

Sterling B2B Integrator



WebSphere MQ File Transfer Edition Integration Guide

Version 5.2.3

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Note

Before using this information and the product it supports, read the information in "Notices" on page 25.

Copyright

This edition applies to Version 5 Release 2 Modification 3 of Sterling B2B Integrator and to all subsequent releases and modifications until otherwise indicated in new editions.

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WebSphere MQ File Transfer Edition Integration (5.2.3 or higher)

Existing users of IBM® Sterling B2B Integrator may be able to implement file transfers with IBM WebSphere® MQ File Transfer Edition.

The instructions in this documentation are based on the following prerequisites:

- You have a working knowledge of Sterling B2B Integrator.
- You have implemented Sterling B2B Integrator.
- You are integrating with an existing WebSphere MQ File Transfer Edition network.
- Sterling B2B Integrator is using client mode to connect with WebSphere MQ File Transfer Edition, not bindings mode.
- There is an MQ administrator (that may have a different role name) to perform the actions for the queue manager, regardless of the server the queue manager is running on.
- There is no specific version of WebSphere MQ File Transfer Edition required to successfully integrate.

Integrating WebSphere MQ File Transfer Edition and Sterling B2B Integrator

WebSphere MQ File Transfer Edition moves files between IT systems with reliability and security regardless of the file size. With WebSphere MQ File Transfer Edition you also have the ability to log file movements for audit purposes and the ability to automate all aspects of transfers eliminating the need to manually detect transfer problems and restart transfers.

Integration involves configuring adapters and services that exist on Sterling B2B Integrator so that they work with an existing WebSphere MQ File Transfer Edition network.

This guide covers the information you need to integrate these products and provides information about:

- What WebSphere MQ File Transfer Edition is
- What information you need to exchange with the WebSphere MQ File Transfer Edition system administrator for the integration
- How to configure Sterling B2B Integrator to perform transfers with WebSphere MQ File Transfer Edition
- How to test your configuration
- How to troubleshoot your configuration
- How to configure ssl
- How to configure the system for high availability

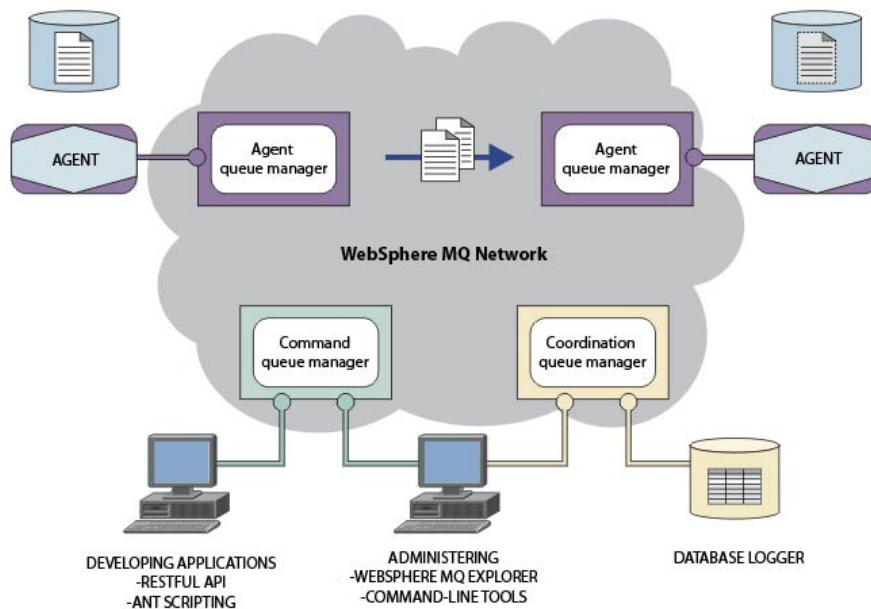
Key Components Used When Integrating WebSphere MQ File Transfer Edition and Sterling B2B Integrator

There are three components of WebSphere MQ File Transfer Edition that must be addressed in Sterling B2B Integrator for file transfers to succeed. WebSphere MQ File Transfer Edition uses:

- Agents to transfer files. The WebSphere MQ File Transfer Edition Agent Adapter in Sterling B2B Integrator puts a WebSphere MQ File Transfer Edition agent within Sterling B2B Integrator. This agent uses FTP within the Sterling B2B Integrator server to read and write messages to and from mailboxes. There must be at least one WebSphere MQ File Transfer Edition Agent Adapter.
- Specific user IDs to identify who requests transfers. The WMQFTE User Map in Sterling B2B Integrator matches the user credentials in WebSphere MQ File Transfer Edition to user accounts within Sterling B2B Integrator. The user account information, user name and password, are used by the WebSphere MQ File Transfer Edition Agent Adapter to access mailboxes.
- Transfer requests to set up transfers. The WebSphere MQ File Transfer Edition Create Transfer Service in Sterling B2B Integrator lets business processes generate WebSphere MQ File Transfer Edition transfer requests. Using business processes to create transfer requests let you automate transfers.

What is WebSphere MQ File Transfer Edition?

WebSphere MQ File Transfer Edition is a system that transfers files in a managed and auditable way, regardless of file size or operating systems used. Message transfers are monitored, logged, and tracked for auditing purposes. Users can view the transfer progress and see where failures occurred during a transfer.



This diagram shows the layout of a simple WebSphere MQ File Transfer Edition setup and transfer. There are two agents. Each agent communicates with its own agent queue manager in a WebSphere MQ network. A file is transferred from the agent on the left side of the diagram, through the WebSphere MQ network, to the agent on the right side of the diagram. Also in the WebSphere MQ network are the coordination queue manager and a command queue manager. Applications and

tools connect to these queue managers to configure, administer, operate, and log WebSphere MQ File Transfer Edition activity in the WebSphere MQ network.

WebSphere MQ File Transfer Edition Features

You can use WebSphere MQ File Transfer Edition to perform the following tasks:

- Create managed file transfers
 - Create new file transfers from WebSphere MQ Explorer on Linux or Windows platforms.
 - Create new file transfers from the command line on all supported platforms.
 - Schedule file transfers to take place at a later time. You can also trigger scheduled file transfers based on a range of file system events, for example a new file being created.
 - Transfer files to and from FTP servers.
 - Transfer files to and from Sterling Connect:Direct® nodes.
 - Transfer both text and binary files. Text files are automatically converted between the code pages and end-of-line conventions of the source and destination systems.
- View transfers in progress and log information about all transfers in your network
 - View the status of transfers in progress from WebSphere MQ Explorer on Linux or Windows platforms.
 - Check the status of completed transfers by using the WebSphere MQ Explorer on Linux or Windows platforms.

