:

- While using HiRDB, enable the specification of foreign key (limited reference).
For the method of setting the database, see the *HiRDB Installation and Design Guide*.
- Execute the "createTable_Oracle.sql" (for Oracle) or the "createTable_HiRDB.sql" (for HiRDB) provided in the sample, in accordance with the available database types, and initialize the tables in the database. When using HiRDB, the "createTable_HiRDB.sql" fails to execute if the specification of a foreign key (limited reference) is disabled.
- Set DB Connector with the server management commands
We recommend that you use DBConnector_Oracle_CP.rar or DBConnector_HiRDB_Type4_CP.rar for DB Connector. If DBConnector_Oracle_XA.rar or DBConnector_HiRDB_Type4_XA.rar is used, disable the write transaction functionality; then start the J2EE server, and set DB Connector. Specify true for

the `ejbserver.distributedtx.XATransaction.enabled` key of the `usrconf.properties` to disable the write transaction functionality.

- Resolve the link of the resources as and when required.
Resolve the link with the Cosminexus application property file "`cosminexus.xml`" provided in the sample. Specify the resource display name in the `<resource-ref>` tag of "`cosminexus.xml`" and set with the server management command. Deploy the application after resolving the link of the resources.
- In the "product" and "cmp20product" of sample programs, "user1" is set in the `<schema-name>` tag of "`cosminexus.xml`". Depending on the database environment used, change to an appropriate value and then deploy the application.
- While using HiRDB to execute the "teller" of sample programs, rewrite the location with the specification of the date function in `TellerEJB.java` file and compile for HiRDB.

(d) Setting the mails used in sample programs

This section describes the settings of the mail used in sample programs.

Use mail as a resource in sample programs marked as "Y" in the "Mail" column of Table L-2. Ensure the proper connection to the mail server before executing sample programs.

Following settings are required:

- Incoming mail addresses must be coded in the source file (`ConfirmerClient.java`) of EJB client application. Rewrite the appropriate incoming mail addresses in this location, and then compile.
- Mail configuration must be set with the server management commands. For instructions on the usage of the server management command, see 6.3 *Settings for mail configuration* in the *uCosminexus Application Server Application Setup Guide*.
- Resolve the link to resources. However, the link need not be resolved if the display name of mail configuration is defined as "`Cosminexus_SMTP_Server`". Resolve the link if any other display name is defined.
Resolve the link with the Cosminexus application property file "`cosminexus.xml`" provided in the sample. Specify the resource display name in `<resource-ref>` tag of "`cosminexus.xml`" and set with the server management command. Deploy the application after resolving the link of the resources.

(e) Setting JMS used in sample programs

This section describes the settings of JMS used in sample programs.

Use JMS as a resource in sample programs marked as "Y" in the "JMS" column of Table L-2. Ensure the proper connection to JMS before running sample programs.

Required settings are as follows:

- Install TP1/Message Queue - Access in advance to use TP1/Message Queue - Access as JMS. Also prepare OpenTP1 and TP1/Message Queue server runtime environment in advance.
- Set up the TP1/Message Queue - Access with the server management commands.
Disable the write transaction functionality, then start the J2EE server, and set TP1/Message Queue - Access. Specify `true` in the `ejbserver.distributedtx.XATransaction.enabled` key of `usrconf.properties` to disable the write transaction functionality.
Set the transaction support level of TP1/Message Queue - Access to "`XATransaction`".
- Resolve the link of resources. However, the link need not be resolved if the default display name of TP1/Message Queue - Access is not changed and "`QUEUE1`" is defined as the display name in the queue definition file. You must

resolve the link if the default display name of TP1/Message Queue - Access is changed and "QUEUE1" queue is not defined as the display name in the queue definition file.

Resolve the link by using the Cosminexus application property file "cosminexus.xml" provided in the sample. Specify the resource display name in the <resource-ref> tag, <resource-env-ref> tag and <message-ref> tag of "cosminexus.xml", and set with the server management command. Deploy the application after resolving the link to resources.

(f) Types of the clients of sample programs

Client of sample programs comprises of 2 types of applications such as EJB client application and the application displayed on Web browser.

- The sample programs marked as "Y" in the "EJB client application" column of Table L-2 are EJB client applications. Use "testClient.bat" provided as a sample to start the client application.
- Sample programs marked as "Y" in "Web browser" column of Table L-2 are Web applications that operate from the Web browser. If you want to operate the application from the client, start the Web browser and specify the following URL:

```
http://Machine-name : Port-number/ContextRoot/Target-file
```

For example, in case of sample "adder" operating on the local host, specify as follows:

```
http://localhost/adder/adder_war/adder.html
```

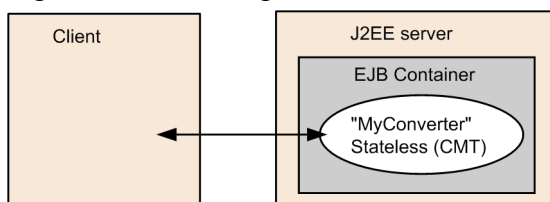
(2) Enterprise Bean (EJB2.0) sample execution procedure

This subsection shows the sample execution example, with the example of converter. The `converter` is the program for calling Enterprise Bean from Java application of the client. This program does not use the resources such as the database. When you want to use the resources, you must follow the procedure mentioned here, and prepare the resources accessible environment. For the details on setting the resources, see 3.3 *Resource connection* in the *uCosminexus Application Server Common Container Functionality Guide*.

(a) Overview of the converter

The converter converts the currency from Dollar to Yen, and from Yen to Euro. Following figure shows the configuration of the converter:

Figure L–1: Configuration of the converter



(b) Compiling

Use batch files (`compileBean.bat` and `compileClient.bat`) provided in the sample to compile Enterprise Bean and the client. These batch files create an application (.ear file).

```
C:\>cd C:\Program Files\Hitachi\Cosminexus\CC\examples\ejb\ejb20\converter
C:\Program Files\Hitachi\Cosminexus\CC\...\converter>compileBean
C:\Program Files\Hitachi\Cosminexus\CC\...\converter>
```

```
C:\Program Files\Hitachi\Cosminexus\CC\...\converter>compileClient  
C:\Program Files\Hitachi\Cosminexus\CC\...\converter>
```

(c) Setting the J2EE server

See [Appendix L.1\(1\) Setting the J2EE server](#).

(d) Customizing the J2EE server

See [Appendix L.1\(2\) Customizing the J2EE server](#).

(e) Starting the J2EE server

See [Appendix L.1\(3\) Starting the J2EE server](#).

(f) Deploying the application

Use the batch file (`deployApp.bat`) provided in the sample to deploy the application. This batch file imports the application into the J2EE server, sets and starts the application, and acquires EJB stub as well as interface file.

Process executed by this batch file is as follows:

- Importing, setting, starting, and listing the application
For execution contents, see [Appendix L.1\(5\) Importing, setting and starting the application](#).
- Acquiring Enterprise Bean stub and interface file
Acquire Enterprise Bean stub and the interface file with the `cjgetsubsjar` command.

(g) Executing the application

Use the batch file (`testClient.bat`) provided in the sample to execute the application. Execution is successful if the following message appears on the Start console window of the EJB client application after execution

```
C:\>cd C:\Program Files\Hitachi\Cosminexus\CC\examples\ ejb\ejb20\converter  
C:\Program Files\Hitachi\Cosminexus\CC\examples\ ejb\ejb20\converter>testCli  
ent  
KDJE40053-I The cjclstartap command will now start. (directory for the  
user definition file = C:\Program Files\Hitachi\Cosminexus\CC\examples\  
ejb\ejb20\converter, PID = 3684)  
12160.0  
0.77  
KDJE40054-I The cjclstartap command was stopped. (PID = 3684, exit status =  
0)  
C:\Program Files\Hitachi\Cosminexus\CC\examples\ ejb\ejb20\converter>
```

(h) Undeploying the application

See [Appendix L.1\(6\) Stopping and deleting the application](#).

(i) Stopping the J2EE server

See [Appendix L.1\(7\) Stopping the J2EE server](#).

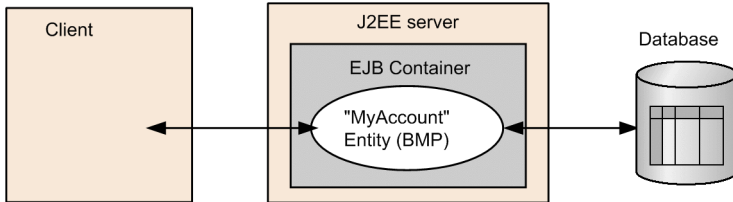
(3) Overview of Enterprise Bean (EJB2.0) sample

This section gives an overview and describes the examples of the configuration and execution of Enterprise Bean (2.0) sample. For required settings, see [Appendix L.2\(1\)\(b\) List of sample programs \(connected resources and types of clients\)](#).

(a) Overview of the account

The *account* calculates the balance according to deposits and withdrawals, and updates the bank account table. The following figure shows the configuration of the account:

Figure L–2: Configuration of account



Following is the execution example of the account:

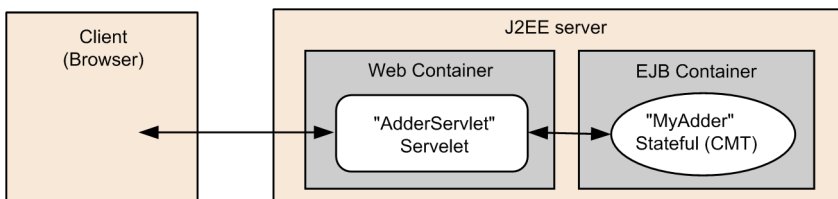
```
C:\Program Files\Hitachi\Cosminexus\CC\examples\ejb\ejb20\account>testClient
KDJE40053-I The cjclstartap command will now start. (directory for the
user definition file = C:\Program Files\Hitachi\Cosminexus\CC\examples\
ejb\ejb20\account, PID = 3684)
balance = 68.25
balance = 32.55
456: 44.77
730: 19.54
268: 100.07
456: 44.77
836: 32.55
KDJE40054-I The cjclstartap command was stopped. (PID = 3684, exit status =
0)

C:\Program Files\Hitachi\Cosminexus\CC\examples\ejb\ejb20\account>
```

(b) Overview of the adder

The *adder* calculates the total of the numerical values entered from the browser. Following figure shows the configuration of the adder:

Figure L–3: Configuration of adder



To execute, start the browser, and specify the following string in the URL:

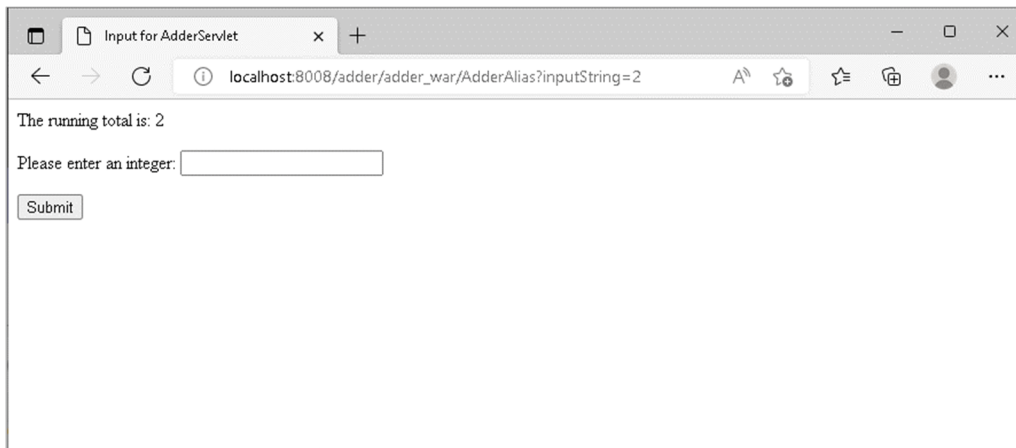
```
http://Machine-name : Port-number/ContextRoot/adder.html
```

When accessing the NIO HTTP server of the J2EE server directly, specify the URL as follows if using the default port:

```
http://localhost:8008/adder/adder_war/adder.html
```

Following is the execution example of adder:

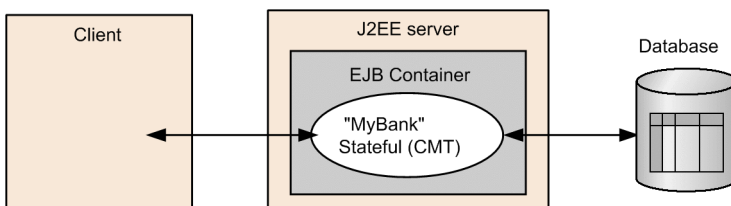
Figure L-4: Execution example of adder



(c) Overview of the bank

The *bank* transfers the funds from current account to savings account and manages the funds in the database. At the time of transferring the funds, the bank updates the corresponding Current account table and Savings account table. The following figure shows the configuration of the bank:

Figure L-5: Configuration of bank



Following is the execution example of the bank:

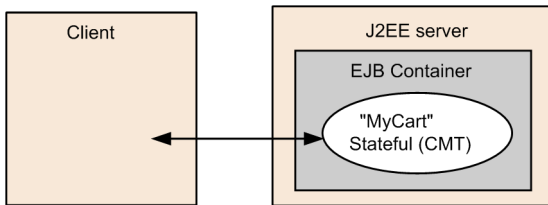
```
C:\Program Files\Hitachi\Cosminexus\CC\examples\ejb\ejb20\bank>testClient
KDJE40053-I The cjclstartap command will now start. (directory for the
user definition file = C:\Program Files\Hitachi\Cosminexus\CC\examples\
ejb\ejb20\bank, PID = 3684)
checking: 60.0
saving: 540.0
KDJE40054-I The cjclstartap command was stopped. (PID = 3684, exit status =
0)

C:\Program Files\Hitachi\Cosminexus\CC\examples\ejb\ejb20\bank>
```

(d) Overview of the cart

This is a shopping cart to purchase books. If you place 3 books in the cart, and then try to take out a book not existing in the cart, the process generates a "BookException". Following figure shows the configuration of the cart:

Figure L–6: Configuration of the cart



Following is the execution example of the cart.

