

JP1 Version 13 for UNIX Systems

**JP1/File Transmission Server/FTP Description,
Reference and Operator's Guide**

3021-3-L60(E)

Notices

■ Relevant program products

P-1M41-94DL JP1/File Transmission Server/FTP 13-00 (for AIX)

P-8441-94DL JP1/File Transmission Server/FTP 13-00 (for Linux)

■ Trademarks

HITACHI, JP1 are either trademarks or registered trademarks of Hitachi, Ltd. in Japan and other countries.

IBM, AIX are trademarks of International Business Machines Corporation, registered in many jurisdictions worldwide.

Itanium is a trademark of Intel Corporation or its subsidiaries.

Linux is the registered trademark of Linus Torvalds in the U.S. and other countries.

Microsoft is a trademark of the Microsoft group of companies.

Oracle and Java are registered trademarks of Oracle and/or its affiliates.

Red Hat is a registered trademark of Red Hat, Inc. in the United States and other countries.

All SPARC trademarks are used under license and are trademarks or registered trademarks of SPARC International, Inc., in the United States and other countries. Products bearing SPARC trademarks are based upon an architecture developed by Sun Microsystems, Inc.

UNIX is a trademark of The Open Group.

Windows is a trademark of the Microsoft group of companies.

Windows Server is a trademark of the Microsoft group of companies.

Other company and product names mentioned in this document may be the trademarks of their respective owners.

Throughout this document Hitachi has attempted to distinguish trademarks from descriptive terms by writing the name with the capitalization used by the manufacturer, or by writing the name with initial capital letters. Hitachi cannot attest to the accuracy of this information. Use of a trademark in this document should not be regarded as affecting the validity of the trademark.

This product includes software developed by the Apache Software Foundation (<http://www.apache.org/>).

This product includes software developed by IAIK of Graz University of Technology.

This software and documentation is based in part on BSD Networking Software, Release 1 licensed from The Regents of the University of California. We acknowledge the role of the Computer Systems Research Group and the Electrical Engineering and Computer Sciences Department of the University of California at Berkeley in its development.

1. This product includes software developed by the OpenSSL Project for use in the OpenSSL Toolkit. (<http://www.openssl.org/>)

2. This product includes cryptographic software written by Eric Young (eay@cryptsoft.com)

3. This product includes software written by Tim Hudson (tjh@cryptsoft.com)

4. This product includes the OpenSSL Toolkit software used under OpenSSL License and Original SSLeay License. OpenSSL License and Original SSLeay License are as follow:

LICENSE ISSUES

=====

The OpenSSL toolkit stays under a double license, i.e. both the conditions of the OpenSSL License and the original SSLeay license apply to the toolkit.

See below for the actual license texts.

OpenSSL License

```
-----
/* =====
* Copyright (c) 1998-2018 The OpenSSL Project. All rights reserved.
*
* Redistribution and use in source and binary forms, with or without
* modification, are permitted provided that the following conditions
* are met:
*
* 1. Redistributions of source code must retain the above copyright
* notice, this list of conditions and the following disclaimer.
*
* 2. Redistributions in binary form must reproduce the above copyright
* notice, this list of conditions and the following disclaimer in
* the documentation and/or other materials provided with the
* distribution.
*
* 3. All advertising materials mentioning features or use of this
* software must display the following acknowledgment:
* "This product includes software developed by the OpenSSL Project
* for use in the OpenSSL Toolkit. (http://www.openssl.org/)"
*
* 4. The names "OpenSSL Toolkit" and "OpenSSL Project" must not be used to
* endorse or promote products derived from this software without
* prior written permission. For written permission, please contact
* openssl-core@openssl.org.
*
* 5. Products derived from this software may not be called "OpenSSL"
* nor may "OpenSSL" appear in their names without prior written
* permission of the OpenSSL Project.
*
* 6. Redistributions of any form whatsoever must retain the following
* acknowledgment:
* "This product includes software developed by the OpenSSL Project
* for use in the OpenSSL Toolkit (http://www.openssl.org/)"
*
* THIS SOFTWARE IS PROVIDED BY THE OpenSSL PROJECT ``AS IS'' AND ANY
* EXPRESSED OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE
* IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR
* PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE OpenSSL PROJECT OR
* ITS CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL,
* SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT
```

```

* NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES;
* LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION)
* HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT,
* STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE)
* ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED
* OF THE POSSIBILITY OF SUCH DAMAGE.
* =====
*
* This product includes cryptographic software written by Eric Young
* (eay@cryptsoft.com). This product includes software written by Tim
* Hudson (tjh@cryptsoft.com).
*
*/
Original SSLeay License
-----
/* Copyright (C) 1995-1998 Eric Young (eay@cryptsoft.com)
* All rights reserved.
*
* This package is an SSL implementation written
* by Eric Young (eay@cryptsoft.com).
* The implementation was written so as to conform with Netscapes SSL.
*
* This library is free for commercial and non-commercial use as long as
* the following conditions are aheared to. The following conditions
* apply to all code found in this distribution, be it the RC4, RSA,
* lhash, DES, etc., code; not just the SSL code. The SSL documentation
* included with this distribution is covered by the same copyright terms
* except that the holder is Tim Hudson (tjh@cryptsoft.com).
*
* Copyright remains Eric Young's, and as such any Copyright notices in
* the code are not to be removed.
* If this package is used in a product, Eric Young should be
given attribution
* as the author of the parts of the library used.
* This can be in the form of a textual message at program startup or
* in documentation (online or textual) provided with the package.
*
* Redistribution and use in source and binary forms, with or without
* modification, are permitted provided that the following conditions
* are met:
* 1. Redistributions of source code must retain the copyright
* notice, this list of conditions and the following disclaimer.

```

```

* 2. Redistributions in binary form must reproduce the above copyright
* notice, this list of conditions and the following disclaimer in the
* documentation and/or other materials provided with the distribution.
* 3. All advertising materials mentioning features or use of this software
* must display the following acknowledgement:
* "This product includes cryptographic software written by
* Eric Young (eay@cryptsoft.com)"
* The word 'cryptographic' can be left out if the routines from the library
* being used are not cryptographic related :-).
* 4. If you include any Windows specific code (or a derivative thereof) from
* the apps directory (application code) you must include an acknowledgement:
* "This product includes software written by Tim Hudson (tjh@cryptsoft.com)"
*
* THIS SOFTWARE IS PROVIDED BY ERIC YOUNG ``AS IS'' AND
* ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE
* IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE
* ARE DISCLAIMED. IN NO EVENT SHALL THE AUTHOR OR CONTRIBUTORS BE LIABLE
* FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL
* DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS
* OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION)
* HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT
* LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY
* OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF
* SUCH DAMAGE.
*
* The licence and distribution terms for any publically available version or
* derivative of this code cannot be changed. i.e. this code cannot simply be
* copied and put under another distribution licence
* [including the GNU Public Licence.]
*/

```

Java is a registered trademark of Oracle and/or its affiliates.



■ Microsoft product screen shots

Microsoft product screen shots reprinted with permission from Microsoft Corporation.

■ Restrictions

Information in this document is subject to change without notice and does not represent a commitment on the part of Hitachi. The software described in this manual is furnished according to a license agreement with Hitachi. The license agreement contains all of the terms and conditions governing your use of the software and documentation, including all warranty rights, limitations of liability, and disclaimers of warranty.

Material contained in this document may describe Hitachi products not available or features not available in your country.

No part of this material may be reproduced in any form or by any means without permission in writing from the publisher.

■ Issued

Jun. 2023: 3021-3-L60(E)

■ Copyright

All Rights Reserved. Copyright (C) 2019, 2023, Hitachi, Ltd.

Summary of amendments

The following table lists changes in this manual (3021-3-L60(E)) and product changes related to this manual.

Changes	Location
The following OSs were deleted from the supported OSs: <ul style="list-style-type: none">• HP-UX• Solaris	--
Operation until 2099 was made possible.	--
Product has been converted to 64-bit.	--

Legend:

--: Not applicable

In addition to the above changes, minor editorial corrections were made.

Preface

This manual describes the functions of and explains how to operate JP1/File Transmission Server/FTP.

In this manual, JP1/File Transmission Server/FTP is abbreviated as *JP1/FTP*.

■ Intended readers

This manual is intended for system administrators of systems that use JP1/FTP to transmit files, and the system operators who operate and maintain such systems. Note that this manual assumes that readers have the following knowledge:

- Knowledge about UNIX (AIX, and Linux)
- Knowledge about TCP/IP
- Knowledge about FTP protocol
- Knowledge about FTPS protocol
- Knowledge about PKI

■ Conventions: Fonts and symbols

The following table explains the text formatting conventions used in this manual:

Text formatting	Convention
Bold	Bold characters indicate text in a window, other than the window title. Such text includes menus, menu options, buttons, radio box options, or explanatory labels. For example: <ul style="list-style-type: none">• From the File menu, choose Open.• Click the Cancel button.• In the Enter name entry box, type your name.
<i>Italic</i>	Italic characters indicate a placeholder for some actual text to be provided by the user or system. For example: <ul style="list-style-type: none">• Write the command as follows: <code>copy source-file target-file</code>• The following message appears: A file was not found. (file = <i>file-name</i>) Italic characters are also used for emphasis. For example: <ul style="list-style-type: none">• Do <i>not</i> delete the configuration file.
Monospace	Monospace characters indicate text that the user enters without change, or text (such as messages) output by the system. For example: <ul style="list-style-type: none">• At the prompt, enter <code>dir</code>.• Use the <code>send</code> command to send mail.• The following message is displayed: <code>The password is incorrect.</code>

The following table explains the symbols used in this manual:

Symbol	Convention
	In syntax explanations, a vertical bar separates multiple items, and has the meaning of OR. For example:

Symbol	Convention
	A B C means A, or B, or C.
{ }	In syntax explanations, curly brackets indicate that only one of the enclosed items is to be selected. For example: { A B C } means only one of A, or B, or C.
[]	In syntax explanations, square brackets indicate that the enclosed item or items are optional. For example: [A] means that you can specify A or nothing. [B C] means that you can specify B, or C, or nothing.
. . .	In coding, an ellipsis (. . .) indicates that one or more lines of coding have been omitted. In syntax explanations, an ellipsis indicates that the immediately preceding item can be repeated as many times as necessary. For example: A, B, B, . . . means that, after you specify A, B, you can specify B as many times as necessary.
()	Parentheses indicate the range of items to which the vertical bar () or ellipsis (. . .) is applicable.
(())	Double parentheses enclose the range of values that can be specified.
<< >>	Double angle brackets enclose the default value.

■ Conventions: Version numbers

The version numbers of Hitachi program products are usually written as two sets of two digits each, separated by a hyphen. For example:

- Version 1.00 (or 1.0) is written as 01-00.
- Version 2.05 is written as 02-05.
- Version 2.50 (or 2.5) is written as 02-50.
- Version 12.25 is written as 12-25.

The version number might be shown on the spine of a manual as *Ver. 2.00*, but the same version number would be written in the program as *02-00*.

Contents

Notices 2

Summary of amendments 7

Preface 8

1 Overview of JP1/FTP 16

- 1.1 Features 17
- 1.2 Functions 18
 - 1.2.1 File transmission function 18
 - 1.2.2 Operations-Manager function 19
 - 1.2.3 JP1 program linkage function 19
- 1.3 Flow of JP1/FTP operations 21
 - 1.3.1 Registering JP1/FTP definition information 21
 - 1.3.2 Transmitting a file 22
 - 1.3.3 Saving and recovering JP1/FTP settings 23
 - 1.3.4 Checking the JP1/FTP definition information for another host 24

2 Installation and Setup 26

- 2.1 JP1/FTP system configuration 27
 - 2.1.1 Basic system configuration 27
- 2.2 Installing and uninstalling 28
- 2.3 Setting up 29
 - 2.3.1 Setting the path 29
 - 2.3.2 Setting the language type 29
 - 2.3.3 Setting the port numbers 30
 - 2.3.4 Setting the system log 31
 - 2.3.5 Creating environments in which names can be resolved 31
- 2.4 Starting and terminating JP1/FTP 32
 - 2.4.1 Starting and terminating the JP1/FTP daemon 32
 - 2.4.2 Starting and terminating the Operations-Manager Agent 34
 - 2.4.3 Starting and terminating the log daemon 37

3 File Transmission by JP1/FTP 40

- 3.1 Defining an environment for JP1/FTP 41
 - 3.1.1 Defining an environment for JP1/FTP 41
 - 3.1.2 Checking the JP1/FTP environment 43
 - 3.1.3 Using environment variables to define a JP1/FTP environment 43
- 3.2 Registering the users who can log in to a JP1/FTP server 49

3.3	Registering auto-start programs	50
3.3.1	Registering auto-start programs	50
3.3.2	Deleting auto-start programs	54
3.3.3	Checking the registered information about auto-start programs	54
3.4	Registering transmission information	55
3.4.1	Registering transmission information onto a transmission card	55
3.4.2	Changing the information registered on a transmission card	59
3.4.3	Deleting transmission cards	60
3.4.4	Checking the contents of a transmission card	60
3.5	Transmitting files	61
3.5.1	Executing transmission by specifying a transmission card (Select Card method of file transmission)	61
3.5.2	Executing transmission by entering a transmission card (Enter Information method of file transmission)	61
3.6	Checking the transmission logs	63
3.7	Saving and recovering JP1/FTP settings	66
3.7.1	Information that can be saved and recovered	66
3.7.2	Saving and recovering JP1/FTP settings	68
3.8	Outputting definition information as text	70
3.8.1	Outputting definition information as text	70
3.9	Function for controlling remote logins	71
3.9.1	How to specify	71
3.9.2	Examples of definition	71
3.9.3	Notes	72
3.10	Event log function	74
3.10.1	How to specify	74
3.10.2	Starting output of event logs to a file	76
3.10.3	Stopping output of event logs to a file	76
3.11	File transmission in the PASV mode	77
3.11.1	Registering the host name	77
3.11.2	Notes	78
3.12	Changing the maximum number of concurrent transmissions	79
3.13	Function for controlling remote host connections	81
3.13.1	Registering host names	81
3.13.2	Notes	83
3.14	Function for limiting directory access	84
3.14.1	Registering user names	84
3.14.2	User environment settings with the function for limiting directory access enabled	85
3.14.3	Notes	86
3.15	Using JP1/FTP in a multiple IP address environment	89
3.15.1	How to specify	89
3.15.2	Definitions for each function	90

3.15.3	Note	93
3.16	Collecting access logs	94
3.16.1	Settings for collecting access logs	94
3.16.2	Access log output file	94
3.16.3	Messages that are output to the access logs	94
3.17	FTP connection response message control function	96
3.17.1	Definition method	96
3.17.2	FTP connection response message that is displayed	97
3.18	Using JP1/FTP in an IPv6 environment	98
3.18.1	How to specify	98
3.18.2	Note	99
3.19	Using FTPS (at the FTP client)	100
3.19.1	Certificate and CRL	100
3.19.2	Notes about the certificate and the CRL	100
3.19.3	Definition of transmission information	100
3.20	Using FTPS (at the FTP server)	101
3.20.1	Private key and certificate	101
3.20.2	Notes about the private key and the certificate	101
3.20.3	Creating a definition file	101
4	JP1/FTP Operations Management	103
4.1	Setting up the Operations-Manager Console	104
4.1.1	Adding managed hosts	105
4.1.2	Deleting managed hosts	106
4.2	Organization and functions of the Operations-Manager Console windows	108
4.2.1	Environment Definition window	108
4.2.2	Auto-Start Program Registration window	109
4.2.3	Transmission Registration window	110
4.2.4	Log Information window	111
4.2.5	Registering the users who can log in to a JP1/FTP server window	112
4.3	Examples of Operations-Manager Console menu operations	113
4.3.1	Example of registering transmission information	113
4.3.2	Example of distributing (copying) transmission information	114
4.3.3	Example of displaying log information	114
4.3.4	Example of outputting multiple registration information items as text	115
5	Linkage with Other JP1 Programs	117
5.1	Linking to JP1/AJS3	118
5.1.1	System configuration for linking to JP1/AJS3	118
5.1.2	Specifying the settings for linking to JP1/AJS3	118
5.1.3	Performing scheduled transmissions	119
5.2	Linking to JP1/IM	124

- 5.2.1 System configuration for linking to JP1/IM 124
- 5.2.2 Specifying the settings for linking to JP1/IM 124
- 5.2.3 Starting the services 125
- 5.2.4 Monitoring transmission results by JP1/IM 125

6 Commands 126

- List of commands 127
- Details of commands 128
- ftsstart - starts the JP1/FTP daemon 129
- ftsstop - terminates the JP1/FTP daemon 130
- ftsutil - changes and displays environment information 131
- ftsautoma - registers, deletes, and displays auto-start programs 133
- ftstran - executes transmission 136
- ftsregc - registers, changes, deletes, and displays transmission information 139
- ftsregcv - displays transmission information 142
- ftshistory - displays log information 145
- ftsconsole - starts the Operations-Manager Console 148
- ftsastart - starts the Operations-Manager Agent 149
- ftsastop - terminates the Operations-Manager Agent 150
- ftslogstart - starts the log daemon 151
- ftslogstop - terminates the log daemon 152
- jftsdstatus - checks the JP1/FTP daemon status 153
- jftsastatus - checks the Operations-Manager Agent status 154
- jftslogstatus - checks the log daemon status 155

7 API Library 156

- How to use the library 157
- Example of library usage 165
- List of functions 169
- Details of functions 170
- fts_ftp_open_ex() - establish connection with the JP1/FTP daemon 171
- fts_ftp_syn_request_ex() - register transmission requests (synchronous) 173
- fts_ftp_asyn_request_ex() - register transmission requests (asynchronous) 175
- fts_ftp_event_ex() - obtain the transmission-end results 177
- fts_ftp_close() - release connection with JP1/FTP 179
- fts_ftp_get_card_info() - obtain transmission information 180
- fts_ftp_bufctoll() - reference the full_trans_size and full_trans_size_comp transmission-end structure members 181

8 Messages 182

- 8.1 Format of displayed messages and message explanations 183
- 8.2 Output format of event log messages and format of event log message explanations 184
- 8.3 Output format of access log messages and format of access log message explanations 185
- 8.4 Messages related to the JP1/FTP daemon (KDJF10xx) 186
- 8.5 Messages related to file transmission (client) (KDJF20xx) 189
- 8.6 Messages related to file transmission (server) (KDJF30xx) 191

8.7	Messages issued by the <code>ftsstop</code> command (KDJF40xx)	193
8.8	Messages issued by the <code>jftsdstatus</code> command (KDJF41xx)	195
8.9	Messages issued by the <code>ftstran</code> command (KDJF50xx)	196
8.10	Messages issued by the <code>ftsutil</code> command (KDJF51xx)	205
8.11	Messages issued by the <code>ftsregc</code> command (KDJF52xx)	214
8.12	Messages issued by the <code>ftsautoma</code> command (KDJF53xx)	224
8.13	Messages issued by the <code>ftshistory</code> command (KDJF54xx)	230
8.14	Messages issued by the <code>ftsregcv</code> command (KDJF55xx)	234
8.15	Messages issued by the Operations-Manager Agent (KDJF60xx)	237
8.16	Messages issued by the <code>ftsastop</code> command (KDJF61xx)	240
8.17	Messages issued by the <code>jftsastatus</code> command (KDJF62xx)	242
8.18	Messages issued by the <code>ftsconsole</code> command (KDJF70xx)	243
8.19	Messages related to the log daemon (KDJF90xx)	245
8.20	Messages issued by the <code>ftslogstop</code> command (KDJF91xx)	247
8.21	Messages issued by the <code>jftslogdstatus</code> command (KDJF92xx)	248
8.22	Event log messages (KDJF10xx, KDJF20xx, KDJF30xx, KDJF40xx, KDJF50xx, KDJF60xx)	249
8.23	Access log messages (KDJF31xx)	281
8.24	Details of error numbers	283

9 Troubleshooting 284

9.1	Error handling procedures	285
9.2	Types of log information	286
9.2.1	Common message log	286
9.2.2	Trace log output by JP1/FTP	286
9.3	Data to collect when a problem occurs	287
9.3.1	Log information about the operating system (OS)	287
9.3.2	Information about JP1/FTP	287
9.3.3	List of JP1/FTP processes	288
9.3.4	Operation information	289
9.3.5	Error information on screen displays	289
9.3.6	How to collect data	289

Appendixes 291

A	List of Files and Directories	292
B	Port Numbers	296
B.1	List of port numbers	296
B.2	Firewall passage directions	296
B.3	Items to check when performing transmission via a firewall	297
C	List of Processes	298
D	JP1 Events	299
D.1	List of JP1 events	299
D.2	Attributes of JP1 events	299

E	Format Files Used for Output of Definition Information	309
E.1	Creating a format file	309
F	Transmission Rejection Messages	312
F.1	For the ftstran command	312
F.2	For the server	312
G	Log Information Deletion Tool	313
G.1	Executing the tool	313
G.2	Notes	313
H	Notes about Operation	314
I	Changes in Each Version	319
I.1	Changes in 13-00	319
I.2	Changes in 12-00	319
I.3	Changes in 11-00	319
I.4	Changes in 10-10	320
I.5	Changes in 10-00	320
I.6	Changes in 09-00	320
J	Reference Material for This Manual	322
J.1	Related publications	322
J.2	Conventions: Abbreviations	322
J.3	Conventions: Acronyms	323
J.4	Conventions: KB, MB, GB, and TB	323

Index 324

1

Overview of JP1/FTP

JP1/FTP is a program for transmitting files in LAN and WAN environments. This chapter describes the features and functions of JP1/FTP. It also uses an example to explain the flow of the file transmission operations.

1.1 Features

JP1/FTP is a file transmission program that is provided with an Operations-Manager function. It uses the FTP procedure, a standard protocol for file transmission. It also enables safe transmission of files by using FTPS. Compared with the UNIX standard FTP functions, JP1/FTP provides functions that are especially useful when files are transmitted by standard applications.

- Automation of file transmission jobs
 - The job start function enables you to automate processing startup when file transmission is completed.
 - The API function enables you to send files to and receive files from user applications.
 - You can automate processing such as receiving data from a base server on a regular schedule throughout the day and then summing up the data at the end of the day.
- Management of execution status
 - By using the display and notification of file transmission status, you can take actions such as error handling.
 - You can manage the transmission status by collecting and displaying log information during file transmission.
- Scheduling transmissions

When linked to JP1/AJS3, JP1/FTP enables you to easily perform scheduled transmission for standard applications. Additionally, JP1/FTP's automated job startup enables you to automate job execution when file transmission is finished.
- Centralized monitoring by JP1/IM

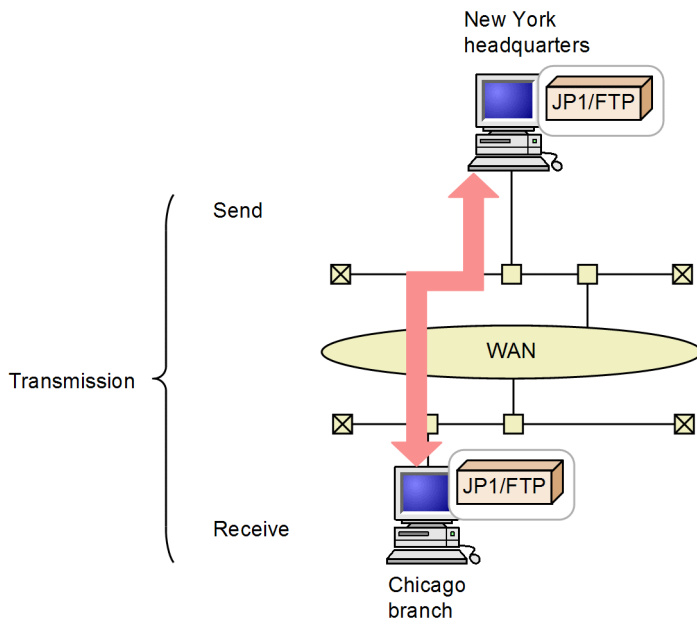
By using JP1/IM, you can achieve centralized monitoring of services starting and stopping and the termination status of transmissions (normal, warning, abnormal).
- Operations-Manager function

You can perform processing on multiple JP1/FTP hosts that are linked in a network, such as by displaying their file transmission histories and distributing and setting up various definition information.

1.2 Functions

The following figure presents an example of file transmission using JP1/FTP.

Figure 1–1: Example of file transmission (transmitting files between the Chicago branch and the New York headquarters)



Use of JP1/FTP to send and receive files between hosts is called *transmission*. The end that sends a file is called the *client*, while the end that receives the file is called the *server*. A host functions as both client and server.

JP1/FTP provides the following three functions:

- File transmission function
- Operations-Manager function
- JP1 program linkage function

The following subsections describe these functions.

1.2.1 File transmission function

(1) Using transmission cards to register and transmit transmission information

You use a *transmission card* to register the information to be transmitted. You can specify multiple transmission cards and send them in the batch mode. You can use a transmission card that has already been registered as a model by editing its contents and then registering the edited version as a new transmission card.

JP1/FTP supports the following operations:

- Transmitting multiple files in the batch mode

You can use wildcards to specify multiple files that are to be transmitted. If you set standard file naming rules, you can achieve efficient transmission, for example when business report files of multiple groups are to be transmitted on a weekly basis.

- **Checking the file size during transmission**

You can check that the size of a file is the same at the sender and the receiver. If transmission terminates successfully, any damage to the file that occurs during transmission is not detected. However, if you check the file size, any change in the file size is detected as a transmission error. This helps you achieve reliable transmission.

You can check the file size only when transmission is between JP1/FTP instances or between JP1/FTP and uCosminexus Service Platform.

(2) Automatically starting a program after file transmission

You can specify a program to start automatically when file transmission is completed, thereby achieving automation of task execution. The following types of automated program startup are supported:

- Starting a specified program when file transmission is performed by a specified user
- Starting a specified program when a specified file is transmitted

(3) Checking file transmission logs

You can check transmission logs from either the server or the client. Supported operations include viewing transmission logs and checking for errors when transmission has terminated abnormally. You can also select the information to be included in the logs, such as displaying logs of abnormal termination information only.

(4) Using an API to link with user programs

You can use an API to link with user programs to perform file transmission. This feature enables you to achieve file transmission that is appropriate to the environment in use and to automate task execution after transmission.

(5) Saving and restoring definition information

You can save the JP1/FTP definition information items and distribute them to other hosts. You can also restore definition information from the saved items. By restoring the definition information of one host at multiple different hosts, you can simplify the setup procedure.

1.2.2 Operations-Manager function

The Operations-Manager function enables you to reference the logs of multiple JP1/FTP hosts that are linked in a network and check their definition information from a single host, thereby reducing the system administrator's workload.

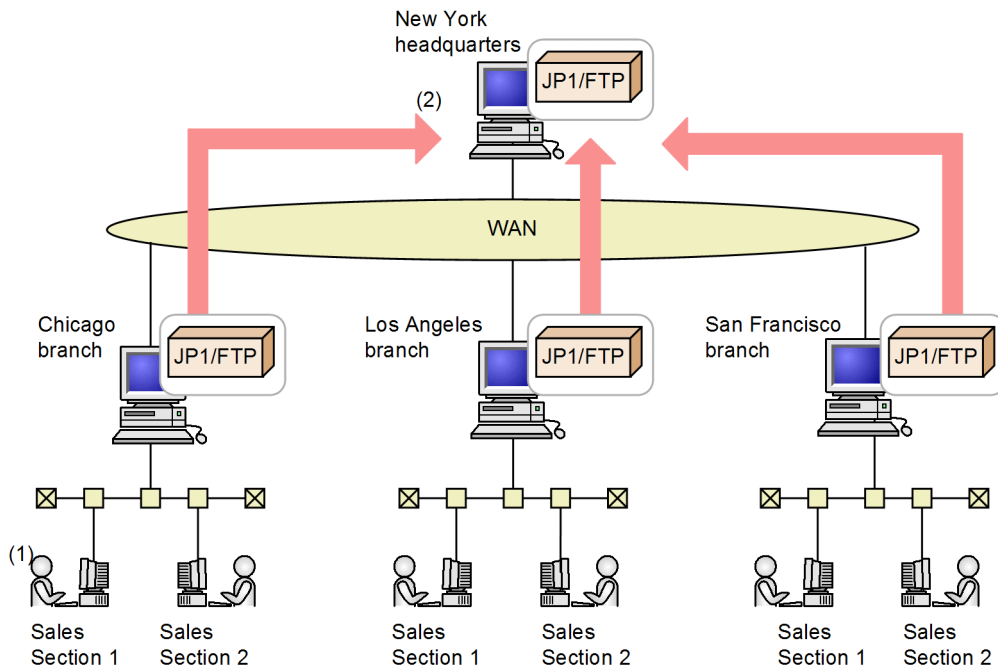
1.2.3 JP1 program linkage function

(1) Linking to JP1/AJS3 to perform scheduling transmissions

You can link to JP1/AJS3 to execute jobs when transmission occurs. This function enables you to automate execution of a series of jobs.

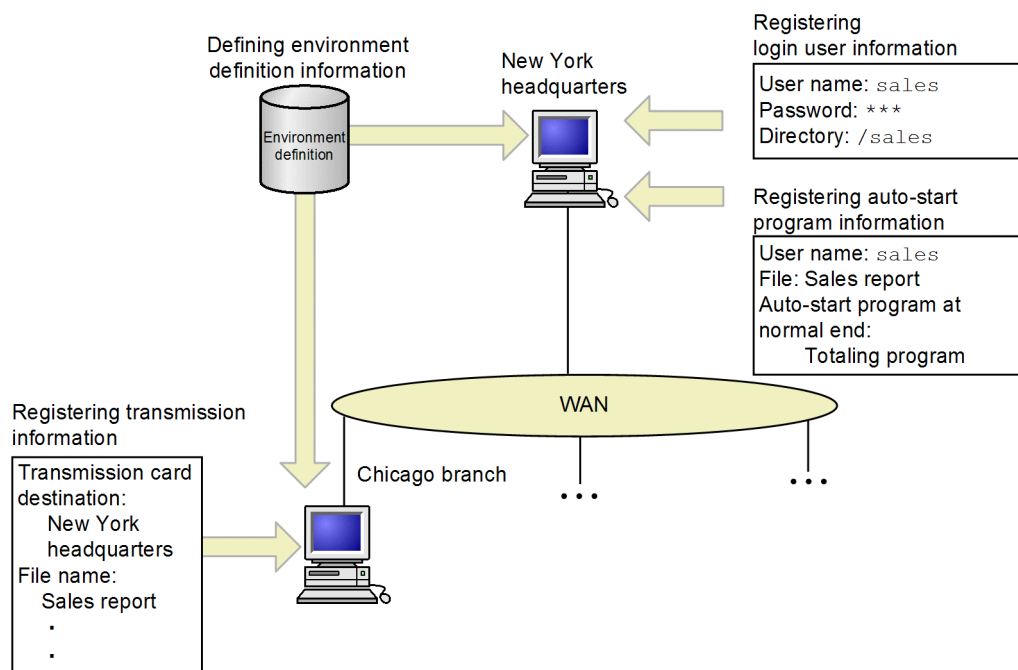
(2) Linking to JP1/IM to check transmission results

You can link to JP1/IM to check the JP1/FTP service status and the results of file transmission. Normally, JP1/IM is used to monitor operations. In the event of an error, you can use the JP1/FTP logs to check the details.



- Environment definition information
- Transmission execution information (auto-start program information, transmission information, and login user information)

Figure 1–3: Example of registering definition information

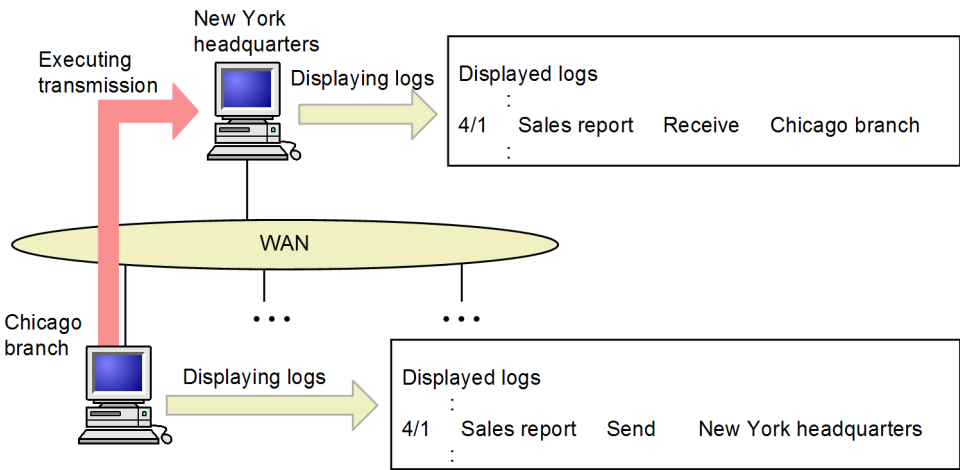


Type of information	Overview of operation	Executing host	Commands that are used
Environment definition information	Defining environment definition information: Defines a JP1/FTP environment, such as the buffer size during transmission and the log file size.	All hosts	ftsutil (see 3.1 Defining an environment for JP1/FTP and ftsutil - changes and displays environment information in 6. Commands)
Transmission execution information	Registering login user information: Registers the users who are permitted to log in to the server during file transmission. In the example, a user (sales) who logs in to the New York headquarters from the Chicago branch is registered.	Server	passwd (see 3.2 Registering the users who can log in to a JP1/FTP server)
	Registering auto-start program information: Registers programs that are started automatically at the server when file transmission is completed. The example registers at the New York headquarters that the <i>Totaling program</i> is to be started when a <i>Sales report</i> file is received from sales.	Server	ftsautoma (see 3.3 Registering auto-start programs and ftsautoma - registers, deletes, and displays auto-start programs in 6. Commands)
	Registering transmission information: Registers in transmission cards the information to be transmitted (such as remote host names and transmission file names). In this example, information about file transmission from the Chicago branch to the New York headquarters is registered.	Client	ftsregc (see 3.4 Registering transmission information and ftsregc - registers, changes, deletes, and displays transmission information in 6. Commands)

1.3.2 Transmitting a file

You register transmission information onto a *transmission card* and then execute transmission. Logs can be used to check the transmission results.

Figure 1–4: Example of file transmission

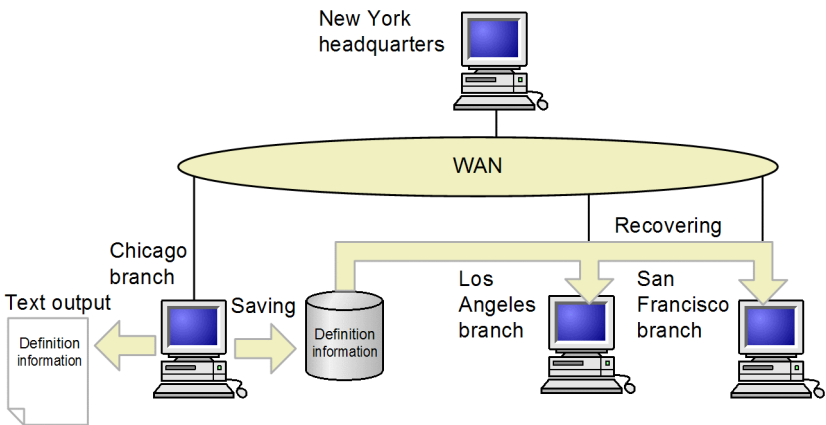


Overview of operation	Executing host	Commands that are used
<p>Transmitting a file:</p> <p>Specifies a registered transmission card and then executes transmission. You can use dialog boxes or commands to execute transmission.</p> <p>This example transmits a file from the Chicago branch to the New York headquarters.</p>	Client	<code>ftstran</code> (see 3.5 <i>Transmitting files</i> and <i>ftstran - executes transmission</i> in 6. <i>Commands</i>)
<p>Displaying logs:</p> <p>Displays logs to check the result of file transmission.</p> <p>In this example, reception logs can be checked at the New York headquarters and transmission logs can be checked at the Chicago branch.</p>	All hosts	<code>ftshistory</code> (see 3.6 <i>Checking the transmission logs</i> and <i>ftshistory - displays log information</i> in 6. <i>Commands</i>)

1.3.3 Saving and recovering JP1/FTP settings

You can save and recover JP1/FTP settings and output them in text format.

Figure 1–5: Example of saving and recovering JP1/FTP settings



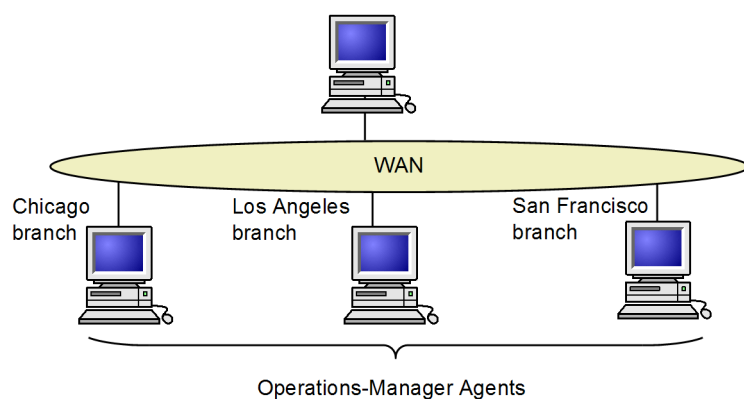
Overview of operation	Executing host	Reference
<p>Saving and recovering JP1/FTP settings: You can save the definition information created at one host and then recover it at other hosts.</p> <p>Definition information that can be saved and recovered:</p> <ul style="list-style-type: none"> • Environment settings • Auto-start program settings • Transmission settings <p>This example recovers definition information for the Chicago branch at the Los Angeles and San Francisco branches. This makes it easy to set up environments.</p>	Host where the information is registered	3.7 Saving and recovering JP1/FTP settings
<p>Outputting definition information as text: You can output the registered information in text format. For the output format, use the provided sample.</p> <p>Definition information that can be output as text:</p> <ul style="list-style-type: none"> • User-to-login settings • Auto-start program settings • Transmission settings • Log information 	Host where the information is registered	3.8 Outputting definition information as text

1.3.4 Checking the JP1/FTP definition information for another host

You can use the Operations-Manager Console to check and change the JP1/FTP definition information and to reference logs.

Figure 1–6: Example of checking the JP1/FTP definition information for another host

New York headquarters: Operations-Manager Console



Overview of operation	Executing host	Commands that are used
<p>Operations-Manager Console:</p> <p>Enables you to reference log information and to check, register, change, and delete definition information for another host.</p> <p>The end that checks definition information is called the <i>Operations-Manager Console</i>, and the end whose definition information is checked is called the <i>Operations-Manager Agent</i>.</p>	Operations-Manager Console	<p>ftsconsole</p> <p>(see 4. JP1/FTP Operations Management)</p>

Overview of operation	Executing host	Commands that are used
In the above example, the New York headquarters can reference each branch's log information and check its definition information.	Operations- Manager Console	ftsconsole (see 4. JP1/FTP Operations Management)

2

Installation and Setup

This chapter describes the setup of JP1/FTP and the procedures required before JP1/FTP can be used.

2.1 JP1/FTP system configuration

This section describes the JP1/FTP system configuration.

The following OSs are supported:

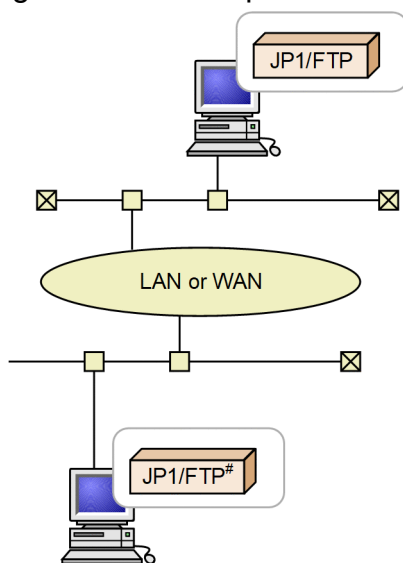
- AIX
- Linux

2.1.1 Basic system configuration

The following figure shows an example of a basic system configuration for installing JP1/FTP and transmitting files.

In addition, either the client or the server can configure FTP software other than JP1/FTP.

Figure 2–1: Example of a basic system configuration for using JP1/FTP to transmit files



#: Or the FTP softwares other than JP1/FTP

2.2 Installing and uninstalling

You use the Hitachi Program Product Installer to install and uninstall JP1/FTP.

A distribution medium is provided for installing JP1/FTP, or you can use JP1/SD to perform remote installation.

Notes

Note the following when installing and uninstalling JP1/FTP:

- Only a superuser can execute the Hitachi Program Product Installer. Therefore, log in as a superuser to the machine on which you plan to install JP1/FTP or from which you plan to uninstall it.
- If the JP1/FTP daemon, log daemon, or Operations-Manager Agent is running, stop them before you install or uninstall an upgraded version.

2.3 Setting up

After you have installed JP1/FTP, you must specify the following settings before you can start the JP1/FTP daemon:

- Path
- Language type
- Port numbers
- Environments in which names can be resolved

2.3.1 Setting the path

Before the JP1/FTP commands can be used, each user must specify the full path for the commands or must set the path that stores the commands. The superuser must also specify the path.

You use the `PATH` environment variable to set the path. The following table shows the path to be set.

Table 2–1: Path to be set

OS	Path to be set
AIX	/opt/jpl_ftp/bin
Linux	/opt/jpl_ftp/bin

2.3.2 Setting the language type

JP1/FTP can be run in a Japanese-language environment and an English-language environment. The following table shows the value to be set for the `LANG` environment variable.

For details about how to set the language type when the JP1/FTP daemon is set to automatically start, and for details about how to set the language type in an RHEL 7, CentOS 7, Oracle Linux 7, SUSE Linux 12, or SUSE Linux 15 environment, see ["2.4.1 Starting and terminating the JP1/FTP daemon"](#), ["2.4.2 Starting and terminating the Operations-Manager Agent"](#), and ["2.4.3 Starting and terminating the log daemon"](#).

Table 2–2: Value of the `LANG` environment variable

OS	Language type	Value of the <code>LANG</code> environment variable
AIX	English	C#
	Japanese (SJIS)	Ja_JP
	Japanese (EUC)	ja_JP
	Japanese (UTF-8)	JA_JP or JA_JP.UTF-8
Linux	English	C#
	Japanese (UTF-8)	ja_JP.UTF-8

#

Indicates the default language.

2.3.3 Setting the port numbers

The following shows the file to use for setting the port numbers and the port number settings.

File used for setting the port numbers

```
/etc/services
```

Settings

```
ftssdata  aaaaa-1/tcp  #Used by the JP1/FTP daemon during data transmission
ftss      aaaaa/tcp    #Used by the server during reception
ftsc      bbbbbb/tcp    #Used by the client
ftsagent  ccccc/tcp    #Used by the Operations-Manager function
ftsagentdata ddddd/tcp #Used by the Operations-Manager function
```

Legend:

aaaaa, *bbbbbb*, *ccccc*, *dddddd*: Unique port numbers. Each must be different from any port numbers used by any other programs.

- *aaaaa-1* can be set automatically, but we recommend that you specify the number explicitly, as shown above.
- *ftsagentdata* can be omitted, in which case an unused port number assigned by the OS is used.
- If you specify a port number that is within the range of port numbers automatically assigned by the OS, it is assigned by the OS when JP1/FTP or another program is running. This might result in redundant assignment.

Example of setting port numbers

```
ftssdata  20124/tcp  #Used by the JP1/FTP daemon during data transmission
ftss      20125/tcp  #Used by the server during reception
ftsc      20126/tcp  #Used by the client
ftsagent  20252/tcp  #Used for the Operations-Manager function (agent)
ftsagentdata 20364/tcp #Used for the Operations-Manager function (agent)
```

A sample file is provided in `/var/opt/jp1_fts/sys/services.model`.

Specification during transmission

To use JP1/FTP at the server, the client must specify the port number that was assigned to *ftss* during file transmission (in the above example, 20125).

When transmitting files from the OS's default FTP to JP1/FTP

If JP1/FTP is at the server and the OS's default FTP is used at the client to transmit files, the port specifications are as shown below.

Figure 2–2: Example of file transmission from the OS's default FTP to JP1/FTP

```
# ftp
ftp> open hostname1      20125
      Name of remote host  Port number specified for ftss
      :
      Omitted
      :
ftp> put localfile1      remotefile1
      File to be transmitted  Name of remote file
      :
      Omitted
      :
```

2.3.4 Setting the system log

To output to the system log, you must make OS system log settings for outputting the following facilities. For output to the system log, the environment must be set up so that the system administrator can detect errors during operation.

Table 2–3: System log-related facilities used by JP1/FTP

Name	Value of /etc/syslog.conf	Macro value	Remarks
System daemon	daemon	LOG_DAEMON	--
User process	user	LOG_USER	Enable this facility in order to output system logs for the <code>ftsstop</code> and <code>ftslogstop</code> commands.

Legend:

--: Not applicable

The following figure shows an example of a typical system log specification (`/etc/syslog.conf` file):

```
*.info /var/syslog
```

This example outputs to the `/var/syslog` file all messages whose priority (level) is a notification message or higher for all facilities.

For details, see the information for such items as `syslog`, `syslogd`, and `syslog.conf` in the OS documentation.

2.3.5 Creating environments in which names can be resolved

JP1/FTP performs host name resolution of local and remote hosts (lookup), as well as IP address resolution (reverse lookup). Set up the OS environment so that the host name and IP address can be resolved uniquely.

In an environment where the host name and IP address cannot be resolved, file transmissions might result in an error, or performance might suffer.

2.4 Starting and terminating JP1/FTP

2.4.1 Starting and terminating the JP1/FTP daemon

You must start the JP1/FTP daemon in order to use JP1/FTP.

(1) Starting the JP1/FTP daemon

To start the JP1/FTP daemon:

1. As a superuser, execute the `ftsstart` command.

The JP1/FTP daemon's message is output to the system log file and to the terminal where the command was entered.

For details about the `ftsstart` command, see *ftsstart - starts the JP1/FTP daemon* in 6. *Commands*.

To customize the startup procedure (for example, to add environment variable settings) in an RHEL 7, CentOS 7, Oracle Linux 7, SUSE Linux 12, or SUSE Linux 15 environment, replace `/etc/opt/jp1_ftp/jp1ftpd.startup` with a shell that has been customized by using `/etc/opt/jp1_ftp/jp1ftpd.startup.model`.

Automatic startup method (in Linux)

The JP1/FTP daemon is set to start automatically during system startup. If you want to customize the startup procedure, for example, to add environment variable settings, replace `/etc/opt/jp1_ftp/jp1ftpd.startup` with a shell that has been customized by using `/etc/opt/jp1_ftp/jp1ftpd.startup.model`.

To prevent the JP1/FTP daemon from starting up automatically on system startup, disable the service using `systemctl` command.

```
# systemctl disable jp1_ftp.service
```

When the JP1/FTP daemon is linked with another product such as JP1/Base, if you want the service of the JP1/FTP daemon to start after another product, set the automatic startup order by changing the service file according to the following procedure.

- (1) Copy the service file.

```
# cp -p /usr/lib/systemd/system/jp1_ftp.service /etc/systemd/system/.
```

- (2) Modify the copy of the service file (`/etc/systemd/system/jp1_ftp.service`).

Example: If you want the service to start after JP1/Base, add the service name of JP1/Base (`jp1_base.service`) to the service file as follows.

```
[Unit]
After=AAA.target BBB.target CCC.service jp1_base.service
```

- (3) Disable the service.

```
# systemctl disable jp1_ftp.service
```

- (4) Enable the service.

```
# systemctl enable jp1_ftp.service
```

Note: If you delete this product, you will need to delete the copy of the service file.

Do not directly execute `/etc/opt/jp1_fts/jp1ftpd.startup`. If you directly execute it, the OS cannot correctly recognize the state of the service, and the JP1/FTP daemon might not stop automatically when the OS stops. In addition, a problem might occur the next time the JP1/FTP daemon starts, or after the JP1/FTP daemon starts.

Automatic startup method (in AIX)

To have the JP1/FTP daemon start automatically during system startup, you must specify the settings described below. These settings take effect the next time the system is started.

1. Creating the start command

The JP1/FTP daemon is set to start automatically during system startup. If you want to customize the startup procedure, for example, to add environment variable settings, replace `/etc/opt/jp1_fts/startup` with a shell that has been customized by using `/etc/opt/jp1_fts/startup.model`. If you want to specify settings so that the JP1/FTP daemon does not start automatically, use a program (such as a text editor) to open `/etc/opt/jp1_fts/startup`, make the lines below into comments (by adding `"#"`), and then save the file.

[Before change]

```
/opt/jp1_fts/bin/jftsd 1>/var/opt/jp1_fts/sys/jftsd.log 2>&1
```

[After change]

```
: # /opt/jp1_fts/bin/jftsd 1>/var/opt/jp1_fts/sys/jftsd.log 2>&1
```

If you do not want the JP1/FTP daemon to start automatically, the settings in step 2 are not required.

2. Specifying the automatic startup setting

Use the `mkitab` command to specify the automatic startup setting:

```
# mkitab "jp1_fts:2:wait:/etc/opt/jp1_fts/startup"
```

If you use JP1-series products, you must first set JP1/Base and then set the other JP1-series products sequentially so that the automatic startup sequence is set correctly. If you use JP1/IM and JP1/AJS3, register the JP1/FTP start command after them.

For example, to have JP1/Base, JP1/IM, JP1/AJS3, and JP1/FTP start automatically in this order, execute the following commands:

```
# mkitab -i hntr2mon "jp1base:2:wait:/etc/opt/jp1base/jbs_start"
# mkitab -i jp1base "jp1cons:2:wait:/etc/opt/jp1cons/jco_start"
# mkitab -i jp1cons "jp1ajs2:2:wait:/etc/opt/jp1ajs2/jajs_start"
# mkitab -i jp1ajs2 "jp1_fts:2:wait:/etc/opt/jp1_fts/startup"
```

After you have specified the settings, use the `lsitab` command to check the settings.

Execute the following command:

```
# lsitab -a
```

Example of output

```
init:2:initdefault:
brc::sysinit:/sbin/rc.boot 3 >/dev/console 2>&1 # Phase 3 of system bo
ot
:
hntr2mon:2:once:/opt/hitachi/HNTRLib2/etc/D002start
jp1base:2:wait:/etc/opt/jp1base/jbs_start
jp1cons:2:wait:/etc/opt/jp1cons/jco_start
jp1ajs2:2:wait:/etc/opt/jp1ajs2/jajs_start
jp1_fts:2:wait:/etc/opt/jp1_fts/startup
```

(2) Terminating the JP1/FTP daemon

Once the JP1/FTP daemon has terminated, no more transmission requests will be accepted.

1. As a superuser, execute the `ftsstop` command.

The JP1/FTP daemon's message is output to the system log file and to the terminal where the command was entered.

For details about the `ftsstop` command, see [*ftsstop - terminates the JP1/FTP daemon*](#) in 6. *Commands*.

Automatic termination method (in Linux)

Once it has been installed, the JP1/FTP daemon is set to terminate automatically during system termination. If you want to customize the termination procedure, replace

`/etc/opt/jp1_fts/jp1ftpd.stop` with a shell that has been created using `/etc/opt/jp1_fts/jp1ftpd.stop.model`. You cannot change the settings so that the JP1/FTP daemon does not stop automatically. If you do change the settings so that the JP1/FTP daemon does not stop automatically, the JP1/FTP daemon cannot be stopped by using the `ftsstop` command either. Do not directly execute `/etc/opt/jp1_fts/jp1ftpd.stop`. If you directly execute it, the OS cannot correctly recognize the state of the service.

Automatic termination method (in AIX)

To have the JP1/FTP daemon terminate automatically during system termination, add the following settings to `/etc/rc.shutdown`:

Example

```
if [ -x /etc/opt/jp1_fts/stop ]
then
    /etc/opt/jp1_fts/stop
fi
```

If there is no `/etc/rc.shutdown` file, you must create it. In such a case, set the attributes of the `/etc/rc.shutdown` file as follows:

```
chmod 550 /etc/rc.shutdown
chown root /etc/rc.shutdown
chgrp shutdown /etc/rc.shutdown
```

If you use JP1-series products, you must set this termination processing so that it executes before the termination processing for JP1/Base and JP1/AJS3.

If you want to terminate programs in a different manner from what is shown above, replace `/etc/opt/jp1_fts/stop` with a shell that has been created using `/etc/opt/jp1_fts/stop.model`.

2.4.2 Starting and terminating the Operations-Manager Agent

In order to use the Operations-Manager Console, you must start the Operations-Manager Agent. By default, it is set not to start automatically. If you are not going to use the Operations-Manager functionality, you do not need to specify start or stop settings for the Operations-Manager Agent.

(1) Starting the Operations-Manager Agent

1. As a superuser, execute the `ftsastart` command.

For details about the `ftsastart` command, see [*ftsastart - starts the Operations-Manager Agent*](#) in 6. *Commands*.

Notes

- This command returns control immediately after it has moved the Operations-Manager Agent to the background. The Operations-Manager Agent then displays the start message once its services are ready. Therefore, the interval between when the command returns control and when the message is output varies.
- In Linux, if you do not set up Operations-Manager Agent to start automatically, you cannot start it by using the `ftsastart` command either.

Automatic startup method (in Linux)

To have the Operations-Manager Agent start automatically during system startup, you must specify the settings described below.

1. Creating the start command

If you want to customize the startup procedure, for example, to add environment variable settings, replace `/etc/opt/jpl_fts/jplftpa.startup` with a shell that has been customized by using `/etc/opt/jpl_fts/jplftpa.startup.model`.

2. Specifying the startup order for this product and another product

When Operations-Manager Agent is linked with another product such as JP1/Base, if you want the service of the Operations-Manager Agent to start after another product, set the automatic startup order by changing the service file according to the following procedure.

(1) Copy the service file.

```
# cp -p /usr/lib/systemd/system/jpl_ftpa.service /etc/systemd/system/.
```

(2) Modify the copy of the service file(`/etc/systemd/system/jpl_ftpa.service`).

Example: If you want the service to start after JP1/Base, add the service name of JP1/Base (`jpl_base.service`) to the service file as follows.

```
[Unit]
After=AAA.target BBB.target CCC.service jpl_base.service
```

Note: If you delete this product, you will need to delete the copy of the service file.

3. Specifying the automatic startup setting

Use the `systemctl` command to enable the service.

```
#systemctl enable jpl_ftpa.service
```

Automatic startup method (in AIX)

To have the Operations-Manager Agent start automatically during system startup, you must specify the settings described below. These settings take effect the next time the system is started.