WebSphere MQ File Transfer Edition transfers

WebSphere MQ File Transfer Edition are distinct from other file transfers, for example copying files or FTP-ing files, in two ways:

Transfers are handled by agents

When a transfer is requested, the request is given to an agent on the source system that tries to deliver the file to an agent on the destination system. For example, if the destination system is not available, the agent on the source system keeps trying to complete the transfer, waiting for the agent on the destination system to become available. Messages in the queues track the agents' status in the network. This provides an auditable trail for each transfer.

Transfers are asynchronous

When a transfer is requested, the file is not immediately sent. The request is given to an agent that actually performs the transfer. The agent on the source system and the agent on the destination system must both be running and able to communicate with each other for the transfer to complete successfully. If one or both agents are not available, a variable amount of time can pass between when the transfer is requested and when the transfer actually occurs.

About WebSphere MQ Explorer

The WebSphere MQ File Transfer Edition plug-in to WebSphere MQ lets you remotely configure your entire messaging backbone from a single WebSphere MQ File Transfer Edition messaging console, called WebSphere MQ Explorer. This graphical tool is what you use to explore and configure all WebSphere MQ objects

and resources, including Java Message Service (JMS), and publish and subscribe. You can view queue managers and agents as well as track the file transfers.

If you have both WebSphere MQ Explorer and the WebSphere MQ File Transfer Edition plug-in installed, you can use WebSphere MQ Explorer to monitor transfers in the WebSphere MQ network.

You do not need to install WebSphere MQ File Transfer Edition on Sterling B2B Integrator unless you want to create agents outside of Sterling B2B Integrator. However, WebSphere MQ Explorer is a useful tool for monitoring and troubleshooting transfers, so you may want to install it and the WebSphere MQ File Transfer Edition plug-in to WebSphere MQ. You must install WebSphere MQ Explorer before you install the WebSphere MQ File Transfer Edition plug-in.

WebSphere MQ File Transfer Edition Agents and Queue Managers

Agents and Queue Managers are key components in WebSphere MQ File Transfer Edition. Agents are the components that actually touch the files being transferred.

WebSphere MQ File Transfer Edition Agents

Files are transferred between agents. In each transfer there is a source agent and a destination agent. Source and destination agents interact with the file systems to create and retrieve files in a transfer. A source agent sends files, a destination agent receives files. By default, all agents are created to be both source and destination agents, so one agent can be a source agent for one transfer and a destination agent for another transfer.

Agents must be installed on each system with which you are transferring files. Each agent is associated with an agent queue manager and has its own set of queues that are maintained by the agent queue manager.

There are also Protocol Bridge Agents that interact with FTP servers to transfer files. These agents act as source and destination agents. For Sterling B2B Integrator, you must create a WebSphere MQ File Transfer Edition Agent Adapter to act as a Protocol Bridge Agent for file transfers within Sterling B2B Integrator to retrieve and deposit files in Sterling B2B Integrator mailboxes.

Transfer Types in Sterling B2B Integrator

There are two types of transfers:

Inbound

A transfer that moves a file into a Sterling B2B Integrator mailbox. The source agent is outside of Sterling B2B Integrator.

Outbound

A transfer that moves a file out of a Sterling B2B Integrator mailbox. The source agent is the WebSphere MQ File Transfer Edition Agent Adapter within Sterling B2B Integrator.

WebSphere MQ File Transfer Edition Queue Manager Roles

Queue managers are part of the network infrastructure and house the queues that WebSphere MQ File Transfer Edition uses. Queue managers can fulfill several roles:

Coordination queue manager

This queue manager collects information from the messages about the agents and transfers in the network.

Agent queue manager

Each agent communicates only with its agent queue manager. Each agent has its own set of dedicated queues within its queue manager.

Command queue manager

Operational tools communicate with agents through the command queue manager.

A single queue manager can perform more than one role. A single queue manager can be the agent queue manager for several agents; but each agent associated with that agent queue manager will have its own queues within the agent queue manager.

Configuring Sterling B2B Integrator to Transfer Files with WebSphere MQ File Transfer Edition

WebSphere MQ File Transfer Edition uses the services and adapters that are part of Sterling B2B Integrator. The configuration you do is used for both inbound and outbound transfers. All transfers require at least one WebSphere MQ File Transfer Edition Agent Adapter, one FTP Server Adapter, and one WMQFTE User Map. The number of users will vary based on needs of the WebSphere MQ File Transfer Edition network with which you are integrating. If you are going to transfer files out of Sterling B2B Integrator, you must configure an instance of the WebSphere MQ File Transfer Edition Create Transfer Service.

Creating an Adapter Container for Sterling B2B Integrator Adapters

For Sterling B2B Integrator and WebSphere MQ File Transfer Edition to work together, agent and server adapters need to be created on Sterling B2B Integrator. The WebSphere MQ File Transfer Edition Agent Adapter must run in an Adapter Container.

There are three adapter related tasks that you must do on Sterling B2B Integrator:

- Create an Adapter Container - you have to do this only once and only if an Adapter Container does not already exist
- Create an FTP Server Adapter - you only need one FTP server adapter
- Create a WebSphere MQ File Transfer Edition Agent Adapter - you only need one WebSphere MQ File Transfer Edition Agent Adapter

You must create the Adapter Container before you create the FTP Server Adapter or WebSphere MQ File Transfer Edition Agent Adapter because you are asked for a location node and adapter container when you create these adapters. The FTP Server Adapter must run on the same Sterling B2B Integrator server as any WebSphere MQ File Transfer Edition Agent Adapter that uses it.

You must create the FTP Server Adapter before you create the WebSphere MQ File Transfer Edition Agent Adapter because you must specify the FTP Server Adapter when you define the WebSphere MQ File Transfer Edition Agent Adapter.

When you create the Adapter Container you must set the Maximum Heap Size (MB) to at least 1024 MB. If using a Sun JVM, set the Maximum Permanent Generation Size (MB) to at least 256 MB.

Setting Up Users, Mailboxes, Virtual Roots, and Permissions

You use the information you exchange with the WebSphere MQ File Transfer Edition administrator to determine the users, mailboxes and permissions needed for Sterling B2B Integrator to receive and send files to the WebSphere MQ File Transfer Edition network.