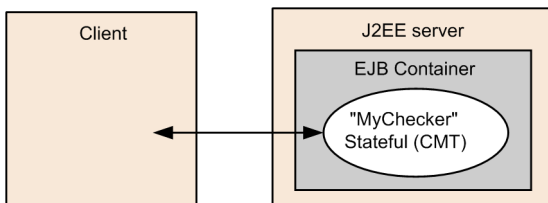
```
C:\Program Files\Hitachi\Cosminexus\CC\examples\ejb\ejb20\cart>testClient
KDJE40053-I The cjclstartap command will now start. (directory for the
user definition file = C:\Program Files\Hitachi\Cosminexus\CC\examples\
ejb\ejb20\cart, PID = 3684)
The Martian Chronicles
2001 A Space Odyssey
The Left Hand of Darkness
Caught a BookException: Alice in Wonderland not in cart.
KDJE40054-I The cjclstartap command was stopped. (PID = 3684, exit status =
0)

C:\Program Files\Hitachi\Cosminexus\CC\examples\ejb\ejb20\cart>
```

(e) Overview of the checker

The *checker* calculates the amount after discount on the basis of discount rate, when the amount to be discounted exceeds a particular limit. The checker also specifies the discounted amount and discount rate in Enterprise Bean environment entry. The following figure shows the configuration of the checker:

Figure L–7: Configuration of checker



Following is the execution example of Checker:

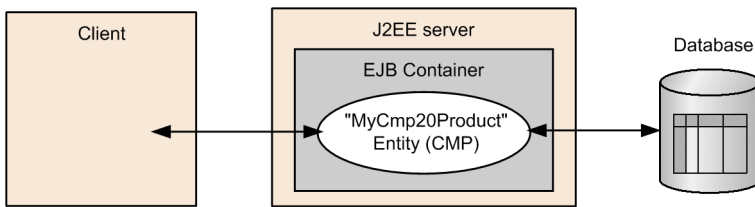
```
C:\Program Files\Hitachi\Cosminexus\CC\examples\ejb\ejb20\checker>testClient
KDJE40053-I The cjclstartap command will now start. (directory for the
user definition file = C:\Program Files\Hitachi\Cosminexus\CC\examples\
ejb\ejb20\checker, PID = 3684)
discount = 4200.0
KDJE40054-I The cjclstartap command was stopped. (PID = 3684, exit status =
0)

C:\Program Files\Hitachi\Cosminexus\CC\examples\ejb\ejb20\checker>
```

(f) Overview of cmp20product

The *cmp20product* registers the product information in the database, and searches the information of registered products. This sample uses CMP 2.0 type Enterprise Bean. Following figure shows the configuration of the *cmp20product*:

Figure L–8: Configuration of cmp20product



The cmp20product execution example is as follows:

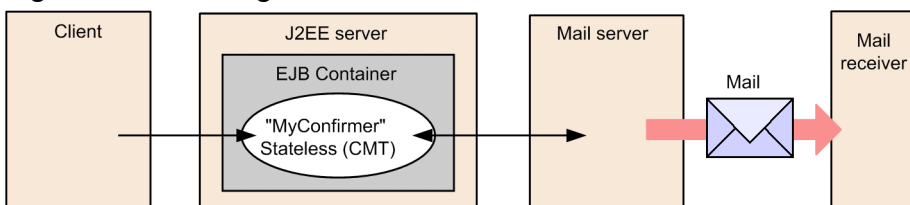
```
C:\Program Files\Hitachi\Cosminexus\CC\examples\ejb\ejb20\cmp20product>testClient
KDJE40053-I The cjclstartap command will now start. (directory for the
user definition file = C:\Program Files\HITACHI\Cosminexus\CC\examples\
ejb\ejb20\cmp20product, PID = 3684)
Ceramic Dog: 10.0
Ceramic Dog: 14.0
Chrome Fish: 22.0
999: Ivory Cat 19.0
789: Ivory Cat 33.0
123: 14.0
456: 13.0
999: 19.0
KDJE40054-I The cjclstartap command was stopped. (PID = 3684, exit status =
0)

C:\Program Files\Hitachi\Cosminexus\CC\examples\ejb\ejb20\cmp20product>
```

(g) Overview of the confirmer

The *confirmer* sends a confirmation mail regarding the order of products. Following figure shows the configuration of the confirmer:

Figure L–9: Configuration of confirmer



Following is the execution example of client (mail sender) of the confirmer:

```
C:\Program Files\Hitachi\Cosminexus\CC\examples\ejb\ejb20\confirmer>testClient
KDJE40053-I The cjclstartap command will now start. (directory for the
user definition file = C:\Program Files\Hitachi\Cosminexus\CC\examples\
ejb\ejb20\confirmer, PID = 3684)
KDJE40054-I The cjclstartap command was stopped. (PID = 3684, exit status =
0)

C:\Program Files\Hitachi\Cosminexus\CC\examples\ejb\ejb20\confirmer>
```

After the execution of the client, the mail is sent to the address specified in `ConfirmerClient.java`. An example of the sent mail is as follows:

```
Subject:"Test Message from ConfirmerEJB"
Message:
Thank you for your order.
We received your order on 2002/03/18 12:35.
```

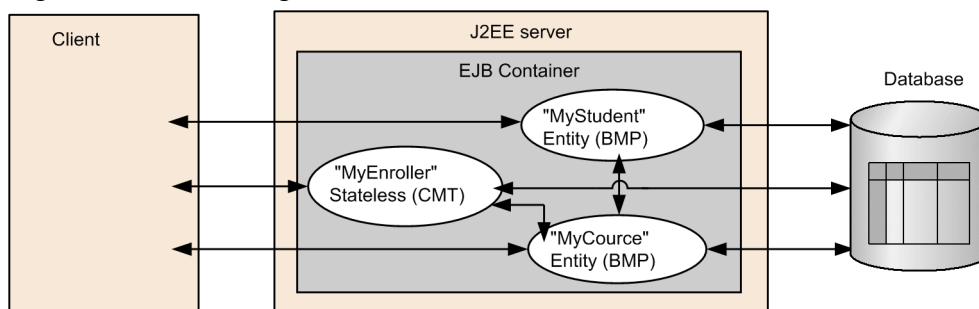
(h) Overview of the converter

For the *converter*, see [Appendix L.2\(2\) Enterprise Bean \(EJB2.0\) sample execution procedure](#).

(i) Overview of the enroller

The *enroller* adds students and subjects, registers the lectures, and updates the corresponding Students information table, Subject table and Lectures registration information table. Following figure shows the configuration of the enroller:

Figure L–10: Configuration of the enroller



Following is the execution example of enroller:

```
C:\Program Files\Hitachi\Cosminexus\CC\examples\ejb\ejb20\enroller>testClient
KDJE40053-I The cjclstartap command will now start. (directory for the
user definition file = C:\Program Files\HITACHI\Cosminexus\CC\examples\
ejb\ejb20\enroller, PID = 3684)
Denise Smith:
220 Power J2EE Programming
333 XML Made Easy
777 An Introduction to Java Programming

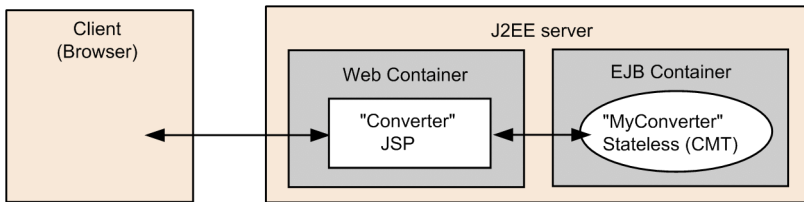
An Introduction to Java Programming:
823 Denise Smith
456 Joe Smith
388 Elizabeth Willis
KDJE40054-I The cjclstartap command was stopped. (PID = 3684, exit status =
0)

C:\Program Files\Hitachi\Cosminexus\CC\examples\ejb\ejb20\enroller>
```

(j) Overview of jsptag

jspstag converts the currency from Dollar to Yen and from Yen to Euro, and displays the currency conversion result on the browser with JSP. Following figure shows the configuration of the *jspstag*:

Figure L–11: Configuration of jsptag



To execute, start the browser and specify the following string in the URL:

```
http://Machine-name: Port-number/ContextRoot/Converter.jsp
```

When accessing the NIO HTTP server of the J2EE server directly, specify the URL as follows if using the default port:

```
http://localhost:8008/jsptag/converter_war/Converter.jsp
```

Following example shows the method of executing jsptag:

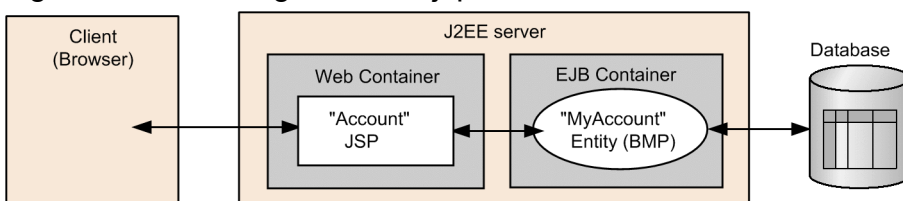
Figure L–12: Execution example of jsptag



(k) Overview of jsptobean

jsptobean calculates the balance according to deposits and withdrawals, updates the database, and displays the balance on the browser with JSP. Following figure shows the configuration of jsptobean:

Figure L–13: Configuration of jsptobean



To execute, start the browser, and specify the following string in the URL:

```
http://Machine-name: Port-number/ContextRoot/Account.jsp
```

When accessing the NIO HTTP server of the J2EE server directly, specify the URL as follows if using the default port:

```
http://localhost:8008/jsptobean/account_war/Account.jsp
```

Following is the execution example of jsptobean:

Figure L–14: Execution example of jsptobean

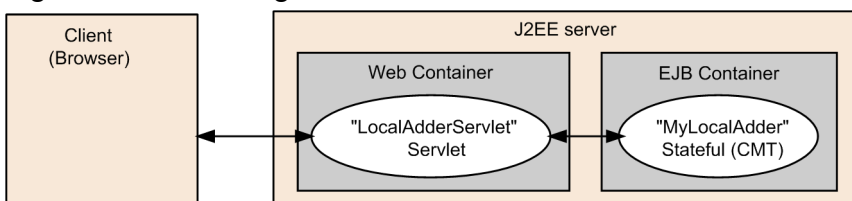
Account ID Balance
First Name Last Name
Action :
☐ Create ☐ Find ☐ Debit ☐ Credit
Amount

Status :
Created account '1'

(I) Overview of localadder

localadder calculates the total of entered numerical values and displays the result on the browser. This sample calls Enterprise Bean from the servlet using the local interface. The following figure shows the configuration of localadder:

Figure L–15: Configuration of localadder



To execute, start the browser, and specify the following string in the URL:

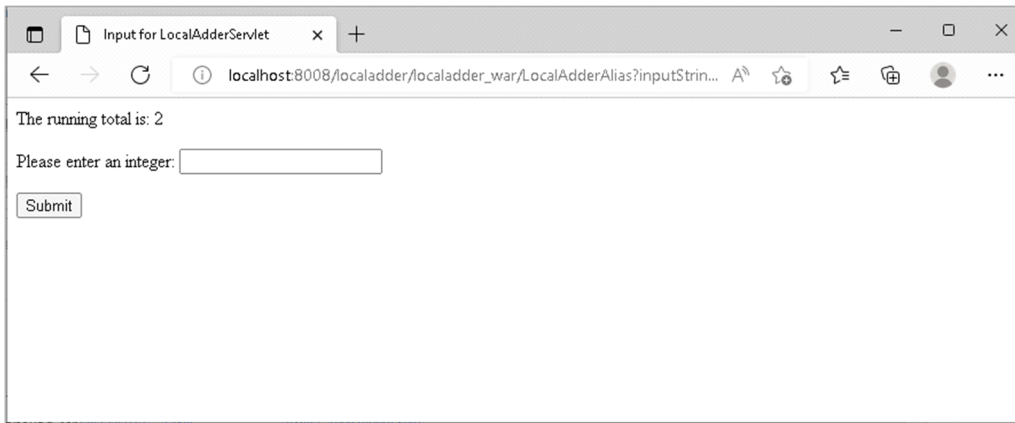
```
http://Machine-name : Port-number/ContextRoot/adder.html
```

