FINRA CAT Connectivity Supplement for Industry Members

Version 1.0

FINra CAT

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1. Introduction

Industry Members and CAT Reporting Agents ("CRA") must establish and maintain redundant connectivity to CAT to support daily data submissions. This document describes the methods available for Industry Members and CRAs to connect to the CAT system.

Industry Members and CRAs interface with the CAT System using the CAT File Transfer and/or the CAT Reporter Portal as described in Section 2. Access to CAT requires at least one of the connectivity methods described in Section 3. The combinations of Connectivity and Interface Methods along with the dates when Connectivity Testing may begin are shown below in Table 1.

Table 1: Interface and Connectivity Methods Availability for Network Testing

Connectivity Methods	Interface Methods	
	CAT File Transfer	**CAT Reporter Portal**
Private Line provided by a MNSP	October 2019	October 2019
AWS PrivateLink	To Be Announced[1]	To Be Announced[2]
CAT Secure Reporting Gateway	Not Applicable	November 2019

1.1. Support

Industry Members and CRAs should contact the FINRA CAT Help Desk for support, to initiate a request, and for any changes to connectivity methods.

Questions related to this document may be directed to the FINRA CAT Helpdesk at 888-696-3348 or at help@finracat.com.

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[1] The AWS PrivateLink service is currently under development. Availability will be announced along with updated instructions on how to leverage PrivateLink for cloud-to-cloud connectivity.

[2] Refer to footnote 1

2. CAT Interface Methods

The interface methods available to Industry Members and CRAs to submit data and retrieve reporting feedback include CAT File Transfer and the CAT Reporter Portal.

2.1. CAT File Transfer

The CAT File Transfer method is an automated, machine-to-machine interface utilizing the Secure File Transfer Protocol ("SFTP") for file submissions, acknowledgements, rejections and corrections. CAT File Transfer may be accessed via Private Line or AWS PrivateLink.

SFTP enables Industry Members and CRAs to create machine-to-machine connections to securely transmit data and retrieve data from FINRA CAT. To use SFTP, FINRA CAT requires each Industry Member and CRA to provide a defined, static set of IP addresses as the source of the file transfers. SFTP requirements include:

- SSH Key Exchange Algorithms
    - diffie-hellman-group-exchange-sha256
- SSH Ciphers
    - aes128-ctr, aes192-ctr, aes256-ctr
- SSH MAC Algorithms
    - hmac-sha256, hmac-sha256@ssh.com
- A connection with bandwidth appropriate for the file sizes submitted
- IP addresses provided to FINRA CAT to whitelist Industry Member and CAT Reporting Agent server(s)

2.2. CAT Reporter Portal

The CAT Reporter Portal is a web interface utilizing secure encryption protocols (HTTPS/TLS) and multi-factor authentication (MFA) for submissions (by either direct entry or manually uploaded file), rejections, corrections, and compliance reports. The CAT Reporter Portal may be accessed via the Private Line, the AWS PrivateLink or the CAT Secure Reporting Gateway.

The Reporter Portal supports a browser-based, manual upload of files. Reporter Portal requirements include:

- TLS 1.2 requiring at a minimum NIST compliant 128 bit ciphers
- HTML5 Compatible browsers, including: Chrome, Firefox, and Safari

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- Multi-factor authentication setup[3]

2.3. CAT Data and Feedback

The following identifies the types of CAT Data and Feedback with the respective interface methods available for each:

Table 2: CAT Data Submission and Feedback Interface Methods

CAT Data Submission and Feedback	CAT File Transfer	CAT Reporter Portal
Submission of CAT Events and Resubmission of Rejected Files/Records, Corrections and Deletions	✓	✓ *Files submitted through the CAT Reporter Portal are limited to 100,000 records*
File Status Retrieval	✓	✓
Reporting Statistics		✓
Interactive CAT Reportable Event Entry		✓
Error Feedback	✓	✓
Corrections Feedback		✓
Account Maintenance		✓
Establishment of Reporting Relationships and ATS Order Types		✓

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[3] More details on the Multi-factor authentication setup and required software will be published in a future version of the FINRA CAT Industry Member Onboarding Guide

3. Connectivity Methods

Industry Members and CRAs may connect to the FINRA CAT system by either Private Line, AWS PrivateLink, or the CAT Secure Reporting Gateway.

