Sterling File Gateway

Overview

Version 1.1

Sterling Commerce

An IBM Company

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Overview

About Sterling File Gateway

Sterling File Gateway is an application for transferring files between partners using different protocols, file naming conventions, and file formats.
Sterling File Gateway utilizes the Sterling B2B foundation, which includes Gentran Integration Suite, Sterling Standards, and the Sterling platform, to deliver capabilities similar to those found in Sterling Advanced File Transfer and Connect:Enterprise for Unix, while adding new features and functionality.

Use Sterling File Gateway for movement of large and high-volume file transfers, with end-to-end visibility of file movement in a process-oriented and highly-scalable framework that alleviates file transfer challenges, such as protocol and file brokering, automation, and data security.

Sterling File Gateway supports integration with Gentran Integration Suite Mailbox, Sterling Control Center, Connect:Direct and Connect:Enterprise for Unix server products. Sterling File Gateway, which is delivered atop the Gentran Integration Suite platform with a unique application URL, provides single sign on access to the Gentran Integration Suite admin console through menu selection.

Prerequisites

You must have the following in order to install Sterling File Gateway:
- A relational database, installed and configured for use
- Appropriate connection credentials for performing the installation
- Administrative access on the machine where the install will be performed
- Adequate disk space on the machine where the install will be performed
- Gentran Integration Suite 4.3.13 installation with at least a core license
- Sterling File Gateway license

Features

Sterling File Gateway provides many features:
- File/File name Transformations – Flexible and powerful way to map input to output file names, leveraging regular expressions; support for system-wide and group policies as well as partner-

specific definitons; pre-built support for common file processing tasks: compression/ decompression, and PGP encryption/decryption, and signing.

- File Transfer Visibility – Events recorded for monitoring and reporting; detailed tracking for input-output file structure processing and dynamic route determination (run-time resolution decisions); ability to view all Sterling File Gateway data flows for all users and filter such views.

- Replay/Redeliver – One click replay/redeliver capability that allows users to reprocess a transmission from the beginning or to resend just the processed file to a specific delivery destination.

- Notifications – partners and operators can subscribe to events to be notified about them by email.

- Predefined business processes – define common behaviors in file-transfer scenarios, reducing the need for customization.

- Extensibility – custom features (for example, custom event codes) can be added to support unique scenarios.

- Broad Communications Protocol Support – FTP, FTP/S, SSH/SFTP, SSH/SCP, and Connect:Direct are supported upon installation, and additional protocols (such as AS2, AS3, or Odette FTP) may be configured through use of the extensibility feature.

- Partner Interface (*myFileGateway*) – Web browser-based interface that enables partners to upload/ download files, subscribe to notifications of events, manage passwords, search and view file transfer activity, and generate reports about file transfer activity.

- Flexible Mailbox Structures – Ability to specify mailbox structures that leverage pattern matching policies and specify attributes that must be true of all partners or a subset of partners

- Dynamic Routing – Consumer derived at run-time, either through mailbox structure, business process-derived consumer name, or map-derived consumer name.

- Partner Onboarding – Easy-to-use graphical user interface to onboard partners and configure the various combinations of communication protocols to enable Sterling File Gateway operations.

License Requirements

Sterling File Gateway can only be installed as part of a Gentran Integration Suite 4.3.14 or later installation. The Gentran Integration Suite installation must be completed before the Sterling File Gateway installation can begin. Therefore, a Gentran Integration Suite license is required.
In addition, a Sterling File Gateway license is required to perform the Sterling File Gateway installation. The Sterling File Gateway license includes components needed for complete functionality:

- Sterling File Gateway Core
- Sterling File Gateway Extensibility
- Mailbox
- PGP
- Connect:Direct Server adapter
- FTP Server adapter
- FTP Client adapter
- HTTP Server adapter
- HTTP Client adapter
- SFTP Server adapter
- SFTP Client adapter

Sterling File Gateway and Gentran Integration Suite must be installed with the same build at all times. That is, if you update Gentran Integration Suite, you must update Sterling File Gateway to the same build.

