

Managing File Transfers with webMethods ActiveTransfer

Innovation Release

Version 10.2

April 2018

This document applies to webMethods ActiveTransfer Version 10.2 and to all subsequent releases.

Specifications contained herein are subject to change and these changes will be reported in subsequent release notes or new editions.

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About this Guide

This guide explains how to configure webMethods ActiveTransfer, manage file transfers, and view analytical information about file transfer activity within an environment. The guide explains common administrative tasks, such as managing servers and ports, defining post-processing and scheduled actions, managing virtual file folders, granting user access to folders and server instances, and viewing and maintaining log information.

This guide assumes you are familiar with webMethods Integration Server.

Document Conventions

Convention	Description
Bold	Identifies elements on a screen.
Narrowfont	Identifies storage locations for services on webMethods Integration Server, using the convention <i>folder.subfolder:service</i> .
UPPERCASE	Identifies keyboard keys. Keys you must press simultaneously are joined with a plus sign (+).
<i>Italic</i>	Identifies variables for which you must supply values specific to your own situation or environment. Identifies new terms the first time they occur in the text.
Monospace font	Identifies text you must type or messages displayed by the system.
{ }	Indicates a set of choices from which you must choose one. Type only the information inside the curly braces. Do not type the { } symbols.
	Separates two mutually exclusive choices in a syntax line. Type one of these choices. Do not type the symbol.
[]	Indicates one or more options. Type only the information inside the square brackets. Do not type the [] symbols.

Convention	Description
...	Indicates that you can type multiple options of the same type. Type only the information. Do not type the ellipsis (...).

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- Link to external websites that discuss open standards and web technology.

1 Understanding ActiveTransfer

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Overview of Managed File Transfer

Managed file transfer (MFT) is a process that ensures protected internal and external data transfers in a centralized system for Business-to-Business (B2B), Application-to-Application (A2A), cloud-based, or ad hoc environments. MFT uses a combination of advanced software and secure communications protocols to provide the following:

- Reliable, secure data transfer
- Automated data transfers based on specific policies, partners, and permissions
- Better management of large files
- Insight and control at every stage of the transfer process, including real-time monitoring, error and receipt logging, auditing, and data tracking

MFT solutions come in many implementations, including both software applications and services, with varying levels of control, integration, and transparency. Most MFT solutions are made up of at least the following four key components, available individually or bundled as an end-to-end solution:

- **MFT servers**, which do the primary work of MFT exchange behind a firewall, including support of all communications and security protocols.
- **Proxies/reverse proxies**, which operate in the “demilitarized zone” and protect the actual IP addresses and ports of both transmitters and recipients.
- **Clients**, which provide administration, reporting, scheduling, and scripting, used by both human users and applications (through application programming interfaces, or APIs).
- **APIs**, which enable third-party applications to interact and communicate with MFT servers.

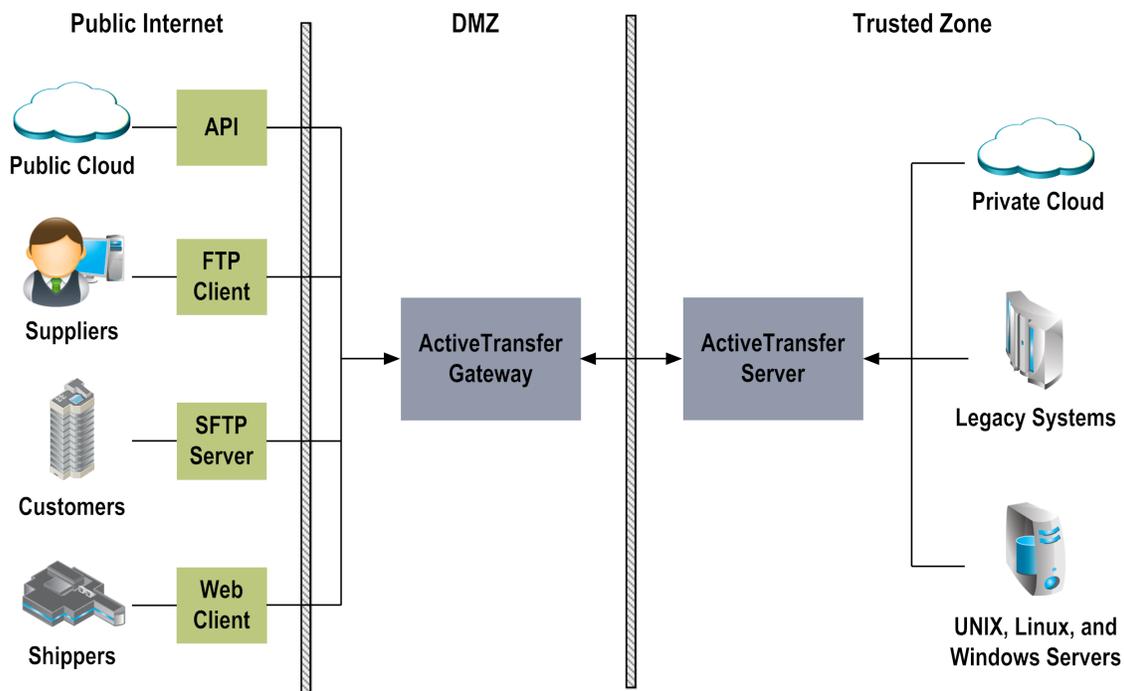
MFT offers a number of security, administration, and scalability advantages over non-secure file transfer protocols such as FTP. With MFT, there is no need to develop custom code for routine functions such as delivery confirmation, reporting, audit, security provisioning, and trading partner/community management.

What Is webMethods ActiveTransfer?

webMethods ActiveTransfer is an integrated MFT solution that brings together B2B, application support, and MFT in a service-oriented platform.

webMethods ActiveTransfer provides you with a single point of control for all file transfer activity, both inside and outside the extended enterprise. ActiveTransfer enables organizations to exchange information securely over the Internet using a variety of communication protocols.

The following figure illustrates at a high level how ActiveTransfer components fit into an MFT scenario.



ActiveTransfer is fully integrated with the webMethods Product Suite, enabling companies to replace older, non-secure file transfer systems with a consolidated platform. ActiveTransfer supports collaboration, file sharing, integration, governance, and scalability.

Features of webMethods ActiveTransfer

ActiveTransfer offers the following features:

- Centralized management:** Provides a centralized interface to manage file transfers, servers, and users. You can set up transfer definitions to facilitate the transfer of entire directories or individual files. You can also control access to file transfers on a per-user basis.
- Transaction monitoring and analytics:** Provides a centralized interface to browse and search audit logs of all file transfers. A variety of embedded analytics provide insight into all the file transfers happening within your environment by showing metrics, making comparisons, and summarizing key activity.
- Business event triggers:** Provides the ability to trigger scheduled or post-processing actions based on file transfer criteria that you specify. For example, an action can be configured to have webMethods Integration Server automatically activate an internal business process, such as order entry or invoicing, if a file transfer is successful. Other actions include executing a file operation (for example, copying, renaming,

deleting, encrypting, or zipping the file), executing a script or a Trading Networks service, sending a Broker notification, sending an email, or writing the file to the database.

- **Multi-protocol support:** Provides full support for HTTP, HTTPS, FTP, FTPS (SSL), SFTP (SSH), SCP, SMB (client only), WebDAV, and WebDAVs protocols.
- **Proxy server support:** Provides full support for file transactions to HTTP, HTTPS, and SOCKS proxy servers for protocols that support these proxy server types.
- **Built-in encryption and security:** Offers complete data security and support for the world's most stringent encryption standards, including SSL and integrated PGP. You can apply global and per-user IP address restrictions. You can also apply policies that can restrict activity during specific days of the week and time of day.
- **Client support:** Provides a variety of client interfaces that end users can use to send files to ActiveTransfer Server. End users can upload or download files using a standard web browser. ActiveTransfer also supports third-party clients such as those for FTP, FTPS, and SSH, enabling partners to transfer files using their existing technologies.
- **Direct integration:** Integrates files directly into your infrastructure. The tight integration of ActiveTransfer with Integration Server, webMethods Broker, and webMethods Trading Networks provides a single platform for interactions based on services, events, and files.
- **Acceleration:** Accelerated file transfers use a server's full bandwidth regardless of network latency or distance. Acceleration is performed over HTTPS and does not require opening of ports in the firewall. File transfers through FTP can also be accelerated by tunneling them through HTTPS. Bandwidth can be controlled either globally or at an individual user level, which ensures that file transfers only occupy a certain percentage of the bandwidth available without affecting other resources on the network.
- **Gateway support:** ActiveTransfer Gateway functions as a reverse proxy server, which acts as an intermediary between the Internet and the internal ActiveTransfer Server for secure file transfer.
- **Failover support for file transfer operations:** Multiple ActiveTransfer Servers can be connected to an ActiveTransfer Gateway. If one server node connected to an ActiveTransfer Gateway fails, another node connected to the ActiveTransfer Gateway automatically takes over the operation of the failed node provided the nodes point to the same ActiveTransfer database. Note that failover is not supported for post-processing events that fail when an ActiveTransfer Server goes down or for post-processing events that have not started after a file transfer is complete because the ActiveTransfer Server went down.
- **Session replication:** A group of ActiveTransfer Servers can be configured to replicate an ActiveTransfer client session that is in progress on one node, across all other ActiveTransfer Server nodes in the group. So, if one ActiveTransfer Server goes down, the client is directed to another ActiveTransfer Server node in the group and the client session continues without the need for a client re-login.

- **Parallel processing of multiple event threads:** Provides you the option of selecting parallel processing of files in multiple threads instead of single-thread, sequential processing of files in an event. Parallel processing results in quicker and more efficient file processing.
- **Integration with webMethods Trading Networks:** Provides you the option of using a single solution, webMethods Trading Networks, to manage partners for ActiveTransfer events. In addition, Trading Networks users can use ActiveTransfer as a delivery method to deliver and receive documents. For details on Trading Networks, see the Trading Networks documentation.
- **Integration with Software AG Command Central :** Provides you the option of using Command Central to manage all ActiveTransfer Server instances from a single user interface. With Command Central, you can start, stop, or restart the WmMFT package and ActiveTransfer Server instances; manage ports; manage licenses; access and download ActiveTransfer Server logs.

Typical Usage Scenarios

Typical business uses of ActiveTransfer include the following:

- Business-to-Business (B2B)
 - Transfers between a manufacturer and a wholesaler
 - Transfers between a wholesaler and a retailer
- Application-to-Application (A2A)
 - Transfers between a bank branch and the central headquarters
 - Transfers between different systems and a mainframe/ERP

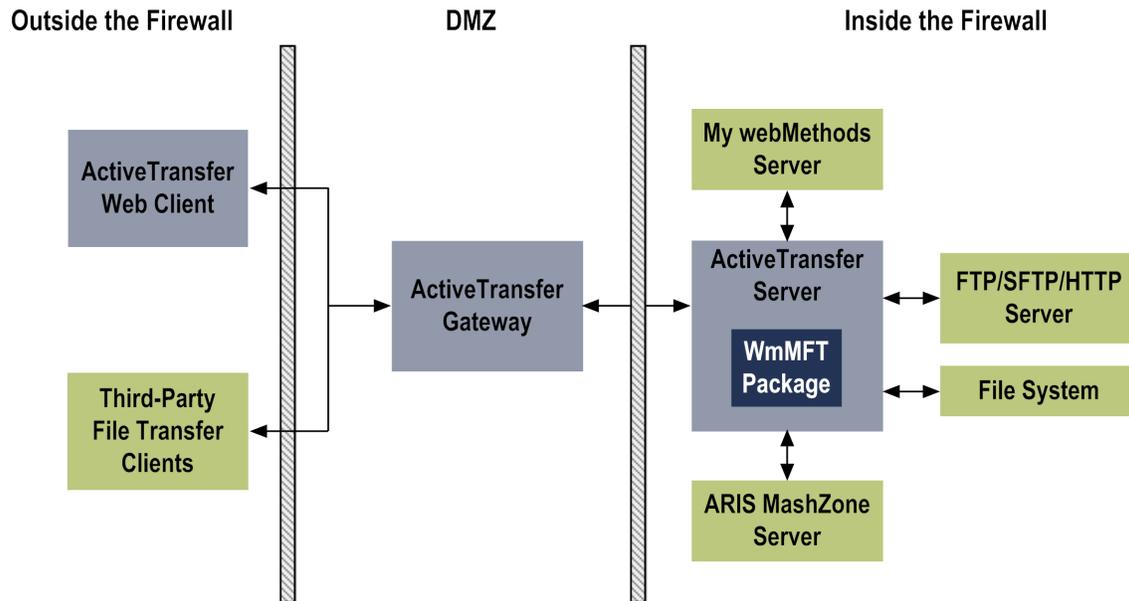
ActiveTransfer Architecture

ActiveTransfer consists of the following components, which interact with your internal FTP clients and with other applications and systems:

- ActiveTransfer Server, which resides behind a firewall.
- ActiveTransfer Gateway, which acts as an intermediary between the Internet and the internal ActiveTransfer Server.
- ActiveTransfer web client, which provides access to ActiveTransfer Server to perform file transfers.

ActiveTransfer Server includes an Integration Server package called WmMFT, which enables ActiveTransfer Server to communicate with Integration Server and My webMethods Server.

The following diagram illustrates how these components typically interact:



For a summary of access points to configure for the components that ActiveTransfer connects to, see "[ActiveTransfer Access Points](#)" on page 241.

The WmMFT Package

The WmMFT package is a standard Integration Server package that performs the following functions:

- Facilitates the interaction between Integration Server and ActiveTransfer Server. When the WmMFT package is enabled in Integration Server, the package starts automatically when you start Integration Server.
- Facilitates the interaction between My webMethods Server, which hosts the ActiveTransfer administration interface, and ActiveTransfer Server. My webMethods Server uses SAML authentication and web service calls to invoke WmMFT functionality to monitor file transactions and manage ActiveTransfer Server, ActiveTransfer Gateway, users, post-processing events, scheduled actions, and data files and folders in the virtual file system.
- Contains built-in services for executing predefined events and for configuring ActiveTransfer Server.

The ActiveTransfer OSGi Bundles

ActiveTransfer Server is implemented as a set of OSGi bundles within the Integration Server profile, which contain the implementation of the core features of ActiveTransfer. ActiveTransfer comprises the following OSGi bundles, typically available in the *Integration Server_directory*\common\runtime\bundles\mft\eclipse directory:

- com.softwareag.mft.launcher

- com.softwareag.mft.common
- com.softwareag.mft.proxy
- com.softwareag.mft.server
- com.softwareag.mft.service
- com.softwareag.mft.tunnel

Note: The *Integration Server_directory*\common\runtime\bundles\mft\eclipse location might change depending on the product or fix installation process.

The ActiveTransfer Interfaces

ActiveTransfer offers the following interfaces:

- **My webMethods:** My webMethods Server hosts the administration interface for ActiveTransfer. Using the My webMethods interface, administrators can manage users, grant access permissions, configure the ActiveTransfer environment, and perform other administrative tasks.
- **API:** Built-in services enable administrators to execute predefined events and configure ActiveTransfer Server.
- **Web client:** The ActiveTransfer web client enables users to access the ActiveTransfer Server to download, upload, and share files.

How does ActiveTransfer work with Trading Networks?

In the Software AG business-to-business (B2B) platform that includes webMethods Trading Networks, ActiveTransfer provides the managed file transfer facility while Trading Networks provides you the B2B capabilities of file (referred to as *documents* in Trading Networks) management and partner management, transaction monitoring, and so on.

Whether you have installed the ActiveTransfer and Trading Networks instances on the same Integration Server host (local installation) or different Integration Server hosts (remote installation), you can control B2B transactions end to end by using ActiveTransfer and Trading Networks as follows:

- **Configure partners only once and then synchronize.**

Configure partners only once—either in ActiveTransfer or Trading Networks. If Trading Networks is not installed, you can define your own partners when you edit virtual folders or user profiles in ActiveTransfer. If Trading Networks is installed, ActiveTransfer Server can retrieve the list of partners from Trading Networks. However, you must define the partner-user and partner-virtual folder associations separately in the two products.

Synchronization of partner information between the two products depends on the following parameter settings. For detailed information on these parameters, see ["Server Configuration Parameters and Variables" on page 217](#).

- `mft.partners.useTNPartners`. This parameter enables the use of Trading Networks partners configured in Trading Networks instead of ActiveTransfer partners.

Note: To make any new Trading Networks partner available in ActiveTransfer, reload the WmMFT package or run the Integration Server service `wm.mft.assets.partner.syncPartnerProfiles`.

- `mft.aliases.tn`. When connecting to remote Trading Networks instances, this parameter lists all the remote Trading Networks server aliases. Local installations of ActiveTransfer and Trading Networks do not require this parameter to share partner information.
- `mft.group.aliases`. If you have ActiveTransfer groups, this parameter enables the sharing of all assets, including partner information, across all ActiveTransfer Server instances in the group.

- **Send files to Trading Networks.**

Local installations of ActiveTransfer and Trading Networks instances do not require any specific configuration for file transfers to Trading Networks. In case of remote installations, ActiveTransfer requires the parameter `mft.aliases.tn` to send files to remote Trading Networks instances. In this parameter, specify the remote server aliases defined in Integration Server for the remote Trading Networks instances. For detailed information on `mft.aliases.tn`, see ["mft.aliases.tn" on page 218](#).

After configuring the required parameters, you can use the **Execute Trading Networks Service** event action to send files to Trading Networks for document processing. For details on the **Execute Trading Networks Service** event action, see ["Executing a Trading Networks Service" on page 163](#).

- **Receive files from Trading Networks.**

Similar to file transfers Trading Networks, only remote installations of Trading Networks instances require a specific configuration—in Trading Networks, you must specify the remote server aliases defined in Integration Server for the remote ActiveTransfer instances. For details on how to configure remote ActiveTransfer server aliases in Trading Networks, see the Trading Networks documentation.

In Trading Networks, ActiveTransfer is available as a delivery method for file transfer (or *document delivery* in Trading Networks). For the ActiveTransfer delivery method, the Trading Networks partner must have a virtual folder. Then, when Trading Networks triggers a file transfer, ActiveTransfer sends the file to the target location in the virtual folder without creating a local copy.

For each file sent, Trading Networks and ActiveTransfer maintain different IDs by which to identify the file transfer. To help you identify Trading Networks file transactions, ActiveTransfer logs include the Trading Networks document ID as well as the ActiveTransfer transaction ID. However, the My webMethods Server

user interface only displays the ActiveTransfer transaction ID. Also, in the My webMethods Server user interface, you can identify file transactions triggered in Trading Networks by using Trading Networks (TN) as the trigger source or the Trading Networks file name. For details on how to filter and find file transaction details, see "[Monitoring ActiveTransfer](#)" on page 187.

Failover Support for File Transfer Operations

Failover support enables you to avoid a single point of failure in your file transfer operations. ActiveTransfer Server provides failover support in the following scenarios:

- Inbound File Transfer
- Outbound File Transfer

Inbound File Transfer

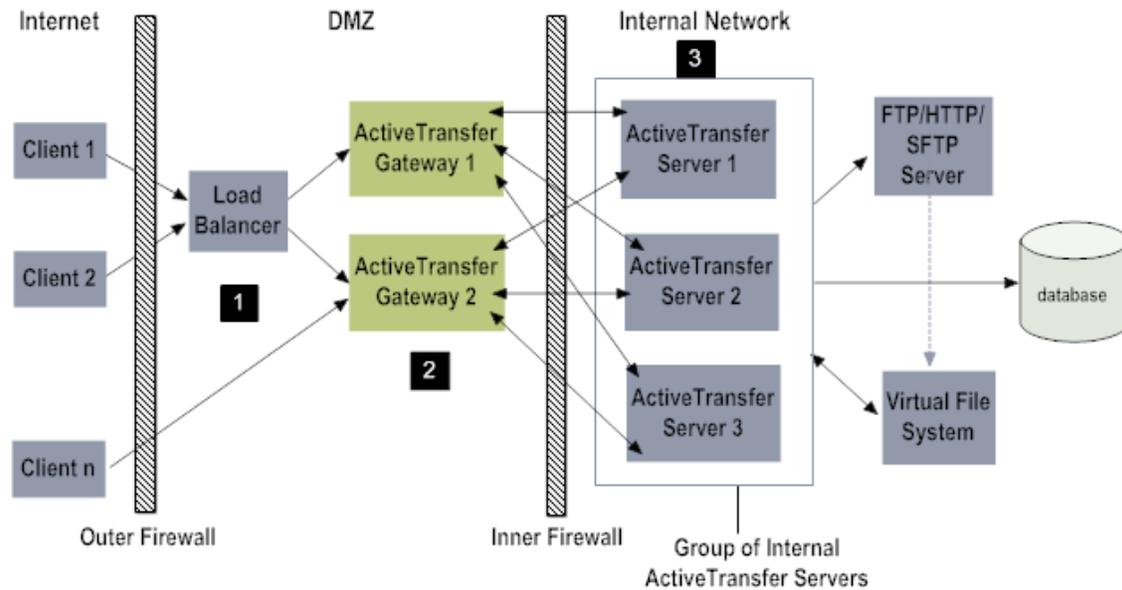
If an ActiveTransfer Server cannot handle a request, or becomes unavailable, the request is automatically redirected to another ActiveTransfer Server that is connected to the same ActiveTransfer Gateway.

Prerequisites to Configuring Failover Support for Inbound File Transfer

- All ActiveTransfer Server and Gateway nodes in the ActiveTransfer installation must run the same webMethods ActiveTransfer version, with the same fixes applied.
- All the ActiveTransfer Server nodes that are part of the *group* that will support failover of file transfer operations must connect to the same ActiveTransfer Gateway in the DMZ.
- All the ActiveTransfer Server nodes that are part of the group that will support failover of file transfer operations must connect to the same ActiveTransfer database.
- All the ActiveTransfer Server nodes that are part of the group that will support failover of file transfer operations must be able to access a common virtual folder location configured in the VFS.

How does Failover for an ActiveTransfer Server Work?

The following diagram illustrates how an ActiveTransfer client request is handled in failover mode:



Step	Description
1	External clients send file transfer requests to the ActiveTransfer Gateway, directly or through a load balancer.
2	ActiveTransfer Gateway then passes on the requests to the ActiveTransfer Server.
3	The ActiveTransfer Server processes the requests and sends responses to the ActiveTransfer Gateway. If one ActiveTransfer Server in a group fails during a file transfer operation, another ActiveTransfer Server takes over and completes the file transfer operation.
Note:	ActiveTransfer does not support failover for post-processing events. If an ActiveTransfer Server goes down after the file transfer operation is completed, the post-processing event configured for the file transfer will not be executed by any other ActiveTransfer Server connected to the ActiveTransfer Gateway. If an ActiveTransfer Server goes down during the execution of a post-processing event, another ActiveTransfer Server connected to the ActiveTransfer Gateway will not resume the post-processing event.

ActiveTransfer Server Group

You can set up a group of ActiveTransfer Servers that share the same database to provide failover support for file transfers when one ActiveTransfer Server node in the group goes down. An ActiveTransfer Server group enables load balancing for incoming file transfer requests from clients. This setup, which is referred to as the *ActiveTransfer Server group*, is independent of Integration Server clustering. An ActiveTransfer Server

group does not make use of the capabilities of an Integration Server cluster, except in the case of the Integration Server scheduler used for scheduled events. For an illustration of a setup that includes an ActiveTransfer Server group and a third-party load balancer, see ["How does Failover for an ActiveTransfer Server Work?" on page 21](#).