Things to remember when setting up the users, mailboxes, virtual roots, and permissions:

- The users must be in the WMQFTE User Map
- The users must have a virtual root. Transfer requests are always relative to the virtual root
- The users must have permissions on any mailboxes that WebSphere MQ File Transfer Edition will attempt to access

Creating an FTP Server Adapter

The WebSphere MQ File Transfer Edition Agent Adapter accesses the Sterling B2B Integrator mailboxes through the FTP Server Adapter. If the FTP Server Adapter and WebSphere MQ File Transfer Edition Agent Adapter are in the same Adapter Container or on the same server, then the FTP traffic does not leave Sterling B2B Integrator server. The FTP Server Adapter you create should be used exclusively for WebSphere MQ File Transfer Edition transfers and not any other FTP traffic. If you want to prevent the FTP Server Adapter from creating subdirectories during transfers you can set up a Policy for the FTP Server Adapter and associate the Policy with the adapter. You would do this to prevent files going into the wrong mailboxes because of typos in the transfer request.

When the WebSphere MQ File Transfer Edition Agent Adapter logs into the FTP Server Adapter, it uses a user name and password. This user name and password must be in a WMQFTE User Map.

Creating User Maps for Sterling B2B Integrator and WebSphere MQ File Transfer Edition File Transfers

The WMQFTE User Map allows the MQMD User Id associated with transfer requests to be converted to a Sterling B2B Integrator user id and password. Each WebSphere MQ File Transfer Edition transfer request includes a MQMD User Id that identifies the user on the WebSphere MQ network that has requested the transfer. To access mailbox messages within Sterling B2B Integrator, the MQMD User Id must first be mapped to a Sterling B2B Integrator user account. The permissions granted to this Sterling B2B Integrator user account determine if the transfer is able to successfully read or create the requested mailbox message. If no mapping is found for the presented MQMD User Id, or if the mapped user account does not have permissions to the necessary mailbox, the WebSphere MQ File Transfer Edition transfer request will fail.

For WebSphere MQ File Transfer Edition transfer operations generated within Sterling B2B Integrator, through both the WMQFTE Create Transfer service and the WebSphere MQ File Transfer Edition Agent Adapter, the MQMD User Id associated with the operations by default will be that of user id of the operating system account that started the Sterling B2B Integrator processes. This default behavior

can be overridden by settings within the WebSphere MQ queue managers, particularly by setting an MCA User Id value on the channel used for client mode connections. On Windows installations, where Sterling B2B Integrator is configured to run as a Windows service executing by default as the operating system user account SYSTEM, it may be necessary to override the MQMD User Id associated with transfer operations generated within Sterling B2B Integrator.

A WMQFTE User Map must exist before you create a WebSphere MQ File Transfer Edition Agent Adapter. It does not need to have a complete list of MQMD User Id and a Sterling B2B Integrator User associations in it. WMQFTE User Map entries can be added, edited, and removed at any time.

WMQFTE User Map

You get to the WMQFTE User Map by selecting **Deployment > Adapter Utilities > WMQFTE User Map** from the Administrator Menu on the Sterling B2B Integrator Admin Console.

When you create a user map you enter a WMQFTE User Map name and a set of map entries. Each WMQFTE User Map entry consists of:

MQMD User ID

For inbound transfers, the MQMD User Id that the WebSphere MQ File Transfer Edition administrator gave you. You can use literal text to match a specific MQMD User Id or a regular expression to match any MQMD User Id sent with a transfer request. For outbound transfers, the MQMD User Id defaults to the ID of the system user that runs Sterling B2B Integrator.

Local User Name

The name of the user you defined for file transfers on Sterling B2B Integrator.

Local User Password

The password for the user you defined for file transfers on Sterling B2B Integrator.

There must be only one match between a Sterling B2B Integrator user ID and an MQMD User Id in a WMQFTE User Map. You can not use the same MQMD User Id more than once in a WMQFTE User Map file. Sterling B2B Integrator looks for a literal text match first. If it does not find a literal text match, then it looks for a regular expression match. If there is no match, or more than one match, the transfer request fails.

Creating a WebSphere MQ File Transfer Edition Agent Adapter

When you create a WebSphere MQ File Transfer Edition Agent adapter, you are creating a WebSphere MQ File Transfer Edition agent within Sterling B2B Integrator that is a Protocol Bridge Agent. This agent can be started and stopped from the Sterling B2B Integrator Dashboard like any other Sterling B2B Integrator adapter. As part of the configuration, Sterling B2B Integrator creates a script that contains the commands to build the queues the agent requires in the agent's queue manager. This script can be downloaded from the configuration page or the Sterling B2B Integrator Dashboard. The script must be downloaded and run on the server where the WebSphere MQ File Transfer Edition Agent Adapter's agent queue manager runs.

MQSC Agent Queue Scripts

One of the scripts that Sterling B2B Integrator generates when a WebSphere MQ File Transfer Edition Agent Adapter is created, <agentname>-create.mqsc, creates the queues that the WebSphere MQ File Transfer Edition Agent Adapter will use. This script must be run on the machine running the WebSphere MQ File Transfer Edition Agent Adapter's agent queue manager to create the queues that the WebSphere MQ File Transfer Edition Agent Adapter will use. The queues must exist on the agent queue manager before the WebSphere MQ File Transfer Edition Agent Adapter starts. The first thing the WebSphere MQ File Transfer Edition Agent Adapter does when it starts is look for its queues. If the WebSphere MQ File Transfer Edition Agent Adapter can't find the queues, it will stop with an error. After the script is run, you can enable the WebSphere MQ File Transfer Edition agent.

The second script that Sterling B2B Integrator generates when the WebSphere MQ File Transfer Edition Agent Adapter is created is <agentname>-delete.mqsc. Run this script on the machine running the WebSphere MQ File Transfer Edition Agent Adapter's agent queue manager if you need to remove the WebSphere MQ File Transfer Edition Agent Adapter's queues. You would only use this script if you were deleting the agent adapter and needed to remove the agent's queues.

Creating and Enabling a WebSphere MQ File Transfer Edition Agent Adapter

There are three things that you need to do to create and enable a WebSphere MQ File Transfer Edition Agent Adapter:

1. Create the WebSphere MQ File Transfer Edition Agent Adapter in Sterling B2B Integrator, but do not enable it
2. Run the script for creating the WMQFTE Agent Adapter queues on the machine running the WebSphere MQ File Transfer Edition Agent Adapter's queue manager.
3. Edit the WebSphere MQ File Transfer Edition Agent Adapter and enable it for use with business processes.