3.1. Private Line

Industry Members and CRAs opting to use Private Line connectivity for CAT File Transfer (SFTP) requires those Industry Members and CRAs to engage a managed network service provider (MNSP) to establish redundant private lines into the FINRA CAT system. Alternatively, Industry Members and CRAs may choose to use AWS PrivateLink, see Section 3.2, as the primary and/or backup connection for their CAT File Transfer.

The MNSP serves as a connectivity service provider that facilitates carrier-based network connectivity to subscribers while providing traffic aggregation and routing services into the FINRA CAT System within an Amazon Web Services (AWS) cloud infrastructure. The MNSP offers the connectivity service for a monthly fee. Connectivity options include the use of private lines that may be established using either wide-area network circuits or data center cross-connects where available. In addition, the MNSP provides help desk support, trouble resolution, and escalations to subscribers, as well as, program management and status reporting through deployment.

CenturyLink is the MNSP that offers private line connectivity into CAT. Industry Members and CRAs must establish a contractual relationship with the MNSP[4]. CenturyLink provides bandwidths ranging between 10 Mbps and 1 Gbps of throughput with redundant connectivity options that are necessary to meet technical specifications requirements.

Please note the following:

- Circuit delivery times can range widely and depend on the provider's network status at any locations
- Industry Members wishing to order connections should directly engage CenturyLink to begin the ordering process
- Industry Members and CRAs may begin to engage CenturyLink to begin the process of establishing private line connectivity through Industry Member's and CRA's existing sales contacts or by contacting CenturyLink by emailing FINRA_CAT-Services@centurylink.com or by phone call to **888-870-8402**.
- Connectivity will be available in October 2019 for network testing.

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[4] An additional MNSP may be considered depending on demand from Industry Members and CRAs.

****NOTE****

Industry Members and CRAs should engage CenturyLink immediately upon receiving the connectivity supplement in order to begin the process of evaluating the status and estimated delivery time for connections to their location(s).
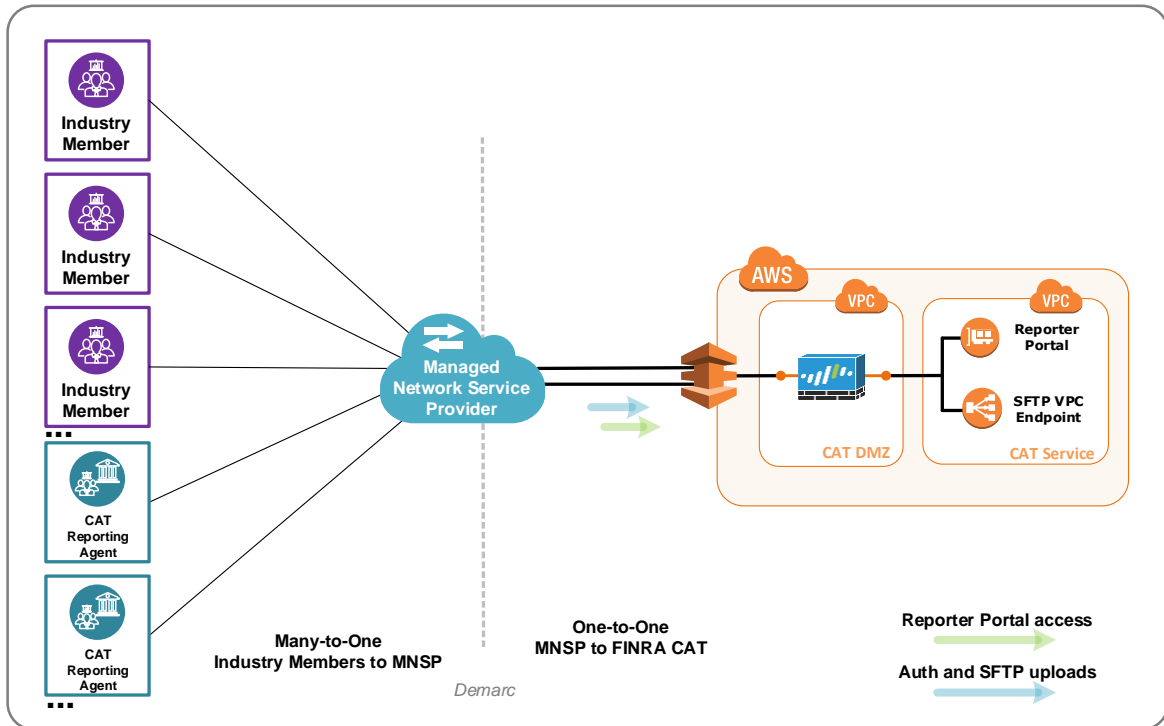