Terms and Concepts

The following terms pertain to Sterling File Gateway:

Term	Definition
Arrived File	A message in a mailbox that Sterling File Gateway monitors, causing Sterling File Gateway to perform some activity on it.
Communication Sessions	Records of a complete set of steps involved in all protocol level interactions between the client and server, typically performed to facilitate a file transfer, from connection to disconnection. Contain the authentication, authorization, file transfer, or non-file transfer records, for all communication activities that adapters participate in, whether or not data actually gets transferred.
Consumer	Partner who receives files directly or in a mailbox.
Consumer File Structure (CFS)	Description of consumer requirements for file naming and format structure.
Dataflows	Dataflows aggregate all documents that are related to each other by parent-child relationships, and annotates them with correlation entries and file transfer events.
Delivery	A record of the activities Sterling File Gateway took to deliver a file to a specific consumer endpoint.
Delivery Channel	Consumer side of the routing channel which specifies a consumer file structure and a mailbox delivery destination. There can be more than one delivery channel for each routing channel.
Event	Description of a distinct routing activity occurrence.
Fact	A named fragment of information gleaned from a file as it is identified and matched against routing channels. Facts can be derived from: - Part of a file name - Time the message arrived from the producer - Name of the producer - Name of the consumer
File Layer	Description of format. A file may encapsulate one or many other files. An example of this is a ZIP file that contains a JPEG file. In this example, the ZIP file is a container layer because it contains another file. The JPEG file is a non-container layer.
File Structure	Description of a file's basic content structure and naming conventions. There are two types: - Consumer File Structure - Producer File Structure

Term	Definition
Integration Architect	Type of user who creates partner groups, communities, routing channel templates, producer file structures, and consumer file structures .
Mailbox	A repository for messages with a hierarchical structure similar to files and directories on Windows and Unix.
Notification	Email sent to a subscriber to tell an event has occurred.
Mailbox Virtual Root	A position in the mailbox hierarchy associated with a user account that acts as the user's root directory.
Operator	Type of user who monitors system status and file activity. Troubleshoots problems with Partner activity, using logs, reports, and notifications.
Partner User	Type of user who uploads and downloads files from myFileGateway portal and works on behalf of the Partner. Views their own activity, specifies notifications to receive, and generates reports. Partner users are producers and consumers.
Producer	Partner who creates and sends files.
Producer File Structure (PFS)	Description of producer requirements for file naming and structure.
Redeliver	The operation that an Operator performs on a delivery, to reattempt that delivery. This can only be performed if a delivery has been attempted.
Regular Expression	An industry standard pattern-matching language. Used in Sterling File Gateway for matching file names and gathering facts related to file names.
Replay	The operation that an Operator performs on a file, to cause the system to reprocess that file again, as if it were sent again by the Producer.
Route	A route is a record of all the activities performed on a Routable Payload, once it known who the consumer is. Each Routable Payload is associated with a route. A replay of a route results in a new route and new file.
Route Details	Route details contain the details about a route, including the consumer, producer, list of deliveries that were attempted to the consumer and the events generated while processing the Route, start and end times, any errors that occurred, and other details. Hyperlinks are provided to data flows, communication sessions, and business processes related to the route.
Route Provisioner	Type of user who creates and manages partners, group membership, and routing channels.
Routing Channel	Matches incoming producer files to consumers according to the requirements in the routing channel template, then transforms and sends them to the correct consumer in the format and name specified in the consumer file structure.

Term	Definition
Routing Channel Template	The routing channel template (RCT) defines the structure through which routing occurs. The RCT specifies producer and consumer mailbox structures and file structures. It functions as a policy that mandates which partners can participate in various file transfer scenarios and which file formats they must use. An RCT is required to create a routing channel, which establishes the producer-consumer relationship for file transfers.
Routable Payload	A file that is eligible to match a routing channel. The top-level file (exactly as sent by the producer) is always routable; if the top-level file is a ZIP file, then the files contained within that ZIP file are also routable. A single payload must not match multiple routing channels. However, because a ZIP file and its constituents are distinct routable payloads, each is independently routed and can match different routing channels.
System Administrator	Type of user who installs and maintains system software. Creates initial users. Configures services, adapters, perimeter servers, certificates and the database for sending and receiving files.