1. Creating the start command

Create the start command using either of the following methods:

- Use a program (such as a text editor) to open `/etc/opt/jpl_fts/startup`, delete the comment (`: #`), and then save the file.
- Replace `/etc/opt/jpl_fts/startup` with a shell that has been customized using `/etc/opt/jpl_fts/startup.model`.

2. Specifying the automatic startup setting

Use the `mkitab` command to specify the automatic startup setting:

```
# mkitab "jpl_fts:2:wait:/etc/opt/jpl_fts/startup"
```

If you use JP1-series products, you must first set JP1/Base and then set the other JP1-series products sequentially so that the automatic startup sequence is set correctly. If you use JP1/IM and JP1/AJS3, register the JP1/FTP start command after them.

For example, to have JP1/Base, JP1/IM, JP1/AJS3, and JP1/FTP start automatically in this order, execute the following commands:

```
# mkitab -i hntr2mon "jplbase:2:wait:/etc/opt/jplbase/jbs_start"
# mkitab -i jplbase "jplcons:2:wait:/etc/opt/jplcons/jco_start"
# mkitab -i jplcons "jplajs2:2:wait:/etc/opt/jplajs2/jajs_start"
# mkitab -i jplajs2 "jpl_fts:2:wait:/etc/opt/jpl_fts/startup"
```

After you have specified the settings, use the `lsitab` command to check the settings.

Execute the following command:

```
# lsitab -a
```

Example of output

```
init:2:initdefault:
brc::sysinit:/sbin/rc.boot 3 >/dev/console 2>&1 # Phase 3 of system bo
ot
:
hntr2mon:2:once:/opt/hitachi/HNTRLib2/etc/D002start
jplbase:2:wait:/etc/opt/jplbase/jbs_start
jplcons:2:wait:/etc/opt/jplcons/jco_start
jplajs2:2:wait:/etc/opt/jplajs2/jajs_start
jpl_fts:2:wait:/etc/opt/jpl_fts/startup
```

(2) Terminating the Operations-Manager Agent

1. As a superuser, execute the `ftsastop` command.

For details about the `ftsastop` command, see [*ftsastop - terminates the Operations-Manager Agent*](#) in *6. Commands*.

Automatic termination method (in Linux)

Once it has been installed, the Operations-Manager Agent is set to terminate automatically during system termination. If you want to customize the termination procedure, replace `/etc/opt/jpl_fts/jplftpa.stop` with a shell that has been created using `/etc/opt/jpl_fts/jplftpa.stop.model`. You cannot change the settings so that the Operations-Manager Agent does not stop automatically. If you do change the settings so that the Operations-Manager Agent does not stop automatically, the Operations-Manager Agent cannot be stopped by using the `ftsastop` command either.

Do not directly execute `/etc/opt/jpl_fts/jplftpa.stop`. If you directly execute it, the OS cannot correctly recognize the state of the service.

Automatic termination method (in AIX)

To have the Operations-Manager Agent terminate automatically during system termination, add the following settings to `/etc/rc.shutdown`. If these settings have already been added for automatic termination of the JP1/FTP daemon, there is no need to add them again.

Example

```
if [ -x /etc/opt/jpl_fts/stop ]
then
    /etc/opt/jpl_fts/stop
fi
```

If there is no `/etc/rc.shutdown` file, you must create it. In such a case, set the attributes of the `/etc/rc.shutdown` file as follows:

```
chmod 550 /etc/rc.shutdown
chown root /etc/rc.shutdown
chgrp shutdown /etc/rc.shutdown
```

If you use JP1-series products, you must set this termination processing so that it executes before the termination processing for JP1/Base and JP1/AJS3.

If you want to terminate programs in a different manner from what is shown above, replace `/etc/opt/jp1_fts/stop` with a shell that has been created using `/etc/opt/jp1_fts/stop.model`.

2.4.3 Starting and terminating the log daemon

In order to receive event logs, you must start the log daemon.

(1) Starting the log daemon

1. As a superuser, execute the `ftslogstart` command.

The log daemon's message is output to the system log file and to the terminal where the command was entered.

For details about the `ftslogstart` command, see *ftslogstart - starts the log daemon* in 6. *Commands*.

Automatic startup method (in Linux)

The log daemon is set to start automatically during system startup. If you want to customize the startup procedure, for example, to add environment variable settings, replace `/etc/opt/jp1_fts/jp1ftplogd.startup` with a shell that has been customized by using `/etc/opt/jp1_fts/jp1ftplogd.startup.model`.

To prevent the log daemon from starting up automatically on system startup, disable the service using `systemctl` command.

```
# systemctl disable jp1_ftplogd.service
```

When the log daemon is linked with another product such as JP1/Base, if you want the service of the log daemon to start after another product, set the automatic startup order by changing the service file according to the following procedure.

- (1) Copy the service file.

```
# cp -p /usr/lib/systemd/system/jp1_ftplogd.service /etc/systemd/system/.
/.
```

- (2) Modify the copy of the service file (`/etc/systemd/system/jp1_ftplogd.service`).

Example: If you want the service to start after JP1/Base, add the service name of JP1/Base (`jp1_base.service`) to the service file as follows.

```
[Unit]
After=AAA.target BBB.target CCC.service jp1_base.service
```

- (3) Disable the service.

```
# systemctl disable jp1_ftplogd.service
```

(4) Enable the service.

```
# systemctl enable jpl_ftplogd.service
```

Note: If you delete this product, you will need to delete the copy of the service file.

Do not directly execute `/etc/opt/jpl_fts/jplftplogd.startup`.

If you directly execute it, the OS cannot correctly recognize the state of the service, and the log daemon might not stop automatically when the OS stops. In addition, a problem might occur the next time the log daemon starts, or after the log daemon starts.

Automatic startup method (in AIX)

To have the log daemon start automatically during system startup, you must specify the settings described below. These settings take effect the next time the system is started.

1. Creating the start command

The log daemon is set to start automatically during system startup. If you want to customize the startup procedure, for example, to add environment variable settings, replace `/etc/opt/jpl_fts/startup` with a shell that has been customized by using `/etc/opt/jpl_fts/startup.model`. If you want to specify settings so that the log daemon does not start automatically, use a program (such as a text editor) to open `/etc/opt/jpl_fts/startup`, make the lines below into comments (by adding `"#"`), and then save the file.

[Before change]

```
/opt/jpl_fts/bin/jftslogd 1>/var/opt/jpl_fts/sys/jftslogd.log 2>&1
```

[After change]

```
: # /opt/jpl_fts/bin/jftslogd 1>/var/opt/jpl_fts/sys/jftslogd.log 2>&1
```

If you do not want the log daemon to start automatically, the settings in step 2 are not required.

2. Specifying the automatic startup setting

Use the `mkitab` command to specify the automatic startup setting:

```
# mkitab "jpl_fts:2:wait:/etc/opt/jpl_fts/startup"
```

If you use JP1-series products, you must first set JP1/Base and then set the other JP1-series products sequentially so that the automatic startup sequence is set correctly. If you use JP1/IM and JP1/AJS3, register the JP1/FTP start command after them.

For example, to have JP1/Base, JP1/IM, JP1/AJS3, and JP1/FTP start automatically in this order, execute the following commands:

```
# mkitab -i hntr2mon "jplbase:2:wait:/etc/opt/jplbase/jbs_start"
# mkitab -i jplbase "jplcons:2:wait:/etc/opt/jplcons/jco_start"
# mkitab -i jplcons "jplajs2:2:wait:/etc/opt/jplajs2/jajs_start"
# mkitab -i jplajs2 "jpl_fts:2:wait:/etc/opt/jpl_fts/startup"
```

After you have specified the settings, use the `lsitab` command to check the settings.

Execute the following command:

```
# lsitab -a
```

Example of output

```
init:2:initdefault:
brc::sysinit:/sbin/rc.boot 3 >/dev/console 2>&1 # Phase 3 of system bo
ot
```

```
hntr2mon:2:once:/opt/hitachi/HNTRLib2/etc/D002start
jplbase:2:wait:/etc/opt/jplbase/jbs_start
jplcons:2:wait:/etc/opt/jplcons/jco_start
jplajs2:2:wait:/etc/opt/jplajs2/jajs_start
jpl_fts:2:wait:/etc/opt/jpl_fts/startup
```

(2) Terminating the log daemon

Once the log daemon has terminated, no more event logs will be received.

1. As a superuser, execute the `ftslogstop` command.

The log daemon's message is output to the system log file and to the terminal where the command was entered.

For details about the `ftslogstop` command, see *ftslogstop - terminates the log daemon* in 6. *Commands*.

Automatic termination method (in Linux)

Once it has been installed, the log daemon is set to terminate automatically during system termination. If you want to customize the termination procedure, replace `/etc/opt/jpl_fts/jplftplogd.stop` with a shell that has been created using `/etc/opt/jpl_fts/jplftplogd.stop.model`. You cannot change the settings so that the log daemon does not stop automatically. If you do change the settings so that the log daemon does not stop automatically, the log daemon cannot be stopped by using the `ftslogstop` command either.

Do not directly execute `/etc/opt/jpl_fts/jplftplogd.stop`. If you directly execute it, the OS cannot correctly recognize the state of the service.

Automatic termination method (in AIX)

To have the log daemon terminate automatically during system termination, add the following settings to `/etc/rc.shutdown`:

Example

```
if [ -x /etc/opt/jpl_fts/stop ]
then
    /etc/opt/jpl_fts/stop
fi
```

If there is no `/etc/rc.shutdown` file, you must create it. In such a case, set the attributes of the `/etc/rc.shutdown` file as follows:

```
chmod 550 /etc/rc.shutdown
chown root /etc/rc.shutdown
chgrp shutdown /etc/rc.shutdown
```

If you use JP1-series products, you must set this termination processing so that it executes before the termination processing for JP1/Base and JP1/AJS3.

If you want to terminate programs in a different manner from what is shown above, replace `/etc/opt/jpl_fts/stop` with a shell that has been created using `/etc/opt/jpl_fts/stop.model`.

3

File Transmission by JP1/FTP

This chapter describes how to use JP1/FTP to transmit files.

3.1 Defining an environment for JP1/FTP

You must specify the environment definition for JP1/FTP.

To specify an environment definition, you must use the `ftsutil` command on the server and client.

3.1.1 Defining an environment for JP1/FTP

The default values are set during installation. We recommend that you change these values only if necessary.

The following table lists and describes each item in the environment definition.

Table 3–1: Items in the environment definition

Item	Setting
No. of file transmissions to log ((0 to 1,000,000)) <<2,000>>	<p>Specifies the number of log entries to retain. One file transmission is counted as one entry. When the number of files transmitted exceeds the number of entries being retained, the oldest information is overwritten.</p> <p>Because the size of one entry is 1,500 bytes, the required file size equals <i>number of retained entries</i> x 1,500 bytes. (In Linux (IPF version), the size of one entry is 1,536 bytes, so the required file size equals <i>number of retained entries</i> x 1,536 bytes.)</p> <p>Increasing the number of log entries to be retained:</p> <p>If you increase the number of log entries to be retained, it might take longer to display logs, depending on the CPU and hardware performance as well as on the amount of memory that is installed. If you want to retain log information over a long period of time, we recommend that you copy the following log information file and then store the copy.</p> <p>Log information file:</p> <ul style="list-style-type: none">• <code>/var/opt/jp1_fts/sys/history</code>
Size of protocol trace file ((4 to 10,000 KB)) <<50 KB>>	<p>Specifies the size of the file to be used to collect FTP protocol trace information. The protocol trace file enables you to check command operation at the FTP level. When the amount of trace information exceeds the specified size, the oldest information is overwritten.</p> <p>The required disk capacity equals <i>specified size</i> x <i>maximum number of concurrent transmissions</i> x 2.</p> <p>You can use a text editor to view the trace file.</p>
Size of module trace file ((4 to 10,000 KB)) <<50 KB>>	<p>Specifies the size of the file to be used to collect module trace information. A module trace is collected as maintenance information. When the amount of trace information exceeds the specified size, the oldest information is overwritten.</p> <p>The required disk capacity equals <i>specified size</i> x <i>maximum number of concurrent transmissions</i> x 2 + <i>specified size</i> x 10.</p> <p>The module trace file cannot be viewed.</p>
Size of access log file ((0 to 100 MB)) <<0 MB>>	<p>Specify the size of the file to use for storing access logs. When the access log information exceeds the specified size, the old information is backed up and a new file is created. If the file for the backup already exists, that file is overwritten. For details about the access logs, see 3.16 Collecting access logs. You can use a text editor to view the access logs.</p>
No. of retries (When connecting to a host) Retry interval (When connecting to a host)	<p>Specifies the number of and interval for retries when connection for file transmission cannot be established (for a reason such as busy status). Retries are attempted at a server whenever a <code>connect</code> system call results in an error, and at a client when a <code>connect</code> system call results in one of the following errors:</p> <p>ETIMEDOUT, ECONNREFUSED, ENETUNREACH, EADDRINUSE, EINPROGRESS, EALREADY, ENOBUFS, ENETDOWN</p> <p>1. No. of retries (When connecting to a host) ((0 to 100,000)) <<5>></p> <p>If you specify 0, no retries will be attempted.</p>

Item	Setting
No. of retries (When connecting to a host) Retry interval (When connecting to a host)	2. Retry interval (When connecting to a host) ((0 to 86,400 seconds)) <<2 seconds>> If you specify 0, retries are attempted immediately (without any interval between retry attempts).
Time-limit waiting to send data ((1 to 3,600 seconds)) <<60 seconds>>	Specifies the amount of time to wait for the sending buffer to become available after a package has been sent during data transmission. If the buffer is still not available when the specified amount of time elapses, the transmission terminates abnormally.
Time-limit waiting to receive data ((1 to 3,600 seconds)) <<60 seconds>>	Specifies the amount of time to wait for a packet to be received during data reception (a packet is transmitted by a remote target). If no data is received after the specified amount of time has elapsed, the transmission terminates abnormally.
Server/Client	<ul style="list-style-type: none"> • Size of sending buffer/Size of receiving buffer ((512 to 262,144 bytes)) <<40,960 bytes>> Specifies the size of the socket buffer for sending and receiving (SO_SNDBUF and SO_RCVBUF). Note that various factors affect transmission efficiency, such as the line speed, usage status, and CPU performance. Specify values as appropriate for the system being used. • Time-limit for idle connection ((30 to 7,200 seconds)) <<900 seconds>> If there is no request from the client for a specific period of time, the server releases the connection with the client. This item specifies the amount of time before the connection is to be released. • File creation mask ((octal number from 000 to 777)) <<027>> Specifies the file mode creation mask for a receive file. This setting is used when a new file is created. If a file with the same name already exists, its file mode remains unchanged. Example: To create a file with user=rw, group=rw, and other=r: 113 To create a file with user=r, group=r, and other=r: 333 For details about the mode, see the documentation that explains the umask and chmod commands. Note that a file with execution permission (x) cannot be created.
Link with JP1/IM	Specifies that JP1 events are to be issued. If this item is specified, JP1 events will be issued when the service status changes and when transmission ends. During transmission as a superuser, events are issued with superuser permissions. During transmission as an ordinary user, events are issued as ordinary user permissions. If you link to JP1/IM, you can monitor the status on JP1/IM. For details about linkage with JP1/IM, see 5.2 Linking to JP1/IM . By default, this item is not specified.
Output transmission result to system log	Specifies that the result of file transmission (normal, error, warning) is to be output to the system log. If this item is specified, messages with the following message IDs are output: <ul style="list-style-type: none"> • KDJF2001-I • KDJF2002-E • KDJF2003-W • KDJF3001-I • KDJF3002-E • KDJF3003-W Messages with all other message IDs are always output to the system log, regardless of this specification. By default, this item is not specified.
Maximum number of concurrent transmissions ((64 to 128)) <<64>>	Specify the permitted maximum number of concurrent transmissions. This is the same as the permitted maximum number of concurrent FTP connections (control). Any transmission requests in excess of this value will be rejected. For details about the maximum number of concurrent transmissions, see 3.12 Changing the maximum number of concurrent transmissions .
FTP connection response message control	Specifies that the format of FTP connection response messages is to be changed from the default. For details about FTP connection response messages, see 3.17 FTP connection response message control function . By default, this item is not specified.

Note about the values for "No. of file transmissions to log", "Size of protocol trace file", and "Size of module trace file"

If you specify a value that is smaller than the current setting, the corresponding information files will be deleted when the service is restarted. This means that information in these files before the restart will be deleted. The log information file is backed up to the following file:

- /var/opt/jpl_fts/sys/history.old

The following figure shows an example of a command for changing definitions:

```
ftsutil -C -EH 10000 -EL CHECK
```

This command changes the following information:

- -EH: Changes the number of log entries to be retained to 10,000
- -EL: Selects the **Output transmission result to system log** option

The new settings take effect when the JP1/FTP daemon is restarted.

For details about the `ftsutil` command, see [ftsutil - changes and displays environment information](#) in 6. *Commands*.

3.1.2 Checking the JP1/FTP environment

We recommend that you check the definitions before you start the JP1/FTP daemon.

The following figure shows an example of a command for checking definitions:

```
ftsutil -L
```

For details about the `ftsutil` command, see [ftsutil - changes and displays environment information](#) in 6. *Commands*.

3.1.3 Using environment variables to define a JP1/FTP environment

You can use the OS's environment variables to define some of the JP1/FTP environment settings. The specified settings take effect when you start the JP1/FTP daemon (`jftsd`) from the environment for which you have set the environment variables. To specify for environment variables to be set when the JP1/FTP daemon automatically starts, define the environment variables in the script that automatically starts the JP1/FTP daemon.

(1) Environment variables that can be set

The following table lists and describes the environment variables that can be set.

Table 3–2: List of environment variables

Environment variable name	Value
<p><code>JP1FTS_LS_OPTION</code></p> <p>Sets the options of the <code>ls</code> command that are used for the JP1/FTP daemon's response (output) to the <code>LIST</code> command.</p>	<p>Options that can be specified in the <code>ls</code> command (maximum of 32 characters).</p> <p>The specified options are used.</p> <p>When omitted:</p> <p>The following options are used:</p> <p>In AIX: <code>-lA</code></p> <p>In Linux: <code>-lA</code></p> <p>Note:</p> <p>You must specify a hyphen (<code>-</code>) immediately before each option.</p>
<p><code>JP1FTS_LS_LANG^{#1}</code></p> <p>Sets the display language of the <code>ls</code> command that is used for the JP1/FTP daemon's response (output) to the <code>LIST</code> command.</p>	<p>Value that can be specified in the <code>LANG</code> environment variable (maximum of 32 characters).</p> <p>The specified display language is used.</p> <p>When omitted:</p> <p>The system uses the display language that is in effect when the JP1/FTP daemon starts.</p>
<p><code>JP1FTS_AUTO_STDIO</code></p> <p>Specifies the standard input/output and error output for an auto-start program (process).</p>	<p><i>path-name</i></p> <p>The specified path name is assigned for the standard input/output and for the error output.</p> <p>When omitted:</p> <p>The standard input/output and error output are placed in closed status.</p> <p>Note:</p> <p>If the standard input/output and error output cannot be opened, they are placed in closed status.</p>
<p><code>JP1FTS_AUTO_STDIO_OP</code></p> <p>When the destination is to be opened and it is specified by a path name in the environment variable <code>JP1FTS_AUTO_STDIO</code>, <code>JP1FTS_AUTO_STDIO_OP</code> specifies whether the destination will be forced open independent of the process permissions.</p>	<p>ON (specify the character string ON)</p> <p>The destination is forced open.</p> <p>When omitted:</p> <p>The open operation follows the process permissions.</p>
<p><code>JP1FTS_PRIVILEGE_ADDITION</code></p> <p>Specifies that the real user ID of an auto-start program (process) is to be set to 0.^{#2}</p>	<p>ON (specify the character string ON)</p> <p>The real user ID is set to 0.</p> <p>In the case of the Linux version, the effective user ID also becomes 0.</p> <p>When omitted:</p> <p>The real user ID is adjusted to match the actual user ID.</p>
<p><code>JP1FTS_LARGEFILE</code></p> <p>Sets the maximum size for transmission files at 4 gigabytes minus 1 byte.^{#3, #4, #7}</p>	<p>ON (specify the character string ON)</p> <p>Enables you to transmit files with a maximum size of 4 gigabytes minus 1 byte.</p> <p>When omitted:</p> <p>Files whose size is 2 gigabytes or greater cannot be transmitted.</p>
<p><code>JP1FTS_LARGEFILE2</code></p> <p>Specifies that there is to be no limit on file size for transmission (files with a size of 4 gigabytes or greater are to be allowed).^{#4, #5, #6, #7}</p>	<p>ON (specify the character string ON)</p> <p>There is no limit to the size of files that can be transmitted. The setting of the <code>JP1FTS_LARGEFILE</code> environment variable is ignored.</p> <p>When omitted:</p> <p>The setting of the <code>JP1FTS_LARGEFILE</code> environment variable is effective.</p>

Environment variable name	Value
JP1FTS_CONREFUSELOG Specifies whether to output to the access log the log information on connection requests that were rejected by the function for controlling remote host connections.	ON (specify the character string ON) Logs of rejected connection requests are output to the access log. When omitted: Rejected connection requests are not logged.
JP1FTS_CSUPPLEGROUP Specifies whether to use the secondary group at the client.	ON (specify the character string ON) The secondary group is used. When omitted: The secondary group is not used.
JP1FTS_WKPORT_ENABLE Specifies whether connection is to be permitted when a well-known port (0 to 1023) is specified in the PORT command at the FTP server.	ON (specify the character string ON) Connection to a well-known port is permitted. When omitted: Connection to a well-known port is rejected.
JP1FTS_ANOTHER_ADDRESS_ENABLE Specifies whether connection is to be permitted when the IP address specified in the PORT command at the FTP server does not belong to the client that established the control connection.	ON (specify the character string ON) Connection to an IP address that does not belong to the client that established the control connection is permitted. When omitted: Connection to an IP address that does not belong to the client that established control connection is rejected.
JP1FTS_MASK_CHMOD Specifies whether to suppress reception of the SITE CHMOD command at the FTP server. ^{#8}	ON (specify the character string ON) Reception of the SITE CHMOD command is suppressed. When omitted: Reception of the SITE CHMOD command is not suppressed.
JP1FTS_MASK_PORT Specifies whether to suppress reception of the PORT command at the FTP server. ^{#8}	ON (specify the character string ON) Reception of the PORT command is suppressed. When omitted: Reception of the PORT command is not suppressed.
JP1FTS_MASK_EPRT Specifies whether to suppress reception of the EPRT command at the FTP server. ^{#8}	ON (specify the character string ON) Reception of the EPRT command is suppressed. When omitted: Reception of the EPRT command is not suppressed.
JP1FTS_AUTO_SIGNALMASK_DELETE Specifies whether to enable reception of SIGHUP, SIGCHLD, and SIGTERM signals by the programs that start after transmission ends. ^{#9}	ON (specify the character string ON) Reception of signals is enabled. When omitted: Signals are held.
JP1FTS_C_WKPORT_ENABLE Specifies whether to permit connection when a well-known port (0 to 1023) is specified for the port number received from the FTP server after the PASV command is issued by the FTP client.	ON (specify the character string ON) Connection to well-known ports is permitted. When omitted: Connection to well-known ports is rejected.
JP1FTS_C_ANOTHER_ADDRESS_ENABLE Specifies whether to permit connection when a server (IP address) other than the server that established the control connection is specified for the IP address received from the FTP server after the PASV command is issued by the FTP client.	ON (specify the character string ON) Connection to a server other than the server that established the control connection is permitted. When omitted: Connection to a server other than the server that established the control connection is rejected.

Environment variable name	Value
JP1FTS_CLMAXOVER_MES Specifies whether to output messages to the system log when the FTP server receives requests that exceed the maximum number of concurrent transmissions.	ON (specify the character string ON) Messages are output. When omitted: Messages are not output.
JP1FTS_FILE_EXCLUSION Specifies whether to lock the files to be transmitted. ^{#10}	ON (specify the character string ON) Files to be transmitted are locked. When omitted: Files to be transmitted are not locked.
JP1FTS_RECV_SYNC Specifies whether to apply the data to the disk synchronously with the following triggers: ^{#11} <ul style="list-style-type: none"> • Receiving completion of transmitted files • Completion of writing of transmission history and event logs into files 	ON (specify the character string ON) Data is applied to the disk. When omitted: Data is not applied to the disk.
JP1FTS_HPUX_LONGPASSWORD Specifies whether HP-UX LongPassword is to be used for the FTP server.	ON (specify the character string ON) LongPassword is used. When omitted: LongPassword is not used.

#1

In AIX, due to the specification of the `ls` command, the date is displayed in English regardless of the value set for `JP1FTS_LS_LANG`.

#2

When ON is specified, an auto-start program (process) can become a superuser even if it is started as an ordinary user.

#3

Note the following about specifying ON:

- An attempt to transmit a file whose size exceeds 4 gigabytes will result in an error.
- If a file whose size is less than 4 gigabytes is transmitted to a Windows system in the ASCII mode, the size of the resulting file might exceed 4 gigabytes in the Windows system. Therefore, when JP1/FTP is used as an FTP program in a Windows system, the maximum file size set in the Windows version of JP1/FTP might be exceeded during transmission.

#4

In the following circumstances, a timeout might occur at the FTP client and could result in abnormal termination of the transmission:

- JP1/FTP-to-JP1/FTP transmission
- File transmission from an FTP server to an FTP client
- Transmission of large files
- ASCII mode
- Size checking function is used

A timeout might occur because it takes time for the FTP server to calculate the file size, resulting in a delay in transmitting the response message. If this becomes a problem, either increase the timeout value for waiting to receive data or execute transmission without using the size checking function.

#5

Although JP1/FTP does not limit the size, transmission might fail due to OS limitations.

#6

Note the following when the transmission size is 4 gigabytes or greater:

- If the size of the transmission file is to be referenced by a user program using the API library (other than in Linux (IPF version)), you must modify the API library. For details, see [7. API Library](#).
- In the list displayed by the `ftshistory` command, the columns might be shifted in the case of transmission of a large file.
- Operations-Manager Agent versions earlier than 10-00 do not support a transmission size of 4 gigabytes or greater. Consequently, if the Operations-Manager Console is connected to an Operations-Manager Agent earlier than version 10-00, and if an attempt is made to reference a transmission log whose transmission size is 4 gigabytes or greater, the displayed value will be smaller than the actual transmission size.

#7

Even if the file to be transmitted is smaller than 2 gigabytes, if there are already 2 gigabytes or more in received files, an error will occur if this environment variable is not specified on the machine where these received files are located.

#8

When ON is specified and the FTP server receives the corresponding command, it sends the message 500 '*command-name*': command not understood to the FTP client.

Help for the corresponding command is not disabled.

#9

By default, the programs that start automatically when transmission ends are started with `SIGHUP`, `SIGCHLD`, and `SIGTERM` masked with `sighold()`. Consequently, the programs that start automatically when transmission ends hold these signals when they are received.

#10

When ON is specified, you cannot receive a file that is being sent or send a file that is being received, but you can send the same file concurrently.

#11

The timing for applying data to the disk is normally determined by the OS. However, this function forcibly applies data to the disk according to the JP1/FTP timing. Be extremely careful about using this function, since enabling it might cause one of the following performance-related problems:

- The transmission speed might decline compared to when the function is disabled.
- File access by other programs might be adversely impacted.

(2) Examples of environment variable definition

(a) JP1FTS_LS_OPTION setting example

This example specifies `-lgA` in the `ls` option:

In `csh`:

```
>setenv JP1FTS_LS_OPTION -lgA
>ftsstart
```

In sh:

```
>JP1FTS_LS_OPTION=-lgA  
>export JP1FTS_LS_OPTION  
>ftsstart
```

(b) JP1FTS_LARGEFILE2 setting example

This example enables the transmission of a file exceeding 4 gigabytes.

In csh:

```
>setenv JP1FTS_LARGEFILE2 ON  
>ftsstart
```

In sh:

```
>JP1FTS_LARGEFILE2=ON  
>export JP1FTS_LARGEFILE2  
>ftsstart
```


3.2 Registering the users who can log in to a JP1/FTP server

You must register in the OS as an OS user all login users who will be logging in to the server during file transmission. JP1/FTP will reject login requests from any other users.

The maximum number of characters allowed for login user names and passwords differs depending on OS specifications and settings.

3.3 Registering auto-start programs

You can register a program to start at the server after file transmission is finished.

To register auto-start programs, you must use the `ftsautoma` command on the server.

3.3.1 Registering auto-start programs

The following features characterize auto-start programs:

- You can register different programs to start in the event of normal termination and abnormal termination of transmission.
- The time at which a specified program starts depends on how the transmission file is specified:
 - file-name* is specified
The program starts when the specified file is transmitted.
 - directory-name* is specified
The program starts when a file is transmitted to the specified directory.
- An auto-start program is executed when transmission is completed for the registered user. To register an auto-start program for all the registered users rather than for a specific user, specify `.default` in **User name**.

The following table lists and describes each item in the auto-start program.

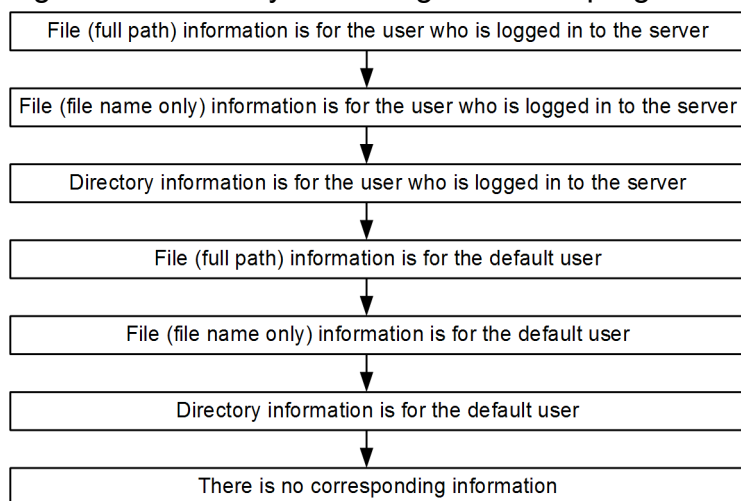
Table 3–3: Items in the auto-start program

Item	Setting
User name	<p>Specifies a user name for registering an auto-start program. This item is mandatory.</p> <p>The following users can be registered in auto-start programs:</p> <ul style="list-style-type: none">• Users who can log in to JP1/FTP (users registered in the OS)• <code>.default</code> (default users) <p>This specification can be applied to all users (registered in the OS) who can log in to JP1/FTP. If there is no registration information that corresponds to individual users, JP1/FTP references the default user registration information. If an applicable item is found, JP1/FTP performs automatic start.</p>
File name/Directory name ((1 to 256-byte character string))	<p>Specifies the name of the file or directory that is to be subject to automatic start.</p> <p>If you specify a file, specify its full path or only the file name. If you specify a directory, specify its full path. If you enter a forward slash (/) at the end of a file name or directory name, the last forward slash becomes invalid and is deleted.</p> <p>For the path of a file name or directory name, specify the real path, not a path that includes a symbolic link.</p> <p>This item is mandatory.</p>
Program to start when transmission ends normally Program to start when transmission ends abnormally ((2 to 256-byte character string))	<p>Specifies the program to start when transmission terminates normally and/or when transmission terminates abnormally.</p> <p>For the name of a program to start, specify its full path. When the program starts, transmission information can be passed as arguments. For details, see Parameter keywords.</p> <p>About JP1EVENT specification</p> <p>Events cannot be issued by specifying JP1EVENT for program names supported in older versions. To issue an event, use the JP1/Base <code>jevsend</code> command and specify a full path.</p>

Priority of program start

If multiple auto-start programs have been registered, the start condition (file name or directory name) might be applicable to more than one of the programs. In such a case, JP1/FTP searches the programs based on the priority order described below and starts only the first program that satisfies a priority condition. The following figure shows the priorities.

Figure 3–1: Priority of starting auto-start programs



Note about the specification of "Program to start when transmission ends normally" and "Program to start when transmission ends abnormally"

If an argument contains the character `\`, be aware that some programs might interpret this character as an escape symbol.

Parameter keywords

You can pass all the transmission-end information items to the user program by specifying a keyword in the auto-start program. You can also use keywords to pass specific transmission-end information items. The following table lists and describes the keywords.

Table 3–4: List of parameter keywords

Parameter keyword	Information that is output	Client	Server
ALL	All items	Y	Y
TRNO	Transmission number	Y	Y
TCNO	Connection number	Y	Y
CARD	Card name	Y	--
HOST	Connection-target host name or IP address	Y	--
	Connecting client's IP address	--	Y
PORT	Connection-target host's port number	Y	--
USER	Login user name	Y	Y
TRTP	Transmission mode: 1: ASCII 2: Binary	Y	Y
TRCM	Transmission command: 1: Send 2: Receive	Y	Y

Parameter keyword	Information that is output	Client	Server
TRCM	3: Append	Y	Y
COMP	Compression mode: 1: Stream 2: Compress	Y	Y
LCFN	Local file name	Y	Y
RMFN	Remote file name	Y	--
STTM	Transmission start time (return value of <code>time()</code>)	Y	Y
SPTM	Transmission end time (return value of <code>time()</code>)	Y	Y
TRSZ	Transmission data size (bytes)	Y	Y
CMNT	Comment	Y	--
TRST	Transmission end status: 1: Success 2: Failure	Y	Y
ERKD	Error type: 1: System call error 2: Logical error 3: Protocol error 4: Termination error 5: SSL communication error	Y	Y
SYCN	System call name	Y	Y
ERNO	Error number	Y	Y
PLMG	Protocol message	Y	--
SSLE	SSL communication error number	Y	Y

Legend:

Y: Enabled

--: Disabled

About keyword specification

If any keyword other than the ones shown in the table above or an invalid keyword is specified, the specified keyword is passed to the user program.

Example of argument specification

The following shows an example of specifying arguments when the `ftsautoma` command is used to register auto-start programs. Specified values must be enclosed in double quotation marks ("").

Example:

```
"/users/accounting/PROC TRNO USER TRCM COMP TRSZ"
```

When the above arguments are specified, the user program is executed in the following format:

/users/accounting/PROCA12ΔaccountingΔ1Δ2Δ30000 (Δ: space)

- Transmission connection number: 12
- Login user name: accounting
- Transmission command: Send

- Compression mode: Compress
- Transmission data size: 30,000 bytes

Information can be received as program arguments.

Standard input/output

The standard input/output is closed. You can allocate the standard input/output to files. For details, see the `JP1FTS_AUTO_STDIO` environment variable listed in Table 3-2 in [3.1.3 Using environment variables to define a JP1/FTP environment](#).

Environment for the process

The JP1/FTP daemon environment is used, not the environment that is set based on the profile of the login user.

How to start programs when multiple files are transmitted

If a wildcard is used to transmit multiple files, an auto-start program is started as many times as there are file transmissions. Information is inherited to the auto-start program separately for each transmission. The transmission information cannot all be inherited to the auto-start program at once.

Blocking signals

Auto-start programs are started with the signals below masked by `sighold()`. Therefore, if a program received the following signals, the signals are put on hold:

- SIGTERM
- SIGCHLD
- SIGHUP

By using the environment variable `JP1FTS_AUTO_SIGNALMASK_DELETE`, auto-start programs can receive the above signals. In addition, in Linux, if you do not use the environment variable `JP1FTS_AUTO_SIGNALMASK_DELETE`, the action for the SIGCHLD signal for that program is set to `SIG_IGN` when an auto-start program starts. For this reason, if you call the `system()` function in the auto-start program, the `system()` function returns an error (`errno = 10`). To avoid this error, set the action for the SIGCHLD signal to `SIG_DFL` before calling the `system()` function.

The following figure shows an example of a command for registering auto-start programs:

```
ftsautoma -file -N accounting file1 -AS /home/accounting/normal.sh -AF
/home/accounting/abnormal.sh
```

This command registers the following information:

- The target is a file (`file`).
- The user name is `accounting`.
- The file/directory name is `file1`.
- `-AS`: The name of the program to start when transmission ends normally is `/home/accounting/normal.sh`.
- `-AF`: The name of the program to start when transmission ends normally is `/home/accounting/abnormal.sh`.

For details about the `ftsautoma` command, see [ftsautoma - registers, deletes, and displays auto-start programs](#) in [6. Commands](#).

3.3.2 Deleting auto-start programs

You can delete registered auto-start programs.

The following example deletes a registered auto-start program:

```
ftsautoma -dir -D accounting /temp/dir1
```

This example deletes the following auto-start program:

- The target is a directory (`dir`).
- The user name is `accounting`.
- The file/directory name is `/temp/dir1`.

For details about the `ftsautoma` command, see *ftsautoma - registers, deletes, and displays auto-start programs* in *6. Commands*.

3.3.3 Checking the registered information about auto-start programs

You can check the registered information about auto-start programs.

The following example displays the registered information about an auto-start program (default format):

```
ftsautoma -file -L accounting file1
```

This example displays information about the following auto-start program:

- The target is a file (`file`).
- The user name is `accounting`.
- The file/directory name is `file1`.

For details about the `ftsautoma` command, see *ftsautoma - registers, deletes, and displays auto-start programs* in *6. Commands*.

3.4 Registering transmission information

You register information about a transmission (such as the remote host name, remote user name, and transmission file) onto a *transmission card*. You can also specify a program that is started by the client when transmission finishes.

To register transmission information, you must use the `ftsregc` command on the client.

3.4.1 Registering transmission information onto a transmission card

You register transmission information onto a transmission card.

You can edit an existing transmission card and register it as a new transmission card.

The following table lists and describes each item in the transmission information.

Table 3–5: Items in the transmission information

Item	Setting
Transmission card name ((1 to 20-byte character string))	Specifies a name for the transmission information. If you link to JP1/AJS3, make sure that the specified transmission card name does not contain any spaces. This item is mandatory.
Remote host name ((1 to 256-byte character string))	Specifies the host name or IP address of the remote host. When you specify an IP address, you can specify an IPv4 or IPv6 address. This item is mandatory.
Port number ((1 to 65,535)) <<21>>	Specifies the port number of the remote host. If this item is omitted, 21 is assumed. <ul style="list-style-type: none">For transmitting to a JP1/FTP host: Specify the port number that was specified in <code>ftss</code> in the port number settings.For transmitting to the OS's default FTP host: Specify the default value (21).
Remote user name ((1 to 80-byte character string))	Specifies the name of the login user at the transmission target. This must be a login user name that has been registered. This item is mandatory.
Password ((0 to 80-byte character string))	Specifies the password registered for the login user. If the password was omitted during the registration process, leave this item blank.
Send/receive type	Specifies the transmission type: <ul style="list-style-type: none">SendReceive
Transmission mode	Specifies the transmission mode according to the file to be transmitted. <ul style="list-style-type: none">ASCII: In this transmission mode, the receiving end adjusts linefeed codes according to the local system. Use this mode to transmit text files.BINARY: This mode achieves transparent transmission without having to be aware of the data contents. Use this mode to transmit data files and executable files.
Size check	Specifies whether to check the size of a transmitted file for errors after file transmission. If a file's transmission data size does not match between the sending and receiving ends, a transmission error results. For the size check to be enabled, the remote FTP host must be JP1/FTP (version 06-00 or later) or uCosminexus Service Platform (version 08-53 or later).
Output type	Specifies how to output files after transmission: <ul style="list-style-type: none">Append: If a file with the same name already exists, the transmitted data will be appended to that file. If there is no file with the same name, a new file will be created. This option is not available when the send/receive type is Receive.

Item	Setting
Output type	<ul style="list-style-type: none"> • Overwrite: If a file with the same name already exists, that file will be overwritten (in which case the file's existing contents will be destroyed). If there is no file with the same name, a new file will be created.
Compression mode	<p>Specifies whether to compress the transmitted files.</p> <p>About the compression specification:</p> <ul style="list-style-type: none"> • If the remote FTP host does not support the compression mode, data is not compressed during transmission even if you specify compression. • The run-length compression method defined in RFC 959 (FILE TRANSFER PROTOCOL) is used as the compression method.
Single/Multiple-file transmission	<p>Specifies whether transmission is to be of a single file or multiple files.</p> <ul style="list-style-type: none"> • Automatic switch: JP1/FTP is to check whether a wildcard character (* or ?) is used in the local file name when the transmission type is Send or in the remote file name when the transmission type is Receive. If the file name contains * or ?, JP1/FTP will perform multiple-file transmission. If the file name does not contain * or ?, JP1/FTP will perform single-file transmission. • Multiple-file: JP1/FTP is to perform multiple-file transmission exactly as dictated by the wildcard. • Single-file: JP1/FTP is to perform single-file transmission. If a wildcard is specified, JP1/FTP treats it as a character and transmits a single file.
Local file name	<p>Specification depends on the transmission type, as described below. This item is mandatory.</p> <ul style="list-style-type: none"> • Send transmission type ((1 to 256-byte character string)) Specifies the name of the file to be sent from the local system. You can use wildcard characters to specify multiple files. If you use a wildcard character, the length of the expanded path name must not exceed 256 bytes. <p>How to specify multiple files: The specification method depends on the setting for Single/Multiple-file transmission:</p> <p>When Single/Multiple-file transmission is set to Automatic switch: You can use the following wildcard characters to specify multiple files: *: Any number of any characters, including no characters ?: Any single character If neither * nor ? is used, single-file transmission is performed.</p> <p>When Single/Multiple-file transmission is set to Multiple-file: You can specify the [] and ! wildcard characters, in addition to * and ?.</p> <p>If you send multiple files, specify a directory for the remote file name. If the specified directory contains a file with the same name as the local file name, that file will be overwritten. If there is no file with the same name, a new file will be created.</p> <p>If Single/Multiple-file transmission is set to Automatic switch or Multiple-file, no wildcard character can be used in the specification of a directory name. If a directory name contains a wildcard character, you must set Single/Multiple-file transmission to Single-file.</p> <ul style="list-style-type: none"> • Receive transmission type ((1 to 256-byte character string)) Specifies the name of the file to be output at the local system after the file is received. If you have specified a wildcard in the remote file name, specify a directory name (other than the root directory). Note that the length of the expanded path name must not exceed 256 bytes. <p>When specifying a relative path: For both sending and receiving, the specified path is relative to the following directory: /var/opt/jp1_fts/work</p>
Remote file name	<p>Specification depends on the transmission type, as described below. This item is mandatory.</p> <ul style="list-style-type: none"> • Send transmission type ((1 to 256-byte character string)) Specifies the name of the output file at the remote system. If you have used a wildcard character in the local file name, specify a directory name. Note that the length of the expanded path name must not exceed 256 bytes. • Receive transmission type ((1 to 256-byte character string))

Item	Setting
Remote file name	<p>Specifies the name of the input file at the remote system.</p> <p>You can use wildcard characters to specify multiple files. Note that the length of the expanded path name must not exceed 256 bytes.</p> <p>How to specify multiple files:</p> <p>The specification method depends on the setting for Single/Multiple-file transmission:</p> <p>When Single/Multiple-file transmission is set to Automatic switch:</p> <p>You can use one of the following wildcard characters to specify multiple files:</p> <ul style="list-style-type: none"> *: Any number of any characters, including no characters ?: Any single character <p>If neither * nor ? is used, single-file transmission is performed.</p> <p>When Single/Multiple-file transmission is set to Multiple-file:</p> <p>You can specify the [] and ! wildcard characters, in addition to * and ?.</p> <p>If you receive multiple files, specify a directory for the local file name. Files with the same names as the remote files will be created in the specified directory.</p> <p>How wildcard characters are interpreted:</p> <p>A wildcard is specified in the NLST command and then sent to the remote FTP host. The file to be transmitted is determined by the response from the FTP host. Therefore, interpretation of the wildcard depends on the remote FTP host.</p> <p>JP1/FTP supports *, ?, and [] as wildcard characters. Wildcard characters cannot be used in directory names. If a directory name contains a wildcard, set Single/Multiple-file transmission to Single-file.</p> <p>About the specification of remote files:</p> <ul style="list-style-type: none"> • Browse displays files as viewed from the local system. For the remote file name, specify a file name that is viewed from the remote system. • If Japanese characters (double-byte character codes) are specified for the remote file name, the remote FTP host might refuse access or the characters in the file name might become garbled in some cases. <p>About the directory delimiter:</p> <p>The directory delimiter \ is treated as part of a file name.</p> <p>When specifying a relative path:</p> <p>For both sending and receiving, the specified path is relative to the current directory.</p>
Program to start at normal end ((0 to 256-byte character string))	<p>Specifies the full path name of a program to start automatically at the client when transmission terminates normally. You can also specify arguments to pass as transmission information to the program when the program starts. For details about the arguments, see Parameter keywords in 3.3.1 <i>Registering auto-start programs</i>.</p>
Program to start at abnormal end ((0 to 256-byte character string))	<p>Specifies the full path name of a program to start automatically at the client when transmission terminates abnormally. You can also specify arguments to pass as transmission information to the program when the program starts. For details about the arguments, see Parameter keywords in 3.3.1 <i>Registering auto-start programs</i>.</p>
FTP command ((0 to 300-byte character string))	<p>Specifies an FTP command to be executed prior to transmission after connection is established with the host. To specify multiple commands, separate them with a semicolon (;).</p> <p>Example: CWD /home/user1;SITE xxxx</p> <p>You can specify only commands that do not establish a data connection. Whether the specified commands can be executed at the FTP server depends on the FTP server.</p> <p>When the FTP server is JP1/FTP:</p> <ul style="list-style-type: none"> • Major commands that can be specified: CDUP, CWD, DELE, HELP, MDTM, MKD, NOOP, PWD, RMD, SITE, SIZE, STAT, SYST, XCUP, XCWD, XMKD, XPWD, XRMD • Commands that can reference the result by means of a protocol trace: HELP, MDTM, SIZE, STAT, SYST <p>About the specification of FTP commands:</p>

Item	Setting
FTP command ((0 to 300-byte character string))	<ul style="list-style-type: none"> Some commands require consecutive command transmission. Before using commands, check the FTP specifications. If you use a command accompanied by an argument, note the following: If Japanese characters (double-byte character codes) are specified for the argument, the remote FTP host might refuse access or the characters in the file name might become garbled in some cases.
Comment ((0 to 80-byte character string))	Specifies any comment. Because the comment is displayed in the log information, this option is useful for setting a memo about the transmission. A comment is not passed to the transmission target.
FTPS enable	Specifies whether to use FTPS. When FTPS is not used, the usual FTP is used.
Server certificate expiration check	Specifies whether to check the expiration date of the server certificate used with FTPS. If you enable the checking, the transmission of files with the expired server certificate ends in failure.
Path name of the CA certificate ((0 to 256-byte character string))	Specifies a full path to the file containing the CA certificate used with FTPS.
Path name of the CRL ((0 to 256-byte character string))	Specifies a full path to the file containing the CRL used with FTPS.

Note about the specification of "Program to start at normal end" and "Program to start at abnormal end"

If an argument contains the character \, be aware that some programs might interpret this character as an escape symbol.

Standard input/output

The standard input/output is closed. You can allocate the standard input/output to files. For details, see the JP1FTS_AUTO_STDIO environment variable listed in Table 3-2 in [3.1.3 Using environment variables to define a JP1/FTP environment](#).

Environment for the process

The JP1/FTP daemon environment is used, not the environment set by .profile of the user who is transmitting the files.

How to start programs when multiple files are transmitted

If a wildcard is used to transmit multiple files, an auto-start program is started as many times as there are file transmissions. Information is inherited to the auto-start program separately for each transmission. The transmission information cannot all be inherited to the auto-start program at once.

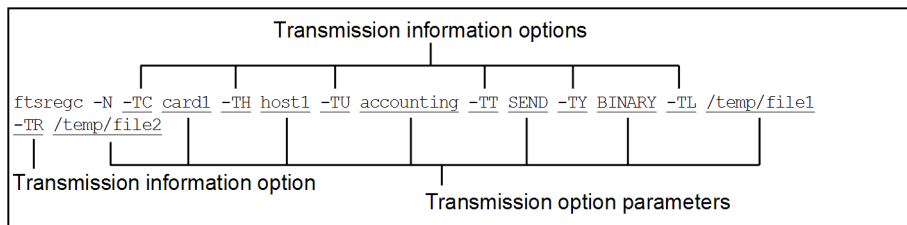
Blocking signals

Auto-start programs are started with the signals below masked by `sighold()`. Therefore, if a program received the following signals, the signals are put on hold:

- SIGTERM
- SIGCHLD
- SIGHUP

By using the environment variable JP1FTS_AUTO_SIGNALMASK_DELETE, auto-start programs can receive the above signals.

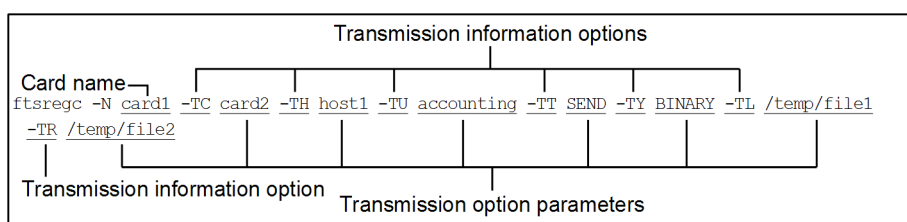
The following figure shows an example of using a command to register new transmission information:



This example registers the following information:

- `-TC`: The transmission card name is `card1`.
- `-TH`: The connection-target host name is `host1`.
- `-TU`: The login user name is `accounting`.
- `-TT`: The send/receive type is `SEND`.
- `-TY`: The transmission mode is `BINARY`.
- `-TL`: The local file name is `/temp/file1`.
- `-TR`: The remote file name is `/temp/file2`.

The following figure shows an example of a command that registers transmission information using an existing transmission card:



This example registers the following information:

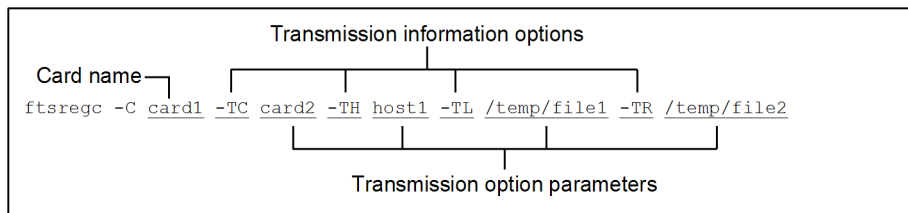
- The name of the existing transmission card that is being used is `card1`.
- `-TC`: The name specified for the new transmission card is `card2`.
- `-TH`: The connection-target host name is `host1`.
- `-TU`: The login user name is `accounting`.
- `-TT`: The send/receive type is `SEND`.
- `-TY`: The transmission mode is `BINARY`.
- `-TL`: The local file name is `/temp/file1`.
- `-TR`: The remote file name is `/temp/file2`.

For details about the `ftsregc` command, see [ftsregc - registers, changes, deletes, and displays transmission information](#) in 6. *Commands*.

3.4.2 Changing the information registered on a transmission card

You can change the information registered on a transmission card.

The following example changes information on a transmission card:



This example changes the following transmission information on `card1`:

- `-TC`: The card name is `card2`.
- `-TH`: The connection-target host name is `host1`.
- `-TL`: The local file name is `/temp/file1`.
- `-TR`: The remote file name is `/temp/file2`.

For details about the `ftsregc` command, see [ftsregc - registers, changes, deletes, and displays transmission information](#) in 6. *Commands*.

3.4.3 Deleting transmission cards

You can delete registered transmission cards.

The following example deletes information on a transmission card:

```
ftsregc -D card1
      Card name
```

For details about the `ftsregc` command, see [ftsregc - registers, changes, deletes, and displays transmission information](#) in 6. *Commands*.

3.4.4 Checking the contents of a transmission card

You can check the contents of a transmission card before you start transmission.

The following example displays the contents of a transmission card:

```
ftsregc -L card1
      Card name
```

For details about the `ftsregc` command, see [ftsregc - registers, changes, deletes, and displays transmission information](#) in 6. *Commands*.

3.5 Transmitting files

There are two ways to transmit files:

- Select Card method of file transmission
This method specifies a registered transmission card and then executes transmission.
- Enter Information method of file transmission
This method transmits files without registering the transmission information specified in the command arguments onto a transmission card.

To transmit files, you must use the `ftstran` command on the client.

3.5.1 Executing transmission by specifying a transmission card (Select Card method of file transmission)

This method specifies a transmission card.

The following figure shows an example of using a command to execute the Select Card Method of file transmission:

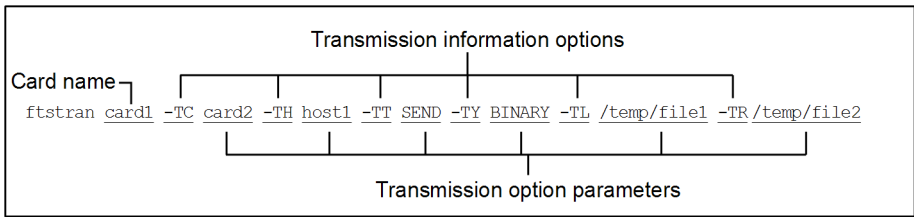
```
ftstran card1
Card name
```

For details about the `ftstran` command, see [ftstran - executes transmission](#) in 6. *Commands*.

3.5.2 Executing transmission by entering a transmission card (Enter Information method of file transmission)

You can use an existing transmission card and edit its contents, and then transmit. The Enter Information method of file transmission does not change the registered contents of the used transmission card.

The following figure shows an example of using a command to execute the Enter Information method of file transmission:



This example changes the following transmission information on `card1` and then executes transmission:

- `-TC`: The card name is `card2`.
- `-TH`: The connection-target host name is `host1`.
- `-TT`: The send/receive type is `SEND`.
- `-TY`: The transmission mode is `BINARY`.

- -TL: The local file name is /temp/file1.
- -TR: The remote file name is /temp/file2.

For details about the `ftstran` command, see *[ftstran - executes transmission](#)* in *6. Commands*.

3.6 Checking the transmission logs

You can check the logs of file transmissions (such as for the transmission times, the names of the transmitted files, the results and details of the transmissions, and the details of errors).

To display transmission logs, you must use the `ftshistory` command on the server and client.

The following table lists and describes each item in the transmission logs.

