

Retrieving FTP client files

SP.FTPGET

FX5S FX5UJ FX5U FX5UC

This instruction retrieves files on the FTP server, which are specified by (s2), to the folder path of the CPU module, which is specified by (s3).

| Ladder | ST |
|--------|-----------------------------------|
| | ENO:=SP_FTPGET(EN,U0,s1,s2,s3,d); |

| FBD/LD |
|--------|
| |

("SP.FTPGET" enters □.)

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Setting data

■Description, range, data type

| Operand | Description | Range | Data type | Data type (label) |
|-------------------|--|--|------------------------------|---|
| (U) ^{*1} | Dummy (Input the character string ['U0'].) | — | String | — ^{*2} |
| (s1) | Start device where control data is stored | Refer to the control data. (Page 1060) | Word | ANY16_ARRAY (Number of elements: 4) |
| (s2) | Name of files stored in the FTP server (transfer source) ^{*3} | — | Unicode string ^{*4} | ANYSTRING_DOUBLE |
| (s3) | Folder path of the CPU module (transfer destination) ^{*3} | — | Unicode string ^{*4} | ANYSTRING_DOUBLE |
| (d) | Device that turns on for one scan upon completion of the instruction When the instruction completes with an error, (d)+1 also turns on. | — | Bit | ANYBIT_ARRAY (Number of elements: 2) |
| EN | Execution condition | — | Bit | BOOL |
| ENO | Execution result | — | Bit | BOOL |

*1 Displayed as U0 in the ST language and FBD/LD language.

*2 Specify the dummy character string with its character string constant.

*3 Unicode string or the start device where the Unicode string is stored

*4 Even though the data type is Unicode string, only one-byte alphanumeric characters, symbols, and kana characters; and two-byte characters (Shift JIS codes) can be used.

■Applicable devices

| Operand | Bit | Word | | | Double word | | Indirect specification | Constant | | | Others (U) |
|---------|-----------------|-----------------------------|---------------------------|-------|-------------|----|------------------------|----------|---|----|------------|
| | | X, Y, M, L, SM, F, B, SB, S | T, ST, C, D, W, SD, SW, R | U□\G□ | Z | LC | | K, H | E | \$ | |
| (U) | — | — | — | — | — | — | — | — | — | ○ | ○ |
| (s1) | — | ○ | — | — | — | — | ○ | — | — | — | — |
| (s2) | — | ○ | — | — | — | — | ○ | — | — | ○ | — |
| (s3) | — | ○ | — | — | — | — | ○ | — | — | ○ | — |
| (d) | ○ ^{*1} | ○ ^{*2} | — | — | — | — | — | — | — | — | — |

*1 S cannot be used.

*2 T, ST, C, and FD cannot be used.

■Control data

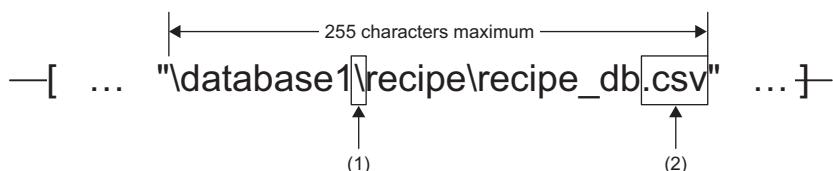
| Operand: (s1) | | | | | | | | |
|---------------|---|--|---------------|--------|-----|---|------------------------------------|------|
| Device | Item | Description | Setting range | Set by | | | | |
| +0 | Application setting area | <p>b15 ... b3 b2 b1 b0</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <tr> <td>0</td> <td>(2)</td> <td>(1)</td> <td>0</td> </tr> </table> <p>(1) Transfer completion file delete setting (b2) Specify whether to delete transfer completion files or not.</p> <ul style="list-style-type: none"> • 0: Do not delete • 1: Delete <p>(2) Temporary file create setting (b3) Specify whether to create a temporary file (FTPCLI_I.TMP) during the file transfer processing or not. Setting this bit to 0 prevents files from becoming undefined in the transfer destination when a cable is disconnected or power is shut off during the file transfer processing.</p> <ul style="list-style-type: none"> • 0: Create • 1: Do not create | 0 | (2) | (1) | 0 | Refer to the "Description" column. | User |
| 0 | (2) | (1) | 0 | | | | | |
| +1 | Completion status | The completion status is stored upon completion of the instruction. | — | System | | | | |
| +2 | Total number of files to be transferred | The total number of files to be transferred by the SP.FTPGET instruction is stored. | — | System | | | | |
| +3 | Number of transferred files | The number of transferred files is stored. | — | System | | | | |