When accessing the NIO HTTP server of the J2EE server directly, specify the URL as follows if using the default port:

```
http://localhost:8008/localadder/localadder_war/adder.html
```

The following example shows the method of executing localadder:

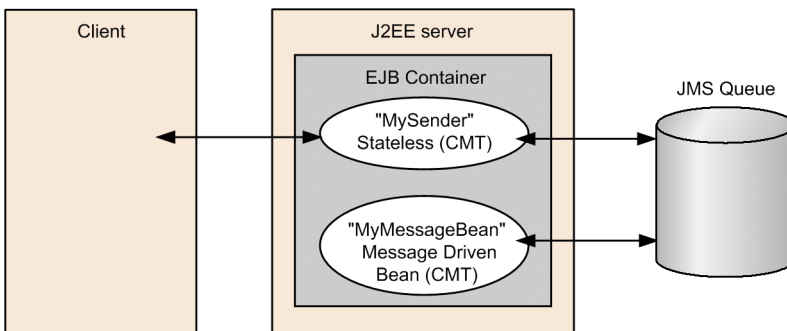
Figure L–16: Execution example of localadder



(m) Overview of the message

The *message* receives the message sent from Session Bean to JMS Queue by Message-driven Bean. The following figure shows the configuration of message:

Figure L–17: Configuration of message



Following is the execution example of the client of the message:

```
C:\Program Files\Hitachi\Cosminexus\CC\examples\ejb\ejb20\message>testClient
KDJE40053-I The cjclstartap command will now start. (directory for the
user definition file = C:\Program Files\HITACHI\Cosminexus\CC\examples\
ejb\ejb20\message, PID = 3684)
sending message=MY MESSAGE
KDJE40054-I The cjclstartap command was stopped. (PID = 3684, exit status =
0)

C:\Program Files\Hitachi\Cosminexus\CC\examples\ejb\ejb20\message>
```

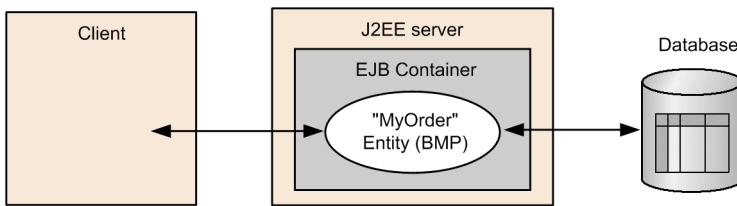
After the execution of the client, the following message is displayed in the J2EE server startup console, if the message sending and receiving is completed successfully:

```
...
MessageBean: onMessage()
MessageBean: received message=MY MESSAGE
...
```

(n) Overview of the order

The *order* searches and displays the order number and corresponding product information, and manages the order numbers and the product information in the Order information table and the Product information table respectively. The following figure shows the configuration of the order:

Figure L–18: Configuration of order



Following is the execution example of the order:

```
C:\Program Files\Hitachi\Cosminexus\CC\examples\ejb\ejb20\order>testClient
KDJE40053-I The cjclstartap command will now start. (directory for the
user definition file = C:\Program Files\Hitachi\Cosminexus\CC\examples\
ejb\ejb20\order, PID = 3684)
about to create
123 1 p23 12.0
123 2 p67 89.0
123 3 p11 41.0

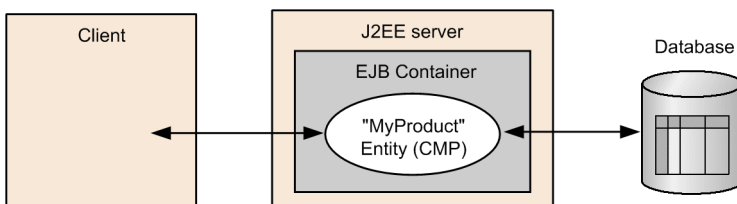
123
456
KDJE40054-I The cjclstartap command was stopped. (PID = 3684, exit status =
0)

C:\Program Files\Hitachi\Cosminexus\CC\examples\ejb\ejb20\order>
```

(o) Overview of the product

The *product* registers the product information such as product name and price in the database, searches the information of registered products, and manages product information in the Product information table. The following figure shows the configuration of the product:

Figure L–19: Configuration of product



Following is the execution example of the product:

```
C:\Program Files\Hitachi\Cosminexus\CC\examples\ejb\ejb20\product>testClient
KDJE40053-I The cjclstartap command will now start. (directory for the
user definition file = C:\Program Files\HITACHI\Cosminexus\CC\examples\
ejb\ejb20\product, PID = 3684)
Ceramic Dog: 10.0
Ceramic Dog: 14.0
Chrome Fish: 22.0
```

```

999: Ivory Cat 19.0
789: Ivory Cat 33.0
123: 14.0
456: 13.0
999: 19.0
KDJE40054-I The cjclstartap command was stopped. (PID = 3684, exit status =
0)

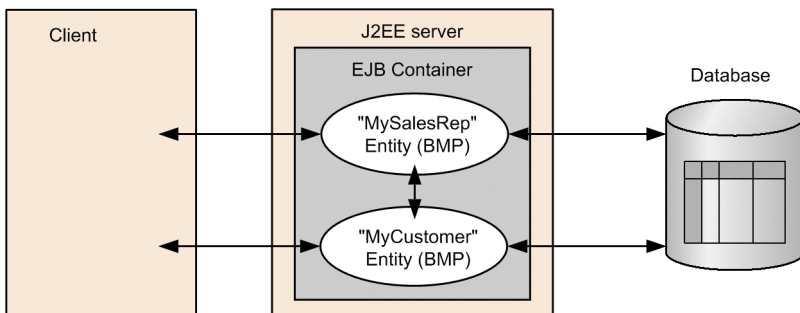
C:\Program Files\Hitachi\Cosminexus\CC\examples\ejb\ejb20\product>

```

(p) Overview of salesrep

The *salesrep* adds customers, modifies the sales representative in-charge, and updates the database. It links two Enterprise Beans, searches and updates the Customer table and the Sales representative table. The following figure shows the configuration of *salesrep*:

Figure L–20: Configuration of *salesrep*



Following is the execution example of *salesrep*:

```

C:\Program Files\Hitachi\Cosminexus\CC\examples\ejb\ejb20\salesrep>testClient
KDJE40053-I The cjclstartap command will now start. (directory for the
user definition file = C:\Program Files\HITACHI\Cosminexus\CC\examples\
ejb\ejb20\salesrep, PID = 3684)
customerId = 221
customerId = 388
customerId = 456
customerId = 844

987: Mary Jackson
221: Alice Smith
388: Bill Williamson
456: Joe Smith
844: Buzz Murphy
KDJE40054-I The cjclstartap command was stopped. (PID = 3684, exit status =
0)

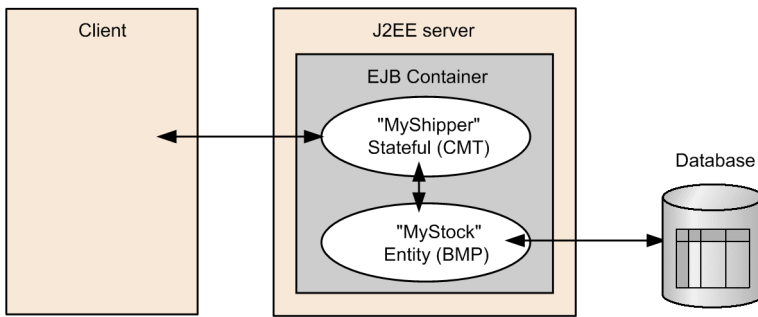
C:\Program Files\Hitachi\Cosminexus\CC\examples\ejb\ejb20\salesrep>

```

(q) Overview of the shipper

The *shipper* calculates the inventory of products against the order and updates the database. It calls the provision process if the inventory of the specified products is low. It links the two Enterprise Beans, and searches and updates the Product inventory information table. Following figure shows the configuration of the *shipper*:

Figure L–21: Configuration of the shipper



Following is the execution example of shipper:

```
C:\Program Files\Hitachi\Cosminexus\CC\examples\ejb\ejb20\shipper>testClient
KDJE40053-I The cjclstartap command will now start. (directory for the
user definition file = C:\Program Files\HITACHI\Cosminexus\CC\examples\
ejb\ejb20\shipper, PID = 3684)
KDJE40054-I The cjclstartap command was stopped. (PID = 3684, exit status =
0)

C:\Program Files\Hitachi\Cosminexus\CC\examples\ejb\ejb20\shipper>
```

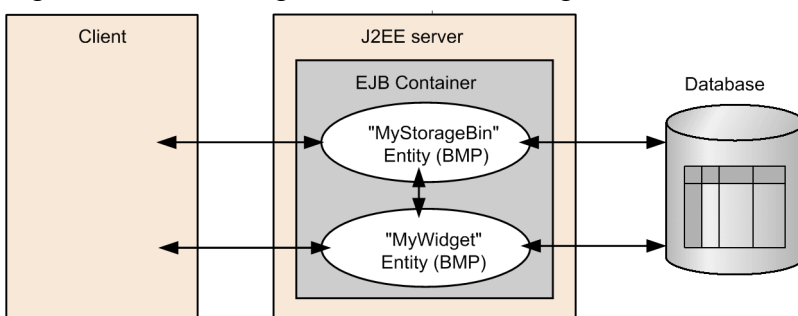
After the execution of the shipper, the following message is displayed in the J2EE server startup console.

```
...
ShipperEJB: ejbCreate()
ShipperEJB: shipItem()
StockEJB: updateOnHand()
StockEJB: reorderNeeded()
...
```

(r) Overview of storagebin

The *storagebin* searches the parts information and the inventory from the database. It links the two Enterprise Beans, and searches the Parts information table and Parts inventory Information table. Following figure shows the configuration of the storagebin:

Figure L–22: Configuration of the storagebin



Following is the execution example of storagebin:

```
C:\Program Files\Hitachi\Cosminexus\CC\examples\ejb\ejb20\storagebin>testCli
ent
KDJE40053-I The cjclstartap command will now start. (directory for the
```



```

user definition file = C:\Program Files\HITACHI\Cosminexus\CC\examples\
ejb\ejb20\storagebin, PID = 3684)
777 388 500 1.0 Duct Tape
KDJE40054-I The cjclstartap command was stopped. (PID = 3684, exit status =
0)

C:\Program Files\Hitachi\Cosminexus\CC\examples\ejb\ejb20\storagebin>

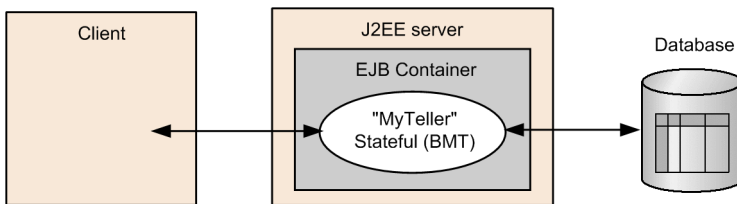
```

(s) Overview of the teller

The *teller* withdraws money from current account from a bank terminal and calculates the balance. It adds transaction details in the Deposits information table (bank terminal) and Transaction history information table in the database.