Creating a WebSphere MQ File Transfer Edition Create Transfer Service

Any time Sterling B2B Integrator creates a transfer request, it uses the WebSphere MQ File Transfer Edition Create Transfer Service. In most cases the WebSphere MQ File Transfer Edition Create Transfer Service will use the WebSphere MQ File Transfer Edition Agent Adapter as either the source or destination agent for the transfer.

When you create a WebSphere MQ File Transfer Edition Create Transfer Service you enter the information for the command queue manager for the WebSphere MQ File Transfer Edition Agent Adapter you created. When you are using client mode, you need to provide the host name, port, and channel information for the command queue manager.

Optional Configurations for Sterling B2B Integrator and WebSphere MQ File Transfer Edition

Once you verify that you can transfer files between WebSphere MQ File Transfer Edition and Sterling B2B Integrator, you can add SSL and/or set up multi instances for fail over.

SSL

SSL can be enabled at three different locations to secure socket connections:

- On client mode connections between the WebSphere MQ File Transfer Edition Agent Adapter and the agent queue manager
- On the FTP connection between the WebSphere MQ File Transfer Edition Agent Adapter and the FTP Server adapter
- On the client mode connections between the WebSphere MQ File Transfer Edition Create Transfer service and the command queue manager

To enable SSL on the client mode connections to the agent or command queue managers, first configure the channels to use SSL according to the WebSphere MQ WebSphere MQ documentation. To enable SSL on the FTP connection between the WebSphere MQ File Transfer Edition Agent adapter and the FTP Server adapter, first enable SSL on the FTP Server adapter according to the Sterling B2B Integrator documentation.

Note that the WebSphere MQ File Transfer Edition Agent Adapter and the WebSphere MQ File Transfer Edition Create Transfer service both utilize components that can only read certificates from JKS format key stores located on disk and cannot access certificates within the Sterling B2B Integrator certificate stores.

IF you want to enable SSL on the ...	THEN ...	
Connection to the agent queue manager	<ol style="list-style-type: none"> 1. Follow the directions in the WebSphere MQ File Transfer Edition online documentation to configure the Agent Queue Manager to use SSL and to generate the truststore and optionally the keystore files to be used by the WebSphere MQ File Transfer Edition Agent Adapter. 2. Copy the truststore and optional keystore files onto the server running Sterling B2B Integrator. 3. Set the WebSphere MQ File Transfer Edition Agent Adapter's "SSL On Connection To Agent Queue Manager" field to Must. 4. Populate the WebSphere MQ File Transfer Edition Agent Adapter's SSL parameters as you would the SSL properties in the agent.properties file as described in the WebSphere MQ File Transfer Edition documentation. 	
	Sterling B2B Integrator UI Field	command.properties property name
	SSL Cipher Specification	agentSslCipherSpec
	SSL Peer Name	agentSslPeerName
	SSL Trust Store Location	agentSslTrustStore
	SSL Trust Store Password	agentSslTrustStorePassword
	SSL Key Store Location	agentSslKeyStore
	SSL Key Store Password	agentSslKeyStorePassword

IF you want to enable SSL on the ...	THEN ...
Connection to the FTP Server Adapter	<ol style="list-style-type: none"> 1. Enable SSL on the FTP Server Adapter used by the WebSphere MQ File Transfer Edition Agent Adapter. 2. Create a JKS truststore file with the appropriate certificates needed to trust the certificate presented by the FTP Server Adapter. The Sterling B2B Integrator Certificate Capture can be used to capture the certificates needed in the truststore. The truststore can be built and certificates imported via a number of tools, including the Sterling Certificate Wizard. 3. Copy the truststore file onto the server running Sterling B2B Integrator. 4. Set the WebSphere MQ File Transfer Edition Agent Adapter's "SSL On Connection To FTP Server" to Must. 5. Set the "Trust Store Location" field on the 'FTPS Configuration' screen to the file copied from step 3. 6. Set the "Trust Store Password" field on the 'FTPS Configuration' screen to the trust store's password. 7. Optional. If you want to enable client authentication: <ol style="list-style-type: none"> a. Create a JKS keystore file with a certificate and private key that identifies the WebSphere MQ File Transfer Edition Agent Adapter. The keystore can be built and certificates imported via a number of tools, including the Sterling Certificate Wizard. b. Copy the keystore file onto the server running Sterling B2B Integrator. c. Set the "Key Store Location" field on the 'FTPS Configuration' screen to the file copied from step b. d. Set the "Key Store Password" field on the 'FTPS Configuration' screen to the key store's password. e. Export the certificates required to trust the certificate from step 7 and import it into the Sterling B2B Integrator CA Certificate Store (Trading Partner->Digital Certificates->CA) f. Update the SSL configuration of the FTP Server Adapter used by the WebSphere MQ File Transfer Edition Agent Adapter, selecting the Certificate(s) imported in step b in the CA Certificate field. g. Restart the FTP Server Adapter and then the WebSphere MQ File Transfer Edition Agent Adapter.

IF you want to enable SSL on the ...	THEN ...	
WebSphere MQ File Transfer Edition Create Transfer Service	<ol style="list-style-type: none"> 1. Follow the directions in the WebSphere MQ File Transfer Edition online documentation to configure the Command Queue Manager to use SSL and to generate the truststore file and optionally the keystore file to be used by the WebSphere MQ File Transfer Edition Create Transfer Service. 2. Copy the truststore and optional keystore files onto the server running Sterling B2B Integrator. 3. Set the WebSphere MQ File Transfer Edition Agent Adapter's "SSL On Connection To Agent Queue Manager" field to Must. 4. Populate the WebSphere MQ File Transfer Edition Create Transfer service's SSL parameters as you would the SSL properties in the command.properties file as described here: 	
	Sterling B2B Integrator UI Field	command.properties property name
	SSL Cipher Specification	connectionSslCipherSpec
	SSL Peer Name	connectionSslPeerName
	SSL Trust Store Location	connectionSslTrustStore
	SSL Trust Store Password	connectionSslTrustStorePassword
	SSL Key Store Location	connectionSslKeyStore
	SSL Key Store Password	connectionSslKeyStorePassword

High Availability

If two separate agent processes (could be two stand alone agents or two agent adapters in Sterling B2B Integrator) both are configured to use the same agent name and both are started at the same time, they will compete for access to the queues that correspond to this agent name. Only one of the agent processes will get exclusive access to the queues, and the other will enter a polling mode where it will periodically attempt to establish exclusive access to the associated queues.