Table 3–6: Items in the transmission logs

Item	Description
Transmission card	<ul style="list-style-type: none">• Client Displays the name of the card that was transmitted.• Server Not displayed.
Local file name	<ul style="list-style-type: none">• For sending Displays the name of the file sent from the local system.• For receiving Displays the name of the file received by the local system.
Remote file name	<ul style="list-style-type: none">• Client For sending: Displays the output file name at the remote system. For receiving: Displays the name of the input source file as is.• Server Not displayed.
Sent or received	Displays the send/receive type (Sent or Received) that was specified during the transmission request.
Transmission mode	Displays the transmission mode (ASCII or BINARY) that was specified in the transmission request.
Output type	Displays the output type (Append or Overwrite) that was specified in the transmission request.
Compress mode	Displays the compression mode (Compress or Uncompress) that was specified in the transmission request.
Remote host name	Displays the remote host name that was specified in the transmission request. This is a host name defined in the system or an IP address.
Port number	<ul style="list-style-type: none">• Client Displays the remote port number that executed transmission.• Server Displays 0.
User name	<ul style="list-style-type: none">• Client Displays the name of the remote login user that executed transmission.• Server Displays the name of the login user that received the transmission.
Comment	<ul style="list-style-type: none">• Client Displays the comment that was specified in the transmission request.• Server Not displayed.
Transmission number	Displays the transmission number. This number is determined separately at the server and the client. Because this is a unique number assigned to each transmission, you can use it as an identifier

Item	Description
Transmission number	when you view logs. The largest transmission number is 999,999 (if this value is exceeded, the counter is reset to 0).
Server or client	<ul style="list-style-type: none"> • Client Displayed when file transmission was executed by the client. • Server Displayed when file transmission was executed by the server.
Status at termination	Displays the termination status of the file transmission (Normal or Abnormal). If automatic program start fails but file transmission itself was successful, Normal is displayed.
Starting time	Displays the date and time transmission started.
Ending time	Displays the date and time transmission ended.
Transmission period	Displays the amount of time (in seconds) required for the file transmission.
Transmission size	Displays the data size (in bytes) of the transmitted file.
Connection number	<p>Displays a transmission identifier based on when JP1/FTP established connection with the remote system. This is a separate number for the server and the client in the range from 1 to the maximum number of concurrent transmissions for each. Because various traces (such as the protocol trace) are output for each connection number, you can use this number as a guide for viewing traces of the corresponding transmission.</p> <p>Example: When Connection number is 2:</p> <p>Client's protocol trace file: CSProtocolTrace2</p> <p>Server's protocol trace file: SSProtocolTrace2</p>
Error type	<p>When the transmission status is Abnormal, displays one of the errors listed below.</p> <ul style="list-style-type: none"> • System call error • Protocol error • Logical error • Forced termination error • SSL communication error
Position where error occurred	Displays the position where the error occurred in JP1/FTP.
Error module name	Displays the name of the JP1/FTP module where the error occurred.
Error system function name	Displays the name of the system call where the error occurred.
Error message	Displays details about the error.
Error protocol	Displays details about the protocol error.
SSL communication error message	Displays an SSL communication error message.

About the display of file transmission errors when a wildcard is used

Only the first error that occurred is displayed.

The following example displays all log information:

```
ftshistory -v
```

The following example displays the details of all log information (default format):


```
ftshistory
```

The following example displays the details of log information (default format) with a specified time (transmission end time of 2004/04/01 15:30:45):

```
ftshistory -s "2004/04/01 15:30:45"
```

The following example changes the log file and displays the log information:

```
ftshistory -f /temp/history1 -v  
Log file
```

For details about the `ftshistory` command, see *ftshistory - displays log information* in 6. *Commands*.

3.7 Saving and recovering JP1/FTP settings

Definition information and log information can be saved and then restored in a different environment. You can achieve a standardized system environment by specifying definition information in one system and then distributing it to multiple systems.

3.7.1 Information that can be saved and recovered

(1) Definition information

The following table lists and describes the definition information that can be saved and recovered.

Table 3–7: JP1/FTP definition information

Information	File and directory names	Owner	Access permission ^{#1}
Environment settings	/var/opt/jp1_fts/sys/environment ^{#2}	Superuser	Owner: rw Other: r
Auto-start program settings	/var/opt/jp1_fts/sys/UserData ^{#3}	Superuser	Owner: rwx Other: rx
Transmission settings	/var/opt/jp1_fts/sys/carddata ^{#4}	Superuser	Owner: rw Other: r
Managed host definition information	/var/opt/jp1_fts/sys/hostdef.csv ^{#5}	Superuser	Owner: rw Other: r
Log daemon definition information	/var/opt/jp1_fts/sys/ftslog.conf	Superuser	Owner: rw Other: r
Connection-rejection user definition file	/var/opt/jp1_fts/sys/jp1ftpusers ^{#6}	Superuser	Owner: r
Connection-permission user definition file	/var/opt/jp1_fts/sys/jp1ftpusers.allow ^{#6}	Superuser	Owner: r
PASV-mode file transmission definition file	/var/opt/jp1_fts/sys/ftspasvmode ^{#7}	Superuser	Owner: r
Definition file for the function for controlling remote host connections	/var/opt/jp1_fts/sys/jp1ftphost.access_list ^{#8}	Superuser	Owner: r
Definition file for the function for limiting directory access	/var/opt/jp1_fts/sys/jp1ftpusers.directory_list ^{#9}	Superuser	Owner: r
Multiple IP address environment definition file	/var/opt/jp1_fts/sys/ftshostenv.conf ^{#10}	Superuser	Owner: r
FTP connection response message file	/var/opt/jp1_fts/sys/ftsbanner ^{#11}	Superuser	Owner: r
Table information file	/var/opt/jp1_fts/sys/.ftstblvers	Superuser	Owner: r
IPv6 environment definition file	/var/opt/jp1_fts/sys/ftsipversion.conf	Superuser	Owner: r Other: r

Information	File and directory names	Owner	Access permission ^{#1}
FTPS (for server) definition file	/var/opt/jp1_ftp/sys/ftsftps	Superuser	Owner: r

#1

These are the minimum permissions. Other permissions might be added depending on the execution environment.

#2

This file does not exist if the environment definition has not been changed (`ftsutil`) or if the environment definition has not been changed using the Operations-Manager Console (`ftsconsole`).

#3

There are files with individual user names under `UserData` and each of those files contains auto-start program information for that user. You can save and move files only for an applicable user.

#4

This file does not exist if transmissions have not been registered (`ftsregc`) or if transmission information has not been registered using the Operations-Manager Console (`ftsconsole`).

#5

This file does not exist if no managed host has been added by the Operations-Manager Console (`ftsconsole`).

#6

This file does not exist if the function for controlling remote logins has not been defined.

#7

This file does not exist if file transmissions in the PASV mode have not been defined.

#8

This file does not exist if the node connection control function has not been defined.

#9

This file does not exist if the function for limiting directory access has not been defined.

#10

This file does not exist if settings for a multiple IP address environment have not been defined.

#11

This file does not exist if FTP connection response messages have not been defined.

(2) Log information

The following table lists and describes the log information that can be saved and recovered.

Table 3–8: JP1/FTP log information

Information	File and directory names	Owner	Access permission [#]
Log information	/var/opt/jp1_ftp/sys/history	Superuser	Owner: rw Other: r
Protocol trace	/var/opt/jp1_ftp/trace	Superuser	Owner: rwx Other: rx
System information	/var/opt/jp1_ftp/sys/system	Superuser	Owner: rw
Event log	Reference file name for the event log that is defined in the log daemon definition information Default: /var/opt/jp1_ftp/trace/ftsevent.log. <i>n</i> <i>n</i> : Value from 1 to the number of event log backup files	Superuser	Owner: rw Other: r
Access log	/var/opt/jp1_ftp/trace/ftsaccess.log	Superuser	Owner: rw

#

These are the minimum permissions. Other permissions might be added depending on the execution environment.

3.7.2 Saving and recovering JP1/FTP settings

(1) Saving

You save necessary information by saving the corresponding files and directories. Execute the command at the host whose environment is to be saved.

Example

```
In AIX:
>tar cvfp definedata /var/opt/jp1_fts/sys/environment /var/opt/jp1_fts/sys/
/UserData /var/opt/jp1_fts/sys/carddata /var/opt/jp1_fts/sys/.ftstblvers

>tar cvfp historydata /var/opt/jp1_fts/sys/history /var/opt/jp1_fts/sys/sy
stem /var/opt/jp1_fts/trace

In Linux:
>tar cvfpP definedata /var/opt/jp1_fts/sys/environment /var/opt/jp1_fts/sy
s/UserData /var/opt/jp1_fts/sys/carddata /var/opt/jp1_fts/sys/.ftstblvers

>tar cvfpP historydata /var/opt/jp1_fts/sys/history /var/opt/jp1_fts/sys/s
ystem /var/opt/jp1_fts/trace
```

(2) Recovering

You recover information by restoring it to the same directories from which the information was saved.

Note

- If the location or attributes have changed, JP1/FTP will not run correctly.
- Definition information and log information cannot be migrated between instances of JP1/FTP on different OSs.

Execute the command at the host whose environment is to be recovered.

Example

```
In AIX:
>tar xvfp definedata

>tar xvfp historydata

In Linux:
>tar xvfpP definedata

>tar xvfpP historydata
```

In the above example, note that if the definition information already exists, it will be overwritten.

When recovering definition information that was saved by version 05-10 or later through a version earlier than 07-50

If you use definition data that was saved by version 05-10 or later through a version earlier than 07-50, you must execute the following command after the data has been recovered:

```
In AIX, and Linux:  
>rm -f /var/opt/jp1_ftp/sys/.ftstblvers  
>/opt/jp1_ftp/bin/ftstbldef
```

When recovering definition information that was saved by version 07-50 or later through a version earlier than 09-00

If you use definition data that was saved by version 07-50 or later through a version earlier than 09-00, you must execute the following command after the data has been recovered:

```
In AIX, and Linux:  
>/opt/jp1_ftp/bin/ftstbldef
```

When recovering definition information that was saved by version 09-00 or later

You must execute the following command after the data has been recovered:

```
>/opt/jp1_ftp/bin/ftstbldef
```

3.8 Outputting definition information as text

You can output the following four types of definition information to a text file:

- Auto-start program information
- Transmission information
- Log information
- Login user information

From the Operations-Manager Console, you can output to a text file information about users who can log in to a Windows host only. Information about users who can log in to a UNIX host cannot be output. For details, see [4.3.4 Example of outputting multiple registration information items as text](#).

When you output definition information, you can use a sample format file that was set up during the new installation. You can edit the format file to a desired format. For details about the format file, see [E. Format Files Used for Output of Definition Information](#).

3.8.1 Outputting definition information as text

To output definition information as text, see [4.3.4 Example of outputting multiple registration information items as text](#).

The following figures show a format file for auto-start programs and an example of text output.

Figure 3–2: Format file

```
////////// Auto-Start Program Registrations ////////// No.$ICNT ////////////  
  
User name: $USER  
Trigger key: $AKEY  
  Auto-start program at normal end: $ANML  
  Auto-start program at abnormal end: $AERR
```

Figure 3–3: Example of text output

```
////////// Auto-Start Program Registrations ////////// No.1 ////////////  
  
User name: ACCOUNTING  
Trigger key: accounting001  
  Auto-start program at normal end: /accounting/tran_success  
  Auto-start program at abnormal end: /Accounting/tran_err  
  
////////// Auto-Start Program Registrations ////////// No.2 ////////////  
  
User name: SALES1  
Trigger key: sales003  
  Auto-start program at normal end: JP1EVENT 1124 ALL  
  Auto-start program at abnormal end: JP1EVENT 1144 ALL
```

3.9 Function for controlling remote logins

This function controls whether to accept FTP login requests from users. You can make settings to permit connection only from specified users or to reject connection requests from specified users.

This is an FTP server function.

3.9.1 How to specify

Use a text editor to specify in definition files the users whose login requests are to be accepted and the users whose login requests are to be rejected.

- Users whose login requests are to be accepted: Connection-permission user definition file (`jp1ftpusers.allow`)
- Users whose login requests are to be rejected: Connection-rejection user definition file (`jp1ftpusers`)

The following figure shows the specification format:

`OS-user-name` [`all`]

Specify one user name on each line. Specify `[all]` for all users.

The attributes of these files are shown below.

Table 3–9: Attributes of the connection-permission user definition file (`jp1ftpusers.allow`)

Item name	Setting
File name	<code>jp1ftpusers.allow</code>
Directory name	<code>/var/opt/jp1_fts/sys</code>
Owner	Superuser
Access permission	Owner: <code>r</code>

Table 3–10: Attributes of the connection-rejection user definition file (`jp1ftpusers`)

Item name	Setting
File name	<code>jp1ftpusers</code>
Directory name	<code>/var/opt/jp1_fts/sys</code>
Owner	Superuser
Access permission	Owner: <code>r</code>

3.9.2 Examples of definition

This subsection presents examples of these definitions.

(1) Permitting connection requests from all users

To enable connection requests from all users, define the connection-permission user definition file (`jp1ftpusers.allow`) as follows:

```
[all]
```

In this case, do not specify anything in the connection-rejection user definition file (`jp1ftpusers`).

(2) Permitting connection requests from only specified users

To permit connection requests from users `ftp` and `guest` only, specify the connection-permission user definition file (`jp1ftpusers.allow`) as follows:

```
ftp
guest
```

In this case, do not specify anything in the connection-rejection user definition file (`jp1ftpusers`).

(3) Rejecting connection requests from specified users

To reject connection requests from users `root` and `guest`, specify the connection-permission user definition file (`jp1ftpusers.allow`) as follows:

```
[all]
```

Also specify the connection-rejection user definition file (`jp1ftpusers`) as follows:

```
root
guest
```

(4) Rejecting connection requests from all users

To reject connection requests from all users, do not specify anything in the connection-permission user definition file (`jp1ftpusers.allow`).

Specify the connection-rejection user definition file (`jp1ftpusers`) as follows:

```
[all]
```

3.9.3 Notes

- No format checking is performed on these definition files.
- The function for controlling remote logins is activated when either one of the definition files is created.

- Each definition takes effect as soon as it is specified in a definition file.
- If there is no connection-permission user definition file, the function permits connections by default regardless of whether there is a connection-rejection user definition file.
- If there is a connection-permission user definition file, the function rejects connections by default regardless of whether there is a connection-rejection user definition file.
- If a definition is invalid in the connection-permission user definition file, the function rejects all user connection requests regardless of whether there is a connection-rejection user definition file.
- If the same host is defined in both the connection-permission user definition file and the connection-rejection user definition file, the definition in the connection-rejection user definition file takes precedence.

3.10 Event log function

The event log function outputs event logs to a file, such as information on the start and termination of JP1/FTP, file transmissions, and errors.

The event log function enables you to specify information such as the output destination file and the rotation timing.

3.10.1 How to specify

Create a definition file (`ftslog.conf`) as shown below. The definitions take effect when the event log daemon (`jftslogd`) starts.

(1) Attributes of the definition file

Create a definition file with the following attributes:

Table 3–11: Attributes of the definition file (`ftslog.conf`)

Item name	Setting
File name	<code>ftslog.conf</code>
Directory name	<code>/var/opt/jp1_fts/sys</code>
Owner	Superuser
Access permission	Owner: r

(2) Contents of the definition file

Use a text editor to write definitions in the definition file (`ftslog.conf`) according to the method described below.

The following figure shows the format of a definition file:

```
#comment
definition-name : value
```

In a definition file, one definition is specified on a single line. A maximum of 2,048 bytes can be specified per line.

There must be space or a tab between a definition name and the colon (:) and between the colon and a value. The definition name can be preceded by spaces or tabs. Any number of characters following a hash mark (#) through a linefeed code are treated as a comment.

If there is no definition file or the definition is invalid, the command uses the default values.

The following table lists and describes the definition names and the values.

Table 3–12: Definition names and values

Definition name	Description	Value
<code>rotation size</code>	Specifies the maximum size of an event log file (in megabytes). Event log files are rotated so that the size of a file does not exceed the specified size.	((1 to 9,999)) <<2>>

Definition name	Description	Value
rotation days	Specifies a usage period for an event log file (in days). When the specified number of days elapses for one event log, the next event log is used.	((1 to 366)) <<omitted>>
rotation files	Specifies the number of backup event log files. Rotation occurs among the specified number of files.	((2 to 500)) <<5>>
output level	Specifies output levels for the event log. Only events at the specified levels are output. To specify multiple levels, delimit them with the comma (.). Example: output level : 0,1,2	((0 to 6)) <<0, 1, 2, 3, 4, 5, 6>>
file name	Specifies the name of the default event log file, expressed as a full path. The actual file name is generated by suffixing <i>.serial-number</i> to the specified default file name. Example: If the default file name is <code>/var/log/ftsevent.log</code> , the first file that is generated will be <code>/var/log/ftsevent.log.1</code> . The serial number that is assigned is from 1 to the number of event log backup files. Example: In the above example, if the number of backup files is 3, the following files are generated: "/var/log/ftsevent.log.1" "/var/log/ftsevent.log.2" "/var/log/ftsevent.log.3"	((1 to 250 bytes)) <</var/opt/jpl_fts/trace/ftsevent.log>>

The following table describes the output levels for the event log.

Level	Messages that are output
0	Error messages reporting an error that resulted in cancellation or termination of processing
1	Messages reporting an error in a function that did not result in cancellation or termination of processing but that prevented normal operation of the function
2	Start and termination of the daemon
3	Transmission termination status
4	Transmission start status
5	Details of the transmission status
6	ftstran command status messages

The following figure shows an example of a definition file:

```
# JP1/File Transmission Server/FTP event logging configuration.

rotation size      : 2
# rotation days    : 10
rotation files     : 5
output level       : 0,1,2,3,4,5,6
file name          : /var/opt/jpl_fts/trace/ftsevent.log
```

3.10.2 Starting output of event logs to a file

You start output of event logs by starting the event log daemon. The following figure shows an example of the command:

```
ftslogstart
```

For details about the `ftslogstart` command, see *ftslogstart - starts the log daemon* in 6. *Commands*.

3.10.3 Stopping output of event logs to a file

You stop output of event logs to a file by terminating the event log daemon. The following figure shows an example of the command:

```
ftslogstop
```

For details about the `ftslogstop` command, see *ftslogstop - terminates the log daemon* in 6. *Commands*.

3.11 File transmission in the PASV mode

At the client, you can transmit files in the PASV mode.

File transmission is permitted in the PASV mode for each host at the remote FTP server.

To transmit files in the PASV mode, you must register in advance the names or IP addresses of the hosts at the remote FTP server to which you wish to transmit files in the PASV mode. When you specify an IP address, you can specify an IPv4 or IPv6 address.

This registration information takes effect when the JP1/FTP daemon (`jftsd`) starts.

3.11.1 Registering the host name

Create a definition file (`ftspasvmode`) as shown below and then specify the host names.

(1) Creating a definition file

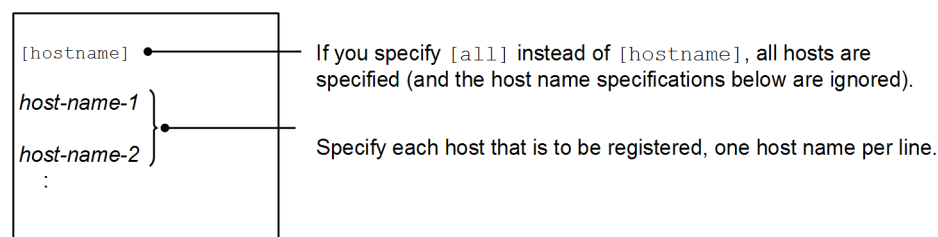
Create a definition file with the following attributes:

Table 3–13: Attributes of the definition file (`ftspasvmode`)

Item name	Setting
File name	<code>ftspasvmode</code>
Directory name	<code>/var/opt/jp1_fts/sys</code>
Owner	Superuser
Access permission	Owner: <code>r</code>

(2) Contents of the definition file

Specify as follows:



Notes

- For a host name, specify the remote host name that was specified in the transmission information.
- A line beginning with a hash mark (`#`) is treated as a comment.

Examples of specification

Example 1: For transmitting files to `host1` and `host2` in the PASV mode:

```
# JP1/File Transmission Server/FTP
# PASV mode configuration file
#
[hostname]
host1
host2
```

Example 2: For transmitting files to all hosts in the PASV mode:

```
# JP1/File Transmission Server/FTP
# PASV mode configuration file
#
[all]
```

3.11.2 Notes

- No format checking is performed on this definition file.

3.12 Changing the maximum number of concurrent transmissions

The maximum number of concurrent transmissions is the same as the permitted maximum number of concurrent FTP connections (control). Any transmission requests in excess of this value will be rejected. For details about rejection of transmission, see [F. *Transmission Rejection Messages*](#).

The default for the maximum number of concurrent transmissions is 64. You can change the maximum number of concurrent transmissions to any value in the range from 64 to 128.

If you have changed the maximum number of concurrent transmissions, the following settings are initialized the next time you start the JP1/FTP daemon:

- Transmission log
- Transmission number
- Connection number
- Protocol trace
- Module trace

When settings are initialized, their previous status is deleted. Therefore, we recommend that you back up any needed information before you start the JP1/FTP daemon. For details about the information to back up, see [\(2\) *Log information in 3.7.1 Information that can be saved and recovered*](#). When you restore from the backup, make sure that the maximum number of concurrent transmissions is set to the same value as when the backup was created. If the maximum number of concurrent transmissions at the time the backup was made does not match the number at the time of recovery, the JP1/FTP daemon will not start.

When you restore from initialized status, the JP1/FTP daemon might be delayed temporarily. To avoid this delay, delete the above settings beforehand. The deletion tool enables you to do this easily. For details about the deletion tool, see [G. *Log Information Deletion Tool*](#).

To change the maximum number of concurrent transmissions:

1. Terminate the JP1/FTP daemon.

Use the `ftsstop` command. For details about the command, see [ftsstop - terminates the JP1/FTP daemon in 6. Commands](#).

2. Change the maximum number of concurrent transmissions.

Use the `ftsutil` command. For details about the command, see [ftsutil - changes and displays environment information in 6. Commands](#).

3. Start the JP1/FTP daemon.

Use the `ftsstart` command. For details about the command, see [ftsstart - starts the JP1/FTP daemon in 6. Commands](#).

Example: This example changes the maximum number of concurrent transmissions to 128.

```
# ftsstop
# ftsutil -C -EC 128
# ftsstart
```

Maximum number of concurrent transmissions

By default, when an FTP server receives a number of requests that exceeds the maximum number of concurrent transmissions, it does not output to the system log a message stating that the maximum was exceeded. You can use the environment variable `JP1FTS_CLMAXOVER_MES` to output such a message to the system log.

3.13 Function for controlling remote host connections

You can limit for an FTP server the remote hosts that are permitted to establish connection.

When the IP addresses or host names of remote hosts whose connection is to be permitted are defined in a permission list, transmission can be performed only by those remote hosts. You can also control connection by defining in a rejection list the IP addresses or host names of remote hosts whose connection requests are to be rejected.

This is a function of the FTP server. The definitions take effect when the JP1/FTP daemon (`jftsd`) starts.

3.13.1 Registering host names

Use a text editor to specify host names in the definition file (`jp1ftphost.access_list`) according to the definition method described below.

```
# comment
definition-name
value
:
```

Begin by specifying a definition name, and then specify values on the following lines. If you specify multiple values, make sure that you specify only one value on each line. Any characters following a hash mark (#) through a linefeed are treated as a comment.

The following table lists and describes the definition names and values that can be specified.

Table 3–14: Definition names and values that can be specified in the definition file (`jp1ftphost.access_list`)

Definition name	Description	Value
[allow_list]	Specifies hosts whose connection is to be permitted. In the case of an IP address, you can specify an IPv4 or IPv6 address.	IP address or host name
[deny_list]	Specifies hosts whose connection is to be rejected. In the case of an IP address, you can specify an IPv4 or IPv6 address.	IP address or host name

The attributes of this definition file are shown below.

Table 3–15: Attributes of the definition file (`jp1ftphost.access_list`)

Item name	Setting
File name	<code>jp1ftphost.access_list</code>
Directory name	<code>/var/opt/jp1_fts/sys</code>
Owner	Superuser
Access permission	Owner: <code>r</code>

The following table shows the formats that can be used for specifying an IPv6 address.

Table 3–16: Formats that can be specified for an IPv6 address

No.	Address to be specified	Description	Definition
1	2001:0db8:0020:0003:1000:0100:0020:0003	All 128 bits specified	Valid
2	2001:db8::9abc	Partial omission	Valid
3	::1	Loopback address specification	Valid
4	2001:F123:2221:2312:3333:4444::/96	Mask specification	Valid
5	2001:128:222:333	Last value omission specification	Invalid
6	2001:F123:2221:2312:3333*:5555:6666	Multiple specifications	Invalid
7	2001:F123:2221:2312:3333:4444:5555:1111-FFFF	Multiple-range specification	Invalid

Example

[allow_list]	# Defines hosts whose connection is permitted.
192.168.10.2	# IP address. Connection is permitted if the IP address matches exactly.
192.169.20.	# Specifies multiple IP addresses. Connection is permitted for any IP address that begins with the specified value.
192.169.20.0/255.255.255.0	# Same as above, but this uses mask specification.
192.169.30.*	# Specifies multiple IP addresses.
192.169.30.0/255.255.255.0	# Same as above, but this uses mask specification.
192.170.	# Specifies multiple IP addresses. Connection is permitted for any IP address that begins with the specified value.
192.170.0.0/255.255.0.0	# Same as above, but this uses mask specification.
192.171.17.68-71	# Specifies a range of IP addresses.
	# Permits 192.171.17.68 through 192.171.17.71.
192.171.17.68/255.255.255.252	# Same as above, but this uses mask specification.
192.172.18-19.*	# Specifies a range of IP addresses.
	# Permits 192.172.18.1 through 192.172.18.255 and 192.172.19.1 through 192.172.19.255.
192.173.*.10	# Specifies a range of IP addresses.
	# Permits 192.173.1.10 through 192.173.255.10.
192.173.*.10/255.255.0.255	# Same as above, but this uses mask specification.
host1.aname.com	# Specifies host names.
.sample.co.jp	# Specifies multiple host names. Connection is permitted for any host name that ends with the specified value.
2001:0db8:0020:0003:1000:0100:0020:0003	# IPv6 address. Connection is OK when the complete IPv6 address matches.
2001:0db8:9abc::/48	# IPv6 address. Connection is OK when the first 48 bits of the IPv6 address match.
[deny_list]	# Defines hosts to be rejected (among the hosts that are permitted).
192.169.20.3	192.169.20.1 through 192.169.20.255 are permitted, except for 192.169.20.3.
192.170.10.	# 192.170.0.0 through 192.170.255.255 are permitted, except for 192.170.10.0 through 192.170.10.255.
www.sample.co.jp	# Hosts whose name ends with .sample.co.jp are permitted, except for www.sample.co.jp.
2001:db8::1234.0.0.9abc	# IPv6 address. Host is rejected when the complete IPv6 address matches.
2001:db8::9abc	# IPv6 address. Host is rejected when the complete IPv6 address matches.

3.13.2 Notes

- No format checking is performed on this definition file.
- If there is no definition file, connection is permitted from all hosts.
- If there is a definition file but it does not contain any valid definitions, connection requests from all hosts are rejected.
- A connection request from a host that is not specified in the definition file is rejected.
- The definitions under `[deny_list]` take precedence over the definitions under `[allow_list]`. For this reason, a connection request from a host that is specified in both `[allow_list]` and `[deny_list]` is rejected.
- When a connection is rejected, the control connection is lost, in which case no response message is sent immediately after control connection is established.
- When specifying an IPv6 address, specify a mask value in the format *address-portion/xx* (where *xx* is a decimal number between 1 and 128).
- Specified IPv6 addresses that have a scope ID (with the % character specified) are invalid.
- Alias host names cannot be specified for host names.

3.14 Function for limiting directory access

This function restricts a user who logs in to the FTP server to access only those directories and files under that user's home directory. You use this function to limit file access by specified FTP users.

A user controlled by this function can access only the directories and files under his or her home directory at the FTP server. Such a user cannot move to a higher directory or transmit files in another user's home directory. Additionally, such a user cannot access the standard commands and definition files provided by the OS because they are not in the user's home directory.

This is an FTP server function. The definition takes effect when the JP1/FTP daemon (`jftsd`) starts.

3.14.1 Registering user names

Use a text editor to specify the necessary information in the definition file (`jp1ftpusers.directory_list`) according to the definition method described below.

```
# comment
definition-name
value
:
```

Begin by specifying a definition name, and then specify values on the following lines. If you specify multiple values, make sure that you specify only one value on each line. Any characters following a hash mark (#) through a linefeed are treated as a comment.

Table 3–17: Definition names and values that can be specified in the definition file (`jp1ftpusers.directory_list`)

Definition name	Description	Value
[enable_list]	Specifies users to whom the function for limiting directory access is to be applied.	<i>user-name</i> or [all]
[disable_list]	Specifies users to whom the function for limiting directory access is not to be applied.	<i>user-name</i> or [all]

The attributes of this definition file are shown below.

Table 3–18: Attributes of the definition file (`jp1ftpusers.directory_list`)

Item name	Setting
File name	<code>jp1ftpusers.directory_list</code>
Directory name	<code>/var/opt/jp1_fts/sys</code>
Owner	Superuser
Access permission	Owner: r

Example

This example definition applies the function for limiting directory access to all users except users `root` and `jp1ftp_user`. `#ftp` is treated as a comment.

```
[enable_list]
[all]
[disable_list]
root
jplftp_user
# ftp
```

3.14.2 User environment settings with the function for limiting directory access enabled

When file transmission is performed by a user to whom the function for limiting directory access is applied, some user environment settings might be necessary depending on the functions that are used. The following functions require user environment settings:

- Automatic startup of programs during file transmission
- Acquisition of a file list (using the `LIST` command or the `NLIST` command whose argument begins with a single-byte hyphen (-)) or acquisition of a file status (using the `STAT` command)

If you use either of these functions, specify the following settings:

1. You need the commands listed below under the home directory of the user who uses each function. Copy each command including the path under the home directory. Set the settings, such as file access permissions and link status, to the same values as for the source.

Commands used for starting auto-start programs:

- `/bin/sh`
- `/usr/bin/sh` (not required in Linux)

Commands used for acquiring a file list (`LIST` command or `NLIST` command whose arguments begins with a hyphen (-)) and a file status (`STAT` command):

- `/bin/sh`
- `/bin/ls`
- `/usr/bin/sh` (not required in Linux)
- `/usr/bin/ls` (not required in Linux)

Example

When `user1` is a user to whom the function for limiting directory access is applied (operation performed as a superuser):

In AIX

```
# cd /
# tar cvf /tmp/work.tar usr/bin/sh usr/bin/ls
# cd ~user1
# tar xvf /tmp/work.tar
# ln -s ./usr/bin bin
```

In Linux

```
# cd /
# tar cvf /tmp/work.tar bin/sh bin/ls
# cd ~user1
```

```
# tar xvf /tmp/work.tar
```

2. Copy the shared library that is used by the commands copied in step 1 to the home directory exactly as is including the paths. To check the shared library used by the commands, use the `ldd` command (for details about the `ldd` command, see the OS documentation).

Example

When `user1` is a user to whom the function for limiting directory access is applied (operation performed as a superuser):

```
# ldd ~user1/usr/bin/sh
```

3.14.3 Notes

- No format checking is performed on this definition file.
- If there is no definition file, the function for limiting directory access is disabled.
- If the definition file does not contain any valid definitions, the function for limiting directory access is disabled.
- The function for limiting directory access is disabled for (not applied to) a user that is not specified in the definition file.
- If `[all]` is specified, that definition applies to all users.
- The definition of `[disable_list]` takes precedence over the definition of `[enable_list]`. For this reason, the function for limiting directory access is disabled for (not applied to) a user that is specified in both `[enable_list]` and `[disable_list]`.
- When the function for limiting directory access is used, a user's home directory is changed to the root directory. If you use the absolute path to specify file and directory names at the client or the auto-start programs that are used at the server, delete the part that indicates the user's home directory.
- If a user to whom the function for limiting directory access is applied is to start auto-start programs, check in advance that the shell and programs that are to be started can actually start in the directory-limited environment. Use the `chroot` command for this checking (for details about the `chroot` command, see the OS documentation).

Example

This example checks the execution of `sample.sh` immediately under the home directory of user `user1` for whom the function for limiting directory access is enabled (operation performed as a superuser):

```
# chroot ~user1 /sample.sh
```

- When the function for limiting directory access is used, the user can execute only those programs under the user's home directory. If an automatically executed program is used, place the program and the shared libraries used by that program appropriately under the user's home directory.
- The location of the program will be the directory that is obtained by adding the path name defined in the `PATH` environment variable to the user's home directory. The location of the shared libraries will be the path that is obtained by adding the library search path to the user's home directory path.
- Login and logout information for users for whom the function for limiting directory access is enabled is not recorded in the OS's `wtmpx` file.
- In AIX, create a `/dev/null` device under the home directory of the user for whom the function for limiting directory access is enabled. Set the file type, major and minor numbers, and access permissions of the copied `dev/null` to the same values as for the original `/dev/null` device.

Example

When `user1` is a user to whom the function for limiting directory access is applied (operation performed as a superuser):

```
# ls -l /dev/null
crw-rw-rw- 1 root system 2, 2 Nov 20 13:10 /dev/null
# mkdir ~user1/dev
# mknod ~user1/dev/null c 2 2
# chmod 0666 ~user1/dev/null
# chown -R root:system ~user1/dev
```

- In AIX, if you select **Link with JP1/IM** in the environment definition, copy the files listed below as is including the path under the home directory of the user to whom the function for limiting directory access is applied. Set the settings, such as file access permissions and link status, to the same values as for the source.

- All files under `/opt/jp1_fts/lib/nls`

Example

When `user1` is a user to whom the function for limiting directory access is applied (operation performed as a superuser):

```
# cd /
# tar cvf /tmp/work.tar opt/jp1_fts/lib/nls
# cd ~user1
# tar xvf /tmp/work.tar
```

- In Linux, create a copy of the `/etc/localtime` file under the home directory of the user to whom the function for limiting directory access is applied. Set the same access permissions to the copied `etc/localtime` file as for the original `/etc/localtime` file. If the `/etc/localtime` file is a symbolic link, also copy the entity file in the same manner.

Example

When `user1` is a user to whom the function for limiting directory access is applied (operation performed as a superuser):

```
# cd /
# tar cvf /tmp/work.tar etc/localtime
# cd ~user1
# tar xvf /tmp/work.tar
```

- In Linux, if the environment variable `JP1FTS_PRIVILEGE_ADDITION` is set to ON and auto-start programs are to be started for a user for whom the function for limiting directory access is enabled, create `/dev/null` and `/dev/full` devices under the home directory of that user. Set the file type, major and minor numbers, and access permissions of the copied `dev/null` to the same values as for the original `/dev/null` device. In addition, set the file type, major and minor numbers, and access permissions of the copied `dev/full` to the same values as for the original `/dev/full` device.

Example

When `user1` is a user for whom the function for limiting directory access is enabled (operation performed as a superuser):

```
# ls -l /dev/null
crw-rw-rw- 1 root root 1, 3 Mar 13 01:06 2013 /dev/null
# mkdir ~user1/dev
# mknod ~user1/dev/null c 1 3
# chmod 0666 ~user1/dev/null
```

```
# ls -l /dev/full
crw-rw-rw- 1 root root 1, 7 Mar 13 01:06 2013 /dev/full
# mknod ~user1/dev/full c 1 7
# chmod 0666 ~user1/dev/full
# chown -R root:root ~user1/dev
```


3.15 Using JP1/FTP in a multiple IP address environment

In an environment in which multiple IP addresses can be used, such as an environment that uses multiple NICs or a cluster environment, the following functions are available:

- Function that enables you to specify the local IP address of the FTP client
- Function for setting the FTP server host name in a response message sent by the FTP server to the address that accepted the connection
- Function for specifying the destination of JP1 events

The definition takes effect when the JP1/FTP daemon (`jftsd`) starts.

3.15.1 How to specify

You use a text editor to define each function in the definition file (`ftshostenv.conf`) according to the definition method described below.

```
# comment  
definition-name : value
```

Specify one definition per line in this definition file. A maximum of a 2,048 bytes of characters can be specified per line. Use the space or tab as the delimiter between a definition name and the colon (:), and as the delimiter between the colon (:) and a value. A definition name can be preceded by spaces or tabs. Any characters following a hash mark (#) through a linefeed are treated as a comment.

Table 3–19: Definition names and values that can be specified in the definition file (`ftshostenv.conf`)

Definition name	Description	Value
<code>specify client localhost</code>	Enables specification of the FTP client's local IP address.	[YES NO] <<NO>>
<code>response hostname reverse lookup</code>	Sets the FTP server host name in a response message sent by the FTP server to the address that accepted the connection.	[YES NO <i>omitted</i>] << <i>omitted</i> >>
<code>jplevent host</code>	Specifies the destination of JP1 events. When you specify an IP address, you can specify an IPv4 or IPv6 address.	[<i>host-name</i> <i>IP-address</i> <i>omitted</i>] << <i>omitted</i> >>
<code>jplevent trans is same</code>	Specifies whether to send JP1 events indicating the termination of file transmission to the destination specified by <code>jplevent host</code> .	[YES NO] <<NO>>

The attributes of this definition file are shown below.

Table 3–20: Attributes of the definition file (`ftshostenv.conf`)

Item name	Setting
File name	<code>ftshostenv.conf</code>
Directory name	<code>/var/opt/jp1_fts/sys</code>

Item name	Setting
Owner	Superuser
Access permission	Owner: r

The following figure shows an example of this definition file:

```

specify client localhost : YES
response hostname reverse lookup : YES
Jplevent host : jpleventhost
jplevent trans is same : YES

```

A sample definition file is stored in the following directory:

- /var/opt/jp1_fts/sys/ftshostenv.conf.model

3.15.2 Definitions for each function

(1) Enabling specification of the FTP client's local IP address

This function enables you to specify the FTP client's local IP address when you transmit files from the client.

To set whether an FTP client's local IP address can be used, specify `specify client localhost` in the definition file (`ftshostenv.conf`). The following values can be specified:

- YES: Enables the local IP address to be specified.
- NO: Disables specification of the local IP address.

Enabling specification of the local IP address means that you can specify the local IP address for the FTP client.

If you disable specification of the local IP address, the FTP client's local IP address will be assigned automatically by the OS.

When you have enabled specification of the local IP address and you omit the host name, the physical address (host name returned by the OS's `hostname` command) is used.

The following table shows the local IP address that is used for file transmission depending on whether this function is enabled or disabled and the specification of the FTP client's local IP address.

Table 3–21: Local IP address used for file transmission depending on whether the function is enabled or disabled and the specification of the FTP client's local IP address

Command or API	Host name specification	Function is enabled	Function is disabled
ftstran command	Host name is specified	Address of the host whose name is specified	Address is assigned automatically by the OS
	Host name is omitted	Physical address	Address is assigned automatically by the OS
fts_ftp_open_ex() function	Host name is specified	Address of the host whose name is specified	Address is assigned automatically by the OS

Command or API	Host name specification	Function is enabled	Function is disabled
<code>fts_ftp_open_ex()</code> function	NULL is specified	Physical address	Address is assigned automatically by the OS

To use the host name for the local IP address specification, specify the name of the host on which the user program that calls the `ftstran` command or the `fts_ftp_open_ex()` function runs.

Example

This example enables specification of the FTP client's local IP address.

```
specify client localhost : YES
```

In this case, you would specify the FTP client's local IP address as follows:

When using the `ftstran` command

In the `-H` option, specify the host name for the address that is to be used as the FTP client's local IP address. For details about the `ftstran` command, see *ftstran - executes transmission* in 6. *Commands*.

Example: This example executes file transmission that is defined on transmission card `card01` from the FTP client `localhostname`.

```
ftstran card01 -H localhostname
Transmission Host name
card name
```

When using API

The host name (`hostname`) of the JP1/FTP daemon that is specified in the `fts_ftp_open_ex(char* hostname)` function becomes the FTP client's local IP address. For details about `fts_ftp_open_ex`, see *fts_ftp_open_ex() - establish connection with the JP1/FTP daemon* in 7. *API Library*.

(2) Setting the FTP server host name in a response message sent by the FTP server to the host or address that accepted the connection

You can set the local host name in a response message sent by the FTP server to the address that accepted the connection. The following shows the response message that is set by the FTP server.

1. Immediately after control connection is established:

```
220 host-name FTP server (JP1/File Transmission Server/FTP VV-RR-SS month
date year) ready.
```

2. After the `STAT` command is received:

```
211 host-name FTP server status:
```

In these messages, *host-name* is replaced with the address that accepted the connection.

To set whether the FTP server host name is to be set in a response message to the host or address that accepted the connection, you must define `responsehostname reverse lookup` in the definition file (`ftshostenv.conf`). The following values can be specified:

- **YES:** Enables the function. The function searches for the host name from the IP address (reverse host name lookup) and then returns the host name of the address that accepted the connection to the response message.

- **NO:** Enables the function. The IP address that accepted the connection is set in the response message, and no host name search (reverse host name lookup) is performed.
- **Omitted:** Disables the function. The host name at the physical address (that is returned by the OS's `hostname` command) is returned to the response message.

Example

This example returns a response message using the host name of the address that accepted the connection.

```
response hostname reverse lookup : YES
```

(3) Specifying the destination of JP1 events

You can specify the destination of JP1 events. We recommend that you specify a destination for JP1 events that indicate the start and termination of daemons (JP1/FTP daemon, log daemon, and Operations-Manager Agent). The target event IDs are from 00010D20 to 00010D28.

To enable specification of the destination of JP1 events, define `jplevent host` in the definition file (`ftshostenv.conf`). The following values can be specified:

- *host-name | IP-address:* The JP1 events indicating the start and termination of daemons are sent to the specified host.
- *omitted:* All JP1 events indicating the start and termination of daemons are sent to the physical address (host name returned by the OS's `hostname` command).

If the destination for JP1 events is specified, the default destination for the JP1 events indicating the termination of file transmission is the local host that executed the transmission. The target event IDs are 00010D0B-00010D0D.

To set the destination for the JP1 events indicating the termination of file transmission to the host specified at the JP1 event destination, define `jplevent trans is same` in the definition file (`ftshostenv.conf`). The following values can be specified:

- **YES:** Specifies that the destination specified in `jplevent host` is to be the destination to which the JP1 events indicating the termination of file transmission are to be sent.
- **NO:** Specifies that the host that executed the transmission is to be the destination to which the JP1 events indicating the termination of file transmission are to be sent.

The following table shows the relationship between the definition specification values and the destination to which the JP1 events indicating the termination of file transmission are to be sent.

Table 3–22: Destination to which the JP1 events indicating the termination of file transmission are to be sent, as determined on the basis of the definition specification values

jp1event host	jp1event trans is same	Destination to which the JP1 events indicating the termination of file transmission are to be sent
Specified	YES	Host specified in <code>jplevent host</code>
	NO	Host that executed the transmission
Not specified	YES	Physical host
	NO	Physical host

Example

The example below specifies `jpleventhost` as the host to which the JP1 events indicating the start and termination of daemons and the termination of file transmission are to be sent.

```
jplevent host : jpleventhost  
jplevent trans is same : YES
```

3.15.3 Note

- No format checking is performed on this definition file.

3.16 Collecting access logs

You can log invalid or unsuccessful accesses attempted by an FTP client until it successfully logs in (achieves user authentication) after establishing connection.

3.16.1 Settings for collecting access logs

To set JP1/FTP to collect access logs, you use the `ftsutil` command. In the `-EA` option of the `ftsutil` command, specify at least 1 megabyte as the file size for access logs. For details about the `ftsutil` command, see [ftsutil - changes and displays environment information](#) in 6. *Commands*.

Example

This example sets the file size for access logs to 1 megabyte:

```
ftsutil -C -EA 1
           File size
```

A new setting takes effect when you restart the JP1/FTP daemon.

3.16.2 Access log output file

Access logs are output as text to the access log file. The following table shows the access log file and backup file.

Table 3–23: Access log output file and backup file

File	Backup file
/var/opt/jpl_fts/trace/ftsaccess.log	/var/opt/jpl_fts/trace/ftsaccess.log.old

The file size is from 0 bytes to the size specified in the `ftsutil` command. When it exceeds the size specified in the `ftsutil` command, JP1/FTP saves the file to the backup file, initializes the file size to 0 bytes, and then writes data from the beginning of the file.

If the backup file already exists when a backup is needed, JP1/FTP overwrites the existing backup file.

3.16.3 Messages that are output to the access logs

The following table lists and describes the messages that are output to the access logs.

Table 3–24: Messages that are output to the access logs

Message ID	Message	Description
KDJF3101-E	The connection was closed without login. [Remote host address: <i>IP-address</i> ^{#1}] [Remote port number: <i>port-number</i> ^{#2}] [Connection number: <i>connection-number</i> ^{#3}]	The FTP client disconnected itself without logging in.

Message ID	Message	Description
KDJF3102-E	Login failed. [Remote host address: <i>IP-address</i> ^{#1}] [Remote port number: <i>port-number</i> ^{#2}] [Connection number: <i>connection-number</i> ^{#3}]	Login failed.
KDJF3103-E	<i>FTP-command</i> ^{#4} is invalid because it was sent by a user who was not logged in. [Remote host address: <i>IP-address</i> ^{#1}] [Remote port number: <i>port-number</i> ^{#2}] [Connection number: <i>connection-number</i> ^{#3}]	An FTP command that becomes executable after login was accepted before login.
KDJF3104-E	The max. number of FTP clients was reached. No more clients can use the service. [Remote host address: <i>IP-address</i> ^{#1}] [Remote port number: <i>port-number</i> ^{#2}]	More connections were accepted than the maximum number of concurrent transmissions.
KDJF3105-E ^{#5}	FTP server refused the connection. [Remote host address: <i>IP-address</i> ^{#1}] [Remote port number: <i>port-number</i> ^{#2}]	Connection was refused.

#1

IP-address: Indicates the IP address of the FTP client.

#2

port-number: Indicates the port number of the FTP client.

#3

connection-number: Indicates the connection number.

#4

FTP-command: Indicates the FTP command.

#5

This message is output only when the JP1FTS_CONREFUSELOG environment variable is set to log refused connections.

For details about the output format of access logs, see [8.3 Output format of access log messages and format of access log message explanations](#).

3.17 FTP connection response message control function

Normally, the following response message is displayed at the time of an FTP connection:

220 <i>HHH</i> FTP server (<i>JP1/File Transmission Server/FTP</i> <i>VV-RR-SS YYYY/MM/DD</i>) ready.		
Host name	Product name	Version information [#]

#

VV-RR-SS: Version (-SS might not be displayed)

YYYY: Year

MM: Month

DD: Date

You can set that the response message is not to display the host name, product name, and version information. You can also set the response message to display any optional character string.

To change the FTP connection response message, you must have already registered the definition information.

This is an FTP server function. The definition takes effect when the JP1/FTP daemon (`jftsd`) starts.

3.17.1 Definition method

To define the information to be displayed in the FTP connection response message:

1. In the `ftsutil` command, specify FTP connection response message control in `CHECK`.

```
ftsutil -C -EX CHECK
```

2. In the FTP connection response message file (`ftsbanner`), specify a character string for the FTP connection response message.

To specify a desired character string for the FTP connection response message, use a text editor to specify the character string in the FTP connection response message file (`ftsbanner`) according to the following definition method:

```
FTP-connection-response-message-character-string
```

Notes

- The FTP connection response message file consists of one or more lines.
- The maximum length of one line is 256 bytes. Any characters in excess of this limit are ignored.
- The maximum file size is 512 bytes. If the file size exceeds 512 bytes, the file is ignored.
- A line consisting of only a linefeed is valid.
- No comment can be defined.
- If the file size is 0 bytes, the file is ignored.
- Some restrictions might apply to the response message format depending on the FTP client that is connected. For this reason, you must specify a response message in the FTP connection response message file in a format that will be recognized by the target FTP client.

- The attributes of the FTP connection response message file are shown below.

Table 3–25: Attributes of the FTP connection response message file (ftsbanner)

Item name	Setting
File name	ftsbanner
Directory name	/var/opt/jp1_ftp/sys
Owner	Superuser
Access permission	Owner: r

3.17.2 FTP connection response message that is displayed

The subsection shows and explains the FTP connection response message that is displayed.

If there is no FTP connection response message file (ftsbanner), the following FTP connection response message is displayed:

```
220 FTP server ready.
```

If there is an FTP connection response message file (ftsbanner), the FTP connection response message is set as follows according to the FTP protocol specifications:

- If the file contains only one line of data, response code 220 is added at the beginning of the line.
- If the file contains multiple lines, 220- is added at the beginning of the first line, 220 is added at the beginning of the last line, and five spaces are added at the beginning of each of the intervening lines.

The following figures show an example of an FTP connection response message.

Contents of the FTP connection response message file (ftsbanner)

```
Welcome to FTP server.
Anonymous users cannot connect to this server.
Please enter the username and password.
```

FTP connection response message

```
220- Welcome to FTP server.
      Anonymous users cannot connect to this server.
220 Please enter the username and password.
```

3.18 Using JP1/FTP in an IPv6 environment

You can use IPv6 addresses to transmit files.

To transmit files using IPv6 addresses, you must pre-register the definition information.

3.18.1 How to specify

Use a text editor to define each function in the definition file (`ftsipversion.conf`) according to the definition method described below.

```
# comment  
definition-name : value
```

Specify one definition per line in this definition file. Use a space or tab as the delimiter between a definition name and the colon (:), and as the delimiter between the colon (:) and a value. A definition name can be preceded by spaces or tabs. Any characters following a hash mark (#) through a linefeed are treated as a comment.

Table 3–26: Definition names and values that can be specified in the definition file (`ftsipversion.conf`)

Definition name	Description	Value
Server IPv4	Specifies whether the FTP server uses IPv4 when accepting a connection from the FTP client.	[ON OFF] <<ON>>
Server IPv6	Specifies whether the FTP server uses IPv6 when accepting a connection from the FTP client.	[ON OFF] <<OFF>>
Client IPv4	Specifies whether the FTP client uses IPv4 when connecting to the FTP server.	[ON OFF] <<ON>>
Client IPv6	Specifies whether the FTP client uses IPv6 when connecting to the FTP server.	[ON OFF] <<OFF>>
Client Priority	<p>Specifies the Internet protocol version preferred by the FTP client when connecting to the FTP server.</p> <p>This definition is used for selecting the Internet protocol version to connect with in the following cases:</p> <p>If the source address of the FTP client is not specified:</p> <p style="padding-left: 20px;">A host name is specified for the remote host name of the transmission card, and both IPv4 and IPv6 addresses are defined for that host name.</p> <p>If the source address of the FTP client is specified:</p> <p style="padding-left: 20px;">A host name is specified for the <code>-H</code> option of the <code>ftstran</code> command, or in the input field for a client host name in a custom job, and both IPv4 and IPv6 addresses are defined for that host name.</p>	[IPv4 IPv6] <<IPv4>>

The attributes of this definition file are shown below.

Table 3–27: Attributes of the definition file (ftsipversion.conf)

Item name	Setting
File name	ftsipversion.conf
Directory name	/var/opt/jp1_fts/sys
Owner	Superuser
Access permission	Owner: rw Other: r

The following figure shows an example of this definition file:

```
Server IPv4 : OFF
Server IPv6 : ON
```

3.18.2 Note

- If there is no definition file, Internet protocol version selection is invalid. In this case, the default settings on both the FTP server and FTP client are IPv4=ON and IPv6=OFF.
- If IPv4=OFF and IPv6=OFF are defined on the FTP server, it is considered that there is no definition. In this case, IPv4=ON and IPv6=OFF are assumed.
- If IPv4=OFF and IPv6=OFF are defined on the FTP client, it is considered that there is no definition. In this case, IPv4=ON and IPv6=OFF are assumed.

3.19 Using FTPS (at the FTP client)

At the FTP client, files can be transmitted by using FTPS.

The following table describes the implemented features related to FTPS.

Table 3–28: Implemented features related to FTPS (at the FTP client)

Item	Implemented feature
Implicit mode	Not supported
Explicit mode	Supported
Automatic switching to the usual FTP when the FTP server does not support FTPS	Not supported
Version of SSL communication	TLS1.2
Client authentication method	Password authentication
Server certificate verification	<ul style="list-style-type: none">• Certificate chain• Expiration date of the certificate• Expiration status of the certificate
Server certificate expiration notification method	CRL
Data protection level for data connection	Private
SSL sessions for data connection	Reuse the control connection sessions
CCC command (Environment where NAT conversion is carried out)	Not supported

3.19.1 Certificate and CRL

Prepare a root certificate corresponding to the server certificate used by the destination FTP server.

You can use a CRL.

3.19.2 Notes about the certificate and the CRL

You can only use certificates and CRLs in X509 PEM format.

3.19.3 Definition of transmission information

Define transmission information.

For details about the transmission information to be defined, see [Table 3-5 Items in the transmission information](#).

3.20 Using FTPS (at the FTP server)

At the FTP server, files can be transmitted by using FTPS.

The following table describes the implemented features related to FTPS.

Table 3–29: Implemented features related to FTPS (at the FTP server)

Item	Implemented feature
Implicit mode	Not supported
Explicit mode	Supported
Version of SSL communication	TLS1.2
Client authentication method	Password authentication
Data protection level for data connection	<ul style="list-style-type: none">• Clear• Private
CCC command (Environment where NAT conversion is carried out)	Not supported

3.20.1 Private key and certificate

Prepare a server private key and the corresponding server certificate.

If the server certificate has been issued by an intermediate certificate authority, you should also prepare all intermediate certificates up to the root certificate. Put all certificates together, including the server certificate, the lower-ranking intermediate certificates, and the higher-ranking intermediate certificates, in that order, and store them in a single file.

3.20.2 Notes about the private key and the certificate

- You cannot use a private key with a passphrase. In other words, you have to cancel the passphrase before using the private key. Thus, it is important that appropriate permissions be assigned so that the private key is not accessed by users other than root users.
- You can only use private keys and certificates in X509 PEM format.

3.20.3 Creating a definition file

Create a definition file (`ftsftps`) by following the procedure described below. The definition becomes enabled when the JP1/FTP daemon (`jftsd`) starts.

(1) Attributes of the definition file

Create a definition file with the following attributes.

Table 3–30: Attributes of the definition file (ftsftps)

Item name	Set value
File name	ftsftps
Directory name	/var/opt/jp1_fts/sys
Owner	Superuser
Access permissions	r for the owner

(2) Information specified in the definition file

By following the definition approach described below, specify information in the definition file (ftsftps) by using a text editor.

Specify information in the definition file by using one line for one definition.

```
Item name=Value
```

The following table describes the specifiable definitions.