Figure 2: High Level Managed Network Service Provider Network Diagram

3.2. AWS PrivateLink

Industry Members and CRAs with existing operations and data processing presence in the AWS cloud (VPC) may establish a cloud-to-cloud connection using the AWS PrivateLink service for an associated AWS fee. An AWS PrivateLink connection enables communication from an Industry Member's AWS VPC to the FINRA CAT VPC without traversing the public Internet. CAT File Transfer (SFTP) and the CAT Reporter Portal can be accessed via AWS PrivateLink.

Establishing AWS PrivateLink connectivity from an Industry Member's and CRA's VPC in the US-East-1 region to the FINRA CAT VPC can be accomplished by executing an AWS CloudFormation template. Industry Members and CRAs will need to provide their AWS account numbers to FINRA CAT in order to facilitate PrivateLink access. Upon providing this information to FINRA CAT and completing the enrollment process, the execution of the FINRA CAT CloudFormation template creates the necessary resources in the Industry Member's and CRA's VPC and automatically establishes VPC-to-VPC

connectivity to FINRA CAT. The template optionally creates AWS-hosted DNS records for CAT services that will be used by Industry Member and CRA client software. Industry Members and CRAs may also select to configure DNS records manually, for example, to use a different DNS service.

The AWS PrivateLink service is currently under development. Availability will be announced along with updated instructions on how to leverage PrivateLink for cloud-to-cloud connectivity. Industry Members and CRAs interested in AWS PrivateLink should contact the FINRA Help Desk at 888-696-3348 or at help@finracat.com.