The ActiveTransfer Server group provides the following capabilities:

- Failover support for file transactions
- Session replication of ActiveTransfer client sessions using local cache
- Load balancing

The following information is stored in the database and shared between the ActiveTransfer Server nodes in a group:

- User details
- User authentication details (CDS database)
- Virtual folder definitions
- Post-processing and scheduled event configurations
- Server port details
- Transaction details

Session Replication

Session replication is useful when a client directly connects to a load balancer which in turn connects to ActiveTransfer Server. Session replication enables you to configure replication of an ActiveTransfer client session that is in progress on one node, across all other ActiveTransfer Server nodes in the group. A client connected to one ActiveTransfer Server in a group is valid on all other ActiveTransfer Servers in the group. So, if one ActiveTransfer Server goes down, the client is directed to another ActiveTransfer Server in the group and any in-progress file transfers can continue without the need for a client re-login. For configuration details, see ["Configuring Session Replication in ActiveTransfer Servers" on page 33](#).

Note that session replication is not required if the client connects directly to the ActiveTransfer Gateway which routes the requests to ActiveTransfer Server. In this case, ActiveTransfer Gateway automatically handles session replication between ActiveTransfer Servers.

Note: ActiveTransfer Server's session replication only replicates data from client sessions. Changes to configuration data (for example: server preferences, user configuration) and runtime data (for example: list of IP addresses banned because of invalid logins) will not be replicated across the ActiveTransfer Server nodes.

Outbound File Transfer

An outbound file transfer is triggered by a scheduled event configured in the ActiveTransfer Server or when the ActiveTransfer Server directly invokes the `wm.mft.schedule:executeEventservice` service.

To configure failover support for outbound file transfers:

- In the copy or move action configuration on the Event Management page, select **Retry failed copies** and **Resume transfer from the point of interruption** options.

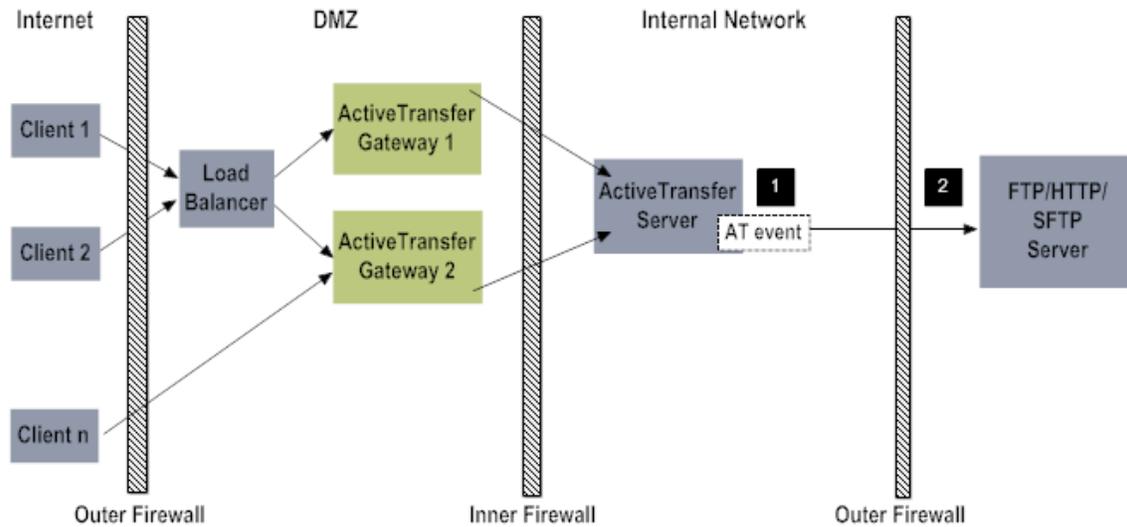
Select this option...	To...
Retry failed copies	Retry a failed copy or move operation for the specified number of times.
Resume transfer from the point of interruption	Resume an interrupted copy or move operation from the point of interruption.

For additional details, see ["Copying or Moving Files" on page 141](#).

- If you are transferring files by way of a virtual folder instead of directly connecting to an external server, configure the following additional options for the virtual folder in the **Administration > Integration > Managed File Transfer > Virtual Folder Management** page before you use the virtual folder in a move or copy action:
 - **High Availability Download Recovery**, if you want ActiveTransfer Server to recover from a download that was not completed.
 - **High Availability Upload Recovery**, if you want ActiveTransfer Server to recover from an upload that was not completed.

The High Availability Upload/Download Recovery options provide recovery from short drops in connections (30 to 60 seconds) during file transfers. ActiveTransfer Server maintains an internal buffer for the transfer-in-progress which is used for automatic retries to re-connect to the external server if the connection goes down. And, when the connection is re-established, ActiveTransfer Server resumes the file transfer from the point of failure. This automatic resume is triggered by ActiveTransfer Server without the intervention of the requestor ensuring uninterrupted file transfer. For additional details on configuring these options, see ["Associating a Virtual Folder with a Physical Folder Location" on page 118](#).

The outbound file transfer scenario is shown in the following illustration:



Label	Description
1	A scheduled event configured in ActiveTransfer Server triggers a file transfer request to an external server.
2	The file transfer request is configured to transfer files to or from an external server, or transfer files to a virtual folder pointing to an external server configured in ActiveTransfer Server and pointing to an external server.

If the connection between an ActiveTransfer Server and a remote server goes down when a file transfer is in progress, ActiveTransfer provides failover support as follows:

- You can configure ActiveTransfer Server to try to re-establish the connection with the remote server. You can set the number of retries when you configure a copy or move action in a post-processing or scheduled event. The default value for the number of retries is `Unlimited`. Once the connection with the remote server is established, you can configure the ActiveTransfer Server to resume file transfer from the point of failure or from the beginning.
- You can configure the High Availability Upload/Download Recovery options in a virtual folder. If selected, these settings provide automatic resume of interrupted file transfer requests from the point of failure. This process is triggered by ActiveTransfer Server without the requestor's knowledge or intervention.

Session Reuse

ActiveTransfer Server events reuse existing client sessions for remote server operations in their actions instead of creating new sessions for each remote operation. For example, a client session created by ActiveTransfer for a find action to fetch files from a remote server can be used later on by a copy or rename action for the same operation. This is achieved by caching the client sessions in ActiveTransfer Server. Session reuse reduces the load on the remote servers caused by multiple client logins. Session reuse improves the performance and scalability of ActiveTransfer Server. This capability is only available with ActiveTransfer Server 9.7 Fix 7 and higher.

Use of Special Characters in Search

My webMethods Server, which hosts the ActiveTransfer administration interface, allows you to use the following special characters in search strings.

Wildcard Search

Depending on whether you want a broad or narrow search results containing the search strings provided, you can either use an asterisk or question mark as wildcard characters.

- *. The asterisk, along with other search characters, gives you all matches that include the search string characters.

Example: The search string `*abc.txt` gives these results:

`kweihdabc.txt, abc.txt, 874abc.txt, labc.txt, aabc.txt, _abc.txt`

- ?. The question mark, along with other search string characters, gives you only those matches that include one character in place of the question mark and the other search string characters.

Example: The search string `?abc.txt` gives these results:

`labc.txt, aabc.txt, _abc.txt`

Exact Match Search

For exact keyword searches, place the search string within single quotation marks.

Example: The search string `'abc.txt'` returns only `abc.txt` as the search result.

2 Configuring webMethods ActiveTransfer

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Before Configuring ActiveTransfer

Before you start performing the configuration tasks described in this chapter, make sure the following tasks are completed:

- Ensure that you have a valid license file for ActiveTransfer Server or ActiveTransfer Gateway.

For details, see "ActiveTransfer License File" on page 30.

- Ensure that "[ActiveTransfer Server](#)" on page 215 and, optionally, ActiveTransfer Gateway are installed. For details, see *Installing Software AG Products*.
- Ensure that all ActiveTransfer Server and Gateway nodes in the ActiveTransfer installation run the same webMethods ActiveTransfer version, with the same fixes applied.
- Ensure that a database component for ActiveTransfer Server is created. For details, see the chapter on creating and dropping database components in *Installing Software AG Products*.

Note: This step does not apply to ActiveTransfer Gateway.

- Ensure that central user management is configured in Integration Server to provide My webMethods users with access to ActiveTransfer. For details, see the chapter on configuring a central user directory or LDAP in *webMethods Integration Server Administrator's Guide*.
- Ensure that the correct SAML resolver location is specified for every Integration Server instance that communicates with My webMethods Server through the WmMFT package.

The default SAML resolver URL is <https://localhost:8585/services/SAML>. Integration Server stores this URL in the `watt.server.auth.samlResolver` server configuration parameter. For information about changing the SAML resolver URL, see *webMethods Integration Server Administrator's Guide*.
- If you want to use MySQL Community Server as your database, ensure that you install MySQL Community Server version 5.7 and complete the required configurations. For details, see "[Configuring a MySQL Community Server Version 5.7 Database](#)" on page 31.
- Ensure that My webMethods Server and Integration Server are started, in that order.

Summary of Configuration Steps

After you install ActiveTransfer, you must perform the following high-level steps to configure ActiveTransfer.

Note: Command Central also allows you to manage ports. For details on how to use Command Central to manage Active transfer, see .

1. Add an ActiveTransfer Server instance to My webMethods Server if the Integration Server that hosts ActiveTransfer Server is running on a machine other than "localhost" on port 5555. For details, see "Adding an ActiveTransfer Server Instance to My webMethods" on page 32.
2. Replace the default SSL certificate for ActiveTransfer instances used in production environments. For details, see "Replacing the Default SSL Certificate" on page 34.
3. Configure ActiveTransfer to send emails by editing the ActiveTransfer configuration properties file. For details, see "Configuring ActiveTransfer to Send Emails" on page 42.
4. Create server ports and configure settings for specific ActiveTransfer Server and ActiveTransfer Gateway instances. For details, see "[Managing ActiveTransfer Server](#) " on page 65 and *Managing File Transfers with webMethods ActiveTransfer Gateway*.
5. Create the users who will use ActiveTransfer to transfer files. For details, see "Working with Templates" on page 87 and " Managing Users, User Groups, and User Roles" on page 97.
6. Create a virtual file system (VFS) and grant access permissions and functional privileges to the folders within the VFS. For details, see "Managing Virtual Folders in a Virtual File System" on page 113.
7. Verify that the appropriate keystore files reside on the machines that host the ActiveTransfer Server or ActiveTransfer Gateway on which you are performing configuration tasks. For details, see "Verifying the Location of Keystore Files for ActiveTransfer" on page 36.
8. Include the IP addresses of the machines that run trusted applications in the unbanned list if these applications will send frequent requests to ActiveTransfer Server or ActiveTransfer Gateway. This is to ensure that these IP addresses are not automatically banned by the default banning settings of ActiveTransfer Server or Gateway. For details, see "mft.query.maxrows" on page 222
9. Configure and manage acceleration using My webMethods. For details, see "Configuring Tunnels for Acceleration" on page 45.
10. Define events that, when triggered, cause ActiveTransfer Server to perform a specified set of actions. For details, see "Managing Events" on page 129.
11. Set up the Software AG MashZone environment and connect the MashZone NextGen server to My webMethods Server. For details, see "Configuring MashZone NextGen" on page 48.
12. Grant non-administrator users the ability to access specific ActiveTransfer screens in My webMethods as necessary. For details, see "Granting Access to ActiveTransfer Pages in My webMethods " on page 55.

For a summary of the ports and host names or IP addresses that ActiveTransfer uses, the products to which ActiveTransfer Server and ActiveTransfer Gateway connect, and the

file paths used for virtual folders and file operations, see "ActiveTransfer Access Points" on page 241.

ActiveTransfer License File

You require a valid license file to install ActiveTransfer. During installation of ActiveTransfer, you are prompted to specify the location of the license file. Therefore, ensure that the license file is in a location that will be accessible during the installation, such as on the local file system. There are three types of ActiveTransfer license files:

- ActiveTransfer Server
- ActiveTransfer Gateway
- ActiveTransfer Agent

You will receive the license in the form of a XML file (for example, `MAT97.xml`). You can identify the ActiveTransfer license type by viewing the product information in the license file.

ActiveTransfer Server:

```
<ProductCode>MAT</ProductCode>
...
<ProductName>ActiveTransfer Server</ProductName>
<ProductVersion>9.7</ProductVersion>
```

ActiveTransfer Gateway:

```
<ProductCode>MAP</ProductCode>
...
<ProductName>ActiveTransfer Gateway</ProductName>
<ProductVersion>9.7</ProductVersion>
```

For details of the ActiveTransfer Agent license, see *Managing File Transfers with webMethods ActiveTransfer Gateway*.

The license file (`licenseKey.xml`) is installed in the `Integration Server_directory \instances \instance_name \packages \WmMFT \config` folder when you install ActiveTransfer using Software AG Installer. ActiveTransfer checks the license file on startup and depending on the license file type installed, starts up as an ActiveTransfer Server or as an ActiveTransfer Gateway.

To change the ActiveTransfer license file

1. Stop the ActiveTransfer instance.
2. Rename the new license file as `licenseKey.xml`. For example, rename `MAT97.xml` to `licenseKey.xml`.
3. Browse to `Integration Server_directory \instances \instance_name \packages \WmMFT \config` folder and replace the existing license file with the new file.
4. Start ActiveTransfer.

Configuring Database Settings

ActiveTransfer requires a database to store configuration and monitoring data.

When you install ActiveTransfer, you can specify database connection parameters. ActiveTransfer creates a JDBC Pool Alias as during installation and associates this to "ActiveTransfer" JDBC Functional Alias. The connection parameters (JDBC Pool Definition) can be modified after installation. For details on how to install ActiveTransfer, see *Installing Software AG Products*.

If you want to use MySQL Community Server version 5.7 as your database, you would need to perform a few additional steps as described in "[Configuring a MySQL Community Server Version 5.7 Database](#)" on page 31.

Configuring a MySQL Community Server Version 5.7 Database

You can use MySQL Community Server version 5.7 as the database for JDBC connection pools.

To configure MySQL Community Server version 5.7

1. Install MySQL Community Server version 5.7.
2. Configure the database driver for MySQL Community Server version 5.7 as described in *webMethods Integration Server Administrator's Guide*.
3. If your ActiveTransfer Server and MySQL databases are in different time zones, set the following parameters when you configure the MySQL JDBC pools for ActiveTransfer:

- `useLegacyDatetetimeCode=false`
- `serverTimezone=MySQL Server Time Zone`

For example, if your ActiveTransfer time zone is Eastern Standard Time (EST) and your MySQL Server time zone is Central Standard Time(CST), the JDBC Pool URL should be:

```
jdbc:mysql://<myhost>:3306/<my database>?  
useLegacyDatetetimeCode=false&serverTimezone=IST
```

For a list of supported time zones, see the MySQL JDBC connector documentation.

Adding an ActiveTransfer Server Instance to My webMethods

My webMethods Server, or a cluster of My webMethods Server instances, can connect to one or more instances of ActiveTransfer Server. Use this procedure to do the following:

- If the Integration Server that hosts ActiveTransfer Server is running on a machine other than “localhost” on port 5555, change the default host name or port of the Integration Server instance definition added to My webMethods.
- Add another ActiveTransfer Server instance to My webMethods, if necessary.

After you complete this procedure, a My webMethods user with access to multiple ActiveTransfer Server instances can select this ActiveTransfer Server instance on ActiveTransfer administration and monitoring pages.

Note: For every user who logs on to My webMethods Server, My webMethods Server creates a session that expires only after the user logs off. Changes to ActiveTransfer instance configurations are not applied until the user logs off and the session ends.

To add an ActiveTransfer Server instance to My webMethods

1. In My webMethods: **Administration > My webMethods > System Settings > ActiveTransfer Instances**.
2. In the ActiveTransfer **Instance Settings** panel, click .
3. Specify the following settings:

Field	Description
Instance Name	Name of the ActiveTransfer Server instance to connect to.
Host	Host name or IP address of the Integration Server that hosts the ActiveTransfer Server instance.
Integration ServerPort	Port number of the Integration Server that hosts the ActiveTransfer Server instance.
Use SSL	Whether to use the Secure Sockets Layer protocol to secure communication between My webMethods and the ActiveTransfer Server instance.

4. Click **OK**.

Configuring Timeout for ActiveTransfer Server Web Service Responses

When a My webMethods Server user issues a request that requires access to ActiveTransfer Server data, My webMethods Server executes an ActiveTransfer Server web service on Integration Server for the purpose. On specific ActiveTransfer Server instances, use this procedure to configure how long My webMethods Server should wait for a response from ActiveTransfer Server web services before timing out the requested action.

1. In My webMethods: **Administration > My webMethods > System Settings > ActiveTransfer Instances**.
2. For the ActiveTransfer Server instance, click the **Edit ActiveTransfer Instance** icon.
3. In **Web Service Timeout**, type the number of seconds My webMethods Server should wait for a response from ActiveTransfer web services before timing out the requested action.

Configuring Session Replication in ActiveTransfer Servers

Use this procedure to enable session replication in a group of ActiveTransfer Server nodes.

1. Open the ActiveTransfer configuration properties file (properties.cnf), located in the *Integration Server_directory\instances\instance_name\packages\WmMFT\config* directory of one ActiveTransfer Server node.
2. Set the following server configuration parameters:
 - **mft.session.replication.enable**: Set this property to true to enable session replication in this ActiveTransfer Server node.
 - **mft.session.replication.address**: Provide the details of this ActiveTransfer Server node.
 - **mft.session.replication.other.nodes**: Provide the list of the ActiveTransfer Server nodes that will form a group with this ActiveTransfer Server node.

For more information about these parameters, see "Server Configuration Parameters" on page 218.

3. Save and close the properties.cnf file.
4. Repeat steps 1 to 3 for each ActiveTransfer Server node in the group.

Replacing the Default SSL Certificate

ActiveTransfer uses a default SSL certificate, installed with ActiveTransfer, for the following purposes:

- To facilitate communication between ActiveTransfer Server and ActiveTransfer Gateway
- To facilitate communication through SSL ports when specific SSL certificates are not configured for those ports

The default SSL certificate is adequate for demo or testing purposes. However, in production environments, Software AG strongly recommends replacing this default certificate with your own certificate.

1. Obtain an SSL certificate for your organization in JKS format. Save this certificate in the following directory on ActiveTransfer Server and, if you are using a gateway, ActiveTransfer Gateway:

Integration Server_directory\instances*instance_name* \packages\WmMFT\resources

2. Open the ActiveTransfer security configuration file (*security.cnf*), located in the *Integration Server_directory* \instances*instance_name* \packages\WmMFT\config directory, and update the following properties:
 - **mft.ssl.privatekey.password:** Provide the private key password for the replacement default certificate.
 - **mft.ssl.keystore.password:** Provide the keystore password for the replacement default certificate.
 - **mft.ssl.certificate.file.name:** Provide the file name of the replacement default certificate.
3. Restart Integration Server.

Important: Software AG strongly recommends restarting Integration Server now. Doing so deletes the password text strings from the security configuration file and enables you to restart Integration Server in the future without being prompted to supply the certificate passwords.

User Certificate Mapping

The *Certificate Mapping* feature in ActiveTransfer allows you to use the user-certificate mapping configured in Integration Server or in My webMethods to validate a client login based on the client certificate, and to fetch the user details associated with the certificate. This capability is only available with ActiveTransfer Server 9.7 Fix1 and higher.

Note: If you configure the user-certificate mapping for a user both in Integration Server and My webMethods, the configuration in Integration Server takes precedence.

For additional details on certificate mapping, see *webMethods Integration Server Administrator's Guide* and *Administering My webMethods Server*.

Enabling ActiveTransfer Server to Use the User-Certificate Mapping in Integration Server or My webMethods

By default, ActiveTransfer Server uses the CN value in the client certificate as the user name for the client who logs in. To enable ActiveTransfer to use the user mapped to the certificate in Integration Server or My webMethods as the username, you must set the ActiveTransfer property, `mft.server.ssl.useSCertMap` in the `\packages\WmMFT\config\properties.cnf` file to `true`. This property can take the following values:

- `False` (default) ActiveTransfer Server considers the CN value in the certificate as the username.
- `True` ActiveTransfer Server looks for the user mapped to the client certificate in Integration Server or My webMethods and considers the same as the username.

ActiveTransfer Server needs the user corresponding to the certificate to fetch the virtual folders configured for the user. If the CN value in the certificate is used as the user, the administrator has the additional responsibility of creating users with the exact name as the CN value for the entire set of client certificates.

Note: Ensure that the user to certificate mapping has been configured in Integration Server or My webMethods for the users who will log on to the ActiveTransfer Server configured as an SSL server. Use one of the following methods to configure the user to certificate mapping:

1. In Integration Server, **Security > Certificates > Configure Client Certificates**.
 - a. Specify the *Certificate Path* and *User*.
 - b. Click **Import Certificate**.
2. Alternatively, in My webMethods, **Administration > System-Wide > User Management > Certificates**.
 - a. Click **Add New Certificate**.
 - b. Browse to the *Certificate File*.
 - c. Specify the *Certificate Type*.
 - d. Click **Upload**.

Verifying the Location of Keystore Files for ActiveTransfer

A keystore file contains one or more pairs of a private key and signed certificate for its corresponding public key. Keystores provide added layers of security and are easier to use than maintaining keys and certificates in separate files. Keystore files should be strongly protected with a password and stored, either on the file system or elsewhere, so that they are accessible only to administrators.