Table 3–31: Information that can be specified in the definition file (ftsftps)

Item name	Value	Description
PrivateKey	<i>path-to-the-server-private-key</i>	Specify a full path to the private key file of the server. If you do not specify the path, the usual FTP is used.
Certificate	<i>path-to-the-certificate</i>	Specify a full path to the certificate file. If you do not specify the path, the usual FTP is used.
FTPModeOnly	[YES NO] <<NO>>	Specify whether to use only FTPS. <ul style="list-style-type: none"> YES: Only FTPS is available. The usual FTP is not available. If you specify YES, the JP1/FTP daemon would not start unless a value is specified for either PrivateKey or Certificate. NO: Not only FTPS but also the usual FTP is available.

The sample definition file is stored under the following directory:

- /var/opt/jp1_fts/sys/ftsftps.model

4

JP1/FTP Operations Management

The Operations-Manager Console enables you to check JP1/FTP definition information and view transmission logs. This chapter describes how to use the Operations-Manager Console.

4.1 Setting up the Operations-Manager Console

To use the Operations-Manager function, you must run the program at both the managing host and the managed hosts.

- Managing host: Start the Operations-Manager Console.

Start the Operations-Manager Console at the managing host. It enables you to view transmission logs of the remote and local hosts and to register, update, and view definition information items.

How to start the Operations-Manager Console

Execute the following command as a superuser:

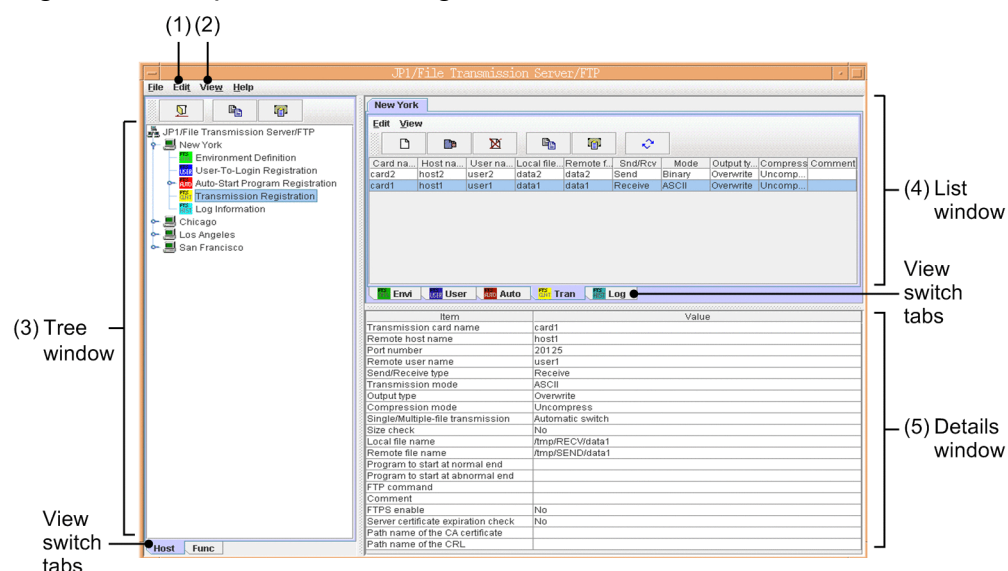
```
ftsconsole
```

Notes about starting the Operations-Manager Console

- If an unsupported value is specified in the LANG environment variable, the Operations-Manager Console runs in the English environment.
- If you use version 09-00 or later, an error will result if you specify the Java_Path argument, which was supported by version 08-00 and earlier.

The following figure shows the Operations-Manager Console window.

Figure 4–1: Operations-Manager Console window



1. Choosing **Host List** from the **Edit** menu: See [4.1.1 Adding managed hosts](#).

2. Choosing **Display Log Count** from the **View** menu:

Set the number of logs to be displayed in the Log Information window. When the Display Log Count dialog box appears, specify the number of logs that you wish to display, in the range from 1 to 10,000.

3. Tree window:

This window displays a list of the managed hosts and corresponding information. The view switch tabs enable you to switch between displaying by hosts and displaying by functions. Note that the login user's registration information is not displayed.

If there are too many managed hosts to fit in the tree window, information about four hosts before and after the selected host is displayed.

4. List window:

This window provides a listing of the information selected in the tree window. You can use the view switch tabs to change the display for each function.

5. Details window:

This window displays details of the information selected in the list window. Note that nothing is displayed for the Environment Definition utility.

- Managed host: Start the Operations-Manager Agent.

Start the Operations-Manager Agent on each host where the Operations-Manager Agent is to be run.

How to start the Operations-Manager Agent

Use the `ftsastart` command to start a manager agent that is to be managed by the Operations-Manager Console. For details about the start method, see [2.4.2 Starting and terminating the Operations-Manager Agent](#).

Notes

- If you use the Operations-Manager function, you can use only alphabetic characters, numbers, and hyphens for the host name.
- The Operations-Manager functions are supported even if the JP1/FTP versions for the Operations-Manager Console and the Operations-Manager Agent are different.
- In an environment in which IP address translation is performed between Operation-Manager Console and Operation-Manager Agent, the Operations-Manager function cannot be used.
- IPv6 cannot be used for connections between Operations-Manager Console and Operations-Manager Agent.
- You cannot use the Operations-Manager function to establish a connection between an environment using version 10-00 or earlier and a pre-10-00 version environment if the environments have different language settings (for example, a Japanese language environment and an English language environment).
- On the side of Operations-Manager Agent, the IP address of the physical host (the host returned by the `hostname` command) must be an IP address to which Operations-Manager Console can connect.

4.1.1 Adding managed hosts

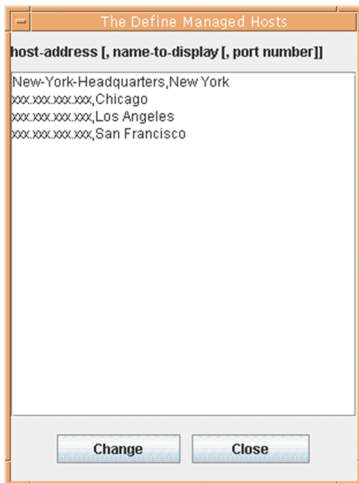
You use the Operations-Manager Console to set the hosts that are to be managed. These are the hosts on which an Operations-Manager Agent is to run. If the version of Operations-Manager Agent is earlier than version 10-00, you must standardize on an English or a Japanese language environment. If the Japanese language environment is used, there is no need to standardize the character code to be used (SJIS, EUC, or UTF-8).

To add managed hosts:

1. At the Operations-Manager Console, from the **Edit** menu, choose **Host List**.

The Define Managed Hosts dialog box appears.

Figure 4–2: The Define Managed Hosts dialog box



2. Specify the address and display name, separated by a comma, of a managed host that is to be added.

```
host-address[, name-to-display[, port-number]]
```

host-address

Specifies a host name or IP address of the managed host. This item is mandatory.

name-to-display ((0 to 15-byte character string))

Specifies a name to be displayed for the managed host on the Operations-Manager Console window.

This item is optional. If it is omitted, the specified host address is displayed.

port-number

Specifies the port number of the managed host.

Specification of a port number is optional. If it is omitted, the port number of the local host in `ftsagent` is assumed.

When the host address or name to be displayed contains a comma (,) or double-quotation mark (")

Enclose the entire host address or name to be displayed in double-quotation marks (").

Example: Specifying `aaa, bbb` as the name to be displayed: `myhost, "aaa, bbb", 20252`

Example: Specifying `aaa"bbb` as the name to be displayed: `myhost, "aaa" "bbb", 20252`

3. Repeat step 2 for each additional host that is to be registered.
4. Click **Change**.
The specified host names are displayed in the tree window.

4.1.2 Deleting managed hosts

To delete a managed host:

1. At the Operations-Manager Console, from the **Edit** menu, choose **Host List**.
The Define Managed Hosts dialog box appears.
2. Select the managed host that you want to delete, and then press the **Delete** key.
3. Click **Change**.

Other editing method

Information about the managed hosts is saved in the following (comma-delimited) CSV file:

- `/var/opt/jp1_fts/sys/hostdef.csv`

You can use a text editor to edit this file. To apply the edited information, you must restart the Operations-Manager Console.

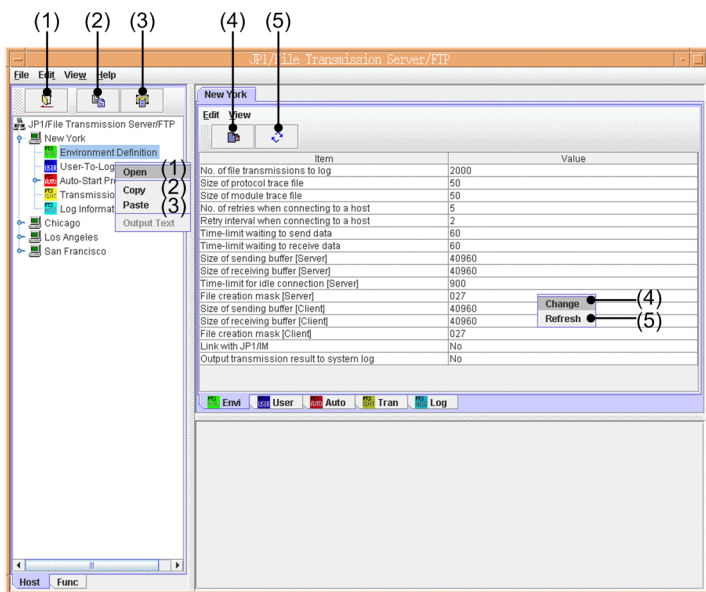
4.2 Organization and functions of the Operations-Manager Console windows






The Operations-Manager Console provides different windows for displaying various types of information. This section presents the windows of the Operations-Manager Console that are used to display information.

4.2.1 Environment Definition window

The figure below shows an example of the Environment Definition window for another host that is displayed in the Operations-Manager Console. This subsection describes the functions that you can use in the Environment Definition window.

Figure 4–3: Environment Definition window



1. Click  , or right-click in the tree window: Opens host information.
2. Click  , or right-click in the tree window: Copies host information.
3. Click  , or right-click in the tree window: Pastes the copied information.
4. Click  , or right-click in the list window: Changes the definition information.
5. Click  , or right-click in the list window: Refreshes the information.

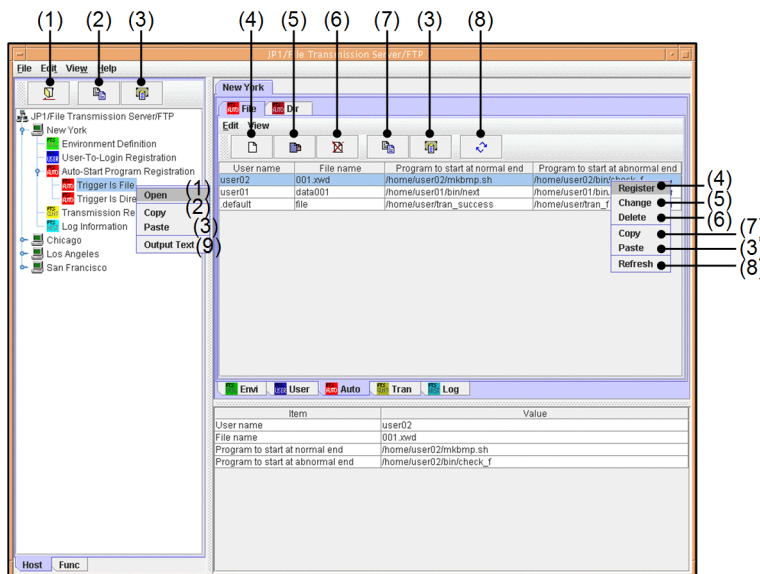
Note









Definition information cannot be copied between Windows hosts and UNIX hosts that have been set as managed hosts.

4.2.2 Auto-Start Program Registration window

The figure below shows an example of an Auto-Start Program Registration window that displays from the Operations-Manager Console the registration status of the auto-start programs at another host. This subsection describes the functions that you can use in the Auto-Start Program Registration window.

Figure 4–4: Auto-Start Program Registration window



1. Click  , or right-click in the tree window: Opens host information.
2. Click  , or right-click in the tree window: Copies all registration information for the auto-start programs.
3. Click  , or right-click in the tree or list window: Pastes the copied information.
4. Click  , or right-click in the list window: Registers new auto-start programs.
5. Click  , or right-click in the list window: Changes the registration details of auto-start programs.
6. Click  , or right-click in the list window: Deletes auto-start programs.
7. Click  , or right-click in the list window: Copies information about a specified auto-start program.
8. Click  , or right-click in the list window: Refreshes information.
9. Right-click in the tree window: Outputs information about auto-start programs as text.

When Cancel is clicked while Register or Change processing is underway

The message Canceled is displayed, but the registration or change processing might have already been completed.

When the Operations-Manager Agent is UNIX

If the Operations-Manager Agent is UNIX, whether the login user name has been registered is not checked when auto-start programs are registered.

About text output

A sample format for text that is output is set up during installation. You use this format file at the Operations-Manager Console host.

The format file to be used corresponds to the value set for the `LANG` environment variable.

You can edit the format file to create a desired format. For details about how to edit the format file, see [E. Format Files Used for Output of Definition Information](#).

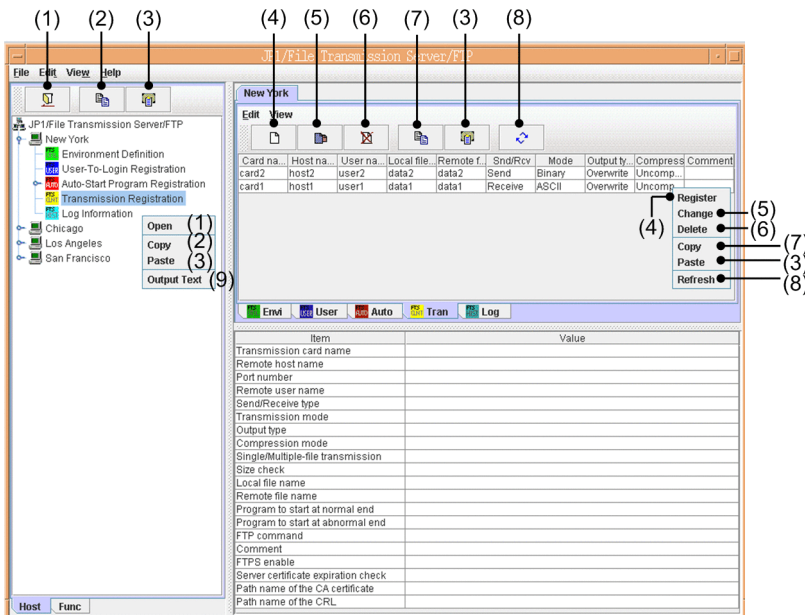
Note









Information about auto-start programs cannot be copied between Windows hosts and UNIX hosts that have been set as managed hosts.

4.2.3 Transmission Registration window

The figure below shows an example of a window that displays from the Operations-Manager Console the transmission information registration details at another host. This subsection describes the functions that you can use in the Transmission Registration window.

Figure 4–5: Transmission Registration window



1. Click , or right-click in the tree window: Opens host information.
2. Click , or right-click in the tree window: Copies all transmission information that has been registered.
3. Click , or right-click in the tree or list window: Pastes the copied information.
4. Click , or right-click in the list window: Registers new transmission information.
5. Click , or right-click in the list window: Changes registered transmission information.
6. Click , or right-click in the list window: Deletes transmission information.
7. Click , or right-click in the list window: Copies the specified transmission information.
8. Click , or right-click in the list window: Refreshes information.
9. Right-click in the tree window: Outputs the transmission information as text.

When Cancel is clicked while Register or Change processing is underway

The message Canceled is displayed, but the registration or change processing might have already been completed.

About text output

A sample format for text that is output is set up during installation. You use this format file at the Operations-Manager Console host.

The format file to be used corresponds to the value set for the `LANG` environment variable.

You can edit the format file to create a desired format. For details about how to edit the format file, see [E. Format Files Used for Output of Definition Information](#).

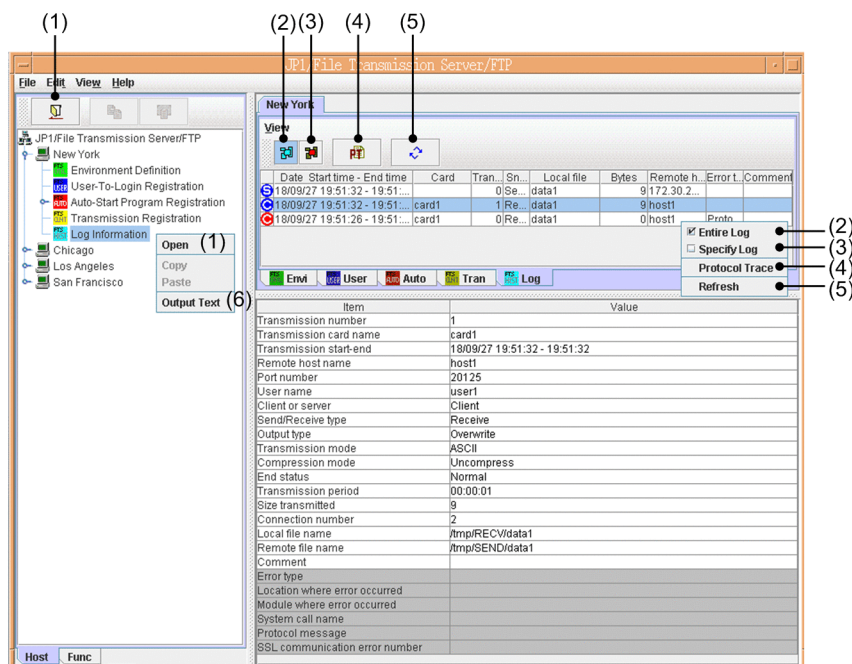
Note






- Transmission information cannot be copied between Windows hosts and UNIX hosts that have been set as managed hosts.
- Pre-10-00 versions of the Windows edition of Operations-Manager Agent have a limitation such that Operations-Manager Console can display only 5,000 items of transmission information from a host on which such an Operations-Manager Agent is running.

4.2.4 Log Information window

The figure below shows an example of a window that displays from the Operations-Manager Console another host's log information. This subsection describes the functions that can be used in the Log Information window.

Figure 4–6: Log Information window



1. Click , or right-click in the tree window: Opens host information.
2. Click , or right-click in the list window: Displays all log information.
3. Click , or right-click in the list window: Displays specific log information.
4. Click , or right-click in the list window: Displays protocol trace.
5. Click , or right-click in the list window: Refreshes information.
6. Right-click in the tree window: Outputs log information as text.

About the display of protocol trace information

The Log Information window displays information about all traces transmitted by using the applicable connection number.

About text output

A sample format for text that is output is set up during installation. You use this format file at the Operations-Manager Console host.

The format file to be used corresponds to the value set for the `LANG` environment variable.

You can edit the format file to create a desired format. For details about how to edit the format file, see [E. Format Files Used for Output of Definition Information](#).

About the transmission size

Operations-Manager Agent versions earlier than 10-00 do not support a transmission size of 4 gigabytes or greater. Consequently, if the Operation-Manager Console is connected to an Operations-Manager Agent earlier than version 10-00, and if an attempt is made to reference a transmission log whose transmission size is 4 gigabytes or greater, the displayed value will be smaller than the actual transmission size.

4.2.5 Registering the users who can log in to a JP1/FTP server window

Only when the target agent is Windows, "Register logged-in user" can be displayed in the operation management console.

For details on "Register logged-in user", see User-To-Login Registration window in the manual JP1/File Transmission Server/FTP for Windows Systems.

4.3 Examples of Operations-Manager Console menu operations

The operations when you use the Operations-Manager Console to register and edit information are the same in all windows. This section presents four examples of menu operations for reference purposes.

4.3.1 Example of registering transmission information

This example registers transmission information in the New York headquarters.

To register transmission information:

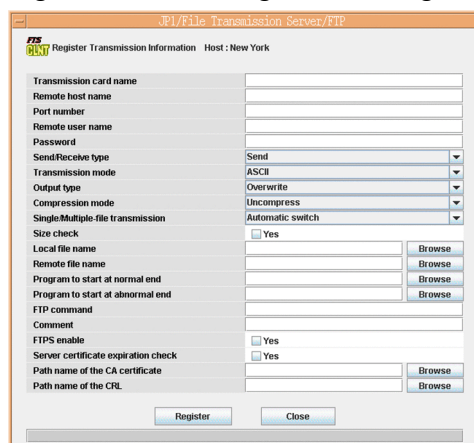
1. In the tree window, double-click **New York**
2. Under **New York**, select **Transmission Registration**, and then click  .







The transmission information that has been registered in the New York headquarters is displayed in the list window.



3. In the list window, click  .

A dialog box for registering transmission information is displayed. If transmission information is selected in the list window, the selected transmission information is displayed. You can also register new information by using the displayed information as a model.

Figure 4–7: Dialog box for registering transmission information



Transmission card name	
Remote host name	
Port number	
Remote user name	
Password	
Send/Receive type	Send
Transmission mode	ASCII
Output type	Overwrite
Compression mode	Uncompress
Single/Multiple file transmission	Automatic switch
Size check	<input type="checkbox"/> Yes
Local file name	<input type="text"/> 
Remote file name	<input type="text"/> 
Program to start at normal end	<input type="text"/> 
Program to start at abnormal end	<input type="text"/> 
FTP command	
Comment	
FTPS enable	<input type="checkbox"/> Yes
Server certificate expiration check	<input type="checkbox"/> Yes
Path name of the CA certificate	<input type="text"/> 
Path name of the CRL	<input type="text"/> 


 

4. Enter the transmission information and then click **Register**.
For details about the information to be registered, see [3.4 Registering transmission information](#).
You can register multiple sets of transmission information one after another until you click **Close**.
5. Click **Close**.

Changing and deleting transmission information

You can change and delete transmission information in the same manner.



Changing: Specify the desired transmission information and then click  .

Deleting: Specify the desired transmission information and then click  .

4.3.2 Example of distributing (copying) transmission information

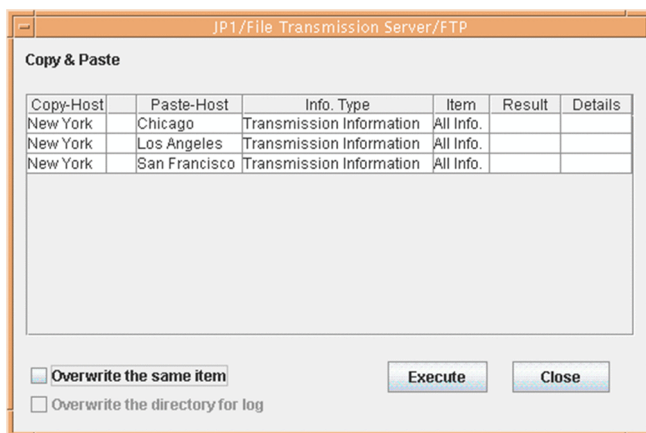
This example copies transmission information by distributing it from the New York headquarters to three branches (Chicago, Los Angeles, and San Francisco). If the same information already exists, it will be overwritten.

To copy information:

1. In the tree window, double-click New York.
2. Under New York, select **Transmission Registration**, and then click  .
3. In the tree window, click Chicago, and then click Los Angeles and San Francisco while holding down the **Shift** or **Ctrl** key.
4. In the tree window or the list window, click  .

A dialog box for copying and pasting information is displayed.

Figure 4–8: Dialog box for copying and pasting information



About Overwrite the directory for log

This option is enabled only when environment definition information is being copied. Select it only if you want to overwrite the existing log information directory.

5. Select **Overwrite the same item** and then click **Execute**.

When the copy and paste operation is finished, **Result** and **Details** are displayed. By clicking **Details**, you can view the copied information and error information.


6. Click **Close**.

4.3.3 Example of displaying log information

This example displays the log information for the New York headquarters.

To display log information:

1. In the tree window, click the **Func** tab at the bottom.
Information is displayed in the tree window by function.
2. In the tree window, double-click **Log Information**.

3. Select **New York** under the log information, and then click  .

Log information is displayed in the list window.

To display only specific log information:


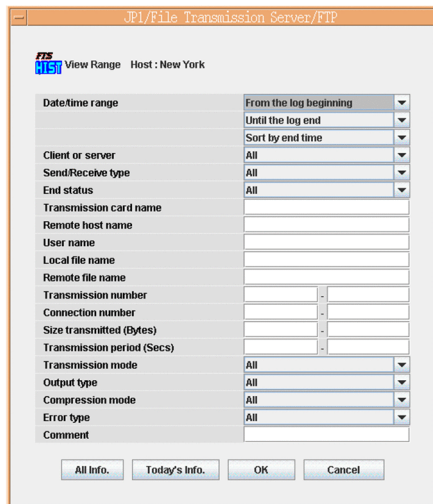
In the list window, click  . In the displayed dialog box, specify a condition for displaying information.

Figure 4–9: Dialog box for displaying specific information



4.3.4 Example of outputting multiple registration information items as text

This example outputs registration information for the Chicago, Los Angeles, and San Francisco branches as text. You can select for the output method either **Output Text** or **Append Text**.

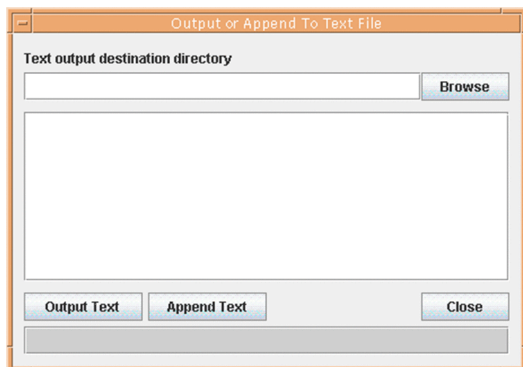
A sample format for text output is set up during installation. You use this format file at the Operations-Manager Console host. The format file to be used corresponds to the value set for the `LANG` environment variable.

You can edit the format file to create a desired format. For details about how to edit the format file, see [E. Format Files Used for Output of Definition Information](#).

To output multiple registration information items as text:

1. In the tree window, click **Chicago**, and then click **Los Angeles** and **San Francisco** while holding down the **Shift** or **Ctrl** key.
2. From the right-click menu, choose **Output Text**.
The Output or Append To Text File dialog box appears.

Figure 4–10: Output or Append To Text File dialog box



3. Specify the directory to which the text is to be output, and then click either **Output Text** or **Append Text**.

Output Text

Outputs the registration information to the specified file. If the specified file already exists, its contents are overwritten.

Append Text

Outputs the registration information at the end of the specified file.

The text output status is displayed.

4. Click **Close**.

File name for the output text

The following table shows the name of the output file depending on the type of information.

Table 4–1: Names of output text files

Type of information	File name ^{#1}
User information ^{#2}	<i>host-name-to-be-displayed_user.txt</i>
Auto-start program information based on file	<i>host-name-to-be-displayed_autof.txt</i>
Auto-start program information based on directory	<i>host-name-to-be-displayed_autod.txt</i>
Transmission information	<i>host-name-to-be-displayed_tran.txt</i>
Log information	<i>host-name-to-be-displayed_hist.txt</i>

^{#1}

If the host name to be displayed contains any illegal character for the file name (\\, /, :, , , ;, *, ?, ", <, >, |), each such illegal character will be replaced with # to create the file name.

^{#2}

The information cannot be output when the target host is UNIX.

5

Linkage with Other JP1 Programs

This chapter describes the settings required for linking JP1/FTP to other JP1 programs and the respective operation methods.

5.1 Linking to JP1/AJS3

You can link JP1/FTP to JP1/AJS3 to perform scheduled file transmissions.

This section describes the settings for linking to JP1/AJS3 and the operation method.

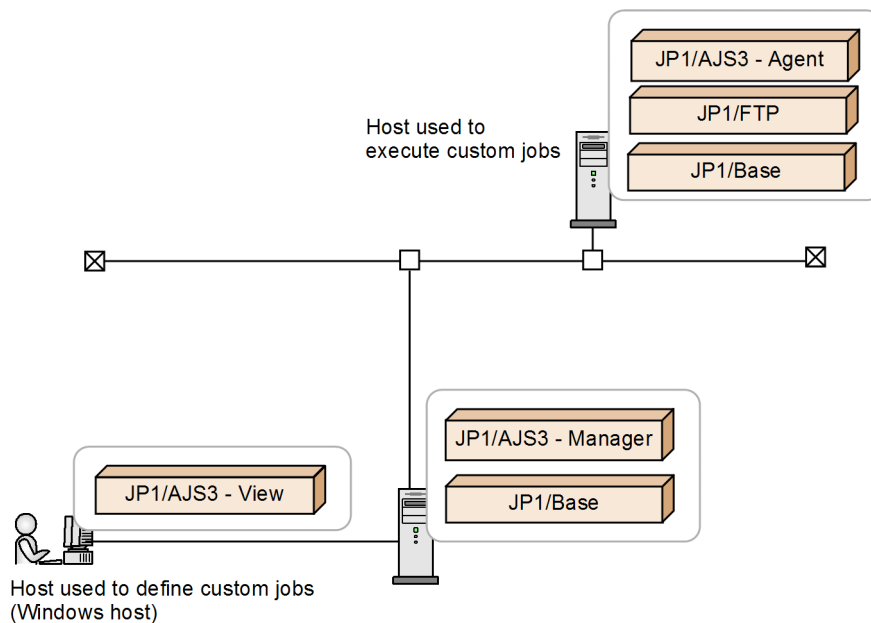
5.1.1 System configuration for linking to JP1/AJS3

Required program

Install the following program on the computer where JP1/FTP is installed:

- JP1/AJS3 - Manager or JP1/AJS3 - Agent

Figure 5–1: Example of a system configuration for linking to JP1/AJS3



5.1.2 Specifying the settings for linking to JP1/AJS3

To register JP1/FTP into JP1/AJS3 as a custom job in order to link JP1/FTP to JP1/AJS3:

1. From the Windows **Start** menu, choose **Programs** and then **JP1_Automatic Job Management System 3 - View**, and then **Register Custom Job**.

The Register Custom Job dialog box appears.

2. Click **Add**.

The Set Properties of Custom Job dialog box appears.

3. Set each item and then click **OK**.

4. Restart JP1/AJS3.

The custom job is registered. The following shows the Set Properties of Custom Job dialog box and the settings.

Figure 5–2: Set Properties of Custom Job dialog box

Table 5–1: Settings in the Set Properties of Custom Job dialog box

Item	Setting
Name ((1 to 8-byte character string))	Specify any name for the custom job. This item is mandatory.
Comment ((0 to 40-byte character string))	Specify any desired comment. The forward slash (/) and the space cannot be used in a comment.
Defining program	Specify nothing.
Executing program	Specify nothing.
Version	0600 (fixed)
Class	JP1FTP (fixed)
Job Type	UNIX

5.1.3 Performing scheduled transmissions

To perform scheduled transmissions, you must first create a jobnet and then register the schedule in the jobnet.


(1) Creating a jobnet

To create a jobnet:

1. From the Windows **Start** menu, choose **Programs, JP1_Automatic Job Management System 3 - View, and Job System Management**, and then log in.
The JP1/AJS3 - View window is displayed.
2. From the **Edit** menu, choose **New** and then **Jobnet** to create a jobnet.
3. Specify each setting and then click **OK**.

The following figure shows an example of the settings. For details, see the *JP1/Automatic Job Management System 3 Linkage Guide*.

Figure 5–3: Example of the settings in the Define Details - [Jobnet] dialog box

4. Double-click the created jobnet.
The Jobnet Editor window appears.
5. Select **Exclusive edit**.
6. From the icon list, drag the required job icon to the map area.
The JP1/FTP icon is the  icon on the **Custom Jobs** page.
The Define Details - [Custom Job] dialog box appears.
7. In **Command statement**, specify the transmission card in the following format:

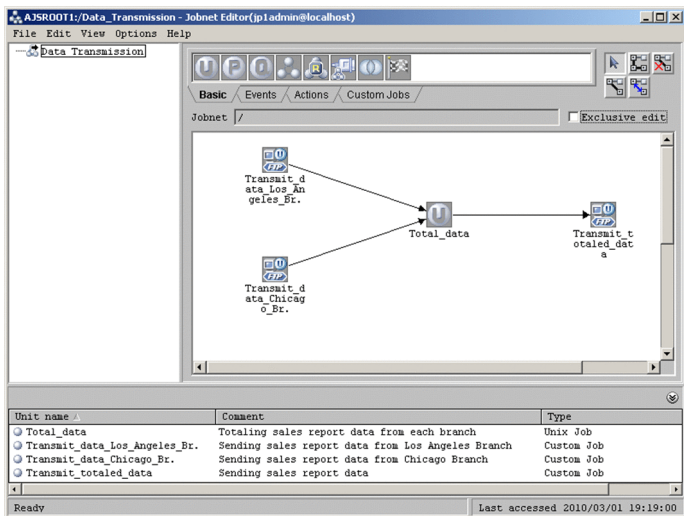
```
ftstran transmission-card-name
```

The following figure shows an example of the settings.

Figure 5–4: Example of the settings in the Define Details - [Custom Job] dialog box

8. Specify other settings, and then click **OK**.
For details, see the *JP1/Automatic Job Management System 3 Linkage Guide*.
9. If necessary, set the job type as a UNIX job and associate the jobs.
The following figure shows an example of the settings.

Figure 5–5: Example of the jobnet settings



10. Close the Jobnet Editor window.

(2) Registering a schedule

To register a schedule:

1. From the list area of the JP1/AJS3 - View window, select the jobnet that is to be scheduled, and then from the **Edit** menu, choose **Schedule**.
The Schedule Settings dialog box is displayed.
2. Specify each setting and then click **OK**.

The figure below shows an example of the settings. For details, see the *JP1/Automatic Job Management System 3 Linkage Guide*.

Figure 5–6: Example of the settings in the Schedule Settings dialog box

Schedule Settings

Jobnet name: Data_Transmission

☐ Depends on upper-level jobnet Copy Upper

#	Linked	Type	Year/Month	Day
1	-	Absolute day ****/**		3 days before

Add... Change... Copy... Delete

Valid term: ☐ Expiration date / /

Options: ☐ Refer to a calendar of another job group
Job group name:
☐ Exclusive schedule
Exclusive jobnet:

OK Cancel Help

3. From the list area of the JP1/AJS3 - View window, select the jobnet to be registered for execution, and then from **Operations**, choose **Register for Execution**.

The Register for Execution dialog box is displayed.

4. Specify each setting and then click **OK**.

The figure below shows an example of the settings. For details, see the *JP1/Automatic Job Management System 3 Linkage Guide*.

Figure 5–7: Example of the settings in the Register for Execution dialog box

Register for Execution

Jobnet name: Data_Transmission

Register method:

- ☒ Planned execution
- ☐ Fixed execution
- ☐ Immediate execution

Planned time passed when daemon starts:

- ☒ Execute immediately
- ☐ Execute from next time

Planned time passed when reg. for exe.:

- ☒ Execute immediately
- ☐ Execute from next time

OK Cancel Pass Info... Help

5.2 Linking to JP1/IM

You can link JP1/FTP to JP1/IM in order to use JP1/IM's Event Console window to perform centralized monitoring of the start and stop of the JP1/FTP service and the termination of transmissions (normal, warning, abnormal).

5.2.1 System configuration for linking to JP1/IM

Required programs

Install the following program on the computer where JP1/FTP is installed:

- JP1/Base

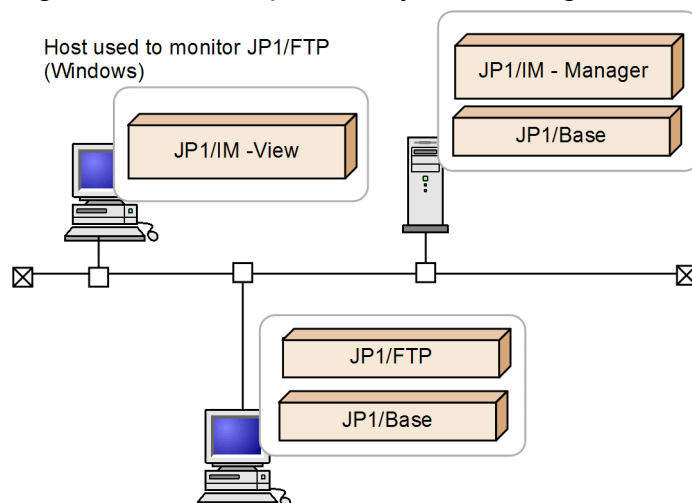
Additionally, install the following programs on the computer that is to be used to monitor JP1/FTP:

- JP1/IM - Manager
- JP1/Base

To use JP1/IM's Event Console window for monitoring, you need a Windows system on which the following program is installed:

- JP1/IM - View

Figure 5–8: Example of a system configuration for linking to JP1/IM



5.2.2 Specifying the settings for linking to JP1/IM

In the `ftsutil` command, specify Link to JP1/IM in `CHECK`.

```
ftsutil -C -EI CHECK
```

5.2.3 Starting the services

Start the JP1/Base, JP1/IM, and JP1/FTP services that are listed below. If any of these services is already running, stop it and then restart it.

- JP1/Base event service

For details, see the *JP1/Base User's Guide*.

- JP1/IM service

For details, see the *JP1/Integrated Management - Manager Overview and System Design Guide* and the *JP1/Integrated Management - Manager Administration Guide*.

- JP1/File Transmission Server/FTP service

Execute the `ftsstart` command to start the JP1/FTP daemon.

Thereafter, JP1 events will be issued to report the status of the JP1/FTP service and the status of file transmissions.

5.2.4 Monitoring transmission results by JP1/IM

To monitor transmission results in the Event Console window of JP1/IM:

1. From the Windows **Start** menu, choose **Programs, JP1_Integrated Management - View**, and then **Integrated View**.

The Login window is displayed.

2. In the Login window, enter the user name, password, and name of the connected host.

3. Click **OK**.

The Event Console window is displayed.

For the list of JP1 events that are output by JP1/FTP and details about their attributes, see [D. JP1 Events](#).

6

Commands

This chapter describes the commands provided by JP1/FTP.

List of commands

The following table lists and describes the commands supported by JP1/FTP and the required execution permissions.

Table 6–1: Commands supported by JP1/FTP

Function	Command name	Required execution permissions		
		Referencing	Registration, change, deletion	Execution
Starts the JP1/FTP daemon	<code>ftsstart</code>	--	--	Superuser
Terminates the JP1/FTP daemon	<code>ftsstop</code>	--	--	Superuser
Changes and displays environment information	<code>ftsutil</code>	Ordinary user	Superuser	--
Registers, deletes, and displays auto-start programs	<code>ftsautoma</code>	Ordinary user	Superuser	--
Executes transmission	<code>ftstran</code>	--	--	Ordinary user
Registers, changes, deletes, and displays transmission information	<code>ftsregc</code>	Ordinary user	Superuser	--
Displays transmission information	<code>ftsregcv</code>	Ordinary user	--	--
Displays log information	<code>ftshistory</code>	Ordinary user	--	--
Starts the Operations-Manager Console	<code>ftsconsole</code>	Superuser	Superuser	--
Starts the Operations-Manager Agent	<code>ftsastart</code>	--	--	Superuser
Terminates the Operations-Manager Agent	<code>ftsastop</code>	--	--	Superuser
Starts the log daemon	<code>ftslogstart</code>	--	--	Superuser
Terminates the log daemon	<code>ftslogstop</code>	--	--	Superuser
Checks the JP1/FTP daemon status	<code>jftsdstatus</code>	--	--	Superuser
Checks the Operations-Manager Agent status	<code>jftsastatus</code>	--	--	Superuser
Checks the log daemon status	<code>jftslogdstatus</code>	--	--	Superuser

Legend:

--: No applicable function

Details of commands

Storage location for commands:

- `/opt/jp1_fts/bin/`

ftsstart - starts the JP1/FTP daemon

Format

```
ftsstart
```

Function

The `ftsstart` command starts the JP1/FTP daemon. To execute this command, you need superuser permissions.

Notes

- Do not use the `jftsd` command of versions earlier than 11-00.
- If you have used the `ftsutil` command to change the maximum number of concurrent transmissions, the following settings are reset to their initial status (initialized) when you start the JP1/FTP daemon:
 - Transmission log
 - Transmission number
 - Connection number
 - Protocol trace
 - Module trace

When settings are initialized, their previous status is deleted. Therefore, we recommend that you back up any needed information before you start the JP1/FTP daemon. For details about the information to back up, see [\(2\) Log information in 3.7.1 Information that can be saved and recovered](#). When you restore from a backup, make sure that the maximum number of concurrent transmissions is set to the same value as when the backup was created. If the maximum number of concurrent transmissions at the time the backup was made does not match the number at the time of recovery, the JP1/FTP daemon will not start.

When you restore from initialized status, the JP1/FTP daemon might be delayed temporarily. To avoid this delay, delete the above settings beforehand. The deletion tool enables you to do this easily. For details about the deletion tool, see [G. Log Information Deletion Tool](#).

ftsstop - terminates the JP1/FTP daemon

Format

```
ftsstop [-f|-z]
```

Function

The `ftsstop` command terminates the JP1/FTP daemon and accepts no more transmission requests. To execute this command, you need superuser permissions.

Arguments

[-f|-z]

- Omitted: If a transmission is underway at the time the command is executed, the command waits until the transmission is finished before terminating the JP1/FTP daemon.
- `-f`: If a transmission is underway at the time the command is executed, the command forcibly terminates the transmission and then terminates the JP1/FTP daemon. The forcibly terminated transmission is logged as a forced termination error.
- `-z`: If a transmission is underway at the time the command is executed, the command forcibly terminates the transmission and then terminates the JP1/FTP daemon. Log information about the forcibly terminated transmission is not retained.

Use the `-z` option only when the JP1/FTP daemon cannot be terminated using the command with the `-f` option specified or with no option specified.

ftsutil - changes and displays environment information

Format

Changing environment information:

```
ftsutil -C environment-information-option transmission-option-parameter
```

Displaying environment information:

```
ftsutil -L
```

Function

The `ftsutil` command changes or displays environment information.

Arguments

-C environment-information-option transmission-option-parameter

Changes the environment information in accordance with the specified environment information options.

To change environment information, you need superuser permissions.

The new settings take effect when you restart the JP1/FTP daemon.

The table below lists and describes the environment information options. For details about the transmission option parameters, see [3.1.1 Defining an environment for JP1/FTP](#).

Table 6–2: Environment information options

Option name	Transmission option parameter	Value
-EH	Number of log entries to retain	((0 to 1,000,000))
-EP	Size of the protocol trace file	((4 to 10,000))
-EM	Size of the module trace file	((4 to 10,000))
-ER	Number of retries when connecting to a host	((0 to 100,000))
-EY	Retry interval when connecting to a host	((0 to 86,400))
-EO	Time-limit for waiting to send data	((1 to 3,600))
-EU	Time-limit for waiting to receive data	((1 to 3,600))
-ES	Size of the send buffer at the server	((512 to 262,144))
-EB	Size of the receive buffer at the server	((512 to 262,144))
-ET	Time-limit for idle connection at the server	((30 to 7,200))
-EV	File creation mask at the server	Octal value ((000 to 777))
-EF	Size of the send buffer at the client	((512 to 262,144))
-EE	Size of the receive buffer at the client	((512 to 262,144))
-EK	File creation mask at the client	Octal value ((000 to 777))
-EI	Link to JP1/IM (CHECK or UNCHECK)	CHECK UNCHECK

Option name	Transmission option parameter	Value
-EL	Output transmission result to system log (CHECK or UNCHECK)	CHECK UNCHECK
-EC	Maximum number of concurrent transmissions	64 to 128 <<64>>
-EA	File size for the access log	((0 to 100))
-EX	FTP connection response message control (CHECK or UNCHECK)	CHECK UNCHECK

-L

Displays environment information.

Example of display:

```

** Environment information **
Number of log entries to be retained: 10000
Size of protocol trace file: 4
Size of module trace file: 4
Number of retries when connecting to a host: 5
Retry interval when connecting to a host: 2
Time limit for waiting to send data: 60
Time limit for waiting to receive data: 60
Size of send buffer at the server: 40960
Size of receive buffer at the server: 40960
Time limit for idle connection at the server: 900
File creation mask at the server: 027
Size of send buffer at the client: 40960
Size of receive buffer at the client: 40960
File creation mask at the client: 027
Link to JP1/IM: CHECK
Output transmission result to system log: UNCHECK
Maximum number of concurrent transmissions: 64#
File size for access log: 0
FTP connection response message control: UNCHECKo

```

#

If you have changed the maximum number of concurrent transmissions, a number in parentheses might be displayed in the maximum number of concurrent transmissions column. This number indicates the maximum number of concurrent transmissions that were in effect at that point and is displayed when a new maximum number of concurrent transmissions is different from the maximum number of concurrent transmissions that was in effect when the information was displayed.

The following example shows a change in the maximum number of concurrent transmissions from 64 to 128:

Maximum number of concurrent transmissions: 128 (64)

Return values

0	Normal termination
62	Abnormal termination during change
64	Abnormal termination during display
91	Abnormal termination due to a syntax error in a command parameter

ftsautoma - registers, deletes, and displays auto-start programs

Format

Registering:

```
ftsautoma -file | dir -N user-name file-name | directory-name end-of-transmission-start-program-option option-parameter
```

Deleting:

```
ftsautoma -file | dir -D user-name file-name | directory-name
```

Displaying:

```
ftsautoma -file | dir -L [user-name [file-name | directory-name]] [-m format-file-name | -v] [-f auto-start-program-information-directory-name]
```

Function

The `ftsautoma` command registers, deletes, or displays auto-start programs.

Arguments

-file | dir

Specifies the type of key:

- `-file`: Uses a file name as the key.
- `-dir`: Uses a directory name as the key.

-N *user-name file-name | directory-name* ((1 to 256-byte character string))

Registers a new auto-start program with the specified file name (or directory name) as the key value.

The user name must be a user registered in the `/etc/passwd` file or the default user (`default`).

A file name must be the full path or the file name. A directory name must be the full path.

At least one of `-AS` and `-AF` must also be specified.

To register auto-start program information, you need superuser permissions.

-D *user-name file-name | directory-name*

Deletes the auto-start program identified by the specified user name and file name (or directory name).

To delete auto-start program information, you need superuser permissions.

-L [*user-name [file-name | directory-name]*]

Displays registration information for the auto-start program identified by the specified user name and file name (or directory name).

If you omit the file name and directory name, the command displays registration information for all auto-start programs for the specified user name.

If you omit all of user name, file name, and directory name, the command displays registration information for all auto-start programs.

-m *format-file-name* ((1 to 256-byte character string))

Displays the auto-start program registration information in the format that is set up in the specified format file.

For details about the format file, see *E. Format Files Used for Output of Definition Information*.

If a relative path is specified for the format file name, the command assumes the directory relative to the command execution directory.

This argument and -v are mutually exclusive.

Example of display when the default format file is specified:

```
////////// Auto-Start Program Registrations ////////// No.1 //////////
User name: jplftp_user
Trigger key: data1
Auto-start program at normal end: /home/jplftp_user/bin/normalend_proc
Auto-start program at abnormal end: /home/jplftp_user/bin/abnormalend_proc
```

If -m and -v are both omitted, the command displays information in the format that is set up in the default format file.

For details about the default format file, see *E. Format Files Used for Output of Definition Information*.

-v

Displays auto-start program registration information in list format.

This argument and -m are mutually exclusive.

Example of display:

User name	File name	Auto-start program at normal end	Auto-start program at abnormal end
root	root_file	/root/normalend_proc	/root/abnormalend_proc
jplftp_user	jplftp_user_fil	/home/jplftp_user/bin/n	/home/jplftp_user/bin/a
.default	shared_file	/home/share/bin/normal	/home/share/bin/abnorma

If the list format is used, the length of each item is limited as shown in the table below.

Table 6–3: Number of characters displayed in the list format columns

Item name	Maximum number of characters displayed
User name	15 characters
File name or Directory name	15 characters
Auto-start program at normal end	23 characters (32 characters when LANG=C is specified)
Auto-start program at abnormal end	23 characters (32 characters when LANG=C is specified)

If -m and -v are both omitted, the command displays information in the format that is set up in the default format file.

For details about the default format file, see *E. Format Files Used for Output of Definition Information*.

-f auto-start-program-information-directory-name ((1 to 256-byte character string))

Changes the directory from which the auto-start program information is loaded to the specified directory.

If you specify a relative path for the auto-start program information directory name, the command assumes the directory relative to the command execution directory.

directory-name end-of-transmission-start-program-option option-parameter

The table below lists and describes the end-of-transmission start program options. For details about the transmission option parameters, see [3.3.1 Registering auto-start programs](#).

Table 6–4: End-of-transmission start program options

Option name	Transmission option parameter	Value
-AS	Name of the program to start when transmission ends normally	((0 to 256 bytes))
-AF	Name of the program to start when transmission ends abnormally	((0 to 256 bytes))

Return values

0	Normal termination
61	Abnormal termination during registration
63	Abnormal termination during deletion
64	Abnormal termination during display
91	Abnormal termination due to a syntax error in a command parameter

Note

A space character contained in a program name specified in -AS or -AF has a special meaning to the shell. In such a case, you must escape the space characters.

Example: Specifying 1 in the option when the program name is /home/user1/sample:

```
"/home/user1/sample 1"
```

ftstran - executes transmission

Format

```
ftstran transmission-card-name [-N file-name] [-E file-name] [-M [B|T] ]  
[-H host-name] [transmission-information-option transmission-option-parameter]
```

Function

The `ftstran` command executes file transmission based on the information in a specified transmission card (Select Card method of file transmission) or by modifying information in a specified transmission card (Enter Information method of file transmission).

Arguments

***transmission-card-name* ((1 to 20-byte character string))**

Specifies the name of a transmission card that has been registered using the Transmission Regist. & Exe. window

-N *file-name* ((1 to 256-byte character string))

Specifies the name of the file to which the results are output when the transmission terminates normally. If this option is omitted, transmission results are not output when the transmission terminates normally.

If you specify a relative path for the file name, the command assumes the directory relative to the command execution directory.

If a file with the same name exists, it is overwritten.

-E *file-name* ((1 to 256-byte character string))

Specifies the name of the file to which the results are output when the transmission terminates abnormally. If this option is omitted, transmission results are not output when the transmission terminates abnormally.

If you specify a relative path for the file name, the command assumes the directory relative to the command execution directory.

If a file with the same name exists, it is overwritten.

-M [B|T]

Specifies the output format.

- B: Binary format (data consisting of consecutive FTS_FTP_API_DATA_EX or FTS_FTP_API_RETDATA_EX structures)
- T: Text format

-H *host-name* ((1 to 256-byte character string))

Specifies the host name or IP address of the computer on which the client's JP1/FTP daemon is running. When you specify an IP address, you can specify an IPv4 or IPv6 address. Use this option to specify a specific address when the `ftstran` command is executed in an environment where the local host has multiple IP addresses.

If you have enabled specification of the FTP client's local IP address, the value specified in this option becomes the FTP client's local IP address. If you omit this option, the address of the physical host is assumed.

If you have disabled specification of the FTP client's local IP address, the address that is assigned automatically by the OS becomes the FTP client's local IP address regardless of the specification of this option. For details about how to enable specification of the FTP client's local IP address, see [3.15 Using JP1/FTP in a multiple IP address environment](#).

transmission-information-option transmission-option-parameter

Specifies desired options in order to modify some of the transmission information on the specified transmission card (Enter Information method of file transmission).

For details about the transmission information options, see [ftsregc - registers, changes, deletes, and displays transmission information](#) in this chapter. For details about the transmission option parameters for the transmission information options, see [3.4.1 Registering transmission information onto a transmission card](#).

Return values

0	Normal termination
10	Normal termination with a warning due to an open error on the transmission-end information storage file
11	Normal termination with a warning due to an output error on the transmission-end information storage file
12	Normal termination with a warning due to a JP1/FTP connection release error
13	Abnormal termination due to unacquired card information
50	Abnormal termination due to an error in [fts_ftp_open_ex()] during JP1/FTP connection establishment
51	Abnormal termination due to an error in [fts_ftp_syn_request_ex()] during transmission request registration (synchronous)
90	Abnormal termination of transmission
91	Abnormal termination due to a syntax error in a command parameter

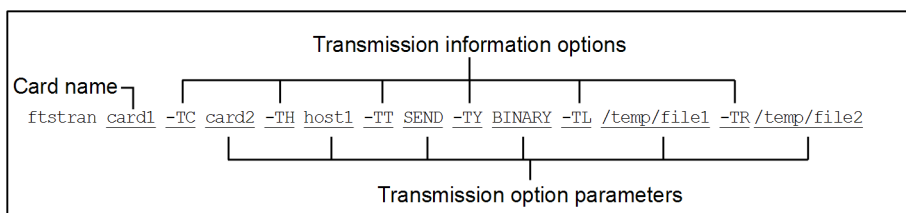
For details about the messages that are displayed, see [8.9 Messages issued by the ftstran command \(KDJF50xx\)](#).

Usage examples

- Example of the Select Card method of file transmission:

```
ftstran card1
Card name
```

- Example of the Enter Information method of file transmission:



This example changes the following transmission information on `card1` and then executes transmission:

- `-TC`: The name for the new card is `card2`.
- `-TH`: The connection-target host name is `host1`.
- `-TT`: The send/receive type is `SEND`.
- `-TY`: The transmission mode is `BINARY`.
- `-TL`: The local file name is `/temp/file1`.

- -TR: The remote file name is /temp/file2.

ftsregc - registers, changes, deletes, and displays transmission information

Format

Registering:

```
ftsregc -N [transmission-card-name] [transmission-information-option transmission-option-parameter]
```

Changing:

```
ftsregc -C [transmission-card-name transmission-information-option transmission-option-parameter]
```

Deleting:

```
ftsregc -D transmission-card-name
```

Displaying:

```
ftsregc -L transmission-card-name
```

Function

The `ftsregc` command registers, changes, deletes, or displays transmission information.

Arguments

-N [transmission-card-name] [transmission-information-option transmission-option-parameter]

There are two ways to register transmission information. One is by registering new transmission information that has been set on a transmission card. The other is by using an existing transmission card as a model and editing its contents in order to register it as a separate transmission card.

- Registering new transmission information onto a transmission card

```
ftsregc -N [transmission-information-option transmission-option-parameter]
```

This method creates new transmission information based on the information specified with the transmission information options. Among the available transmission information options, you must always specify `-TC`, `-TH`, `-TU`, `-TT`, `-TY`, `-TL`, and `-TR`. You must use the `-TC` transmission information option to specify a name for the transmission card.