Processing details

- This instruction retrieves files on the FTP server, which are specified by (s2), to the folder path of the CPU module, which is specified by (s3). The CPU module opens a connection with the FTP server set in the module parameters ("FTP Client Settings") at execution of the instruction, and closes a connection after retrieving files. For details on the parameter setting, refer to the following.

 MELSEC iQ-F FX5 User's Manual (Communication)

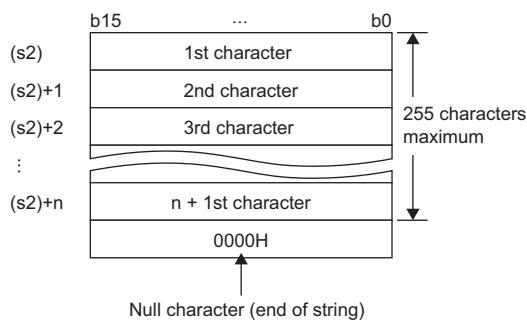
- The total number of files to be transferred by the SP.FTPGET instruction is stored in (s1)+2, and the number of transferred files is stored in (s1)+3.
- Specify the folder path where the transfer source files are stored on the FTP server, and the file name (including an extension) in (s2) in Unicode string. The maximum number of characters used in a file path is 255. The specified file path shall be a relative path from home directory of the FTP server. Use one-byte '\ or '/' as a delimiter to specify the boundary of the folder path or the file name.* 1



(1)Use one-byte '\' or '/' as a delimiter of the folder path or file.* 1

(2)The specified file name should include an extension.

*1 Note that '\' cannot be used as a delimiter for some FTP servers.



- Wild card characters (*, ?) can be used in the file name or the extension specified in (s2).

| Symbol | Description |
|--------|---|
| * | An asterisk '*' is replaced with any character or string (including none) in a file name. |
| ? | A question mark '?' is replaced with a character (excluding none) in a file name. ('?' can be used multiple times.) |

Wild card characters do not recognize periods.

Using wild card characters in the following ways results in an error.

- Two or more asterisks '*' are used in a file name (before the period) or an extension. (Example: *abc*.csv)
- An asterisk '*' and a question mark '?' are used in a file name (before the period) or an extension. (Example: *ab?. csv)

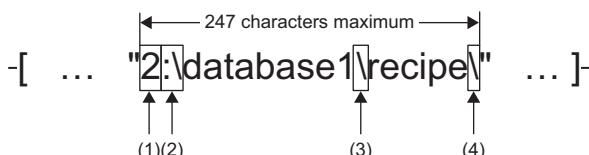
When any wild card character is used, the number of files that can be transferred is determined by the total size of the file names of the specified files. The specified files can be transferred when the number of these files and the total size of the file names satisfy the following condition. If a file transfer function instruction is executed without satisfying the following condition, the instruction completes with an error.