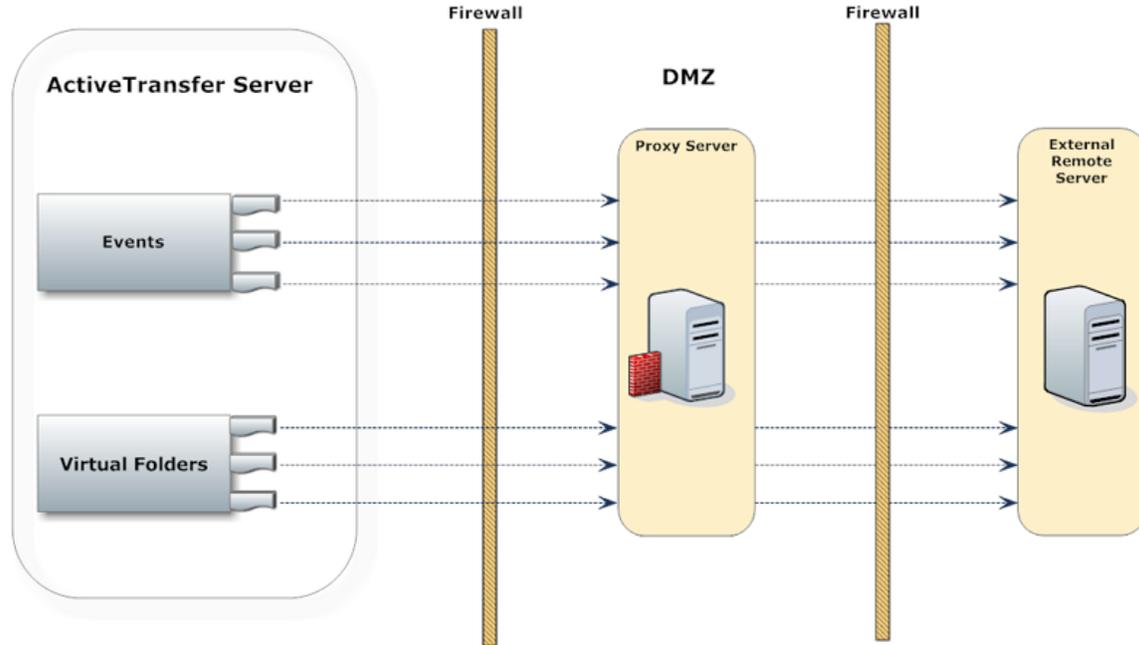
You will be prompted to specify a keystore location when you configure the following settings:

- SSL settings for an ActiveTransfer Server or ActiveTransfer Gateway port that uses the HTTPS or FTPS protocol, as described in "Specifying a Keystore File for a Port" on page 68.
- SSL settings for an ActiveTransfer Server or ActiveTransfer Gateway instance rather than for a specific port, as described in "Activating SSL Settings" on page 80.
- File-based encryption and decryption settings for an ActiveTransfer Server or ActiveTransfer Gateway instance, as described in "Activating File-Based Encryption and Decryption" on page 81.
- SSH settings for an ActiveTransfer Server port that uses the SFTP protocol, as described in "Setting RSA and DSA Encryption" on page 73.
- File-based encryption and decryption settings when configuring templates and users on ActiveTransfer Server, as described in "Specifying Encryption and Decryption Options at the Template Level" on page 93 and "Specifying Encryption and Decryption Options for a User" on page 110.
- The "encrypt" or "decrypt" file operation for an event configured on ActiveTransfer Server, as described in "Encrypting and Decrypting Files" on page 147.

Verify that the appropriate keystore files reside on the machines that host the ActiveTransfer Server or ActiveTransfer Gateway on which you are performing these configuration tasks.

Managing Proxy Server Aliases

If you have installed ActiveTransfer behind a firewall, you might need proxy servers in order to connect to external remote servers outside the firewall. ActiveTransfer provides full support for HTTP, HTTPS, and SOCKS proxy servers for protocols that support these proxy server types. The following diagram illustrates a typical proxy server setup in which ActiveTransfer transfers files to an external remote server.



File transfers through proxy servers to remote servers require proxy server aliases set up either in Integration Server or ActiveTransfer. The file transfer protocols, proxy server types, and proxy server aliases supported are:

File Transfer Protocol	Supported Proxy Server Type	ActiveTransfer Proxy Server Alias Type
FTP	SOCKS	SOCKS
SFTP	HTTPS	HTTPS
	SOCKS	SOCKS
HTTP	HTTP	HTTP
	SOCKS	SOCKS
HTTPS	HTTPS	HTTPS
	SOCKS	SOCKS

Set up proxy server aliases in the **My webMethods: Administration > Integration > Managed File Transfer > Proxy Management > Proxy Management** page. Each time you add, delete, or modify proxy server aliases in the Proxy Management page, ActiveTransfer shares the changes with Integration Server, and the changes appear in **Integration Server Administrator > Settings > Proxy Servers**. Similarly, Integration Server shares proxy server aliases set up in Integration Server with ActiveTransfer. In ActiveTransfer, you can then associate virtual folders and configure event actions with the proxy server aliases. For

information on how to set up proxy server aliases in Integration Server, see *webMethods Integration Server Administrator's Guide*.

The details of file transactions using proxy server aliases are available in file transaction details in the File Transaction page and event logs. For details on viewing file transaction details, see ["Viewing File Transaction Details" on page 189](#) and ["Monitoring Events" on page 191](#).

How to Use Proxy Server Aliases

ActiveTransfer supports proxy server alias in the following two scenarios.

- When you configure a VFS that points to an external remote server. The connection to the remote server is routed through the proxy server alias specified in the VFS configuration.
- When you configure an event action that requires connection to an external remote server.

In both these scenarios, you can either configure the VFS or event action to use a specific proxy server alias or use the default proxy server alias setup in ActiveTransfer or Integration Server. For information on default proxy server aliases in Integration Server, see *webMethods Integration Server Administrator's Guide*.

You can set up single or multiple proxy server aliases for each file transfer protocol. However, you can designate only one proxy server alias as the default proxy server alias for a particular file transfer protocol. If you do not designate a default proxy server alias for a protocol, ActiveTransfer uses the Integration Server parameters, `watt.net.proxy.useNonDefaultProxies` and `watt.net.proxy.fallbackToDirectConnection`, to select the appropriate proxy server alias. The parameters which decide the proxy server aliases to use at run time are:

Parameter Location in...	Parameter Required and Description
Integration Server	<code>watt.net.proxy.fallbackToDirectConnection</code>

Set this parameter in
Integration Server_directory\instances
\instance_name \config directory \cnfserver.cnf.

The parameter determines how ActiveTransfer handles connections through proxy servers:

- *true* : ActiveTransfer establishes a direct connection to the remote server.
- *false* : ActiveTransfer treats the connection attempt as failed.

Parameter Location in...	Parameter Required and Description
	<p>For information on the parameter, see <i>webMethods Integration Server Administrator's Guide</i>.</p>
Integration Server	watt.net.proxySkipList
	<p>Set this parameter in <i>Integration Server_directory\instances\instance_name\config directory\cnfserver.cnf</i>.</p> <p>If the IP address of the remote server is in this list, ActiveTransfer ignores the proxy server alias and connects directly to the remote server.</p> <p>For information on the parameter, see <i>webMethods Integration Server Administrator's Guide</i>.</p>
Integration Server	watt.net.proxy.useNonDefaultProxies
	<p>Set this parameter in <i>Integration Server_directory\instances\instance_name\config directory\cnfserver.cnf</i>.</p> <p>For information on the parameter, see <i>webMethods Integration Server Administrator's Guide</i>.</p> <p>The parameter determines how ActiveTransfer must handle the absence of default proxy sever aliases.</p> <ul style="list-style-type: none"> ■ <i>true</i> : ActiveTransfer selects any proxy server alias enabled for the protocol. ■ <i>false</i> : ActiveTransfer treats the connection attempt as failed.
ActiveTransfer	mft.client.outbound.useProxy
	<p>Set this parameter in <i>Integration Server_directory\instances</i></p>

Parameter Location in...	Parameter Required and Description
	<p><code>\instance_name \packages\WmMFT\config \properties.cnf.</code></p> <p>The parameter determines if proxy server settings are enabled in ActiveTransfer. For more information on the parameter, see "mft.client.outbound.useProxy" on page 219.</p>

Adding a Proxy Server Alias

Use this procedure to add a proxy server alias for file transfers from and to remote servers through proxy servers. The proxy server alias you add here also appears in Integration Server Administrator > **Settings** > **Proxy Servers**.

For information on the use of proxy server aliases, see ["Managing Proxy Server Aliases" on page 36.](#)

1. In **My webMethods: Administration** > **Integration** > **Managed File Transfer** > **Proxy Management**.
2. Above the proxy server alias list, click  at the top right corner.
3. In the Add Proxy Server Alias dialog box, provide the following details:

Field	Do this...
Alias	Type a suitable name for the proxy server alias.
Protocol	Select the file transfer protocol to which this proxy server alias applies.
Host IP Address	Type the host IP address for the proxy server..
Port Number	Type the port number to use for the proxy server alias.

4. Click **Add**.
The proxy server alias appears at the top of the proxy server alias list.
5. Select the proxy server alias in the list, and specify the following details:

Field	Do this...
User Name	Type the user name to connect to the proxy server.

Field	Do this...
Password	Type the password to connect to the proxy server.
Enable	Select this option to enable the proxy server alias.
Is Default	Select this option if you want ActiveTransfer to use this alias as the default proxy server alias for the particular file transfer protocol.

Note: You can designate only one proxy server alias as the default proxy server alias for a particular file transfer protocol.

- Click **Save**.

Connecting to HTTP(S) Servers

You can configure HTTP(S) servers in events and virtual folders. When connecting to remote HTTP(S) servers, ActiveTransfer works differently if the HTTP(S) server is an ActiveTransfer Server or a third-party HTTP(S) server as follows:

- **Third-party HTTP(S) server.** When connecting to third-party HTTP(S) servers, ActiveTransfer supports only upload and download file operations. Typically, third party HTTP(S) servers do not support operations like file listing, renaming, moving, and so on. Due to this limitation, you cannot specify a third-party HTTP(S) servers in the virtual folder configuration, since virtual folders require support for all file operations.

However, you can specify a third party HTTP(S) server in an event for find and copy actions. If you use a third-party HTTP(S) server in an event action, the HTTP(S) URL specified in the action relates to a single file. Therefore, the event action works on a single file at a time.

- **ActiveTransfer HTTP(S) Server.** ActiveTransfer uses a custom method to communicate between each other using an agreed set of HTTP requests and response. Therefore, when ActiveTransfer connects to an ActiveTransfer HTTP(S) Server, all file operations are supported.

Connections to remote HTTP(S) servers also support the following features:

- **Streaming of data (chunking).** ActiveTransfer supports chunked transfer encoding in HTTP. In chunked transfer encoding, the data is sent as a series of "chunks". This enables ActiveTransfer to stream the data to an HTTP(S) server rather than sending the data in a single HTTP request, which is particularly helpful when handling large files. The Active transfer client streams the data to the server as soon as the data is available without waiting for the complete data to be available.

For upload or download, there is no limitation on the file size. However, the chunk size is determined by the Integration Server property `watt.net.httpChunkSize` and the default value is 8192. For details, see the *webMethods Integration Server Administrator's Guide*.

If the remote HTTP(S) server streams the file data that ActiveTransfer must download, ActiveTransfer downloads the file as chunks. File uploads presume that the HTTP(S) servers support chunking. ActiveTransfer sends the file data as chunks if you include the upload header `Transfer-Encoding` with the value `chunked` in the event configuration.

- **Multipart messages.** HTTP(S) servers expect data formatted as multipart messages. ActiveTransfer supports multipart messages out of the box for file upload to remote HTTP(S) servers. To send files formatted as multipart messages, include the upload header `Content-Type` with the value `multipart/form-data` in the event configuration.
- **Resuming file transfer from point of interruption.** When an upload or download operation fails while ActiveTransfer connects to an HTTP(S) server, ActiveTransfer resumes the operation from the point where the failure occurred. ActiveTransfer transfers (upload or download) only the remaining data (bytes) and skips the data that is already transferred.

Configuring ActiveTransfer to Send Emails

You can configure ActiveTransfer to send emails in the following situations:

- As a post-processing action when a file is uploaded, downloaded, or deleted
- When a new user is created
- When an existing user profile is modified
- When a user shares a file manually using the web client

Preparing ActiveTransfer to send emails requires the configuration of the SMTP server and configuration of the default email settings.

Configuring the SMTP Server

You configure the SMTP server that is used to send emails using one of the following methods:

- Edit the resource settings on the **Settings > Resources** page in Integration Server Administrator.
- Set the following server configuration parameters: `watt.server.smtpServer`, `watt.server.smtpServerPort`, `watt.server.smtpTransportSecurity`, and `watt.server.smtpTrustStoreAlias`.

For more information about these methods, see *webMethods Integration Server Administrator's Guide*.

Configuring Default Email Settings

Use this procedure to configure default email settings.

To configure default email settings

1. Open the ActiveTransfer configuration properties file (properties.cnf), located in the *Integration Server_directory* \instances*instance_name* \packages\WmMFT\config directory, and set the default sender, external ActiveTransfer Server URL, and email subject line in the following parameters:
 - mft.user.email.from
 - mft.user.email.public.ip
 - mft.user.email.subject

For more information about these parameters, see "Server Configuration Parameters" on page 218.

Note: If you are specifying email settings as part of defining a "send email" action for a post-processing or scheduled event, you can override the sender and subject line parameters, as well as provide required information such as the email recipient and email body, as part of defining the event. For details, see "Sending an Email Message" on page 168.

2. Configure the body of the emails sent when user profiles are created or modified by editing the following files located in the *Integration Server_directory* \instances*instance_name* \packages\WmMFT\config directory in a text editor:
 - For emails that will be sent to new users, edit the NewUserEmailContent.txt file.
 - For emails that will be sent to existing users whose profile you have changed, edit the ExistingUserEmailContent.txt file.

You can include user variables in the body of the email that is sent when user profiles are created or modified. For more information, see "User Variables" on page 230.

3. Ensure that at least one server port is configured with the **Include this information in the user credentials email** option. For details, see "Including Port Information in User Emails" on page 68.
4. Reload the WmMFT package. For more information about reloading packages, see *webMethods Integration Server Administrator's Guide*.

Configuring the Maximum Number Actions in an Event

By default, ActiveTransfer allows users to add a maximum of 20 actions in an event. You can increase this default limit to 50 actions using this procedure.

1. Navigate to the following location:

Integration Server_directory\MWS\server\default\deploy\portal.war\WEB-INF\

2. Using an XML editor, open the file jetty8-web.xml.
3. Locate the line `<Configure class="org.eclipse.jetty.webapp.WebAppContext">`.

4. Make the following edits:

- a. Change the default value 2000 for the property `maxFormKeys` as follows:

```
<Set name="maxFormKeys">4000</Set>
```

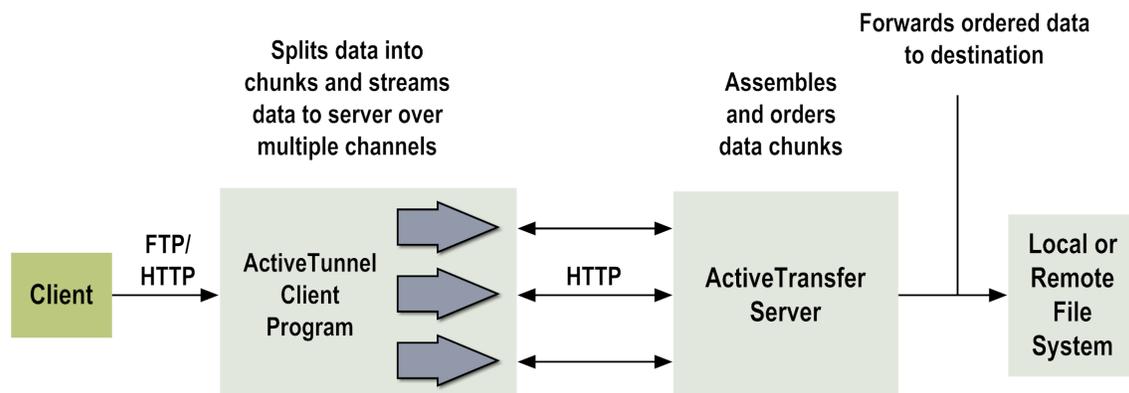
- b. In the next line, add the property `maxFormContentSize`:

```
<Set name="maxFormContentSize">2000000</Set>
```

Configuring and Managing Acceleration

Through the use of tunnels, ActiveTransfer provides the ability to conduct high-speed file transfer by dividing a single connection into many connections. Data is delivered in parallel through these tunnel connections and then reassembled and delivered to the intended destination.

The following diagram illustrates this process:



Any TCP connection that pushes data as fast as possible without internal verification of received amounts can be accelerated. Users connect to their own local host IP address, and the tunnel then routes the data over HTTP to ActiveTransfer Server, which forwards the data to the destination.

ActiveTransfer Server performs accelerated transfers by using a multiplier in the HTTP acceleration. As network latency increases, the maximum theoretical bandwidth of a connection decreases significantly. You can offset this decrease in bandwidth by configuring the HTTP tunnel multiplier needed to reach your maximum speed. For example, if the speed is 3 MB/sec and your bandwidth maximum is 50 MB/sec, entering a multiplier of 17 will give you the maximum acceleration. Entering a multiplier higher than 17 in this case is not beneficial because your Internet Service Provider still limits your maximum speed.

Configuring Tunnels for Acceleration

To configure tunnels for acceleration

1. Define an ActiveTransfer Server tunnel. For details, see "Accelerating Data Transfer" on page 82.

Note: If you are using an ActiveTransfer Gateway to accept client connections, you must define the tunnel on ActiveTransfer Server, not on the Gateway.

2. Add the following ports for ActiveTransfer Server to use internally as part of the tunneling process:
 - a. If you are using the FTP protocol for accelerated file transfers, add an FTP port numbered 55521 with an IP address of 127.0.0.1.
 - b. If you are using the HTTP protocol or the ActiveTransfer web client for accelerated file transfers, add an HTTP port numbered 55580 with an IP address of 127.0.0.1. The IP address and port number of the HTTP port are the same as the IP address and port number used in the tunnel definition for the server port.

If you are using an ActiveTransfer Gateway to route client requests to ActiveTransfer Server, configure these ports in the gateway. For details about adding ports, see "Adding a Port" on page 66.

3. Map the tunnel to one or more users to grant access to the tunnel. For details, see "Specifying Acceleration Options at the Template Level" on page 94 and "Specifying Acceleration Options for a User" on page 111.

If you do not map a tunnel to a user, and the user uses the advanced upload/download feature in the web client, the server will upload or download the files or folders at a normal, not an accelerated, rate of speed.

Using Acceleration

After you configure acceleration, users can accelerate their file transfers using one of three methods:

- **Web client.** For instructions, see *webMethods ActiveTransfer Web Client User's Guide*.

- **ActiveTunnel.jar file.** For more information, see "Accelerating File Transfers Using the ActiveTunnel.jar File" on page 46.
- **Java Network Launch Protocol (JNLP).** For more information, see "Accelerating File Transfers Using JNLP" on page 46.

Accelerating File Transfers Using the ActiveTunnel.jar File

Use this method if you are using the FTP protocol for accelerated file transfers.

You can integrate the ActiveTunnel process into an existing workflow using a standalone machine that acts as the tunnel provider using the ActiveTunnel.jar file. You can download this jar file from the WebInterface folder of ActiveTransfer Server using the following URL:

`http://host:port/WebInterface/ActiveTunnel.jar`

For example:

```
java -cp ActiveTunnel.jar com.softwareag.mft.tunnel2.Tunnel2 protocol=https  
host=localhost port=443 username=sag password=sag
```

Where:

- `protocol` is the either HTTP or HTTPS.
- `host` is the host (local or remote) to which to connect.
- `port` is the port to use to connect to the host.
- `username` is the user name to log on to the host.
- `password` is the user name to log on to the host.

The command starts the tunnel and defines it as a server that can handle both FTP and HTTP requests. The tunnel then passes the request to ActiveTransfer Server or ActiveTransfer Gateway.

You can also start a tunnel programmatically through your own code by including the ActiveTunnel.jar file in the code.

Accelerating File Transfers Using JNLP

Use this method if you are using the HTTP protocol for accelerated file transfers.

You can launch a specific tunnel from the command line using Java WebStart by way of the ActiveTunnel.jnlp file. You can download this JNLP file from the WebInterface folder of ActiveTransfer Server using the following URL:

`http://host:port/WebInterface/ActiveTunnel.jnlp`

Limitations of File Acceleration

The following limitations are observed with respect to file acceleration:

- If you enable the HTTP only security configuration by setting `HTTPOnly=true` in the `config.properties` file, file acceleration does not work. File acceleration in ActiveTransfer web client uses an applet which is blocked because you have enabled the `HTTPOnly` setting.
- If you enable CSRF security configuration by setting `csrf=true` in the `config.properties` file, file acceleration does not work.

Achieving Maximum Throughput for File Transfers using Acceleration

You can achieve maximum throughput using file acceleration when transferring large files on high latency connections such as the ones between inter-continental and cross-continental locations with the following techniques:

- Utilizing the network bandwidth to the maximum by varying the number of channels.
- Adjusting the **Minimum Fast Speed** and the **Minimum Slow speed** based on the one channel test.
- Adjusting the **Channels Ramp Up** value based on the **IN/OUT channels** set, and the performance of file acceleration.

Note: These guidelines are applicable (have been tested) only for the inbound file transfer scenario in ActiveTransfer Server and in the case of file download using ActiveTransfer web client.

The acceleration parameters and their roles are listed in the table below:

Acceleration Parameter	Description
Basic Settings:	
IN Channels	Indicates the maximum number of inbound channels that can be opened in parallel to transfer one file.
OUT Channels	Indicates the maximum number of outbound channels that can be opened in parallel to transfer one file.
Advanced Settings:	
Stability Interval	The time to monitor a stable average speed before adding new channels. By default, 1 channel is added after the speed is stable for 5 seconds.
Channels Ramp Up	Number of incremental channels added at one shot. Default is 1.

Acceleration Parameter	Description
Minimum Fast Speed	Minimum speed that each channel should reach before a new channel can be added. Default value is 100Kb/sec.
Minimum Slow speed	Speed below which the channels are removed. By default, one channel at a time is removed at every interval 50Kb/sec.
Speed Threshold	Threshold speed to be reached before a new channel is added. Default value is 60%.

Setting Up the Channel Count

The IN and OUT channel counts are tuned based on the utilization of the hardware resources on the server machine. For example, in a network with 100 Mbps bandwidth and 150 ms latency, if we see a transfer rate of 48 Kbps with one channel, the network utilization is 0.5% of 100 Mbps. In this case, you will take around 400 minutes to transfer a 1 GB file. One solution to this issue is to set the **IN channels** to 200. This will increase the combined transfer rate to 9.37 Mbps (48 Kbps x 200 channels). With this new setting for **IN channels**, you will be able to transfer a 1 GB file in about 1 minute 49 seconds.

Increasing/decreasing the Minimum Fast Speed

You should make a note of the average transfer speed per channel and use that information to set the **Minimum Fast Speed**. **Minimum Fast Speed**

Increasing/Decreasing the Minimum Slow Speed

You should make a note of the minimum transfer speed per channel and use that information to set the **Minimum Slow Speed**. **Minimum Slow Speed**

Setting the Channels Ramp Up

You should decide on the **Channels Ramp Up** setting based on the number of IN/OUT channels. For example, if you set the **IN Channels** count to 100 channels and the **Channels Ramp Up** count to 10 for a file transfer, the channel count is ramped up in multiples of 10 which will help in achieving the required speed quickly. On the other hand, if for a **IN Channels** count of 20, if you set the **Channels Ramp Up** count to 10, you may not get the required speed. This setting might slow down the file transfer instead. A **Channel Ramp Up** value between 2- 4 channels will provide better results here.

Configuring MashZone NextGen

Before you can display ActiveTransfer analytical information in My webMethods, you must configure MashZone NextGen by performing the following high-level steps:

1. Configure MashZone NextGen and set up the dashboard for ActiveTransfer. For details, see "Setting Up the MashZone NextGen Environment" on page 49.
2. Connect the MashZone NextGen server to My webMethods Server so that analytical information can be viewed in My webMethods. For details, see "Connecting MashZone NextGen Server to My webMethods Server" on page 52.

For additional information about configuring MashZone NextGen and managing MashZone NextGen dashboards, see the MashZone NextGen documentation.

Setting Up the MashZone NextGen Environment

When you install ActiveTransfer using the Software AG Installer, the monitoring MashApps for ActiveTransfer Server are downloaded but are not installed on the MashZone NextGen server. Use this procedure to complete the configuration of MashZone NextGen.