This configuration creates an active/standby situation. The active agent process will be the one that obtained exclusive access to the queues and will process all transfers. The standby agent process will be the one that failed to get exclusive access, and it will periodically retry to get this access. If the active agent process is stopped or dies, the standby agent process will obtain exclusive access to the queues and will start processing any pending or new transfers.

To configure this within Sterling B2B Integrator, you need:

1. a Sterling B2B Integrator cluster with at least two adapter containers (AC).
2. a WebSphere MQ File Transfer Edition Agent Adapter instance configured on each AC. Each adapter must have a different adapter name but call the same agent name.

Integrating WebSphere MQ File Transfer Edition with Sterling B2B Integrator

You need information from the established WebSphere MQ File Transfer Edition network for Sterling B2B Integrator. You also have to provide the WebSphere MQ File Transfer Edition administrator information for transfers to succeed.

Specific Settings from WebSphere MQ File Transfer Edition

You need to know the:

- Name of the coordination queue manager, agent queue manager, and command queue manager that Sterling B2B Integrator will use. Remember that a single queue manager can have several roles, so the same queue manager can be all three.
- Host name, listener ports, and the channel name for the agent queue manager and command queue manager.
- User credentials (MQMD User Id) for the transfer requests initiated from outside of Sterling B2B Integrator that involve the WebSphere MQ File Transfer Edition Agent Adapter instance.
- Destination file paths for transfers out of Sterling B2B Integrator.

Additional Information You Need from the WebSphere MQ File Transfer Edition Administrator

You need to set up users and mailboxes for transfers into Sterling B2B Integrator. Before you set up the users and mailboxes you need to work with the WebSphere MQ File Transfer Edition administrator and find out:

- What kind of files are being transferred?
- What will be done with the files?
- Will all files be sent to one mailbox or to many mailboxes?
- Will all of the messages come from the same sender (have the same MQMD User Id)?
- Who will Sterling B2B Integrator transfer messages to?
- What path will the WebSphere MQ File Transfer Edition destination agent use to deliver files?

This information will help you determine how many Sterling B2B Integrator users to create, the number of mailboxes you will need, and the permissions to assign to the mailboxes.

This information is also used in the WMQFTE User Map. You need to associate MQMD User Ids to the correct Sterling B2B Integrator users for inbound and outbound transfers.

You need to give the WebSphere MQ File Transfer Edition administrator the right path information for the files to be put in the correct mailboxes. The paths that are specified in the transfer requests are relative to the user's virtual root. If the file is going to the virtual root for the user, the transfers can be sent to "/".

For outbound transfers, you need to know the user mailbox for the WebSphere MQ File Transfer Edition Agent Adapter to retrieve the file and the location for the WebSphere MQ File Transfer Edition destination agent to place the file. You must have a user map entry for Sterling B2B Integrator outbound transfers that matches

the MQMD User Id for Sterling B2B Integrator and the user and password to access the correct mailbox on Sterling B2B Integrator to get the file to send. Remember that the MQMD User Id for Sterling B2B Integrator defaults to the system user that runs Sterling B2B Integrator. For example, b2b_admin on Unix machines or SYSTEM on Windows machines.

Information You Give to the WebSphere MQ File Transfer Edition Administrator

After you set up the Sterling B2B Integrator users and give them permissions to mailboxes, you need to give the WebSphere MQ File Transfer Edition administrator:

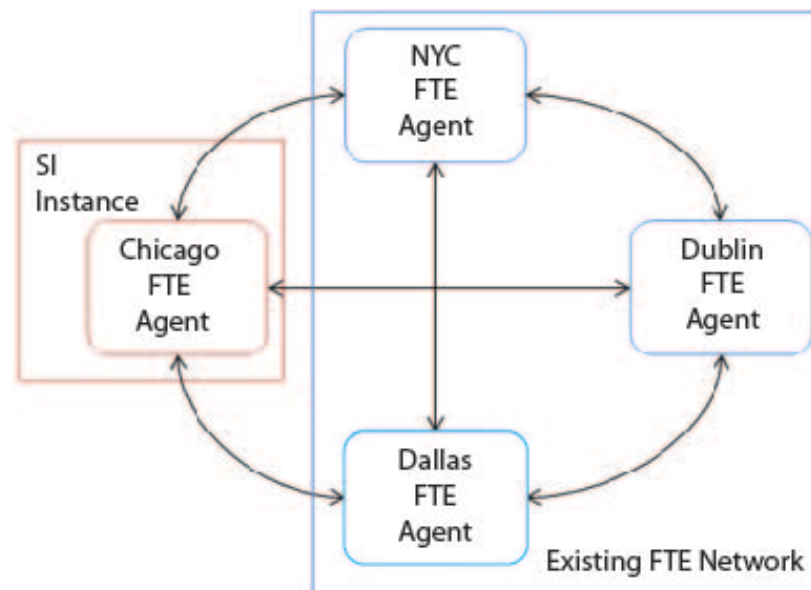
- For outbound transfers, the MQMD User Id associated with transfer operations generated by Sterling B2B Integrator.
- For inbound transfers, the relative path for the mailboxes to which WebSphere MQ File Transfer Edition will send files.

Example: Information exchange and configuration for integration

This is an example of the information you need to exchange with the WebSphere MQ File Transfer Edition administrator. It has a sample, existing WebSphere MQ File Transfer Edition network with which Sterling B2B Integrator will integrate. There are specific files transfers to different mailboxes in Sterling B2B Integrator and then to different locations in the WebSphere MQ File Transfer Edition network.

WebSphere MQ File Transfer Edition network

Sterling B2B Integrator is integrating with an existing WebSphere MQ File Transfer Edition network that has three agents in three cities: Dallas, Dublin, and New York City. There is a Sterling B2B Integrator instance in Chicago that must integrate with the network:



The network activity requires three different sets of transfers:

- Invoice files generated in New York must be sent to the Sterling B2B Integrator instance in Chicago. Sterling B2B Integrator must be configured to process all invoice files arriving in the /Widgets/Invoices mailbox.
- Shipping notifications generated in both Dublin and Dallas must be sent to the B2B Integrator instance in Chicago. Sterling B2B Integrator must be configured to process shipping notification files arriving in /Widgets/Shipping/Dublin and /Widgets/Shipping/Dallas mailboxes.
- Payment notifications received by the Sterling B2B Integrator instance in Chicago must be sent to New York. Sterling B2B Integrator must be configured to deposit all payment notification files into the mailbox /Widgets/Payments.

