JPX Market Innovation & Research
Specification for connecting to Data Feed System
（arrowhead/ToSTNeT Notice Batch Data File Service）

Version 3.2

November 5, 2024

JPX Market Innovation & Research, Inc.

This specification will be applied on November 5, 2024.

Contents

1. Purpose of this Specification

In order for JPX Market Innovation & Research, Inc. (hereafter as JPXI) to provide the following services, this specification contains the necessary information to connect user systems to the JPXI Data Feed System (hereafter as DFS).
   - arrowhead Notice Batch Data File Service
   - ToSTNeT Notice Batch Data File Service

2. Outline of DFS

Data files are transferred from the DFS to user systems.

2.1. File Transfer Protocol

The following two protocols are available between the DFS and the user system. In both protocol, the user system becomes the terminal side (FTP client).
   It is not possible to use both FTP and SFTP through the Internet with the same user ID.

   ①   File transfer via FTP

   ②   File transfer via SFTP

2.2. Telecommunication Network

Telecommunication network for both FTP and SFTP is arrownet.

3. Connection via FTP

3.1. Telecommunication Network

User systems have to connect to DFS over arrownet.

3.2. Telecommunication Equipment

Users need to prepare telecommunication equipment capable of connecting to arrownet.

3.3. Configuration Information

JPXI prepares "the connection guideline" and informs users of user ID and password.
IP address is as follows.

IP Address	10.211.48.109

In FTP, it is possible to use both active mode and passive mode.
The port number for FTP is 20020 or 20021 as generally used for this protocol.

For connendtions in passive mode, the data transfer port will randomly respond between "50000 and 65535".

【PASSIVE mode】
Control connection:Client(any)⇒JPXI system(port 20021).
Data connection:Client(any)⇒JPXI system(port 50000 to 65535)(JPXI system side notifies the port used).
【ACTIVE mode】
Control connection:Client(any)⇒JPXI system(port 20021).
Data connection:JPXI system(20022 port)→Access client (any)(establish connection from JPXI system side).

For details on setup information for users to connect to arrownet, please refer to the arrownet guideline.
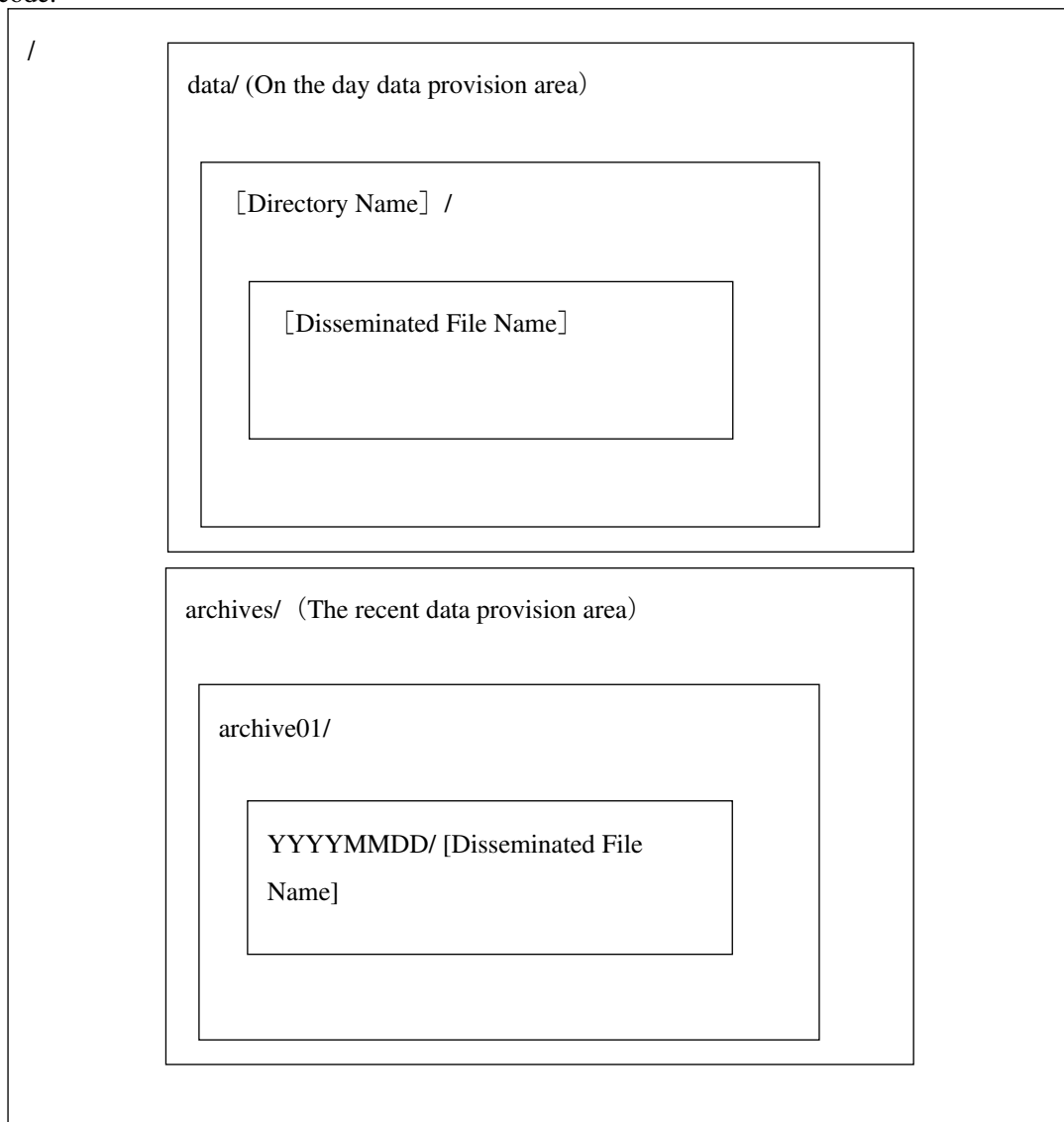
3.4. Directory Configuration