- Registering transmission information using an existing transmission card

```
ftsregc -N [transmission-card-name] [transmission-information-option transmission-option-parameter]
```

This method specifies the name of a transmission card to use as a model and then specifies transmission information options to change. You must specify in `-TC` a name for the new transmission card that you are registering.

To register transmission information, you need superuser permissions.

The table below lists and describes the transmission information options. For details about the transmission option parameters, see [3.4.1 Registering transmission information onto a transmission card](#).

Table 6–5: Transmission information options

Option name	Transmission option parameter	Value
-TC	Transmission card name	((1 to 20 bytes))
-TH	Connection-target host name	((1 to 256 bytes))
-TP	Connection-target port number	((1 to 65,535))
-TU	Login user name	((1 to 80 bytes))
-TW	Login password	((0 to 80 bytes))
-TT	Send/receive type: <ul style="list-style-type: none"> • SEND: Sends files (overwrite). • RECV: Receives files. • APPE: Sends files (append). 	SEND RECV APPE
-TY	Transmission mode: <ul style="list-style-type: none"> • ASCII: Transmits files in the ASCII mode. • BINARY: Transmits files in the binary mode. 	ASCII BINARY
-TM	Compression mode: <ul style="list-style-type: none"> • STREAM: Transmits files without compressing them. • COMPRESS: Compresses files during transmission. 	STREAM COMPRESS
-TK	Size check: <ul style="list-style-type: none"> • CHECK: Checks the size. • UNCHECK: Does not check the size. 	CHECK UNCHECK
-TL	Local file name	((1 to 256 bytes))
-TR	Remote file name	((1 to 256 bytes))
-TS	Name of the program to start when transmission ends normally	((0 to 256 bytes))
-TF	Name of the program to start when transmission ends abnormally	((0 to 256 bytes))
-TX	FTP command	((0 to 300 bytes))
-TO	Comment	((0 to 80 bytes))
-TA	Single/multiple-file transmission: <ul style="list-style-type: none"> • AUTO: Switches automatically between single-file transmission and multiple-file transmission. • MULTIPLE: Performs multiple-file transmission. • SINGLE: Performs single-file transmission. 	AUTO MULTIPLE SINGLE
-TSS	Use FTPS <ul style="list-style-type: none"> • CHECK: Uses FTPS. • UNCHECK: Does not use FTPS. 	CHECK UNCHECK
-TSE	Check the expiration date of the server certificate <ul style="list-style-type: none"> • CHECK: Checks the expiration date of the server certificate. • UNCHECK: Does not check the expiration date of the server certificate. 	CHECK UNCHECK
-TSA	Path to the CA certificate	((0 to 256 bytes))
-TSR	Path to the CRL	((0 to 256 bytes))

-C *transmission-card-name* [*transmission-information-option transmission-option-parameter*]

Changes from the specified transmission card the transmission information that is specified by the transmission information options.

To change transmission information, you need superuser permissions.

-D *transmission-card-name*

Deletes the transmission information identified by the specified transmission card name.

To delete transmission information, you need superuser permissions.

-L *transmission-card-name*

Displays the transmission information for the specified transmission card.

Note

Do not execute the `ftsregc` command so that multiple instances are running at the same time. If you execute multiple instances of the command at the same time, an error will occur, and even if an error message is not output, you might not get the expected results. However, when displaying transmission information, multiple instances of the `ftsregc` command can be executed at the same time.

Return values

0	Normal termination
61	Abnormal termination during registration
62	Abnormal termination during change
63	Abnormal termination during deletion
64	Abnormal termination during display
91	Abnormal termination due to a syntax error in a command parameter

For details about the messages that are displayed, see [8.11 Messages issued by the `ftsregc` command \(KDJF52xx\)](#).

Note

To specify zero characters in an option argument, specify the null character string.

Example: Delete the name of the program that is started when transmission ends normally:

```
ftsregc -C card1 -TS ""
```

ftsregcv - displays transmission information

Format

```
ftsregcv [-c transmission-card-name] [-m format-file-name | -v] [-x | -e] [-f transmission-card-information-file-name]
```

Function

The `ftsregcv` command displays transmission information that has been registered.

Arguments

-c *transmission-card-name*

Specifies the name of the transmission card that is to be displayed.

The command displays the transmission card information that matches the specified transmission card name.

-m *format-file-name* ((1 to 256-byte character string))

Displays transmission information in the format that was set up in the specified format file.

For details about the format file, see [E. Format Files Used for Output of Definition Information](#).

If a relative path is specified for the format file name, the command assumes the directory relative to the command execution directory.

This argument and `-v` are mutually exclusive.

Example of display when the default format file is specified:

```
////////// Transmission Cards ////////// No.1 ////////////  
  
Transmission card: card01  
Local file name: /home/user01/data01  
Remote file name: /home/user01/data02  
Sending or receiving: Send  
Transmission mode: ASCII  
Kind of output: Overwrite  
Compression mode: Uncompress  
Size check: Off  
Single/Multiple-file transmission: Automatic switch  
Remote host name: host01  
Remote port number: 20125  
User name: user01  
Program started at normal end: /normalend  
Program started at abnormal end: /abnormalend  
FTP command:  
Comment:  
FTPS enable: Off  
Server certificate expiration check: Off  
Path name of the CA certificate:  
Path name of the CRL:
```

If `-m` and `-v` are both omitted, the command displays information in the format that was set up in the default format file.

For details about the default format file, see [E. Format Files Used for Output of Definition Information](#).

-v

Displays transmission information in list format.

This argument and `-m` are mutually exclusive.

Example of display:

Card name	Host name	User name	Local file name	Remote file name	DTOM	Comment
card_001	host01	user01	data01	data01		RIOC
card_002	host02	user01	data02	data02		SAOC
card_003	host03	user01	data03	data03		SIAS

In the list format, the meanings of the information in the *DTOM* column are as follows:

- D: Send/receive type
 - S: Send
 - R: Receive
- T: Transmission type
 - A: ASCII
 - I: Binary
- O: Output type
 - O: Overwrite
 - A: Append
- M: Compression mode
 - S: Uncompressed
 - C: Compressed

If the list format is used, the length of each item is limited as shown in the table below.

Table 6–6: Number of characters displayed in the list format columns

Item name	Maximum number of characters displayed
Card name	14 characters
Host name	14 characters
User name	14 characters
Local file name	19 characters
Remote file name	19 characters
Comment	20 characters

If `-m` and `-v` are both omitted, the command displays information in the format that was set up in the default format file.

For details about the default format file, see [E. Format Files Used for Output of Definition Information](#).

-x

Changes some of the characters to be output to the file to the value specified in the transmission information option.

For details about the transmission information option, see [ftsregc - registers, changes, deletes, and displays transmission information](#) in [6. Commands](#).

-e

Changes some of the values to be output to the file to the value in the keyword output content to be transferred to the auto-start program.

For details about the keyword output content to be transferred to the auto-start program, see *Parameter keywords* in [3.3.1 Registering auto-start programs](#).

-f *transmission-card-information-file-name* ((1 to 256-byte character string))

Changes the location from which to load the transmission card information to the specified transmission card information file.

If you specify a relative path for the transmission card information file name, the command assumes the directory relative to the command execution directory.

Return values

0	Normal termination
64	Abnormal termination during display
91	Abnormal termination due to a syntax error in the command parameter

ftshistory - displays log information

Format

```
ftshistory [-m format-file-name | -v] [-s transmission-time [,transmission-t  
ime] ] [-f log-file-name]
```

Function

The `ftshistory` command displays log information.

Arguments

-m *format-file-name* ((1 to 256-byte character string))

Displays log information in the format that was set up in the specified format file.

For details about the format file, see [E. Format Files Used for Output of Definition Information](#).

If you specify a relative path for the file name, the command assumes the directory relative to the command execution directory.

This argument and `-v` are mutually exclusive.

Example of display when the default format file is specified:

```
////////// Log Information ////////// No.1 ////////////  
  
Transmission card: card1  
Local file name: /tmp/RECV/data1  
Remote file name: /tmp/SEND/data1  
Sent or received: Received  
Transmission mode: ASCII  
Output type: Overwrite  
Compress mode: Uncompress  
Remote host name: host1  
Port number: 20125  
User name: user1  
Comment:  
  
Transmission number: 1  
Server or client: Client  
Status at termination: Normal  
Starting time: 2018/09/27 19:51:32  
Ending time: 2018/09/27 19:51:32  
Transmission period: 0  
Transmission size: 9  
  
Connection number: 2  
Error type:  
Position where error occurred:  
Error module name:  
Error system function name:  
Error message:  
Error protocol:  
SSL communication error message:
```

If `-m` and `-v` are both omitted, the command displays information in the format that was set up in the default format file.

For details about the default format file, see [E. Format Files Used for Output of Definition Information](#).

-v

Displays log information in list format.

This argument and -m are mutually exclusive.

Example of display:

Stat	S/C	Date	End time	Card name	Trans.No.	Snd/Rcv	Local file	Bytes	Remote host	Error type	Comment
N	P	C	2010/03/17 16:52:40	end_status	21	Received	testdata	65536	Windows2000_1		
N	C		2010/03/17 16:51:58	Windows_Re	20	Received	testdata	65536	Windows2000_1		
N	S		2010/03/17 16:51:24		11	Sent	regctest_nocard	7744	11.222.333.444		
N	S		2010/03/17 16:50:56		10	Received	regctest_nocard	7744	11.222.333.444		
A	S		2010/03/17 16:50:23		9	Received	testdata	0	11.222.333.444	System call error	
A	S		2010/03/17 16:49:51		8	Received	testdata	0	11.222.333.444	System call error	
N	S		2010/03/17 16:49:21		7	Sent	testdata	65536	11.222.333.444		
A	C		2010/03/17 16:48:39	Linux_Rece	19	Received	testdata	0	redhat_A52.1_1	System call error	

In the list display format, the entries in the STAT (result) and S/C (server or client) columns have the following meanings:

- STAT (result)
 - N: Transmission that terminated normally
 - A: Transmission that terminated abnormally
 - P: Start of auto-start program failed
- S/C (server or client)
 - C: Client
 - S: Server

If the list format is used, the length of each item is limited as shown in the table below.

Table 6–7: Number of characters displayed in the list format columns

Item name	Maximum number of characters displayed
Card name	10 characters
Local file name	18 characters
Remote host name	15 characters
Comment	15 characters

If -m and -v are both omitted, the command displays information in the format that was set up in the default format file.

For details about the default format file, see [E. Format Files Used for Output of Definition Information](#).

-s transmission-time [, transmission-time]

Displays the log information for the specified transmission time.

If you specify two transmission time values, the command displays all log information items with an end-of-transmission time that falls within the range of the two times.

A transmission time is displayed in the following format:

YYYY/MM/DD HH:MM:SS

-f *log-file-name* ((1 to 256-byte character string))

Changes to the log information in the specified log file.

If you specify a relative path for the log file name, the command assumes the directory relative to the command execution directory.

Return values

0	Normal termination
64	Abnormal termination during display
91	Abnormal termination due to a syntax error in a command parameter

Note

A space character contained in a transmission time has a special meaning to the shell. In such a case, you must escape the space characters.

Example: Specifying 2004-01-01 at 00:00:00:

```
-s "2004/01/01 00:00:00"
```

ftsconsole - starts the Operations-Manager Console

Format

```
ftsconsole
```

Function

The `ftsconsole` command displays the Operations-Manager Console window. To execute this command, you need superuser permissions.

Notes

- In 09-00 or later, an error results if you specify the `Java_Path` argument, which was supported by 08-00 and earlier.

ftsastart - starts the Operations-Manager Agent

Format

```
ftsastart
```

Function

The `ftsastart` command starts the Operations-Manager Agent. To execute this command, you need superuser permissions.

Notes

- Do not use the `jftsa` command of versions earlier than 11-00.
- This command returns control immediately after it has moved the Operations-Manager Agent to the background. The Operations-Manager Agent then displays the start message once its services are ready. Therefore, it might take some time after the command returns control before the start message is displayed.

ftsastop - terminates the Operations-Manager Agent

Format

```
ftsastop [-f]
```

Function

The `ftsastop` command terminates the Operations-Manager Agent. To execute this command, you need superuser permissions.

Arguments

-f

Forcibly terminates the Operations-Manager Agent without waiting for Java to terminate. If this option is omitted, the command terminates the Operations-Manager Agent after Java has terminated.

ftslogstart - starts the log daemon

Format

```
ftslogstart
```

Function

The `ftslogstart` command starts the log daemon. To execute this command, you need superuser permissions.

The log daemon starts in accordance with the information specified in the definition file (`ftslog.conf`). For details about the definition file (`ftslog.conf`), see [3.10 Event log function](#).

Note

- Do not use the `jftslogd` command of versions earlier than 11-00.

ftslogstop - terminates the log daemon

Format

```
ftslogstop [-f]
```

Function

The `ftslogstop` command terminates the log daemon and stops accepting event logs. To execute this command, you need superuser permissions.

Arguments

-f

Terminates the log daemon without outputting the event logs that are queued for file output at the time of command execution.

When this option is omitted and there are event logs waiting for file output at the time of command execution, the command outputs those event logs and then terminates the log daemon.

jftsdstatus - checks the JP1/FTP daemon status

Format

```
jftsdstatus
```

Function

The `jftsdstatus` command checks the status of the JP1/FTP daemon. To execute this command, you need superuser permissions.

Return values

0	The daemon is running
1	The daemon is stopped
64	Abnormal termination due to a command error

For details about the messages that are displayed, see [8.8 Messages issued by the jftsdstatus command \(KDJF41xx\)](#).

Execution example

When the JP1/FTP daemon is running:

```
# jftsdstatus
KDJF4100-I The JP1/FTS server is running.
# echo $?
0
```

jftsastatus - checks the Operations-Manager Agent status

Format

```
jftsastatus
```

Function

The `jftsastatus` command checks the status of the Operations-Manager Agent. To execute this command, you need superuser permissions.

Return values

0	The daemon is running
1	The daemon is stopped
64	Abnormal termination due to a command error

For details about the messages that are displayed, see [8.17 Messages issued by the jftsastatus command \(KDJF62xx\)](#).

Execution example

When the Operations-Manager Agent is running:

```
# jftsastatus
KDJF6200-I The JP1/FTS agent is running.
# echo $?
0
```

jftslgdstatus - checks the log daemon status

Format

```
jftslgdstatus
```

Function

The `jftslgdstatus` command checks the status of the log daemon. To execute this command, you need superuser permissions.

Return values

0	The daemon is running
1	The daemon is stopped
64	Abnormal termination due to a command error

For details about the messages that are displayed, see [8.21 Messages issued by the jftslgdstatus command \(KDJF92xx\)](#).

Execution example

When the log daemon is running:

```
# jftslgdstatus
KDJF9200-I The JP1/FTS log daemon is running.
# echo $?
0
```

7

API Library

This chapter describes how to use the JP1/FTP API library to link user programs to JP1/FTP and presents an example of library usage.

How to use the library

You use the JP1/FTP API library when you use the file transmission function of JP1/FTP from a user program.

The 32-bit (ILP32 data model) and 64-bit (LP64 data model) versions of the API library are provided.

The JP1/FTP API library enables you to do the following:

- Register transmission requests from a single user program to multiple JP1/FTPs that are running on different hosts (or on the same host)
- Select the transmission type when you register transmission requests:
 - Synchronous type: Waits until a transmission is completed and the termination result is obtained.
 - Asynchronous type: Performs registration only and does not wait for the termination results (obtains the termination results later).

Licensing

You may copy the header file and libraries to the environment in which JP1/FTP is not installed to build a user program.

Languages

The following languages are supported for user programs:

- C
- C++

Setting up an environment

Setting /etc/services

Set the JP1/FTP client's service name as `fts.c`. For details, see [2.3.3 Setting the port numbers](#).

Setting /etc/hosts

Set the host name and IP address of the host on which the client's JP1/FTP daemon is running. Specify this host name in the connection information structure and the transmission information structure.

Add the following line to `/etc/hosts`:

<code>xxx.xxx.xxx.xxx</code>	<code>yyyyyy</code>
------------------------------	---------------------

Legend:

`xxx.xxx.xxx.xxx`: IP address

`yyyyyy`: Host name

Coding

Specifying information for establishing a connection with JP1/FTP

To establish a connection with the JP1/FTP daemon, specify the address of the connection information structure in the argument of `fts_ftp_open_ex()`.

- Connection information structure

```
typedef struct _FTS_FTP_API_CONN_DATA {
    char hostname[256+1]; /* Client host name */
    int priority; /* IP version to be given priority */
    char reserve[1784]; /* Reserved area */
} FTS_FTP_API_CONN_DATA;
```

- Content of the connection information structure members

hostname

Specifies the host name or IP address of the computer on which the client's JP1/FTP daemon is running. When you specify an IP address, you can specify an IPv4 or IPv6 address. If a null value is specified, the local host name (the physical host name returned by the OS's `hostname` command) is assumed.

If specification of a local IP address at the FTP client is enabled, the value specified in this argument becomes the local IP address of the FTP client.

If a null value is specified, the physical host of the FTP client is assumed.

If specification of a local IP address at the FTP client is disabled, the local IP address of the FTP client is automatically assigned by the OS. For details about the definition that enables specification of a local IP address at the FTP client, see [3.15 Using JP1/FTP in a multiple IP address environment](#).

priority

Specifies the Internet protocol version to be given priority.

FTS_AF_INET: IPv4 is given priority.

FTS_AF_INET6: IPv6 is given priority.

In all other cases, FTS_AF_INET is assumed,

reserve

Reserved area. Initialize the area by specifying `\0`.

Note

Make sure that a `char`-type variable value ends with `\0`.

Specifying the transmission information

To register a file transmission request, you set the registered transmission card name and the address of the transmission information structure in the arguments of `fts_ftp_syn_request_ex()` and `fts_ftp_asyn_request_ex()`.

- Using the card name to register transmission requests:
You can register a transmission request by specifying a transmission card name registered using **Registration And Execution Of Transmission Requests**.
- Using the transmission information structure to specify transmission information:
You can register a transmission request by specifying the information needed for transmission.
- Transmission information structure

```
typedef struct _FTS_FTP_API_DATA_EX {
    char cardname[20+1]; /* Card name */
    char host[256+1]; /* Remote host name */
    unsigned int portnum; /* Port number */
    char username[80]; /* Remote user name */
    char password[80]; /* Password */
    int type; /* Transmission mode */
    int cmd; /* Send/receive type */
}
```

```

    int mode; /* Compression mode */
    char quote[300+1]; /* FTP command */
    char localname[256+1]; /* Local file name */
    char remotename[256+1]; /* Remote file name */
    char end_program[256+1]; /* Name of program to start at normal end */
    char abend_program[256+1]; /* Name of program to start at abnormal end */
    char comment[80+1]; /* Comment */
    int fsize; /* Size check */
    int ftps; /* Use FTPS */
    int scertval; /* Check the expiration date of the server certificate */
    char cacertpath[256+1]; /* Path to the CA certificate */
    char crlpath[256+1]; /* Path to the CRL */
    char reserve[716]; /* Reserved area */
} FTS_FTP_API_DATA_EX;

```

- Description of the transmission information structure members

cardname

Specifies the card name.

host

Specifies the FTP host name: ftp>open *aaaa*

portnum

Specifies the FTP port number: ftp>open *aaaa bbbb*

username

Specifies the login name: ftp>user *aaaa*

password

Specifies the password.

type

Specifies the transmission mode:

FTS_TYPE_A: Interprets data as being in ASCII code and then sends it (ftp>ascii).

FTS_TYPE_I: Interprets the data as an image and then sends it (ftp>binary).

cmd

Specifies the type of transmission.

By using OR to specify single/multiple-file transmission, you can specify a combination of single-file transmission and multiple-file transmission.

Transmission types:

FTS_CMD_SEND (send): ftp>put *aaaa bbbb*

FTS_CMD_RECV (receive): ftp>get *cccc dddd*

FTS_CMD_APPE (send with append): ftp>append *eeee ffff*

Single/multiple-file transmission:

FTS_MLT_AUTO: Switch automatically between single-file and multiple-file transmission. This is the default.

FTS_MLT_MULTIPLE: Perform multiple-file transmission.

FTS_MLT_SINGLE: Perform single-file transmission.

FTS_MLT_AUTO switches transmission automatically as follows:

When sending

The function checks whether * or ? is used in the local file name. If * or ? is used, multiple-file transmission is used. If neither of them is used, single-file transmission is used.

When receiving

The function checks whether * or ? is used in the remote file name. If * or ? is used, multiple-file transmission is used. If neither of them is used, single-file transmission is used.

Examples

Sending multiple files:

```
cmd = FTS_CMD_SEND | FTS_MLT_MULTIPLE;
```

Receiving a single file:

```
cmd = FTS_CMD_RECV | FTS_MLT_SINGLE;
```

Sending (with append) by automatic switching:

```
cmd = FTS_CMD_APPE | FTS_MLT_AUTO;
```

or

```
cmd = FTS_CMD_APPE;
```

(If specification of single/multiple-file transmission is omitted, FTS_MLT_AUTO is assumed.)

mode

Specifies compressed transmission.

FTS_MODE_S: Does not perform compressed transmission.

FTS_MODE_C: Performs compressed transmission.

quote

Specifies the FTP command to execute.

This structure member is a character string consisting of commands, such as CWD and SITE, delimited by semicolons (;) (the character string must end with \0).

Only commands that do not establish a data connection can be specified. Whether a command can be executed by the FTP server depends on the FTP server.

localname

Specifies the local file name.

Examples

```
ftp>put aaaa bbbb
```

```
ftp>get cccc dddd
```

remotename

Specifies the remote file name.

Examples

```
ftp>put aaaa bbbb
```

```
ftp>get cccc dddd
```

end_program

Specifies the full path name of the program to start when transmission ends normally.

abend_program

Specifies the full path name of the program to start when transmission ends abnormally.

comment

Specifies any character string.

fsize

Specifies whether to check the file size after transmission.

FTS_FSIZE_TRUE: Checks the size.
FTS_FSIZE_FALSE: Does not check the size.

ftps

Specifies whether to use FTPS.

FTS_FTPS_TRUE: Uses FTPS.

FTS_FTPS_FALSE: Does not use FTPS.

scertval

Specifies whether to check the expiration date of the server certificate.

FTS_SCVAL_TRUE: Checks the expiration date of the server certificate.

FTS_SCVAL_FALSE: Does not check the expiration date of the server certificate.

cacertpath

Specifies a full path to the CA certificate file.

crlpath

Specifies a full path to the CRL file.

reserve

Reserved area. Initialize the area by specifying \0.

Note

Make sure that a char-type variable value ends with \0.

Obtaining transmission-end information

You can obtain the termination information for transmission requests registered by `fts_ftp_syn_request_ex()` and `fts_ftp_asyn_request_ex()`.

- When `fts_ftp_syn_request_ex()` is used to register requests:
Specify the address of the transmission-end information structure in the fourth argument of `fts_ftp_syn_request_ex()`.
- When `fts_ftp_asyn_request_ex()` is used to register requests:
Specify the address of the transmission-end information structure in the second argument of `fts_ftp_event_ex()`.
- Transmission-end information structure

```
typedef struct _FTS_FTP_API_RETDATA_EX {
    /* Data when transmission was successful */
    int trans_status;                /* Transmission end status:
                                     success (TRANS_SUCCESS) */
                                     /* Transmission end status:
                                     failure (TRANS_FAILURE) */

    char cardname[20+1];            /* Card name */
    unsigned long trno;              /* Transmission number */
    unsigned long trcno;            /* Connection number */

    /* Data when transmission was successful */
    unsigned long trans_size;        /* Transmitted data size */

    /* Data when transmission (compressed) was successful */
    unsigned long trans_size_comp;  /* Transmitted data size
```

```

                                after compression */

/* Data when transmission failed */
int ab_kind;                    /* System call error
                                (FTS_ERR_SYSTEM) */
                                /* Logical error
                                (FTS_ERR_LOGIC) */
                                /* Protocol error
                                (FTS_ERR_PROTOCOL) */
                                /* Forced termination error
                                (FTS_ERR_FORCE) */
                                /* SSL communication error
                                (FTS_ERR_SSL) */
char ab_place[8];              /* Location of error */
char ab_func[32];              /* Name of module resulting
                                in error */
char ab_system[32];            /* System call name */
unsigned long ab_errno;        /* Error number */
char ab_promes[256];          /* Protocol message
                                (error) */

#ifdef FTS_API_64BIT
char full_trans_size[8];      /* Transmitted data size */
char full_trans_size_comp[8]; /* Transmitted data size
                                after compression */
#endif

int ab_sslerno;                /* SSL communication error number */
char reserve[1668];           /* Reserved area */
} FTS_FTP_API_RETDATA_EX;

```

- Description of transmission-end information structure members

trans_status

Returns one of the following values indicating the termination status of transmission:

TRANS_SUCCESS: Normal termination

TRANS_FAILURE: Abnormal termination

cardname

Returns the transmission card name.

trno

Returns the transmission number.

trcno

Returns the connection number.

trans_size (Applicable to normal termination only)

Transmitted data size (Can be referenced only when the transmitted data size is smaller than 4 gigabytes).

trans_size_comp (Applicable to normal termination only)

Transmitted data size after compression (Can be referenced only when the transmitted data size is smaller than 4 gigabytes).

ab_kind (Applicable to abnormal termination only)

Returns the error type:

FTS_ERR_SYSTEM: System call error

FTS_ERR_LOGIC: Logical error

FTS_ERR_PROTOCOL: Protocol error

FTS_ERR_FORCE: Forced termination error

FTS_ERR_SSL: SSL communication error

ab_place (Applicable to abnormal termination only)

Returns the location of the error.

ab_func (Applicable to abnormal termination only)

Returns the name of module resulting in the error.

ab_system (Applicable to abnormal termination only)

Returns the system call name.

ab_errno (Applicable to abnormal termination only)

Returns the system call error number.

One of the following values is returned:

2000: Timeout was detected during system function (*system-call-name*) processing.

2001: Transmission file size mismatch was detected during system function (*system-call-name*) processing.

2003: The maximum file size supported for transmission by JP1/FTP was exceeded during system function (*system-call-name*) processing.

Other: A value is returned by the system function (*system-call-name*), but the target of the return value depends on the system function, as follows:

- For the `getaddrinfo` function: `getaddrinfo` return value (In Linux, the return value is negative, but it is converted to an unsigned value.)
- For the `getnameinfo` function: `getnameinfo` return value (In Linux, the return value is negative, but it is converted to an unsigned value.)
- For other functions: `errno` value

ab_promes (Applicable to abnormal termination only)

Returns the protocol message sent from the server.

full_trans_size (Applicable to normal termination only)

Transmitted data size (Referenced using `fts_ftp_bufcoll()`).

full_trans_size_comp (Applicable to normal termination only)

Transmitted data size after compression (Referenced using `fts_ftp_bufcoll()`).

ab_sslerno (Applicable to abnormal termination only)

Returns the SSL communication error number.

reserve

Reserved area.

Compiling and linking

- To use the 64-bit library, specify `FTS_API_64BIT` for the compile option.
Example: `cc -DFTS_API_64BIT -c sample.c`
- To use `fts_ftp_bufcoll()`, specify the `FTS_NO_TRANSIZE_LIMIT` compile option.
Example: `cc -DFTS_NO_TRANSIZE_LIMIT -c sample.c`
- Link the following library:
For the 32-bit library: `libftsftp_r.so`

For the 64-bit library: `libftsftp64_r.so`

- In Linux, specify `-lpthread` in the link option.

Notes about using libraries

- The API libraries support multithreading.

- The following usage is not permitted:

Using a single `fts_ftp_open_ex()` function to issue multiple `fts_ftp_syn_request_ex()` and `fts_ftp_asyn_request_ex()` functions concurrently (concurrent execution of `fts_ftp_syn_request_ex()` and `fts_ftp_asyn_request_ex()` by multiple processes)

- If a wildcard character is specified, the transmission-end information that can be obtained is as follows:

When the function terminates normally: Transmission-end information for the last file transmitted

When the function terminates abnormally: Transmission-end information for the first file resulting in an error

- In Linux, specify the library path in the following environment variable:

```
LD_LIBRARY_PATH
```

Example in bash:

```
LD_LIBRARY_PATH=/opt/jp1_ftp/lib/api/apilib
export LD_LIBRARY_PATH
```

Example in csh:

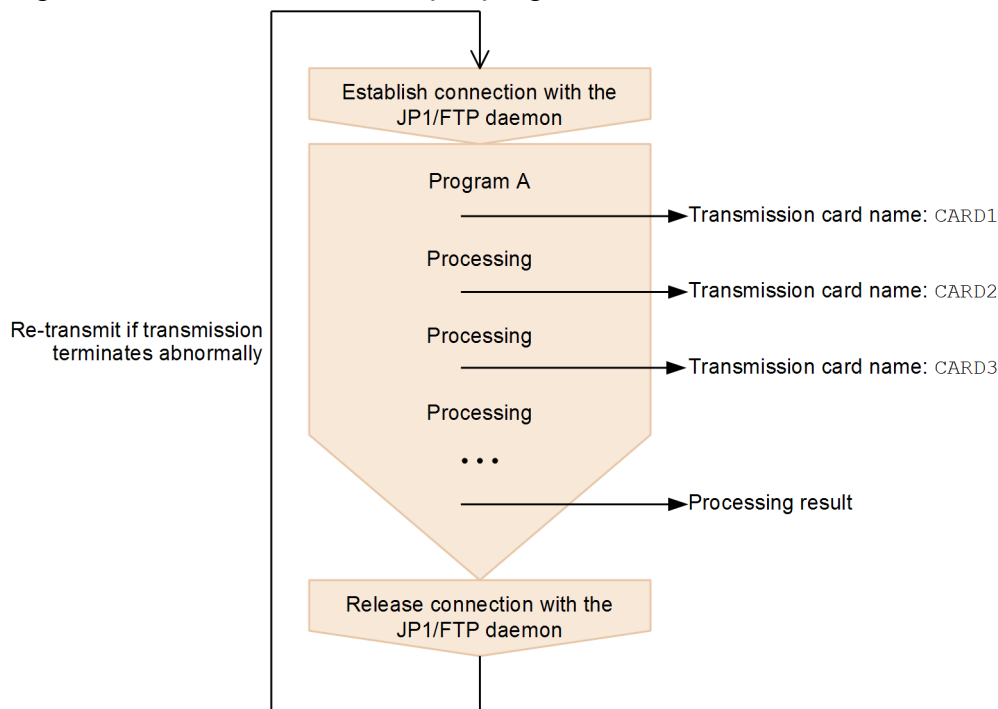
```
setenv LD_LIBRARY_PATH /opt/jp1_ftp/lib/api/apilib
```

- For the 32-bit library, if the size of the transmitted data or of the compressed data that was transmitted is 4 gigabytes or greater, the transmission-end information structure members `trans_size` and `trans_size_comp` cannot be referenced. This is because `trans_size` and `trans_size_comp` are the unsigned long type, and in the ILP32 data model, if the data size is 4 gigabytes or greater, overflow occurs. If the transmitted data size (or transmitted data size after compression) is 4 gigabytes or greater, convert the transmission-end information structure members `full_trans_size` and `full_trans_size_comp` to numeric values by using `fts_ftp_buftoll()` before referencing them.
- Only POSIX threads are supported.
- A value cannot be set in `fts_errno`. It can only be referenced.
- If you call `fts_ftp_open_ex()` once in a process and call `fts_ftp_syn_request_ex()` by multiple threads concurrently, transmission is performed serially. To perform concurrent transmissions, call `fts_ftp_open_ex()` each time `fts_ftp_syn_request_ex()` is called. Note that you need as many `fts_ftp_close()` functions as the number of `fts_ftp_open_ex()` calls that are issued.
- `fts_ftp_syn_request_ex()` and `fts_ftp_asyn_request_ex()` cannot be mixed together when only one `fts_ftp_open_ex()` is used to call them. If these functions are mixed, the transmission result cannot be received successfully.
- All API functions become thread cancellation points.
- If a thread has been canceled, make sure that you use `fts_ftp_close()` to release connection with the JP1/FTP daemon that was used by the canceled thread. If you continue using the connection, the transmission result cannot be received successfully.

Example of library usage

This sample program uses the registered transmission cards (transmission card names: CARD1 through CARD3) to register asynchronous transmission requests and obtains the termination results.

Figure 7–1: Flowchart of sample program



```
/* **** */
/* Sample program: program to register an asynchronous */
/* transmission request and obtain the transmission */
/* termination flags */
/* (This example uses a registered card) */
/* **** */
#include <stdio.h>
#include <stdlib.h>
#include <errno.h>
#include <string.h>
#include <apihead.h>

#define CARD1 "card1"
#define CARD2 "card2"
#define CARD3 "card3"

#define FTS_EXECUTION 0
#define FTS_SUCCESS 1
#define FTS_FAILURE 2

#define FTS_MAX_RETRY 3

int main()
{
    FTS_FTP_API_CONN_DATA api_conn_data;
    /* Connect information structure */
    FTS_FTP_API_DATA_EX data1, data2, data3;
```

```

    /* Transmission information structure */
    FTS_FTP_API_RETDATA_EX ret_data;
    /* End of transmission information structure */
    int sock;
    unsigned long trno1, trno2, trno3;
    int flag1, flag2, flag3;
    int i;

    flag1 = FTS_EXECUTION;
    flag2 = FTS_EXECUTION;
    flag3 = FTS_EXECUTION;

    for( i = 0; i <= FTS_MAX_RETRY; i++ ) {
        if( i == 0 ) {
            printf( "Transmission is executed. \n" );
        } else {
            printf( "Transmission is executed again.\n" );
        }

        memset( &data1, 0, sizeof(FTS_FTP_API_DATA_EX) );
        memset( &data2, 0, sizeof(FTS_FTP_API_DATA_EX) );
        memset( &data3, 0, sizeof(FTS_FTP_API_DATA_EX) );

        /******
        /* Establish a connection with JP1/FTP
        /******
        memset( &api_conn_data, 0, sizeof( api_conn_data ) );
        api_conn_data.priority = FTS_AF_INET;
        sock = fts_ftp_open_ex( &api_conn_data );
        if( sock == INVALID_SOCKET ) {
            /* Error */
            printf( "fts_ftp_open_ex() error!! error number = %ld\n", fts_er
rno );
            exit(1);
        }

        /******
        /* Register the transmission request
        /******
        if( flag1 == FTS_EXECUTION ) {
            if( !fts_ftp_asyn_request_ex( sock, CARD1, &data1, &trno1, FTS_G
ET_RETURN ) ) {
                /* Error */
                printf( "fts_ftp_request_ex(1) error!! error number = %ld\n"
, fts_errno );
            }
        }
        if( flag2 == FTS_EXECUTION ) {
            if( !fts_ftp_asyn_request_ex( sock, CARD2, &data2, &trno2, FTS_G
ET_RETURN ) ) {
                /* Error */
                printf( "fts_ftp_request_ex(2) error!! error number = %ld\n"
, fts_errno );
            }
        }
        if( flag3 == FTS_EXECUTION ) {
            if( !fts_ftp_asyn_request_ex( sock, CARD3, &data3, &trno3, FTS_G
ET_RETURN ) ) {

```

```

        /* Error */
        printf( "fts_ftp_request_ex(3) error!! error number = %ld\n"
, fts_errno );
    }
}

/*****
/* Obtain the transmission termination results */
*****/
while(1) {
    if( !fts_ftp_event_ex( sock, &ret_data ) ) {
        if( fts_errno == FTS_API_ERROR_NODATA ) {
            /* Obtained all the transmission termination flags */
            break;
        } else {
            /* Error */
            printf( "fts_ftp_event_ex error!! error number = %ld\n"
, fts_errno );

            fts_ftp_close( sock );
            exit(1);
        }
    }
    if( flag1 == FTS_EXECUTION ) {
        if( ret_data.trno == trno1 ) {
            /* Termination of CARD1 */
            if( ret_data.trans_status == TRANS_SUCCESS ) {
                /* Transmission ends normally. */
                printf( "CARD1 trnas success!!\n" );
                flag1 = FTS_SUCCESS;
            } else {
                /* Transmission ends abnormally. */
                printf( "CARD1 trnas failure!!\n" );
            }
            continue;
        }
    }
    if( flag2 == FTS_EXECUTION ) {
        if( ret_data.trno == trno2 ) {
            /* Termination of CARD2 */
            if( ret_data.trans_status == TRANS_SUCCESS ) {
                /* Transmission ends normally. */
                printf( "CARD2 trnas success!!\n" );
                flag2 = FTS_SUCCESS;
            } else {
                /* Transmission ends abnormally. */
                printf( "CARD2 trnas failure!!\n" );
            }
            continue;
        }
    }
    if( flag3 == FTS_EXECUTION ) {
        if( ret_data.trno == trno3 ) {
            /* Termination of CARD3 */
            if( ret_data.trans_status == TRANS_SUCCESS ) {
                /* Transmission ends normally. */
                printf( "CARD3 trnas success!!\n" );
                flag3 = FTS_SUCCESS;
            } else {

```

```

        /* Transmission ends abnormally. */
        printf( "CARD3 trnas failure!!\n" );
    }
    continue;
}
}

/*****
/* Release the connection with JP1/FTP */
*****/
fts_ftp_close( sock );

if( flag1 == FTS_SUCCESS && flag2 == FTS_SUCCESS && flag3 == FTS_SUC
CESS ) {
    break;
}
}
printf( "Transmission is ended. \n" );

exit(0);
}

```


List of functions

The following table lists and describes the functions supported by the JP1/FTP API library.

Table 7–1: Functions supported by the JP1/FTP API library

Function	Function name
Establish connection with the JP1/FTP daemon	<code>fts_ftp_open_ex()</code>
Register transmission requests (synchronous)	<code>fts_ftp_syn_request_ex()</code>
Register transmission requests (asynchronous)	<code>fts_ftp_asyn_request_ex()</code>
Obtain the transmission-end results	<code>fts_ftp_event_ex()</code>
Release connection with JP1/FTP	<code>fts_ftp_close()</code>
Obtain transmission information	<code>fts_ftp_get_card_info()</code>
Reference the <code>full_trans_size</code> and <code>full_trans_size_comp</code> transmission-end structure members	<code>fts_ftp_buftoll()</code>

Note

In addition to those listed above, the following functions are provided in order to maintain compatibility with earlier versions of JP1/FTP:

- `fts_ftp_open()`

Details of functions

Call the functions from a user program in the following order:

1. Establish connection with JP1/FTP by calling `fts_ftp_open_ex()`.
2. Set the transmission information in the transmission information structure and then call `fts_ftp_syn_request_ex()` (synchronous) or `fts_ftp_asyn_request_ex()` (asynchronous) to register transmissions. If you use `fts_ftp_syn_request_ex()`, you can obtain the result of each transmission upon termination of the function.
3. If you call `fts_ftp_asyn_request_ex()` in step 2, you can obtain transmission results by calling `fts_ftp_event_ex()`.
4. Release connection with JP1/FTP by calling `fts_ftp_close()`.

You can call `fts_ftp_get_card_info()` and `fts_ftp_bufcoll()` at any time.

The details of the functions provided in the following sections describe individual functions in the order they are called.

fts_ftp_open_ex() - establish connection with the JP1/FTP daemon

Format

```
#include <apihead.h>
int fts_ftp_open_ex( FTS_FTP_API_CONN_DATA *condata )
```

Function

This function establishes connection with the client's JP1/FTP daemon.

Arguments

condata

Specifies the address of the connection information structure. JP1/FTP connects to the JP1/FTP daemon according to the connection information.

Notes

- Call this function before you call `fts_ftp_syn_request_ex()`, `fts_ftp_asyn_request_ex()`, and `fts_ftp_close()`.
- This function's return value is needed when you use other functions.

Return values

Socket handler	Normal
INVALID_SOCKET	Abnormal

A value indicating an error is set in `fts_errno`. The table below lists and describes the return values for error information. In the case of an error other than one listed below, the system function's error number is set. For details, see the displayed error number for the system function.

Return value of extended error information (decimal)	Description	Can be retried?
FTS_API_ERROR_UNDEFFTSHOST (805306112)	The specified host name is not defined in the <code>/etc/hosts</code> file.	No
FTS_API_ERROR_CONNREFUSED (805306113)	A connection request was rejected. The JP1/FTP daemon might not have been started.	No
FTS_API_ERROR_TIMEOUT (805306114)	A connection request to the JP1/FTP daemon resulted in a timeout. The connection processing in the JP1/FTP daemon might be taking too long or the system on which the JP1/FTP daemon is supposed to be running might be down.	Yes
FTS_API_ERROR_UNREACH (805306115)	Routing to the system on which the JP1/FTP daemon is running might have failed.	No
FTS_API_ERROR_DISCONNECT (805306116)	A connection with the JP1/FTP daemon was released. If you want to register the transmission request again, you must start the processing over from <code>fts_ftp_open_ex()</code> .	No
FTS_API_ERROR_MEMORY (805306122)	Memory allocation failed.	No

Return value of extended error information (decimal)	Description	Can be retried?
FTS_API_ERROR_UNDEFFTSSERV (805306123)	The definition of <code>Client (ftsc)</code> for the JP1/FTP daemon is missing in the <code>/etc/services</code> file.	No
FTS_API_ERROR_MAXCONNECT (805306126)	The maximum number of APIs that can be connected concurrently (maximum number of concurrent transmissions established through issuance of the <code>fts_ftp_open_ex()</code> function) has been reached. No more connections can be established until a connection is released by means of another API (through issuance of the <code>fts_ftp_close()</code> function). For details about the maximum number of concurrent transmissions, see <i>ftsutil - changes and displays environment information</i> in 6. <i>Commands</i> .	Yes
FTS_API_ERROR_LOGIC (805306128)	A logical conflict error occurred in an API.	No

fts_ftp_syn_request_ex() - register transmission requests (synchronous)

Format

```
#include <apihead.h>

int fts_ftp_syn_request_ex( int sock,
                           char *cardname,
                           FTS_FTP_API_DATA_EX *data,
                           FTS_FTP_API_RETDATA_EX *retdata )
```

Function

This function registers a transmission request to JP1/FTP and returns the termination result when the transmission is terminated. You can specify the details for the transmission request by specifying a transmission information structure or the name of a registered transmission card. The termination result is returned to the transmission-end information structure. You can determine whether the transmission was successful by checking the `trans_status` member of the transmission-end information structure.

Arguments

sock

Specifies the return value of `fts_ftp_open_ex()`.

cardname

Specifies the name of a registered transmission card. The file transmission request is registered in accordance with the information on the transmission card.

data

Specifies the address of a transmission information structure.

If `NULL` is specified in *cardname*, the file transmission request is registered according to the information specified in *data*.

If the name of a registered transmission card is specified in *cardname*, the file transmission request is registered according to the information on the transmission card. The registered transmission information is stored in the transmission information structure. You can use this transmission information structure again when you register another file transmission request.

retdata

Specifies the address of a transmission-end information structure. It returns the termination result of transmission.

Notes

- Call this function after you have called `fts_ftp_open_ex()`.
- This function does not return control until the requested transmission is terminated.

Return values

TRUE	Normal
FALSE	Abnormal.

FALSE	Registration of the transmission request or acquisition of the transmission termination result failed.
-------	--------------------------------------------------------------------------------------------------------

A value indicating an error is set in `fts_errno`. The table below lists and describes the return values for error information. In the case of an error other than one listed below, the system function's error number is set. For details, see the displayed error number for the system function.

Return value of extended error information (decimal)	Description	Can be retried?
<code>FTS_API_ERROR_DISCONNECT</code> (805306116)	A connection with the JPI/FTP daemon was released. To register the transmission request again, you must issue <code>fts_ftp_close()</code> and start the process over from <code>fts_ftp_open_ex()</code> .	No
<code>FTS_API_ERROR_NOTREADCARD</code> (805306117)	The specified card name cannot be referenced. The card might not have been registered correctly.	No
<code>FTS_API_ERROR_MAXPALTRANS</code> (805306119)	The maximum number of transmissions that can be executed concurrently (maximum number of concurrent transmissions) has been reached. Register the transmission request after another transmission is finished. For details about the maximum number of concurrent transmissions, see <i>ftsutil - changes and displays environment information</i> in 6. Commands.	Yes
<code>FTS_API_ERROR_MEMORY</code> (805306122)	Memory allocation failed.	No
<code>FTS_API_ERROR_NOTSOCK</code> (805306124)	The return value of <code>fts_ftp_open_ex()</code> might not have been set in the first argument.	No
<code>FTS_API_ERROR_FTSMISS</code> (805306125)	An error occurred in the JPI/FTP daemon.	No
<code>FTS_API_ERROR_FORCEEND</code> (805306127)	The JPI/FTP daemon was terminated forcibly.	No
<code>FTS_API_ERROR_LOGIC</code> (805306128)	A logical conflict error occurred in API.	No
<code>FTS_API_ERROR_MAXGROUPS</code> (805306129)	The maximum number of secondary groups has been reached.	No

fts_ftp_asyn_request_ex() - register transmission requests (asynchronous)

Format

```
#include <apihead.h>

int  fts_ftp_asyn_request_ex( int sock,
                             char *cardname,
                             FTS_FTP_API_DATA_EX *data,
                             unsigned long *trno,
                             int get_return_flag )
```

Function

This function registers a transmission request to JP1/FTP, but does not wait for the transmission to terminate. You must use `fts_ftp_event_ex()` to obtain the termination result. You can define the transmission request by specifying a transmission information structure or the name of a registered transmission card. You can determine whether the transmission was successful by checking the `trans_status` member of the transmission-end information structure that is obtained by `fts_ftp_event_ex()`.

Arguments

sock

Specifies the return value of `fts_ftp_open_ex()`.

cardname

Specifies the name of a registered transmission card. The file transmission request is registered in accordance with the information on the transmission card.

data

Specifies the address of a transmission information structure.

If `NULL` is specified in *cardname*, the file transmission request is registered according to the information specified in *data*.

If the name of a registered transmission card is specified in *cardname*, the information on the transmission card is registered. The registered transmission information is stored in the transmission information structure. You can use this transmission information structure again when you register another file transmission request.

trno

Specifies the address at which the transmission number is stored.

This matches the transmission number in the transmission-end information that is obtained from log information or by `fts_ftp_event_ex()`.

get_return_flag

If you have specified `FTS_GET_RETURN`, you can obtain the transmission-end information by calling `fts_ftp_event_ex()`.

If you have specified `FTS_UNGET_RETURN`, the transmission-end information cannot be obtained.

Notes

- Call this function after you have called `fts_ftp_open_ex()`.
- If you want to obtain transmission-end information, call `fts_ftp_event_ex()` with `FTS_GET_RETURN` specified in the fifth argument. In this case, make sure that you issue `fts_ftp_event_ex()`. If `fts_ftp_event_ex()` is not issued, you might not be able to release the system resources (memory) because the transmission-end information remains in the process that issued the function or in JP1/FTP.

Return values

TRUE	Normal
FALSE	Abnormal. Registration of the transmission request failed.

A value indicating an error is set in `fts_errno`. The table below lists and describes the return values for error information. In the case of an error other than one listed below, the system function's error number is set. For details, see the displayed error number for the system function.

Return value of extended error information (decimal)	Description	Can be retried?
<code>FTS_API_ERROR_DISCONNECT</code> (805306116)	A connection with the JP1/FTP daemon was released. To register the transmission request again, you must issue <code>fts_ftp_close()</code> and start the process over from <code>fts_ftp_open_ex()</code> .	No
<code>FTS_API_ERROR_NOTREADCARD</code> (805306117)	The specified card name cannot be referenced. The card might not have been registered correctly.	No
<code>FTS_API_ERROR_MAXPALTRANS</code> (805306119)	The maximum number of transmissions that can be executed concurrently (maximum number of concurrent transmissions) has been reached. Register the transmission request after another transmission is finished. For details about the maximum number of concurrent transmissions, see <i>ftsutil - changes and displays environment information</i> in 6. Commands.	Yes
<code>FTS_API_ERROR_MEMORY</code> (805306122)	Memory allocation failed.	No
<code>FTS_API_ERROR_NOTSOCK</code> (805306124)	The return value of <code>fts_ftp_open_ex()</code> might not have been set in the first argument.	No
<code>FTS_API_ERROR_FTSMISS</code> (805306125)	An error occurred in the JP1/FTP daemon.	No
<code>FTS_API_ERROR_FORCEEND</code> (805306127)	The JP1/FTP daemon was terminated forcibly.	No
<code>FTS_API_ERROR_LOGIC</code> (805306128)	A logical conflict error occurred in API.	No
<code>FTS_API_ERROR_MAXGROUPS</code> (805306129)	The maximum number of secondary groups has been reached.	No

fts_ftp_event_ex() - obtain the transmission-end results

Format

```
#include <apihead.h>

int fts_ftp_event_ex( int sock, FTS_FTP_API_RETDATA_EX *retdata )
```

Function

This function obtains the termination results of a transmission that was registered by `fts_ftp_async_request_ex()`.

You can determine whether the transmission was successful by checking the `trans_status` member of the transmission-end information structure.

Arguments

sock

Specifies the return value of `fts_ftp_open_ex()`.

retdata

Specifies the address of a transmission-end information structure. It returns the termination result of transmission.

Notes

- Call this function after you have called `fts_ftp_open_ex()`.
- If transmission is not finished when this function is issued, the function waits until the transmission is finished.

Return values

TRUE	Normal
FALSE	Abnormal. Acquisition of the transmission-end information failed.

A value indicating an error is set in `fts_errno`. The table below lists and describes the return values for error information. In the case of an error other than one listed below, the system function's error number is set. For details, see the displayed error number for the system function.

Return value of extended error information (decimal)	Description	Can be retried?
FTS_API_ERROR_DISCONNECT (805306116)	A connection with the JPI/FTP daemon was released. To register the transmission request again, you must issue <code>fts_ftp_close()</code> and start the process over from <code>fts_ftp_open_ex()</code> .	No
FTS_API_ERROR_NODATA (805306120)	There is no registered transmission request.	No
FTS_API_ERROR_NOTSOCK (805306124)	The return value of <code>fts_ftp_open_ex()</code> might not have been set in the first argument.	No

Return value of extended error information (decimal)	Description	Can be retried?
FTS_API_ERROR_LOGIC (805306128)	A logical conflict error occurred in API.	No

fts_ftp_close() - release connection with JP1/FTP

Format

```
#include <apihead.h>

int fts_ftp_close(int sock )
```

Function

This function releases connection with JP1/FTP.

Arguments

sock

Return value of `fts_ftp_open_ex()`

Note

- If `fts_ftp_open_ex()` has terminated normally, make sure that you call this function after all transmission registration processing is finished.

Return values

TRUE	Normal
FALSE	Abnormal

A value indicating an error is set in `fts_errno`. The table below lists and describes the return values for error information. In the case of an error other than one listed below, the system function's error number is set. For details, see the displayed error number for the system function.

Return value of extended error information (decimal)	Description	Can be retried?
FTS_API_ERROR_INVALIDSOCK (805306121)	An invalid argument was specified. This might not be a return value of <code>fts_ftp_open_ex()</code> .	No
FTS_API_ERROR_LOGIC (805306128)	A logical conflict error occurred in API.	No

fts_ftp_get_card_info() - obtain transmission information

Format

```
#include <apihead.h>

int fts_ftp_get_card_info ( char *cardname,
                           FTS_FTP_API_DATA_EX *data )
```

Function

This function obtains the transmission information on a registered card.

Arguments

cardname

Specifies the name of a registered transmission card.

data

Specifies the address of a transmission information structure. It returns transmission information.

Note

- The actual password is not set in the password area, but you can use the password as is or overwrite it with a new password.

Return values

TRUE	Normal
FALSE	Abnormal. Acquisition of transmission information failed.

A value indicating an error is set in `fts_errno`. The table below lists and describes the return values for error information. In the case of an error other than one listed below, the system function's error number is set. For details, see the displayed error number for the system function.

Return value of extended error information (decimal)	Description	Can be retried?
FTS_API_ERROR_NOTREADCARD (805306117)	The specified card name cannot be referenced. The card might not have been registered correctly.	No

fts_ftp_buftoll() - reference the full_trans_size and full_trans_size_comp transmission-end structure members

Format

```
#include <apihead.h>

long long fts_ftp_buftoll ( char *full_trans_size )
```

Function

This function converts the `full_trans_size` and `full_trans_size_comp` transmission-end structure members to numeric values. During compilation, specify the `-DFTS_NO_TRANSIZE_LIMIT` compile option.

Arguments

full_trans_size

Specifies the `full_trans_size` or `full_trans_size_comp` transmission-end structure member.

Notes

- This function is provided only in the 32-bit library. For 64-bit user programs, reference the transmission-end information structure members `trans_size` and `trans_size_comp` directly.
- Some compilers do not support the `long long` type by default. In such a case, specify the compile option that enables the `long long` type.

Return values

The function converts the values of the specified `full_trans_size` or `full_trans_size_comp` transmission-end structure member to numeric values and then returns them. There will be no error.

8

Messages

This chapter describes the messages that are issued by JP1/FTP.

8.1 Format of displayed messages and message explanations

A message consists of a message ID followed by a message text.

The format of the messages displayed by JP1/FTP is as follows:

KDJFnnnnn-Z message-text

The message ID is composed of the following elements:

K

Indicates the system identifier.

DJF

Indicates a JP1/FTP message.

nnnnn

Indicates the message number.

Z

Indicates the type of message, as described below:

E: Error message. The processing is canceled, or processing will resume with some functions disabled.

W: Warning message. The processing is resumed after the message is displayed.

I: Information message. The system is providing the user with information.

The following describes the format of the explanations in this manual of the messages that are issued by JP1/FTP. This manual uses the following explanatory format for messages. It lists the messages in order of message ID, as classified by module type and command.

message-ID

message-text

Explanation of the message

(S)

Explains the processing performed by JP1/FTP.

(O)

Explains the action recommended for the user to take when the message is displayed.

In this chapter, the part of a message text that is shown in *italics* represents a variable.

8.2 Output format of event log messages and format of event log message explanations

An event log message consists of a timestamp, a module type, a connection number, a transmission number, a message ID, and a message text.

The format of an event log message displayed by JP1/FTP is as follows:

```
YYYY/MM/DD hh:mm:ss.sss X ccc, ttttt KDJFnnnnn-Z message-text
```

YYYY/MM/DD hh:mm:ss.sss

Message timestamp. *YYYY* indicates the year; *MM* indicates the month; *DD* indicates the day; *hh* indicates the hour; *mm* indicates the minute; *ss* indicates the second; and *sss* indicates the millisecond.