Types of Users

There are several types of users that use Sterling File Gateway.
The personas that use Sterling File Gateway are:

- System Administrator - installs and maintains system software. Handles functions accessed in Gentran Integration Suite. Creates initial administrative users. Configures services and adapters for sending and receiving files. Manages extensibility features. Moves resources and configurations between systems.

- Integration Architect - creates partner groups, communities, routing channel templates, producer file structures, and consumer file structures.

- Route Provisioner - creates and manages partners, group membership, and routing channels.

- Operator - monitors system status and file activity. Troubleshoots problems with Partner activity, generates reports, uses logs, and subscribes for their own notifications.

- Partner User - uploads and downloads files from myFileGateway. Views their activity, subscribes for their notifications about their activities, manages their password, and generates reports about their activities. Are producers and consumers.

Comparison of AFT and Sterling File Gateway

Gentran Integration Suite Advanced File Transfer (AFT) represented a first generation solution to enable enterprise-level file transfer. It offered consolidated partner configuration and onboarding and enabled streamlined definition of file exchange relationships.
Sterling File Gateway represents the next generation for enterprise-level file transfer. It includes all the features of AFT, and adds the following new capabilities:

- A Partner still belongs to exactly one community but it can belong to more than one partner group.
- An Integration Architect can configure File Gateway's mailbox hierarchy to match that which Partners are already familiar with.
- The structure for mailboxes is flexibly defined.
- Sterling File Gateway can perform format unwrapping and wrapping for the ZIP, GZIP and PGP formats.
- Sterling File Gateway can extract facts from file names and use them for routing and delivery, and as input for generating the file name the consumer sees.
- Producer and consumer mailboxes are no longer tightly constrained as they were with AFT. Both producer and consumer mailbox patterns can be built from facts available when a routing channel is provisioned; consumer mailbox patterns can also include facts that are only available when a file is being routed.

About AFT Migration to Sterling File Gateway

AFT customers who want to take advantage of the Sterling File Gateway application will find built-in capabilities to migrate them to the new system with minimal effort. After migration, all functionality from AFT is preserved in Sterling File Gateway.

Important considerations to keep in mind for migrating customers:

- The AFT interface will be substantially modified and the current interface will be unavailable when Sterling File Gateway is installed.
- The Advanced File Transfer tab in Gentran Integration Suite will be available, but limited to offer AFT Route Activity and Reporting links so that a legacy AFT user can still view old AFT data for as long as it exists in the system.
- Migration creates routing channels and standard AFT routing channel templates (prefixed with AFT) in Sterling File Gateway. Migration also creates custom AFT routing channel templates for all migrated partners according to the consumer identification policies selected in AFT.
- The evaluation mode of all AFT routing rules are changed to Evaluate Manually at migration, effectively disabling them. They are replaced with a single Sterling File Gateway routing rule with an evaluation mode of Evaluate Automatically.
- A Partner that has been migrated to Sterling File Gateway remains in the Community they were originally created in, but they are also associated with the partner group AllPartners, as well as the partner groups AFT_PRODUCER_GROUP and/or AFT_CONSUMER_GROUP based on their role as defined in AFT.
- The PGP configuration used in AFT remains unchanged after migration; the PGP Profile named "AFTPGPProfile" continues to be used in Sterling File Gateway as well as the command line adapter instance named "PGPCmdlineService".
- After migration, AFT producers are associated with routing channel templates that replicate those producers' prior consumer identification policies. This is also true of custom consumer identification policies in AFT.
- Custom customer identification is achieved differently in Sterling File Gateway than in AFT. For an AFT producer that has a custom consumer identification policy, create that producer in Sterling File Gateway.

About the Web Application *myFileGateway*

Partners send and retrieve files from the Web application *myFileGateway*. Log on to *myFileGateway* requires a valid user account. This user account is created when a Route Provisioner onboards the Partner.