Data	Data Storage Location
(1) On the day data provision area	/data/ [Directory Name*] / [Disseminated File Name*
(2) The recent data provision area	/archives/archive01/YYYYMMDD/Disseminated File Name*

　*Historical Data are provided up to the last seven days.

Section	Directory Name*	Disseminated File Name*
arrowhead Notice Data	arrowhead_tuchi	YYYYMMDD_XXXXX.zip**
ToSTNeT Notice Data	ToSTNeT_tuchi	YYYYMMDD_XXXXX_T.zip**

**"YYYYMMDD" means the dissemination date of the data, and "XXXXX" means a participant code.

```
/
    data/ (On the day data provision area）

        ［Directory Name］/

            ［Disseminated File Name］


    archives/ （The recent data provision area）

        archive01/

            YYYYMMDD/ [Disseminated File
            Name]
```

4. Connection via SFTP

4.1. Telecommunication Network

User systems have to connect to DFS over arrownet.

4.2. Telecommunications Equipment

Users need to prepare telecommunication equipment capable of connecting to arrownet.

4.3. Configuration Information

TSE prepares "the connection guideline" and informs users of user ID.
IP address is as follows.

IP Address	10.211.48.109

The port number for SFTP is 20022 as generally used for this protocol.

SFTP connection requires a pair of a private key and a public key. Please set up a pair of keys and notify the public key to JPXI. Public keys are stored with the following naming rule. When replacing the public key, please rename the file using the following naming rule. (For new SFTP connections, please submit an arbitrary file name as we will ask you to create a public key when you have not provided us with your ID.)

Public key
User ID_keys

(e.g.) If an user ID is "USER0001", the key should be named "USER0001_keys."

Please create the public key in the OpenSSH format. (Only RSA encryption format can be registered. Not accepted in SECSH format, DSA encryption format.)
SSH Version 2 is only acceptable. SSH version 1 is not supported.
The maximum key length is 4096 bits.
Only one public key can be set for each FTP user ID.

An example of OpenSSH format is as indicated. (A newline must be added at the end of the string.)

