

FINRA

fileX User Guide

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Revision History

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0.1.0	Initial Version	08/01/2018	Approved	First draft of fileX service user guide
0.1.1	First Revision	08/15/2018	Approved	Changes to SFTP Hostnames for Production and CT Environment
1.0.0	Second Revision	9/18/2018	Approved	Enhancement to FAQs & Troubleshooting section along with additional minor changes
1.0.3	Third Revision	10/18/2018	Approved	Changed the ACATS and eFOCUS upload/download paths and added FAQs

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1 Introduction

fileX is a centralized, secure file transfer service from FINRA, where customers (member firms and industry participants) can send or receive batch file(s) to FINRA Applications like CRD, eFOCUS or OATS (referred within this document as 'application').

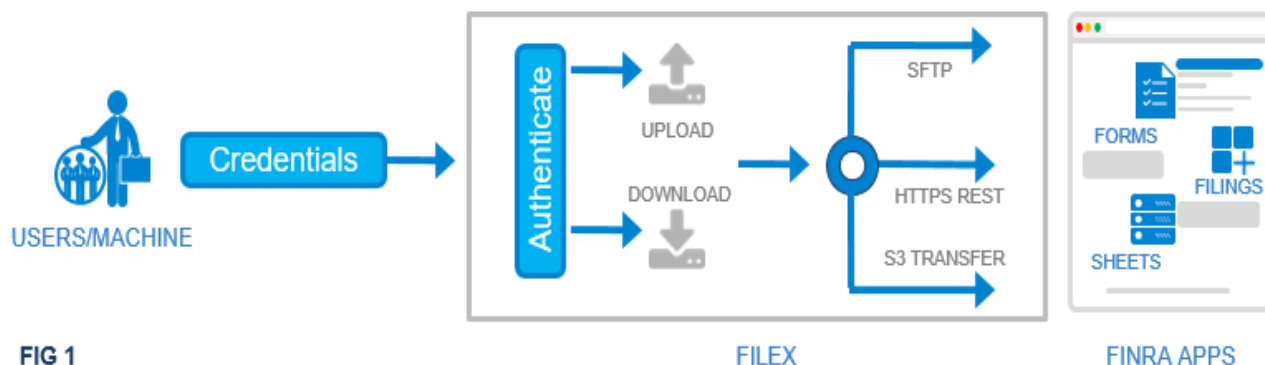



FIG 1


The purpose of this document is to provide details for using fileX services to transfer file(s) with FINRA applications.

fileX supports multiple access methods to send/receive files, and a customer may choose to use any combination of the supported access methods to transfer file(s).

2 Access Methods

fileX supports three access methods for customers to send/receive file(s).

	<p>FINRA customers can upload or download files through Secure File Transfer Protocol (SFTP), a standard file transfer mechanism to securely transmit files between systems/machines. fileX supports the full security and authentication functionalities provided by SFTP. Customers need to configure the fileX Hostname and Port (22) and then connect using their credentials (username/password). Username and Password provided by the customers ensures right privilege/access for the customers based on their identity and privilege configured within FINRA Entitlement Service.</p> <p>Customers need to ensure firewall access is enabled to establish connection to fileX Host/IP and exchange file(s) with FINRA.</p>
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	<p>FINRA customers can upload or download files using REST APIs over HTTPS protocol. Customers can make standard REST API calls to the endpoint URL with valid credentials for authentication. REST API calls are secured through HTTPS based encryption.</p> <p>Username and Password provided by the customers ensures right privilege/access for the customers based on their identity and privilege configured within FINRA Entitlement Service.</p>
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FINRA customers can upload or download files natively through Amazon AWS S3. Customers who are already on Amazon AWS S3 can send /receive files directly from/to their S3 bucket. Customers can make an API call to fileX S3 token service for authentication and file transfer. S3 token returned ensures right privilege/access for the customers based on their identity and privilege configured within FINRA Entitlement Service. Customers can then leverage the token to transfer file(s) with FINRA through fileX service.

3 Environment and Connectivity

FINRA recommends customers to first test their setup on 'Customer Test' environment (also referred as "CT") before cutting it over to 'Production'.

ENVIRONMENT	PRODUCTION	CUSTOMER TEST
Environment description	Live/production environment	Production-like customer test environment
Credentials	Production FINRA Enterprise Web Security (EWS) credentials	Production FINRA Enterprise Web Security (EWS) credentials

3.1 SFTP Transfer Method

Customers need to use the configuration details provided below to leverage SFTP access method within fileX service.