From within *myFileGateway*, Partners can:

- Upload or download files.
- Search for routes they participated in.
- View recent activity and status for file transfers they participated in.
- Generate reports for activity they participated in.
- Subscribe to notifications.

Configuration Checklist for System Administrators

Before installing Sterling File Gateway, review this checklist to understand the overall process. The following table provides the process for implementing Sterling File Gateway:

Stage	Description
1	Create an architectural design plan.
2	Determine system and hardware requirements.
3	Obtain product training.
4	Install Gentran Integration Suite.
5	Install Sterling File Gateway.
6	Tune Gentran Integration Suite.
7	Configure permissions and set up accounts for administrative users (Operators, Route Provisioners, and Integration Architects).
8	Configure services and adapters: • HTTP Server adapter • HTTP Client adapter • FTP Server adapter • FTP Client adapter and services • SFTP Server adapter • SFTP Client adapter and services • Connect:Direct Server adapter and services • Command Line Adapter 2 for PGP
9	Set up any certificates and keys that are required.

Mailboxes

A key function of Sterling File Gateway is the routing of files from one mailbox to another, so mailboxes are fundamental to Sterling File Gateway operations.

Mailboxes used for Sterling File Gateway operations can be created automatically in the following circumstances:

- When a Partner is created in Sterling File Gateway
- When Partners are migrated from AFT
- When Partners are imported into Gentran Integration Suite
- When a routing channel is created
- On demand, at the time of file transfer

When a Partner is created, a mailbox with the same name is created. For example, if the partner is named "PartnerOne" a mailbox is created where the mailbox absolute path is "/PartnerOne". When the Partner user logs in, the absolute path is not displayed. The Partner only sees the virtual path, which in this example is "/".

When a routing channel is created, a producer mailbox is created in the structure specified in the governing routing channel template. Creation of a routing channel may or may not result in the creation of a consumer mailbox as well, depending on the governing routing channel template.

A consumer mailbox may optionally be created on demand (at run time), if configured to do so in the routing channel template.

Whether created at routing channel creation time or on demand at run time, the consumer mailbox will conform to the structure mandated by the routing channel template.

Sterling File Gateway can also use pre-existing mailboxes (for example, those from a Gentran Integration Suite instance), if their paths match those expected by a routing channel, which derives its mailbox path from the governing routing channel template. When creating routing channels, the Sterling File Gateway application first checks to see if a mailbox of the required structure exists. If the mailbox does not exist, Sterling File Gateway creates it, along with any needed permissions.

Disable Duplicate Messages

An important consideration for mailboxes is related to system behavior regarding duplicate files. A global system setting allows or disallows duplicates (files of the same name) in mailboxes. For optimum system behavior, disallow duplicates in your customer_overrides.properties file. To edit the customer_overrides.properties file:

1. In the install_dir/properties directory, locate (or create, if necessary) the customer_overrides.properties file.
2. Open the customer_overrides.properties file in a text editor.
3. Add the following:

```
mailbox.disallowDuplicateMessages=true
```

This ensures that every message in a single mailbox has a unique name. It also ensures that a message and a mailbox do not have the same name. If you write a message to a mailbox and the name matches the name of a message in the mailbox, the service deletes the old message before adding the new message.

Enable Routing Schedule

To enable the routing of files from one mailbox to another, you must also ensure that an appropriate mailbox routing schedule is enabled. Before attempting to operate the system, verify that one of the following schedules is enabled:

- MailboxEvaluateAllAutomaticRules (runs once per minute and can be edited for longer intervals)
- MailboxEvaluateAllAutomaticRulesSubMin (checks for the presence of routable messages once every ten seconds and can be edited for other intervals less than one minute by modifying the MailboxEvaluateAllAutomaticRulesSubMin business process)

To enable either of these schedules, from the Gentran Integration Suite Administration menu, select **Deployment** > **Schedules**.