To set up the MashZone NextGen environment

1. Copy the necessary files to the MashZone NextGen installation as follows:
 - a. Copy the relevant JDBC drivers to the directory *MashZone_Installation_directory* \MashZoneNG\mashzone\data\jdbcdrivers.
For details on the which JDBC drivers to copy, see MashZone NextGen documentation.
 - b. Copy the Red.less file from the directory *Integration Server_directory* \IntegrationServer\instances \instance_name \packages \WmMFT \mashzone \columnchart to the directory *MashZone_Installation_directory* \MashZoneNG\apache-tomcat\webapps \mashzone\hub\dashboard\assets\custom-look-and-feel\dashboard\default \columnchart.
2. Update the XFrame-Options filters and content security policies in the MashZone NextGen directory using the contents of the ActiveTransfer file as follows:
 - a. Navigate to the directory *Integration Server_directory* \IntegrationServer\instances \instance_name \packages \WmMFT \mashzone \security-filter
 - b. Using an XML editor, open the file applicationContext-security-filters.xml.
 - c. Copy the complete header content (all content within the open and close tags) for the following to a temporary file like a text file.
 - http pattern="/**/*.*.jsp" use-expressions="false"
 - http pattern="/**/*.*.html" use-expressions="false"
 - d. In the copied header content, locate each instance of `otherServerHost:otherServerPort` and replace:
 - `otherServerHost` with your My webMethods Server host name.

- `otherServerPort` with your My webMethods Server Server port number.
 - e. Close the `applicationContext-security-filters.xml` file.
 - f. Navigate to the directory `MashZone_Installation_directory \MashZoneNG \apache-tomcat\webapps\mashzone\WEB-INF\classes`.
 - g. Open the file `applicationContext-security-filters.xml`.
 - h. Replace the following header content (all content within the open and close tags) with the corresponding header content that you copied and edited earlier:
 - `http pattern="/**/*.jsp" use-expressions="false"`
 - `http pattern="/**/*.html" use-expressions="false"`
 - i. Save and close the `applicationContext-security-filters.xml` file.
3. Start the MashZone NextGen server.
 4. Browse to the MashZone NextGen welcome page `http://host:8080/mashzone`, and log on as a system user.

The default system user name and password are `Administrator` and `manage`, respectively.
 5. Depending on the system directory you use to store user credentials, do the following
 - By default, ActiveTransfer uses the My webMethods Server system directory. If you use the My webMethods Server system directory to store user profiles, create a matching user profile in MashZone NextGen for each user who has the permission to view or manage ActiveTransfer analytical information as follows:
 - i. In the MashZone NextGen welcome page, click **Administrator > Admin Console**.
 - ii. On the Admin Console page, click **Users & Groups > Users**.
 - iii. Click **Add new user**.
 - iv. Specify the login ID defined for the user in My webMethods Server and other relevant details.
 - v. Click **Add this user**.
 - Instead of the My webMethods Server system directory, if you use LDAP as your central user profile repository, integrate your LDAP directory with Software AG MashZone NextGen.

For details on how to integrate your LDAP repository with MashZone NextGen, see the MashZone NextGen documentation.
 6. In the MashZone NextGen, Admin Console page, add user groups and associate users with the user groups, as required.

For details on how to add user groups and associate users to user groups, see MashZone NextGen documentation.

Tip: Instead of specifying privileges for each user individually, define privileges for multiple users at a time by creating a user group, and then associating users with the group.

7. Import the ActiveTransfer analytics dashboard into MashZone NextGen by using the following command at the command prompt:
 - a. Navigate to the directory *Integration Server_directory*\IntegrationServer\instances\default\packages\WmMFT\mashzone\dashboard.
 - b. Copy the file ActiveTransfer_Analytics_Dashboard.zip to any location on your local machine.
 - c. Navigate to the directory *MashZone_Installation_directory* \MashZoneNG\prestocli\bin.
 - d. Open the command prompt and run the following command:

Note: The arrow symbol in this code snippet represents a forced line break for improved readability. When copying this code, delete the arrow symbol and the line break without introducing new character spaces or deleting existing character spaces.

```
padmin importDashboard -l http://host:port▶  
/mashzone -f Location of ActiveTransfer_Analytics_Dashboard.zip -u▶  
Administrator -w manage -o
```

8. Define a data source in MashZone NextGen to the ActiveTransfer database as follows:
 - a. On the Admin Console page, click **JDBC Configuration > Data Sources**.
 - b. Click **Add data source**.
 - c. In **Data Source Name**, type MFTDB, the name of the ActiveTransfer database.
For the ActiveTransfer analytics dashboard to work, the MFTDB database is mandatory.
 - d. Specify other relevant details for the ActiveTransfer database component.
 - e. Click **Save Changes**.
 - f. To test the database connection, click ▶.
9. Share the dashboard with the users or groups you defined previously as follows:
 - a. On the MashZone NextGen welcome page, open the **ActiveTransfer Analytics** dashboard.
 - b. In the menu, click  > **Manage > Permissions**.
 - c. In the Manage dashboard permissions dialog box, select view or edit permissions for the user or group.
 - d. Click **Save**.

Prerequisite:

"[Connecting MashZone NextGen Server to My webMethods Server](#)" on page 52

Connecting MashZone NextGen Server to My webMethods Server

MashZone NextGen dashboards for ActiveTransfer only work with My webMethods Server. Before you can view analytical information in My webMethods, you must connect the MashZone NextGen server to My webMethods Server.

To connect MashZone NextGen server to My webMethods Server

ActiveTransfer

1. In My webMethods: **My webMethods > System Settings > ActiveTransfer Instances**
2. In the **MashZone Server Settings** window, click the  button to add a MashZone NextGen server.
3. In the **Add MashZone Server Configuration** dialog box, type the following in the respective field text boxes:
 - The name of the MashZone NextGen server.
 - The host name and port of the machine on which MashZone NextGen is installed.

If you want to use the SSL port specified during MashZone installation, select the **Use Secure Connection** check box.
4. In the **ActiveTransfer Instance** list, select the appropriate ActiveTransfer Server.
5. Click **Save**.

Navigate to My webMethods: **Monitoring > Integration > Managed File Transfer > Analytics** to view the MashZone NextGen page for ActiveTransfer.

Starting and Stopping ActiveTransfer

ActiveTransfer has several components hosted in Integration Server runtime, including the WmMFT package and ActiveTransfer OSGi bundles. By default, when Integration Server starts and stops, ActiveTransfer also starts and stops. However, you can also start and stop ActiveTransfer separately.

From the **Packages** menu in the Integration Server, you can perform the following operations:

- Disable the WmMFT package to control ActiveTransfer separately from the Integration Server startup and stop processes.
- Start or stop the WmMFT package to start or stop ActiveTransfer. This ensures that all the ActiveTransfer OSGi bundles in the correct sequence.

For details on how to use Integration Server Administrator, see the *webMethods Integration Server Administrator's Guide*.

You can also use Command Central to start and stop the WmMFT package. For details, see "[Administering ActiveTransfer with Command Central](#)" on page 215 and *Software AG Command Central Help*.

3 Granting Access to ActiveTransfer Pages in My webMethods

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Overview

My webMethods Server provides control of access permissions at both the user and the role level. You can specify which parts of the ActiveTransfer interface are available to specific users, user groups, or roles, and the functions that each user, user group, or role is allowed to execute. For more information about access permissions, see *Administering My webMethods Server*.

Using these permissions, you grant access to ActiveTransfer pages in My webMethods, typically based on the role membership of My webMethods users. By default, My webMethods users have no access to ActiveTransfer pages.

To grant access, you must:

1. Create a My webMethods user account.
2. Define any custom roles you want to create for the user (see the following description of the default role).
3. Grant permissions to any custom roles you have created.
4. Add the user or user group as a member of one or more ActiveTransfer roles.

The default My webMethods role for ActiveTransfer is as follows:

My webMethods Server Role	Corresponding ACL	Description
MFT Administrators	MFTAdmins	These users can view all ActiveTransfer pages and perform all ActiveTransfer actions. You manually add My webMethods users to this role.

When you first start Integration Server and ActiveTransfer Server after configuring central user management, ActiveTransfer automatically adds the MFT Administrators role to the Allowed list of the MFTAdmins ACL.

Defining Roles

Defining roles for users consists of the following tasks:

- Creating a My webMethods user account for the user
- Defining roles to which you will grant access to ActiveTransfer pages
- Adding My webMethods users or user groups to the roles

For more information about these tasks, see *Administering My webMethods Server*.

Important: A user configured with the MFT Administrators role has the same privileges as a system user. The ActiveTransfer system owner should set appropriate file access rights for the user with the MFT Administrators role.

Adding My webMethods Users to the MFT Administrators Role

To grant a My webMethods user the authority to access ActiveTransfer pages, you must add the user to the MFT Administrators role. You can accomplish this by doing either of the following:

- Add the user to the MFT Administrators role.
- Add the group to which the user belongs to the MFT Administrators role.

For instructions, see the section on editing members of a static role in *Administering My webMethods Server*.

Granting a Role the Ability to Access an ActiveTransfer Server Instance

Users can connect to multiple ActiveTransfer Servers in My webMethods. On every My webMethods page that requires access to ActiveTransfer data, users can select the ActiveTransfer Server instance on which they would like to perform the requested action. You grant this access to a role by adding the role to the list of allowed roles for an ActiveTransfer Server instance.

To grant a role the ability to access an ActiveTransfer Server instance

1. In My webMethods: **Administration > My webMethods > System Settings > ActiveTransfer Instances**.
2. Click the **Permissions** icon for the ActiveTransfer Server instance you want to work with.

Note: If no ActiveTransfer Server instances are listed, you can add one. For details, see ["Adding an ActiveTransfer Server Instance to My webMethods" on page 32](#).

3. In the **Select Roles** dialog box, type text that exists in the names of the roles you want, and then click **Search**.
4. Move the roles to which you want to grant access from the **Available** list to the **Selected** list.
5. Click **Apply**.

Associating an Existing My webMethods Server Role with ActiveTransfer

Use this procedure to associate user role already defined in My webMethods Server with ActiveTransfer. For details on how to create a role in My webMethods Server, see *Administering My webMethods Server*. Similar to user association, once associated with ActiveTransfer, you can perform any of following operations on roles:

- Specify throttling options.
- Specify restrictions for server access, file actions, login volume, and so on.
- Specify encryption and decryption options.
- Specify acceleration options.

For details on inheritance of permissions, see ["Inheritance of Permissions and Settings in Groups and Roles" on page 98](#).

To associate an existing My webMethods Server role with ActiveTransfer

1. In My webMethods: **Administration > Integration > Managed File Transfer > User Management > Users**
2. Select the server instance. For details, see ["Selecting the Instance to Work With" on page 62](#).
3. Click **Role**.
4. Click the  button above the list of roles.
5. In the **Add Role** dialog box, enter the search criteria in the **Search Role** box and click **Search**.
6. In the search results, select the check box next to the role that you want to associate with ActiveTransfer and click **Select Role**.

Note: You can continue to add more user groups to the selected roles' list.

7. Click **Add**.

ActiveTransfer Server lists the roles in the Role page. and lists the user on the Users page.

Tip: To delete a role, select the role and click . This action does not delete the role from the system directory or from the external directory service. Rather, it removes the association between the role and ActiveTransfer.

Granting or Denying Access to Specific ActiveTransfer Pages in My webMethods

You can grant or deny access to specific My webMethods pages that a user or role can access. Examples include the following:

- You might want to grant another user selected administrative privileges. For example, you might want that user to be able to manage ActiveTransfer and Software AG MashZone servers and their settings. To do so, you must grant access to the **Administration > My webMethods > System Settings > ActiveTransfer Instances** page.
- Users in an operations analyst role would be interested in examining file transaction details and viewing analytics information. Users in this role would not be performing ActiveTransfer administrative tasks. Therefore, you would grant the role access to the File Transactions and Analytics pages, and you would deny access to the ActiveTransfer administration pages.

To grant or deny access to specific ActiveTransfer pages in My webMethods

1. In My webMethods: **Administration > System-Wide > Permissions Management**
2. On the **Advanced** tab on the Search panel, select **webMethods Applications** from the **Resource Type** list and click **Search**.
3. Move **webMethods Applications** from the **Found** list to the **Selected** list and click **Next**.
4. In the Manage Permissions panel, click **Add**.
5. In the **Add Principals** dialog box, search for and select one or more My webMethods users or roles to which you want to grant access.
6. Click **Add**.
7. In the Permissions panel, click the **Grant** check box for the ActiveTransfer pages you want the user or role to access, and click the **Deny** check box for the pages you do not want the user or role to access.
8. In the Manage Permissions panel, click **Apply**.

Important: Be sure to perform this step to assure that the permission is granted.

Granting the Authority to Execute ActiveTransfer Services

When a My webMethods user issues a request that requires access to ActiveTransfer data, My webMethods Server executes an ActiveTransfer service on Integration Server to perform the requested action, and then displays the results in My webMethods. To execute the service, My webMethods Server uses the credentials of the user. The My

webMethods user must, therefore, have the authority in Integration Server to execute the service.

In Integration Server, ActiveTransfer services are protected by the MFTAdmins ACL. For My webMethods users to be able to execute the services, the users must belong to the MFT Administrators role. However, you must still grant the user's role the appropriate permissions to My webMethods pages, as described in "[Granting or Denying Access to Specific ActiveTransfer Pages in My webMethods](#) " on page 59.

Note: If you want users to be able to execute ActiveTransfer services from Software AG Designer, the users must be a member of the MFTAdmins ACL in Integration Server.

4 Preparing to Manage and Monitor ActiveTransfer Server in My webMethods

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Overview

Many of the My webMethods pages on which you perform ActiveTransfer administrative and monitoring tasks share a common way of selecting server instances to work with and displaying and managing search results. This chapter describes the steps to perform these common tasks.

For additional information about the My webMethods user interface, see *Working with My webMethods*.

Selecting the Instance to Work With

The ActiveTransfer administrative and monitoring tasks you perform in My webMethods require you to first select the ActiveTransfer Server, ActiveTransfer Gateway, or Software AG MashZone server instance you want to work with.

To select the instance to work with

1. At the top left of the ActiveTransfer **Server Management** page in My webMethods, click the name of the current instance.
2. If you are working with the Analytics page to view ActiveTransfer analytical information, select the Software AG MashZone server instance you want to work with.
3. If you are working with the Server Management page to change the configuration of an ActiveTransfer Server or ActiveTransfer Gateway instance, do the following:
 - a. From the **ActiveTransferInstances** list, select the ActiveTransfer Server instance you want to work with.
 - b. If you are working with an ActiveTransfer Gateway instance defined for the selected ActiveTransfer Server, select the instance from the **ActiveTransferGatewayInstances** list.
 - c. Click **OK**.
4. If you are working with any other ActiveTransfer administration or monitoring page, select the ActiveTransfer Server instance you want to work with.

Searching for Items and Managing Search Results

The following ActiveTransfer pages display search results in a table at the top of the page.

ActiveTransfer Page	Navigation Path in My webMethods
Server Management (Ports, Acceleration, and Gateway tabs)	Administration > Integration > Managed File Transfer > Server Management
Templates	Administration > Integration > Managed File Transfer > User Management > Templates
Users	Administration > Integration > Managed File Transfer > User Management > Users
Event Management	Administration > Integration > Managed File Transfer > Event Management
File Transactions	Monitoring > Integration > Managed File Transfer > File Transactions
Agents	Administration > Integration > Managed File Transfer > Agent Management > Agents
Agent Groups	Administration > Integration > Managed File Transfer > Agent Management > Agent Groups
Agent Events	Administration > Integration > Managed File Transfer > Agent Management > Agent Events
Agent Event Log	Monitoring > Integration > Managed File Transfer > Agent Event Log
Agent Activity Log	Monitoring > Integration > Managed File Transfer > Agent Activity Log

You can search for a specific port, template, user, event, or file transaction. You can also set the number of rows to display in the search results list, select the columns to display in the table, and export the list details to a CSV file.

Note: Not all of the features described in the following procedure are available for all items.

To search for items and manage search results

1. If you want to search for a port, template, user, or event, type the first few letters of the item name in the **Search** box. The search results lists dynamically populates with the items that match your search criteria.

Tip: For users, you can type the first few letters of the user's first name, last name, or user ID. Alternatively, you can click the arrow to the right of the search box and enter the search criteria in the appropriate box.

Note: This step does not apply to file transactions. For file transactions, you must populate the search results table by specifying filter criteria. For details, see ["Monitoring File Transaction Activity" on page 188](#).

2. If you want to set the number of rows to display in the search results list, click  and select the appropriate number of rows in the **Table Options** dialog box.
3. If you want to select the columns to display in the table, click  and do the following:
 - a. Select the **Configure Table** option from the list.
 - b. Select the columns to display or hide.
 - c. Click **OK**.
4. If you want to export the list details to a CSV file, click , select the **Export Table** option in the **Table Options** dialog box, and do the following:
 - a. From the **Character Encoding** list, select the appropriate character encoding for the exported data.
 - b. Click **Export**.
 - c. Specify where to save the file. The exact method depends on the browser you are using.

Note: In case of file transactions, change the search criteria to limit the search results to a reasonable number. If the number of file transactions is extremely large, export fails.

5. If you want to refresh the list, click .

5 Managing ActiveTransfer Server

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Managing ActiveTransfer Ports

You can configure ActiveTransfer Server to listen on one or more ports. Each port is associated with a protocol. Clients can connect to ActiveTransfer Server using configured ports to transfer files and to execute other commands, such as obtain a directory listing. For example, if you create port 21 with the FTP protocol, clients can connect to ActiveTransfer Server through port 21 using any standard FTP client, and then transfer files or execute FTP commands.

You can create any number of ports for a protocol. Each port you create will start a listener in ActiveTransfer Server that waits for client connections.

You create and manage ports on the Server Management page in My webMethods. On this page, the settings on the **Ports** tab are specific to each port associated with the ActiveTransfer Server instance, whereas the settings on the **Throttling, Restrictions, Banning, Encryption, and Miscellaneous** tabs are general and apply to all ports associated with the server instance.

Note: ActiveTransfer Server does not share ports with ActiveTransfer Gateway. For details on gateway ports, see *Managing File Transfers with webMethods ActiveTransfer Gateway*.

Adding a Port

To add a port

1. In My webMethods: **Administration > Integration > Managed File Transfer > Server Management**.
2. Select the server instance.
For details, see "[Selecting the Instance to Work With](#)" on page 62.
3. On the **Ports** tab, click the  button to add a new port to the instance.
4. In the **Add a Port** dialog box, type the **Name** you want to give the port.
5. From the **Protocol** list, select the appropriate protocol (for example, HTTP).
6. Type the **Host IP Address** and **Port** values.

Note: Make sure that the port you specify is not being used by any application, including the default ports used for ActiveTransfer Server and ActiveTransfer Gateway (2080 and 8500, respectively).

7. Click **OK**.
8. To refresh the server listing page, click the **Refresh** button in the upper right of the Server Management page.

The port information appears in the table on the **Ports** tab.

Starting, Stopping, or Restarting a Port

To start, stop, or restart a port

1. In My webMethods: **Administration > Integration > Managed File Transfer > Server Management**.
2. Select the server instance. For details, see ["Selecting the Instance to Work With" on page 62](#).
3. On the **Ports** tab, select the port from the list of ports.
4. To start, stop, or restart the port, click the appropriate button in the **Status** section of the **Basic** tab.

Checking the Status of a Port

To check the status of a port

1. In My webMethods: **Administration > Integration > Managed File Transfer > Server Management**.
2. Select the server instance. For details, see ["Selecting the Instance to Work With" on page 62](#).
3. On the **Ports** tab, select the port from the list of ports.
4. In the **Status** section of the **Basic** tab, click **Check Status**.

Note: If the port is listed as active but ActiveTransfer Server cannot connect to the client because either a firewall exists between the client and the server or the virtual private network the client is using has altered the IP address given to ActiveTransfer Server, enable the **Router/Firewall Aware** option. For details, see ["Setting Passive FTP Mode for ActiveTransfer Server" on page 69](#).

Modifying a Port

To modify a port

1. In My webMethods: **Administration > Integration > Managed File Transfer > Server Management**.
2. Select the server instance. For details, see ["Selecting the Instance to Work With" on page 62](#).
3. On the **Ports** tab, select the port from the list of ports.

4. Modify the port definition values in the **Basic** and **Advanced** tabs as required.
5. Click **Save**.

Deleting a Port

To delete a port

1. In My webMethods: **Administration > Integration > Managed File Transfer > Server Management**.
2. Select the server instance. For details, see ["Selecting the Instance to Work With" on page 62](#).
3. On the **Ports** tab, select the port from the list of ports.
4. Click the  button.
5. Click **OK** in the confirmation dialog box to delete the port.

Including Port Information in User Emails

When you create a new user account or edit the credentials or server connection details for a user, you alert the user of the changes by way of email. You can specify to include the port name, protocol, and host and port information in these alert emails.

To include port information in user emails

1. In My webMethods: **Administration > Integration > Managed File Transfer > Server Management**.
2. Select the server instance. For details, see ["Selecting the Instance to Work With" on page 62](#).
3. On the **Ports** tab, select the port from the list of ports.
4. In the **Settings** sections below the port list, select the **Include this information in the user credentials email** check box.
5. Click **Save**.

Specifying a Keystore File for a Port

Use this procedure to specify a keystore file for a port that uses the FTP, FTPS, HTTP, or HTTPS protocol. This keystore file overrides any global SSL encryption settings that apply to all ports on the server. For information about specifying global SSL encryption settings, see ["Specifying Encryption Settings" on page 80](#).

To specify a keystore file for a port

1. In My webMethods: **Administration > Integration > Managed File Transfer > Server Management**.
2. Select the server instance. For details, see ["Selecting the Instance to Work With" on page 62](#).
3. On the **Ports** tab, select an FTP, FTPS, HTTP, or HTTPS port from the list of ports.
4. Click the **Advanced** tab.

Note: The remaining steps in this procedure pertain to the **SSL Options** section.

5. For **Keystore Location**, specify the path to the keystore file.

Note: For an ActiveTransfer Gateway, specify the path of the server on which ActiveTransfer Gateway is running.

6. In the **Keystore Password** box, type the keystore password.
7. In the **Private Key Password** box, type the private key password.
8. If you want to block all connections from the client when the client does not have a valid client certificate key password, select the **Require valid client certificate for blank passwords** check box.

Note: When this check box is selected, ActiveTransfer Server expects the clients requesting a server connection to present a valid certificate. The certificate should match one of the certificates stored in the truststore. To store valid certificates, you must create a truststore file in the same location as the keystore file, with the name *keystoreName_trust*. For example, if the keystore file name is *server_ks.jks*, the truststore name should be *server_ks.jks_trust*. You should add all of the valid client certificates to this truststore.

9. Click **Save**.

Setting Passive FTP Mode for ActiveTransfer Server

ActiveTransfer Server can work in both active and passive FTP modes.

In active mode, the server creates an outgoing connection through the specified port to the client machine for data transfer as specified in the FTP commands issued by the client.

In some cases, such as when firewall impose restrictions on connections, it is not possible to create an outgoing connection to a client machine. In such cases, passive FTP mode is used, and the client initiates the connection to the server using one of the ports specified in the range of port numbers that can be used for such a data connection.