	PRODUCTION	CUSTOMER TEST
SFTP IP	52.207.197.35 35.171.199.181	18.209.156.254 34.225.135.103
SFTP Hostname	filex.finra.org	filex.ct.finra.org ("Customer Test")
Firewall requirements	open port 22 to FINRA server IPs on customer firewall; <i>request that FINRA opens port 22 on FINRA servers to Customer IPs</i>	open port 22 to FINRA server IPs on customer firewall; <i>request that FINRA opens port 22 on FINRA servers to Customer IPs</i>

3.2 HTTPS REST APIs

Customers need to use the configuration details provided below to leverage HTTPS REST access method within fileX service.

	PRODUCTION	CUSTOMER TEST
HTTPS IPs	To be announced	To be announced
REST/HTTPS URL	To be announced	To be announced

Note: HTTPS REST support will be available soon

3.3 S3 DIRECT TRANSFER

Customers need to use the configuration details provided below to leverage S3 transfer access method within fileX service.

	PRODUCTION	CUSTOMER TEST
S3 Direct IP	To be announced	To be announced
S3 Direct Token Service	Customers will leverage a FINRA token service to get access to the FINRA S3 bucket. The URL for the token service is: To be announced	Customers will leverage a FINRA token service to get access to the FINRA S3 bucket. The URL for the token service is: To be announced
S3 Location	Dynamically generated; will be returned by the FINRA token service. Example: <i>s3://5101-9919-3688- eft/<orgId>/crd/in/</i>	Dynamically generated; will be returned by the FINRA token service. Example: <i>s3://7234-0120-8410-ef/<orgId>/crd/in/</i>

Note: S3 Transfer support to be available soon

4 Entitlement & Access Control

FINRA Entitlement Service controls the access and privileges granted to customer accounts to access various services provided by FINRA, including fileX service. Customers will have the option of creating multiple file transfer accounts with different access privileges. Various supported access levels for users includes, but not limited to,

- read only
- submit only
- download only
- submit and download

This allows customers to support separation of duties within the firm across different departments or people. Administrator (typically SAA) of the firm need to contact FINRA Entitlement Service to create user accounts and provision entitlements.

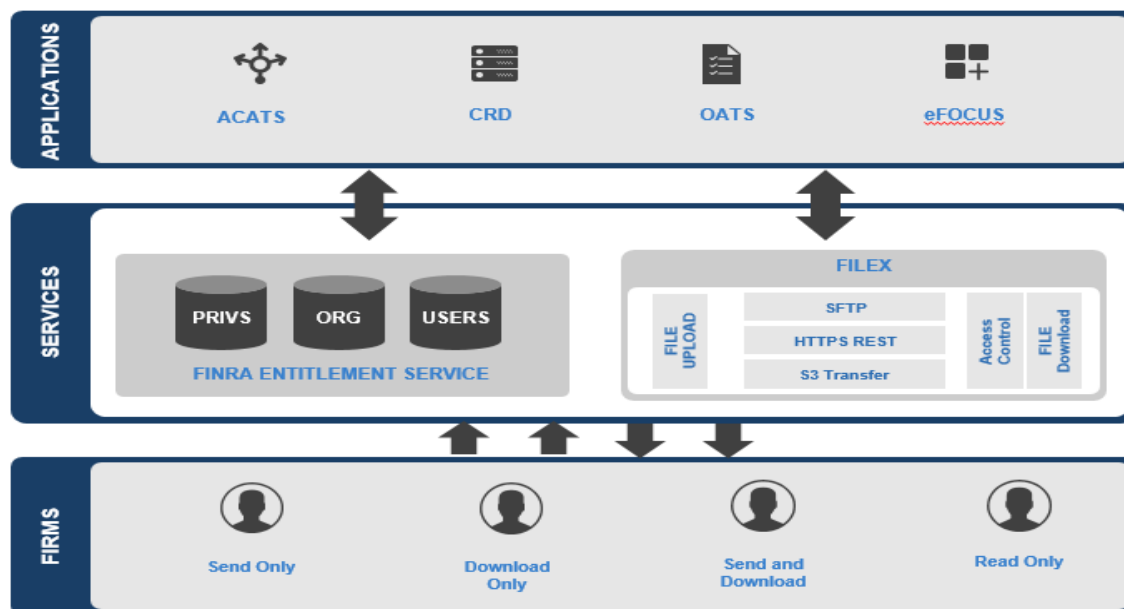


FIG 2

fileX leverages FINRA provisioned entitlements to control access to specific upload/download directories or the respective HTTPS REST endpoints. For example, once the CRD application is onboard to the fileX platform, access to the CRD upload and download capabilities will be controlled as indicated in the table below:

CRD FTP - Send Files Only	Account will see only an <i>incoming</i> or <i>in</i> or <i>drop-off</i> directory for CRD. Account will be able to PUT files in the <i>in</i> directory.	Account will be able to perform only the upload POST action for CRD.	Account will be able to copy files to the <i>incoming</i> or <i>in</i> S3 location for CRD.
CRD FTP - Send and Receive Files	Account will see an <i>incoming</i> or <i>in</i> or <i>drop-off</i> directory for CRD, as well as an <i>out</i> or <i>outgoing</i> or <i>pickup</i> directory, and possibly an <i>ack</i> directory. Account will be able to PUT files in the <i>in</i> directory and GET files from the <i>out</i> and <i>ack</i> directories.	Account will be able to perform the upload POST and the download GET actions for CRD.	Account will be able to copy files to the <i>incoming</i> or <i>in</i> S3 location for CRD. Account will be able to retrieve files from the <i>outgoing</i> or <i>out</i> and <i>ack</i> directories for CRD.

Currently, entitling SFTP or machine-to-machine account is a paper-based process handled by FINRA entitlement service. If you have any question around FINRA Entitlement program, please check <https://www.finra.org/industry/entitlement-program> for the relevant information

5 Use Cases

fileX Service supports various dataflow use cases which are listed below. These use cases are listed for all the transfer methods supported within fileX like HTTPS REST, SFTP and S3 TRANSFER

5.1 SFTP Inbound Use Case

Pre-Conditions

- Username, Password, Entitlements for the user have been provisioned
- Firewalls on both sides (FINRA, External Customer) have rules in place to allow port 22 traffic to flow

Steps

- User makes SFTP connection to fileX server and logs in
- The directory structure for that user is dynamically provisioned (based on the user's entitlements)
- User changes directory to appropriate drop-off directory for the file(s) being transferred
- User PUTs the file(s) into that drop-off directory
- User logs out

5.2 SFTP Outbound Use Case

Pre-Conditions

- Username, Password, Entitlements for the user have been provisioned
- Firewalls on both sides (FINRA, External Customer) have rules in place to allow port 22 traffic to flow

Steps

- User makes SFTP connection to fileX server and logs in
- The directory structure for that user is dynamically provisioned (based on the user's entitlements)
- User changes directory to appropriate pickup directory for the file(s) being transferred
- User GETs the file(s) from that pickup directory
- User logs out

5.3 API/HTTPS Inbound Use Case

Pre-Conditions

- Username, Password, Entitlements for the user have been provisioned
- User need to know the HTTPS REST endpoint

Steps

- User makes a REST API call to the fileX service endpoint to upload file

5.4 API/HTTPS Outbound Use Case

Pre-Conditions

- Username, Password, Entitlements for the user have been provisioned
- User need to know the HTTPS REST endpoint

Steps

- User makes a REST API call to the fileX service endpoint to download file

5.5 Direct S3 Inbound Use Case

Pre-Conditions

- Username, Password, Entitlements for the user have been provisioned
- Update firewall to allow access to AWS S3 service

Steps

- User makes an API call to FINRA token service (URL to be announced soon), with valid username and password; response is a temporary token that allows access to a specific S3 location. Token is valid for ONE hour.
- Token contains:
 - Access key
 - Secret key
 - Session token
 - S3 location URL
- User leverages the token when making a S3 copy (download) call using any of S3 APIs, command-line, or other supported tools.

5.6 Direct S3 Outbound Use Case

Pre-Conditions

- Username, Password, Entitlements for the user have been provisioned
- Update firewall to allow access to AWS S3 service

Steps

- User makes an API call to FINRA token service (URL to be announced soon), with valid username and password; response is a temporary token that allows access to a specific S3 location. Token is valid for ONE hour.
- Token contains:
 - Access key
 - Secret key
 - Session token
 - S3 location URL
- User leverages that token when making a S3 copy (download) call using any of a variety of S3 APIs, command-line, or other tools.

6 Troubleshooting & FAQs

1. What are the supported and unsupported SFTP actions?

SFTP commands supported by fileX: put, get, cd, ls

SFTP commands not supported by fileX: mkdir, rmdir, ln, chgrp, chown, chmod, move, rename.

fileX does not support put append or put resume

2. What happens when a file is re-uploaded (uploaded twice)?

FINRA handles every uploaded file as a separate submission and delivers to the application that processes that submitted data. Please contact the FINRA support team for guidance in handling re-uploads in specific scenarios.

3. Can I do recursive calls to upload multiple files through fileX SFTP service?

Since users do not have access to create directories, fileX doesn't allow users to do recursive calls.

4. How do I view the files that I submitted?

This depends upon the application that processes the submitted data. Some applications might provide a location that will allow you to view the submitted files. In other cases, it is possible to make a special request to download a submitted file - this is a one-off manual activity for the fileX support team that may incur a charge.