The following figure shows the configuration of the teller:

Figure L–23: Configuration of the teller



Following is the execution example of teller:

```

C:\Program Files\Hitachi\Cosminexus\CC\examples\ejb\ejb20\teller>testClient
KDJE40053-I The cjclstartap command will now start. (directory for the
user definition file = C:\Program Files\HITACHI\Cosminexus\CC\examples\
ejb\ejb20\teller, PID = 3684)
checking = 500.0
checking = 440.0
KDJE40054-I The cjclstartap command was stopped. (PID = 3684, exit status =
0)

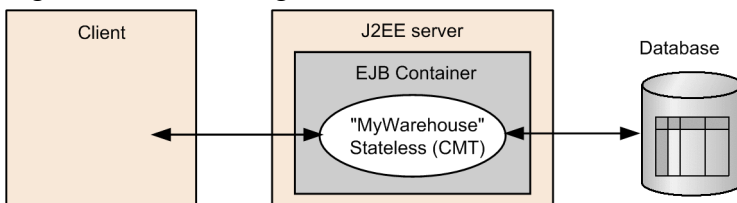
C:\Program Files\Hitachi\Cosminexus\CC\examples\ejb\ejb20\teller>

```

(t) Overview of the warehouse

The *warehouse* updates the product inventory and the status of order received products. It also updates the Product information table and Inventory information table in the database. Following figure shows the configuration of the warehouse:

Figure L–24: Configuration of warehouse



Following is the execution example of the warehouse:

```

C:\Program Files\Hitachi\Cosminexus\CC\examples\ejb\ejb20\warehouse>testClie
nt

```

```

KDJE40053-I The cjclstartap command will now start. (directory for the
user definition file = C:\Program Files\HITACHI\Cosminexus\CC\examples\
ejb\ejb20\warehouse, PID = 3684)
status = shipped
KDJE40054-I The cjclstartap command was stopped. (PID = 3684, exit status =
0)

C:\Program Files\Hitachi\Cosminexus\CC\examples\ejb\ejb20\warehouse>

```

L.3 Sample programs of Enterprise Bean (Annotations)

Following are the three types of annotation compliant Enterprise Bean sample programs:

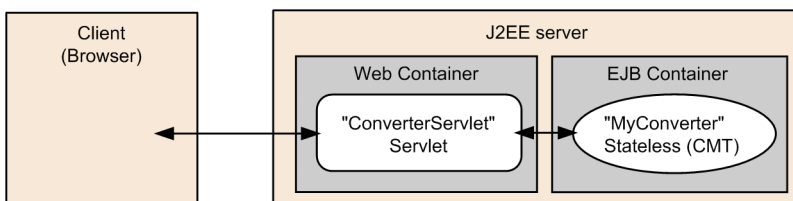
- Annotation compliant Enterprise Bean (without database connection)
Storage location is *Cosminexus-installation-directory\CC\examples\ejb\annotation\stateless*.
- Annotation compliant Enterprise Bean (with database connection)
Storage location is *Cosminexus-installation-directory\CC\examples\ejb\annotation\stateful*.
- Annotation compliant Enterprise Bean connected from Enterprise Bean (EJB2.0)
Storage location is
Cosminexus-installation-directory\CC\examples\ejb\annotation\home.

The overview, and the execution procedure of sample programs are as follows:

(1) Overview of annotation compliant Enterprise Bean (without database connection)

Following figure shows the configuration of annotation compliant Enterprise Bean sample program "annotation_stateless" without a database connection:

Figure L–25: Configuration of annotation_stateless (Annotation compliant and without database connection)



In this sample program, the program accesses the servlet through Web browser, and displays execution results on the browser. The program calls Enterprise Bean from the servlet by using the business interface.

Use the `@EJB` annotation on the servlet side to acquire the reference of annotation compliant Enterprise Bean.

```

@EJB (beanName="MyConverter")
Converter converter;

```

Following figure shows the execution example of the sample program:

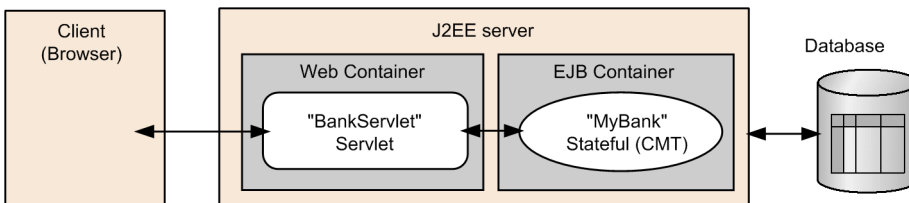
Figure L–26: Execution example of annotation compliant Enterprise Bean sample program (without database connection)



(2) Overview of annotation compliant Enterprise Bean (with database connection)

Following figure shows the configuration of annotation compliant Enterprise Bean sample program "annotation_stateful" with the database connection:

Figure L–27: Configuration of annotation_stateful (Annotation compliant and with database connection)



In this sample program, the program uses annotation to connect to the database. The program acquires the resource by `@Resource` annotation in annotation compliant Enterprise Bean.

```
@Resource(mappedName="DB_Connector_for_Cosminexus_Driver")
private DataSource ds;
```

Use JNDI to look up Stateful Session Bean with the business interface from the servlet side.

```
Context initial = new InitialContext();
duke = (Bank)initial.lookup("java:comp/env/ejb/Bank");
```

The following figure shows the execution example of the sample program:

Figure L–28: Execution example of annotation compliant Enterprise Bean sample program (with database connection)

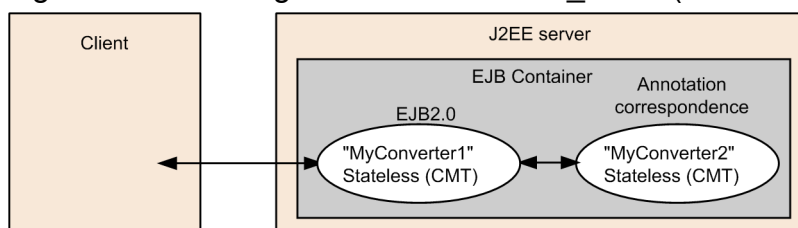


Enter user ID and amount, and then execute the process. You can specify User ID as 001. The initial balance is 10,000 yen.

(3) Overview of annotation compliant Enterprise Bean connected from Enterprise Bean (EJB2.0)

You can add the definition of the home interface to annotation compliant Enterprise Bean; to call annotation compliant Enterprise Bean from EJB2.0. Following figure shows the configuration of the sample program "annotation_home" that executes this process:

Figure L–29: Configuration of annotation_home (Annotation compliant and connection from EJB2.0)



In this sample program, the program calls annotation compliant Enterprise Bean with the local home interface from Enterprise Bean of EJB2.0. The program looks up the local home interface in Enterprise Bean code of EJB2.0.

```
...
Context ctx = new InitialContext();
Converter2LocalHome home = (Converter2LocalHome) ctx.lookup("java:comp/env/ej
b/Converter2");
...
```

Specify @LocalHome annotation in Enterprise Bean for the local home interface of annotation compliant Enterprise Bean.

```
@Stateless(name="MyConverter2")
@LocalHome(value=Converter2LocalHome.class)
public class Converter2EJB {
    ...
}
```

(4) Execution procedure of Enterprise Bean (Annotations) sample programs

Following is the procedure to execute sample programs:

(a) Compiling sample programs

Compile sample programs by using batch files provided in the sample.

Sample program of Annotation compliant Enterprise Bean (with/without database connection) executes "compile.bat".

The sample connected to annotation compliant Enterprise Bean from Enterprise Bean of EJB2.0 executes "compileBean.bat" and "compileClient.bat".

(b) Executing SQL (Annotation compliant Enterprise Bean (with database connection))

When you use the sample program for connecting to the database, execute SQL in advance. SQL statements are available in the sample (createTable_Oracle.sql, createTable_HiRDB.sql).

(c) Setting the J2EE server

See [Appendix L.1\(1\) Setting the J2EE server](#).

(d) Customizing the J2EE server

See [Appendix L.1\(2\) Customizing the J2EE server](#).

(e) Starting the J2EE server

See [Appendix L.1\(3\) Starting the J2EE server](#).

(f) Setting the resource adapter (Annotation compliant Enterprise Bean (with database connection))

You must set the resource adapter when using sample programs for connecting to the database. See [Appendix L.1\(4\) Setting the resource adapter](#).

(g) Deploying the application

Use the batch file (deployApp.bat) provided in the sample to deploy the application. This batch file imports, starts, displays the list of applications, and acquires stub and interface of Enterprise Bean.

Following is the process executed by this batch file:

- Importing, starting and listing applications
For execution contents, see [Appendix L.1\(5\) Importing, setting and starting the application](#).
- Acquiring Enterprise Bean stub and interface file
Acquires the Enterprise Bean stub and interface file with the `cjgetsubsjar` command.

(h) Executing the application

The following procedure describes the details on executing each application:

- Annotation compliant Enterprise Bean (without database connection)
Start the browser and specify the following string in URL:
`http://Machine-name : Port-number/ContextRoot/Target file`
- Annotation compliant Enterprise Bean (with database connection)
Start the browser and specify the following string in the URL:
`http://Machine-name: Port-number/ContextRoot/Target-file`
- Annotation compliant Enterprise Bean connected from Enterprise Bean (EJB2.0)
Use the batch file (`testClient.bat`) provided in the sample to execute the EJB client application. Following is the execution example of the application.

```
C:\Program Files\Hitachi\Cosminexus\CC\examples\ejb\annotation\home>testClient
KDJE40053-I The cjclstartap command will now start. (directory for the
user definition file = C:\Program Files\Hitachi\Cosminexus\CC\examples\
ejb\annotation\home, PID = 3684)
93.632
KDJE40054-I The cjclstartap command was stopped. (PID = 3684, exit status
= 0)
```

(i) Undeploying the application

See [Appendix L.1\(6\) Stopping and deleting the application.](#)

(j) Stopping the J2EE server

See [Appendix L.1\(7\) Stopping the J2EE server.](#)

L.4 Sample programs of Enterprise Bean (Timer Service)

The sample program for executing the Timer Service is stored in the following directory:

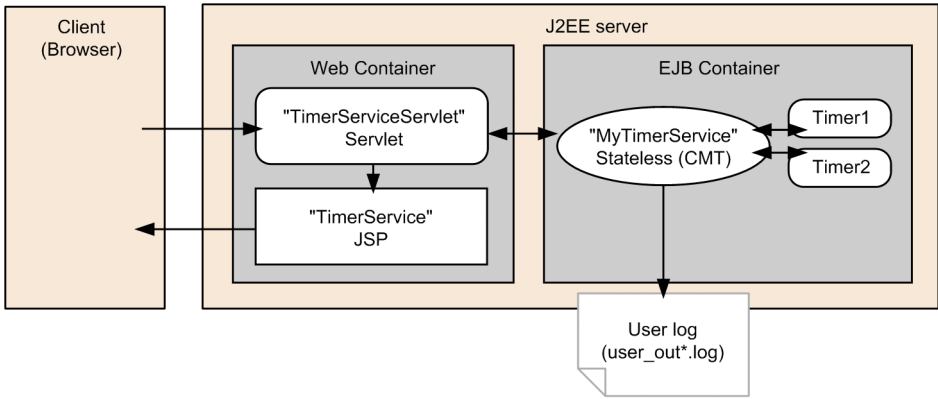
Cosminexus-installation-directory\CC\examples\ejb\timerservice

Following is the overview and execution procedure of the sample:

(1) Overview of Enterprise Bean (Timer Service) sample programs

The following figure shows the configuration of the Timer Service sample program "TimerService":

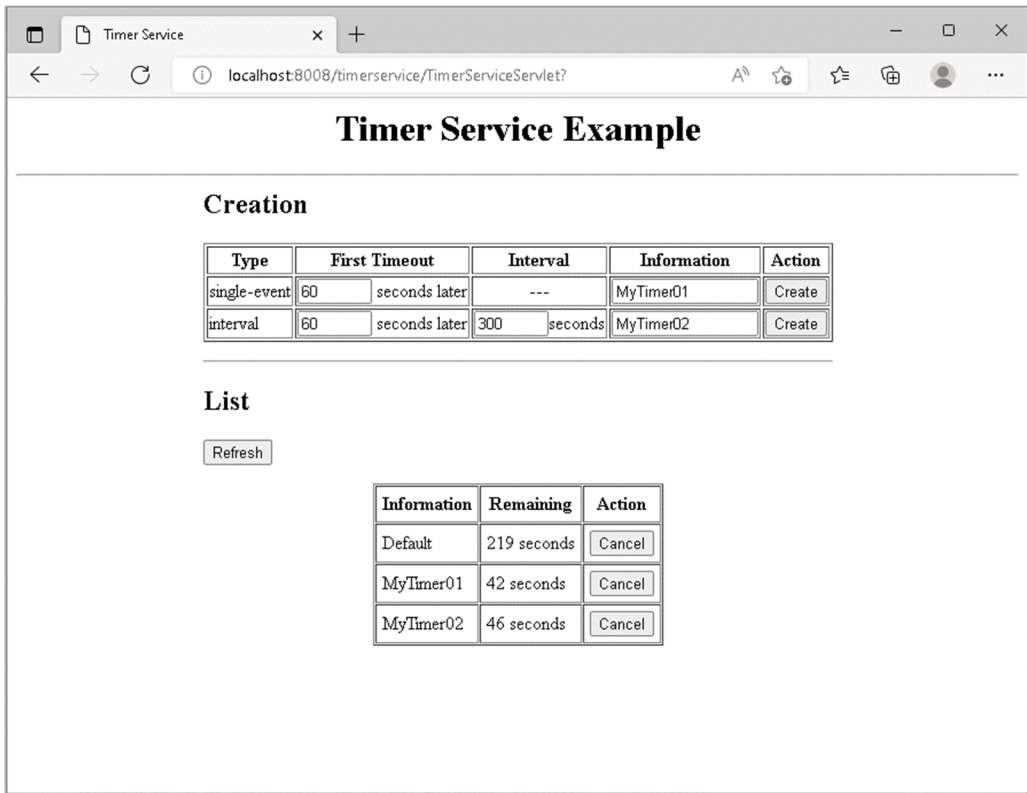
Figure L–30: Configuration of TimerService



You can use this sample program to create, list, and cancel EJB timer through the Web browser. If timeout occurs for EJB timer, a message is output to the user log.

Following is the execution example of the sample program.