To set passive FTP mode for ActiveTransfer Server

1. In My webMethods: **Administration > Integration > Managed File Transfer > Server Management**.
2. Select the server instance. For details, see ["Selecting the Instance to Work With" on page 62](#).
3. On the **Ports** tab, select an FTP port from the list of ports.
4. In the **Access** section, for the **Passive Port Range** in the **From** and **To** boxes, specify the range of port numbers that can be used for passive port connections.

Note: Be sure to provide proper access for the ports in your firewall settings. Otherwise, connections between the client machine and ActiveTransfer Server might be blocked.

5. If your firewall or router is FTP-aware, select the **Router/Firewall Aware** check box.

Note: FTP-aware routers and firewalls will inspect the FTP command and response, and might modify the response. Check your firewall configuration before selecting this option.

6. In the **Passive IP Address** box, do one of the following:
 - If you want ActiveTransfer Server to automatically identify the external IP address of the server, type `Auto`.
 - If you want to enter an IP address manually, type the IP address to use for the passive IP address.
7. In the **Welcome Message** box, type an optional welcome message. If specified, this message appears in the FTP, FTPS, and SFTP client console when a user connects to the server.
8. Click **Save**.

Configuring a FTP Port to Support Implicit and Explicit SSL

To configure a FTP Port to support implicit SSL (FTPS) or explicit SSL (FTPES), you must configure additional settings on a FTP port in ActiveTransfer Server.

To configure a FTP port to support FTPS or FTPES

1. In My webMethods: **Administration > Integration > Managed File Transfer > Server Management**.
2. Select the server instance. For details, see ["Selecting the Instance to Work With" on page 62](#).
3. On the **Ports** tab, select an FTP port from the list of ports.

4. In the **Encryption** section of the **Advanced** tab, enable **Implicit SSL** or enable one of the modes under **Explicit SSL**.
5. In the SSL Options section of the **Advanced** tab, specify the following:

Parameter	Details
<i>Keystore Location</i>	Mandatory ActiveTransfer Server loads the truststore file from the keystore file path, <Keystore-File-Path>_trust
<i>Keystore Password</i>	Mandatory The password for the keystore file
<i>Private Key Password</i>	Mandatory The private key password

6. Click **Save**.

Setting the Command Delay Interval

You can add a pause between each command to slow down clients that continually access the server.

To set the command delay interval

1. In My webMethods: **Administration** > **Integration** > **Managed File Transfer** > **Server Management**.
2. Select the server instance. For details, see ["Selecting the Instance to Work With" on page 62](#).
3. On the **Ports** tab, select the port from the list of ports.
4. Click the **Advanced** tab.
5. In the **Priority Options** section, type a command delay interval in milliseconds.
6. Click **Save**.

Setting the Encryption Method for ActiveTransfer Server

Use this procedure to set the encryption methods for ActiveTransfer Server ports that use FTP protocol.

ActiveTransfer supports Transport Layer Security (TLSv1) and Secure Sockets Layer (SSLv3), cryptographic protocols that provide Internet communication security. The FTP protocol uses two types of client security methods:

- **Explicit.** Connections between an FTPS-aware server and the clients remain secure even if the clients are not FTPS-aware.
- **Implicit.** SSL authentication is used for all clients that connect with the FTPS server for each session. This method is not compatible with clients that are not FTPS-aware.

To set the encryption method for ActiveTransfer Server

1. In My webMethods: **Administration > Integration > Managed File Transfer > Server Management.**
2. Select the server instance. For details, see ["Selecting the Instance to Work With" on page 62.](#)
3. On the **Ports** tab, select an FTP port from the list of ports.
4. Click the **Advanced** tab.
5. In the **Encryption** section, set the encryption method from these options:

Option	Description
Implicit SSL	Use implicit SSL as the encryption mode. SSL is used on all the clients in each session.
Explicit SSL: Require encryption	Require the client to use the data transfer encryption mode while connecting to the FTP server. In this mode, the client has the option to switch off the channel encryption.
Explicit SSL: SSLv3	Use SSLv3 in the explicit SSL encryption mode.
Explicit SSL: TLSv1	Use TLSv1 in the explicit SSL encryption mode.

6. Click **Save**.

Setting SSH Encryption Algorithm, Ciphers, and Connection Options

For SFTP ports, you can specify SSH settings such as an encryption algorithm and associated host keys, the ciphers used to encrypt or decrypt data, and connection settings.

Setting RSA and DSA Encryption

ActiveTransfer supports both RSA and DSA encryption.

Note: The following procedure applies only to ports that use the SFTP protocol. When you create a default SFTP port in ActiveTransfer Server or ActiveTransfer Gateway, the default RSA and DSA keys are used for login. The default RSA and DSA keys are adequate for demo or testing purposes. However, in production environments, we recommend that you replace these default keys with your own RSA and DSA keys.

To set RSA or DSA encryption

1. In My webMethods: **Administration > Integration > Managed File Transfer > Server Management**.
2. Select the server instance. For details, see ["Selecting the Instance to Work With" on page 62](#).
3. On the **Ports** tab, select an SFTP port from the list of ports.
4. Click the **Advanced** tab.
5. In the **SSH - Server Host Keys** section, do either or both of the following:
 - To enable RSA, click the **Activate** link and then specify the full path of the file that contains the key for the RSA algorithm.
 - To enable DSA, click the **Activate** link and then specify the full path of the file that contains the key for the DSA algorithm.

Note: For an ActiveTransfer Gateway, specify the path of the server on which ActiveTransfer Gateway is running.

6. Click **Save**.

Tip: To deactivate RSA or DSA, click the relevant **Deactivate** link.

Setting the Supported Ciphers for SSH

Use this procedure to set ciphers for ports that use the SFTP protocol.

Ciphers are algorithms that are used to encrypt or decrypt data. In ActiveTransfer, you can set the supported ciphers for SSH.

To set the supported ciphers for SSH

1. In My webMethods: **Administration > Integration > Managed File Transfer > Server Management**.

2. Select the server instance. For details, see ["Selecting the Instance to Work With" on page 62](#).
3. On the **Ports** tab, select an SFTP port from the list of ports.
4. Click the **Advanced** tab.
5. In the **SSH - Supported Ciphers** section, do the following:

- a. Click .
- b. In the **Add Ciphers** dialog box, enable or disable the supported ciphers and click **OK**.

The enabled ciphers appear in the **SSH - Supported Ciphers** section.

Note: The ciphers, aes192-cbc, aes192-ctr, aes256-cbc, aes256-ctr, and arcfour256 require strong Java security policy certificates. You need to set the Java Cryptography Extension (JCE) Unlimited Strength Jurisdiction Policy Files for your JDK/JRE in order to use these ciphers. Java comes with a default maximum key strength of 128 bytes. Do not add ciphers that require a key strength of more than 128 bytes as default when you configure a new SFTP server.

6. In the **SSH - Supported MAC** section, do the following:
 - a. Click .
 - b. In the **Add MAC** dialog box, enable or disable the supported keyed-hash message authentication codes (HMACs) for verification of data integrity and click **OK**.The enabled HMACs appear in the **SSH - Supported MAC** section.
7. Click **Save**.

Configuring SSH Connection Settings

Use this procedure to configure SSH connection settings for SFTP ports.

SSH connection settings include the following:

- Default character encoding that controls how ASCII characters are encoded when being sent to a client.
- Whether to use asynchronous threading to enable tasks to run in parallel. Asynchronous threading is useful to transfer a file to multiple external locations at the same time instead of sequentially.
- Number of seconds to wait before disconnecting an idle connection.
- Handshake options to use when establishing a secure connection with a partner.

To set SSH connection settings

1. In My webMethods: **Administration > Integration > Managed File Transfer > Server Management**.
2. Select the server instance. For details, see "[Selecting the Instance to Work With](#)" on [page 62](#).
3. On the **Ports** tab, select an SFTP port from the list of ports.
4. Click the **Advanced** tab.
5. In the **SSH Connection Settings** section, click the **Text Encoding** list and select the encoding format you want to work with. In general, most clients use the UTF-8 encoding.
6. If you want to use asynchronous threading, select the **Use Asynchronous Threading** check box.
7. If you want to specify a timeout value for disconnecting an idle connection, type the number of seconds in the **Idle Timeout** box.
8. Select either or both of the handshake options to use when you establish a secure connection with a partner:
 - If you want to make the password mandatory when the certificate handshake is passed, select **Require Password Authentication**.
 - If you require a certificate or public key, select **Require Public Key Authentication**. Whether password-based authentication is mandatory or not, authentication is done with the public key alone.
9. Click **Save**.

Setting Throttling Options

Throttling enables you to control the percentage of the bandwidth that should be made available for file transfers. By imposing such a restriction on bandwidth, you help prevent a situation where your organization's entire bandwidth is used for file transfers. You can specify the following options:

- Maximum number of client connections that can be made to ActiveTransfer Server at any given time
- Maximum outgoing and incoming speeds allowed across all ports in the ActiveTransfer instance
- IP patterns that define a range of IP addresses that are immune to the speed settings, for internal IP addresses for which bandwidth is not a concern

To set throttling options

1. In My webMethods: **Administration > Integration > Managed File Transfer > Server Management**.
2. Select the server instance. For details, see ["Selecting the Instance to Work With" on page 62](#).
3. Click the **Throttling** tab.
4. In the **Maximum Simultaneous User Connections** box, type the maximum number of connections allowed for the server at any given time.
5. In the **Maximum Outgoing Speed** box, type the maximum allowable speed for outbound transfers, in kilobytes per second.
6. In the **Maximum Incoming Speed** box, type the maximum allowable speed for inbound transfers, in kilobytes per second.
7. In the **IP Patterns Immune to Speed** section, click . In the new row that appears in the section, type the pattern representing a range of IP addresses. For example, 168.21.* indicates that all addresses that begin with 168.21 are immune to speed settings.

You can delete an IP address pattern by selecting it and clicking the  button.

8. Click **Save**.

Setting Server Restrictions

You can set the following server restrictions:

- Restrict server availability to specified days of the week.
- Restrict particular actions for files that match a specified pattern. For example, you can restrict users from uploading files that end with "exe".
- Restrict access to subfolders in the virtual file system that match a specified pattern.

To set server restrictions

1. In My webMethods: **Administration > Integration > Managed File Transfer > Server Management**.
2. Select the server instance. For details, see ["Selecting the Instance to Work With" on page 62](#).
3. Click the **Restrictions** tab.
4. If you want to allow connections to the server only on particular days, select the appropriate check box next to the days of the week in the **Active Time Window** section.

Note: The days and times are represented in the time zone of the server.

5. If you want to restrict particular operations for certain files, do the following in the **Patterns** list in the **File Name Filters** section:
 - a. Click the  button.
 - b. From the **Command** list, select an operation to restrict (**Rename**, **Listing**, **Download**, or **Upload**).
 - c. From the **Filter Type** list, select a filter type (**Ends with**, **Starts with**, or **Contains**).
 - d. In the **File Name** box, type the portion of the file name that the **Filter Type** criterion should evaluate (for example, "exe").

Note: Any characters except wildcard characters or regular expressions are permitted. ActiveTransfer Server treats those characters as part of the file name.

- e. To add more file name filters, click the  button. To delete a file name filter, select the filter and click the  button.
6. If you want to restrict access to specific folders in the virtual file system, do the following in the **Block Paths Matching These Patterns** area of the **File Name Filters** section:

- a. Click the  button.
 - b. Type the virtual file system path you want to block in the new row.

Note: You can specify a regular expression pattern. You can also use simple pattern matching by preceding the pattern with the tilde (~) character. For example, to deny user access to the folder /system/bin, you would type: ~/system/bin/*

- c. To add more block paths, click the  button. To delete a path, select the path and click the  button.
7. Click **Save**.

Banning IP Addresses

ActiveTransfer enables you to restrict access to ActiveTransfer Server and ActiveTransfer Gateway for specific IP addresses.

Specifying Hammering Settings

At times, applications might attempt to access your ActiveTransfer Server or ActiveTransfer Gateway through a rapid succession of login attempts, a technique

sometimes referred to as *hammering*. This can consume significant bandwidth and processing time, resulting in the denial of connection requests from other users.

Note: Apply the settings to the server only in the absence of a gateway instance. If you have a server and a gateway instance, apply the settings to the gateway.

You can use the hammering settings to do the following:

- Set limits on the number of connection, password, or command execution attempts and the interval between them, and then ban the user's IP address for a specified number of minutes when those limits are reached.
- Ban the IP address associated with a user, after the user's first incorrect password attempt, either permanently or for a specified number of minutes.
- Block efforts to discover valid user credentials by holding the names of invalid users in cache for a specified number of seconds.
- Discourage hack attempts by robots that scan for writable directories on the server by slowing down responses to such clients.

Note: If the hammering settings are too restrictive, they can prevent users and applications from connecting to ActiveTransfer Server or ActiveTransfer Gateway to exchange files or perform file operations under normal operating conditions.

When the specified time interval elapses, ActiveTransfer Server and ActiveTransfer Gateway automatically lift the ban on IP addresses. You can also free banned IP addresses before the specified time interval by using the Integration Server service `wm.mft.server:unbanIPs`. For details on the `wm.mft.server:unbanIPs` service, see *webMethods ActiveTransfer Built-In Services Reference*.

To specify hammering settings

1. In My webMethods: **Administration > Integration > Managed File Transfer > Server Management**.
2. Select the server.
For details, see ["Selecting the Instance to Work With" on page 62](#).
3. Click the **Banning** tab.

Note: The remaining steps in this procedure pertain to the **Hammering** section.

4. If you want to ban a user's IP address after a certain number of connection, password, or command execution attempts, do the following in the **Ban a user's IP address after a certain number of unsuccessful attempts** section:
 - a. Click the **Edit** button in the **Connection**, **Password**, or **Command** row as desired.
 - b. In the **Maximum of** box, enter the maximum number of attempts allowed.
 - c. In the **attempts in** box, enter the time period to be measured, in seconds.

- d. In the **then banned for** box, enter the number of minutes to ban the IP address.
5. If you want to ban the IP address associated with a specific user after the user's first incorrect password attempt, do the following in the **Ban the IP addresses associated with the following users after the users' first incorrect password attempt** section:
 - a. Click the  button, and then enter the name of the user whose IP address you want to ban. Repeat this step for each user whose IP address you want to ban.
 - b. In **Ban these IP addresses**, select whether to ban the user's IP address permanently or only for a certain number of minutes. If you select **If attempted, for**, enter the number of minutes to elapse before accepting another password attempt from that user's IP address.
6. In the **Remember invalid user names for** box, enter the number of seconds to hold the names of invalid users in cache.

The temporary caching of invalid user names is useful for blocking robots that make repeated attempts to discover valid user credentials. As a robot scans ActiveTransfer Server or ActiveTransfer Gateway during the user validation process, this option blocks subsequent login attempts made using an invalid user name for the specified number of seconds. If the user name is valid, the ActiveTransfer Server or ActiveTransfer Gateway ignores this setting.

7. To slow down responses to a client that appears to be a robot scanning for writable directories on your server by way of an FTP connection, select **Slow down hack attempt scans**. This setting doubles the server's response time for each subsequent response to the client, thereby rendering such robots less effective.

Selecting this option does not result in any extra load on the CPU.

8. Click **Save**.

Allowing or Denying a Range of IP Addresses

You can allow or deny a range of IP addresses for selective access to ActiveTransfer Server or ActiveTransfer Gateway. The default range is 0-255, which indicates that ActiveTransfer Server or ActiveTransfer Gateway allows all IP addresses to access the server and gateway, respectively.

To allow or deny a range of IP Addresses

1. In My webMethods: **Administration > Integration > Managed File Transfer > Server Management**.
2. Select the server or gateway instance. For details, see "[Selecting the Instance to Work With](#)" on page 62.
3. Click the **Banning** tab.
4. In the **IP Restrictions** section, click .
5. From the first list, select **Allow** or **Deny**.

6. Type the IP address range in the **Address from** and **To** fields.

For example, specifying from 168.21.* to 168.23.* indicates that all addresses within that range are affected.

7. Click **Save**.

Specifying Encryption Settings

ActiveTransfer enables you to use SSL encryption and file-based encryption. SSL is configured as a two-way handshake. Clients must submit valid and trusted certificates before an SSL connection is completed.

Activating SSL Settings

The following procedure specifies global SSL encryption settings that apply to all ports on the server. For information about specifying a keystore file for a specific FTP, FTPS, HTTP, or HTTPS port, see ["Specifying a Keystore File for a Port" on page 68](#).

To activate SSL settings

1. In My webMethods: **Administration > Integration > Managed File Transfer > Server Management**.
2. Select the server instance. For details, see ["Selecting the Instance to Work With" on page 62](#).
3. Click the **Encryption** tab.
4. In the **SSL** section, click **Activate**.
5. For **Keystore Location**, specify the path to the keystore file (for example, "C:\keystore" on Windows and "/usr/keystore" on UNIX).
6. In the **Keystore Password** box, type the keystore password.
7. In the **Private Key Password** box, type the private key password.
8. If you want to block all connections from the client when the client does not have a valid client certificate key password, select the **Require valid client certificate for blank passwords** check box.

Note: When this check box is selected, ActiveTransfer Server expects the clients requesting a server connection to present a valid certificate. The certificate should match one of the certificates stored in the truststore. To store valid certificates, you must create a truststore file in the same location as the keystore file, with the name *keystoreName_trust*. For example, if the keystore file name is *server_ks.jks*, the truststore name should be *server_ks.jks_trust*. You should add all of the valid client certificates to this truststore.

9. If you want to use the SSL keystore settings for file upload and download operations using acceleration, select the **Enable advanced upload/download option in web client** check box.
10. Click **Save**.

Managing SSL Ciphers

Ciphers are algorithms that are used to encrypt or decrypt data. You can specify the SSL ciphers that ActiveTransfer will apply to all ports associated with a server instance.

To manage SSL ciphers

1. In My webMethods: **Administration > Integration > Managed File Transfer > Server Management**.
2. Select the server instance. For details, see ["Selecting the Instance to Work With" on page 62](#).
3. Click the **Encryption** tab.
4. In the **SSL** section, click the  button to add a cipher in the **Manage Ciphers** list.
5. In the **Add Ciphers** dialog box, select the cipher(s) you want to use and click **OK**.
6. Click **Save**.

Activating File-Based Encryption and Decryption

File-based encryption enables you to store files on your drive in a format that cannot be read outside of ActiveTransfer. Encrypted files are decrypted only if they are transferred back through ActiveTransfer using the same key that was used to encrypt them.

ActiveTransfer Server encrypts and decrypts files instream rather than after the file is fully transferred.

When encryption and decryption keys are configured at multiple levels (user, server, and virtual folder), ActiveTransfer enforces the following order of preference:

1. User management
2. Virtual folder management
3. Server management

For example, if user *A* accesses port *10* and uploads a file in a VFS *MN*, then ActiveTransfer checks if the encryption or decryption key is available for user *A*. If no key is available at the user level, then ActiveTransfer checks for the virtual folder settings for a key. If no key is present at the VFS level, then ActiveTransfer checks the server level settings for the key.

To activate file-based encryption and decryption

1. In My webMethods: **Administration > Integration > Managed File Transfer > Server Management**.
2. Select the server instance. For details, see ["Selecting the Instance to Work With" on page 62](#).
3. Click the **Encryption** tab.
4. In the **File-Based Encryption** section, do the following:
 - a. Click **Activate**.
 - b. In the **Public PGP Key Location** box, specify the file path to the public PGP key (for example, "C:\keylocation\simple.key" on Windows and "/usr/keylocation/enterprise.key" on UNIX).

Note: You can use the `wm.mft.security.pgp:generatePGPKeyFiles` service to generate an OpenPGP key pair. For details, see *webMethods ActiveTransfer Built-In Services Reference*.

5. In the **File-Based Decryption** section, do the following:
 - a. Click **Activate**.
 - b. In the **Private PGP Key Location** box, specify the file path to the private PGP key (for example, "C:\keylocation\simple.key" on Windows and "/usr/keylocation/enterprise.key" on UNIX).
 - c. In the **Private PGP Key Password** box, enter the password for the private PGP key.

Note: You can use the `wm.mft.security.pgp:generatePGPKeyFiles` service to generate an OpenPGP key pair. For details, see *webMethods ActiveTransfer Built-In Services Reference*.

6. Click **Save**.

You can deactivate file-based encryption or decryption at any time by clicking **Deactivate**.

Accelerating Data Transfer

Through the use of tunnels, ActiveTransfer speeds up file transfers by using the server's full bandwidth regardless of network latency or distance. For more information about this process, see ["Configuring and Managing Acceleration" on page 44](#).

Use the following procedure to define a tunnel for an ActiveTransfer Server instance.

To define a tunnel

1. In My webMethods: **Administration > Integration > Managed File Transfer > Server Management**.
2. Select the server instance. For details, see ["Selecting the Instance to Work With" on page 62](#).
3. Click the **Acceleration** tab.
4. To add a new tunnel, do the following:
 - a. Click the  button.
 - b. In the **Tunnel Name** box on the **Add a Tunnel** dialog box, type a name for the tunnel. The new tunnel appears in the list of tunnels.
5. Select the tunnel in the tunnel list and edit the following options in the **Basic** tab:
 - a. If you want the tunnel to start as soon as it is ready without any user intervention, select the **Auto-Start** check box.
 - b. In the **Server** section, the default host and port values for the destination server are 127.0.0.1 and 55580, respectively. Do not change these values.
 - c. In the **Client** section, the default host and port values for the destination server are 127.0.0.1 and 55555, respectively. Do not change these values.
 - d. To connect the tunnel to ActiveTransfer Server, create a tunnel back to your system, and then connect to a destination from there, select the **Reverse** check box.
 - e. In the **Channels** section, specify the maximum number of inbound and outbound channels to use for file transfer. These values should correspond to the appropriate multiplier for the speed gain you are looking for. Use the smallest value that still gives you the performance you need, usually 10 to 20.
6. On the **Advanced** tab, in the **Advanced Settings** section, enter the following tunnel details:
 - a. In the **Stability Interval** box, enter the number of seconds to build an average speed for a single connection. After this time is reached, channels are added.
 - b. In the **Channel Ramp Up** box, enter the number of channels to be added as the data transfer speed increases.
 - c. In the **Minimum Fast Speed** box, enter the minimum speed (in KB/s) that each channel should reach before new channels are added.
 - d. In the **Minimum Slow Speed** box, enter the speed (in KB/s) below which the channels are removed.
 - e. In the **Speed Threshold** box, enter the threshold of the speed reached (in percentage) before a new channel is added.

7. Click **Save**.
8. Ensure that the remaining acceleration configuration tasks described in "[Configuring and Managing Acceleration](#)" on page 44 are completed.

Configuring Miscellaneous Settings

You can configure additional server settings, including protocol options, zip compression level, and directory listing options.

Setting Protocol Options

You can set additional protocol options that apply to all protocols.

To set protocol options

1. In My webMethods: **Administration > Integration > Managed File Transfer > Server Management**.
2. Select the server instance. For details, see "[Selecting the Instance to Work With](#)" on page 62.
3. Click the **Miscellaneous** tab.
4. In the **Protocol Options** section, set the following options:
 - a. To download files only in binary mode, select the **Download in binary** check box. This prevents ActiveTransfer from altering the ASCII text file line endings even if the FTP client requests it.
 - b. To upload files only in binary mode instead of ASCII mode, select the **Upload in binary** check box.
 - c. To run events in parallel, select the **Run events asynchronously** check box.
 - d. To allow extended passive and port commands (EPSV/EPRT), select the **Allow extended passive and port commands** check box.