(e.g.) ssh-rsa AAAAB3NzaC1yc2EAAAABJQAAA/W1jndOv/~~

(NG example) ---BEGIN SSH PUBLIC KEY---

              Subject : staff

              Comment : "1024-bit dsa, staff@client-pc, Thu Mar 3 20XX 00:00:00 +09¥
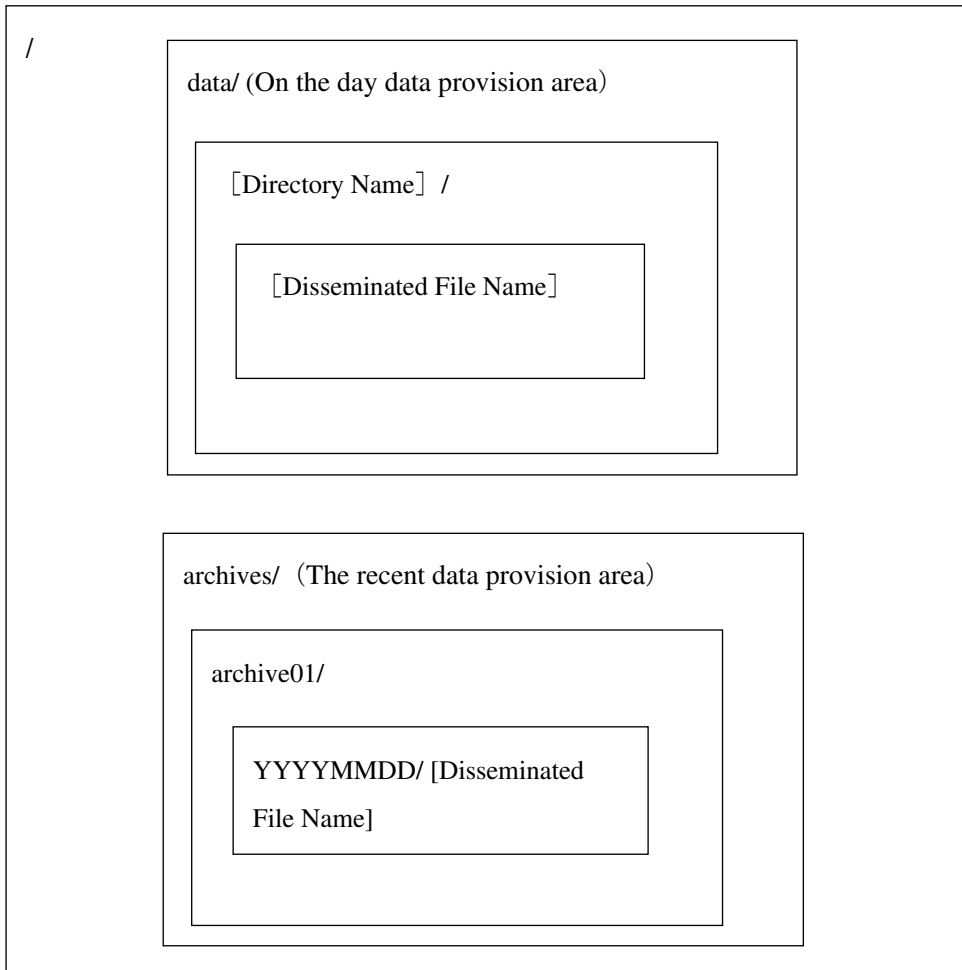
                       AAAAB3NzaC1yc2EAAAABJQAAA/W1jndOv/～～

4.4. Directory Configuration

Data	Data Storage Locaion
(1) On the day data provision area	/data/ [Directory Name*] /Disseminated File Name*
(2) The recent data provision area	/archives/archive01/YYYYMMDD/Disseminated File Name*

*Historical Data are provided up to the last seven days.

Section	Directory Name*	Disseminated File Name*
arrowhead Notice Data	arrowhead_tuchi	YYYYMMDD_XXXXX.zip**
ToSTNeT Notice Data	ToSTNeT_tuchi	YYYYMMDD_XXXXX_T.zip**

**"YYYYMMDD" means the dissemination date of the data, and "XXXXX" means a participant code.

```
/
    data/ (On the day data provision area）

        ［Directory Name］ /

            ［Disseminated File Name］


    archives/ （The recent data provision area）

        archive01/

            YYYYMMDD/ [Disseminated
            File Name]
```

5. Contents of the Service

5.1. Type of Contents

The type of the contents provided by this system are as follows. Users can access contents after TSE gives permission to the contents following the execution of the contract to use this service. The contents only include trading data generated by the user's trading (users cannot acquire other users' data).

（File List）

NO	Content	File name	Remarks
1	arrowhead Notice Data	YYYYMMDD_XXXXX.zip*	
2	ToSTNeT Notice Data	YYYYMMDD_XXXXX_T.zip*	

*"YYYYMMDD" means the dissemination date of the data, and "XXXXX" means a participant code.