Figure L–31: Execution example of TimerService sample program



The sample provides the following functionalities:

- Creating the EJB timer
An EJB timer is created when the application starts. Specify the `<load-on-startup>` tag in the DD for servlet, and the `init` method of servlet calls Stateless Session Bean method for creating the EJB timer.
Moreover, an EJB timer is created when you specify Web page EJB timer classification, timeout time, and string information, and click the **Create** button.
- Displaying the list of EJB timers

A list of EJB timers is displayed on the Web page. The latest list of EJB timers is displayed when you click the **Refresh** button.

- Cancelling the EJB timer

When you click the **Cancel** button on the Web page, the corresponding EJB timer is cancelled.

- Outputting to the user log

When EJB timer reaches the timeout date and time, the timeout method is called and a message is output to the user log. The following example shows an output of the message:

```
The timeout method was invoked. (Information = MyTimer02)
```

(2) Execution procedure of Enterprise Bean (Timer Service) sample programs

The following procedure describes the method of executing sample programs:

(a) Compiling sample programs

Compile sample programs by using a batch file (`compile.bat`) provided in the sample. This batch file creates EJB-JAR file (`timerservice.jar`), WAR file (`timerservice.war`), and EAR file (`timerservice.ear`).

(b) Setting the J2EE server

See [Appendix L.1\(1\) Setting the J2EE server](#).

(c) Customizing the J2EE server

See [Appendix L.1\(2\) Customizing the J2EE server](#).

(d) Starting the J2EE server

See [Appendix L.1\(3\) Starting the J2EE server](#).

(e) Deploying the application

See [Appendix L.1\(5\) Importing, setting and starting the application](#).

(f) Executing the application

Start the browser and specify the following string in the URL:

`http://Machine-name: Port-number/ContextRoot/TimerServiceServlet`

When accessing the NIO HTTP server of the J2EE server directly, specify the URL as follows if using the default port:

`http://localhost:8008/timerservice/TimerServiceServlet`

(g) Undeploying the application

See [Appendix L.1\(6\) Stopping and deleting the application](#).

(h) Stopping the J2EE server

See [Appendix L.1\(7\) Stopping the J2EE server](#).

L.5 JavaBeans resource sample program

Following directory stores the sample program that uses JavaBeans resource.

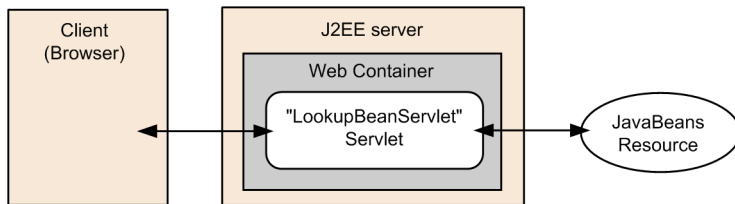
Cosminexus-installation-directory\CC\examples\javabeans

Following is the overview and the execution procedure of the sample:

(1) Overview of JavaBeans resource sample program

The following figure shows the configuration of JavaBeans resource sample program:

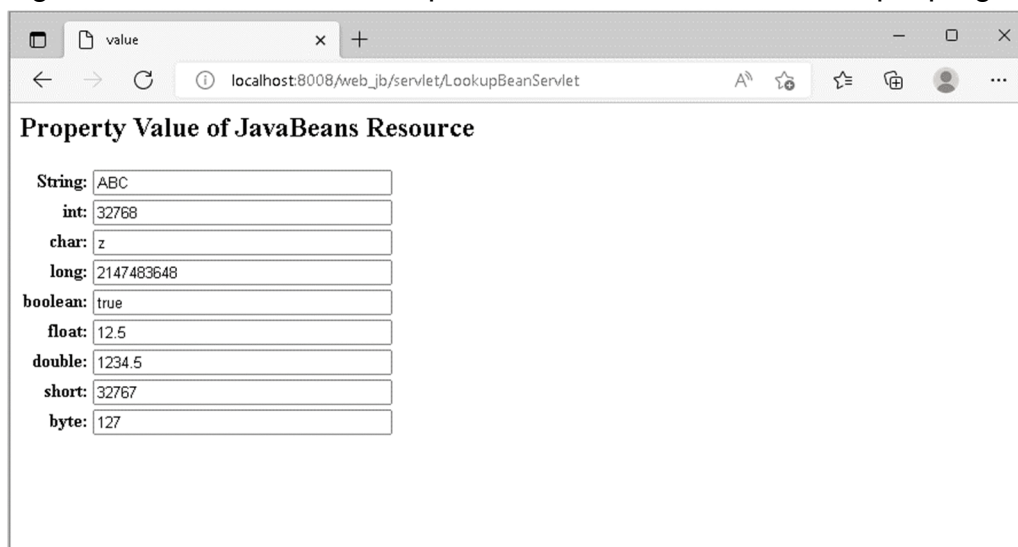
Figure L–32: Configuration of JavaBeans resource sample program



This sample program displays the value on the browser on the basis of the information of each setting specified in the property of the JavaBeans resource property file.

Following figure shows the execution example of the sample program:

Figure L–33: Execution example of JavaBeans resource sample program



(2) Execution procedure of JavaBeans resource sample program

Following procedure describes the method of executing the sample program:

(a) Compiling sample programs

Compile sample programs by using the batch file (`compile.bat`) provided in the sample. This batch file creates JavaBeans resource (`MyJavaBean.jar`) and EAR file (`LookupBean.ear`).

(b) Setting the J2EE server

See *Appendix L.1(1) Setting the J2EE server.*

(c) Customizing the J2EE server

See *Appendix L.1(2) Customizing the J2EE server.*

(d) Starting the J2EE server

See *Appendix L.1(3) Starting the J2EE server.*

(e) Importing and starting JavaBeans resource

Use the batch file (`deployJb.bat`) provided in the sample to deploy JavaBeans resource. This batch file imports and starts JavaBeans resource.

Following is the process executed by this batch file:

- The `cjimportjb` command is executed and JavaBeans resource is imported to the J2EE server. The used JavaBeans resource property file is `"jb_resource.xml"`.
- The `cjstartjb` command is executed and JavaBeans resource is started. The used JavaBeans resource display name is `"JavaBean_resource"`.
- The `cjlistjb` command is executed and the status of JavaBeans resources on the J2EE server is displayed in a list. The operation status of JavaBeans (operating) can be confirmed from this list.

(f) Deploying the application

See *Appendix L.1(5) Importing, setting and starting the application*

(g) Executing the application

Start the browser and specify the following string in the URL:

`http://Machine-name:Port-number/ContextRoot/servlet/LookupBeanServlet`

When accessing the NIO HTTP server of the J2EE server directly, specify the URL as follows if using the default port:

`http://localhost:8008/web_jb/servlet/LookupBeanServlet`

(h) Undeploying the application

See *Appendix L.1(6) Stopping and deleting the application.*

(i) Stopping JavaBeans resource

Stop the JavaBeans resource with the `cjstopjb` command.

```
C:\>cd Program Files\Hitachi\Cosminexus\CC\admin\bin
C:\Program Files\Hitachi\Cosminexus\CC\admin\bin>cjstopjb MyServer -resname
JavaBean_resource
```

(j) Restarting the J2EE server

Stop the J2EE server with the `cjstopsv` command and start with the `cjstartsv` command. For the method of stopping the J2EE server, see [Appendix L.1\(7\) Stopping the J2EE server](#). For the method of starting the J2EE server, see [Appendix L.1\(3\) Starting the J2EE server](#).

(k) Deleting JavaBeans resource

Delete JavaBeans resource with the `cjdeletejb` command.

```
C:\>cd Program Files\Hitachi\Cosminexus\CC\admin\bin
C:\Program Files\Hitachi\Cosminexus\CC\admin\bin>cjdeletejb MyServer -resnam
e JavaBean_resource
```

(l) Stopping the J2EE server

See [Appendix L.1\(7\) Stopping the J2EE server](#).

L.6 User log functionality sample program

The userlog is provided as a sample program for confirming the operations of the user log functionality. The following table describes the files provided as samples of the source file and definition files used to execute this sample program:

Table L–3: Sample program for confirming the operations of user log functionality

File name	Usage
UserLogServlet.java	Servlet program of user log
UserLogHome.java	Home interface
UserLog.java	Remote interface
AdderEJB.java	Implementation class of Enterprise Bean for calculating the total of integers.
sample.properties	Sample property of logger set in the property.
MyFormatter.java	Self-defined class provided as a formatter.
MyFilter.java	Self-defined class provided as a filter.

The files are located in the following location.

Cosminexus-installation-directory\CC\examples\userlog

Following is the overview and the execution procedure of sample program with user log functionality:

(1) Overview of user log functionality sample program

This sample program can output the following 3 types of logs.

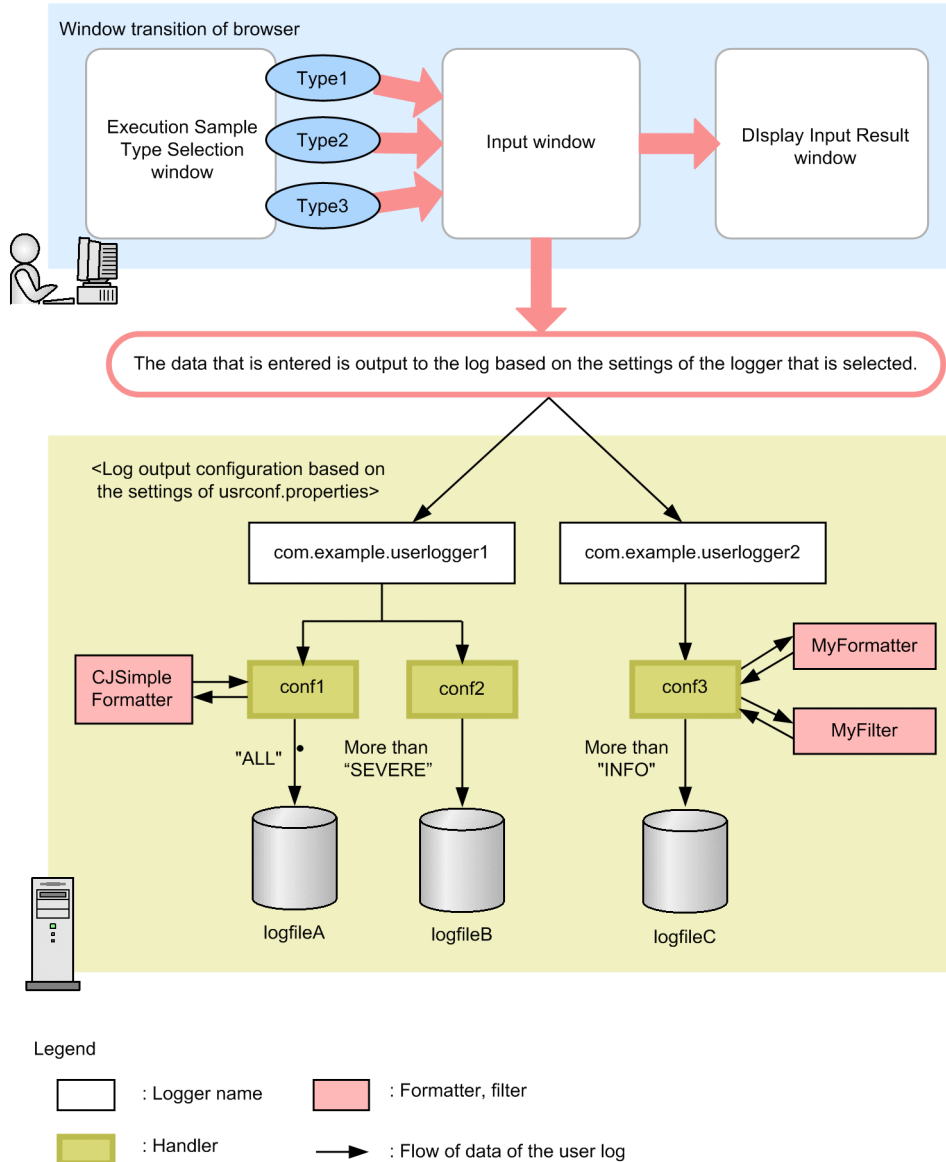
- Type 1: Sample for outputting messages from servlet
The entered message is output from the servlet side.
- Type 2: Sample for outputting the entered numbers and total value from AdderEJB

The entered values and total of those values are output to the log file from "AdderEJB (Enterprise Bean)" for calculating the total of the entered integers.

- Type 3: Sample for outputting exception logs from the servlet
Exception is generated and its details are output to the log file from the servlet.

The following figure shows the flow of process in the sample program:

Figure L–34: Structure of user log sample program (Servlet, Enterprise Bean)



The log file output differs depending on the logger name and log level selected in the Input window.

- If you select logger name `com.example.userlogger1`, the log is output to logfileA regardless of the level you specify.
- If you select logger name `com.example.userlogger1` and specify SEVERE or higher in the log level, the log is output to logfileA and logfileB.
- If you select logger name `com.example.userlogger2`, specify INFO or higher in the log level and if MyFilter is not used for filtering, the log is output to logfileC. The output formatter "MyFormatter (self-defined class)" is used.