AWS PrivateLink pricing information is available at: https://aws.amazon.com/privatelink/pricing/. More information on the AWS Cloud Formation service can be found at https://aws.amazon.com/cloudformation.
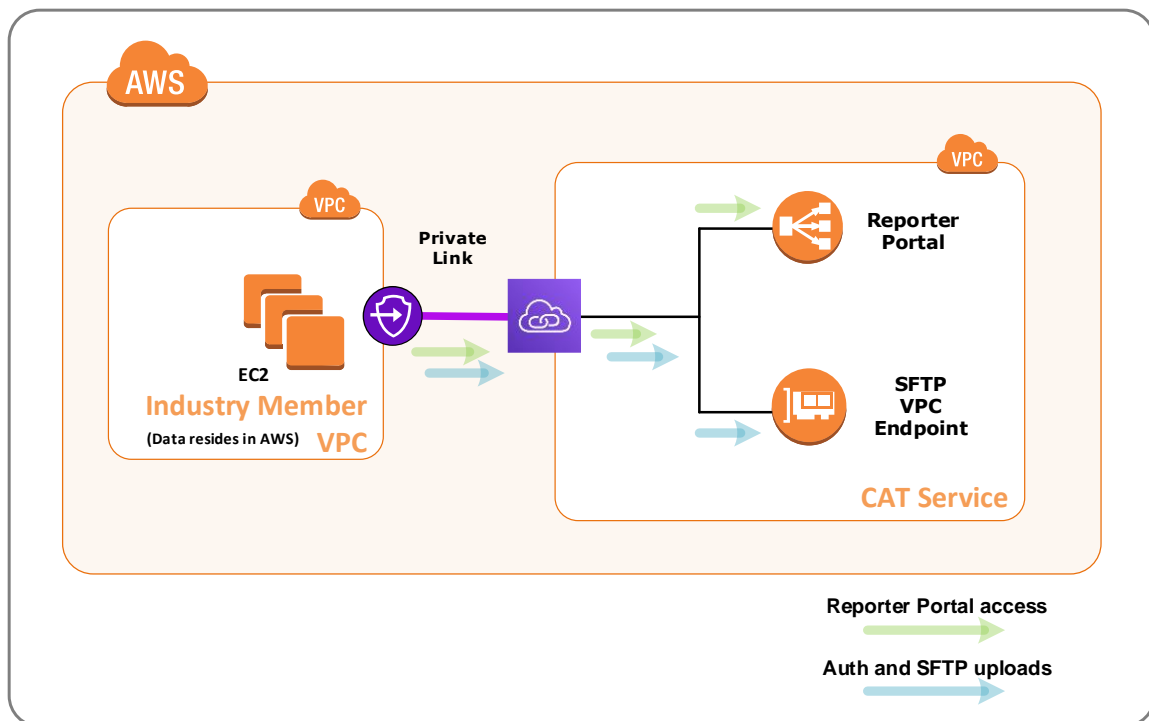

Figure 3: High Level AWS PrivateLink Diagram

3.3. CAT Secure Reporting Gateway

Industry Members and CRAs using public lines will only be able to access the CAT Reporter Portal[5] by establishing an authenticated, encrypted connection through the CAT Secure Reporting Gateway (SRG). The CAT Secure Reporting Gateway requires multi-factor authentication (MFA) to establish a secure,

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[5] CAT File Transfer (SFTP) is not available through the SRG.

encrypted session before accessing the CAT Reporter Portal. The CAT Secure Reporting Gateway meets all Plan requirements for data connectivity and encryption, specifically: 1) Network isolation limiting access to only authorized endpoints, 2) Strong authentication using MFA, and 3) Encryption of the data in transit. The CAT SRG does not limit Industry Members with respect to their choice of Internet Service Providers.