Note: Before you enable this option, make sure that your client supports these commands.
 - e. To prevent users from changing modified times on uploaded files, select the **Disable MTDM notifications** check box.
 - f. To delete any incomplete uploads done in ActiveTransfer, select the **Delete partial uploads** check box.
5. Click **Save**.

Setting the Zip Compression Level

You can set the zip compression level according to your needs for file size and data transfer speed.

To set the zip compression level

1. In My webMethods: **Administration > Integration > Managed File Transfer > Server Management**.
2. Select the server instance. For details, see ["Selecting the Instance to Work With" on page 62](#).
3. Click the **Miscellaneous** tab.
4. In the **Zip Compression Level** section, select one of the following options from the **Compression Level** list:

Option	Explanation
None	No compression. Results in the largest file size of the three options, with the longest transfer time.
Fast	Fastest compression. Performs little compression, but compression time is the fastest of the three options.
Best	Maximum compression. Provides the smallest file size possible after compression, with the shortest transfer time, but requires more time to perform the compression than the other two options.

5. Click **Save**.

Setting Directory Listing Options

You can have ActiveTransfer use the directory listing command `ls -la` to list the owner, user group, and permission details of the destination directory when the operating system is Mac OS X, UNIX, or Linux..

To set directory listing options

1. In My webMethods: **Administration > Integration > Managed File Transfer > Server Management**.
2. Select the server instance. For details, see ["Selecting the Instance to Work With" on page 62](#).
3. Click the **Miscellaneous** tab.

4. In the **Directory Listing** section, select the **Use ls -la for Destination Directory Listing (Mac OS X, UNIX, Linux)** check box.
5. Click **Save**.

6 Working with Templates

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Overview

A template contains predefined settings such as limits for upload and download file sizes, server connection restrictions, encryption and decryption settings, and settings to help speed up file transfers. ActiveTransfer Server applies these settings to new users when those users are created.

ActiveTransfer provides a default template, called Default Template. You can edit the settings for this template. You can also create additional templates and specify any template to use as the default for new users.

Note: You can assign a different template to an existing user and override individual settings for that user. For more information, see "[Managing Users, User Groups, and User Roles](#)" on page 97.

Adding a Template

To add a template

1. In My webMethods: **Administration > Integration > Managed File Transfer > User Management > Templates**
2. Select the server instance. For details, see "[Selecting the Instance to Work With](#)" on page 62.
3. Click the  button above the list of templates.
4. On the **Add Template** dialog box, enter the name and description of the template.
5. Click **OK**. The new template appears in the list of templates.

Specifying a Default Template

ActiveTransfer identifies the default template with a check mark in the **Default** column in the template list at the top of the Templates page. When a new ActiveTransfer user profile is created, the user is associated with this template by default. You can specify a different template to use as the default for any new users created.

To specify a default template

1. In My webMethods: **Administration > Integration > Managed File Transfer > User Management > Templates**
2. Select the server instance. For details, see "[Selecting the Instance to Work With](#)" on page 62.
3. In the template list, select the template you want to define as the default template.

4. On the **General** tab, select the **Default Template for New User** check box.
5. Click **Save**.

Specifying Throttling Options at the Template Level

You can specify preferences for speed, file size, and data limits for upload and download operations.

To specify throttling options at the template level

1. In My webMethods: **Administration > Integration > Managed File Transfer > User Management > Templates**
2. Select the server instance. For details, see ["Selecting the Instance to Work With" on page 62](#).
3. Select the template from the template list.
4. Click the **Throttling** tab.
5. In the **Upload Preferences** section, do the following:
 - a. If you want to specify the maximum permissible speed, in kilobytes per second, for an upload operation, enter a value in the **Maximum Speed** box.
 - b. If you want to specify the maximum permissible size, in megabytes, for an uploaded file, enter a value in the **Maximum Individual File Size** box.
 - c. If you want to specify the maximum amount of data that can be uploaded per session, enter a value, in megabytes, in the **Maximum Amount per Session** box.
 - d. If you want to specify the maximum amount of data that can be uploaded per day, enter a value, in megabytes, in the **Maximum Amount per Day** box.
 - e. If you want to specify the maximum amount of data that can be uploaded per month, enter a value, in megabytes, in the **Maximum Amount per Month** box.
6. In the **Download Preferences** section, do the following:
 - a. If you want to specify the maximum permissible speed, in kilobytes per second, for a download operation, enter a value in the **Maximum Speed** box.
 - b. If you want to specify the maximum amount of data that can be downloaded per session, enter a value, in megabytes, in the **Maximum Amount per Session** box.
 - c. If you want to specify the maximum amount of data that can be downloaded per day, enter a value, in megabytes, in the **Maximum Amount per Day** box.
 - d. If you want to specify the maximum amount of data that can be downloaded per month, enter a value, in megabytes, in the **Maximum Amount per Month** box.
7. Click **Save**.

Specifying Restrictions at the Template Level

You can have the template define a set of restrictions that apply to all users associated with the template. Specifically, you can:

- Restrict server availability to specified times and days of the week.
- Restrict particular actions for files that match a specified pattern and restrict access to subfolders in the virtual file system that match a specified pattern.
- Restrict login volume and duration and specify authentication settings.
- Restrict connections by protocol or IP address and specify default character encoding.

Specifying Time Windows for Server Availability

You can specify the days of the week and the times during which users can connect to ActiveTransfer Server.

Note: The days and times are represented in the time zone of the server.

To specify time windows for server availability

1. In My webMethods: **Administration > Integration > Managed File Transfer > User Management > Templates**
2. Select the server instance. For details, see ["Selecting the Instance to Work With" on page 62](#).
3. Select the template from the template list.
4. Click the **Restrictions** tab.
5. In the **Active Time Window** section, do the following:
 - a. If you want to restrict access to particular days of the week, select the appropriate check box next to the days you want the server to be available.
 - b. If you want to restrict access to particular time slots, click . Then, select start and end times from the **From Time** and **To Time** lists, respectively.

Tip: You can specify additional time slots by clicking .

6. Click **Save**.

Specifying File Name Filters

You can restrict particular actions for files that match a specified pattern. For example, you can restrict users from uploading files that end with “exe”. You can also restrict access to subfolders in the virtual file system that match a specified pattern.

To specify file name filters

1. In My webMethods: **Administration > Integration > Managed File Transfer > User Management > Templates**
2. Select the server instance. For details, see ["Selecting the Instance to Work With" on page 62](#).
3. Select the template from the template list.
4. Click the **Restrictions** tab.
5. If you want to restrict particular actions for certain files, do the following in the **Patterns** area of the **File Name Filters** section:
 - a. Click the  button.
 - b. From the **Command** list, select a command (**Rename**, **List**, **Download**, or **Upload**).
 - c. From the **Filter Type** list, select a filter type (**Starts with**, **Ends with**, or **Contains**).
 - d. In the **File Name** box, type the portion of the file name that the **Filter Type** criterion should evaluate (for example, “exe”).

Note: Any characters except wildcard characters or regular expressions are permitted. ActiveTransfer Server treats those characters as part of the file name.

- e. Add more file name filters as necessary by clicking .
6. If you want to restrict access to specific folders in the virtual file system, do the following in the **Block Paths Matching These Patterns** area of the **File Name Filters** section:
 - a. Click the  button.
 - b. Type the virtual file system path you want to block in the new row.

Tip: You can use simple pattern matching by preceding the pattern with the tilde (~) character. For example, to deny user access to the folder /system/bin, you would type: ~/system/bin/*

- c. Add more block paths as necessary by clicking .
7. Click **Save**.

Setting Authentication and Login Restrictions

You can set authentication and login restrictions that specify the maximum number of users who are logged in simultaneously, the maximum login and idle times per session, public key and password requirements, and the paths to trusted public SSH key files.

To set authentication and login restrictions

1. In My webMethods: **Administration > Integration > Managed File Transfer > User Management > Templates**
2. Select the server instance. For details, see ["Selecting the Instance to Work With" on page 62](#).
3. Select the template from the template list.
4. Click the **Restrictions** tab.
5. In the **Authentication and Login** section, do the following:
 - a. If you want to specify the maximum number of simultaneous logins allowed for the same user, enter a value in the **Maximum Simultaneous Logins** box.
 - b. If you want ActiveTransfer Server to require the user to supply a public key and password, select the **Require public key and password** check box.
 - c. If you want to specify the maximum number of minutes a user can remained logged in per session, enter a value in the **Maximum Login Time per Session** box.
 - d. If you want to specify the maximum number of minutes a user session can remain idle, enter a value in the **Maximum Idle Time per Session** box.
 - e. If you want to use trusted public SSH key files for authentication, click the  button next to **Paths to Trusted Public SSH Key Files**. Then, enter the path to a public key (for example, `/usr/var/keys/key_1`).
6. Click **Save**.

Setting Connection Restrictions

You can restrict connections by protocol or IP address. You can also specify the default character encoding for the connection between the user and ActiveTransfer Server.

To set connection restrictions

1. In My webMethods: **Administration > Integration > Managed File Transfer > User Management > Templates**
2. Select the server instance. For details, see ["Selecting the Instance to Work With" on page 62](#).
3. Select the template from the template list.

4. Click the **Restrictions** tab.

Note: The remaining steps in this procedure pertain to the **Connection** section.

5. If you want to restrict connections to particular protocols, select the check box next to the desired protocols.
6. From the **Default Character Encoding** list, select the appropriate default character encoding. The default is **UTF-8**.
7. If you want ActiveTransfer Server to accept or deny connection requests from specific IP addresses, do the following in the **IP Restrictions** area:
 - a. Click the  button.
 - b. From the list, select **Deny** or **Accept**.
 - c. Specify a range of IP addresses in the **from** and **to** boxes.
 - d. Add more IP address ranges to accept or deny as necessary by clicking .
8. Click **Save**.

Specifying Encryption and Decryption Options at the Template Level

You can define specific file-based encryption and decryption PGP keys for users assigned to a template. When files are encrypted, they are stored on a user's drive in a format that cannot be read outside of ActiveTransfer. Encrypted files are decrypted only if they are transferred back through ActiveTransfer using the same key that was used to encrypt them.

Note: You must obtain the appropriate keystores for use with this feature and make sure they are stored in the correct location. For details, see "[Verifying the Location of Keystore Files for ActiveTransfer](#)" on page 36.

You can override the template-level encryption and decryption options for a specific user. For more information, see "[Specifying Encryption and Decryption Options for a User](#)" on page 110.

To specify encryption and decryption options at the template level

1. In My webMethods: **Administration > Integration > Managed File Transfer > User Management > Templates**
2. Select the server instance. For details, see "[Selecting the Instance to Work With](#)" on page 62.
3. Select the template from the template list.

4. Click the **Encryption** tab.
5. In the **File-Based Encryption** section, specify the path to the public PGP key in the **Public PGP Key Location** box (for example, "C:\keylocation" on Windows and "/usr/keylocation" on UNIX).

Note: You can use the `wm.mft.security.pgp:generatePGPKeyFiles` service to generate an OpenPGP key pair. For details, see *webMethods ActiveTransfer Built-In Services Reference*.

6. In the **File-Based Decryption** section, do the following:
 - a. In the **Private PGP Key Location** box, specify the path to the private PGP key (for example, "C:\keylocation" on Windows and "/usr/keylocation" on UNIX).
 - b. In the **Private PGP Key Password** box, enter the password for the private PGP key.

Note: You can use the `wm.mft.security.pgp:generatePGPKeyFiles` service to generate an OpenPGP key pair. For details, see *webMethods ActiveTransfer Built-In Services Reference*.

7. Click **Save**.

Specifying Acceleration Options at the Template Level

ActiveTransfer allows accelerated data transfer, also known as *acceleration*. For more information about acceleration, see "[Configuring and Managing Acceleration](#)" on [page 44](#).

To specify acceleration options at the template level

1. In My webMethods: **Administration > Integration > Managed File Transfer > User Management > Templates**
2. Select the server instance. For details, see "[Selecting the Instance to Work With](#)" on [page 62](#).
3. Select the template from the template list.
4. Click the **Acceleration** tab.
5. In the **Active Tunnels** section, click the  button.

ActiveTransfer Server displays the tunnels that were created on the Server Management page.

6. On the **Add Tunnel** dialog box, select the tunnel that you want to associate with this template.
7. Click **OK**.

Note: It is only necessary to map one tunnel to a template. If you map more than one tunnel to a template, ActiveTransfer Server ignores all but the first tunnel you mapped.

8. Click **Save**.

7 Managing Users, User Groups, and User Roles

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Overview

ActiveTransfer users are My webMethods Server users who have an ActiveTransfer profile. The ActiveTransfer profile contains all of the settings required for users to log in to ActiveTransfer Server to transfer files and perform other ActiveTransfer tasks.

You can create an ActiveTransfer profile for a user in two ways:

- If the user is already defined as a My webMethods Server user, either by way of the internal My webMethods Server system directory service or through an external directory service such as LDAP, you create an ActiveTransfer profile for the user by associating the user with ActiveTransfer. For details, see "[Associating an Existing My webMethods Server User with ActiveTransfer](#)" on page 99.
- If the user is not already defined as a My webMethods Server user, you can create the user in the My webMethods Server system directory and define an ActiveTransfer profile for the user at the same time. For details, see "[Creating a New User](#)" on page 101.

Inheritance of Permissions and Settings in Groups and Roles

In My webMethods Server, members of a group or role can be any user, any role, or any group. Groups and roles can also have multiple groups and roles in a parent-child hierarchy. Inheritance of permissions and settings for groups and roles work as follows:

- When a user is a member of any child group or child role, the user also inherits the parent group or role. For example, the user Mary is added to *group B*, and *group A* is the parent of *group B*. Consequently, Mary is also a member of *group A*.
- Any settings applied to the parent groups and roles in ActiveTransfer user management configuration, virtual folder management configuration, and post-processing event configuration are inherited by all child groups and roles. For example, the role *Admin_all* is the parent of the role *Admin_a* and *Admin_a* is the parent of group *Admin_bldEast*. *Admin_all* is provided access to the virtual folder *Enterprise*. Therefore, all members of the role *Admin_a* and group *Admin_bldEast* also have access to *Enterprise*.
- A user is able to log in to ActiveTransfer if the user is a member of any user role or group for which ActiveTransfer login is enabled.
- A user's ActiveTransfer login permission is disabled only when login is disabled for all groups and roles of which the user is a member. If, however, ActiveTransfer login is disabled only for a few groups or roles, the user will continue to have login permission to ActiveTransfer.

Associating an Existing My webMethods Server User with ActiveTransfer

If a user is already defined as a My webMethods Server user but does not have an ActiveTransfer profile, use this procedure to associate the user with ActiveTransfer.

To associate an existing My webMethods Server user with ActiveTransfer

1. In My webMethods: **Administration > Integration > Managed File Transfer > User Management > Users**
2. Select the server instance. For details, see "[Selecting the Instance to Work With](#)" on page 62.
3. Click the  button above the list of users.
4. In the **Add User** dialog box, click **Search for Existing Users** and enter the search criteria in the **Existing User Search** box.
5. In the search results, select the check box next to the users that you want to associate with ActiveTransfer.
6. Click **Advanced Settings**.
7. If you want to change the user's password, select the **Change Password** check box and then either generate a random password or create a specific password for the user.
8. Specify the ActiveTransfer Server ports to include in emails sent to users along with the user credentials:
 - To include ports that are listed as **Default in Emails** in the **Server Management** page, select **Default Ports**.
 - To include specific ports, select **Select Servers**, and then select the required ports.
9. Click **Select User**.

Note: This button is enabled only when you provide the user information. You continue to add more users to the selected users' list.

10. Click **Add**.

ActiveTransfer Server creates an ActiveTransfer profile for the user and lists the user on the Users page.

Tip: To delete a selected user, select the user and click . This action does not delete the user from the system directory or from the external directory service. Rather, it removes the association between the user and ActiveTransfer.

11. If you want to send an email to the user containing the user's login credentials and the URL of the ActiveTransfer Server the user will be logging in to, click **Send** at the bottom of the user's **User Details** tab.

ActiveTransfer Server sends emails by way of the SMTP server configured in webMethods Integration Server. For information about the SMTP server configuration, see *webMethods Integration Server Administrator's Guide*.

Associating an Existing My webMethods Server User Group with ActiveTransfer

Use this procedure to associate user groups already defined in My webMethods Server with ActiveTransfer. For details on how to create a group in My webMethods Server, see *Administering My webMethods Server*. Similar to user association, once associated with ActiveTransfer, you can perform any of following operations on groups:

- Associate the group with any partner or with your enterprise.
- Specify throttling options.
- Specify restrictions for server access, file actions, login volume, and so on.
- Specify encryption and decryption options.
- Specify acceleration options.

To associate an existing My webMethods Server user group with ActiveTransfer

1. In My webMethods: **Administration > Integration > Managed File Transfer > User Management > Users**
2. Select the server instance. For details, see ["Selecting the Instance to Work With" on page 62](#).
3. Click **Group**.
4. Click the  button above the list of user groups.
5. In the **Add Group** dialog box, enter the search criteria in the **Search Group** box and click **Search**.
6. In the search results, select the check box next to the user group that you want to associate with ActiveTransfer and click **Select Group**.

Note: You can continue to add more user groups to the selected groups' list.

7. Click **Add**.

ActiveTransfer Server lists the user groups in the Group page. and lists the user on the Users page.

Tip: To delete a user group, select the group and click . This action does not delete the group from the system directory or from the external directory service. Rather, it removes the association between the group and ActiveTransfer.

Creating a New User

If a user is not already defined as a My webMethods Server user and does not have an ActiveTransfer profile, use this procedure to create the user in the My webMethods Server system directory and then define an ActiveTransfer profile for the user.

To create a new user

1. In My webMethods: **Administration > Integration > Managed File Transfer > User Management > Users**
2. Select the server instance. For details, see ["Selecting the Instance to Work With" on page 62](#).
3. Click the  button above the list of users.
4. In the **Add User** dialog box, click **Create a New User**.
5. Enter the user ID, user's first and last name, and email address in the respective boxes.
6. Click **Advanced Settings**.
7. Assign a password to the new user by either generating a random password or creating a specific password for the user.
8. Specify the ActiveTransfer Server ports to include in emails sent to users along with the user credentials:
 - To include ports that are listed as **Default in Emails** in the **Server Management** page, select **Default Ports**.
 - To include specific ports, select **Select Servers**, and then select the required ports.
9. Click **Select User**.

Note: This button is enabled only when you provide the user information. You continue to add more users to the selected users' list.

10. Click **OK**.

ActiveTransfer Server creates an ActiveTransfer profile for the user and lists the user on the Users page.

Tip: To delete a user, select the user and click . This action does not delete the user from the system directory or from the external directory service. Rather, it removes the association between the user and ActiveTransfer.

11. Click **Add**.

ActiveTransfer Server creates an ActiveTransfer profile for the user and lists the user on the Users page.

Tip: To delete a user, select the user and click . This action does not delete the user from the system directory or from the external directory service. Rather, it removes the association between the user and ActiveTransfer.

12. If you want to send an email to the user containing the user's login credentials and the URL of the ActiveTransfer Server the user will be logging in to, click **Send** at the bottom of the user's **User Details** tab.

Note: ActiveTransfer Server sends emails by way of the SMTP server configured in webMethods Integration Server. For information about the SMTP server configuration, see *webMethods Integration Server Administrator's Guide*.

Viewing and Editing User Details

You can view and edit the details of the ActiveTransfer profile for an existing user created in the My webMethods Server system directory.

To view and edit user details

1. In My webMethods: **Administration > Integration > Managed File Transfer > User Management > Users**
2. Select the server instance. For details, see "[Selecting the Instance to Work With](#)" on [page 62](#).
3. Select the user from the list of users.
4. On the **User Details** tab, in the **General** section, edit the user's name or email address as desired.

Note: The **Role** box displays the role(s) assigned to the user. **Distinguished Name** uniquely identifies the user in LDAP or in the Directory Service. An example of an entry for this field is `uid=john,ou=people,o=system,o=mws`. You cannot edit these two fields.

5. If you want to change the default template assigned to a user, select the appropriate template from the **Template** list.
6. Click **Save**.

Associating a User with a Partner or with Your Enterprise

You can associate a user with a partner or with your enterprise. Associating users with partners or with your enterprise is a way to organize virtual folders and file transactions.

To associate a user with a partner or with your enterprise

1. In My webMethods: **Administration > Integration > Managed File Transfer > User Management > Users**
2. Select the server instance. For details, see ["Selecting the Instance to Work With" on page 62](#).
3. Select the user from the list of users.
4. On the **User Details** tab, in the **Associated Partner** section, do one of the following:
 - If you do not want to associate the user with either a partner or your enterprise, select **No Partner**.
 - If you want to associate the user with your enterprise, select **Your Enterprise**.
 - If you want to associate the user with a partner, select **The Following Partner**. Then, click the box beneath the option and select the partner name from the list.

Note: You may not see the desired partner name if webMethods Trading Networks is not installed. In this case, you can type the partner name manually.

5. Click **Save**.

Editing Server Access Details for a User

You can edit server access details such as the user's password, or disable a user's ID to prevent the user from logging in to the server. ActiveTransfer Server sends an email to the user when you change the user's password and the ports selected for the user.

Note: This section does not include information about sending server port details to users. For details on how to send server port details to users, see ["Emailing Change of Password and Server Port Details" on page 104](#).

To edit server access details for a user

1. In My webMethods: **Administration > Integration > Managed File Transfer > User Management > Users**
2. Select the server instance. For details, see ["Selecting the Instance to Work With" on page 62](#).

3. Select the user from the list of users.
4. If you want to disable the user's ID and prevent that user from logging in to the server, select the **Disable login** check box.
5. Click **Save**.

Emailing Change of Password and Server Port Details

Use the **Send Email** option in the User Details page to immediately communicate the following details to existing ActiveTransfer Server users through emails:

- Change of user login password. For example:

```
Your username: Jill1122
Your password: fl89&^_L09
```

- The URL for server ports where the ActiveTransfer file storage is located. For example:

```
ftp://idt56yu-97p4.sii.ad.for:1100
sftp://kpmml7-97p4.sii.ad.for:0047
```

You can choose to include details of both change of password and server ports, or only one of them. To generate the email, ActiveTransfer uses the default format in the ExistingUserEmailContent.txt file, available in the *Integration Server_directory\instances\instance_name\packages\WmMFT\config* directory. You can modify this default format as required. For details on how to modify the ExistingUserEmailContent.txt, see ["Configuring Default Email Settings" on page 43](#).

To email change of password and server port details to an existing user

1. In My webMethods: **Administration > Integration > Managed File Transfer > User Management > Users**
2. Select the server instance. For details, see ["Selecting the Instance to Work With" on page 62](#).
3. Select the relevant user from the list of users.
4. Click **Send Email**.

Note: If you do not need to change the user's password skip the next step.

5. To change the user's login password:
 - a. Click **Change password**.
 - b. Select the method for generating the password:
 - **Generate random password.** To allow ActiveTransfer to generate a random user password.
 - **Create a password.** To type and confirm a specific new password for the user.