Specifications of MyFormatter

The output format is as follows:

message: *Entered-message* LEVEL: *Specified-level*

Specifications of MyFilter

Messages marked with "debug:" in the heading are not output to the log.

(2) Execution procedure of user log functionality sample program

The following procedure describes the procedure for executing the sample program.

(a) Setting the J2EE server

See [Appendix L.1\(1\) Setting the J2EE server](#).

(b) Compiling the sample file

Compile the user log samples with the batch file (`compile.bat`) provided in the sample.

On compiling, "myloglib.jar" file is created. Store this file in any directory to allow access to the JAR file. For details on allowing the access to the file, see 8.7.2 *Using container extension library* in the *uCosminexus Application Server Expansion Guide*.

(c) Setting the property information

The property information is set in the set up server. Some contents in `usrconf.properties` of the set up server are rewritten in the set up file (`sample.properties`) provided in the sample. For building a system using Management Server, see 8.8 *Setting the user log output of J2EE applications* in the *uCosminexus Application Server Expansion Guide*.

The storage location of `usrconf.properties` and the rewritten portion in `usrconf.properties` file, when the set up server is "MyServer" are as follows:

- File location

Cosminexus-installation-directory\CC\server\usrconf\ejb\MyServer\usrconf.properties

- Rewritten portion in the file:

The following part is rewritten with the contents of `sample.property`.

```
:
# user-log handler settings
#ejbserver.application.userlog.CJLogHandler.<Specify handler-name>.path=us
er_log
#ejbserver.application.userlog.CJLogHandler.<Specify handler-name>.count=2
:
# user-log logger settings
#ejbserver.application.userlog.Logger.<Specify logger-name>.handlers=<Spec
ify handler-class>
#ejbserver.application.userlog.Logger.<Specify logger-name>.useParentHandl
ers=true
:
```

The contents of `sample.properties` provided in the sample are as follows:

```
# user-log handler settings
#conf1 settings
```

```

ejbserver.application.userlog.CJLogHandler.conf1.path=userlog/logFileA
ejbserver.application.userlog.CJLogHandler.conf1.level=ALL
ejbserver.application.userlog.CJLogHandler.conf1.appname=userlog_app
ejbserver.application.userlog.CJLogHandler.conf1.formatter=com.hitachi.software.ejb.application.userlog.CJSimpleFormatter

#conf2 settings
ejbserver.application.userlog.CJLogHandler.conf2.path=userlog/logFileB
ejbserver.application.userlog.CJLogHandler.conf2.level=SEVERE
ejbserver.application.userlog.CJLogHandler.conf2.appname=userlog_app

#conf3 settings
ejbserver.application.userlog.CJLogHandler.conf3.path=userlog/logFileC
ejbserver.application.userlog.CJLogHandler.conf3.level=INFO
ejbserver.application.userlog.CJLogHandler.conf3.appname=userlog_app

# user-log logger settings
#logger1 settings
ejbserver.application.userlog.Logger.com.example.userlogger1.handlers=com.hitachi.software.ejb.application.userlog.CJMessageFileHandler;conf1,com.hitachi.software.ejb.application.userlog.CJMessageFileHandler;conf2
ejbserver.application.userlog.Logger.com.example.userlogger1.level=ALL

#logger2 settings
ejbserver.application.userlog.Logger.com.example.userlogger2.handlers=com.hitachi.software.ejb.application.userlog.CJMessageFileHandler;conf3
ejbserver.application.userlog.Logger.com.example.userlogger2.level=INFO

ejbserver.application.userlog.loggers=com.example.userlogger1, com.example.userlogger2

```

For the setting of NIO HTTP server, see [Appendix L.1\(2\) Customizing the J2EE server](#).

(d) Starting the J2EE server

See [Appendix L.1\(3\) Starting the J2EE server](#).

(e) Deploying the application

See [Appendix L.1\(5\) Importing, setting and starting the application](#).

(f) Executing the application

Start the browser and specify the following string in the URL:

```
http://Machine-name:Port-number/ContextRoot/userlog.html
```

When accessing the NIO HTTP server of the J2EE server directly, specify the URL as follows if using the default port:

```
http://localhost:8008/userlog/userlog_war/userlog.html
```

(g) Execution example of userlog

The following example shows the method of executing the userlog. The following figure shows the Select the Execution Sample Type window displayed on executing the application and specifying the URL.

Figure L–35: Select the Type of Sample to Execute window (Userlog sample program)

Userlog Sample Page

Select the type of sample to execute

Sample for outputting messages from the servlet

Enter

Sample for outputting the entered numbers and total value from AdderEJB

Enter

Sample for outputting exception logs from the servlet

Enter

Select the type of sample to be executed and move to each data input form. The following example describes the subsequent operations on the window and method to output the log for each selected type.

When the name of the set up server is "MyServer", the resulting log file is output to the following directory by the file name set in `usrconf.properties`.

```
Cosminexus-installation-directory\CC\server\public\MyServer\logs\user\user1  
og
```

- Type 1: Execution example of the message output
The following example shows the window transition and output of log file when you select Sample for outputting message from the servlet type on the Select the Execution Sample Type window.
After selecting the type, enter the following values in the displayed Input window:
 - Logger name: `com.example.userlogger1`
 - Message: AAA
 - Message level: SEVERE (fatal)

The following figure shows the Input window when you select Type 1:

Figure L–36: Input window (Type 1: User log sample program)

The screenshot shows a web browser window titled "Message input page". The address bar shows the URL "localhost:8008/userlog/userlog_war/UserLogAlias?Message=Enter". The page content is titled "Message Input Page" and contains three main sections: "Select a logger_name to output" with a dropdown menu showing "com.example.userlogger1", "Enter a message to output to the log" with a text input field containing "AAA", and "Select a level for the message to be output" with a dropdown menu showing "SEVERE". At the bottom, there is a "send" button.

The following figure shows the Display Input Result window on clicking the **send** button after input:

Figure L–37: Display Input Result window (Type 1: User log sample program)

The screenshot shows a web browser window titled "Input Data". The address bar shows the URL "localhost:8008/userlog/userlog_war/UserLogAlias". The page content is titled "Input Data" and displays the following information: "logger : com.example.userlogger1", "handler : 1", "filter : null", "formatter : com.hitachi.software.ejb.application.userlog.C3SimpleFormatter", "handler : 2", "filter : null", "formatter : null", "logmsg : AAA", and "level : SEVERE". At the bottom, there are "return" and "Top" buttons.

In this example, the result is output to logfileA and logfileB.

The output result of logfileA is as follows:

```
0310 2005/01/21 20:37:53.296 userlog_app 00922804 01000BCF Msg_10
0      2005/01/21 20:37:53|UserLogServlet|doPost|fatal|AAA
```

The output result of logfileB is as follows:


```
0888 2005/01/21 19:41:03.609 userlog_app 00922804 009B6220 Msg_10
0 AAA
```

- Type 2: Execution example of the output of entered numbers and total value

The following example shows the window transition and output of log file when you select Sample for outputting the entered numbers and total value from AdderEJB type on the Select the Execution Sample Type window.

After selecting the type, enter the following values in the displayed Input window:

- Logger name: `com.example.userlogger1`
- Input number: 10

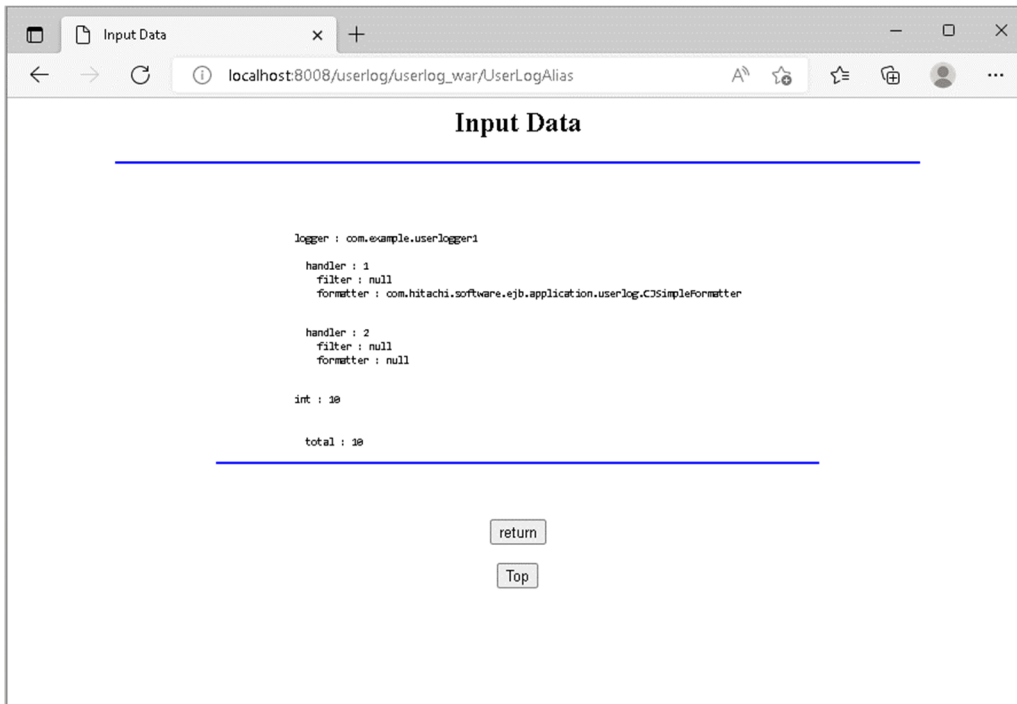
The following figure shows the Input window when you select Type 2:

Figure L–38: Input window (Type 2: User log sample program)

The screenshot shows a web browser window titled 'Integer Input Page for Adder'. The address bar shows 'localhost:8008/userlog/userlog_war/UserLogAlias?Adder=Enter'. The main content area has a heading 'Adder' followed by a horizontal line. Below the line is the text 'Select a logger_name to output' and a dropdown menu showing 'com.example.userlogger1'. Further down is the text 'Enter an integer :' and a text input field containing '10'. At the bottom center is a button labeled 'send'.

The following figure shows the Display Input Result window on clicking the **send** button after input:

Figure L–39: Display Input Result window (Type 2: User log sample program)



In this example, the result is output only to logfileA.

The output result of logfileA is as follows:

```
0324 2005/01/21 20:38:59.500 userlog_app 00922804 015C998A Adder_20
0      2005/01/21 20:38:59|AdderEJB|add|information|inputNumber = 10
0327 2005/01/21 20:38:59.500 userlog_app 00922804 015C998A Adder_20
1      2005/01/21 20:38:59|AdderEJB|getTotal|information|total = 10
```

- Type 3:Execution example of exception logs output
The following example shows the window transition and output of log file when you select Sample for outputting exception logs from the servlet type on the Select the Execution Sample Type window.
After selecting the type, enter the following value in the displayed Input window:
 - Logger name: com.example.userlogger2The following figure shows the Input window when you select Type 3:

Figure L–40: Input window (Type 3: User log sample program)

Cause an Exception Page

localhost:8008/userlog/userlog_war/UserLogAlias?Exception=Enter

Exception

Select a logger_name to output

com.example.userlogger2

Cause an exception

send

The following figure shows the Display Input Result window on clicking the **send** button after input:

Figure L–41: Display Input Result window (Type 3: User log sample program)

Input Data

localhost:8008/userlog/userlog_war/UserLogAlias

Input Data

logger : com.example.userlogger2

handler : 1

filter : PyFilter

formatter : PyFormatter

return

Top

In this example, the result is output only to logfileC.

The output result of logfileC is as follows:

```
1077 2005/01/21 19:55:19.328 userlog_app 00922804 006458A6 Exp_30
0 message:Exception LEVEL:SEVERE
```

(h) Undeploying the application

See *Appendix L.1(6) Stopping and deleting the application.*

(i) Stopping the J2EE server

See *Appendix L.1(7) Stopping the J2EE server.*

L.7 Sample program of Web application

Sample program of Web application sample program is stored in the following directory:

Cosminexus-installation-directory\CC\examples\webapps

Following is the overview and execution procedure of the sample program:

(1) Overview of the sample program of Web application

You can use the servlet conforming to the specifications of Servlet 2.5 and JSP sample program as a sample of Web application. This section describes the prerequisites, types of sample programs and configuration of the sample programs.

(a) Prerequisites

The following are the prerequisites of the sample program of Web application:

- The version of Web application must be Servlet 2.5.
- You must run Web application in the J2EE server mode.

Additionally, the sample program of Web application uses JSTL 1.2. You must set a class path in *usrconf.cfg* in order to use JSTL 1.2.

(b) Types of sample programs

The following are the types of the provided sample programs:

Servlet

- Display of "Hello World"
- Display of HTTP request information
- Display of HTTP header
- Display of HTTP request parameter
- Cookie operation
- HTTP session operation

JSP

- Expression Language^{#1}
- Simple tag handler, JSP fragment
- Tag file^{#1}
- JSP of XML syntax^{#1#2}

- Other functionalities mentioned in JSP 2.0 specifications
- Functionalities mentioned in JSP 1.2 specifications

#1

This sample program uses JSTL.