5.2. About the Data Files

(1)　Overview the Data Files

NO	Information	Description
1	arrowhead Notice Data	✓ This data contains notice messages (acceptance notice messages and execution notice messages) sent from arrowhead to the user's virtual servers in the production environment (*1). ✓ A separate ZIP file is provided for each business day. ✓ It contains one notice as one record. ✓ TSE starts to produce the data file between the afternoon session close and the end of participant online. Although some error notice messages after the afternoon session close may be contained in the data file, error notice messages after the afternoon session close is not covered in this service.

2	ToSTNeT Notice Data	✓ This data contains notice messages (acceptance notice messages and execution notice messages) sent from ToSTNeT to the user's virtual servers (*2) in the production environment.
		✓ A separate ZIP file is provided for each business day.
		✓ It contains one notice as one record.
		✓ All notice messages including error notice messages until the end of participant online are covered in this service.

*1 The file contains only the notice messages of order/query virtual servers at the Tokyo Stock Exchange. Please refer to Appendix 1 - About Data Distributed to Media (Notices) in "System Interface Specifications for arrowhead - Operation (Order Notice)" to look up file specification for notice message of each virtual server.

*2 Please refer to Appendix 1 - Output to Medium (Notice Information) in "ToSTNeT FIX Interface Specifications (Order/Notice) (Connection)" for the details of file specification for notice message.

(2)   Data format

  For details of data formats regarding arrowhead Notice Data (types of acceptance notice messages and execution notice messages), please refer to "System Interface Specification for arrowhead -Data Format (Order Notice)".

For details of data formats regarding ToSTNeT Notice Data (types of acceptance notice messages and execution notice messages), please refer to "ToSTNeT FIX Interface Specifications (Order/Notice) (Data Format)".

(3)   Character code

  In principle, character codes are JIS8 code for half-width and shift JIS code for double-byte character.

(4)   Compression file format

  Data compression is done by ZIP format.

5.3. Service Schedule

(1) The time to provide the data

This data feed service is available 24 hours a day, 365 days a year in principle.

However, there is a possibility of halting this service during holidays or night. In such case, JPXI will announce the date of service suspension via e-mail beforehand.

(2) The available period to get a file

The start time of file provision is as follows

NO	Section	Provision time
1	arrowhead Notice Data	Between 16:00 and 17:40 for the day (JST)
2	ToSTNeT Notice Data	Between 18:00 and 19:40 for the day (JST)

The period of time for which data can be obtained is as follows for each data provision area described in "3.4. Directory Configuration" and "4.4. Directory Configuration".

(a) On the day data provision area

We will provide Data of the day. File deletion time is from 8:00 am to 8:30 am. The provision period is from the file provision start time to the deletion time. You can get the file any number of times within the file provision period.   (Refer to the deletion image)

Deletion image
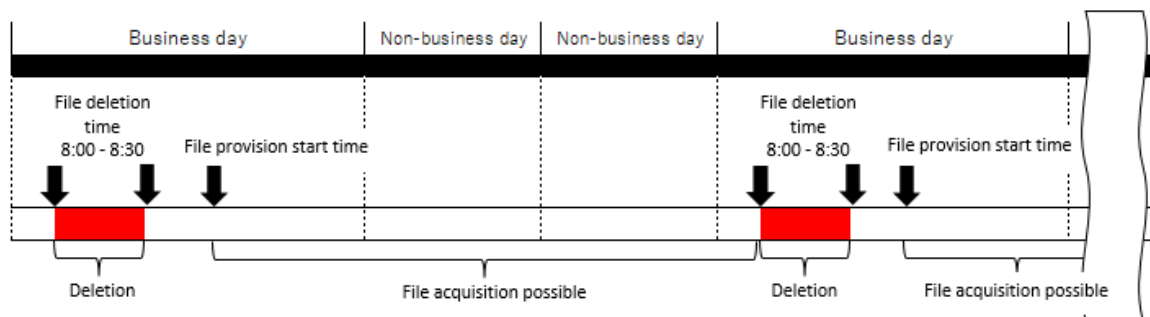
(b) The recent data provision area

We will provide Data of the day and for business days within the last 7 days. Please note that unlike On the day data provision area,the data can be acquired only once. Please if users have requests for

reacquiring the data, please contact the e-mail address, written in "7.Contact – (1) Contact information for inquiries about this specification".

6. Operation at System Failure

6.1. During System Failure

If system failure occurs on this system, TSE will announce via e-mail.

After its recovery, the announcement is made again so that users can get file again.

In some cases, TSE may recover from the failure after the following business day. In addition, when it becomes difficult to provide data until TSE's recovery, TSE will inform you of stopping providing data.