5. How to track a file's progress?

Programmatic file tracking capability is planned for a future release. Please contact the FINRA fileX support team at fileX-Support@finra.org in the meanwhile to check the status of a given submission.

6. Is there any restriction on the file name?

fileX service allows all letters(aA-zZ), numbers (0-9) and special characters like: ! @ , ; & - = ' _ .

7. Is there any restriction on the file size?

fileX service doesn't not put any limit on the file size. However it is recommended to keep the file size under 60GB to have better control over the file transfer process.

8. Can I change the file after upload?

fileX doesn't allow any changes/operations to the file like changing the owner(CHMOD) or renaming the file. If customers perform these tasks after uploading the file, it would become unusable and customers need to upload the file again.

9. My file is not immediately getting processed?

This may happen due to variety of reasons ranging from slow network connection to large file size. It is recommended to wait for few minutes for fileX service to pick up the file(s) before reaching out to FINRA support team.

10. I am not able to see the folder to upload/download the file?

This could be due to lack of proper/required FINRA entitlements to the specific application you are trying to upload/download. Please contact FINRA support team.

10. I am not able to upload any file?

This could be due to insufficient privileges with your account. Please contact FINRA support team.

11. Am I allowed to rename or delete file/s in download location?

Users do not have privilege to rename, edit or delete files at the download locations

12. How many files I can transfer together using fileX service?

SFTP and S3 access methods do not have any limit on the number of files to be transferred but HTTPS REST allows only ONE file to be transferred at a time.

13. What happens when two sessions from the same firm log in with the same entitlements?

Both sessions will see the same directories and files. fileX service moves the file(s) immediately after the upload is complete, so a file that gets uploaded in session 'A' may "disappear" from view of session 'B'.

14. Is there a SFTP Client UI to exchange file(s) through fileX?

fileX service with FINRA is tested with some SFTP clients like FileZilla, SecureFX and WinSCP.

15. I am a new member/customer of FINRA. How do I get access to the File Transfer?

Please check <https://www.finra.org/industry/entitlement-program> for the relevant information.

16. I am not able to log in. What should I do now?

Your account may not be active or locked out. Also check with FINRA support team to ensure correct privileges are assigned to your account.

17. My account got locked out, how do I reset my account?

If you try incorrect password 3 times, you will get locked out. You need to contact FINRA support to get the account unlocked.

18. Do you support SSH Keys?

It will be supported in a future release.

19. My network got disconnected while I was uploading the file, what should I do now?

You may still see the file in the folder but it is highly recommended that you upload the file again. fileX service from FINRA must receive upload complete message from client applications before it starts processing file(s). Also ensure that you do not change the original file name.

20. I am getting network connection error while trying to use the application?

Network connection error may occur because IP Address or DNS names are not whitelisted by customer's IT Department. It could also happen due to encryption key related issues. Please ensure you have whitelisted the IP Addresses as required and verify outflow of traffic at your end. If the problem still persists, please contact FINRA support team to troubleshoot.

21. I can already send/receive files through FINRA. Do I need to whitelist IP Addresses again?

No, if you have already whitelisted IP addresses through FINRA before, we will retain those whitelisting details to make it seamless migration to fileX service.

22. How can check fileX service status?

You can check the status of the fileX service through the below health check URL:

status.filex.finra.org

23. SFTP Client getting 'Too Many Connection Error'

This generally happens when customer is trying to check for a new file frequently. If you are expecting a file every week or month, it is recommended to establish connection and check for the file on a daily basis. If you are getting files daily or twice a day, it is recommended to check for the file every 4 hours.

24. Session getting timed out during File transfer

This generally happens if the size of the file is too large. Please make sure the size of the file you are uploading is not larger than 60GB. If you are still getting this error, reach out to FINRA Helpdesk.

7 Contact Information

Please call FINRA Gateway Call Center (800-321-6273) or visit the web page at https://tools.finra.org/cc_support/

8 Supported Applications and Relevant Parameters

FINRA will migrate applications to leverage fileX service to transfer files. Find below the directory structure and retention policy of the 2 applications (eFOCUS & ACATS) which will migrate to fileX service soon.

Key:

- *Immediately Moved* - these files are moved out of the indicated directory as soon as they are processed. There should be no expectation that the files in these directories will persist in the directory beyond the transfer itself.
- *N days* - minimum number of days that the files will remain in the indicated directory. Files will not be removed or moved from the directory before N days have passed.

Application Name	Directories Used	Retention Used
eFOCUS	{orgId}/focus/in {orgId}/focus/out	Immediately Moved for upload and 30 days for download
ACATS	{orgId}/acats/in	Moved immediately

Note: Parameters for other FINRA apps will listed here as they migrate over to fileX