(Fi + NM) + 1 < 32768 [bytes]

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N: Total number of files that match the wild card specification
 Fi: Total size of the file names that match the wild card specification
 M: Specific information size (Fixed value: 6 bytes)

- If an error occurs in any one of the files to be retrieved during execution of the SP.FTPGET instruction, the transfer processing will be stopped upon detection of the error, and the rest of target files will not be transferred.
- Untransferable files will not be transferred even though the wild card specification conditions are satisfied.
- If the number of characters in the file path which includes a file name and an extension exceeds 255, files will not be transferred even though the wild card specification conditions are satisfied.
- If only a file name is specified by (s2), the CPU module directly accesses under the home directory of the FTP server. When specifying only a file name, start with a delimiter. For details, follow the FTP server specifications.
- Specify the folder path of the transfer destination CPU module in (s3) in Unicode string. Use one-byte '\' or '/' as a delimiter to specify the boundary of the folder path. The maximum number of characters in the folder path is 247 (246 when a delimiter at the end of the string is omitted). Note that the total number of characters in a folder path (including the delimiter at the end) and the file name specified in (s2) must be within the maximum path length (255 characters) supported by the CPU module. (When the delimiter at the end is omitted, it must not exceed 254 characters.) The delimiter at the end of a string can be omitted. When omitted, '\' is assumed to be set at the end. If a nonexistent folder path is specified, a folder is automatically created by the system at execution of the instruction, and then the processing is performed.



(1)Drive numbers that can be specified are 2. (IMELSEC iQ-F FX5 User's Manual (Application))

(2)Use one-byte ':' or '/' as a delimiter of the drive number.

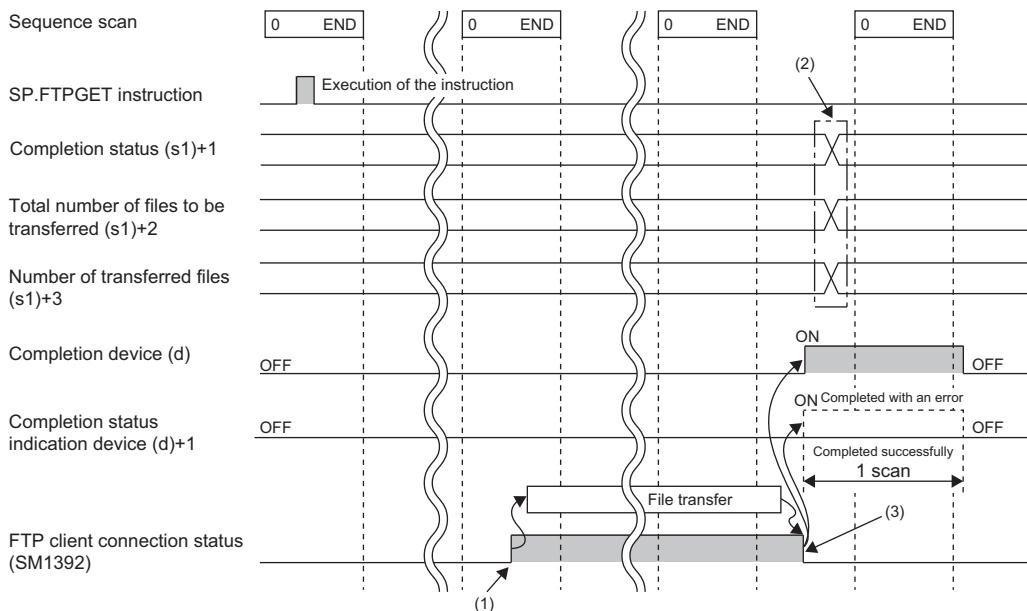
(3)Use one-byte '\' or '/' as a delimiter to specify the boundary of the folder path.

(4)The delimiter at the end of string can be omitted.