WebSphere MQ File Transfer Edition information

Working with the WebSphere MQ File Transfer Edition administrator, you find out that:

- Transfer requests initiated from Dublin will have a MQMD User Id of dublin_ftc.
- Transfer requests initiated from Dallas will have a MQMD User Id of dallas_ftc.
- Transfer requests initiated from New York will have a MQMD User Id of nyc_ftc.
- Transfer requests initiated by Sterling B2B Integrator in Chicago will have an MQMD User Id of si_admin because this is the user Id of the user that installed Sterling B2B Integrator.

Sterling B2B Integrator users, mailboxes, and permissions

Based on the WebSphere MQ File Transfer Edition information, you create the following user accounts, virtual roots, and mailboxes:

Table 1. User Accounts, Virtual Roots, and Mailbox Permissions

Sterling B2B Integrator User Account	Account's Virtual Root	Account's Mailbox Permissions
invoices	/Widgets/Invoices	/Widgets/Invoices
shipping	/Widgets/Shipping	/Widgets/Shipping
		/Widgets/Shipping/Dallas
		/Widgets/Shipping/Dublin
payments	/Widgets/Payments	/Widgets/Payments

WMQFTE User Map

Based on the user accounts and mailboxes, you add these entries to the WMQFTE User Map:

Table 2. WMQFTE User Map Entries

MQMD User Id	Regular Expression	Local User Name	Local User Password
nyc_ftc	No	invoices	password for invoices account
dublin_ftc	No	shipping	password for shipping account

Table 2. WMQFTE User Map Entries (continued)

MQMD User Id	Regular Expression	Local User Name	Local User Password
dallas_fte	No	shipping	password for shipping account
si_admin	No	payments	password for payments account

Information used by WebSphere MQ File Transfer Edition administrators for transfers inbound to Sterling B2B Integrator

From the Sterling B2B Integrator accounts you created, the virtual roots you assigned to these accounts and the WMQFTE User Map entries you created, the WebSphere MQ File Transfer Edition administrators in New York, Dublin and Dallas are instructed to use the following destination directories when creating transfers:

Table 3. Destination Directories for WebSphere MQ File Transfer Edition transfers inbound to Sterling B2B Integrator

Transfer	MQMD User Id	Maps to Sterling B2B Integrator	Sterling B2B Integrator Account's Virtual Root	Absolute mailbox where files should be deposited	Destination Directory used in WMQFTE transfer request
Invoices from New York City	nyc_fte	invoices	/Widgets/ Invoices	/Widgets/ Invoices	/
Shipping notifications from Dallas	dallas_fte	shipping	/Widgets/ Shipping	/Widgets/ Shipping/ Dallas	/Dallas
Shipping notifications from Dallas	dublin_fte	shipping	/Widgets/ Shipping	/Widgets/ Shipping/ Dublin	/Dublin

Information used for outbound transfers from Sterling B2B Integrator to WebSphere MQ File Transfer Edition network

To transfer payment notification files from the /Widgets/Payments mailbox in Sterling B2B Integrator to the NYC agent, you create a business process that calls the WMQFTE Create Transfer service using the appropriate source directory based on the WMQFTE User Map entry for the si_admin MQMD User Id:

Table 4. Sterling B2B Integrator outbound transfer information

Transfer	MQMD User Id	Maps to Sterling B2B Integrator	Sterling B2B Integrator Account's Virtual Root	Absolute mailbox where files should be deposited	Destination Directory used in WMQFTE transfer request
Payment notifications from SI	si_admin	payments	/Widgets/ Payments	/Widgets/ Payments	/

Configure Sterling B2B Integrator to transfer files with WebSphere MQ File Transfer Edition

There are several tasks that you must complete to configure Sterling B2B Integrator to transfer files with WebSphere MQ File Transfer Edition. These tasks involve creating or configuring services and adapters, creating or identifying users, mapping WebSphere MQ File Transfer Edition users to Sterling B2B Integrator users. Before you do these tasks you work with the WebSphere MQ File Transfer Edition administrator to determine what files will be transferred and what will be done with the files. You use this information when you configure Sterling B2B Integrator.

The list of tasks that you do to configure Sterling B2B Integrator to work with WebSphere MQ File Transfer Edition includes:

1. Create or configure an existing Sterling B2B Integrator Adapter Container. You only have to do this once.
2. Create or identify existing Sterling B2B Integrator user accounts, mailboxes, virtual roots, and permissions to use in the transfers.
3. Create an FTP Server Adapter instance for WebSphere MQ File Transfer Edition integration.
4. Create or modify an existing WMQFTE User Map.
5. Create a WebSphere MQ File Transfer Edition Agent Adapter instance.
6. Create a WebSphere MQ File Transfer Edition Create Transfer Service instance. If you are not going to generate transfer requests (inbound or outbound) from business processes, you do not need to do this step.

It is recommended that you create one FTP Server Adapter and use it for all of the WebSphere MQ File Transfer Edition transfers.

Because WebSphere MQ File Transfer Edition agents are both source and destination agents, you can use one WebSphere MQ File Transfer Edition Agent Adapter for all transfers on your system.

Create an Adapter Container

The WebSphere MQ File Transfer Edition Agent Adapter can not run on the ASI node. If there is no Adapter Container already in place, you must create one for the WebSphere MQ File Transfer Edition Agent Adapter. You need to know the location for the Adapter Container.

About this task

This task is performed on the Sterling B2B Integrator Admin Console.

Procedure

1. Configure an Adapter Container in Sterling B2B Integrator.
2. Use the Performance Tuning Wizard to change the Maximum Heap Size (MB) to at least 1024 MB. If using a Sun JVM, set the Maximum Permanent Generation Size (MB) to at least 256 MB.

Setup users, mailboxes, and permissions for WebSphere MQ File Transfer Edition and Sterling B2B Integrator file transfers

WebSphere MQ File Transfer Edition needs a place to send and receive files on Sterling B2B Integrator. You must create users, mailboxes, and assign user permissions to the mailboxes that will be used in file transfers. You use this information in the WMQFTE User Map. After you set up the users, mailboxes, virtual root, and permissions, you give the WebSphere MQ File Transfer Edition administrator the path to the mailboxes to deliver files.

About this task

This task is performed on the Sterling B2B Integrator Admin Console.

Procedure

1. Create the users that you need for WebSphere MQ File Transfer Edition and Sterling B2B Integrator file transfers. 1. Select **Accounts > User Accounts > Create a new user account**. Enter User information.
2. Create the mailboxes the users will need. Select **Deployment > Mailboxes > Configuration > Create a new Mailbox**. Enter Mailbox information.
3. Assign a virtual root to the user. Select **Deployment > Mailboxes > Virtual Roots > Create a new Virtual Root**. Enter Virtual root information.
4. Assign permissions to the mailboxes.