Note: Skip the next step if you do not want to email server port details.

6. Select the ActiveTransfer Server server ports to include the email:
 - a. Select from one these server port options:
 - **Send port server details, marked as default.** To share details of the server ports marked as default ports in the Server Management page.
 - **Select port server details, to be shared with user.** To share details only of the specific server ports.
 - b. If you selected **Select port server details, to be shared with user**, select the required server ports from the list that appears.
 - c. Click **OK**.
7. Click **Save**.

The email is immediately sent to the user with the specified details.

Specifying Throttling Options for a User

You can specify preferences for speed, file size, and data limits for upload and download operations for an individual user. These settings will override any throttling options set in the template associated with the user. You can apply the same settings to user groups (**User Management > Users > Group**) and (**User Management > Users > Role**) roles.

To specify throttling options for a user

1. In My webMethods: **Administration > Integration > Managed File Transfer > User Management > Users**
2. Select the server instance. For details, see "[Selecting the Instance to Work With](#)" on [page 62](#).
3. Select the user from the list of users.
4. Click the **Throttling** tab.
5. In the **Upload Preferences** section, do the following:
 - a. If you want to specify the maximum permissible speed, in kilobytes per second, for an upload operation performed by the user, enter a value in the **Maximum Speed** box.
 - b. If you want to specify the maximum permissible size, in megabytes, for a file the user uploads, enter a value in the **Maximum Individual File Size** box.
 - c. If you want to specify the maximum amount of data that the user can upload per session, enter a value, in megabytes, in the **Maximum Amount per Session** box.
 - d. If you want to specify the maximum amount of data that the user can upload per day, enter a value, in megabytes, in the **Maximum Amount per Day** box.

- e. If you want to specify the maximum amount of data that the user can upload per month, enter a value, in megabytes, in the **Maximum Amount per Month** box.
6. In the **Download Preferences** section, do the following:
 - a. If you want to specify the maximum permissible speed, in kilobytes per second, for a download operation performed by the user, enter a value in the **Maximum Speed** box.
 - b. If you want to specify the maximum amount of data that the user can download per session, enter a value, in megabytes, in the **Maximum Amount per Session** box.
 - c. If you want to specify the maximum amount of data that the user can download per day, enter a value, in megabytes, in the **Maximum Amount per Day** box.
 - d. If you want to specify the maximum amount of data that the user can download per month, enter a value, in megabytes, in the **Maximum Amount per Month** box.
7. The  icon to the left of each box in this section indicates a property that is inherited from the template associated with this user. If you override a template value and you want to reset it to the default value specified by the template, click the  **Reset inheritance** button to the left of the box.
8. Click **Save**.

Specifying Restrictions for a User

You can define the following restrictions for a user, user group, or role:

- Restrict server availability to specified times and days of the week.
- Restrict particular actions for files that match a specified pattern and restrict access to subfolders in the virtual file system that match a specified pattern.
- Restrict login volume and duration and specify authentication settings.
- Restrict connections by protocol or IP address and specify default character encoding.

These settings will override any restrictions set in the template associated with the user.

Specifying Time Windows for Server Availability

You can specify the days of the week and the times during which a user can connect to ActiveTransfer Server.

Note: The days and times are represented in the time zone of the server.

To specify time windows for server availability

1. In My webMethods: **Administration > Integration > Managed File Transfer > User Management > Users**
2. Select the server instance. For details, see ["Selecting the Instance to Work With" on page 62.](#)
3. Select the user from the list of users.
4. Click the **Restrictions** tab.
5. In the **Active Time Window** section, do the following:
 - a. If you want to restrict access to particular days of the week, select the appropriate check box next to the days you want the server to be available to the user.
 - b. If you want to restrict access to particular time slots, click . Then, select start and end times from the **From Time** and **To Time** lists, respectively.

Tip: You can specify additional time slots by clicking .

6. The  icon to the left of each box in this section indicates a property that is inherited from the template associated with this user. If you override a template value and you want to reset it to the default value specified by the template, click the  **Reset inheritance** button to the left of the box.
7. Click **Save**.

Specifying File Name Filters

You can restrict particular actions for files that match a specified pattern. For example, you can restrict a user from uploading files that end with "exe". You can also restrict access to subfolders in the virtual file system that match a specified pattern.

To specify file name filters

1. In My webMethods: **Administration > Integration > Managed File Transfer > User Management > Users**
2. Select the server instance. For details, see ["Selecting the Instance to Work With" on page 62.](#)
3. Select the user from the list of users.
4. Click the **Restrictions** tab.

Note: The remaining steps in this procedure pertain to the **File Name Filters** section.

5. If you want to restrict particular actions for certain files, do the following in the **Patterns** area of the section:

- a. Click the  button.
- b. From the **Command** list, select a command (**Rename**, **List**, **Download**, or **Upload**).
- c. From the **Filter Type** list, select a filter type (**Starts with**, **Contains**, or **Ends with**).
- d. In the **File Name** box, type the portion of the file name that the **Filter Type** criterion should evaluate (for example, "exe").

Note: Any characters except wildcard characters or regular expressions are permitted. ActiveTransfer Server treats those characters as part of the file name.

- e. Add more file name filters as necessary by clicking  .
6. If you want to restrict a user's access to specific folders in the virtual file system, do the following in the **Block Paths Matching These Patterns** area of the section:
 - a. Click the  button.
 - b. Type the virtual file system path you want to block in the new row.

Note: You can use simple pattern matching by preceding the pattern with the tilde (~) character. For example, to deny user access to the folder /system/bin, you would type: ~/system/bin/*

- c. Add more block paths as necessary by clicking  .
7. The  icon to the left of each box in this section indicates a property that is inherited from the template associated with this user. If you override a template value and you want to reset it to the default value specified by the template, click the  **Reset inheritance** button to the left of the box.
 8. Click **Save**.

Setting Authentication and Login Restrictions

You can set authentication and login restrictions that specify the maximum number of simultaneous logins, the maximum login and idle times per session, public key and password requirements, and the paths to trusted public SSH key files.

To set authentication and login restrictions

1. In My webMethods: **Administration** > **Integration** > **Managed File Transfer** > **User Management** > **Users**
2. Select the server instance. For details, see ["Selecting the Instance to Work With" on page 62](#).
3. Select the user from the list of users.

4. Click the **Restrictions** tab.
5. In the **Authentication and Login** section, do the following:
 - a. If you want to specify the maximum number of simultaneous logins allowed for this user, enter a value in the **Maximum Simultaneous Logins** box.
 - b. If you want ActiveTransfer Server to require the user to supply a public key and password, select the **Require public key and password** check box.
 - c. If you want to specify the maximum number of minutes the user can remain logged in per session, enter a value in the **Maximum Login Time per Session** box.
 - d. If you want to specify the maximum number of minutes the user session can remain idle, enter a value in the **Maximum Idle Time per Session** box.
 - e. If you want to use trusted public SSH key files for authentication, click the  button next to **Paths to Trusted Public SSH Key Files**. Then, enter the path to a public key (for example, `/usr/var/keys/key_1`).
6. The  icon to the left of each box in this section indicates a property that is inherited from the template associated with this user. If you override a template value and you want to reset it to the default value specified by the template, click the  **Reset inheritance** button to the left of the box.
7. Click **Save**.

Setting Connection Restrictions

You can restrict connections by protocol or IP address. You can also specify the default character encoding for the connection between the user and ActiveTransfer Server.

To set connection restrictions

1. In My webMethods: **Administration > Integration > Managed File Transfer > User Management > Users**
2. Select the server instance. For details, see ["Selecting the Instance to Work With" on page 62](#).
3. Select the user from the list of users.
4. Click the **Restrictions** tab.

Note: The remaining steps in this procedure pertain to the **Connection** section.

5. If you want to restrict connections to particular protocols, select the check box next to the desired protocols.
6. From the **Default Character Encoding** list, select the appropriate default character encoding. The default is **UTF-8**.

7. If you want ActiveTransfer Server to accept or deny connection requests from specific IP addresses, do the following in the **IP Restrictions** area:
 - a. Click the  button.
 - b. From the list, select **Deny** or **Allow**.
 - c. Specify a range of IP addresses in the **from** and **to** boxes.
 - d. Add more IP address ranges to accept or deny as necessary by clicking .
8. The  icon to the left of each box in this section indicates a property that is inherited from the template associated with this user. If you override a template value and you want to reset it to the default value specified by the template, click the  **Reset inheritance** button to the left of the box.
9. Click **Save**.

Specifying Encryption and Decryption Options for a User

You can define specific file-based encryption and decryption PGP keys for an individual user. These settings will override any encryption assignments set in the template associated with the user. When encrypted, files are stored on the user's drive. Encrypted files are decrypted only if they are transferred back through ActiveTransfer using the same key that was used to encrypt them.

You can apply the same settings to user groups (**User Management > Users > Group**) and (**User Management > Users > Role**) roles.

When encryption and decryption keys are configured at multiple levels (user, server, and virtual folder), ActiveTransfer enforces the following order of preference:

1. User management
2. Virtual folder management
3. Server management

For example, if user *A* accesses port *10* and uploads a file in a VFS *MN*, then ActiveTransfer checks if the encryption or decryption key is available for user *A*. If no key is available at the user level, then ActiveTransfer checks for the virtual folder settings for a key. If no key is present at the VFS level, then ActiveTransfer checks the server level settings for the key.

To specify encryption and decryption options for a user

1. In My webMethods: **Administration > Integration > Managed File Transfer > User Management > Users**
2. Select the server instance. For details, see "[Selecting the Instance to Work With](#)" on [page 62](#).

3. Select the user from the list of users.
4. Click the **Encryption** tab.
5. In the **File-Based Encryption** section, specify the path to the public PGP key in the **Public PGP Key Location** box (for example, "C:\keylocation\simple.key" on Windows and "/usr/keylocation/enterprise.key" on UNIX).

Note: You can use the `wm.mft.security.pgp:generatePGPKeyFiles` service to generate an OpenPGP key pair. For details, see *webMethods ActiveTransfer Built-In Services Reference*.

6. In the **File-Based Decryption** section, do the following:
 - a. In the **Private PGP Key Location** box, specify the path to the private PGP key (for example, "C:\keylocation\simple.key" on Windows and "/usr/keylocation/enterprise.key" on UNIX).
 - b. In the **Private PGP Key Password** box, enter the password for the private PGP key.

Note: You can use the `wm.mft.security.pgp:generatePGPKeyFiles` service to generate an OpenPGP key pair. For details, see *webMethods ActiveTransfer Built-In Services Reference*.

7. Click **Save**.

You can deactivate file-based encryption or decryption at any time by clicking **Deactivate**.

Specifying Acceleration Options for a User

ActiveTransfer allows accelerated data transfer, also known as *acceleration*. For more information about acceleration, see "[Configuring and Managing Acceleration](#)" on page 44.

The acceleration settings you specify in the following procedure will override any acceleration settings set in the template associated with the user. You can apply the same settings to user groups (**User Management > Users > Group**) and (**User Management > Users > Role**) roles.

To specify acceleration options for a user

1. In My webMethods: **Administration > Integration > Managed File Transfer > User Management > Users**
2. Select the server instance. For details, see "[Selecting the Instance to Work With](#)" on page 62.
3. Select the user from the list of users.
4. Click the **Acceleration** tab.

5. In the **Active Tunnels** section, click the  button.
6. On the **Add Tunnel** dialog box, select the tunnel that you want to associate with this user.
7. Click **OK**.

Note: It is only necessary to map one tunnel to a user. If you map more than one tunnel to a user, ActiveTransfer Server ignores all but the first tunnel you mapped.

8. The  icon to the left of each box in this section indicates a property that is inherited from the template associated with this user. If you override a template value and you want to reset it to the default value specified by the template, click the  **Reset inheritance** button to the left of the box.
9. Click **Save**.

8 Managing Virtual Folders in a Virtual File System

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Overview

ActiveTransfer enables you to create a *virtual file system* (VFS). A virtual file system provides an abstract, virtual view of resources in your physical file system or on a remote system such as another FTP server. This capability enables users and client applications to access a variety of file systems in a uniform way. Although the information in a virtual folder might be physically stored across one or more local or remote file systems in your enterprise, it appears as a cohesive data collection in the VFS.

You create a virtual file system by creating one or more *virtual folders*, which you typically arrange in a file system hierarchy. For example, you can create a group of virtual folders to categorize your organization's sales for various years. At the top level of folders, you can create a group of separate virtual folders, each representing one year of sales. Inside each yearly virtual folder, you can create 12 virtual folders to represent the monthly sales data for that year.

After you create a virtual folder, you then assign users to the folder and specify each user's access privileges for that folder. When the users log in to ActiveTransfer, they see the folders they can access and the resources within those folders. In this way, you can store different types of data (for example, sales data and customer profile information) on the same physical file system, yet control access to that data according to individual need.

A VFS also bridges the differences between file systems on various operating systems so that users and applications can access files without having to know what type of file system they are accessing.

Using SMB Protocol for File Sharing

In ActiveTransfer, you can configure virtual folders to exchange files with an SMB server. For details, see ["Using SMB Protocol for File Sharing" on page 130](#).

Managing the Virtual File System in ActiveTransfer

You can perform the following VFS management tasks:

- Create and delete virtual folders.
- Search for virtual folders and any associated users or partners.
- Filter the list of virtual folders.
- Organize virtual folders by partners or by your enterprise.
- Associate a virtual folder with a physical folder location.
- Specify the access privileges that ActiveTransfer users, groups, and roles have for a virtual folder.

Creating a Virtual Folder

You create and maintain virtual folders on the Virtual Folder Management page in My webMethods. When you create a virtual folder, you have two options:

- Associate the virtual folder with a physical location. That is, the virtual folder represents an existing physical folder on a local or remote file system. Such folders are identified by an orange square in the virtual folder list.
- Create a virtual folder with no physical location. In this case, the virtual folder simply represents a collection of physical folders and files located on one or more local or remote file systems. Such folders are identified by a white rectangle in the virtual folder list.

Important: You cannot add a virtual folder beneath a virtual folder that is associated with a remote physical location.

To create a virtual folder

1. In My webMethods: **Administration > Integration > Managed File Transfer > Virtual Folder Management**.
2. Select the server instance. For details, see ["Selecting the Instance to Work With" on page 62](#).
3. In the virtual folder list, click  to the right of the **Home** folder.
4. In the **Add Virtual Folder** dialog box, type the folder name.
5. If you want the folder to be associated with a physical local or remote folder, select **This folder has a physical location**. For information about specifying the physical location, see ["Associating a Virtual Folder with a Physical Folder Location" on page 118](#).
6. To provide access My webMethods Server users, groups, or roles to the virtual folder, click **Permissions** and add users, groups, and roles.

For information on how to associate users, groups, and roles, with virtual folders, see ["Associating an Existing My webMethods Server User with ActiveTransfer" on page 99](#), ["Associating an Existing My webMethods Server User Group with ActiveTransfer" on page 100](#), and ["Associating an Existing My webMethods Server Role with ActiveTransfer" on page 58](#).

7. If you want to route file transfers through a proxy server, associate the virtual folder with a proxy server alias. For information on how to associate virtual folders, see ["Associating Virtual Folders with a Proxy Server Alias" on page 116](#).
8. Click **Add**.

The new virtual folder appears in the list of virtual folders on the left side of the page.

Associating Virtual Folders with a Proxy Server Alias

Use this procedure to associate proxy server aliases with virtual folders for file transfers to remote servers. For information on proxy server aliases in ActiveTransfer, see ["Managing Proxy Server Aliases" on page 36](#).

1. In My webMethods: **Administration > Integration > Managed File Transfer > Virtual Folder Management**.
2. Select the server instance. For details, see ["Selecting the Instance to Work With" on page 62](#).
3. Select the virtual folder in the virtual folder list.
4. Select **Use Proxy**.
5. If you want ActiveTransfer to use the default proxy server alias defined for a specific file transfer protocol in Integration Server or ActiveTransfer, select **Global proxy settings**.
6. If you want to use a specific proxy alias for the VFS:
 - a. Select **Select proxy alias**.
 - b. From the available list, select the appropriate proxy server alias to use.
7. Click **Save**.

Searching for Folders, Associated Users, and Associated Partners

If you need to quickly locate a virtual folder or its associated users or partners, you can search the virtual folder list.

To search for folders, users, or partners

1. In My webMethods: **Administration > Integration > Managed File Transfer > Virtual Folder Management**.
2. Select the server instance. For details, see ["Selecting the Instance to Work With" on page 62](#).
3. In the virtual folder list, click **Expand All** .
4. By default, all folders and all partners will be searched. Depending on how complex the virtual folder structure is, the search could take some time to complete. To narrow your search, you can apply a partner-based filter to the folder display or you can manually navigate to a specific partner folder in the list.

For instructions on applying a filter to the folder display, see ["Filtering the Virtual Folder List" on page 117](#).

5. In the **Search** box, enter the search criteria. The folder list dynamically populates with the names of the items matching your search criteria.

Filtering the Virtual Folder List

You can filter the virtual folders that are displayed in the virtual folder list. You can view all virtual folders, the virtual folders of a trading partner, or the virtual folders of your enterprise.

To filter the virtual folder list

1. In My webMethods: **Administration > Integration > Managed File Transfer > Virtual Folder Management**.
2. Select the server instance. For details, see ["Selecting the Instance to Work With" on page 62](#).
3. Click **Filters** at the top of the page to show the filter options.
4. If you want to display all virtual folders, select **All Folders**.
5. If you want to display only the virtual folders for a specific partner or for your enterprise, do the following:
 - a. Select **Folders of the Partner or Your Enterprise**.
 - b. Click the box beneath the option.
 - c. Select a partner name or enterprise name.
6. Click **Apply**.

Deleting a Virtual Folder

To delete a folder

1. In My webMethods: **Administration > Integration > Managed File Transfer > Virtual Folder Management**.
2. Select the server instance. For details, see ["Selecting the Instance to Work With" on page 62](#).
3. Select the virtual folder name in the virtual folder list.
4. Click to the right of the folder name.
5. In the **Delete Folder** confirmation dialog box, click **OK**.

Deleting a virtual folder does not delete its contents in the local or remote location.

Organizing Virtual Folders

You can organize the virtual folders in your VFS by associating the folders with partners or with your enterprise. If you do not associate a folder with either a partner or your enterprise, the folder appears beneath a folder called No Partner.

To organize virtual folders

1. In My webMethods: **Administration > Integration > Managed File Transfer > Virtual Folder Management**.
2. Select the server instance. For details, see ["Selecting the Instance to Work With" on page 62](#).
3. Select the virtual folder in the virtual folder list. The folder details appear on the right side of the page.
4. Click the arrow to the left of **Partner** to view the partner options.
5. Do one of the following:
 - If you do not want to associate the folder with either a partner or your enterprise, select **No Partner**.
 - If you want to associate the folder with your enterprise, select **Your Enterprise**.
 - If you want to associate the folder with a partner, select **The Following Partner**. Then, click the box beneath the option and select the partner name from the list.

Note: You may not see the desired partner name if webMethods Trading Networks is not installed. In this case, you can type the partner name manually.

6. Click **Save**.

After the virtual folder list refreshes, the virtual folder you modified appears under the appropriate folder.

Associating a Virtual Folder with a Physical Folder Location

You can associate a virtual folder with a physical folder location. The location can be either local or remote.

To associate a virtual folder with a physical location

1. In My webMethods: **Administration > Integration > Managed File Transfer > Virtual Folder Management**.
2. Select the server instance. For details, see ["Selecting the Instance to Work With" on page 62](#).

3. Select the virtual folder in the virtual folder list. The virtual folder details appear on the right side of the page.
4. Click the arrow to the left of **Location** to view the folder location options.
5. Select **This folder has a physical location**.
6. If you want to specify a local physical location, do the following:
 - a. Click **Local File Path**.
 - b. Specify the path to the folder you want to use in your local file system by either typing the path or browsing your local file system to locate the folder.
7. If you want to specify a remote physical location, do the following:
 - a. Click **Remote Path**.
 - b. Select the transport mechanism from the list.

For example, **FTPES** to connect to servers that use explicit FTPS over TLS, or **FTPS** to enable communication for Implicit mode.

- c. Enter the remote path in the format *protocol://host:port/relative path* (for example, `ftp://ftpmc:56/projectfolder/download/`).

Important: Make sure the path ends with `"/` to identify the location as a folder and not a file.

You can use user variables in the path. For information about these variables, see ["Server Configuration Parameters and Variables" on page 217](#).

Note: If you do not specify a port, ActiveTransfer will use the default port for the protocol.

- d. Type a **User Name** and **Password** for the remote system.
 - e. If you selected the secure protocols FTPES, FTPS, and HTTPS, specify the keystore path in **Keystore**, and enter the **Keystore Password** and **Key Password**.

By default, ActiveTransfer Server accepts SSL certificates from any remote server. You can configure ActiveTransfer Server to accept certificates only from trusted remote servers. For details, see ["Configuring ActiveTransfer Server for SSL Communication with Remote Servers" on page 120](#).
 - f. If you selected the **SFTP** transport type, enter the **Private Key Path** and the **Private Key Password**, and specify whether you want to enable **Two-Factor Authentication** to check for two or more authentication types.
 - g. If you want to quickly check the connection to a remote location, click **Test Connection**.
 - h. If you want ActiveTransfer Server to recover from a download that was not completed, select **High Availability Download Recovery**.

- i. If you want ActiveTransfer Server to recover from an upload that was not completed, select **High Availability Upload Recovery**.
 - j. For FTP, FTPS, and FTPES protocols, to enable ActiveTransfer Server to connect to a remote server using the passive mode, select **Passive**. By default, **Passive** is not selected so that ActiveTransfer Server uses the active mode.
8. Click **Save**.

Configuring ActiveTransfer Server for SSL Communication with Remote Servers

By default, ActiveTransfer Server accepts SSL certificates from any remote server. You can configure ActiveTransfer Server to accept certificates only from trusted remote servers. For this configuration to work, the remote server's certificate should be listed as a trusted root in the ActiveTransfer Server's truststore. ActiveTransfer Server validates the certificate received from the remote server against the ones listed in its truststore.

To configure ActiveTransfer Server to allow SSL communication only with trusted remote servers

1. Browse to the *Integration Server_directory \instances\instance_name \packages \WmMFT\config* directory on ActiveTransfer Server.
2. Open the properties configuration file (properties.cnf).
3. Set the `mft.ssl.client.acceptAnyCert` property to `false`. For details of `mft.ssl.client.acceptAnyCert`, see "[mft.ssl.client.](#)" on page 223 and save the file.

Note: When you set this property to `false`, ActiveTransfer Server validates the certificate presented by the remote server against the certificates in its truststore. You must store the truststore file with all the trusted certificates in the same location as the keystore file. The truststore file should have the name `keystoreName_trust`. For example, if the keystore file name is `remoteserver_ks.jks`, the truststore name should be `remoteserver_ks.jks_trust`.

Specifying Encryption and Decryption Options for a Virtual Folder

You can define specific file-based encryption and decryption PGP keys for a virtual folder. When files are uploaded or downloaded to the virtual folder through the ActiveTransfer Server, ActiveTransfer encrypts or decrypts the files in stream. Encrypted files are decrypted only if they are transferred back through ActiveTransfer using the same key that was used to encrypt them.