- If a file with the same name exists in the transfer destination, the file will be overwritten.
- When a file with large size is transferred, the transfer time may be longer. ((Example) Transfer time of 16-MB file with scan time of 5 ms: Approx. 450 sec)
- The execution status and the completion status of the SP.FTPGET instruction can be checked with the completion device (d) and the completion status indication device (d)+1.

| Device | Operation |
|---|---|
| Completion device (d) | This device turns on during END processing of the scan where the SP.FTPGET instruction completes, and turns off during the next END processing. |
| Completion status indication device (d)+1 | This device turns on or off depending on the completion status of the SP.FTPGET instruction. <ul style="list-style-type: none"> When completed successfully: The device remains off. When completed with an error: The device turns on during END processing of the scan where the SP.FTPGET instruction completes, and turns off during the next END processing. In addition, an error code is stored in the device specified by (s1)+1. |

- The following figure shows the execution timing of the SP.FTPGET instruction.



- SM1392 (FTP client connection status) is on while the CPU module is connected to the FTP server, and SM1392 turns off when disconnected.
- SM753 (File access in progress) turns on while the SP.FTPGET instruction is being executed. While SM753 is on, the SP.FTPGET instruction cannot be executed. If executed, no processing is performed.
- If the SP.FTPGET instruction is executed while the SP.FTPPUT or SP.FTPGET instruction is being executed, the instruction is ignored and not executed until the currently executing instruction completes. When the instruction is ignored, SM699 (Dedicated instruction skip flag) turns on.
- In the following cases, the instruction completes with an error: when there is no free space in the transfer destination; or when b3 (Temporary file create setting) of ($s1+0$) is set to 0 (Create), but there is not enough free space for storing transfer-target files and a temporary file (same size as transfer-target files) in the transfer destination.
- Even though the operating status of the CPU module is switched from RUN to STOP during the file transfer processing, the CPU module continues the processing until completed.

Precautions

- If a cable is disconnected, power is shut off, or the CPU module is reset during the file transfer processing, transfer files again. In those cases, unnecessary files will be deleted in the following ways.

| Unnecessary file | Delete operation |
|--------------------------------|---|
| Temporary file (FTPCLI_I.TMP) | A temporary file left in the FTP client will be automatically deleted at the start of next file transfer processing to the same folder. |
| Undefined transfer target file | An undefined transfer target file left in the FTP client will be overwritten during next file transfer processing to the same file. |

- When a file with the same name has already existed in the transfer destination and its access is restricted by the file password function, the SP.FTPGET instruction completes with an error.
- When b3 (Temporary file create setting) of ($s1+0$) is set to 0 (Create), set the maximum number of characters in the folder path of the CPU module to 243 (242 when a delimiter at the end of the string is omitted). Since a temporary file of 12 characters (FTPCLI_I.TMP) is created in the transfer destination, set the folder path so that the total number of characters in the folder path and the temporary file does not exceed the maximum path length (255 characters) supported by the CPU module.
- Do not use unsupported characters for the operands of the SP.FTPGET instruction. Do not store any file with a file name containing unsupported characters in the source folder to transfer the SP.FTPGET instruction.

Operation error

| Error code (SD0) | Description |
|---------------------|--|
| 2820H | There is no NULL code (0000H) in each setting area in the device/label memory in device specified by (s2), (s3) and later. |
| 3405H | The number of characters in the string specified by (s2) exceeds 255. |
| | The number of characters in the path specified by (s2), excluding the file name, exceeds 246 (not including a delimiter). |
| | The total number of characters in the strings specified by (s3) and (s2) (only the file name part) exceeds 255. |
| | The drive number specified by (s3) is out of range. |
| 3426H | A file name is not specified by (s2). |
| | The file name that cannot be transferred is specified by (s2). |
| | The delimiter used to separate the drive number in (s3) is neither ':' nor '/'. |
| | Two or more asterisks '*' are used in the file name (before the period) or the extension specified by (s2). |
| | An asterisk '*' and a question mark '?' are used in the file name (before the period) or the extension specified by (s2). |
| | Wild card characters, '*' and '?', are used in the string specified by (s3). |
| 3430H | The SP.FTPGET instruction was executed without setting FTP client parameters. |
| 3582H | The SP.FTPGET instruction is executed in an interrupt program. |