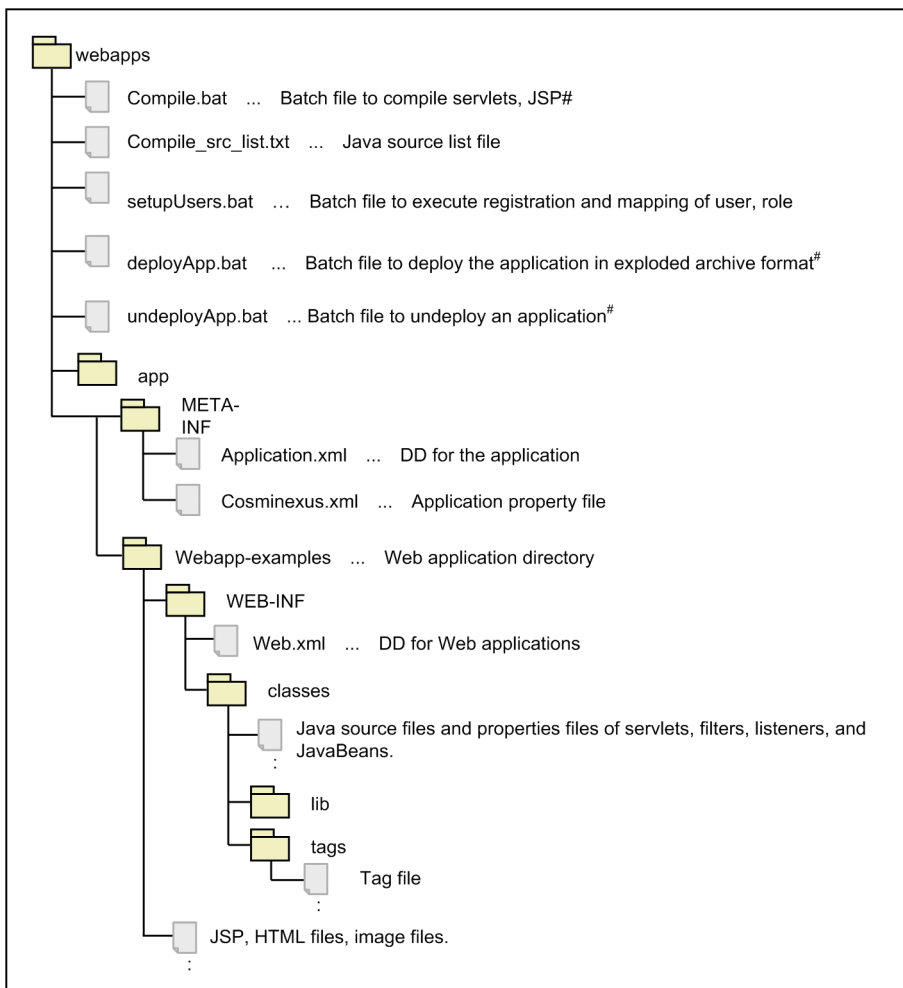
#2

This sample returns the execution result in SVG data format. You must have a SVG compliant browser to display the data in SVG format.

(c) Configuring the sample programs

You can use the sample programs of Web application as is as an exploded archive format. The following figure shows the configuration under the *Cosminexus-installation-directory*\CC\examples\webapps:

Figure L–42: Configuration under the webapps directory



UNIX version is a shell script. There is no extension.

In the execution procedure of the sample programs of Web application explained hereafter, the webapp directory under the *Cosminexus-installation-directory*\CC\examples is mentioned as webapps directory.

(2) Execution procedure of the sample programs of Web application

The following procedure describes the execution procedure of the sample program. The following functionalities are used in this procedure:

- Deploying an exploded archive format
- Pre-compiling JSP

(a) Compiling sample programs

Compile the servlet, filter and listener of Web application; Java source file of JavaBeans and the JSP file; using the batch file (`compile.bat`) provided in the sample.

Java source files such as servlet and filter use `javac` command, and the `cjjspc` command is used for compiling the JSP files.

(b) Setting the J2EE server

See *Appendix L.1(1) Setting the J2EE server*.

(c) Customizing the J2EE server

See *Appendix L.1(2) Customizing the J2EE server*.

(d) Starting the J2EE server

See *Appendix L.1(3) Starting the J2EE server*.

(e) Registering users and roles

Register the users and roles by using the batch file (`setupUsers.bat`) provided in the sample. This batch file registers the users and roles for the J2EE server with J2EE server name "MyServer".

Following process is executed by this batch file:

1. The following users are registered on executing the `cjaddsec` command:
 User 1: User name "user1", password "passwd1"
 User 2: User name "user2", password "passwd2"
2. Roles "role1" and "role2" are registered on executing the `cjaddsec` command.
3. The following mappings are registered on executing the `cjmapsec` command:
 Mapping 1: Role "role1" and user "user1"
 Mapping 2: Role "role2" and user "user2"

The user name and password registered here are used in the "Security" on the JSP sample page.

(f) Deploying the application

See *Appendix L.1(5) Importing, setting and starting the application*.

(g) Executing the application

Start the browser, specify the following string in the URL and access the top page of the Web application.

`http://Machine-name/examples`

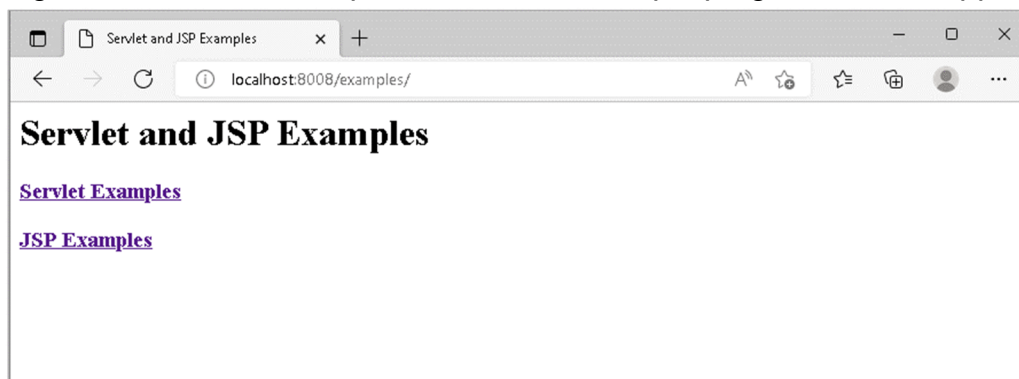
When you customize the port number, specify ": Port-number" after *Machine-name*.

Specify the following when you access from the host on which the J2EE server is started.

http://localhost/examples

The following top window is displayed when the access is successful:

Figure L–43: Execution procedure of the sample program of Web application



(h) Undeploying the application

See *Appendix L.1(6) Stopping and deleting the application.*

(i) Stopping the J2EE server

See *Appendix L.1(7) Stopping the J2EE server.*

L.8 Sample program of TP1 inbound linking functionality

Sample program that uses the TP1 inbound linking functionality is stored in the following directory:

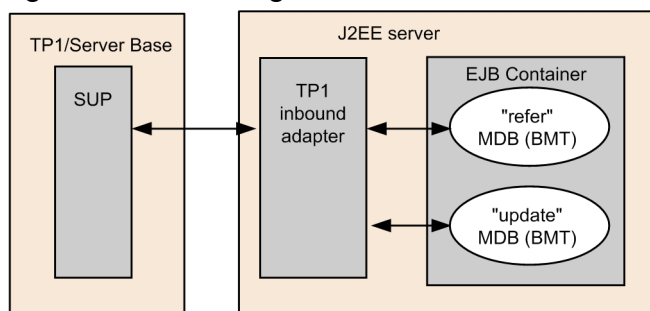
Cosminexus-installation-directory\CC\examples\tp1inbound

The overview and execution procedure of the sample program is as follows:

(1) Overview of TP1 inbound linking functionality sample programs

The following figure shows the configuration of the TP1 inbound linking functionality sample program:

Figure L–44: Configuration of TP1 inbound linking functionality sample program



MDB indicates the Message-driven Bean.

This sample program receives RPC request messages from C language based SUP of Base sample provided by TP1/Server Base. It is a Message-driven Bean program for executing a process similar to C language based SPP of Base

sample and returns the execution result to the C language based SUP as a RPC reply message. The Message-driven Bean process acquires the customer information, and updates in the same way as that of C language based SPP of Base sample.

The sample program stores the customer information in a table in the memory. The following Table L-4 describes the table configuration and Table L-5 describes the contents of the table used by the sample program:

Table L–4: Configuration of the table used by the sample program

Column	Explanation
name	Name
sex	Sex
age	Age
sale	Sale

Table L–5: Contents of the table used in sample program

name	sex	age	sale
Suzuki	M	30	1000000
Okada	F	23	1500000
Yoshida	F	26	800000
Saitoh	M	24	1000000
Itoh	M	35	1800000
Nishikawa	M	20	300000
Katoh	F	28	1000000
Satoh	F	27	2100000
Hasegawa	M	25	600000
Watanabe	M	31	1600000

(2) Execution procedure of the sample program of TP1 inbound linking functionality

The following procedure describes the procedure for executing the sample programs.

(a) Setting the base sample of TP1/Server Base

Perform the following settings for the Base sample of TP1/Server Base.

- **Setting the scheduler direct by user service network definition**

Set OpenTP1 user service definition and the user service network definition to call TP1 inbound adapter with the scheduler direct functionality by user service network definition. Set the following contents.

- Specify TP1 inbound adapter service group name, host name and port number in the user service network definition. The following table describes the settings:

Table L–6: Settings in user service network definition

Settings	Contents to be set
Service group name	Specify the service group name "base_svg" specified in the Base sample.

Settings	Contents to be set
Host name	Specify the host name of Application Server. [#]
Port number	Specify the port number defined in the <code>scd_port</code> property of the Connector property file of TP1 inbound adapter.

[#]: OpenTP1 compares the IP addresses of RPC sender and receiver, executes UNIX domain communication if the machine is the same, and INET domain communication if the machines are different. TP1 inbound adapter supports only INET domain communication. Hence, when you use OpenTP1 and TP1 inbound adapter on the same machine, you must specify the IP address different than the source assigned by IP alias functionality, in the host name.

Example of user service network definition

```
dcsvgdef -g base_svg -h Host name[:Port number]
```

- Set definition in the user service definition `rpc_destination_mode`. This enables you to search address from the specified value of user service network definition when you call the `dc_rpc_call` function.

Example of user service definition

```
set rpc_destination_mode = definition
```

For details, see the *OpenTP1 Program Creation Guide*.

- **Setting the performance analysis trace**

You must set the performance analysis trace in the common system definitions; to inherit the information of OpenTP1 performance analysis trace by TP1 inbound adapter. The following table describes the settings:

Table L–7: Settings of the performance analysis trace

Settings	Purpose of setting
<code>set prf_trace=Y</code>	To acquire the information of trace for the performance validation.
<code>set rpc_prf_trace_level=00010001</code>	To transmit the OpenTP1 PRF information to Cosminexus.

For common system definitions, see the manual *OpenTP1 System Definition*.

(b) Compiling the sample programs

Compile the sample programs by using a batch file (`compile.bat`) provided in the sample. This batch file creates EAR file.

(c) Setting the J2EE server

See [Appendix L.1\(1\) Setting the J2EE server](#).

(d) Customizing the J2EE server

See [Appendix L.1\(2\) Customizing the J2EE server](#).

(e) Starting the J2EE server

See [Appendix L.1\(3\) Starting the J2EE server](#).

(f) Importing, setting and starting TP1 inbound adapter

For details on importing and setting the TP1 inbound adapter, see [Appendix L.1\(4\) Setting the resource adapter](#). However, among the description in the reference, connection test of the resource adapter with the `cjtestres` command need not be executed. Message `KDJE48606-E` is generated on executing the connection test. In the settings of TP1 inbound adapter, specify the service group name "base_svg" specified in the Base sample, in the `service_group` property of the Connector property file.

(g) Deploying the application

See *Appendix L.1(5) Importing, setting and starting the application.*

(h) Executing SUP

See the Base sample provided by TP1/Server Base.

(i) Undeploying the application

See *Appendix L.1(6) Stopping and deleting the application.*

(j) Stopping the J2EE server

See *Appendix L.1(7) Stopping the J2EE server.*

(3) Notes on sample programs

This section describes the notes on using sample programs.

- **Setting a connection of TP1 inbound adapter**

Ensure the proper settings for the connection of TP1 inbound adaptor to use as a resource in this sample program.

- Resolving the link of a resource

The resource link need not be resolved if the default display name of TP1 inbound adapter is not changed. You must resolve the resource link if the default display name of TP1 inbound adapter is changed. The following procedure describes the method of resolving the link:

1. Set the display name of the resource in `<message-ref>` of `cosminexus.xml` provided in the sample.

For details on setting the display name, see 2. *Cosminexus Application Property File (cosminexus.xml)* in the *uCosminexus Application Server Application and Resource Definition Reference Guide*.