Create an FTP Server Adapter

The WebSphere MQ File Transfer Edition Agent Adapter uses the FTP Server Adapter to access the mailboxes within Sterling B2B Integrator. The WebSphere MQ File Transfer Edition Agent Adapter uses the user name and password that is in the WMQFTE User Map. The FTP Server Adapter must run on the same server as the WebSphere MQ File Transfer Edition Agent Adapter. It is recommended that both adapters be in the same Adapter Container.

Before you begin

Before you create an FTP Server Adapter you must have the:

- Port number the FTP Server Adapter will listen on
- Adapter Container you will use
- Policy created for the FTP Server Adapter, if you want to prevent the adapter from creating new subdirectories.

About this task

This task is performed on the Sterling B2B Integrator Admin Console

Procedure

1. Select **Deployment > Services > Configuration** from the Administration Menu.
2. Select **Create New Service Go!** .
3. On the **Select Service Type** page, select **FTP Server Adapter** from the drop-down and select **Save** in the pop-up window. Select **Next** on the **Select Service Type** page.

4. On the Name page, enter a Name and Description for the adapter. It is suggested that you use FTE in the name to distinguish it from other FTP adapters. Select the node and adapter container from the Environment drop down. Select **Next**.
5. On the Configuration page, enter the port number in the FTP Server Listen Port field. Make sure that Mailbox is specified for Payload Repository. Select **Next**.
6. Accept the defaults for the Document Storage by selecting **Next**.
7. If you created a policy for this adapter, enter it on the Add Policies page and select **Next**.
8. Accept the defaults for the Configuration page by selecting Next. They can be edited later if necessary.
9. On the Extractability page, select **Extractable** and make sure the option is set to Yes. You must select the button for Extractability to be enabled. Select **Next**.
10. On the SSL page, select **Next**. You can edit the adapter later to set up SSL, if necessary.
11. On the Confirm page, check **Enable Service for Business Processes** and select **Finish**.
12. Select **Return**.

Create a WMQFTE User Map

WMQFTE User Maps in Sterling B2B Integrator define the relationship between users known to WebSphere MQ File Transfer Edition and users known to Sterling B2B Integrator. By entering the MQMD User Id and mapping it to a Sterling B2B Integrator user ID and password, WebSphere MQ File Transfer Edition users are authorized to transfer files to Sterling B2B Integrator. You contact the WebSphere MQ File Transfer Edition administrator to get the MQMD User ID to enter in the WMQFTE User Map.

About this task

This task is performed on the Sterling B2B Integrator Admin Console.

Procedure

1. Select **Deployment > Adapter Utilities > WMQFTE User Maps** from the Administrator's Menu.
2. Select **Create a New Map Go!**.
3. Enter a name for the map and select **Next**.
4. Click the + sign next to add a New Map Entry.
5. On the Add WMQFTE User Map Entry page, enter the MQMD User ID, the Local User Name that you created on Sterling B2B Integrator and the password needed to access the mailbox. If you are using a regular expression for the MQMD User ID, check the **"Is MQMD User ID a regular expression?"** box.
6. Select **Finish**.
7. Select **Return**.

Create a WebSphere MQ File Transfer Edition Agent Adapter

The WebSphere MQ File Transfer Edition Agent Adapter must have information about the location of the agent queue manager with which it will interact.

Before you begin

Before you do this task you must:

1. know the node name and adapter container to use
2. previously created a WMQFTE User Map
3. know the hostname, port, and channel information for the agent queue manager and the name of the coordination queue manager, if it is different from the agent queue manager
4. know the name of the FTP Server Adapter that you created for WebSphere MQ File Transfer Edition transfers
5. know where to forward the MQSC scripts generated.

About this task

This task is performed on the Sterling B2B Integrator Admin Console.

Procedure

1. Select **Deployment > Services > Configuration**.
2. Select New Service **Go!**
3. On the Service Type page, select the WebSphere MQ File Transfer Edition Agent Adapter from the drop-down list.
4. On the Name page, enter the name and a description for the adapter. Select the node and adapter container from the Environment drop-down. Select **Next**.
5. On the Agent Configuration page, enter the agent name, a description, the agent's queue manager and the coordination queue manager. Select **Client**. Select **Next**.
6. If the system is in client mode, on the Configuration - Client Mode Parameters page, enter the hostname, port, and channel for the agent's queue manager. To use a channel other than the default of SYSTEM.DEF.SVRCONN, enter the channel name. Select **Next**.
7. On the Additional WebSphere MQ File Transfer Edition Agent Parameters page, select the FTP Server Adapter you created for WebSphere MQ File Transfer Edition transfers.
8. On the User Map page, select the WebSphere MQ File Transfer Edition User Map for this agent to use.
9. On the Configuration - Agent Queue Manager Configuration Scripts page, download and save the scripts the configuration task created.
10. On the Confirmation page, uncheck "**Enable Server for Business Processes**".
11. Select **Finish**.
12. Select **Return**.

Run the WebSphere MQ File Transfer Edition Agent Adapter script

When you create a WebSphere MQ File Transfer Edition Agent Adapter, Sterling B2B Integrator generates a script that creates the queues that the agent will use. This script must be run on the machine where the agent's agent queue manager is located. You must run this script before you enable the agent adapter because the first task an agent adapter does is check for its queues.

About this task

This task must be done on the machine where the agent's agent queue manager is located.

Procedure

1. Copy the script to the machine running the agent queue manager.
2. Run the script. For example, for Windows and Unix systems, the command is:
runmqsc <agent_qmgr_name> < <agentname>-create.mqsc

Enable the WebSphere MQ File Transfer Edition Agent Adapter

After the queues for a WebSphere MQ File Transfer Edition Agent Adapter are created on the machine running the WebSphere MQ File Transfer Edition Agent Adapter's agent queue manager, the WebSphere MQ File Transfer Edition Agent Adapter can be enabled for use with the business processes running on Sterling B2B Integrator.

About this task

This task is performed on the Sterling B2B Integrator Admin Console.

Procedure

1. Select **Deployment > Services > Configuration** from the Administration Menu.
2. Search for the WebSphere MQ File Transfer Edition Agent Adapter by type.
3. Go to the Confirmation page and select the **Enable for Business Processes** box.
4. Select **Finish**.
5. Select **Return**.