6.2. Data Error

If data error occurs, there is a possibility that the system cannot recreate the file due to its specification. In this case, TSE will alternatively create data and give it to users via e-mail.

If TSE could create another opportunity to get a file again, we will inform users of it later so that they can get a file on their own.

6.3. File Reacquisition

If the time for file acquisition has elapsed due to a failure of the user system, etc. and an user cannot acquire a file, TSE will re-provide the file.

In this case, TSE will send the files by e-mail, etc.

This system stores files up to the last seven days (including non-business days).

*If the files cannot be acquired, please contact TSE with the acquisition time and error message.

7. Contact Information

(1)   Contact information for inquiries about this specification

JPX Market Innovation & Research, Inc. IT Business Department Information system team
e-mail : tmi-contact@jpx.co.jp

(2)   Contact information for call center at night

JPX Market Innovation & Research, Inc.

IT Service Department

Officer of System Operation

Telephone : +81-50-3819-1050

*When inquiring, please inform the operator of using "arrowhead Notice Batch Data File Service" or "ToSTNeT Notice

Batch Data File Service"

8. Revision History

Date	Version	Description
August 26, 2016	0.9	New
November 1, 2016	1.0	3.2. and 4.2. Description about telecommunication equipment has been changed. 3.3. and 4.3. IP addresses have been changed. 5.3.(2) The available period has been changed.

June 28, 2021	2.0	The following description has been changed due to replacement of the Tokyo Market Information (TMI) system.
		  - 3.2. Telecommunication Network
		  - 3.4. Directory Configuration
		  - 4.3. Configuration Information
		  - 4.4. Directory Configuration
		  - 5.3.(2) The available period to get a file
		  - 6.3. File Reacquisition
		  - 7 Contact Information
		
		The following description has been changed due to the addition of ToSTNeT Notice Batch Data File Service.
		  - title
		  - 1 Purpose of this Specification
		  - 3.4. Directory Configuration
		  - 4.4. Directory Configuration
		  - 5.1. Data on the File to be provided
		  - 5.2.(1) Content of the files
		  - 5.3.(2) The available period to get a file

April 4,2022	3.0	Changed corporate name, JPX Market Innovation & Research, Inc. 1.Purpose of this specification Changed Tokyo Stock Exchange Co., Ltd. to JPX Soken Co., Ltd. ※The part described as TSE will be changed to JPX Research Institute. 3.3. Configuration Information ・Add the following. For connendtions in passive mode, the data transfer port will randomly respond between "50000 and 65535".

		【PASSIVE mode】
		Control connection:Client(any)⇒JPXI system(port 20021).
		Data connection:Client(any) ⇒ JPXI system(port 50000 to 65535)(TSE system side notifies the port used).
		【ACTIVE mode】
		Control connection:Client(any)⇒JPXI system(port 20021).
		Data connection:JPXI system(20022 port) → Access client (any)(establish connection from JPXI TSE system side).
		Connection via SFTP
		Add notes.
		・Not accepted in SECSH format.
		5.3. Service Schedule
		(2)　The available period to get a file
		(a) Data for the day
		Corrected as follows.
		・The file is created by the time of provision. The file can be acquired only once, since the file acquired once is deleted and cannot be acquired, The directory with the file name remains even after the file is acquired.
		(b) Historical Data
		The files of ths day will be saved for both "Data of the day"and "Data of the day "and "The recent data" directries respectively at the same timeing. In addition, the directories of each file name existing in archives02 will be deleted together with the directory of the corresponding date after all the files in the date are acquired.
		7. Contact Information
		・Change Tokyo Stock Exchnge, Inc. to JPX Market Innovation & Research, Inc.

| September 30, 2023 | 3.1 | Correction of description of public key
・4. Connection via SFTP
　4.3. Configuration Information

Changed description of directory structure (no change in specification)
・3. Connection via FTP
　3.4. Directory Configuration
・4. Connection via SFTP
　4.4. Directory Configuration

Correction regarding elimination of limit on number of times a file can be retrieved
・5.3. Service Schedule
　(2)　The available period to get a file
・6. Operation at System Failure
　6.3. File Reacquisition

Change of department name
・7. Contact Information
　(1)　Contact information for inquiries about this specification |
| November 5, 2024 | 3.2 | Corrrection due to arrowhead4.0 go-live
　5.2. About the Data Files |

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