2. Deploy the application.

- **Platform to execute the sample program**

This sample program does not create or acquire the user data that recognizes Endian. Hence, run SUP on the platform having the identical Endian. If you run SUP on a platform having different Endian, the value of "Sales" in the sample program becomes invalid.

L.9 Sample program of JSF

The sample program that uses JSF is stored in the following directory:

`Cosminexus-installation-directory\CC\examples\jsf`

Following is the overview and execution procedure of the sample:

(1) Overview of the sample program of JSF

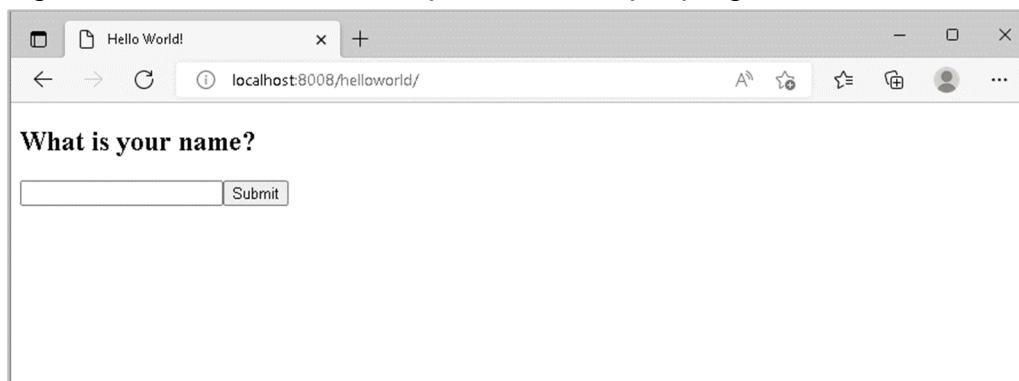
This sample program provides the JSF application for executing the following operations:

- If you enter a string and click the button, the entered string is displayed on the window.
- If the entered string has more than 15 characters and you click the button, the message `Length is greater than allowable maximum of 15` is displayed on the window.

JSF sample program uses JSF. To use JSF, you must set a class path in `usrconf.cfg`.

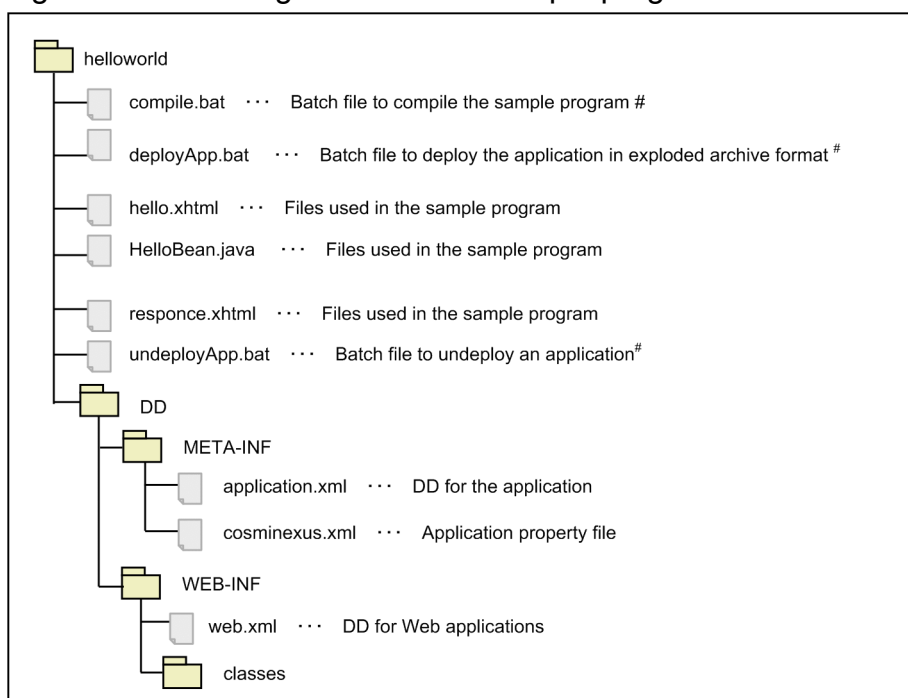
The following figure shows the method of executing the sample program of JSF:

Figure L–45: Execution example of the sample program of JSF



The following figure shows the configuration of the sample program:

Figure L–46: Configuration of the sample program of JSF



UNIX version is a shell script. There is no extension.

(2) Execution procedure of the sample program of JSF

The following procedure describes the method for executing the sample program:

(a) Setting the J2EE server

See [Appendix L.1\(1\) Setting the J2EE server](#).

(b) Customizing the J2EE server

See [Appendix L.1\(2\) Customizing the J2EE server](#).

(c) Starting the J2EE server

See *Appendix L.1(3) Starting the J2EE server*.

(d) Compiling sample programs

Compile the sample programs with the batch file (`compile.bat`) provided in the sample. This batch file creates a WAR file (`helloworld.war`) and EAR file (`helloworld.ear`).

(e) Deploying the application

Use the batch file (`deployApp.bat`) provided in the sample to deploy the application. See *Appendix L.1(5) Importing, setting and starting the application*.

(f) Executing the application

Start the browser and specify the following string in the URL:

`http://Machine-name:Port-number/helloworld/`

When accessing the NIO HTTP server of the J2EE server directly, specify the URL as follows if using the default port:

`http://localhost:8008/helloworld/`

(g) Undeploying the application

See *Appendix L.1(6) Stopping and deleting the application*.

(h) Stopping the J2EE server

See *Appendix L.1(7) Stopping the J2EE server*.

L.10 Sample of Bean Validation and CDI integration application

The sample program using the Bean Validation and CDI integration application is stored in the following directory:

Application-Server-installation-directory\CC\examples\bv_cdi

This subsection gives an overview of the sample and describes the execution procedure.

(1) Overview of the sample program of Bean Validation and CDI integration application

This sample program provides a sample combining Bean Validation, CDI, and JSF.

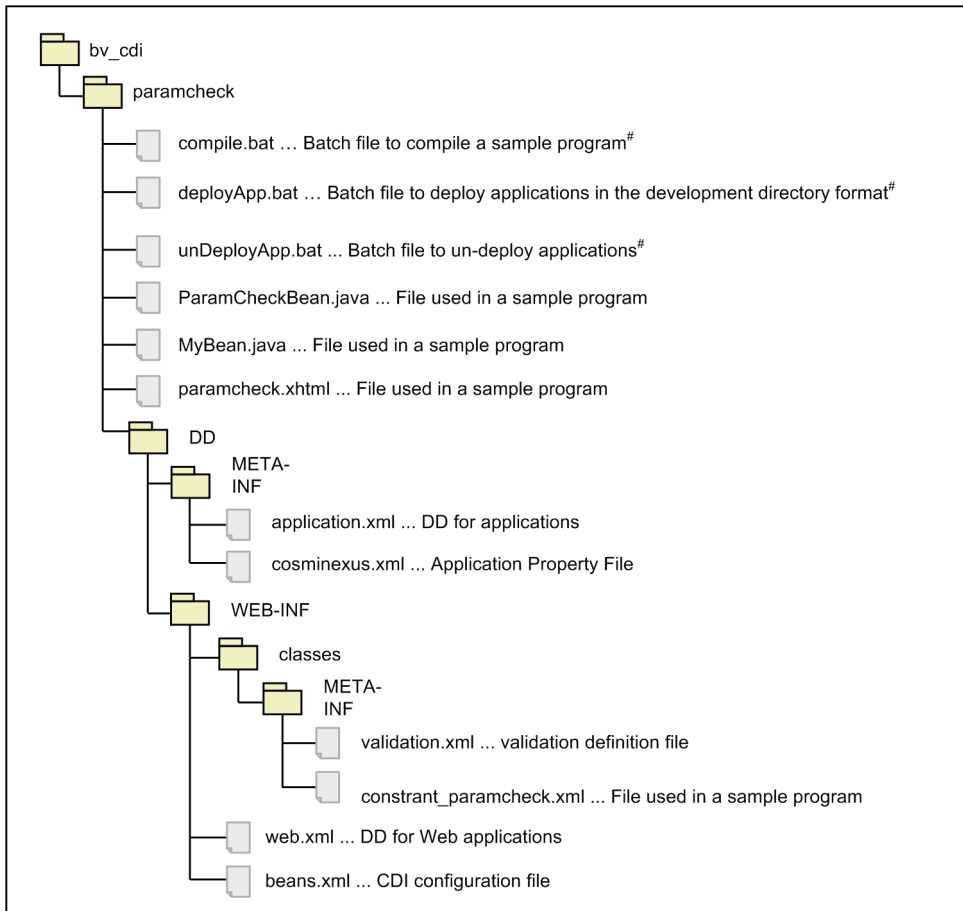
With the sample Bean Validation and CDI application, the following settings must be implemented before you execute the sample:

- Setting up the class path to `usrconf.cfg` for using the JSF
- Setting up the permissions to access `server.policy` for using CDI

For details on `server.policy`, see *2.2.4 server.policy (Security policy file for J2EE servers)* in the *uCosminexus Application Server Definition Reference Guide*.

The following figure shows the *Application-Server-installation-directory*\CC\examples\bv_cdi configuration.

Figure L–47: bv_cdi directory configuration



#: It is a shell script in the UNIX version. There is no extension.

(2) Execution procedure of the sample program of Bean Validation and CDI integration application

The procedure for executing the sample program is as follows:

(a) Compiling the sample program

Use the batch file (*compile.bat*) provided with the sample to compile the sample program. This batch file creates a WAR file (*paramcheck.war*) and EAR file (*paramcheck.ear*).

(b) Setting the J2EE server

See *Appendix L.1(1) Setting the J2EE server*.

(c) Customizing the J2EE server

See *Appendix L.1(2) Customizing the J2EE server*.

(d) Starting the J2EE server

See *Appendix L.1(3) Starting the J2EE server*.

(e) Deploying the application

See [Appendix L.1\(5\) Importing, setting and starting the application.](#)

(f) Executing the application

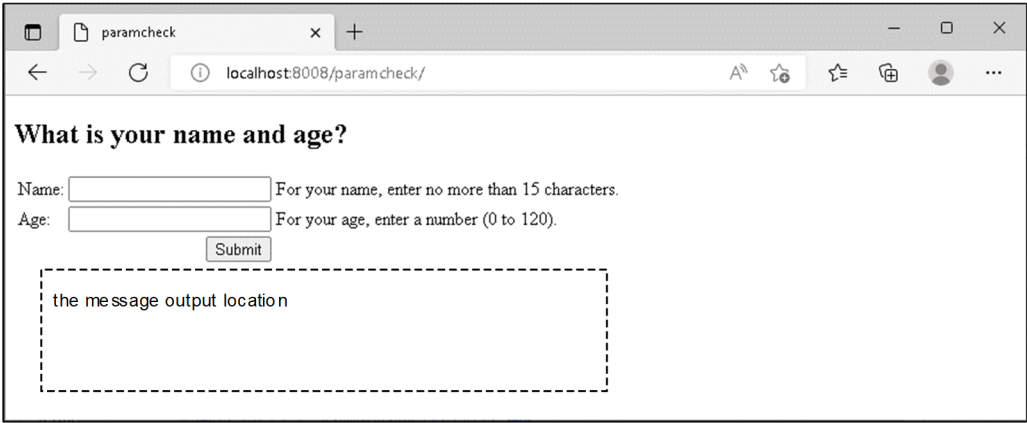
Start the browser and specify the following string in the URL to execute the application:

```
http://computer-name:port-number/paramcheck/
```

If the port number has been customized, specify the customized *port-number*.

The following figure shows an example execution of the sample program of Bean Validation and CDI integration application.

Figure L–48: Example execution of the sample program of CDI integration application



Click the **Submit** button to display the validation results in the message output location.

The following table describes the message output conditions and the output messages.

Table L–8: Message output conditions and the output messages

No.	Condition	Output message ^{#1}
1	When the validation is successful	Validation Successful!
2	When a string of 16 or more characters is entered in the Name textbox ^{#2}	size must be between 0 and 15 The name must be no more than 15 characters.
3	When a value smaller than 0 is entered in the Age textbox ^{#2}	must be greater than or equal to 0 The age is less than the minimum value. Enter a number from 0 through 120.
4	When a value greater than 120 is entered in the Age textbox ^{#2}	must be less than or equal to 120 The age exceeds the maximum value. Enter a number from 0 through 120.
5	When a value that cannot be converted into a number is entered in the Age textbox ^{#2}	For your age, enter a number (0 to 120).
6	When an exception occurs in the validation processing	Validation Failed.

^{#1}

If there are multiple causes of validation failure, the respective messages are output consecutively.

^{#2}

No.6 "When an exception occurs in the validation processing" is not output for the messages output due to these conditions.

(g) Un-deploying the application

See *Appendix L.1(6) Stopping and deleting the application.*

(h) Stopping the J2EE server

See *Appendix L.1(7) Stopping the J2EE server.*

M. Glossary

Terminology used in this manual

For the terms used in the manual, see the *uCosminexus Application Server and BPM/ESB Platform Terminology Guide*.

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