Create a WebSphere MQ File Transfer Edition Create Transfer Service

The WebSphere MQ File Transfer Edition Create Transfer Service is used to request a transfer over the WebSphere MQ File Transfer Edition network. The WebSphere MQ File Transfer Edition Create Transfer Service is configured to communicate with a command queue manager within the WebSphere MQ File Transfer Edition network.

About this task

This task is performed on the Sterling B2B Integrator Admin Console.

Procedure

1. Select **Deployment > Services > Configuration** from the Administration Menu.
2. Select **New Service Go!**
3. Select the WebSphere MQ File Transfer Edition Create Transfer Service and Select **Next**.
4. On the Configuration - Name page, enter the name and description for the service. Select **Next**.
5. On the Configuration - Command Queue Manager Configuration page, enter the command queue manger name and select **Client** mode. Select **Next**.

6. On the Configuration - Client Mode Parameters page, enter the command queue manager host name, port, and channel. To utilize a channel other than the default of SYSTEM.DEF.SVRCONN, enter the channel name. Select **Next**.
7. On the Confirmation page, select **Finish**.
8. Select **Return**.

Task: Test Your Configuration

After you have configured the WebSphere MQ File Transfer Edition Agent Adapter and FTP Server adapter and WMQFTE User Map, you can test a transfer. If you have installed WebSphere MQ Explorer and the WebSphere MQ File Transfer Edition plug-in, use WebSphere MQ Explorer to request a transfer. You can monitor the transfer in WebSphere MQ Explorer.

About this task

This task is performed on WebSphere MQ Explorer

Procedure

1. Open WebSphere MQ Explorer.
2. Right-click on the coordination queue manager under Managed File Transfer and select **New Transfer**.
3. In the From section of the New Transfer page, select the source agent and transfer type. You can only send files or directories. Enter the location and name of the file you are sending. If you are transferring a file outbound from Sterling B2B Integrator to WebSphere MQ File Transfer Edition, enter the path relative to the virtual root this transfer will be mapped to. If you are sending a file inbound from WebSphere MQ File Transfer Edition to Sterling B2B Integrator, enter the file system path to the source file.
4. In the To section of the New Transfer page, select the destination agent and transfer type. Enter the location and name of where the file will be placed on the destination machine. If the transfer is inbound to Sterling B2B Integrator, enter the destination path relative to the virtual root of the WebSphere MQ File Transfer Edition user this transfer will be mapped to. If you are transferring a file from Sterling B2B Integrator to WebSphere MQ File Transfer Edition, enter the path for the file system destination for the file. If you do not enter a destination file name, the file keeps the same name as the source file.
5. Select **Finish**.
6. Left click on the Transfer Log for the queue manager from which you requested a transfer.
7. Locate the transfer in the Transfer Log. You will see the source Agent, the Destination agent and the Completion Status.

Task: Troubleshoot Your Sterling B2B Integrator and WebSphere MQ File Transfer Edition Configuration

There are several things to check if your transfer is not successful. Common reasons for failure include errors in the WMQFTE User Map, errors in the file name location, and typing errors. WebSphere MQ File Transfer Edition error messages, which begin with BFG, are shown in WebSphere MQ Explorer. These messages can provide useful troubleshooting information. Consult the WebSphere MQ File Transfer Edition documentation or work with the WebSphere MQ File Transfer Edition administrator when you see these messages.

Transfer Isn't Progressing

If the transfer starts and doesn't seem to be progressing, verify that the WebSphere MQ File Transfer Edition Agent Adapter and the FTP Server Adapter are running.

Is the Source File Location Correct?

A transfer will fail if it can not find the source file. For Sterling B2B Integrator outbound transfers, the source file location is always a mailbox. Make sure the location specified in the transfer is correct.

Is the MQMD User ID and Sterling B2B Integrator User Mapping Correct?

Transfers will fail if the user mapping on Sterling B2B Integrator is incorrect. If you have MQ Explorer installed, right-click on the transfer record in the Transfer Log and select Properties. The properties lists the MQMD User Id for that transfer. Make sure that the MQMD User Id for the transfer is in the WMQFTE User Map and is associated with the correct local user and password.

The Transfer Succeeded But the File Isn't in The Directory You Expect It To Be

By default, WebSphere MQ File Transfer Edition transfers are set to create subdirectories in the destination locations. Make sure you spelled the destination location correctly. If you wanted the file to be placed in "Source" and entered "Soucre", the transfer created a new folder and put the file there. You can prevent this from happening in Sterling B2B Integrator by setting a Policy for the FTP Server Adapter so that it can not create subdirectories.

MQ Explorer shows the error: BFGSS0030W: The agent is already acting as the source agent for the maximum number of file transfer operations and unable to queue further requests, due to the queued transfer limit of 1000 being reached. The new transfer request will not be carried out

If there are too many transfers queued up by the source agent, the WebSphere MQ File Transfer Edition Agent Adapter will start rejecting transfers. The default maximum number of transfers is 1000. If the number of transfers exceeds 1000, transfers are rejected. If you see this error, you can increase the number of transfers by increasing the value of the maxQueuedTransfer parameter for the WebSphere MQ File Transfer Edition Agent Adapter with the 'Additional Agent Properties File' option. Create an agent.properties file with an entry for the maxQueuedTransfer parameter. Set the parameter to a value over 1000. Edit the WebSphere MQ File Transfer Edition Agent Adapter to use the properties file you created.

The WebSphere MQ File Transfer Edition Agent Adapter Queue Manager Script Does Not Run Correctly on z/OS

The WebSphere MQ File Transfer Edition Agent Adapter script can get corrupted if it is not transferred to z/OS in a way that properly converts the file. The file needs to be converted to EBCDIC and to retain the proper end of line markings or it will not work properly. This could be an issue if you download the script to a Windows machine and then FTP it to z/OS. You can do one of two things:

1. Click the link for the file in the Sterling B2B Integrator dashboard and download the file.

2. Chose Open With and select WORDPAD.exe as program to use.
3. From Wordpad, use 'Save As' and select plain text.
4. Use FTP in text mode to copy the file to z/OS and run appropriate JCL command to have queue manager process the file.

Or

1. Click the link for the file in the Sterling B2B Integrator dashboard and download the file to the Windows system.
2. From Windows (DOS) command prompt, run `c:\>type <WebSphere MQ File Transfer Edition agent name>-create.msqc | FIND "" /V > <WMQFTE agent name>-create2.msqc`.
3. Use FTP text mode to copy the new <WebSphere MQ File Transfer Edition agent name>-create2.msqc file to z/OS and run the appropriate JCL command to have the queue manager process the file.

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