X

Type of module that issued the event log:

D: JP1/FTP daemon-related module

C: File transmission (client)

S: File transmission (server)

A: Operations-Manager Agent-related module

P: Other program (such as a transmission command)

ccc

Connection number. If there is no connection number, an asterisk (*) is displayed.

ttttt

Transmission number. If there is no transmission number, an asterisk (*) is displayed.

KDJFnnnnn-Z message-text

The message ID and message text are the same as in [8.1 Format of displayed messages and message explanations](#).

This manual uses the following explanatory format for event log messages. It lists the messages in the order of the message IDs.

message-ID (module-type,output-level)

message-text

Explanation of the message

(S)

Explains the processing performed by JP1/FTP.

(O)

Explains the recommended action for the user to take when the message is displayed.

In this chapter, the part of a message text that is shown in *italics* represents a variable.

8.3 Output format of access log messages and format of access log message explanations

An access log message consists of a timestamp and a message ID, followed by a message text.

The format of an access log message displayed by JP1/FTP is as follows:

YYYY/MM/DD hh:mm:ss KDJFnnnnn-Z message-text

YYYY/MM/DD hh:mm:ss

Message timestamp (year/month/date hour:minute:second)

KDJFnnnnn-Z message-text

The message ID and message text are the same as in [8.1 Format of displayed messages and message explanations](#).

This manual uses the following explanatory format for access log messages. It lists the messages in the order of the message IDs.

message-ID

message-text

Explanation of the message

In this chapter, the part of a message text that is shown in *italics* represents a variable.

8.4 Messages related to the JP1/FTP daemon (KDJF10xx)

These messages are output to the system log. If a terminal was used to execute the command, the messages are also output to the terminal. However, the messages are not output to the terminal in Linux.

KDJF1000-I

JP1/FTS server started.

The JP1/FTP daemon has started.

KDJF1001-I

JP1/FTS server stopped.

The JP1/FTP daemon has been terminated.

KDJF1002-W

JP1/FTS server already started.

The JP1/FTP daemon is already running.

KDJF1003-E

A system call error occurred.

[*system-call-name*(*error-number*)] [*module-name*(*line-number*)]

A system call error has occurred.

(S)

The JP1/FTP daemon might be terminated.

(O)

Contact the system administrator.

KDJF1004-E

Permission denied

The user is not authorized to start JP1/FTP.

(S)

Cancels the JP1/FTP daemon start processing.

(O)

Execute the start command using superuser permissions.

KDJF1005-E

Port number is not defined in the Services file. [*service-name*]

The indicated *service-name* has not been defined in `/etc/services`.

(S)

Terminates the JP1/FTP daemon.

(O)

Define *service-name* by referencing [2.3.3 Setting the port numbers](#).

KDJF1006-E

Cannot connect to the JP1/IM Event Server.

An attempt to establish connection with JP1/Base has failed.

(S)

Stops the JP1 event issuance processing and then resumes the start processing.

(O)

Check and, if necessary, revise the JP1/Base status. If there is no problem with the JP1/Base status, contact the system administrator.

KDJF1007-E

JP1/IM not installed.

JP1/Base has not been installed.

(S)

Stops the JP1 event issuance processing and then resumes the start processing.

(O)

Install JP1/Base and then restart the JP1/FTP daemon.

KDJF1008-E

Maximum client reached, service unavailable. [remotehost]

The number of connection requests received by the FTP server exceeds the maximum number of concurrent transmissions.

(S)

Rejects the connection request.

KDJF1015-E

The environment is invalid. (Maximum number of concurrent transmissions)

The setting in the environment definition for the maximum number of concurrent transmissions is invalid.

(S)

Terminates the JP1/FTP daemon.

(O)

Check and, if necessary, revise the maximum number of concurrent transmissions in the environment definition.

KDJF1019-E

A definition in the definition file `ftsftp` is incorrect. (`/var/opt/jp1_fts/sys/ftsftp`)

The definition in `ftsftp` is invalid.

(S)

Terminates the JP1/FTP daemon.

(O)

Check and, if necessary, revise the definition in `ftsftp`.

8.5 Messages related to file transmission (client) (KDJF20xx)

These messages are output to the system log.

KDJF2000-E

A system call error occurred.
[*system-call-name*(*error-number*)] [*module-name*(*line-number*)]
[*connection-number:transmission-number*]

A system call error has occurred.

(S)

Terminates file transmission (client) processing.

(O)

Contact the system administrator.

KDJF2001-I

Transmission ended normally.
[Transmission number:*transmission-number*]
[Connection number:*connection-number*]
[Card name:*transmission-card-name*]
[Logged-in user:*login-name*]
[Remote host name:*remote-host-name*]
[Local file name:*local-file-name*]
[Remote file name:*remote-file-name*]

Transmission terminated normally.

KDJF2002-E

Transmission ended abnormally.
[Transmission number:*transmission-number*]
[Connection number:*connection-number*]
[Card name:*transmission-card-name*]
[Logged-in user:*login-name*]
[Remote host name:*remote-host-name*]
[Local file name:*local-file-name*]
[Remote file name:*remote-file-name*]

Transmission terminated abnormally.

(S)

Transmission terminated abnormally.

(O)

Check the transmission logs for errors.

KDJF2003-W

Auto-start program failed to execute.

[Transmission number:*transmission-number*]

[Connection number:*connection-number*]

[Card name:*transmission-card-name*]

[Logged-in user:*login-name*]

[Remote host name:*remote-host-name*]

[Local file name:*local-file-name*]

[Remote file name:*remote-file-name*]

[Auto-start program:*auto-start-program-name*]

Execution of the auto-start program failed and the transmission terminated with a warning.

KDJF2004-E

Cannot connect to the JP1/IM Event Server.

An attempt to establish connection with JP1/Base has failed.

(S)

Stops the JP1 event generation processing and then resumes the transmission processing.

(O)

Check and, if necessary, revise the JP1/Base status. If there is no problem with the JP1/Base status, contact the system administrator.

KDJF2005-E

JP1/IM not installed.

JP1/Base has not been installed.

(S)

Stops the JP1 event generation processing and then resumes the transmission processing.

(O)

Install JP1/Base, restart the JP1/FTP daemon, and then re-execute the transmission.

8.6 Messages related to file transmission (server) (KDJF30xx)

These messages are output to the system log.

KDJF3000-E

A system call error occurred. [system-call-name(error-number)][module-name(line-number)]
[connection-number:transmission-number]

A system call error has occurred.

(S)

Terminates file transmission (server) processing.

(O)

Contact the system administrator.

KDJF3001-I

Transmission ended normally.
[Transmission number:transmission-number]
[Connection number:connection-number]
[Logged-in user:login-name]
[Remote host name:remote-host-name]
[Local file name:local-file-name]

Transmission terminated normally.

KDJF3002-E

Transmission ended abnormally.
[Transmission number:transmission-number]
[Connection number:connection-number]
[Logged-in user:login-name]
[Remote host name:remote-host-name]
[Local file name:local-file-name]

Transmission terminated abnormally.

(S)

Transmission terminated abnormally.

(O)

Check the transmission logs for errors.

KDJF3003-W

Auto-start program failed to execute.
[Transmission number:transmission-number]
[Connection number:connection-number]
[Logged-in user:login-name]

[Remote host name:*remote-host-name*]
[Local file name:*local-file-name*]
[auto-start program:*auto-start-program-name*]

Transmission is terminating with a warning.

KDJF3004-E

Cannot connect to the JP1/IM Event Server.

An attempt to establish connection with JP1/Base has failed.

(S)

Stops the JP1 event generation processing and then resumes the transmission processing.

(O)

Check and, if necessary, revise the JP1/Base status. If there is no problem with the JP1/Base status, contact the system administrator.

KDJF3005-E

JP1/IM not installed.

JP1/Base has not been installed.

(S)

Stops the JP1 event generation processing and then resumes the transmission processing.

(O)

Install JP1/Base, restart the JP1/FTP daemon, and then re-execute the transmission.

8.7 Messages issued by the `ftsstop` command (KDJF40xx)

These messages are output to the system log. If a terminal was used to execute the command, the messages are also output to the terminal. However, the messages are not output to the terminal in Linux.

KDJF4000-I

JP1/FTS server is stopped.

The JP1/FTP daemon has terminated.

KDJF4001-W

JP1/FTS server is not started.

The JP1/FTP daemon is not running. It has already been terminated.

KDJF4002-I

JP1/FTS server is ending now.

Termination processing of the JP1/FTP daemon is underway.

KDJF4003-E

Permission denied.

The user is not authorized to terminate the JP1/FTP daemon.

(S)

Cancels the JP1/FTP daemon termination processing.

(O)

Execute the termination command using superuser permissions

KDJF4004-E

JP1/FTS server can't be stopped.

The command with no option specified was unable to stop the JP1/FTP daemon, because the command with the `-f` option specified was executed while the command with no option specified was executing.

(S)

Terminates `ftsstop` command processing.

KDJF4005-E

A system call error occurred. *[system-call-name(error-number)][module-name(line-number)]*

A system call error has occurred.

(S)

Terminates `ftsstop` command processing.

(O)

Contact the system administrator.

8.8 Messages issued by the jftsdstatus command (KDJF41xx)

These message are output to the terminal.

KDJF4100-I

The JP1/FTS server is running.

The JP1/FTP daemon is running (has already started).

KDJF4101-W

The JP1/FTS server has stopped.

The JP1/FTP daemon has stopped.

KDJF4102-I

The JP1/FTS server is now stopping.

The JP1/FTP daemon is undergoing termination processing

KDJF4104-W

The command is now executing.

The `jftsdstatus` command is executing.

(S)

Terminates `jftsdstatus` command processing.

(O)

Execute the command after the current `jftsdstatus` command has terminated.

KDJF4105-E

A system call error occurred. [*system-call-name(error-number)*][*module-name(line-number)*]

A system call error has occurred.

(S)

Terminates `jftsdstatus` command processing.

(O)

Contact the system administrator.

8.9 Messages issued by the `ftstran` command (KDJF50xx)

These messages are output to the terminal used to execute the command.

KDJF5001-I

Transmission ended normally.

File transmission terminated normally. If you specified output of results upon termination of transmission, output of transmission results also terminated normally.

KDJF5002-W

Transmission ended normally but with a warning.

File transmission terminated normally. If you specified output of results upon termination of transmission, output of transmission results terminated abnormally.

KDJF5003-E

Transmission ended abnormally.

File transmission terminated abnormally.

(S)

Terminates `ftstran` command processing.

(O)

Check the transmission logs for error details.

KDJF5004-E

Invalid option.- *opt*

An invalid *opt* option was specified.

(S)

Terminates `ftstran` command processing.

(O)

Check and, if necessary, revise the specified option.

KDJF5005-E

Duplicated option.- *opt*

The *opt* option was specified more than once.

(S)

Terminates `ftstran` command processing.

(O)

Check and, if necessary, revise the specified options.

KDJF5006-W

Usage: `ftstran cardname [-N file] [-E file] [-M[B|T]] [-H hostname] [transmission-option transmission-option-parameter]`

The operands are not specified correctly.

(S)

Terminates `ftstran` command processing.

(O)

Check and, if necessary, revise the specified operands.

KDJF5007-E

The file name is specified incorrectly.

(S)

Terminates `ftstran` command processing.

(O)

Check and, if necessary, revise the specified file name.

KDJF5008-E

The file name is too long.

(S)

Terminates `ftstran` command processing.

(O)

Express the file name as a character string in the range from 1 to 256 bytes.

KDJF5009-E

The card name is specified incorrectly.

(S)

Terminates `ftstran` command processing.

(O)

Check and, if necessary, revise the specified card name.

KDJF5010-E

The card name is too long.

(S)

Terminates `ftstran` command processing.

(O)

Express the card name as a character string in the range from 1 to 20 bytes.

KDJF5011-E

The specified card is not registered.

(S)

Terminates `ftstran` command processing.

(O)

Check the card name. To register a card, see [3.4 Registering transmission information](#).

KDJF5012-E

The JP1/FTP server is not running.

(S)

Terminates `ftstran` command processing.

(O)

Start the JP1/FTP daemon. For details about starting the JP1/FTP daemon, see [2.4.1 Starting and terminating the JP1/FTP daemon](#).

KDJF5013-E

A function error occurred.

(Function name : *func* , Error code : *errno*).

A function error occurred.

(S)

Terminates `ftstran` command processing.

(O)

For details about the error number, see the extended error information for the corresponding function in [7. API Library](#).

KDJF5014-E

The card information is unacquirable. - *func(errno)*

A system call error occurred while card information was being acquired.

(S)

Terminates `ftstran` command processing.

(O)

For details about the error number, see the error numbers for the corresponding system function.

KDJF5015-E

The remote host name is too long.

(S)

Terminates `ftstran` command processing.

(O)

Express the host name as a character string in the range from 1 to 256 bytes.

KDJF5016-E

The name of a user to log in is too long.

(S)

Terminates `ftstran` command processing.

(O)

Express the user name as a character string in the range from 1 to 80 bytes.

KDJF5017-E

The password is too long.

(S)

Terminates `ftstran` command processing.

(O)

Express the password as a character string in the range from 1 to 80 bytes.

KDJF5018-E

Specify the port number with an integer.

The port number contains a nonnumeric character.

(S)

Terminates `ftstran` command processing.

(O)

Specify the port number as all numeric characters.

KDJF5019-E

Specify the port number in the range from 1 to 65535.

(S)

Terminates `ftstran` command processing.

(O)

Express the port number as an integer in the range from 1 to 65,535.

KDJF5020-E

Specify SEND, RECV, or APPE after the `-TT` option.

Neither SEND (send (overwrite)), nor RECV (receive), nor APPE (send (append)) is specified after the `-TT` option.

(S)

Terminates `ftstran` command processing.

(O)

Specify `SEND` (send (overwrite)), `RECV` (receive), or `APPE` (send (append)) after the `-TT` option.

KDJF5021-E

Specify `ASCII` or `BINARY` after the `-TY` option.

Neither `ASCII` nor `BINARY` is specified after the `-TY` option.

(S)

Terminates `ftstran` command processing.

(O)

Specify either `ASCII` or `BINARY` after the `-TY` option.

KDJF5022-E

Specify `STREAM` or `COMPRESS` after the `-TM` option.

Neither `STREAM` (do not compress) nor `COMPRESS` (compress) is specified after the `-TM` option.

(S)

Terminates `ftstran` command processing.

(O)

Specify either `STREAM` (do not compress) or `COMPRESS` (compress) after the `-TM` option.

KDJF5023-E

The local file name is too long.

(S)

Terminates `ftstran` command processing.

(O)

Express the local file name as a character string in the range from 1 to 256 bytes.

KDJF5024-E

The remote file name is too long.

(S)

Terminates `ftstran` command processing.

(O)

Express the remote file name as a character string in the range from 1 to 256 bytes.

KDJF5025-E

The name of the program that starts when file transmission ends normally is too long.

(S)

Terminates `ftstran` command processing.

(O)

Express the name of the program to start when transmission ends normally as a character string in the range from 1 to 256 bytes.

KDJF5026-E

The name of the program that starts when file transmission ends abnormally is too long.

(S)

Terminates `ftstran` command processing.

(O)

Express the name of the program to start when transmission ends abnormally as a character string in the range from 1 to 256 bytes.

KDJF5027-E

The FTP command is too long.

(S)

Terminates `ftstran` command processing.

(O)

Express the FTP command as a character string in the range from 1 to 300 bytes.

KDJF5028-E

The comment is too long.

(S)

Terminates `ftstran` command processing.

(O)

Express the comment as a character string in the range from 1 to 80 bytes.

KDJF5029-E

Specify the name of the program that starts when file transmission ends normally with a full-path name.

(S)

Terminates `ftstran` command processing.

(O)

Express the name of the program to start when transmission ends normally as a full path beginning with a forward slash (/).

KDJF5030-E

Specify the name of the program that starts when file transmission ends abnormally with a full-path name.

(S)

Terminates `ftstran` command processing.

(O)

Express the name of the program to start when transmission ends abnormally as a full path beginning with a forward slash (/).

KDJF5031-E

Specify CHECK or UNCHECK after the -TK option.

Neither CHECK (with size checking) nor UNCHECK (without size checking) is specified after the -TK option.

(S)

Terminates `ftstran` command processing.

(O)

Specify either CHECK (with size checking) or UNCHECK (without size checking) after the -TK option.

KDJF5032-E

The card name is empty.

The null character string was specified for the card name.

(S)

Terminates `ftstran` command processing.

(O)

Specify a non-null character string for the card name.

KDJF5033-E

The remote host name is empty.

The null character string was specified for the host name.

(S)

Terminates `ftstran` command processing.

(O)

Specify a non-null character string for the host name.

KDJF5034-E

The name of a user to log in is empty.

The null character string was specified for the user name.

(S)

Terminates `ftstran` command processing.

(O)

Specify a non-null character string for the user name.

KDJF5035-E

The local file name is empty.

The null character string was specified for the local file name.

(S)

Terminates `ftstran` command processing.

(O)

Specify a non-null character string for the local file name.

KDJF5036-E

The remote file name is empty.

The null character string was specified for the remote file name.

(S)

Terminates `ftstran` command processing.

(O)

Specify a non-null character string for the remote file name.

KDJF5047-E

Specify `AUTO`, `MULTIPLE` or `SINGLE` after the `-TA` option.

Neither `AUTO` (switch automatically), nor `MULTIPLE` (perform multiple-file transmission), nor `SINGLE` (perform single-file transmission) is specified after the `-TA` option.

(S)

Terminates `ftstran` command processing.

(O)

Specify `AUTO` (switch automatically), or `MULTIPLE` (perform multiple-file transmission), or `SINGLE` (perform single-file transmission) after the `-TA` option.

KDJF5051-E

Specify `CHECK` or `UNCHECK` after the `-TSS` option.

Neither `CHECK` (use FTPS) nor `UNCHECK` (do not use FTPS) is specified after the `-TSS` option.

(S)

Terminates `ftstran` command processing.

(O)

Specify either `CHECK` (use FTPS) or `UNCHECK` (do not use FTPS) after the `-TSS` option.

KDJF5052-E

Specify `CHECK` or `UNCHECK` after the `-TSE` option.

Neither **CHECK** (check the expiration date of the server certificate) nor **UNCHECK** (do not check the expiration date of the server certificate) is specified after the **-TSE** option.

(S)

Terminates `ftstran` command processing.

(O)

Specify either **CHECK** (check the expiration date of the server certificate) or **UNCHECK** (do not check the expiration date of the server certificate) after the **-TSE** option.

KDJF5053-E

The path name of the CA certificate is too long.

(S)

Terminates `ftstran` command processing.

(O)

Specify the path to the CA certificate as a string of up to 256 bytes.

KDJF5054-E

The path name of the CRL is too long.

(S)

Terminates `ftstran` command processing.

(O)

Specify the path to the CRL as a string of up to 256 bytes.

KDJF5055-E

Specify the path name of the CA certificate with the full path.

(S)

Terminates `ftstran` command processing.

(O)

Specify the full path name for the CA certificate by using a path that begins with a forward slash (/).

KDJF5056-E

Specify the path name of the CRL with the full path.

(S)

Terminates `ftstran` command processing.

(O)

Specify the full path name for the CRL by using a path that begins with a forward slash (/).

8.10 Messages issued by the ftsutil command (KDJF51xx)

These messages are output to the terminal used to execute the command.

KDJF5101-E

Invalid option.- - *opt*

An invalid *opt* option was specified.

(S)

Terminates `ftsutil` command processing.

(O)

Check and, if necessary, revise the specified options.

KDJF5102-E

Duplicated option.- - *opt*

The *opt* option was specified more than once.

(S)

Terminates `ftsutil` command processing.

(O)

Check and, if necessary, revise the specified options.

KDJF5103-W

Usage: `ftsutil -C environment_information_option environment_information_option_parameter`
`ftsutil -L`

The operands are not specified correctly.

(S)

Terminates `ftsutil` command processing.

(O)

Check and, if necessary, revise the specified operands.

KDJF5104-E

A function error occurred.
(Function name : *func* , Error code : *errno*)

A function error occurred.

func: Function name, *errno*: Error number

(S)

Terminates `ftsutil` command processing.

(O)

For details about the error number, see the error numbers for the corresponding system function.

KDJF5105-E

Permission denied.

The user does not have superuser permissions.

(S)

Terminates `ftsutil` command processing.

(O)

Execute the command using superuser permissions.

KDJF5111-E

Specify No. of file transmissions to log using integral numbers.

The specification of the number of log entries to be retained contains a nonnumeric character.

(S)

Terminates `ftsutil` command processing.

(O)

Specify numeric characters only for the number of log entries to be retained.

KDJF5112-E

Specify No. of file transmissions to log in the range from 0 to 1000000.

The number of log entries to be retained is not an integer in the range from 0 to 1,000,000.

(S)

Terminates `ftsutil` command processing.

(O)

Express the number of log entries to be retained as an integer in the range from 0 to 1,000,000.

KDJF5113-E

Specify the size of protocol trace file using integral numbers.

The specification of the protocol trace file size contains a nonnumeric character.

(S)

Terminates `ftsutil` command processing.

(O)

Specify numeric characters only for the protocol trace file size.

KDJF5114-E

Specify the size of protocol trace file in the range from 4 to 10000.

The size of the protocol trace file is not an integer in the range from 4 to 10,000.

(S)

Terminates `ftsutil` command processing.

(O)

Express the size of the protocol trace file as an integer in the range from 4 to 10,000.

KDJF5115-E

Specify the size of module trace file using integral numbers.

The specification of the module trace file size contains a nonnumeric character.

(S)

Terminates `ftsutil` command processing.

(O)

Specify numeric characters only for the module trace file size.

KDJF5116-E

Specify the size of module trace file in the range from 4 to 10000.

The size of the module trace file is not an integer in the range from 4 to 10,000.

(S)

Terminates `ftsutil` command processing.

(O)

Express the size of the module trace file as an integer in the range from 4 to 10,000.

KDJF5117-E

Specify No. of retries when connecting to a host using integral numbers.

The specification of the number of retries for establishing connection with a host contains a nonnumeric character.

(S)

Terminates `ftsutil` command processing.

(O)

Specify numeric characters only for the number of retries for establishing connection with a host.

KDJF5118-E

Specify No. of retries when connecting to a host in the range from 0 to 100000.

The number of retries for establishing connection with a host is not an integer in the range from 0 to 100,000.

(S)

Terminates `ftsutil` command processing.

(O)

Express the number of retries for establishing connection with a host as an integer in the range from 0 to 100,000.

KDJF5119-E

Specify the retry interval when connecting to a host using integral numbers.

The specification of the retry interval for establishing connection with a host contains a nonnumeric character.

(S)

Terminates `ftsutil` command processing.

(O)

Specify numeric characters only for the retry interval for establishing connection with a host.

KDJF5120-E

Specify the retry interval when connecting to a host in the range from 0 to 86400.

The retry interval for establishing connection with a host is not an integer in the range from 0 to 86,400.

(S)

Terminates `ftsutil` command processing.

(O)

Express the retry interval for establishing connection with a host as an integer in the range from 0 to 86,400.

KDJF5121-E

Specify the time-limit waiting to send data using integral numbers.

The specification of the time limit for waiting to send data contains a nonnumeric character.

(S)

Terminates `ftsutil` command processing.

(O)

Specify numeric characters only for the time limit for waiting to send data.

KDJF5122-E

Specify the time-limit waiting to send data in the range from 1 to 3600.

The time limit for waiting to send data is not an integer in the range from 1 to 3,600.

(S)

Terminates `ftsutil` command processing.

(O)

Express the time limit for waiting to send data as an integer in the range from 1 to 3,600.

KDJF5123-E

Specify the time-limit waiting to receive data using integral numbers.

The specification of the time limit for waiting to receive data contains a nonnumeric character.

(S)

Terminates `ftsutil` command processing.

(O)

Specify numeric characters only for the time limit for waiting to receive data.

KDJF5124-E

Specify the time-limit waiting to receive data in the range from 1 to 3600.

The time limit for waiting to receive data is not an integer in the range from 1 to 3,600.

(S)

Terminates `ftsutil` command processing.

(O)

Express the time limit for waiting to receive data as an integer in the range from 1 to 3,600.

KDJF5125-E

Specify the size of sending buffer for the server using integral numbers.

The size of the sending buffer for the server contains a nonnumeric character.

(S)

Terminates `ftsutil` command processing.

(O)

Specify numeric characters only for the size of the sending buffer for the server.

KDJF5126-E

Specify the size of sending buffer for the server in the range from 512 to 262144

The size of the sending buffer for the server is not an integer in the range from 512 to 262,144.

(S)

Terminates `ftsutil` command processing.

(O)

Express the size of the sending buffer for the server as an integer in the range from 512 to 262,144.

KDJF5127-E

Specify the size of receiving buffer for the server using integral numbers.

The specification of the size of the receiving buffer for the server contains a nonnumeric character.

(S)

Terminates `ftsutil` command processing.

(O)

Specify numeric characters only for the size of the receiving buffer for the server.

KDJF5128-E

Specify the size of receiving buffer for the server in the range from 512 to 262144.

The size of the receiving buffer for the server is not an integer in the range from 512 to 262,144.

- (S)
Terminates `ftsutil` command processing.
- (O)
Express the size of the receiving buffer for the server as an integer in the range from 512 to 262,144.

KDJF5129-E

Specify the time-limit of idle connection for the server using integral numbers.

The specification of the time limit for an idle connection for the server contains a nonnumeric character.

- (S)
Terminates `ftsutil` command processing.
- (O)
Specify numeric characters only for the time limit for an idle connection for the server.

KDJF5130-E

Specify the time-limit of idle connection for the server in the range from 30 to 7200.

The time limit for an idle connection for the server is not an integer in the range from 30 to 7,200.

- (S)
Terminates `ftsutil` command processing.
- (O)
Express the time limit for an idle connection for the server as an integer in the range from 30 to 7,200.

KDJF5131-E

Specify the file creation mask for the server using octal numbers.

The file creation mask for the server contains non-octal characters.

- (S)
Terminates `ftsutil` command processing.
- (O)
Express the file creation mask for the server using octal characters.

KDJF5132-E

Specify the file creation mask for the server in the range from 000 to 777.

The file creation mask for the server is not an octal number in the range from 000 to 777.

(S)

Terminates `ftsutil` command processing.

(O)

Express the file creation mask for the server as an octal number in the range from 000 to 777.

KDJF5133-E

Specify the size of sending buffer for the client using integral numbers.

The specification of the size of the sending buffer for the client contains a nonnumeric character.

(S)

Terminates `ftsutil` command processing.

(O)

Specify numeric characters only for the size of the sending buffer for the client.

KDJF5134-E

Specify the size of sending buffer for the client in the range from 512 to 262144.

The size of the sending buffer for the client is not an integer in the range from 512 to 262,144.

(S)

Terminates `ftsutil` command processing.

(O)

Express the size of the sending buffer for the client as an integer in the range from 512 to 262,144.

KDJF5135-E

Specify the size of receiving buffer for the client using integral numbers.

The specification of the size of the receiving buffer for the client contains a nonnumeric character.

(S)

Terminates `ftsutil` command processing.

(O)

Specify numeric characters only for the size of the receiving buffer for the client.

KDJF5136-E

Specify the size of receiving buffer for the client in the range from 512 to 262144.

The size of the receiving buffer for the client is not an integer in the range from 512 to 262,144.

(S)

Terminates `ftsutil` command processing.

(O)

Express the size of the receiving buffer for the client as an integer in the range from 512 to 262,144.

KDJF5137-E

Specify the file creation mask for the client using octal numbers.

The file creation mask for the client contains non-octal characters.

(S)

Terminates `ftsutil` command processing.

(O)

Express the file creation mask for the client using octal characters.

KDJF5138-E

Specify the file creation mask for the client in the range from 000 to 777.

The file creation mask for the client is not an octal number in the range from 000 to 777.

(S)

Terminates `ftsutil` command processing.

(O)

Express the file creation mask for the client as an octal number in the range from 000 to 777.

KDJF5139-E

Specify CHECK or UNCHECK after -EI option.

Neither CHECK (with JP1 event issuance) nor UNCHECK (without JP1 event issuance) is specified after the -EI option.

(S)

Terminates `ftsutil` command processing.

(O)

Specify either CHECK (with JP1 event issuance) or UNCHECK (without JP1 event issuance) after the -EI option.

KDJF5140-E

Specify CHECK or UNCHECK after -EL option.

Neither CHECK (with system log output) nor UNCHECK (without system log output) is specified after the -EL option.

(S)

Terminates `ftsutil` command processing.

(O)

Specify either CHECK (with system log output) or UNCHECK (without system log output) after the -EL option.

KDJF5142-E

Specify the maximum number of concurrent transmissions using integral numbers.

The specification of the maximum number of concurrent transmissions contains a nonnumeric character.

- (S)
Terminates `ftsutil` command processing.
 - (O)
Specify numeric characters only for the maximum number of concurrent transmissions.
- KDJF5143-E**
- Specify the maximum number of concurrent transmissions in the range from 64 to 128.
- The maximum number of concurrent transmissions is not an integer in the range from 64 to 128.
- (S)
Terminates `ftsutil` command processing.
 - (O)
Express the maximum number of concurrent transmissions as an integer in the range from 64 to 128.

- KDJF5144-E**
- Specify the size of access log file using integral numbers.
- The specification of the access log file size contains a nonnumeric character.
- (S)
Terminates `ftsutil` command processing.
 - (O)
Specify numeric characters only for the access log file size.

- KDJF5145-E**
- Specify the size of access log file in the range from 0 to 100.
- The size of the access log file is not an integer in the range from 0 to 100.
- (S)
Terminates `ftsutil` command processing.
 - (O)
Express the size of the access log file as an integer in the range from 0 to 100.

- KDJF5152-E**
- Specify `CHECK` or `UNCHECK` after the `-EX` option.
- Neither `CHECK` (with FTP connection response message control) nor `UNCHECK` (without FTP connection response message control) is specified after the `-EX` option.
- (S)
Terminates `ftsutil` command processing.
 - (O)
Specify either `CHECK` (with FTP connection response message control) or `UNCHECK` (without FTP connection response message control) after the `-EX` option.

8.11 Messages issued by the `ftsregc` command (KDJF52xx)

These messages are output to the terminal used to execute the command.

KDJF5201-E

Invalid option. - - *opt*

An invalid *opt* option was specified.

(S)

Terminates `ftsregc` command processing.

(O)

Check and, if necessary, revise the specified options.

KDJF5202-E

Duplicated option.- - *opt*

The *opt* option was specified more than once.

(S)

Terminates `ftsregc` command processing.

(O)

Check and, if necessary, revise the specified options.

KDJF5203-W

Usage: `ftsregc -N [cardname] transmission_information_option option_parameter`
`ftsregc -C cardname transmission_information_option option_parameter`
`ftsregc -D cardname`
`ftsregc -L cardname`

The operands are not specified correctly.

(S)

Terminates `ftsregc` command processing.

(O)

Check and, if necessary, revise the specified operands.

KDJF5204-E

A function error occurred.
(Function name : *func* Error code : *errno*)

A function error occurred.

(S)

Terminates `ftsregc` command processing.

(O)

For details about the error number, see the error numbers for the corresponding system function.

KDJF5205-E

Permission denied.

The user does not have superuser permissions.

(S)

Terminates `ftsregc` command processing.

(O)

Execute the command using superuser permissions.

KDJF5211-E

The card name is empty.

The null character string was specified for the card name.

(S)

Terminates `ftsregc` command processing.

(O)

Specify a non-null character string for the card name.

KDJF5212-E

The card name is too long.

(S)

Terminates `ftsregc` command processing.

(O)

Express the card name as a character string in the range from 1 to 20 bytes.

KDJF5213-E

The host name is empty.

The null character string was specified for the host name.

(S)

Terminates `ftsregc` command processing.

(O)

Specify a non-null character string for the host name.

KDJF5214-E

The host name is too long.

(S)

Terminates `ftsregc` command processing.

(O)

Express the host name as a character string in the range from 1 to 256 bytes.

KDJF5215-E

Specify the port number using integral numbers.

The specification of the port number contains a nonnumeric character.

(S)

Terminates `ftsregc` command processing.

(O)

Specify numeric characters only for the port number.

KDJF5216-E

Specify the port number in the range from 1 to 65535.

(S)

Terminates `ftsregc` command processing.

(O)

Express the port number as an integer in the range from 1 to 65,535.

KDJF5217-E

The user name is empty.

The null character string was specified for the user name.

(S)

Terminates `ftsregc` command processing.

(O)

Specify a non-null character string for the user name.

KDJF5218-E

The user name is too long.

(S)

Terminates `ftsregc` command processing.

(O)

Express the user name as a character string in the range from 1 to 80 bytes.

KDJF5219-E

The password is too long.

(S)

Terminates `ftsregc` command processing.

(O)

Express the password as a character string in the range from 1 to 80 bytes.

KDJF5220-E

Specify `SEND`, `RECV`, or `APPE` after `-TT` option.

Neither `SEND` (send (overwrite)), nor `RECV` (receive), nor `APPE` (send (append)) is specified after the `-TT` option.

(S)

Terminates `ftsregc` command processing.

(O)

Specify `SEND` (send (overwrite)), `RECV` (receive), or `APPE` (send (append)) after the `-TT` option.

KDJF5221-E

Specify `ASCII` or `BINARY` after `-TY` option.

Neither `ASCII` nor `BINARY` is specified after the `-TY` option.

(S)

Terminates `ftsregc` command processing.

(O)

Specify either `ASCII` or `BINARY` after the `-TY` option.

KDJF5222-E

Specify `STREAM` or `COMPRESS` after `-TM` option.

Neither `STREAM` (uncompressed) nor `COMPRESS` (compress) is specified after the `-TM` option.

(S)

Terminates `ftsregc` command processing.

(O)

Specify either `STREAM` (uncompressed) or `COMPRESS` (compress) after the `-TM` option.

KDJF5223-E

Specify `CHECK` or `UNCHECK` after `-TK` option.

Neither `CHECK` (with size checking) nor `UNCHECK` (without size checking) is specified after the `-TK` option.

(S)

Terminates `ftsregc` command processing.

(O)

Specify either `CHECK` (with size checking) or `UNCHECK` (without size checking) after the `-TK` option.

KDJF5224-E

The local file name is empty.

The null character string was specified for the local file name.

(S)

Terminates `ftsregc` command processing.

(O)

Specify a non-null character string for the local file name.

KDJF5225-E

The local file name is too long.

(S)

Terminates `ftsregc` command processing.

(O)

Express the local file name as a character string in the range from 1 to 256 bytes.

KDJF5226-E

The remote file name is empty.

The null character string was specified for the remote file name.

(S)

Terminates `ftsregc` command processing.

(O)

Specify a non-null character string for the remote file name.

KDJF5227-E

The remote file name is too long.

(S)

Terminates `ftsregc` command processing.

(O)

Express the remote file name as a character string in the range from 1 to 256 bytes.

KDJF5228-E

The name of the program that starts when file transmission ends normally is too long.

(S)

Terminates `ftsregc` command processing.

(O)

Express the name of the program to start when transmission ends normally as a character string in the range from 1 to 256 bytes.

KDJF5229-E

The name of the program that starts when file transmission ends abnormally is too long.

(S)

Terminates `ftsregc` command processing.

(O)

Express the name of the program to start when transmission ends abnormally as a character string in the range from 1 to 256 bytes.

KDJF5230-E

FTP command is too long.

(S)

Terminates `ftsregc` command processing.

(O)

Express the FTP command as a character string in the range from 1 to 300 bytes.

KDJF5231-E

The comment is too long.

(S)

Terminates `ftsregc` command processing.

(O)

Express the command as a character string in the range from 1 to 80 bytes.

KDJF5241-E

The card is not registered.

(S)

Terminates `ftsregc` command processing.

(O)

Check the card name. To register a card, see [3.4 Registering transmission information](#).

KDJF5242-E

The card is already registered.

(S)

Terminates `ftsregc` command processing.

(O)

Check the card name. Specify a card name that has not been registered.

KDJF5243-E

Specify the name of the program that starts when file transmission ends normally with a full-path name.

(S)

Terminates `ftsregc` command processing.

(O)

Express the name of the program to start when transmission ends normally as a full path beginning with a forward slash (/).

KDJF5244-E

Specify the name of the program that starts when file transmission ends abnormally with a full-path name.

(S)

Terminates `ftsregc` command processing.

(O)

Express the name of the program to start when transmission ends abnormally as a full path beginning with a forward slash (/).

KDJF5251-E

Specify the card name.

The card name option is missing.

(S)

Terminates `ftsregc` command processing.

(O)

Specify the card name option.

KDJF5252-E

Specify the host name.

The host name option is missing.

(S)

Terminates `ftsregc` command processing.

(O)

Specify the host name option.

KDJF5253-E

Specify the user name.

The user name option is missing.

(S)

Terminates `ftsregc` command processing.

(O)

Specify the user name option.

KDJF5254-E

Specify Send or Receive type.

The send/receive type option is missing.

(S)

Terminates `ftsregc` command processing.

(O)

Specify the send/receive type option.

KDJF5255-E

Specify the transmission mode.

The transmission mode option is missing.

(S)

Terminates `ftsregc` command processing.

(O)

Specify the transmission mode option.

KDJF5256-E

Specify the local file name.

The local file name option is missing.

(S)

Terminates `ftsregc` command processing.

(O)

Specify the local file name option.

KDJF5257-E

Specify the remote file name.

The remote file name option is missing.

(S)

Terminates `ftsregc` command processing.

(O)

Specify the remote file name option.

KDJF5259-E

Specify `AUTO`, `MULTIPLE` or `SINGLE` after the `-TA` option.

Neither `AUTO` (switch automatically), nor `MULTIPLE` (perform multiple-file transmission), nor `SINGLE` (perform single-file transmission) is specified after the `-TA` option.

(S)

Terminates `ftsregc` command processing.

(O)

Specify `AUTO` (switch automatically), or `MULTIPLE` (perform multiple-file transmission), or `SINGLE` (perform single-file transmission) after the `-TA` option.

KDJF5261-E

Specify `CHECK` or `UNCHECK` after the `-TSS` option.

Neither `CHECK` (use `FTPS`) nor `UNCHECK` (do not use `FTPS`) is specified after the `-TSS` option.

(S)

Terminates `ftstran` command processing.

(O)

Specify either `CHECK` (use `FTPS`) or `UNCHECK` (do not use `FTPS`) after the `-TSS` option.

KDJF5262-E

Specify `CHECK` or `UNCHECK` after the `-TSE` option.

Neither `CHECK` (check the expiration date of the server certificate) nor `UNCHECK` (do not check the expiration date of the server certificate) is specified after the `-TSE` option.

(S)

Terminates `ftstran` command processing.

(O)

Specify either `CHECK` (check the expiration date of the server certificate) or `UNCHECK` (do not check the expiration date of the server certificate) after the `-TSE` option.

KDJF5263-E

The path name of the CA certificate is too long.

(S)

Terminates `ftstran` command processing.

(O)

Specify the path to the CA certificate as a string of up to 256 bytes.

KDJF5264-E

The path name of the CRL is too long.

(S)

Terminates `ftstran` command processing.

(O)

Specify the path to the CRL as a string of up to 256 bytes.

KDJF5265-E

Specify the path name of the CA certificate with the full path.

- (S)
Terminates `ftstran` command processing.
- (O)
Specify the full path name for the CA certificate by using a path that begins with a forward slash (/).

KDJF5266-E

Specify the path name of the CRL with the full path.

- (S)
Terminates `ftstran` command processing.
- (O)
Specify the full path name for the CRL by using a path that begins with a forward slash (/).

8.12 Messages issued by the `ftsautoma` command (KDJF53xx)

These messages are output to the terminal used to execute the command.

KDJF5301-E

Invalid option. - - *opt*

An invalid *opt* option was specified.

(S)

Terminates the `ftsautoma` command.

(O)

Check and, if necessary, revise the specified options.

KDJF5302-E

Duplicated option.- - *opt*

The *opt* option was specified more than once.

(S)

Terminates the `ftsautoma` command.

(O)

Check and, if necessary, revise the specified options.

KDJF5303-E

These options cannot be specified simultaneously. - -*opt1, opt2*

The mutually exclusive options *opt1* and *opt2* are both specified.

(S)

Terminates the `ftsautoma` command.

(O)

Check and, if necessary, revise the specified options.

KDJF5304-W

Usage: `ftsautoma -file|dir -N username file_or_directory auto_start_program_option option_parameter`
`ftsautoma -file|dir -D username file_or_directory`
`ftsautoma -file|dir -L [username [file_or_directory]] [-m format|-v]`

The operands are not specified correctly.

(S)

Terminates the `ftsautoma` command.

(O)

Check and, if necessary, revise the specified operands.

KDJF5305-E

A function error occurred.

(Function name : *func* Error code : *errno*)

A function error occurred.

(S)

Terminates the `ftsautoma` command.

(O)

For details about the error number, see the error numbers for the corresponding system function.

KDJF5306-E

Permission denied.

The user does not have superuser permissions.

(S)

Terminates the `ftsautoma` command.

(O)

Execute the command using superuser permissions.

KDJF5307-E

No file or directory name is specified.

The null character string is specified for the file or directory.

(S)

Terminates the `ftsautoma` command.

(O)

Specify a non-null character string for the file and directory names.

KDJF5308-E

The file or directory name is too long.

(S)

Terminates the `ftsautoma` command.

(O)

Express the file or directory name as a character string in the range from 1 to 256 characters.

KDJF5309-E

No user name is specified.

The null character string is specified for the user name.

(S)

Terminates the `ftsautoma` command.

(O)

Specify a non-null character string for the user name.

KDJF5310-E

The user name is too long.

(S)

Terminates the `ftsautoma` command.

(O)

Express the user name as a character string in the range from 1 to 80 characters.

KDJF5311-E

The user name is not registered into `/etc/password` file.

(S)

Terminates the `ftsautoma` command.

(O)

Specify a user registered in the `/etc/passwd` file.

KDJF5312-E

No file or directory type is specified.

The `-file` or `-dir` option is missing.

(S)

Terminates the `ftsautoma` command.

(O)

Specify the `-file` or `-dir` option.

KDJF5313-E

An incorrect character is used for the file name.

(S)

Terminates the `ftsautoma` command.

(O)

Check and, if necessary, revise the file name.

KDJF5314-E

An incorrect character is used for the directory name.

(S)

Terminates the `ftsautoma` command.

(O)

Check and, if necessary, revise the directory name.

KDJF5315-E

Specify the directory name with the full path.

The directory name is not specified as a full path beginning with a forward slash (/).

(S)

Terminates the `ftsautoma` command.

(O)

Express the directory name as a full path beginning with a forward slash (/).

KDJF5316-E

The auto-start program is already registered.

The specified auto-start program has already been registered.

(S)

Terminates the `ftsautoma` command.

(O)

Check the auto-start program information. Specify an auto-start program that has not been registered.

KDJF5317-E

The auto-start program is not registered.

The specified auto-start program is not registered.

(S)

Terminates the `ftsautoma` command.

(O)

Check the auto-start program information. If you are registering an auto-start program, see [3.3.1 Registering auto-start programs](#).

KDJF5319-E

The program name is too long.

(S)

Terminates the `ftsautoma` command.

(O)

Express the program name as a character string in the range from 1 to 256 characters.

KDJF5320-E

An incorrect character is used for the program name.

(S)

Terminates the `ftsautoma` command.

(O)

Check and, if necessary, revise the program name.

KDJF5324-E

Specify the program name with the full path.

The program name is not specified as a full path beginning with a forward slash (/).

(S)

Terminates the `ftsautoma` command.

(O)

Express the program name as a full path beginning with a forward slash (/).

KDJF5325-E

No form file name is specified.

The null character string is specified for the format file name.

(S)

Terminates the `ftsautoma` command.

(O)

Specify a non-null character string for the format file name.

KDJF5326-E

The form file name is too long.

(S)

Terminates the `ftsautoma` command.

(O)

Express the format file name as a character string in the range from 1 to 256 characters.

KDJF5327-E

A form file does not exist.

File name : *file-name*

(S)

Terminates the `ftsautoma` command.

(O)

Check the format file.

KDJF5331-E

The file cannot be accessed.

File name : *file-name*

Error code: *errno*

(S)

Terminates the `ftsautoma` command.

(O)

For details about the error number, see the error numbers for the corresponding system function.

KDJF5334-E

Enter the auto-start program for normal termination, or the auto-start program for abnormal termination.

The name of the auto-start program to start when transmission ends normally or abnormally is not specified.

(S)

Terminates the `ftsautoma` command.

(O)

Specify the name of the auto-start program to start when transmission ends normally or abnormally.

8.13 Messages issued by the ftshistory command (KDJF54xx)

These messages are output to the terminal used to execute the command.

KDJF5401-E

Invalid option. - - *opt*

An invalid option *opt* was specified.

(S)

Terminates `ftshistory` command processing.

(O)

Check and, if necessary, revise the specified options.

KDJF5402-E

Duplicated option.- - *opt*

The *opt* option was specified more than once.

(S)

Terminates `ftshistory` command processing.

(O)

Check and, if necessary, revise the specified options.

KDJF5403-E

These options cannot be specified simultaneously. - -*opt1, opt2*

The mutually exclusive options *opt1* and *opt2* are both specified.

(S)

Terminates `ftshistory` command processing.

(O)

Check and, if necessary, revise the specified options.

KDJF5404-W

Usage: `ftshistory [-m format|-v] [-s time[,endtime]] [-f historyfile]`

The operands are not specified correctly.

(S)

Terminates `ftshistory` command processing.

(O)

Check and, if necessary, revise the specified operands.

KDJF5405-E

No log file name is specified.

The null character string is specified for the log file name.

(S)

Terminates `ftshistory` command processing.

(O)

Specify a non-null character string for the log file name.

KDJF5406-E

The log file name is too long.

(S)

Terminates `ftshistory` command processing.

(O)

Express the log file name as a character string in the range from 1 to 256 characters.

KDJF5407-E

No form file name is specified.

The null character string is specified for the format file name.

(S)

Terminates `ftshistory` command processing.

(O)

Specify a non-null character string for the format file name.

KDJF5408-E

The form file name is too long.

(S)

Terminates `ftshistory` command processing.

(O)

Express the format file name as a character string in the range from 1 to 256 characters.

KDJF5409-E

No date and time of the log to display is specified.

(S)

Terminates `ftshistory` command processing.

(O)

Specify the date and time of the log that is to be displayed.

KDJF5411-E

Specify the date and time in YYYY/MM/DD HH:MM:SS form.

The format of the specified date and time is invalid.

(S)

Terminates `ftshistory` command processing.

(O)

Specify the date and time in the format *YYYY/MM/DD HH:MM:SS*.

KDJF5412-E

Specify the date and time in the range from 1970/01/01 00:00:00 to 2099/12/31 23:59:59 .

The specified date and time is outside the range from 1970-01-01 at 00:00:00 to 2099-12-31 at 23:59:59.

(S)

Terminates `ftshistory` command processing.

(O)

Specify a date and time in the range from 1970-01-01 at 00:00:00 to 2037-12-31 at 23:59:59.

KDJF5413-E

A file cannot be accessed.

File name : *file-name*

Error code: *errno*

(S)

Terminates `ftshistory` command processing.

(O)

For details about the error number, see the error numbers for the corresponding system function.

KDJF5414-E

A function error occurred.

(Function name : *func* Error code : *errno*)

A function error occurred.

(S)

Terminates `ftshistory` command processing.

(O)

For details about the error number, see the error numbers for the corresponding system function.

KDJF5415-E

A log file does not exist.

File name : *file-name*

(S)

Terminates `ftshistory` command processing.

(O)

Check and, if necessary, revise the log file.

KDJF5416-E

A form file does not exist.

File name : *file-name*

(S)

Terminates `ftshistory` command processing.

(O)

Check the format file.

KDJF5417-W

There is no log to output.

(S)

Terminates `ftshistory` command processing.

KDJF5418-E

It is not a log file. Or the log file is destroyed.

(S)

Terminates `ftshistory` command processing.

(O)

Check the log file.

8.14 Messages issued by the `ftsregcv` command (KDJF55xx)

These messages are output to the terminal used to execute the command.

KDJF5501-E

Invalid option. - - *opt*

An invalid *opt* option was specified.

(S)

Terminates `ftsregcv` command processing.

(O)

Check and, if necessary, revise the specified options.

KDJF5502-E

Duplicated option. - - *opt*

The *opt* option was specified more than once.

(S)

Terminates `ftsregcv` command processing.

(O)

Check and, if necessary, revise the specified options.

KDJF5503-E

These options cannot be specified simultaneously.- -*opt1, opt2*

The mutually exclusive options *opt1* and *opt2* are both specified.

(S)

Terminates `ftsregcv` command processing.

(O)

Check and, if necessary, revise the specified options.

KDJF5504-W

Usage: `ftsregcv [-c card] [-m format|-v]`

The operands are not specified correctly.

(S)

Terminates `ftsregcv` command processing.

(O)

Check and, if necessary, revise the specified operands.

KDJF5505-E

No card name is specified.

The null character string was specified for the card name.

(S)

Terminates `ftsregcv` command processing.

(O)

Specify a non-null character string for the card name.

KDJF5506-E

The card name is too long.

(S)

Terminates `ftsregcv` command processing.

(O)

Express the card name as a character string in the range from 1 to 20 characters.

KDJF5507-E

The card is not registered.

(S)

Terminates `ftsregcv` command processing.

(O)

Check the card name. To register a card, see [3.4 Registering transmission information](#).

KDJF5508-E

No form file name is specified.

The null character string was specified for the format file name.

(S)

Terminates `ftsregcv` command processing.

(O)

Specify a non-null character string for the format file name.

KDJF5509-E

The form file name is too long.

(S)

Terminates `ftsregcv` command processing.

(O)

Express the format file name as a character string in the range from 1 to 256 characters.

KDJF5510-E

A form file does not exist.

File name : *file-name*

(S)

Terminates `ftsregcv` command processing.

(O)

Check the format file.

KDJF5514-E

A file cannot be accessed.

File name : *file-name*

Error code : *errno*

(S)

Terminates `ftsregcv` command processing.

(O)

For details about the error number, see the error numbers for the corresponding system function.

KDJF5515-E

A function error occurred.

(Function name : *func* Error code : *errno*)

A function error occurred.

(S)

Terminates `ftsregcv` command processing.

(O)

For details about the error number, see the error numbers for the corresponding system function.

8.15 Messages issued by the Operations-Manager Agent (KDJF60xx)

These messages are output to the system log. If a terminal was used to execute the command, the messages are also output to the terminal. However, the messages are not output to the terminal in Linux.

KDJF6000-I

JP1/FTS agent started.

The Operations-Manager Agent has started.

KDJF6001-W

JP1/FTS agent already started.

The Operations-Manager Agent is already running.

KDJF6002-E

A system call error occurred.

[*system-call-name*(*error-number*)] [*module-name*(*line-number*)]

A system call error has occurred.

(S)

Terminates `ftsastart` command processing.

(O)

Contact the system administrator.

KDJF6003-E

Permission denied

The user is not authorized to start JP1/FTP.

(S)

Terminates `ftsastart` command processing.

(O)

Execute the command using superuser permissions.

KDJF6004-E

Port number is not defined in the Services file. [*service-name*]

The indicated *service-name* has not been set in `/etc/services`.

(S)

Terminates `ftsastart` command processing.

(O)

The indicated *service-name* has not been set in `/etc/services`. For details about how to specify the settings, see [2.3.3 Setting the port numbers](#).

KDJF6005-E

[*Java_Path*]: Not Found.

The Java start command cannot be found.

(S)

Terminates `ftsastart` command processing.

(O)

Check if there is a path indicated as *Java_Path*. Also check if the installation of JP1/FTP has been completed. If the path indicated as *Java_Path* does not exist or the installation was canceled, reinstall JP1/FTP. If the path indicated as *Java_Path* exists and the installation has been completed successfully, contact the system administrator.

KDJF6006-E

JP1/FTS agent can't be started.

The Operations-Manager Agent could not be started.

(S)

Terminates `ftsastart` command processing.

(O)

Re-execute the command. If the command cannot be executed, contact the system administrator.

KDJF6007-W

JP1/FTS agent is starting or ending now.

The Operations-Manager Agent is undergoing start or termination processing.

KDJF6008-E

Specify java file or jre file.

No Java file is specified.

(S)

Terminates `ftsastart` command processing.

(O)

Contact the system administrator.

KDJF6009-E

Cannot connect to the JP1/IM Event Server.

An attempt to establish connection with JP1/Base has failed.

(S)

Stops the JP1 event issuance processing and then resumes the start processing.

(O)

Check and, if necessary, revise the JP1/Base status. If there is no problem with the JP1/Base status, contact the system administrator.

KDJF6010-E

JP1/IM not installed.

JP1/Base has not been installed.

(S)

Stops the JP1 event issuance processing and then resumes the start processing.

(O)

Install JP1/Base and then restart the Operations-Manager Agent.

KDJF6012-I

JP1/FTS agent stopped.

The Operations-Manager Agent has stopped.

KDJF6013-E

JP1/FTS agent will now stop.

The Operations-Manager Agent will now be canceled.

(S)

Terminates `ftsastart` command processing.

(O)

Contact the system administrator.

8.16 Messages issued by the ftsastop command (KDJF61xx)

These messages are output to the system log. If a terminal was used to execute the command, the messages are also output to the terminal. However, the messages are not output to the terminal in Linux.

KDJF6100-I

JP1/FTS agent is stopped.

The Operations-Manager Agent has stopped.

KDJF6101-W

JP1/FTS agent is not started.

The Operations-Manager Agent has not started. It has already stopped.

KDJF6102-W

JP1/FTS agent is starting or ending now.

The Operations-Manager Agent is undergoing start or termination processing.

KDJF6103-E

Permission denied.

The user is not authorized to terminate the Operations-Manager Agent.

(S)

Terminates `ftsastop` command processing.

(O)

Execute the command using superuser permissions.

KDJF6104-E

JP1/FTS agent can't be stopped.

(S)

Terminates `ftsastop` command processing.

(O)

Contact the system administrator.

KDJF6105-E

A system call error occurred.

[system-call-name(error-number)][module-name(line-number)]

A system call error has occurred.

(S)

Terminates `ftsastop` command processing.

(O)

Contact the system administrator.

KDJF6106-E

Cannot connect to the JP1/IM Event Server.

An attempt to establish connection with JP1/Base has failed.

(S)

Stops the JP1 event issuance processing and then resumes the termination processing.

(O)

Contact the system administrator.

KDJF6107-E

JP1/IM not installed.

JP1/Base has not been installed.