Purge Messages from Mailboxes

Messages in consumer mailboxes are not automatically purged, and over time could affect system performance. To avoid this, configure the Mailbox Scheduled Delete service to delete messages from one, many, or all mailboxes. See *Mailbox Scheduled Delete Service* .

View Sterling File Gateway Help

Definitions of each field on a page are available when you hover over a field. A complete library of information about Sterling File Gateway is available from the Help menu.

To access Help:

1. Click on the **Help** menu in the upper right corner.

2. Select **Sterling File Gateway Help**.

Tutorial

To learn how Sterling File Gateway works from end to end, perform the following procedure using sample files that you create to use with the tutorial.

Only the high-level tasks are listed here. For specific instructions for each step, see the topics in the appropriate persona library. Use the following log on information for users that are automatically installed with Sterling File Gateway:

Role	User ID	Password
System Administrator	fg_sysadmin	password
Integration Architect	fg_architect	password
Route Provisioner	fg_provisioner	password
Operator	fg_operator	password
Partner	fg_partner	password

1. Log in to Sterling File Gateway as fg_sysadmin.

2. Configure an FTP Server adapter.

See *Prepare Communication Adapters*.

3. Log out.

4. Log in as fg_architect.

5. From the main menu, select Participants > Communities to create a community with the following values:

Field	Value
Community Name	FirstComm
Partner Initiates Protocol Connection	X
Partner Listens for Protocol Connections	X
FTP or FTPS	X
Should Receive Notification	Yes

See *Create a Community*.

6. Select Participants > Groups to create a group named Group1.

   See *Create a Group*.

7. Log out of Sterling File Gateway.

8. Log in as fg_provisioner.

9. Create two partners with the following values:

Field	Value For First Partner	Value For Second Partner
Community	FirstComm	FirstComm
Partner Name	Partner1	Partner2
Phone	333	444
E-mail	y@x.com	x@y.com
User Name	partner1	partner2
Password	password	password
First Name	partner	partner
Last Name	1	2
Partner Role	Is a consumer of data • Initiates a connection	Is a producer of data
Use SSH	No	No
PGP Settings	• No • No	• No • No

See *Create Partner*.

10. Associate the partners with Group1. Select Particpants > Groups, then click Add Partner. Select the partners and the group, and click Execute.

See *Add Partners to Groups*.

11. Log out.

12. Log in as fg_architect.

13. Select Routes > Templates > Create to create a routing channel template with the following
    values:

Field	Value
Template Name	FirstStatic
In the Type tab	
Type	Static
In the Special Characters tab	
Special Characters	None
In the Groups tab	
Groups	Group1 for producers and consumers
In the Producer tab	
Producer File Structure	Click Add
Producer File Type	Unknown
File name pattern as regular expression	.+
File name pattern group fact names, comma delimited	blank
In the Consumer tab	
Pattern for Consumer Mailbox Path	/${ConsumerName}/Inbox
Consumer File Structure	Click Add
Consumer File Type	Unknown
Consumer file name format	${ProducerFilename}

See *Create a Routing Channel Template*.

14. Log out.

15. Log in as fg_provisioner.

16. Create a routing channel with the following values:

Field	Value
Routing Channel Template	FirstStatic
Producer	Partner2
Consumer	Partner1

See *Create a Routing Channel*.

17. Log out.

18. Log in to myFileGateway as Partner2.

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19. Upload a file to the / mailbox.

    See *Send a File from myFileGateway*.

20. Log out.

21. Log in to Sterling File Gateway as fg_operator.

22. Search for the file you uploaded.

    See *Search for a File*.

23. Click on the arrived file and observe the details about the events, the routing channel, and the routing channel template.

24. Log out.

25. Log in to myFileGateway as Partner1.

26. Download a file.

    See *Retrieve a File from myFileGateway*.

27. Log out.

28. Log in to Sterling File Gateway as fg_operator.

29. Search for the file you downloaded.

30. Click on the arrived file and observe the details about the events, the routing channel, and the routing channel template.

31. Replay the route.

    See *Replay From the Beginning of a Transfer*.

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