The CAT Secure Reporting Gateway enables end users with secure access to CAT Reporter Portal via a web browser. The SRG does not require any specialized client software to be installed on the Industry Members' or CRAs' computers other than a modern web browser as specified in Section 2.2. The SRG provides refined control over the web applications through the use of policy manager controls and content inspection of the application data. Through the use of the SRG the client computer never communicates directly with the CAT web application.
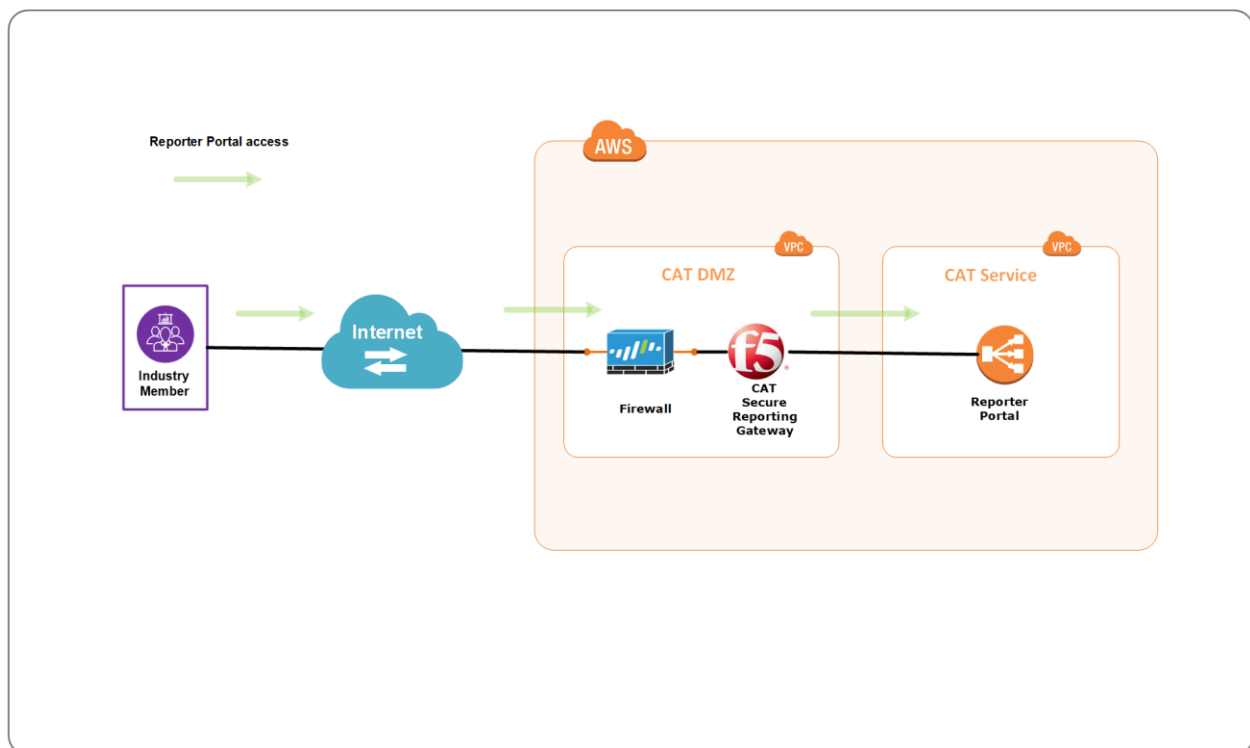

Figure 4: High Level CAT Secure Reporting Gateway Diagram

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4. Connecting to the CAT System

Testing the ability to connect to the CAT system is a required step documented in the **FINRA CAT Industry Member Onboarding Guide** located at https://www.catnmsplan.com/registration/. Once the requirements for establishing Access and Connectivity have been completed as per this document, Industry Members and CRAs must test connecting to the CAT System for each interface method that will be used to report to CAT and/or retrieve associated feedback.

4.1. CAT File Transfer

The following URLs are required to access the CAT system using SFTP:

Table 3: SFTP URLs

	Production	Industry Test
Private Line	sftp.catnms.com	sftp.ct.catnms.com
AWS Private Link	To Be Announced[6]	To Be Announced[7]

The steps to test network connectivity to the CAT File Transfer interface method via SFTP:

1. Connect to filetransfer.ct.catnms.com (sftp {user}@sftp.ct.catnms.com). Note: Refer to the table above for the URL associated with the selected Connectivity Method
2. Perform an "ls" operation and see the first directory, which would be named for the CRD # of the CAT SFTP User.

4.2. CAT Reporter Portal

The following URLs are required to interface the CAT Reporter Portal:

Table 4: CAT Reporter Portal URLs

	Production	Industry Test
Private Line	reporterportal.catnms.com	reporterportal.ct.catnms.com
AWS Private Link	To Be Announced[8]	To Be Announced[9]
CAT Secure Reporting Gateway	srg.catnms.com	srg.ct.catnms.com

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[6] The AWS PrivateLink service is currently under development. Availability will be announced along with updated instructions on how to leverage PrivateLink for cloud-to-cloud connectivity.
[7] Refer to footnote 6.
[8] Refer to footnote 6.
[9] Refer to footnote 6.

Steps to test network connectivity to the CAT Reporter Portal:

1. In a browser, go to https://srg.ct.catnms.com . Note: see table in URLs section above for correct the URL for your Connectivity Method.

2. Upon login using the CAT User Account established during the CAT Entitlement Onboarding step, an Under Construction page will be displayed, which demonstrates a successful login while the CAT Reporter Portal is being built.