(S)

Stops the JP1 event issuance processing and then resumes the termination processing.

(O)

If you will be using JP1 events, install JP1/Base. If you will not be using JP1 events, specify the JP1/FTP environment definition in such a manner that the JP1/IM event issuance processing is not used.

8.17 Messages issued by the jftsastatus command (KDJF62xx)

These message are output to the terminal.

KDJF6200-I

The JP1/FTS agent is running.

The Operations-Manager Agent is running (has already started).

KDJF6201-W

The JP1/FTS agent has stopped.

The Operations-Manager Agent has stopped.

KDJF6202-I

The JP1/FTS agent is now starting or stopping.

The Operations-Manager Agent is undergoing start or termination processing.

KDJF6204-W

The command is now executing.

The `jftsastatus` command is executing.

(S)

Terminates `jftsastatus` command processing.

(O)

Execute the command after the current `jftsastatus` command has terminated.

KDJF6205-E

A system call error occurred. [*system-call-name*(*error-number*)] [*module-name*(*line-number*)]

A system call error has occurred.

(S)

Terminates `jftsastatus` command processing.

(O)

Contact the system administrator.

8.18 Messages issued by the `ftsconsole` command (KDJF70xx)

These messages are output to the terminal used to execute the command.

KDJF7000-E

Port number is not defined in the Services file. [*service-name*]

The indicated *service-name* has not been set in `/etc/services`.

(S)

Terminates `ftsconsole` command processing.

(O)

Set *service-name* by referencing [2.3.3 Setting the port numbers](#).

KDJF7001-E

[*Java_Path*]: Not Found.

The Java start command cannot be found.

(S)

Terminates `ftsconsole` command processing.

(O)

Check if there is a path indicated as *Java_Path*. Also check if the installation of JP1/FTP has been completed. If the path indicated as *Java_Path* does not exist or the installation was canceled, reinstall JP1/FTP. If the path indicated as *Java_Path* exists and the installation has been completed successfully, contact the system administrator.

KDJF7002-E

A system call error occurred. [*system-call-name*(*error-number*)][*module-name*(*line-number*)]

A system call error has occurred.

(S)

Terminates `ftsconsole` command processing.

(O)

Contact the system administrator.

KDJF7003-E

Specify java file or jre file.

No Java file is specified.

(S)

Terminates `ftsconsole` command processing.

(O)

Contact the system administrator.

KDJF7004-E

Permission denied

The user is not authorized to start the command.

(S)

Terminates `ftsconsole` command processing.

(O)

Execute the command using superuser permissions.

8.19 Messages related to the log daemon (KDJF90xx)

These messages are output to the system log. If a terminal was used to execute the command, the messages are also output to the terminal. However, the messages are not output to the terminal in Linux.

KDJF9000-I

JP1/FTS log daemon started.

The log daemon has started.

KDJF9001-I

JP1/FTS log daemon stopped.

The log daemon has stopped.

KDJF9002-W

JP1/FTS log daemon already started.

The log daemon is already running.

KDJF9003-E

A system call error occurred.

[system-call-name(error-number)][module-name(line-number)]

A system call error has occurred.

(S)

Might terminate the log daemon.

(O)

Contact the system administrator.

KDJF9005-E

Cannot connect to the JP1/IM Event Server.

An attempt to establish connection with JP1/Base has failed.

(S)

Stops the JP1 event issuance processing and then resumes the start processing.

(O)

Check and, if necessary, revise the JP1/Base status. If there is no problem with the JP1/Base status, contact the system administrator.

KDJF9006-E

JP1/IM not installed.

JP1/Base has not been installed.

(S)

Stops the JP1 event issuance processing and then resumes the start processing.

(O)

Install JP1/Base and then restart the JP1/FTP daemon.

8.20 Messages issued by the `ftslogstop` command (KDJF91xx)

These messages are output to the system log. If a terminal was used to execute the command, the messages are also output to the terminal. However, the messages are not output to the terminal in Linux.

KDJF9100-I

JP1/FTS log daemon is stopped.

The log daemon has stopped.

KDJF9101-W

JP1/FTS log daemon is not started.

The log daemon has not started. It has already stopped.

KDJF9102-I

JP1/FTS log daemon is ending now.

The log daemon is undergoing termination processing.

KDJF9104-E

JP1/FTS log daemon can't be stopped.

The command with no option specified was unable to stop the log daemon, because the command with the `-f` option specified was entered while the command with no option specified was executing.

(S)

Terminates `ftslogstop` command processing.

KDJF9105-E

A system call error occurred. [*system-call-name*(*error-number*)] [*module-name*(*line-number*)]

A system call error has occurred.

(S)

Terminates `ftslogstop` command processing.

(O)

Contact the system administrator.

8.21 Messages issued by the jftslogdstatus command (KDJF92xx)

These message are output to the terminal.

KDJF9200-I

The JP1/FTS log daemon is running.

The log daemon is running (has already started).

KDJF9201-W

The JP1/FTS log daemon has stopped.

The log daemon has stopped.

KDJF9202-I

The JP1/FTS log daemon is now stopping.

The log daemon is undergoing termination processing.

KDJF9204-W

The command is now executing.

The `jftslogdstatus` command is executing.

(S)

Terminates `jftslogdstatus` command processing.

(O)

Execute the command after the current `jftslogdstatus` has terminated.

KDJF9205-E

A system call error occurred. [*system-call-name(error-number)*][*module-name(line-number)*]

A system call error has occurred.

(S)

Terminates `jftslogdstatus` command processing.

(O)

Contact the system administrator.

8.22 Event log messages (KDJF10xx, KDJF20xx, KDJF30xx, KDJF40xx, KDJF50xx, KDJF60xx)

KDJF1000-I (D,2)

JP1/FTS server started.

The JP1/FTP daemon has started.

KDJF1001-I (D,2)

JP1/FTS server stopped.

The JP1/FTP daemon has been terminated.

KDJF1002-W (D,2)

JP1/FTS server already started.

The JP1/FTP daemon is already running.

KDJF1003-E (D,0)

A system call error occurred.

[*system-call-name*(*error-number*)] [*module-name*(*line-number*)]

A system call error has occurred.

(S)

Might terminate the JP1/FTP daemon.

(O)

Contact the system administrator.

KDJF1005-E (D,0)

Port number is not defined in the Services file. [*service-name*]

The indicated *service-name* is not defined in `/etc/services`.

(S)

Terminates the JP1/FTP daemon.

(O)

Define *service-name* by referencing [2.3.3 Setting the port numbers](#).

KDJF1006-E (D,0)

Cannot connect to the JP1/IM Event Server.

An attempt to establish connection with JP1/Base has failed.

(S)

Stops the JP1 event issuance processing and then resumes the start processing.

(O)

Check and, if necessary, revise the JP1/Base status. If there is no problem with the JP1/Base status, contact the system administrator.

KDJF1007-E (D,0)

JP1/IM not installed.

JP1/Base has not been installed.

(S)

Stops the JP1 event issuance processing and then resumes the start processing.

(O)

Install JP1/Base and then restart the JP1/FTP daemon.

KDJF1009-W (D,1)

A system call error occurred.

[*system-call-name*(*error-number*)] [*module-name*(*line-number*)]

A system call error has occurred.

(S)

Continues processing although an error was detected in the JP1/FTP daemon.

(O)

Contact the system administrator.

KDJF1010-I (D,5)

JP1/FTS server was connected from a transfer client. [*transfer-client-number*]

The JP1/FTP daemon was connected from a transfer client.

KDJF1011-I (D,5)

JP1/FTS server received a transmission request from a transfer client. [*transfer-client-number*]

The JP1/FTP daemon received a transmission request from a transfer client.

KDJF1012-I (D,5)

JP1/FTS server started an FTP client. [*transfer-client-number:connection-number*]

The JP1/FTP daemon has started file transmission (client).

KDJF1013-I (D,5)

JP1/FTS server has sent transmission-end results to a transfer client. [*transfer-client-number*]

The JP1/FTP daemon has sent the transmission-end results to the transfer client.

KDJF1016-E (D,3)

A transmission process terminated because a signal was received. [*signal-number:type:connection-number*]

A transmission process was terminated because a signal was received.

(S)

Terminates the file transmission process.

(O)

Contact the system administrator.

KDJF2000-E (C,0)

A system call error occurred.

[*system-call-name(error-number)*][*module-name(line-number)*]
[*connection-number:transmission-number*]

A system call error occurred during file transmission (at the client).

(S)

Terminates file transmission (client) processing.

(O)

Contact the system administrator. For details about the error number, see [8.24 Details of error numbers](#).

KDJF2001-I (C,3)

Transmission ended normally.

[Transmission number: *transmission-number*]
[Connection number: *connection-number*]
[Card name: *transmission-card-name*]
[Logged-in user: *login-name*]
[Remote host name: *remote-host-name*]
[Local file name: *local-file-name*]
[Remote file name: *remote-file-name*]

File transmission (client) terminated normally.

KDJF2002-E (C,3)

Transmission ended abnormally.

[Transmission number: *transmission-number*]
[Connection number: *connection-number*]
[Card name: *transmission-card-name*]
[Logged-in user: *login-name*]
[Remote host name: *remote-host-name*]
[Local file name: *local-file-name*]
[Remote file name: *remote-file-name*]

File transmission (client) terminated abnormally.

(S)

Transmission terminated abnormally.

(O)

If another message (with the same module type, connection number, or transmission number) was displayed before this message, take appropriate action according to that error message. If there is no such error message, check the transmission logs for any errors.

KDJF2004-E (C,0)

Cannot connect to the JP1/IM Event Server.

An attempt to establish connection with JP1/Base has failed.

(S)

Stops the JP1 event generation processing and then resumes the transmission processing.

(O)

Check and, if necessary, revise the JP1/Base status. If there is no problem with the JP1/Base status, contact the system administrator.

KDJF2005-E (C,0)

JP1/IM not installed.

JP1/Base has not been installed.

(S)

Stops the JP1 event generation processing and then resumes the transmission processing.

(O)

Install JP1/Base, restart the JP1/FTP daemon, and then re-execute the transmission.

KDJF2006-W (C,1)

A system call error occurred.

[*system-call-name*(*error-number*)] [*module-name*(*line-number*)]

[*connection-number:transmission-number*]

A system call error has occurred.

(S)

Continues processing although an error was detected in file transmission (client).

(O)

Contact the system administrator. For details about the error number, see [8.24 Details of error numbers](#).

KDJF2007-W (C,3)

Transmission ended normally, but the auto-start program failed to execute.

[Transmission number: *transmission-number*]

[Connection number: *connection-number*]

[Card name: *transmission-card-name*]

[Auto-start program: *auto-start-program-name*]

[Logged-in user: *login-name*]
[Remote host name: *remote-host-name*]
[Local file name: *local-file-name*]
[Remote file name: *remote-file-name*]

Execution of the auto-start program failed and the transmission terminated with a warning.

(S)
The file transmission (client) terminated normally, but the auto-start program could not be executed.

(O)
If another message (with the same module type, connection number, or transmission number) was displayed before this message, take appropriate action according to that error message. If there is no such message, check the specified auto-start program.

KDJF2008-E (C,0)

Transmission will now stop. A system call error occurred.
[*system-call-name*(*error-number*)] [*name-of-module-resulting-in-error*(*location-of-error*)]

File transmission (client) will now be canceled. A system call error has occurred.

(S)
Terminates file transmission (client) processing.

(O)
An overview of the error might be displayed in the subsequent message. Determine the cause of the error from the error overview, system call name, or error number, and then take appropriate action.
If no error overview is displayed and the cause of the error cannot be determined, contact the system administrator. For details about the error number, see [8.24 Details of error numbers](#).

KDJF2009-E (C,0)

Transmission will now stop. A protocol error occurred.
[*protocol-message*] [*name-of-module-resulting-in-error*(*location-of-error*)]

File transmission (client) will now be canceled. A protocol error has occurred.

(S)
Terminates file transmission (client) processing.

(O)
An overview of the error might be displayed in the subsequent message. Determine the cause of the error from the error overview or protocol message, and then take appropriate action.
If no error overview is displayed and the cause of the error cannot be determined, contact the system administrator.

KDJF2010-E (C,0)

Transmission will now stop. A logical error occurred.
[*name-of-module-resulting-in-error*(*location-of-error*)]

File transmission (client) will now be canceled. A logical error has occurred.

(S)

Terminates file transmission (client) processing.

(O)

Contact the system administrator.

KDJF2011-E (C,0)

Transmission will now stop. A forced stop occurred.

[*name-of-module-resulting-in-error(location-of-error)*]

File transmission (client) will now be canceled. A forced termination error has occurred.

(S)

Terminates file transmission (client) processing.

(O)

If this error has occurred for a reason other than forced termination by the user, contact the system administrator.

KDJF2012-E (C,0)

An attempt to connect to the FTP server has failed.

An attempt to establish control connection with the FTP server has failed.

(S)

Terminates file transmission (client) processing.

(O)

Check and, if necessary, revise the following:

- Remote host settings
- Status of the FTP server
- Network status

Also check the information in the error message (with the same module type, connection number, or transmission number) that was displayed before this message.

KDJF2013-E (C,0)

An FTP command could not be sent. [FTP command:*command-name*]

Transmission of the *command-name* FTP command failed.

(S)

Terminates file transmission (client) processing.

(O)

Check the information in the error message (with the same module type, connection number, or transmission number) that was displayed before this message.

KDJF2014-E (C,0)

A time out occurred during an attempt to receive a reply message.

A response from the FTP server could not be received within the specified amount of time.

(S)

Terminates file transmission (client) processing.

(O)

Check and, if necessary, revise the following:

- Value of **Time-limit waiting to receive data** specified in [3.1.1 Defining an environment for JP1/FTP](#)
- Status of the FTP server
- Network status

KDJF2015-E (C,0)

An error occurred during an access to a send file. [*file-name*]

An error occurred while accessing a send file (*file-name*).

(S)

Terminates file transmission (client) processing.

(O)

Check the information in the error message (with the same module type, connection number, or transmission number) that was displayed before this message.

KDJF2016-E (C,0)

An attempt to allocate a buffer for compression has failed.

An attempt to allocate a buffer for compressed file transmission has failed.

(S)

Terminates file transmission (client) processing.

(O)

Check and, if necessary, revise the following:

- Status of virtual memory in the system

Also check the information in the error message (with the same module type, connection number, or transmission number) that was displayed before this message.

KDJF2017-E (C,0)

An error occurred during a data connection.

A data connection error occurred during file transmission.

(S)

Terminates file transmission (client) processing.

(O)

Check and, if necessary, revise the following:

- Status of the FTP server
- Network status

Also check the information in the error message (with the same module type, connection number, or transmission number) that was displayed before this message.

KDJF2018-E (C,0)

An error occurred during a file send.

An error occurred while sending a file.

(S)

Terminates file transmission (client) processing.

(O)

Check and, if necessary, revise the following:

- Status of the FTP server
- Network status

Also check the information in the error message (with the same module type, connection number, or transmission number) that was displayed before this message.

KDJF2019-E (C,0)

An error occurred during an access to a receive file. [*file-name*]

An error occurred while accessing a receive file (*file-name*).

(S)

Terminates file transmission (client) processing.

(O)

Check the information in the error message (with the same module type, connection number, or transmission number) that was displayed before this message.

KDJF2020-E (C,0)

An attempt to allocate a buffer for a file receive has failed.

An attempt to allocate a buffer for file reception has failed.

(S)

Terminates file transmission (client) processing.

(O)

Check and, if necessary, revise the following:

- Status of virtual memory in the system

Also check the information in the error message (with the same module type, connection number, or transmission number) that was displayed before this message.

KDJF2021-E (C,0)

An attempt to allocate a buffer for compression has failed.

An attempt to allocate a buffer for compressed file reception has failed.

(S)

Terminates file transmission (client) processing.

(O)

Check and, if necessary, revise the following:

- Value of **Size of receiving buffer** for the client that was specified in *3.1.1 Defining an environment for JPI/FTP*
- Status of virtual memory in the system

Also check the information in the error message (with the same module type, connection number, or transmission number) that was displayed before this message.

KDJF2022-E (C,0)

An error occurred during a data connection.

A data connection error occurred during file reception.

(S)

Terminates file transmission (client) processing.

(O)

Check and, if necessary, revise the following:

- Status of the FTP server
- Network status

Also check the information in the error message (with the same module type, connection number, or transmission number) that was displayed before this message.

KDJF2023-E (C,0)

An error occurred during a file receive.

An error occurred while receiving a file.

(S)

Terminates file transmission (client) processing.

(O)

Check and, if necessary, revise the following:

- Status of the FTP server
- Network status

Also check the information in the error message (with the same module type, connection number, or transmission number) that was displayed before this message.

KDJF2024-E (C,0)

The sizes of the transmitted files do not match. *[file-name]*

The sizes of the receive files do not match.

(S)

Terminates file transmission (client) processing.

(O)

Check and, if necessary, revise the following:

- Status of the FTP server
- Network status

KDJF2025-E (C,0)

An error occurred while a data connection was being prepared.

An error occurred while preparing to establish data connection.

(S)

Terminates file transmission (client) processing.

(O)

Check and, if necessary, revise the following:

- Network status

Also check the information in the error message (with the same module type, connection number, or transmission number) that was displayed before this message.

KDJF2026-E (C,0)

An error occurred during an attempt to connect a data connection.

An error occurred while establishing data connection.

(S)

Terminates file transmission (client) processing.

(O)

Check and, if necessary, revise the following:

- Status of the FTP server
- Network status

Also check the information in the error message (with the same module type, connection number, or transmission number) that was displayed before this message.

KDJF2027-E (C,0)

An error occurred during receipt of a file list.

An error occurred while receiving a list of receive files.

(S)

Terminates file transmission (client) processing.

(O)

Check and, if necessary, revise the following:

- Status of the FTP server
- Network status

Also check the information in the error message (with the same module type, connection number, or transmission number) that was displayed before this message.

KDJF2028-E (C,0)

An error occurred during an attempt to create a file list to be sent.

An error occurred while creating a list of send files.

(S)

Terminates file transmission (client) processing.

(O)

Check and, if necessary, revise the following:

- Specification of a local file
- Status of the specified local file

Also check the information in the error message (with the same module type, connection number, or transmission number) that was displayed before this message.

KDJF2029-W (C,1)

The specified auto-start program is invalid. [*auto-start-program-name*]

The specified auto-start program (*auto-start-program-name*) is invalid.

(S)

Terminates start processing of the auto-start program and resumes file transmission (client) processing.

(O)

Check and, if necessary, revise the following:

- Specified auto-start program

If another message (with the same module type, connection number, or transmission number) was displayed before this message, take appropriate action according to that error message.

KDJF2030-W (C,1)

The auto-start program could not be executed. [*auto-start-program-name*]

An attempt to start the specified auto-start program (*auto-start-program-name*) has failed.

(S)

Terminates start processing of the auto-start program and resumes file transmission (client) processing.

(O)

Check and, if necessary, revise the following:

- Specified auto-start program

If another message (with the same module type, connection number, or transmission number) was displayed before this message, take appropriate action according to that error message.

KDJF2031-E (C,0)

An error occurred during an attempt to send a JP1/IM event.

An error occurred while issuing a JP1 event

(S)
Terminates JP1 event issuance processing and then resumes the file transmission (client) processing.

(O)
Check and, if necessary, revise the following:

- JP1/Base status

Also check the information in the error message (with the same module type, connection number, or transmission number) that was displayed before this message.

KDJF2032-E (C,0)

Could not connect to the FTP server. [Remote host name:*remote-host-name*]

An attempt to establish connection with the FTP server named *remote-host-name* has failed.

(S)
Terminates file transmission (client) processing.

(O)
Check and, if necessary, revise the following:

- Status of the FTP server

Also check the information in the error message (with the same module type, connection number, or transmission number) that was displayed before this message.

KDJF2033-E (C,0)

command-name command failed.

The FTP command (*command-name*) failed.

(S)
Terminates file transmission (client) processing.

(O)
Check and, if necessary, revise the following:

- Status of the FTP server
- Network status

Also check the information in the error message (with the same module type, connection number, or transmission number) that was displayed before this message.

KDJF2034-I (C,5)

Connected to the FTP server. [Logged-in user:*login-name*][Remote host name:*remote-host-name*]

Connection has been established with the FTP server.

KDJF2035-I (C,4)

Transmission will now start.

[Card name: *transmission-card-name*]

[Logged-in user: *login-name*]

[Remote host name: *remote-host-name*]

[Local file name: *local-file-name*]

[Remote file name: *remote-file-name*]

File transmission (client) will now start.

KDJF2037-I (C,5)

The auto-start program has executed. [*auto-start-program-name*]

The auto-start program for file transmission (client) was executed.

KDJF2038-I (C,5)

FTP client disconnected from the FTP server.

The FTP client was disconnected from the FTP server.

KDJF2039-E (C,0)

There was no receive file.

[Logged-in user: *login-name*]

[Remote host name: *remote-host-name*]

[Remote file name: *remote-file-name*]

There was no receive file.

(S)

Terminates file transmission (client) processing.

(O)

Check and, if necessary, revise the following:

- Specified remote file name
- FTP server status

KDJF2040-E (C,0)

An error occurred during an attempt to read a file to be sent. [*file-name*]

An error occurred while reading a send file.

(S)

Terminates file transmission (client) processing.

(O)

Check and, if necessary, revise the following:

- Specified local file name

Also check the information in the error message (with the same module type, connection number, or transmission number) that was displayed before this message.

KDJF2041-E (C,0)

An error occurred during an attempt to write a received file. [*file-name*]

An error occurred while writing a receive file.

(S)

Terminates file transmission (client) processing.

(O)

Check and, if necessary, revise the following:

- Specified local file name

Also check the information in the error message (with the same module type, connection number, or transmission number) that was displayed before this message.

KDJF2044-E (C,0)

Transmission will now stop. An SSL communication error occurred. [*SSL-communication-error-number*] [*SSL-function-name*] [*module-name(line-number)*]

An error occurred during SSL communication processing.

(S)

Terminates file transmission (client) processing.

(O)

Contact the system administrator.

KDJF2045-E (C,0)

The server certificate has expired.

The server certificate has expired.

(S)

Terminates file transmission (client) processing.

(O)

Use a valid server certificate at the FTP server.

KDJF2046-E (C,0)

The server certificate was revoked.

The server certificate is no longer valid.

(S)

Terminates file transmission (client) processing.

KDJF3000-E (S,0)

A system call error occurred.

[*system-call-name*(*error-number*)] [*module-name*(*line-number*)]

[*connection-number:transmission-number*]

A system call error has occurred.

(S)

Terminates file transmission (server) processing.

(O)

Contact the system administrator. For details about the error number, see [8.24 Details of error numbers](#).

KDJF3001-I (S,3)

Transmission ended normally.

[Transmission number: *transmission-number*]

[Connection number: *connection-number*]

[Logged-in user: *login-name*]

[Remote host name: *remote-host-name*]

[Local file name: *local-file-name*]

Transmission terminated normally.

KDJF3002-E (S,3)

Transmission ended abnormally.

[Transmission number: *transmission-number*]

[Connection number: *connection-number*]

[Logged-in user: *login-name*]

[Remote host name: *remote-host-name*]

[Local file name: *local-file-name*]

Transmission terminated abnormally.

(S)

Transmission terminated abnormally.

(O)

If another message (with the same module type, connection number, or transmission number) was displayed before this message, take appropriate action according to that error message. If there is no such error message, check the transmission logs for any errors.

KDJF3004-E (S,0)

Cannot connect to the JP1/IM Event Server.

An attempt to establish connection with JP1/Base has failed.

(S)

Stops the JP1 event generation processing and then resumes the transmission processing.

(O)

Check and, if necessary, revise the JP1/Base status. If there is no problem with the JP1/Base status, contact the system administrator.

KDJF3005-E (S,0)

JP1/IM not installed.

JP1/Base has not been installed.

(S)

Stops the JP1 event generation processing and then resumes the transmission processing.

(O)

Install JP1/Base, restart the JP1/FTP daemon, and then re-execute the transmission.

KDJF3006-W (S,1)

A system call error occurred.

[*system-call-name*(*error-number*)] [*module-name*(*line-number*)]
[*connection-number:transmission-number*]

A system call error has occurred.

(S)

Continues processing although an error was detected during file transmission (server).

(O)

Contact the system administrator. For details about the error number, see [8.24 Details of error numbers](#).

KDJF3007-W (S,3)

Transmission ended normally, but the auto-start program failed to execute.

[Transmission number: *transmission-number*]
[Connection number: *connection-number*]
[Auto-start program: *auto-start-program-name*]
[Logged-in user: *login-name*]
[Remote host name: *remote-host-name*]
[Local file name: *local-file-name*]

Execution of the auto-start program failed and the transmission terminated with a warning.

(S)

File transmission (server) terminated normally, but execution of the auto-start program failed.

(O)

If another message (with the same module type, connection number, or transmission number) was displayed before this message, take appropriate action according to that error message. If there is no such message, check the specified auto-start program.

KDJF3008-E (S,0)

Transmission will now stop. A system call error occurred.

[*system-call-name*(*error-number*)] [*name-of-module-resulting-in-error*(*location-of-error*)]

Transmission will now be canceled. A system call error has occurred.

(S)

Terminates file transmission (server) processing.

(O)

An overview of the error might be displayed in the subsequent message. Determine the cause of the error from the error overview, system call name, or error number, and then take appropriate action.

If no error overview is displayed and the cause of the error cannot be determined, contact the system administrator. For details about the error number, see [8.24 Details of error numbers](#).

KDJF3010-E (S,0)

Transmission will now stop. A logical error occurred.

[*name-of-module-resulting-in-error*(*location-of-error*)]

Transmission will now be canceled. A logical error has occurred.

(S)

Terminates file transmission (server) processing.

(O)

Contact the system administrator.

KDJF3011-E (S,0)

Transmission will now stop. A forced stop occurred.

[*name-of-module-resulting-in-error*(*location-of-error*)]

Transmission will now be canceled. A forced termination error has occurred.

(S)

Terminates file transmission (server) processing.

(O)

If this error has occurred for a reason other than forced termination by the user, contact the system administrator.

KDJF3012-E (S,0)

Connection was lost.

Connection was lost suddenly.

(S)

Terminates file transmission (server) processing.

(O)

Check and, if necessary, revise the following:

- Status of the FTP client
- Network status

Also check the information in the error message (with the same module type, connection number, or transmission number) that was displayed before this message.

KDJF3013-E (S,0)

An error occurred during a send file access. [*file-name*]

An error occurred while accessing a send file (*file-name*).

(S)

Terminates file transmission (server) processing.

(O)

Check the information in the error message (with the same module type, connection number, or transmission number) that was displayed before this message.

KDJF3014-E (S,0)

An error occurred during a receive file access. [*file-name*]

An error occurred while accessing a receive file (*file-name*).

(S)

Terminates file transmission (server) processing.

(O)

Check the information in the error message (with the same module type, connection number, or transmission number) that was displayed before this message.

KDJF3015-E (S,0)

An error occurred while a data connection was being prepared.

An error occurred while preparing to establish data connection.

(S)

Terminates file transmission (server) processing.

(O)

Check and, if necessary, revise the following:

- Network status

Also check the information in the error message (with the same module type, connection number, or transmission number) that was displayed before this message.

KDJF3016-E (S,0)

An error occurred during an attempt to connect a data connection.

An error occurred while establishing data connection.

(S)

Terminates file transmission (server) processing.

(O)

Check and, if necessary, revise the following:

- Status of the FTP client
- Network status

Also check the information in the error message (with the same module type, connection number, or transmission number) that was displayed before this message.

KDJF3017-E (S,0)

An attempt to allocate a buffer for a file send has failed.

An attempt to allocate a buffer for file transmission has failed.

(S)

Terminates file transmission (server) processing.

(O)

Check and, if necessary, revise the following:

- Status of virtual memory in the system

Also check the information in the error message (with the same module type, connection number, or transmission number) that was displayed before this message.

KDJF3018-E (S,0)

An attempt to allocate a buffer for compression has failed.

An attempt to allocate a buffer for compressed file transmission has failed.

(S)

Terminates file transmission (server) processing.

(O)

Check and, if necessary, revise the following:

- Status of virtual memory in the system

Also check the information in the error message (with the same module type, connection number, or transmission number) that was displayed before this message.

KDJF3019-E (S,0)

An error occurred during an attempt to read a file to be sent. [*file-name*]

An error occurred while reading a send file.

(S)

Terminates file transmission (server) processing.

(O)

Check and, if necessary, revise the following:

- Status of file (*file-name*) requested to be sent

Also check the information in the error message (with the same module type, connection number, or transmission number) that was displayed before this message.

KDJF3020-E (S,0)

An error occurred during a file send.

An error occurred while sending a file.

(S)

Terminates file transmission (server) processing.

(O)

Check and, if necessary, revise the following:

- Status of the FTP client
- Network status

Also check the information in the error message (with the same module type, connection number, or transmission number) that was displayed before this message.

KDJF3021-E (S,0)

An attempt to allocate a buffer for a file receive has failed.

An attempt to allocate a buffer for file reception has failed.

(S)

Terminates file transmission (server) processing.

(O)

Check and, if necessary, revise the following:

- Value of **Size of receiving buffer** for the server that was specified in [3.1.1 Defining an environment for JP1/FTP](#)
- Status of virtual memory in the system

Also check the information in the error message (with the same module type, connection number, or transmission number) that was displayed before this message.

KDJF3022-E (S,0)

An attempt to allocate a buffer for compression has failed.

An attempt to allocate a buffer for compressed file reception has failed.

(S)

Terminates file transmission (server) processing.

(O)

Check and, if necessary, revise the following:

- Value of **Size of receiving buffer** for the server that was specified in [3.1.1 Defining an environment for JP1/FTP](#)
- Status of virtual memory in the system

Also check the information in the error message (with the same module type, connection number, or transmission number) that was displayed before this message.

KDJF3023-E (S,0)

An error occurred during a file receive.

An error occurred while receiving a file.

(S)

Terminates file transmission (server) processing.

(O)

Check and, if necessary, revise the following:

- Status of the FTP client
- Network status

Also check the information in the error message (with the same module type, connection number, or transmission number) that was displayed before this message.

KDJF3024-E (S,0)

An error occurred during an attempt to write a received file. [*file-name*]

An error occurred while writing a receive file.

(S)

Terminates file transmission (server) processing.

(O)

Check and, if necessary, revise the following:

- Status of file (*file-name*) requested to be received

Also check the information in the error message (with the same module type, connection number, or transmission number) that was displayed before this message.

KDJF3025-E (S,0)

The sizes of the transmitted files do not match. [*file-name*]

The sizes of the receive files do not match.

(S)

Terminates file transmission (server) processing.

(O)

Check and, if necessary, revise the following:

- FTP server status
- Network status

KDJF3026-E (S,0)

An error occurred during a reply send.

An error occurred while sending an FTP command's reply.

(S)

Terminates file transmission (server) processing.

(O)

Check the information in the error message (with the same module type, connection number, or transmission number) that was displayed before this message.

KDJF3027-E (S,0)

Connection was disconnected from a remote host.

Control connection was lost.

(S)

Terminates file transmission (server) processing.

(O)

Check and, if necessary, revise the following:

- Status of the FTP client
- Network status

KDJF3028-E (S,0)

Transfer aborted. Data connection closed.

Transmission was aborted. An abort request was received from the FTP client.

(S)

Terminates file transmission (server) processing.

(O)

Check and, if necessary, revise the following:

- Status of the FTP client

KDJF3030-E (S,0)

An error occurred during a control connection.

An error occurred in the control connection.

(S)

Terminates file transmission (server) processing.

(O)

Check and, if necessary, revise the following:

- Status of the FTP client
- Network status

Also check the information in the error message (with the same module type, connection number, or transmission number) that was displayed before this message.

KDJF3031-W (S,1)

The specified auto-start program is invalid. [*auto-start-program-name*]

The specified auto-start program (*auto-start-program-name*) is invalid.

(S)
Terminates start processing of the auto-start program and resumes file transmission (server) processing.

(O)
Check and, if necessary, revise the following:

- Specified auto-start program

If another message (with the same module type, connection number, or transmission number) was displayed before this message, take appropriate action according to that error message.

KDJF3032-W (S,1)

The auto-start program could not be executed. [*auto-start-program-name*]

An attempt to start the specified auto-start program (*auto-start-program-name*) has failed.

(S)
Terminates start processing of the auto-start program and resumes file transmission (server) processing.

(O)
Check and, if necessary, revise the following:

- Specified auto-start program

If another message (with the same module type, connection number, or transmission number) was displayed before this message, take appropriate action according to that error message.

KDJF3033-E (S,0)

An error occurred during an attempt to send a JP1/IM event.

An error occurred while issuing a JP1 event.

(S)
Terminates JP1 event issuance processing and then resumes the file transmission (server) processing.

(O)
Check and, if necessary, revise the following:

- JP1/Base status

Also check the information in the error message (with the same module type, connection number, or transmission number) that was displayed before this message.

KDJF3034-I (S,5)

FTP server has been connected to an FTP client.

[Logged-in user:*login-name*][Remote host name:*remote-host-name*]

Connection has been established with the FTP client.

KDJF3035-I (S,4)

Transmission will now start.

[Logged-in user:*login-name*][Remote host name:*remote-host-name*][Local file name:*local-file-name*]

File transmission (server) will now start.

KDJF3037-I (S,5)

The auto-start program has executed. [*auto-start-program-name*]

The auto-start program for file transmission (server) was executed.

KDJF3038-I (S,5)

FTP server disconnected from an FTP client.

The FTP server was disconnected from the FTP client.

KDJF3039-E (S,0)

An error occurred during a data connection.

During file transmission, an error occurred while establishing data connection.

(S)

Terminates file transmission (client) processing.

(O)

Check and, if necessary, revise the following:

- Status of the FTP client
- Network status

Also check the information in the error message (with the same module type, connection number, or transmission number) that was displayed before this message.

KDJF3040-E (S,0)

An error occurred during a data connection.

During file reception, an error occurred while establishing data connection.

(S)

Terminates file transmission (client) processing.

(O)

Check and, if necessary, revise the following:

- Status of the FTP client
- Network status

Also check the information in the error message (with the same module type, connection number, or transmission number) that was displayed before this message.

KDJF3042-E (S,0)

Transmission will now stop. An SSL communication error occurred. [*SSL-communication-error-number*] [*SSL-function-name*] [*module-name(line-number)*]

An error occurred during SSL communication processing.

(S)

Terminates file transmission (server) processing.

(O)

Contact the system administrator.

KDJF4000-I (D,2)

JP1/FTS server is stopped.

The JP1/FTP daemon has terminated.

KDJF4001-W (D,2)

JP1/FTS server is not started.

The JP1/FTP daemon is not running. It has already been terminated.

KDJF4002-I (D,2)

JP1/FTS server is ending now.

The JP1/FTP daemon is undergoing termination processing.

KDJF4004-E (D,0)

JP1/FTS server can't be stopped.

The command with no option specified was unable to stop the JP1/FTP daemon, because the command with the `-f` option specified was executed while the command with no option specified was executing.

(S)

Terminates `ftsstop` command processing.

KDJF4005-E (D,0)

A system call error occurred. [*system-call-name*(*error-number*)] [*module-name*(*line-number*)]

A system call error occurred in the `ftsstop` command.

(S)

Terminates `ftsstop` command processing.

(O)

Contact the system administrator.

KDJF5038-I (P,6)

The `ftstran` command will now start. [Process ID:*process-ID*][User ID:*user-ID*]

The `ftstran` command will now start.

KDJF5039-I (P,6)

Transmission ended normally.
[Process ID: *process-ID*]
[Card name: *transmission-card-name*]
[Transmission number: *transmission-number*]
[Connection number: *connection-number*]

File transmission terminated normally.

KDJF5040-E (P,6)

Transmission ended abnormally.
[Process ID: *process-ID*]
[Card name: *transmission-card-name*]
[Transmission number: *transmission-number*]
[Connection number: *connection-number*]
[Error type: System call error]
[Module where error occurred: *name-of-module-resulting-in-error*]
[Location where error occurred: *location-of-error*]
[Name of system call: *system-call-name*]
[Error code: *error-number*]

File transmission terminated abnormally due to a system call error.

(S)

Terminates the `ftstran` command.

(O)

For details about the error and how to handle it, see the error message regarding the file transmission (client or server).

KDJF5041-E (P,6)

Transmission ended abnormally.
[Process ID: *process-ID*]
[Card name: *transmission-card-name*]
[Transmission number: *transmission-number*]
[Connection number: *connection-number*]
[Error type: Logic error]
[Module where error occurred: *name-of-module-resulting-in-error*]
[Location where error occurred: *location-of-error*]

File transmission terminated abnormally due to a logical error.

(S)

Terminates the `ftstran` command.

(O)

For details about the error and how to handle it, see the error message regarding the file transmission (client or server).

KDJF5042-E (P,6)

Transmission ended abnormally.
[Process ID: *process-ID*]
[Card name: *transmission-card-name*]
[Transmission number: *transmission-number*]
[Connection number: *connection-number*]
[Error type: Forced stop error]

File transmission terminated abnormally due to a forced termination error.

(S)

Terminates the `ftstran` command.

(O)

For details about the error and how to handle it, see the error message regarding the file transmission (client or server).

KDJF5043-E (P,6)

Transmission ended abnormally.
[Process ID: *process-ID*]
[Card name: *transmission-card-name*]
[Transmission number: *transmission-number*]
[Connection number: *connection-number*]
[Error type: Protocol error]
[Module where error occurred: *name-of-module-resulting-in-error*]
[Location where error occurred: *location-of-error*]
[Protocol message: *protocol-message*]

File transmission terminated abnormally due to a protocol error.

(S)

Terminates the `ftstran` command.

(O)

For details about the error and how to handle it, see the error message regarding the file transmission (client or server).

KDJF5044-I (P,6)

The `ftstran` command will now stop. [Process ID:*process-ID*]

The `ftstran` command will now be terminated.

KDJF5045-E (P,6)

A system call error occurred.
[Process ID: *process-ID*]
[Function name: *system-call-name*]
[Error code: *error-number*]
[Exit status: *return-value*]

The `ftstran` command terminated abnormally due to a system call error.

(S)

Terminates the `ftstran` command.

(O)

Determine the cause of the error from the system call name and error number, and then take appropriate action. If the cause of the error cannot be determined, contact the system administrator.

KDJF5046-E (P,6)

A function error occurred.

[Process ID: *process-ID*]

[Function name: *API-function-name*]

[Error code: *API-function-error-information*]

[Exit status: *return-value*]

The `ftstran` command terminated abnormally due to a JP1/FTP API function error.

(S)

Terminates the `ftstran` command.

(O)

Determine the cause of the error from the API function name and API function error information. If the cause of the error cannot be determined, contact the system administrator.

KDJF6000-I (A,2)

JP1/FTS agent started.

The Operations-Manager Agent has started.

KDJF6001-W (A,2)

JP1/FTS agent already started.

The Operations-Manager Agent is already running.

KDJF6002-E (A,0)

A system call error occurred.

[*system-call-name(error-number)*][*module-name(line-number)*]

A system call error has occurred.

(S)

Terminates `ftsastart` command processing.

(O)

Contact the system administrator.

KDJF6004-E (A,0)

Port number is not defined in the Services file. [*service-name*]

The indicated *service-name* has not been set in `/etc/services`.

(S)

Terminates `ftsastart` command processing.

(O)

The indicated *service-name* has not been set in `/etc/services`. For details about how to specify the settings, see [2.3.3 Setting the port numbers](#).

KDJF6005-E (A,0)

[*Java_Path*]: Not Found.

The Java start command cannot be found.

(S)

Terminates `ftsastart` command processing.

(O)

Check if there is a path indicated as *Java_Path*. Also check if the installation of JP1/FTP has been completed. If the path indicated as *Java_Path* does not exist or the installation was canceled, reinstall JP1/FTP. If the path indicated as *Java_Path* exists and the installation has been completed successfully, contact the system administrator.

KDJF6006-E (A,0)

JP1/FTS agent can't be started.

The Operations-Manager Agent could not be started.

(S)

Terminates the Operations-Manager Agent.

(O)

Re-execute the command. If the command cannot be executed, contact the system administrator.

KDJF6007-W (A,1)

JP1/FTS agent is starting or ending now.

The Operations-Manager Agent is undergoing start or termination processing.

KDJF6008-E (A,0)

Specify java file or jre file.

No Java file is specified.

(S)

Terminates `ftsastart` command processing.

(O)

Contact the system administrator.

KDJF6009-E (A,0)

Cannot connect to the JP1/IM Event Server.

An attempt to establish connection with JP1/Base has failed.

(S)

Stops the JP1 event issuance processing and then resumes the start processing.

(O)

Check and, if necessary, revise the JP1/Base status. If there is no problem with the JP1/Base status, contact the system administrator.

KDJF6010-E (A,0)

JP1/IM not installed.

JP1/Base has not been installed.

(S)

Stops the JP1 event issuance processing and then resumes the start processing.

(O)

Install JP1/Base and then restart the Operations-Manager Agent.

KDJF6011-W (A,1)

A system call error occurred.

[*system-call-name*(*error-number*)][*module-name*(*line-number*)]

A system call error has occurred.

(S)

Continues processing although an error was detected in the Operations-Manager Agent.

(O)

Contact the system administrator.

KDJF6012-I (A,2)

JP1/FTS agent stopped.

The Operations-Manager Agent has stopped.

KDJF6013-E (A,0)

JP1/FTS agent will now stop.

The Operations-Manager Agent will now be canceled.

(S)
Terminates `ftsastart` command processing.

(O)
Contact the system administrator.

KDJF6100-I (A,2)

JP1/FTS agent is stopped.

The Operations-Manager Agent has stopped.

KDJF6101-W (A,2)

JP1/FTS agent is not started.

The Operations-Manager Agent has not started. It has already stopped.

KDJF6102-W (A,2)

JP1/FTS agent is starting or ending now.

The Operations-Manager Agent is undergoing start or termination processing.

KDJF6105-E (A,0)

A system call error occurred.

[system-call-name(error-number)][module-name(line-number)]

A system call error occurred in the `ftsastop` command.

(S)
Terminates `ftsastop` command processing.

(O)
Contact the system administrator.

KDJF6106-E (A,0)

Cannot connect to the JP1/IM Event Server.

An attempt to establish connection with JP1/Base has failed.

(S)
Terminates JP1 event issuance processing and then resumes the `ftsastop` processing.

(O)
Check and, if necessary, revise the JP1/Base status. If there is no problem with the JP1/Base status, contact the system administrator.

KDJF6107-E (A,0)

JP1/IM not installed.

JP1/Base has not been installed.

- (S)
Terminates JP1 event issuance processing and then resumes the `ftsastop` command processing.
- (O)
Install JP1/Base.

8.23 Access log messages (KDJF31xx)

KDJF3101-E

The connection was closed without login. [Remote host address:*IP-address*][Remote port number:*port-number*]
[Connection number:*connection-number*]

The FTP client disconnected itself without logging in.

IP-address: IP address of the FTP client

port-number: Port number of the FTP client

connection-number: Connection number

KDJF3102-E

Login failed. [Remote host address:*IP-address*][Remote port number:*port-number*]
[Connection number:*connection-number*]

Login failed.

IP-address: IP address of the FTP client

port-number: Port number of the FTP client

connection-number: Connection number

KDJF3103-E

FTP-command is invalid because it was sent by a user who was not logged in. [Remote host address:*IP-address*]
[Remote port number:*port-number*][Connection number:*connection-number*]

An FTP command that becomes executable after login was accepted before login.

FTP-command: FTP command

IP-address: IP address of the FTP client

port-number: Port number of the FTP client

connection-number: Connection number

KDJF3104-E

The max. number of FTP clients was reached. No more clients can use the service. [Remote host address:*IP-address*][Remote port number:*port-number*]

The number of connection requests exceeded the maximum number of concurrent transmissions that are specified.

IP-address: IP address of the FTP client

port-number: Port number of the FTP client

KDJF3105-E

FTP server refused the connection. [Remote host address:*IP-address*][Remote port number:*port-number*]

The FTP server refused a connection request. The connection request was from an FTP client that is specified as a connection-rejection user in the function for controlling remote host connections.

IP-address: IP address of the FTP client

port-number: Port number of the FTP client

8.24 Details of error numbers

The error number is assigned to the corresponding system function (*system-call-name*) that was called. The target of the error number depends on the system function, as follows:

For the `getaddrinfo` function: `getaddrinfo` return value

For the `getnameinfo` function: `getnameinfo` return value

For other functions: `errno` value

For the meanings of the error numbers, see the OS documentation.

The error numbers listed in the table below are set by JP1/FTP.

Error number set by JP1/FTP	Meaning
2000	Timeout was detected during system function (<i>system-call-name</i>) processing.
2001	Transmission file size mismatch was detected during system function (<i>system-call-name</i>) processing.
2002	The ABOR command was received from the FTP client during system function (<i>system-call-name</i>) processing.
2003	The maximum file size supported for transmission by JP1/FTP was exceeded during system function (<i>system-call-name</i>) processing.

9

Troubleshooting

This chapter describes how to handle problems that can occur while you are using JP1/FTP.

9.1 Error handling procedures

This section describes the procedures for handling errors that might occur while you are using JP1/FTP.

1. Check the processing.

Check the processing event that was underway when the error occurred. If a message has been output, check the details of the message (for the messages, see [8. Messages](#)). For details about the log information that is output by JP1/FTP, see [9.2 Types of log information](#).

2. Collect data.

Collect data to determine the cause of the error. For details about the data to be collected, see [9.3 Data to collect when a problem occurs](#).

3. Check the problem.

Check the cause of the problem on the basis of the collected data. Also isolate the problem or the affected range.

9.2 Types of log information

The following two types of log information are output during operation of JP1/FTP:

- Common message log
- Trace log

This section describes these two types of log information.

9.2.1 Common message log

The common message log contains log information that reports system errors that have occurred and is intended for the system administrator. The common message log provides the minimum amount of error information that is required.

The common message log is output to the `syslog` file.

9.2.2 Trace log output by JP1/FTP

The trace log output by JP1/FTP is the log information that is output by each function of JP1/FTP on a UNIX host. The trace log is output to a separate log file for each function.

9.3 Data to collect when a problem occurs

This section describes the data that we recommend you collect in the event of an error on JP1/FTP and how to collect it.

9.3.1 Log information about the operating system (OS)

The following table lists the log information about the OS that needs to be collected.

Type of information	Default file name
syslog files	All files under /var/adm/syslog/ (in AIX) /var/log/messages (in Linux)
Patch information for the OS	--
List of processes	--
core files	/var/opt/jpl_ftp/work/core core files under the command execution directory core files under the login user's home directory core files under the current directory if the current directory was changed after login

Legend:

--: No applicable information exists.

9.3.2 Information about JP1/FTP

The following table lists the information about JP1/FTP that needs to be collected.

Table 9–1: Information about JP1/FTP

File name	Directory name	Overview	Size	Management method
history ^{#1}	/var/opt/jpl_ftp/sys	Results of file transmission	Number of log entries to be retained, as specified in the environment definition, x 1,500 bytes	Wraparound
MAINModuleTrace	/var/opt/jpl_ftp/trace	Module trace for the daemon	Module trace file size specified in the environment definition x 10	Wraparound
CModuleTracen <i>n</i> : Value from 1 to the maximum number of concurrent transmissions	/var/opt/jpl_ftp/trace	Module trace for the client	Module trace file size specified in the environment definition	Wraparound
SModuleTracen <i>n</i> : Value from 1 to the maximum number of concurrent transmissions		Module trace for the server	Same as the above	Wraparound

File name	Directory name	Overview	Size	Management method
CSProtocolTrace n n : Value from 1 to the maximum number of concurrent transmissions	/var/opt/jpl_fts/trace	Protocol trace for the client	Protocol trace file size specified in the environment definition	Wraparound
SSProtocolTrace n n : Value from 1 to the maximum number of concurrent transmissions		Protocol trace for the server	Same as the above	Wraparound
ftsagent{1 2}.log	/var/opt/jpl_fts/trace	Module trace for the Operations-Manager Agent	1 megabyte	2-file management
ftsconsole{1 2}.log		Module trace for the Operations-Manager Console	1 megabyte	2-file management
agent_trace		Trace for the Operations-Manager Agent	Incremental ^{#2}	--
console_trace		Trace for the Operations-Manager Console	Incremental ^{#2}	--
Reference file name for the event log that is defined in the log daemon definition information. Default: ftsevent.log. n n : Value from 1 to the number of event log backup files	Directory for the reference file name for the event log that is defined in the log daemon definition information. Default: /var/opt/jpl_fts/trace	Event log	Maximum size of the event log file in the log daemon definition information	Management of as many files as there are backup event log files specified in the log daemon definition information
ftsaccess.log[.old]	/var/opt/jpl_fts/trace	Access log	File size of the access log that was specified by the ftsutil command	2-file management
CSError.log	/var/opt/jpl_fts/trace	Error log for the client	100 kilobyte	Wraparound
SSError.log	/var/opt/jpl_fts/trace	Error log for the server	100 kilobyte	Wraparound

Legend:

--: No applicable method is available.

#1

If you change the number of logs to be retained, the system might create a backup of the old log file. The backup file name is history.old.

#2

The size increases steadily while Operations-Manager Agent or Operations-Manager Console is running. When Operations-Manager Agent or Operations-Manager Console is restarted, the size is reset to 0 bytes.

9.3.3 List of JP1/FTP processes

You use UNIX's `ps` command to check the operating status of processes. For details about the processes, see [C. List of Processes](#).

9.3.4 Operation information

You need the following information about the operation that was underway when the error occurred, so record this information:

- Details of the operation
- Time the error occurred
- Computer configuration (such as the version of each OS and the host names)

9.3.5 Error information on screen displays

When an error is displayed in a window, collect that information. Also make a hardcopy of the following information:

- Error dialog box
- If **Details** is displayed, make a copy of that information.

9.3.6 How to collect data

An information collection tool (the Extraction tool) is provided. The Extraction tool simplifies the collection procedure.

(1) Collecting

The Extraction tool stores data in a specified directory.

This tool collects the following information:

- Product information
- Transmission information definition file
- Information described in [9.3.2 Information about JP1/FTP](#)

Tool name:

```
ftslogclct.sh
```

Path:

```
/opt/jp1_fts/lib/script
```

Example

Store the data in the `/home/ftpuser/fts/collect` directory:

```
# /opt/jp1_fts/lib/script/ftslogclct.sh /home/ftpuser/fts/collect
```

(2) Archiving

If you archive the directory that stores the collected data, the data can be distributed easily. Use the `tar` command to archive a directory.

Example

Archive the collected data in `/home/ftpuser/fts/ftscclct.tar`:

```
# cd /home/ftpuser/fts
# tar cvfp ftsclct.tar ./collect
```

(3) Notes

- The tool must be executed by the superuser.
- To customize the Extraction tool, copy the tool to a directory of your choice before customizing it.

Appendixes

A. List of Files and Directories

The following table lists the names of the files and directories that are used by JP1/FTP.

Table A–1: List of files and directories for JP1/FTP

Description		Default file and directory names
Commands	Starts the JP1/FTP daemon	/opt/jp1_ftp/bin/ftsstart
	Terminates the JP1/FTP daemon	/opt/jp1_ftp/bin/ftsstop
	Changes and displays environment information	/opt/jp1_ftp/bin/ftsutil
	Registers, deletes, and displays auto-start programs	/opt/jp1_ftp/bin/ftsautoma
	Executes transmission	/opt/jp1_ftp/bin/ftsran
	Registers, changes, deletes, and displays transmission information	/opt/jp1_ftp/bin/ftsregc
	Displays transmission information	/opt/jp1_ftp/bin/ftsregcv
	Displays log information	/opt/jp1_ftp/bin/ftshistory
	Operations-Manager Console window	/opt/jp1_ftp/bin/ftsconsole
	Starts the Operations-Manager Agent	/opt/jp1_ftp/bin/ftsastart
	Terminates the Operations-Manager Agent	/opt/jp1_ftp/bin/ftsastop
	Starts the log daemon	/opt/jp1_ftp/bin/ftslogstart
	Terminates the log daemon	/opt/jp1_ftp/bin/ftslogstop
	Checks the start status of the JP1/FTP daemon	/opt/jp1_ftp/bin/jftsdstatus
	Checks the start status of the Operations-Manager Agent	/opt/jp1_ftp/bin/jftsastatus
	Checks the start status of the log daemon	/opt/jp1_ftp/bin/jftslogdstatus
Definition information files	Sample file for port number settings	/var/opt/jp1_ftp/sys/services.model
	Table information file	/var/opt/jp1_ftp/sys/.ftstblvers
	Environment definition information	/var/opt/jp1_ftp/sys/environment
	Auto-start program information	/var/opt/jp1_ftp/sys/UserData/ <i>user-name</i>
	Transmission card information	/var/opt/jp1_ftp/sys/carddata
	Connection-rejection user definition file	/var/opt/jp1_ftp/sys/jp1ftpusers
	Connection-permission user definition file	/var/opt/jp1_ftp/sys/jp1ftpusers.allow

Description		Default file and directory names
Definition information files	Event log definition file	/var/opt/jpl_ftp/sys/ftslog.conf
	Sample file for Event log definition file	/var/opt/jpl_ftp/sys/ftslog.conf.model
	PASV transmission definition file	/var/opt/jpl_ftp/sys/ftspasvmode
	Sample file for PASV transmission definition file	/var/opt/jpl_ftp/sys/ftspasvmode.model
	Function for controlling remote host connections definition file	/var/opt/jpl_ftp/sys/jplftphost.access_list
	Function for limiting directory access definition file	/var/opt/jpl_ftp/sys/jplftpusers.directory_list
	Multiple IP address environment definition file	/var/opt/jpl_ftp/sys/ftshostenv.conf
	Multiple IP address environment definition file sample	/var/opt/jpl_ftp/sys/ftshostenv.conf.model
	FTP connection response message file	/var/opt/jpl_ftp/sys/ftsbanner
	IPv6 environment definition file	/var/opt/jpl_ftp/sys/ftsipversion.conf
	IPv6 environment definition file sample	/var/opt/jpl_ftp/sys/ftsipversion.conf.model
	FTPS (for server) definition file	/var/opt/jpl_ftp/sys/ftsftps
	Sample of the FTPS (for server) definition file	/var/opt/jpl_ftp/sys/ftsftps.model
Log information files	Log file	/var/opt/jpl_ftp/sys/history
	Backup of the log file ^{#1}	/var/opt/jpl_ftp/sys/history.old
	Module trace for the JPl/FTP daemon	/var/opt/jpl_ftp/trace/MAINModuleTrace
	Module trace for the client	var/opt/jpl_ftp/trace/CSModuleTracen <i>n</i> : Value from 1 to the maximum number of concurrent transmissions
	Module trace for the server	/var/opt/jpl_ftp/trace/SSModuleTracen <i>n</i> : Value from 1 to the maximum number of concurrent transmissions
	Protocol trace for the client	/var/opt/jpl_ftp/trace/CSProtocolTracen <i>n</i> : Value from 1 to the maximum number of concurrent transmissions
	Protocol trace for the server	/var/opt/jpl_ftp/trace/SSProtocolTracen <i>n</i> : Value from 1 to the maximum number of concurrent transmissions
	Access log file	/var/opt/jpl_ftp/trace/ftsaccess.log
	Backup of the access log file	/var/opt/jpl_ftp/trace/ftsaccess.log.old
	Log management information	/var/opt/jpl_ftp/sys/system
	Error log for the client	/var/opt/jpl_ftp/trace/CSError.log
	Error log for the server	/var/opt/jpl_ftp/trace/SSError.log
Event log	Event log file	Reference file name for the event log that is defined in the log daemon definition information.

Description		Default file and directory names
Event log	Event log file	Default: /var/opt/jp1_fts/trace/ftsevent.log. <i>n</i> <i>n</i> : Value from 1 to the number of event log backup files
Format files for text output	Login user registration information	/opt/jp1_fts/share/format/LANG-value ^{#2} /usform
	Sample file for login user registration information	/opt/jp1_fts/share/format/LANG-value ^{#2} /usform.model
	Auto-start program information	/opt/jp1_fts/share/format/LANG-value ^{#2} /atform
	Sample file for auto-start program information	/opt/jp1_fts/share/format/LANG-value ^{#2} /atform.model
	Transmission request registration information	/opt/jp1_fts/share/format/LANG-value ^{#2} /clform/
	Sample file for transmission request registration information	/opt/jp1_fts/share/format/LANG-value ^{#2} /clform.model
	Log information	/opt/jp1_fts/share/format/LANG-value ^{#2} /hsform
	Sample file for log information	/opt/jp1_fts/share/format/LANG-value ^{#2} /hsform.model
API library	Library	/opt/jp1_fts/lib/api/apilib/libftsftp*
	Header file	/opt/jp1_fts/lib/api/include/apihead.h
	Sample program	/opt/jp1_fts/lib/api/sample/sample.c
Scripts to automatically start or terminate daemons during system startup or termination	Automatic start	/etc/opt/jp1_fts/startup ^{#3} /etc/opt/jp1_fts/jplftpd.startup ^{#4} /etc/opt/jp1_fts/jplftplogd.startup ^{#4} /etc/opt/jp1_fts/jplftpa.startup ^{#4}
	Sample file for automatic start	/etc/opt/jp1_fts/startup.model ^{#3} /etc/opt/jp1_fts/jplftpd.startup.model ^{#4} /etc/opt/jp1_fts/jplftplogd.startup.model ^{#4} /etc/opt/jp1_fts/jplftpa.startup.model ^{#4}
	Automatic termination	/etc/opt/jp1_fts/stop ^{#3} /etc/opt/jp1_fts/jplftpd.stop ^{#4} /etc/opt/jp1_fts/jplftplogd.stop ^{#4} /etc/opt/jp1_fts/jplftpa.stop ^{#4}
	Sample file for automatic termination	/etc/opt/jp1_fts/stop.model ^{#3} /etc/opt/jp1_fts/jplftpd.stop.model ^{#4} /etc/opt/jp1_fts/jplftplogd.stop.model ^{#4} /etc/opt/jp1_fts/jplftpa.stop.model ^{#4}
Automatically executed shell during log file rotation	Automatically executed shell	/etc/opt/jp1_fts/rotation
	Sample file for the automatically executed shell	/etc/opt/jp1_fts/rotation.model
Service configuration ^{#4}	Service configuration file	/usr/lib/systemd/system/jp1_ftpd.service /usr/lib/systemd/system/jp1_ftplogd.service

Description		Default file and directory names
Service configuration ^{#4}	Service configuration file	/usr/lib/systemd/system/jp1_ftp.service
Operations management	Managed host definition information	/var/opt/jp1_ftp/sys/hostdef.csv
	Operations-Manager Agent module trace	/var/opt/jp1_ftp/trace/ftsagent1.log or ftsagent2.log
	Operations-Manager Console module trace	/var/opt/jp1_ftp/trace/ftsconsole1.log or ftsconsole2.log
	Operations-Manager Agent trace	/var/opt/jp1_ftp/trace/agent_trace
	Operations-Manager Console trace	/var/opt/jp1_ftp/trace/console_trace
Utility	Data collection tool	/opt/jp1_ftp/lib/script/ftslogclct.sh
	Log information deletion tool	/opt/jp1_ftp/lib/script/ftsprestart.sh
Correction patch information		/var/opt/jp1_ftp/patch

- #1
If you change the number of log entries to be retained, the system might create a backup of the old log file.
- #2
LANG-value is replaced with the supported `LANG` code.
- #3
Exists only in AIX.
- #4
Exists only in Linux.

B. Port Numbers

This appendix describes the port numbers used by JP1/FTP and the firewall passage directions. The protocol to be used is TCP/IP.

B.1 List of port numbers

Each port number is set after JP1/FTP has been installed. You can set any port number. The table below shows an example of port number settings. For details about the settings, see [2.3.3 Setting the port numbers](#).

Table B–1: List of port numbers for JP1/FTP

Service name	Port number (example)	Usage
ftssdata	20124	Used for transferring data to be received (FTP data connection)
ftss	20125	Used as the server port (FTP control connection)
ftsc	20126	Used by the client
ftsagent	20252	Used by the Operations-Manager function
ftsagentdata	20364	Used by the Operations-Manager function

B.2 Firewall passage directions

The following tables show the firewall passage directions.

Table B–2: Firewall passage directions (ACTV mode)

Connection type	Product at server	Port number (example)	Firewall passage direction	Product at client	Port number
Control connection	JP1/FTP	20125/tcp	<-	JP1/FTP [#]	ANY/tcp
Data connection	JP1/FTP	20124/tcp	->	JP1/FTP [#]	ANY/tcp

Table B–3: Firewall passage directions (PASV mode)

Connection type	Product at server	Port number (example)	Firewall passage direction	Product at client	Port number
Control connection	JP1/FTP	20125/tcp	<-	JP1/FTP [#]	ANY/tcp
Data connection	JP1/FTP	ANY/tcp	<-	JP1/FTP [#]	ANY/tcp

#

If the product at the client is not JP1/FTP, the port number depends on that product.

ANY means that an available port number assigned by the OS is to be used. If `ftsagentdata` is omitted, an unused port number assigned by the OS is used. In these cases, the range of available port numbers depends on the OS.

Table B–4: Firewall passage directions (Operations-Manager function)

Operations-Manager Agent		Firewall passage direction	Operations-Manager Console
Service name	Port number (example)		Port number
ftsagent	20252/tcp	<-	ANY/tcp
ftsagentdata	20364/tcp	<-	ANY/tcp

B.3 Items to check when performing transmission via a firewall

We recommend that you check the following when you perform file transmission via a firewall:

1. Check whether the firewall can pass the FTP protocol.
 - YES -> 2
 - NO -> Use a firewall that can pass the FTP protocol (evaluate this change).
2. Check whether the OS's default FTP is also to be used.
 - YES -> 3
 - NO -> Change `ftssdata` and `ftss` to the port numbers used for normal FTP:
`ftssdata: 20/TCP`
`ftss: 21/TCP`
3. Check whether the firewall settings allow addition of FTP ports.
 - YES -> Set the firewall in such a manner that `ftssdata` and `ftss` can be used as FTP ports.
 - NO -> If the default FTP is also used, JP1/FTP cannot be used.

Note

The Operations-Manager function cannot be used in an environment in which IP addresses are converted between Operations-Manager Console and Operations-Manager Agent.

C. List of Processes

The tables below list the processes that are displayed when the `ps` command is executed. A numeric value in parentheses is the number of processes that can be executed concurrently.

Table C–1: List of JP1/FTP processes

Parent process name	Function	Child process name	Function
jftsd (1) ^{#1}	File transmission	/opt/jp1_fts/bin/ftsftpd * ^{#2}	File transmission process (server)
		/opt/jp1_fts/bin/ftsftp * ^{#2}	File transmission process (client)
jftsa (1) ^{#1}	Operations-Manager Agent (management)	/opt/jp1_fts/PSBJDK/jdk/jre/bin/java * (1)	Operations-Manager Agent (core)
jftslogd (1) ^{#1}	Event log	--	--

Legend:

--: Not applicable.

#1

The value in the parentheses is the normal value. Because child processes are generated, the number of child processes might increase temporarily.

#2

Maximum number of concurrent transmissions (64 to 128). For details about the maximum number of concurrent transmissions, see [ftsutil -changes and displays environment information](#) in 6. *Commands*.

D. JP1 Events

This appendix provides a list of the JP1 events that are issued by JP1/FTP, as well as lists of their attributes.

D.1 List of JP1 events

Table D–1: List of JP1 events

Event ID	Event	Message
00010D20	Start of JP1/File Transmission Server/FTP Daemon	FTP Daemon started.
00010D21	Termination of JP1/File Transmission Server/FTP Daemon	FTP Daemon ended.
00010D22	Abnormal termination of JP1/File Transmission Server/FTP Daemon	FTP Daemon ended abnormally.
00010D23	Start of JP1/File Transmission Server/FTP Agent	FTP Agent service started.
00010D24	Termination of JP1/File Transmission Server/FTP Agent	FTP Agent service ended.
00010D25	Start of JP1/File Transmission Server/FTP Log Daemon	FTP Log Daemon started.
00010D26	Termination of JP1/File Transmission Server/FTP Log Daemon	FTP Log Daemon ended.
00010D27	Abnormal termination of JP1/File Transmission Server/FTP Log Daemon	FTP Log Daemon ended abnormally.
00010D28	Abnormal termination of JP1/File Transmission Server/FTP Agent	FTP Agent service ended abnormally.
00010D0B	Normal termination of file transmission	FTP file transmission ended normally.
00010D0C	Abnormal termination of file transmission	FTP file transmission ended abnormally.
00010D0D	Termination of file transmission with a warning (auto-start program start failure)	FTP file transmission is terminated with a warning. Automatic start of a program failed.

D.2 Attributes of JP1 events

This section presents the details of the JP1 events for each event ID.

(1) Details of event ID: 00010D20

Attribute type	Item	Attribute name	Description
Basic attribute	Message	--	FTP Daemon started.
Extended attributes (common information)	Severity	SEVERITY	Information
	User name	USER_NAME	User who started the product
	Product name	PRODUCT_NAME	/HITACHI/JP1/FTP

Attribute type	Item	Attribute name	Description
Extended attributes (common information)	Object type	OBJECT_TYPE	JOB
	Object name	OBJECT_NAME	DAEMON
	Root object type	ROOT_OBJECT_TYPE	JOB
	Root object name	ROOT_OBJECT_NAME	JP1/FTP/DAEMON
	Object ID	OBJECT_ID	DAEMON
	Occurrence	OCCURRENCE	START
	Start time	START_TIME	Start time
	End time	END_TIME	--
	End code	RESULT_CODE	--

Legend:

--: No applicable information exists.

(2) Details of event ID: 00010D21

Attribute type	Item	Attribute name	Description
Basic attribute	Message	--	FTP Daemon ended.
Extended attributes (common information)	Severity	SEVERITY	Information
	User name	USER_NAME	User who terminated the product
	Product name	PRODUCT_NAME	/HITACHI/JP1/FTP
	Object type	OBJECT_TYPE	JOB
	Object name	OBJECT_NAME	DAEMON
	Root object type	ROOT_OBJECT_TYPE	JOB
	Root object name	ROOT_OBJECT_NAME	JP1/FTP/DAEMON
	Object ID	OBJECT_ID	DAEMON
	Occurrence	OCCURRENCE	END
	Start time	START_TIME	--
	End time	END_TIME	End time
	End code	RESULT_CODE	0

Legend:

--: No applicable information exists.

(3) Details of event ID: 00010D22

Attribute type	Item	Attribute name	Description
Basic attribute	Message	--	FTP Daemon ended abnormally.
Extended attributes (common information)	Severity	SEVERITY	Error
	User name	USER_NAME	User who terminated the product

Attribute type	Item	Attribute name	Description
Extended attributes (common information)	Product name	PRODUCT_NAME	/HITACHI/JP1/FTP
	Object type	OBJECT_TYPE	JOB
	Object name	OBJECT_NAME	DAEMON
	Root object type	ROOT_OBJECT_TYPE	JOB
	Root object name	ROOT_OBJECT_NAME	JP1/FTP/DAEMON
	Object ID	OBJECT_ID	DAEMON
	Occurrence	OCCURRENCE	END
	Start time	START_TIME	--
	End time	END_TIME	End time
	End code	RESULT_CODE	1
	Module in which the error occurred	C0	Module in which the error occurred
	Location of the error	C1	Location of the error
	Error type	B6	System call error or logical error
	Name of the system call	B7	Name of the system call in which the error occurred (Error type: system call error)
	System call message	B8	System call error message (Error type: system call error)

Legend:

--: No applicable information exists.

(4) Details of event ID: 00010D23

Attribute type	Item	Attribute name	Description
Basic attribute	Message	--	FTP Agent service started.
Extended attributes (common information)	Severity	SEVERITY	Information
	User name	USER_NAME	User who started the agent
	Product name	PRODUCT_NAME	/HITACHI/JP1/FTP
	Object type	OBJECT_TYPE	JOB
	Object name	OBJECT_NAME	AGENT
	Root object type	ROOT_OBJECT_TYPE	JOB
	Root object name	ROOT_OBJECT_NAME	JP1/FTP/AGENT
	Object ID	OBJECT_ID	AGENT
	Occurrence	OCCURRENCE	START
	Start time	START_TIME	Start time
	End time	END_TIME	--
	End code	RESULT_CODE	--

Legend:

--: No applicable information exists.

(5) Details of event ID: 00010D24

Attribute type	Item	Attribute name	Description
Basic attribute	Message	--	FTP Agent service ended.
Extended attributes (common information)	Severity	SEVERITY	Information
	User name	USER_NAME	User who terminated the agent
	Product name	PRODUCT_NAME	/HITACHI/JP1/FTP
	Object type	OBJECT_TYPE	JOB
	Object name	OBJECT_NAME	AGENT
	Root object type	ROOT_OBJECT_TYPE	JOB
	Root object name	ROOT_OBJECT_NAME	JP1/FTP/AGENT
	Object ID	OBJECT_ID	AGENT
	Occurrence	OCCURRENCE	END
	Start time	START_TIME	--
	End time	END_TIME	End time
	End code	RESULT_CODE	0

Legend:

--: No applicable information exists.

(6) Details of event ID: 00010D25

Attribute type	Item	Attribute name	Description
Basic attribute	Message	--	FTP Log Daemon started.
Extended attributes (common information)	Severity	SEVERITY	Information
	User name	USER_NAME	User who started the product
	Product name	PRODUCT_NAME	/HITACHI/JP1/FTP
	Object type	OBJECT_TYPE	JOB
	Object name	OBJECT_NAME	LOGD
	Root object type	ROOT_OBJECT_TYPE	JOB
	Root object name	ROOT_OBJECT_NAME	JP1/FTP/LOGD
	Object ID	OBJECT_ID	LOGD
	Occurrence	OCCURRENCE	START
	Start time	START_TIME	Start time
	End time	END_TIME	--
	End code	RESULT_CODE	--

Legend:

--: No applicable information exists.

(7) Details of event ID: 00010D26

Attribute type	Item	Attribute name	Description
Basic attribute	Message	--	FTP Log Daemon ended.
Extended attributes (common information)	Severity	SEVERITY	Information
	User name	USER_NAME	User who terminated the product
	Product name	PRODUCT_NAME	/HITACHI/JP1/FTP
	Object type	OBJECT_TYPE	JOB
	Object name	OBJECT_NAME	LOGD
	Root object type	ROOT_OBJECT_TYPE	JOB
	Root object name	ROOT_OBJECT_NAME	JP1/FTP/LOGD
	Object ID	OBJECT_ID	LOGD
	Occurrence	OCCURRENCE	END
	Start time	START_TIME	--
	End time	END_TIME	End time
	End code	RESULT_CODE	0

Legend:

--: No applicable information exists.

(8) Details of event ID: 00010D27

Attribute type	Item	Attribute name	Description
Basic attribute	Message	--	FTP Log Daemon ended abnormally.
Extended attributes (common information)	Severity	SEVERITY	Error
	User name	USER_NAME	User who terminated the product
	Product name	PRODUCT_NAME	/HITACHI/JP1/FTP
	Object type	OBJECT_TYPE	JOB
	Object name	OBJECT_NAME	LOGD
	Root object type	ROOT_OBJECT_TYPE	JOB
	Root object name	ROOT_OBJECT_NAME	JP1/FTP/LOGD
	Object ID	OBJECT_ID	LOGD
	Occurrence	OCCURRENCE	END
	Start time	START_TIME	--
	End time	END_TIME	End time
	End code	RESULT_CODE	1
(program-specific information)	Module in which the error occurred	C0	Module in which the error occurred
	Location of the error	C1	Location of the error

Attribute type	Item	Attribute name	Description
(program-specific information)	Error type	B6	System call error or logical error
	Name of the system call	B7	Name of the system call in which the error occurred (Error type: system call error)
	System call message	B8	System call error message (Error type: system call error)

Legend:

--: No applicable information exists.

(9) Details of event ID: 00010D28

Attribute type	Item	Attribute name	Description
Basic attribute	Message	--	FTP Agent service ended abnormally.
Extended attributes (common information)	Severity	SEVERITY	Error
	User name	USER_NAME	User who terminated the agent
	Product name	PRODUCT_NAME	/HITACHI/JP1/FTP
	Object type	OBJECT_TYPE	JOB
	Object name	OBJECT_NAME	AGENT
	Root object type	ROOT_OBJECT_TYPE	JOB
	Root object name	ROOT_OBJECT_NAME	JP1/FTP/AGENT
	Object ID	OBJECT_ID	AGENT
	Occurrence	OCCURRENCE	END
	Start time	START_TIME	--
	End time	END_TIME	End time
	End code	RESULT_CODE	1
(program-specific information)	Module in which the error occurred	C0	Module in which the error occurred
	Location of the error	C1	Location of the error
	Error type	B6	System call error or logical error
	Name of the system call	B7	Name of the system call in which the error occurred (Error type: system call error)
	System call message	B8	System call error message (Error type: system call error)

Legend:

--: No applicable information exists.

(10) Details of event ID: 00010D0B

Attribute type	Item	Attribute name	Description
Basic attribute	Message	--	FTP file transmission ended normally.
Extended attributes (common information)	Severity	SEVERITY	Information
	User name	USER_NAME	FTP login user
	Product name	PRODUCT_NAME	/HITACHI/JP1/FTP
	Object type	OBJECT_TYPE	JOB
	Object name	OBJECT_NAME	For SERVER: Transmission number For CLIENT: Transmission card name
	Root object type	ROOT_OBJECT_TYPE	JOB
	Root object name	ROOT_OBJECT_NAME	JP1/FTP/SERVER or JP1/FTP/CLIENT
	Object ID	OBJECT_ID	SERVER or CLIENT
	Occurrence	OCCURRENCE	END
	End time	END_TIME	End time
	End code	RESULT_CODE	0
(program-specific information)	Transmission number	A0	Transmission number
	Connection number	A1	Connection number
	Card name	A2	Transmission card name (client only)
	Name of the host at the connection destination	A3	Name of the host at the connection destination
	Number of the port at the connection destination	A4	Number of the port at the connection destination (client only)
	User name	A5	FTP login user name
	Transmission mode	A6	ASCII or BINARY
	Transmission command	A7	Send (overwrite), send (append), receive (overwrite), or receive (append)
	Compression mode	A8	Compressed or uncompressed
	Local file name	A9	Local file name
	Remote file name	B0	Remote file name (client only)
	Transmission start time	B1	Transmission start time
	Transmission end time	B2	Transmission end time
	Size of the transmitted data	B3	Size of the transmitted data (bytes)
	Comment	B4	Comment (client only)
	Transmission end status	B5	Normal termination

Legend:

--: No applicable information exists.

(11) Details of event ID: 00010D0C

Attribute type	Item	Attribute name	Description
Basic attribute	Message	--	FTP file transmission ended abnormally.
Extended attributes (common information)	Severity	SEVERITY	Error
	User name	USER_NAME	FTP login user
	Product name	PRODUCT_NAME	/HITACHI/JP1/FTP
	Object type	OBJECT_TYPE	JOB
	Object name	OBJECT_NAME	For SERVER: Transmission number For CLIENT: Transmission card name
	Root object type	ROOT_OBJECT_TYPE	JOB
	Root object name	ROOT_OBJECT_NAME	JP1/FTP/SERVER or JP1/FTP/CLIENT
	Object ID	OBJECT_ID	SERVER or CLIENT
	Occurrence	OCCURRENCE	END
	End time	END_TIME	End time
	End code	RESULT_CODE	1
(program-specific information)	Transmission number	A0	Transmission number
	Connection number	A1	Connection number
	Card name	A2	Transmission card name (client only)
	Name of the host at the connection destination	A3	Name of the host at the connection destination
	Number of the port at the connection destination	A4	Number of the port at the connection destination (client only)
	User name	A5	FTP login user name
	Transmission mode	A6	ASCII or BINARY
	Transmission command	A7	Send (overwrite), send (append), receive (overwrite), or receive (append)
	Compression mode	A8	Compressed or uncompressed
	Local file name	A9	Local file name
	Remote file name	B0	Remote file name (client only)
	Transmission start time	B1	Transmission start time
	Transmission end time	B2	Transmission end time
	Size of the transmitted data	B3	Size of the transmitted data (bytes)
	Comment	B4	Comment (client only)
	Transmission end status	B5	Abnormal termination
	Auto-start program name	C3	--

Attribute type	Item	Attribute name	Description
(program-specific information)	Module in which the error occurred	C0	Module in which the error occurred
	Location of the error	C1	Location of the error
	Error type	B6	System call error, logical error, protocol error, or SSL communication error
	Name of the system call	B7	Name of the system call in which the error occurred (Error type: system call error)
	System call message	B8	System call error message (Error type: system call error)
	Protocol message	B9	Protocol error message (Error type: protocol error)

Legend:

--: No applicable information exists.

(12) Details of event ID: 00010D0D

Attribute type	Item	Attribute name	Description
Basic attribute	Message	--	FTP file transmission is terminated with a warning. Automatic start of a program failed.
Extended attributes (common information)	Severity	SEVERITY	Warning
	User name	USER_NAME	FTP login user
	Product name	PRODUCT_NAME	/HITACHI/JP1/FTP
	Object type	OBJECT_TYPE	JOB
	Object name	OBJECT_NAME	For SERVER: Transmission number For CLIENT: Transmission card name
	Root object type	ROOT_OBJECT_TYPE	JOB
	Root object name	ROOT_OBJECT_NAME	JP1/FTP/SERVER or JP1/FTP/CLIENT
	Object ID	OBJECT_ID	SERVER or CLIENT
	Occurrence	OCCURRENCE	END
	End time	END_TIME	End time
	End code	RESULT_CODE	2
(program-specific information)	Transmission number	A0	Transmission number
	Connection number	A1	Connection number
	Card name	A2	Transmission card name (client only)
	Name of the host at the connection destination	A3	Name of the host at the connection destination

Attribute type	Item	Attribute name	Description
(program-specific information)	Number of the port at the connection destination	A4	Number of the port at the connection destination (client only)
	User name	A5	FTP login user name
	Transmission mode	A6	ASCII or BINARY
	Transmission command	A7	Send (overwrite), send (append), receive (overwrite), or receive (append)
	Compression mode	A8	Compressed or uncompressed
	Local file name	A9	Local file name
	Remote file name	B0	Remote file name (client only)
	Transmission start time	B1	Transmission start time
	Transmission end time	B2	Transmission end time
	Size of the transmitted data	B3	Size of the transmitted data (bytes)
	Comment	B4	Comment (client only)
	Transmission end status	B5	Normal termination
	Auto-start program name	C3	Auto-start program name

Legend:

--: No applicable information exists.

E. Format Files Used for Output of Definition Information

This appendix describes the format files that are used for output of definition information.

Sample format files are provided. For the storage locations and names of the format files and the sample format files, see [A. List of Files and Directories](#).

You can edit a format file for ease of use, such as by specifying the information you wish to have output.

E.1 Creating a format file

Keywords are used to specify the information that is to be output to a format file.

During output, information is embedded into the format file at the locations of the corresponding keywords. Any characters other than the keywords (including linefeed and control characters) are output as is to the text file.

Notes about creating a format file

A format file must be created within a size limit of 2,048 bytes. If a created file exceeds 2,048 bytes, any excess information will be ignored.

(1) Keywords that can be specified

This subsection lists the keywords that can be specified in each type of format file. Note that the login user information is output as text from the Operations-Manager Console.

Table E–1: Keywords that can be specified for login user information

Keyword	Description
\$ICNT	Data count
\$USER	User name
\$CDIR	Current directory

Table E–2: Keywords that can be specified for auto-start program information

Keyword	Description
\$ICNT	Data count
\$USER	User name
\$AKEY	Trigger for auto-start
\$AFDK	Key type
\$ANML	Name of the program to start when transmission ends normally
\$AERR	Name of the program to start when transmission ends abnormally

Table E–3: Keywords that can be specified for transmission information

Keyword	Description
\$ICNT	Data count
\$USER	User name

Keyword	Description
\$PSWD	Password [#]
\$CARD	Transmission card
\$LCAL	Local file name
\$RMTE	Remote file name
\$TRAN	Sending or receiving
\$MODE	Transmission mode
\$COMP	Compression mode
\$FSIZ	Size check
\$OUTK	Output type
\$HOST	Remote host name
\$PORT	Port number
\$ANML	Name of the program to start when transmission ends normally
\$AERR	Name of the program to start when transmission ends abnormally
\$CMND	FTP command
\$CMNT	Comment
\$MULT	Single-file or multiple-file transmission
\$FTPS	Use FTPS
\$SCVC	Check the expiration date of the server certificate
\$CACF	Path to the CA certificate
\$CRLF	Path to the CRL

#

To output passwords, you must have superuser permissions.

Table E–4: Keywords that can be specified for log information

Keyword	Description
\$ICNT	Data count
\$USER	User name
\$CARD	Transmission card
\$LCAL	Local file name
\$RMTE	Remote file name
\$MODE	Transmission mode
\$TRAN	Sending or receiving
\$COMP	Compression mode
\$OUTK	Output type
\$HOST	Remote host name
\$PORT	Port number

Keyword	Description
\$CMNT	Comment
\$TRNO	Transmission number
\$SVCE	Client or server
\$STAT	End status
\$STIM	Start time
\$ETIM	End time
\$TIME	Transmission period
\$TSIZ	Size transmitted
\$CONO	Connection number
\$ETYP	Error type
\$EPOS	Location of the error
\$EMOD	Error module name
\$ESYS	Name of the system call
\$EMSG	Error message
\$EPRT	Protocol message
\$EMSC	SSL communication error message

F. Transmission Rejection Messages

JP1/FTP rejects file transmissions when the maximum number of concurrent transmissions would be exceeded. This appendix shows the messages that are displayed when a transmission request is rejected for this reason.

F.1 For the ftstran command

After the number of API connections has reached the maximum number of concurrent transmissions:

The `ftstran` command displays the following error message and terminates itself:

```
KDJF5013-E A function error occurred.  
      (Function name : fts_ftp_open_ex    ,  
      Error code : 805306126)
```

After the number of transmission requests has reached the maximum number of concurrent transmissions:

The `ftstran` command displays the following error message and terminates itself:

```
KDJF5013-E A function error occurred.  
      (Function name : fts_ftp_syn_request_ex    ,  
      Error code : 805306119)
```

F.2 For the server

Immediately after the FTP control connection is established, JP1/FTP returns the following message as a response to the FTP client:

```
421 Maximum client reached service unavailable.
```


G. Log Information Deletion Tool

This tool resets (initializes) log information to its initial status.

The log information deletion tool deletes the log files listed below. For details about the log files, see [A. List of Files and Directories](#).

- Log file
- Protocol trace
- Module trace
- Log management information

G.1 Executing the tool

Tool name: `ftsprestart.sh`

Path: `/opt/jp1_fts/lib/script`

Example:

```
# /opt/jp1_fts/lib/script/ftsprestart.sh
Is it OK to delete the log information files? y#
Deletion will now start.
Do not start the JP1/FTS server until deletion has ended.
Deletion has ended.
```


To continue, enter `y`. If any other value is entered, the tool is canceled.

G.2 Notes

- Execute this tool as a superuser.
- Make sure that the JP1/FTP daemon has terminated before you use this tool.
- Do not start the JP1/FTP daemon while the tool's deletion processing is underway.
- The deletion processing might take quite a while, depending on the sizes of the files to be deleted.
- Once this tool has executed, the deleted log information cannot be recovered. If necessary, make backups of the log files before executing the tool. For details about making a backup, see [3.7 Saving and recovering JP1/FTP settings](#).

H. Notes about Operation

1. By default, while transmitting a file, JP1/FTP does not perform processing on the file being transmitted exclusively. Therefore if you edit or delete a file during transmission, the results of the transmission will be incorrect. The results of the transmission will also be incorrect if the same file is sent and received at the same time. You can use the environment variable `JP1FTS_FILE_EXCLUSION` to perform processing on the file exclusively.
2. The default is that files of 2 gigabytes or more cannot be transmitted. If you use the `JP1FTS_LARGEFILE2` environment variable, you can eliminate the limitations on file size altogether. However, the actual possible size of transmitted files depends on the system. For details about the environment variables, see [3.1.3 Using environment variables to define a JP1/FTP environment](#).
3. If file transmission is interrupted, such as by forced termination of file receive processing or by a transmission error, an incomplete file might be created. If overwrite receive processing is interrupted, the original file cannot be restored.
4. JP1/FTP handles NFS files as a single UNIX file. Therefore, you can use NFS files only in an environment that supports them as UNIX files and within the supported operation range.
Even if transmission processing is successful, the contents of a transmitted file might not be written correctly due to problems specific to NFS, their settings, and the environment configuration.
5. If you use secondary groups at the client (ON is set in the `JP1FTS_CSUPPLEGROUP` environment variable), the maximum number of secondary groups is 63 (this is a system limitation). If you exceed this value, an error occurs during transmission.
The permitted maximum number of secondary groups at the server depends on the system.
6. If you use a network relay device (such as a router or a firewall) that performs IP address translation (such as Network Address Translation (NAT) or IP masquerading), file transmission via the device might fail due to use of the FTP protocol. Make sure that the device in use supports the FTP protocol.

Note

The specifications of checking for the `PORT` command in 09-00 and the `PASV` command in 10-00 have been improved. These improvements can sometimes cause a problem to occur when an IP address is not properly translated. If this happens, revise the IP address translation settings so that it is properly translated, or change the specifications of checking for the `PORT` and `PASV` commands by referring to [Table 3-2](#).

7. `/etc/hosts`, `/etc/services`, and `/etc/passwd` require ordinary user's read permissions.
8. In the case of a transmission that uses a wildcard file name, there is no limit to the total number of files that can be expanded or the sum of the total lengths of the expanded path names at the client, but there are such limitations at the server. The length of the path name of each expanded file includes the termination characters (NULL characters).

Table H–1: Maximum number of files that can be expanded and maximum value for the sum of the lengths of the path names (server)

Platform	JP1/FTP version	Maximum number of files	Maximum value for the sum of the lengths of the path names
AIX	--	4,095	24,571
Linux	--	21,844	131,067

Legend:

--: No limitations based on version

9. In the event log, the timestamps might not be sorted in ascending order.
10. When definitions for a multiple IP address environment are not used, JP1/FTP uses the IP addresses shown in the table below.

Table H–2: IP addresses used by JP1/FTP

No.	Usage		IP address to be used
1	Client	IP address for control connection	IP address that is assigned automatically by the OS
2		IP address for data connection	IP address for control connection
3	Server	IP address for control connection	IP address that accepted the connection
4		IP address for data connection	IP address for control connection
5	IP address of the Operations-Manager Agent		Physical IP address (IP address corresponding to the host name that is returned by an OS command (such as <code>hostname</code>))
6	IP address of the Operations-Manager Console		IP address that is assigned automatically by the OS

11. When an auto-start program starts after the end of a transmission, the standard input/output and error output are closed. This applies at both the server and the client. If you want to open them, you must specify settings in such a manner that files are allocated to the standard input/output and error output. For details about how to specify the settings, see [3.1.3 Using environment variables to define a JP1/FTP environment](#).
12. To register an auto-start program, the user must have read permissions as well as execution (search) permissions for all the directories that constitute the real path of the file or directory that is to be registered.
13. Provided below are notes about using JP1/FTP in a cluster system configuration (in an HA configuration that supports node switching). For details about the definition of JP1/FTP in an environment where logical addresses are used, see [3.15 Using JP1/FTP in a multiple IP address environment](#). A cluster system is the same as what is referred to as a node switching system in the JP1 manuals.
 - Failover is not supported.
 - Physical IP addresses must be enabled (IP addresses corresponding to the host names that are returned by an OS command, such as `hostname`).
 - JP1/FTP services can be started and stopped by using cluster software.
 - When JP1/FTP is run as the FTP server, file transmission is supported whether the FTP client specifies a local IP address or a physical IP address as the connection target.
 - When JP1/FTP is run as the FTP client, re-transmission initiated by a method such as automatic retries of file transmission is not performed in the event of a failure.
 - FTP custom jobs can be used to perform file transmission.

The following notes apply when the environment definition for a multiple IP address environment is not used:

- When JP1/FTP is run as the FTP client, the IP address for connection is usually a physical IP address because it is assigned automatically by the OS.
 - JP1 events are sent to the physical IP address (IP address corresponding to the host name that is returned by an OS command, such as `hostname`).
 - When JP1/FTP is run as the FTP server, the physical host name (host name returned by an OS command, such as `hostname`) is set in message 220, which is returned when control connection is established.
14. Before changing the system time, stop all JP1/FTP daemons and commands. To reset the system time, you must initialize the transmission logs.
The procedure for resetting the system time is as follows:
 1. Stop all JP1/FTP daemons and commands.
 2. Back up the log information file and event log files to a directory of your choice.

3. Change the system time.
 4. Initialize the log information. For details on how to initialize the log information, see [G. Log Information Deletion Tool](#).
 5. Delete the event log files.
 6. Start the JP1/FTP daemons and commands.
15. When the FTP client receives (get) a file from the FTP server and an error occurs in the FTP client after the FTP server sends the file normally, differences between the files in the FTP server and in the FTP client occur. Similar differences will occur during execution of operations with the size check option.
16. On the JP1/FTP client, if you want to receive files by specifying wildcard characters, a local file name is generated from the list of file path names received in response to the NLST command. As a result, depending on the format of the list of file path names received from the destination FTP server, the file might not be able to be transmitted normally. The list of file path names supported by JP1/FTP is based on the RFC 959 (FILE TRANSFER PROTOCOL). In addition, of the file path names in the list, those that are supported by JP1/FTP must meet all of the following conditions:
- The format of the first part of the file path name must be the same as the format of the file path name specified for the remote file name. Alternatively, if the file path name specified for the remote file name is a relative path and begins with ". /", the format of the first part of the file path name must be the same as the format of the file path name (excluding ". /" or ". \") specified for the remote file name.
 - If the list of file path names includes blank lines, all file path names must be listed before the first blank line.

Examples are shown below.

In these examples, the configuration of directories on an FTP server is as shown below.

```
/
└─dir1
   ├──file11
   ├──file12
   ├──dir11
   │   └─file111
   ├──dir12
   │   └─file121
   └─dir13
       └─file131
```

Example 1

On the JP1/FTP client, the file path name specified for the remote file name is `"/dir1/*"` and the list of file path names is as follows:

```
/dir1/file11
file12
/dir1/dir11/file111

/dir1/dir12:
file121

/dir1/dir13:
file131
```

In this case, the supported file path names are `"/dir1/file11"` and `"/dir1/dir11/file111"` only.

Example 2

On the JP1/FTP client, if the file path name specified for the remote file name is `". /dir1/*"` or `". \dir1*"`, the following file path names in the list of file path names are supported:

```
./dir1/file11
.\dir1\file11
```

```
dir1/file11
dir1\file11
./dir1/dir11/file111
.\dir1\dir11\file111
```

Note

Depending on the FTP server, a list of file path names might include directory path names. In such cases, if the above conditions are met, the JP1/FTP client sends the `RETR` command with the path name as the parameter. As a result, the FTP server usually returns an error response, and file transmission terminates abnormally.

17. Files transmitted via an IPv6 address are not compatible with IPv4-mapped addresses.
18. The typical implementation of JP1/FTP is to create transmission information when setting up the environment, and then actually transmit files after operation is started. As a result, the `ftsregc` command is typically only used when setting up the environment, and not during normal operation.

Note the following:

- Do not transmit files and delete transmission information at the same time. (This also applies to Operations-Manager Console operations.) If you transmit files and delete transmission information at the same time, the transmission might fail even if the deleted transmission card is different from the transmission card used for the files you are transmitting.
 - The `ftsregc` command is resource-intensive.
 - If transmission information is fixed during operation, instead of executing the `ftsregc` command, we recommend using `ftstran` command arguments to specify the fixed transmission information.
19. If a character defined in the definition file for prohibited characters (`/var/opt/jp1_fts/sys/ftsmetachars`) is specified in an argument for the `LIST`, `NLST`, or `STAT` command, execution of the command fails. Likewise, if a file name specified as an argument for the `LIST`, `NLST`, or `STAT` command contains a character defined in the definition file for prohibited characters, execution of the command fails. Also, in the cases below, a file cannot be transmitted.

Examples of when a file cannot be transmitted:

- The `LIST`, `NLST`, or `STAT` command is executed as an extension of an FTP client file transmission command (`get`, `put`, etc.), and the specified file name contains a prohibited character.
- From a JP1/FTP client, the `STAT` command is specified in an FTP command, which is within transmission information, and a prohibited character is contained in the argument (the file name).
- From a JP1/FTP client, the following is specified for transmission information, and a remote file name is specified that contains a prohibited character:
 - "Receive" is specified for "Send/receive type".
 - "Multiple-file" is specified for "Single/multiple-file transmission".

Characters can be removed from the definition file, but since the characters are special metacharacters of the shell, they are all prohibited characters. Characters can also be added. One line of up to 255 1-byte characters can be defined. The file can also be blank.

- The contents of the definition file for prohibited characters (`/var/opt/jp1_fts/sys/ftsmetachars`):
& () ; ` |

20. If disk space becomes insufficient during file reception, a timeout might occur on the sending side.
21. If the FTP server auto-start program specifies a key that contains a file name such as LCFN or RMFN, do not use a transmission file name that contains special characters because the execution of the auto-start program might fail if the transmission file name contains special characters of the OS shell.
22. In AIX, the JP1/FTP transmission process might be delayed or a timeout error might occur because, during the name resolution of the connection destination, a search is performed for an IPv6 address even if IPv6 is not being used.

If you do not want to use IPv6 on AIX, set the hosts value to not search for IPv6 addresses in the `/etc/netsvc.conf` file.

(Example)

```
hosts=local4, bind4
```

23. The use of multibyte characters in wildcards is not supported.

I. Changes in Each Version

This appendix describes the changes that were made in each version of JP1/FTP.

I.1 Changes in 13-00

- The following OSs were deleted from the supported OSs:
 - HP-UX
 - Solaris
- Operation until 2099 was made possible.
- Product has been converted to 64-bit.

I.2 Changes in 12-00

- The following OSs are now supported:
 - AIX V7.2
 - SUSE Linux Enterprise Server 15
- The following OSs were deleted from the supported OSs:
 - AIX V6.1
 - Solaris 10
- Files can now be transmitted via FTPS.
- The following message was added:
KDJF1019-E, KDJF5051-E, KDJF5052-E, KDJF5053-E, KDJF5054-E, KDJF5055-E,
KDJF5056-E, KDJF5261-E, KDJF5262-E, KDJF5263-E, KDJF5264-E, KDJF5265-E,
KDJF5266-E, KDJF2044-E (C,0), KDJF2045-E (C,0), KDJF2046-E (C,0), KDJF3042-E (S,0)

I.3 Changes in 11-00

- GUI commands were removed.
- The specifications for opening a path name specified in the environment variable JP1FTS_AUTO_STDIO were changed. For this reason, the environment variable JP1FTS_AUTO_STDIO_OP was added.
- The display format of dates in FTP connection response messages was changed.
- Static libraries were removed.
- Libraries for single threads were removed.
- The functions `fts_ftp_syn_request`, `fts_ftp_asyn_request`, and `fts_ftp_event` were removed.
- The format of the connection information structure was changed.
- An API library for 64-bit was added.
- The command for starting the JP1/FTP daemon was changed to `ftsstart`.

- The command for starting the Operations-Manager Agent was changed to `ftsastart`.
- The command for starting the log daemon was changed to `ftslogstart`.
- Scripts for automatic startup and automatic termination were added for RHEL 7, CentOS 7, Oracle Linux 7, and SUSE Linux 12.

I.4 Changes in 10-10

- You can now specify IPv6 addresses in `jp1ftphost.access_list`.
- You can now specify the destination of a JP1 event to be sent when transmission ends.
- The following message was added:
KDJF1016-E

I.5 Changes in 10-00

- The Operations-Manager function can now be used in the Linux version.
- Files can now be transferred using IPv6 addresses.
- The default values and maximum values of the following settings were changed:
 - Number of logs that can be saved
 - Protocol trace file size
 - Module trace file size
- The check specifications of the PASV command on the FTP client side were modified.
- The 4-gigabyte restriction on the size of log information that can be displayed on Operations-Manager Console was eliminated.
- The `fts_ftp_open_ex` function was added.

I.6 Changes in 09-00

- The organization of installation directories for the Solaris version was changed to be the same as for the other OSs.
- For the Operations-Manager function, JRE included in JP1/FTP is now used.
- The `Java_Path` argument of the `ftsconsole` and `jftsa` commands were deleted.
- The `Java_Path` argument was removed from the `ftsconsole` and `jftsa` commands.
- Use of the `SITE CHMOD` command can now be suppressed at the FTP server. Because of this change, the `JP1FTS_MASK_CHMOD` environment variable was added.
- The check specifications for the `PORT` command were changed on the FTP server. Because of this change, the `JP1FTS_WKPORT_ENABLE`, `JP1FTS_ANOTHER_ADDRESS_ENABLE`, and `JP1FTS_MASK_PORT` environment variables were added.
- Secondary groups can now be used.
- The user can now hide the host name, product name, and version information from the reply message during FTP connection. It is also possible to change the reply message to any character string.

- Information about firewall passage directions was added.
- The `jftsdstatus` command for checking the start status of the JP1/FTP daemon was added. Because of this change, a `jftsdstatus` command output message was added.
- The `jftsastatus` command for checking the start status of the Operations-Manager Agent was added. Because of this change, a `jftsastatus` command output message was added.
- The `jftslogdstatus` command for checking the start status of the log daemon was added. Because of this change, a `jftslogdstatus` command output message was added.
- A user environment setting was added for when the function for limiting directory access is enabled.
- Notes about directory limitations were added.
- Limitations on file transmission were added for versions other than IPF.
- The action to be taken by the user was added to the following error messages:
KDJF6106-E and KDJF6107-E
- The following error messages were modified:
KDJF3101-E, KDJF3102-E, KDJF3103-E, and KDJF3104-E
- The following error messages were added:
KDJF3105-E and KDJF5152-E
- Transmission file size limitations can now be released. Because of this change, the `JP1FTS_LARGEFILE2` environment variable was added.
- Rejections of connection by the function for controlling remote host connections can now be logged.

J. Reference Material for This Manual

This appendix provides reference information, including various conventions, for this manual.

J.1 Related publications

This manual is part of a related set of manuals. The manuals in the set are listed below (with the manual numbers):

- *JP1 Version 13 JP1/Base User's Guide* (3021-3-L09(E))
- *JP1 Version 13 JP1/Integrated Management 3 - Manager Configuration Guide* (3021-3-L03(E))
- *JP1 Version 13 JP1/Automatic Job Management System 3 Linkage Guide* (3021-3-L50(E))
- *Job Management Partner 1/Software Distribution Manager Description and Administrator's Guide* (3000-3-841(E))
- *Job Management Partner 1/Software Distribution Client Description and User's Guide* (3020-3-S85(E)), for UNIX systems

J.2 Conventions: Abbreviations

This manual uses the following abbreviations for product names:

Abbreviation			Full name or meaning
JP1/AJS3	JP1/AJS3 - Manager		JP1/Automatic Job Management System 3 - Manager
	JP1/AJS3 - View		JP1/Automatic Job Management System 3 - View
JP1/FTP			JP1/File Transmission Server/FTP
JP1/IM	JP1/IM - Manager		JP1/Integrated Management - Manager
			JP1/Integrated Management 2 - Manager
	JP1/IM - View		JP1/Integrated Management - View
			JP1/Integrated Management 2 - View
JP1/SD			Job Management Partner 1/ Software Distribution
UNIX	AIX		AIX V7.1
			AIX V7.2
	Linux	RHEL 6	Red Hat Enterprise Linux(R) Server 6 (64-bit x86_64)
		RHEL 7	Red Hat Enterprise Linux(R) Server 7
		CentOS 6	CentOS 6 (64-bit x86_64)
		CentOS 7	CentOS 7
		Oracle Linux 6	Oracle Linux 6 (64-bit x86_64)
		Oracle Linux 7	Oracle Linux 7
		SUSE Linux 12	SUSE Linux Enterprise Server 12
		SUSE Linux 15	SUSE Linux Enterprise Server 15

J.3 Conventions: Acronyms

This manual also uses the following abbreviations:

Abbreviation	Full name or meaning
API	Application Programming Interface
CA	Certificate Authority
CRL	Certificate Revocation List
FTPS	File Transfer Protocol over SSL/TLS
IPF	Itanium(R) Processor Family
JRE	Java Runtime Environment
LAN	Local Area Network
NAT	Network Address Translation
NIC	Network Interface Card
PKI	Public Key Infrastructure
RFC	Request for Comments
TCP/IP	Transmission Control Protocol/Internet Protocol
UCS	Universal multi-octet coded Character Set
UTF	UCS Transformation Format
WAN	Wide Area Network

J.4 Conventions: KB, MB, GB, and TB

This manual uses the following conventions:

- 1 KB (kilobyte) is 1,024 bytes.
- 1 MB (megabyte) is 1,024² bytes.
- 1 GB (gigabyte) is 1,024³ bytes.
- 1 TB (terabyte) is 1,024⁴ bytes.

Index

A

- abbreviations defined 322
- access log 94
 - collecting 94
 - setting for collecting 94
- access log message
 - format of explanation 185
 - KDJF31xx 281
 - output format of 185
- access log output file 94
- acronyms 323
- API library 157
- Auto-Start Program Registration window 109

C

- client 18
- coding 157
- command
 - checking JP1/FTP daemon status 153
 - checking log daemon status 155
 - checking Operations-Manager Agent status 154
 - displaying log information 145
 - displaying transmission information 142
 - executing transmission 136
 - registering, changing, deleting, and displaying transmission information 139
 - registering, deleting, and displaying auto-start program 133
 - starting JP1/FTP daemon 129
 - starting log daemon 151
 - starting Operations-Manager Agent 149
 - starting Operations-Manager Console 148
 - terminating JP1/FTP daemon 130
 - terminating log daemon 152
 - terminating Operations-Manager Agent 150
- commands, list of 127
- compiling 163
- connection-permission user definition file 71
- connection-rejection user definition file 71
- conventions
 - abbreviations 322
 - acronyms 323
 - fonts and symbols 8
 - KB, MB, GB and TB 323

- version numbers 9

- Creating environments in which names can be resolved 31

D

- data to collect when problem occurs 287
- definition information, outputting as text 70

E

- Enter Information method of file transmission 61
- environment
 - checking 43
 - defining 41
 - setting up (library) 157
 - using environment variable to define 43
- environment definition 41
 - Items in 41
- Environment Definition window 108
- environment variable 43
- error handling procedure 285
- event log
 - How to specify 74
 - starting output of, to file 76
 - stopping output of, to file 76
- event log function 74
- event log message
 - format of explanation 184
 - KDJF10xx, KDJF20xx, KDJF30xx, KDJF40xx, KDJF50xx, KDJF60xx 249
 - output format of 184

F

- features 17
- file size 314
- file transmission
 - Enter Information method of 61
 - flow of 21
 - in PASV mode 77
 - messages related to (client) (KDJF20xx) 189
 - messages related to (server) (KDJF30xx) 191
 - Select Card method of 61
- file transmission function 18
- firewall
 - passage direction 296

- transmission via 297
- font conventions 8
- format file
 - creating 309
 - keyword that can be specified in 309
- FTP connection response message
 - control function 96
 - definition method of 96
 - displayed 97
- fts_ftp_asyn_request_ex() 175
- fts_ftp_close() 179
- fts_ftp_event_ex() 177
- fts_ftp_get_card_info() 180
- fts_ftp_open_ex() 171
- fts_ftp_syn_request_ex() 173
- ftsastart (starting Operations-Manager Agent) 149
- ftsastop (terminating Operations-Manager Agent) 150
- ftsautoma (registering, deleting, and displaying auto-start program) 133
- ftsbanner 96, 97
- ftsconsole (starting Operations-Manager Console) 148
- ftsftps 101
- ftshistory (displaying log information) 145
- ftshostenv.conf 89
- ftsipversion.conf 98
- ftslog 74
- ftslogstart (starting log daemon) 151
- ftslogstop (terminating log daemon) 152
- ftspasvmode 77
- ftsregc (registering, changing, deleting, and displaying transmission information) 139
- ftsregcv (displaying transmission information) 142
- ftsstart (starting JP1/FTP daemon) 129
- ftsstop (terminating JP1/FTP daemon) 130
- ftstran (executing transmission) 136
- ftsutil (changing and displaying environment information) 131
- function
 - controlling remote host connection 81
 - controlling remote login 71
 - establishing connection with JP1/FTP daemon 171
 - limiting directory access 84
 - obtaining transmission-end result 177
 - obtaining transmission information 180
 - registering transmission request (asynchronous) 175
 - registering transmission request (synchronous) 173
 - releasing connection with JP1/FTP 179

- functions 18
 - details of 170
 - list of 169

G

- GB meaning 323

I

- installing 28
- IPv6 environment, using JP1/FTP in 98
- item
 - in auto-start program 50
 - in environment definition 41
 - in transmission information 55
 - in transmission logs 63
- Items in auto-start program
 - Items in 50

J

- jftsastatus (checking Operations-Manager Agent status) 154
- jftsdstatus (checking JP1/FTP daemon status) 153
- jftslodstatus (checking log daemon status) 155
- JP1/AJS3, setting for linking to 118
- JP1/FTP, overview of 16
- JP1/FTP daemon
 - messages related to (KDJF10xx) 186
 - starting 32
 - terminating 34
- JP1/FTP setting
 - recovering 68
 - saving 68
- JP1/IM
 - monitoring transmission result by 125
 - setting for linking to 124
- JP1 event 299
 - attribute of 299
- jp1ftphost.access_list 81
- jp1ftpusers 71
- jp1ftpusers.allow 71
- jp1ftpusers.directory_list 84
- JP1 program linkage function 19

K

- KB meaning 323

L

- language type, setting 29
- library
 - example of using 165
 - using 157
- linking 163
 - to JP1/AJS3 118
 - to JP1/IM 124
- List of environment variables 44
- log daemon
 - starting 37
 - terminating 39
- log information
 - example of displaying 114
 - type of 286
- Log Information window 111
- login user, registering 49

M

- managed host
 - adding 105
 - deleting 106
- MB meaning 323
- message
 - file transmission (client) (KDJF20xx) 189
 - file transmission (server) (KDJF30xx) 191
 - format of displayed 183
 - format of explanation 183
 - issued by ftsastop command (KDJF61xx) 240
 - issued by ftsautoma command (KDJF53xx) 224
 - issued by ftsconsole command (KDJF70xx) 243
 - issued by fts history command (KDJF54xx) 230
 - issued by ftslogstop command (KDJF91xx) 247
 - issued by ftsregc command (KDJF52xx) 214
 - issued by ftsregcv command (KDJF55xx) 234
 - issued by ftsstop command (KDJF40xx) 193
 - issued by ftstran command (KDJF50xx) 196
 - issued by ftsutil command (KDJF51xx) 205
 - issued by jftsastatus command (KDJF62xx) 242
 - issued by jftsdstatus command (KDJF41xx) 195
 - issued by jftslogdstatus command (KDJF92xx) 248
 - issued by Operations-Manager Agent (KDJF60xx) 237
 - JP1/FTP daemon (KDJF10xx) 186
 - log daemon (KDJF90xx) 245
- multiple files, specifying 56, 57

multiple IP address environment, using JP1/FTP in 89

N

- notes
 - about operation 314
 - about using libraries 164

O

- Operations-Manager Agent 105
 - starting 34
 - terminating 36
- Operations-Manager Console 104
- Operations-Manager Console window 104
- Operations-Manager function 19
- Output or Append To Text File dialog box 116
- output text file, name of 116

P

- parameter keyword 51
- path
 - setting 29
 - to be set 29
- port number, setting 30
- port numbers, list of 296
- processes, list of 298
- program start, priority of 51

R

- registration information, example of outputting 115

S

- scheduled transmission (JP1/AJS3) 119
- Select Card method of file transmission 61
- server 18
- setting up 29
- starting
 - log daemon 37
 - Operations-Manager Agent 34
- symbol conventions 8
- system configuration 27
 - for linking to JP1/AJS3 118
 - for linking to JP1/IM 124
- system log, setting 31

T

- TB meaning [323](#)
- terminating
 - log daemon [39](#)
 - Operations-Manager Agent [36](#)
- The Define Managed Hosts dialog box [106](#)
- transmission [18](#)
- transmission-end information, obtaining [161](#)
- transmission information
 - example of distributing (copying) [114](#)
 - example of registering [113](#)
 - Items in [55](#)
- transmission logs
 - Items in [63](#)
- Transmission Registration window [110](#)

U

- uninstalling [28](#)
- Using FTPS (at the FTP client) [100](#)
- Using FTPS (at the FTP server) [101](#)

V

- version, changes in each [319](#)
- version number conventions [9](#)

W

- wildcard [56](#), [57](#)



6-6, Marunouchi 1-chome, Chiyoda-ku, Tokyo, 100-8280 Japan