The encryption and decryption settings are applicable only when a user connects to ActiveTransfer Server and performs an upload or download operation. ActiveTransfer does not use these keys when the virtual folder is used in an event. If you want to use the encryption and decryption keys in an event, create an encryption or decryption action in the event.

When encryption and decryption keys are configured at multiple levels (user, server, and virtual folder), ActiveTransfer enforces the following order of preference:

1. User management
2. Virtual folder management
3. Server management

For example, if user *A* accesses port *10* and uploads a file in a VFS *MN*, then ActiveTransfer checks if the encryption or decryption key is available for user *A*. If no key is available at the user level, then ActiveTransfer checks for the virtual folder settings for a key. If no key is present at the VFS level, then ActiveTransfer checks the server level settings for the key.

To specify file-based encryption and decryption options for a virtual folder

1. In My webMethods: **Administration > Integration > Managed File Transfer > Virtual Folder Management**.
2. Select the ActiveTransfer Server instance. For details, see ["Selecting the Instance to Work With" on page 62](#).
3. Select the required virtual folder in the VFS tree.

The folder details appear on the right side of the page.

4. Click the arrow to the left of **Encryption**.
5. In the **File-Based Encryption** section, do the following:

- a. Click **Activate**.
- b. In the **Public PGP Key Location** box, specify the file path to the public PGP key (for example, "`C:\keylocation\simple.key`" on Windows and "`/usr/keylocation/enterprise.key`" on UNIX).

Note: You can use the `wm.mft.security.pgp:generatePGPKeyFiles` service to generate an OpenPGP key pair. For details, see *webMethods ActiveTransfer Built-In Services Reference*.

6. In the **File-Based Decryption** section, do the following:
 - a. Click **Activate**.
 - b. In the **Private PGP Key Location** box, specify the file path to the public PGP key (for example, "`C:\keylocation\simple.key`" on Windows and "`/usr/keylocation/enterprise.key`" on UNIX).

- c. In the **Private PGP Key Password** box, enter the password for the private PGP key.

Note: You can use the `wm.mft.security.pgp:generatePGPKeyFiles` service to generate an OpenPGP key pair. For details, see *webMethods ActiveTransfer Built-In Services Reference*.

7. Click **Save**.

You can deactivate file-based encryption or decryption at any time by clicking **Deactivate**.

Specifying User Permissions for a Subfolder

Let us consider the users **Mike** and **Anna** who have the following access privileges to the **Marketing** folder:

- *View*
- *Download*
- *Resume File Transfer*

As an Administrator you want to provide the additional access permission, *Upload* to **Mike** in the **inbound** folder and restrict the access permission provided to **Anna** in the **outbound** folder to *View* only, you can achieve these using the following:

To override the user access privileges inherited from the Marketing folder

1. In My webMethods: **Administration** > **Integration** > **Managed File Transfer** > **Virtual Folder Management**.
2. Select the ActiveTransfer Server instance. For details, see "[Selecting the Instance to Work With](#)" on page 62.
3. Select the virtual folder **inbound** in the VFS tree. The folder details appear on the right side of the page.
4. Select the user **Mike** in the **User Access** section.
5. Unselect the checkbox **Inherit permissions from parent**.
6. Select the permissions that you want to assign to the user **Mike**: *View*, *Upload*, *Download*, and *Resume File Transfer*.
7. Click **Save**.
8. Similarly, select the virtual folder **outbound** in the VFS tree. The folder details appear on the right side of the page.
9. Select the user **Anna** in the **User Access** section.
10. Unselect the checkbox, **Inherit permissions from parent**.

11. Select the permissions that you want to assign to the user **Anna: View** and unselect all other permissions.
12. Click **Save**.

User, Group, and Role Permission Propagation in VFS

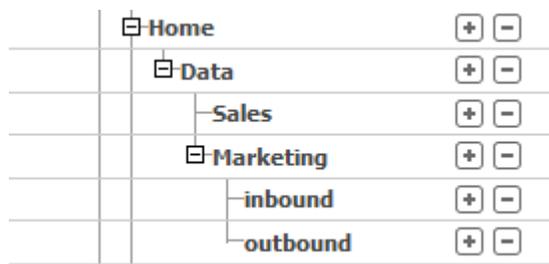
Note: In this topic, *user* also refers to user group and role.

ActiveTransfer now propagates user permissions in the VFS as follows:

- If you grant a user permissions to a parent folder, the user will also have the same permissions to all subfolders.
- If you grant a user permissions to a subfolder, the user will automatically have the permission to traverse through the parent folders.
- You can override the inherited permissions and specify a different set of permissions to a folder for a user. These new permissions are then be inherited by any subfolders under the folder.

Example

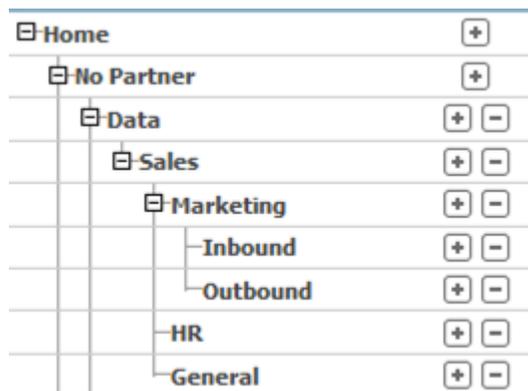
Consider the following VFS scenario in ActiveTransfer:



Let us grant the ActiveTransfer user, Mike, permission to access the Marketing folder in the VFS. The following permissions are automatically assigned to the parent folder and the subfolders of Marketing:

- Folder traverse permission: Mike has traversal permission for the parent folder Data. This means that the Mike can browse al folders from Data to Marketing.
- Inherited permission from parent folder: The Marketing subfolders, inbound and outbound inherit the permissions defined in the parent folder for Mike.

You might choose to override the permissions inherited from the parent folder and define your own permissions for Mike at the subfolder level. For details on how you can specify permissions to subfolders, see [Specifying User Permissions for a Subfolder](#).



Mike has *view* permission to the Marketing folder, but you now want to also give him *view* permission to the HR and General folders too. So you could give Mike *view* permission to all subfolders of Data, the parent folder instead of setting permissions separately for each subfolder in Sales.

Specifying User Access Privileges for a Virtual Folder

You can specify access privileges to a virtual folder by first selecting the users who can access the folder and then specifying the permissions for the actions each user can perform in the folder.

To specify user access privileges to a virtual folder

1. In My webMethods: **Administration** > **Integration** > **Managed File Transfer** > **Virtual Folder Management**.
2. Select the server instance. For details, see ["Selecting the Instance to Work With" on page 62](#).
3. Select the virtual folder in the virtual folder list. The folder details appear on the right side of the page.
4. Click the arrow to the left of **User Access** to view the user access options.
5. Click the **+** button above the list of users.
6. If the user you want to access the folder already exists in the system directory, select **Search for Existing Users** and do the following:
 - a. Type the first few letters of the user's first name, last name, or user name in the search box and then click **Search**.
 - b. In the search results, select the check box next to the user that you want to add.
 - c. If you want to change the user's password or ports, click **Advanced Settings** and change these settings as desired. For more information, see ["Associating an Existing My webMethods Server User with ActiveTransfer" on page 99](#).
 - d. Click **Add Existing Users**. You can add more users as needed.

7. If the user you want to access the folder does not already exist in the system directory, select **Create a New User** and do the following:
 - a. Enter the user's user ID, first name, last name, and email address in the respective boxes.
 - b. Click the arrow to the left of **Advanced Settings** and specify password and port settings for the user as desired. For more information, see ["Creating a New User" on page 101](#).
 - c. Click **Add New User to Selection**. You can add more users as needed.

Note: When you create a new user in this way, the user account is created in the system directory but not in any externally configured directory services such as LDAP.

8. When you are done adding users, click **OK**.
9. In the **User Access** section, select the user whose permissions you want to specify.
10. Select the check box next to each permission you want to grant to the user (for example, view the contents of the folder, download files to the folder, create subfolders within the folder).

Note: If the folder does not have a physical location, the **Upload** and **Create Folder** permissions are not applicable.

11. In the **Quota Limit** box, specify the total amount of space, in megabytes or gigabytes, to make available to this user for file transfers in this virtual folder. Then, select **MB** or **GB** from the list. If the user exceeds this limit, ActiveTransfer Server denies the user from any further file transfer activity until the user frees up space by deleting files he or she has previously uploaded or downloaded in this folder.

Note: If you have assigned a user access privileges to only one virtual folder in the VFS, the contents of the folder will be directly shown to the user. ActiveTransfer Server shows the folders in the VFS only if the user has access privileges to more than one folder. If you want the user to see a root folder when the user logs in, you must create such a folder inside the ActiveTransfer Server VFS.

12. Click **Save**.

Specifying User Permissions for a Subfolder

Let us consider the users **Mike** and **Anna** who have the following access privileges to the **Marketing** folder:

- *View*
- *Download*

■ *Resume File Transfer*

As an Administrator you want to provide the additional access permission, *Upload* to **Mike** in the **inbound** folder and restrict the access permission provided to **Anna** in the **outbound** folder to *View* only, you can achieve these using the following:

To override the user access privileges inherited from the Marketing folder

1. In My webMethods: **Administration > Integration > Managed File Transfer > Virtual Folder Management**.
2. Select the ActiveTransfer Server instance. For details, see "[Selecting the Instance to Work With](#)" on page 62.
3. Select the virtual folder **inbound** in the VFS tree. The folder details appear on the right side of the page.
4. Select the user **Mike** in the **User Access** section.
5. Unselect the checkbox **Inherit permissions from parent**.
6. Select the permissions that you want to assign to the user **Mike**: *View*, *Upload*, *Download*, and *Resume File Transfer*.
7. Click **Save**.
8. Similarly, select the virtual folder **outbound** in the VFS tree. The folder details appear on the right side of the page.
9. Select the user **Anna** in the **User Access** section.
10. Unselect the checkbox, **Inherit permissions from parent**.
11. Select the permissions that you want to assign to the user **Anna**: *View* and unselect all other permissions.
12. Click **Save**.

Specifying User Access Privileges in the Parent Folder

Let us consider the user **Mike** in the above example who has access to the **Marketing** folder. Let us now consider two more folders in the VFS, **General** and **HR** under the **Sales** folder. **Mike** currently has the following access in the VFS:

- **Marketing** folder: *View*, *Download*, and *Resume File Transfer*.
- **Inbound** folder: *View*, *Download*, *Resume File Transfer*, and *Upload*.
- **Outbound** folder: *View*, *Download*, and *Resume File Transfer*.

As an Administrator, you want to grant *view* access to **Mike** to the other folders in the **Sales** folder: **General** and **HR**. This can be achieved using the following:

To specify user access privileges in the parent folder

1. In My webMethods: **Administration > Integration > Managed File Transfer > Virtual Folder Management**.
2. Select the ActiveTransfer Server instance. For details, see "[Selecting the Instance to Work With](#)" on page 62.
3. Select the virtual folder **Sales** in the VFS tree. The folder details appear on the right side of the page. The user **Mike** has folder traversal permission in this folder.
4. Unselect the **Traverse folder** checkbox. You will see the minimum permission set selected in the list.
5. Unselect all other permissions except *View* .
6. Click **Save**. **Mike** will now get *View* access to the **General** and **HR** folders under **Sales** folder.

9 Managing Events

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About Events

You can define events that, when triggered, cause ActiveTransfer Server to perform a specified action or set of actions. There are two types of managed file transfer events:

- *Post-processing events* cause ActiveTransfer Server to perform a specified action or set of actions when a user uploads, downloads, or deletes a file.
- *Scheduled events* cause ActiveTransfer Server to perform an action at a specified date and time.

Creating an event consists of the following high-level steps:

1. Add a post-processing or scheduled event.
2. Define the conditions that trigger the event.
3. Define one or more actions to execute when the event is triggered.
4. Define an error action to execute if the specified event action fails.
5. Activate the event.

Using SMB Protocol for File Sharing

In ActiveTransfer, you can configure events and virtual folders to exchange files with an SMB server. The SMB protocol allows ActiveTransfer to read, create, and update files on a network file share or a remote server that supports SMB, with the option to specify the user name and password for access. By default, Microsoft Windows systems support the native SMB protocol. However, UNIX systems must have interoperability utilities like Samba. SMB also allows for cross-platform file access. So, for example, ActiveTransfer running on Microsoft Windows system can access files on a Linux system.

Typically, file operations are faster when you connect to a network file share using SMB protocol (SMB://host/Folder/) than when directly using a network file path (for example, FILE:///host/SharedFolder/). This is especially true when the operations are carried out on a large number of files.

Adding an Event

You can define two types of events:

- Post-processing event, which executes an action when a user uploads, downloads, or deletes a file
- Scheduled event, which executes an action at a specified date and time

The first step in defining an event is to add the event to the **Post-Processing Events** tab or the **Scheduled Events** tab on the Event Management page.

Adding a Post-Processing Event

To add a post-processing event

1. In My webMethods: **Administration > Integration > Managed File Transfer > Event Management**.
2. Select the server instance. For details, see ["Selecting the Instance to Work With" on page 62](#).
3. Click the **Post-Processing Events** tab.
4. Click the  above the list of events.
5. In the **Add Post-Processing Event** dialog box, do one of the following:
 - If you want to create a new event that is not based on an existing, similar one, select **A new event**.
 - If you want to create a new event that is similar to one that already exists, select **A copy of an existing event**. Click the box beneath this option and select the event on which you want to base the new one.
6. Type the event name and description in the respective boxes.
7. Click **OK**. The event name appears in the event list at the top of the page.
8. Define the conditions that determine when to execute an action for this event. For details, see ["Specifying Conditions for a Post-Processing Event" on page 132](#).

Adding a Scheduled Event

Note: Association of users, groups, and roles is not available for scheduled events. It is limited to post-processing events.

To add a scheduled event

1. In My webMethods: **Administration > Integration > Managed File Transfer > Event Management**.
2. Select the server instance. For details, see ["Selecting the Instance to Work With" on page 62](#).
3. Click the **Scheduled Events** tab.
4. Click the  button above the list of events.
5. In the **Add Scheduled Event** dialog box, do one of the following:
 - If you want to create a new event that is not based on an existing, similar one, select **A new schedule**.

- If you want to create a new event that is similar to one that already exists, select **A copy of an existing schedule**. Click the box beneath this option and select the event on which you want to base the new one.
6. Type the event name and description in the respective boxes.
 7. Click **OK**. The event name appears in the event list at the top of the page.
 8. Define the criteria that determine when to execute an action for this event. For details, see ["Specifying Conditions for a Scheduled Event" on page 133](#).
 9. If you want to test the actions defined for the scheduled event, you can use the `wm.mft.schedule:executeEvent` service. For details about this service, see *webMethods ActiveTransfer Built-In Services Reference*.

Defining Conditions that Trigger an Event

After you add an event, the next step is to define the conditions that trigger the event and determine when an action should be executed. For example, for a post-processing event, you can specify to execute an action immediately after any user uploads a file into a particular folder. For a scheduled event, you specify the date and time to execute the action.

Specifying Conditions for a Post-Processing Event

To specify conditions for a post-processing event

1. In My webMethods: **Administration > Integration > Managed File Transfer > Event Management**.
2. Select the server instance. For details, see ["Selecting the Instance to Work With" on page 62](#).
3. Click the **Post-Processing Events** tab.
4. Select the event from the list of post-processing events.

Note: The remaining steps in this procedure pertain to the **Criteria** section.

5. From the **Execute the actions below when a user** list, specify the file operation to consider (for example, **uploads**).

Note: If you specify an event based on the deletion of a file, make sure that any subsequent actions you define for the event do not rely on the presence of the deleted file.

6. If you want to specify a particular folder, select **The following name**, and then type the folder name in the box beneath this option.

Note: You can use wildcard characters in the folder name box (for example, *baseName).

By default, ActiveTransfer Server considers file activity in any virtual file system folder when evaluating event criteria.

7. For the file transfer status, specify whether ActiveTransfer Server should consider successful transfers only (**Success**), unsuccessful transfers only (**Failure**), or both (**Success or Failure**).
8. If you want to specify particular users, roles, or groups for whom the event should be executed, use the appropriate option:
 - If you want ActiveTransfer Server to consider operations performed by any user, select **Any user**.
 - If you want ActiveTransfer Server to execute the event for file operations performed by particular users, groups, or roles, select **The following users, groups, roles**. Then, click the **+** to search for and select the users, groups, and roles that you want to add to the criteria.
9. Specify whether to execute the actions immediately, after the user exits all sessions, or after the user is idle for some seconds. If you select **After the user is idle for**, enter the number of seconds to wait before executing the action.
10. Click **Save**.
11. Define one or more actions to execute when the event is triggered. See "[Defining Actions to Execute when an Event Is Triggered](#)" on page 135.

Specifying Conditions for a Scheduled Event

To specify conditions for a scheduled event

1. In My webMethods: **Administration > Integration > Managed File Transfer > Event Management**.
2. Select the server instance. For details, see "[Selecting the Instance to Work With](#)" on page 62.
3. Click the **Scheduled Events** tab.
4. Select the event from the list of scheduled events.

Note: The remaining steps in this procedure pertain to the **Criteria** section.

5. From the **Execute Actions** list, specify how often to execute the action, as follows:

If you select this...	Do this...
Run Once	Specify the date and time to execute the action. Click the calendar icon to select a date from the calendar.
Manual	<p>Use the <code>wm.mft.schedule:executeEvent</code> service to execute the actions defined for this event.</p> <p>Note: This event can be triggered on demand using the <code>wm.mft.schedule:executeEvent</code> service.</p>
Fixed Interval	Specify a date range and the time interval that ActiveTransfer Server should wait before executing the next action for a scheduled event. For details, see "Calendar and Processing Options for Scheduled Events" on page 231.
Hourly	Specify a date range and the times you want to execute the action each hour. For details, see "Calendar and Processing Options for Scheduled Events" on page 231.
Daily	Specify a date range and the times you want to execute the action each day. For details, see "Calendar and Processing Options for Scheduled Events" on page 231.
Weekly	Specify a date range, the days of the week, and the times you want to execute the action each week. For details, see "Calendar and Processing Options for Scheduled Events" on page 231.
Monthly	Specify a date range, the days within the month, and the times you want to execute the action each month. For details, see "Calendar and Processing Options for Scheduled Events" on page 231.
Yearly	Specify a date range, the months, the days within the month, and the times you want to execute the action each year. For details, see "Calendar and Processing Options for Scheduled Events" on page 231.

- Click **Save**.
- Define one or more actions to execute when the event is triggered. Ensure that a "find file" action is the first action defined for the event. See ["Defining Actions to Execute when an Event Is Triggered"](#) on page 135.

Defining Actions to Execute when an Event Is Triggered

After you add an event and define the conditions that trigger the event, you define one or more actions to execute when the event is triggered. The following table describes the types of actions you can execute:

Action	Where to Go for Information
Execute a file operation, such as renaming, decrypting, or unzipping a file	"Executing File Operations" on page 136
Execute an Integration Server service	"Executing an Integration Server Service" on page 159
Execute a script	"Executing a Script" on page 161
Execute a Trading Networks service	"Executing a Trading Networks Service" on page 163
Send a Broker notification	"Sending a Broker Notification" on page 166 (Deprecated)
Send an email message	"Sending an Email Message" on page 168
Write the contents of a file to the database	"Writing File Content to the Database" on page 170
Jump to a designated action	"Jumping to a Designated Action" on page 172
Exclude certain files from an action or a set of actions based on a source filter	"Excluding Files from an Action" on page 174

File Processing in Event Actions

An ActiveTransfer post-processing event is triggered for each file based on the actions configured in the event. The event is triggered by a file upload, file download, or a file delete. The event is executed for one file at a time. If an error occurs in the event, the file processing is stopped after processing the files in the current action.

The first action configured in a scheduled event is the find action. The files listed by the find action is the source of input files for the event. If the find action returns more than one file, the subsequent actions will operate on all the files. Each action configured in the event will complete the operation on all the files in the list and pass on the set of files to the subsequent action. For more details on how the files are processed for specific events, refer to the *Result* section for that action.

If an error action is configured in the event, one error action is executed for each file transaction that has an error. If the find action returns an empty list, subsequent actions will be executed with 0 files as input.

Executing File Operations

One type of action that ActiveTransfer Server can execute when an event is triggered is a file operation. File operations include finding, copying, moving, renaming, deleting, encrypting and decrypting, unzipping and zipping files or writing content to a file. For each file operation, you define specific properties that apply to that operation.

Creating a Basic File Operation Action

When you create a file operation action, you must first select the file operation you want to execute. Then, you define the specific properties that apply to the selected file operation.

The following procedure describes how to create the basic file operation action. For information about defining individual file operation properties, see the topics at the end of this procedure.

Note: For outbound file transfers triggered through scheduled events or by invoking the `wm.mft.schedule:executeEvent` service, consider transferring the files by way of a virtual folder instead of directly connecting to an external server using a find, copy, or move file operation. Files transferred by way of virtual folders are automatically logged on the File Transactions page.

To create a basic file operation action

1. In My webMethods: **Administration > Integration > Managed File Transfer > Event Management**.
2. Select the server instance. For details, see ["Selecting the Instance to Work With" on page 62](#).
3. Click the tab containing the event for which you are creating the file operation action (**Post-Processing Events** or **Scheduled Events**).
4. Select the event in the event list.
5. In the **Actions** section, click the **Select Action** list.

- a. In the resulting dialog box, click the **Select Category** list, and then click **Execute File Operation**.
- b. In the **Select Action** list, click the file operation you want the action to execute (for example, **Copy**).
- c. Click **OK**.

You can accept the default properties for the selected file operation action, or you can modify them to meet your requirements. For details, see:

- ["Finding Files" on page 138](#)
- ["Copying or Moving Files" on page 141](#)
- ["Deleting Files" on page 146](#)
- ["Encrypting and Decrypting Files" on page 147](#)
- ["Renaming Files" on page 150](#)
- ["Unzipping Files" on page 151](#)
- ["Writing Content to a File" on page 154](#)
- ["Zipping Files" on page 156](#)

Note: If you are defining a scheduled event, make sure the "find file" action is the first action you define. Otherwise, the scheduled event will fail.

6. If you require parallel processing of files in multiple threads, click the **Advanced** list.
 - a. Select **Parallel processing**.
 - b. From the **Start parallel processing for files after**, select the action after which ActiveTransfer must start parallel processing of files in multiple threads.

ActiveTransfer executes the action you selected here, and any others before it, sequentially.
 - c. In **Maximum number of parallel processes**, type the maximum number (between one and 999) of parallel threads that ActiveTransfer can create to simultaneously process files.

Result: You can monitor the actions performed on files using the **File Seq No** column in the **Activities** tab of the Event Log page. By default, this column is hidden, but you can configure its display.

All files in an event are assigned a **File Seq No** starting from zero when ActiveTransfer picks them up sequentially for the first event action. Even after parallel processing starts, for all subsequent actions, ActiveTransfer maintains the initial sequence number on each thread until the event execution is complete.

Finding Files

After you create a basic find file action as described in "[Creating a Basic File Operation Action](#)" on page 136, use this procedure to set the properties of the action.

Note: If you are defining a scheduled event, make sure the “find file” action is the first action you define. Otherwise, the scheduled event will fail.

To set the properties of a find file action

1. For **File URL**, identify the path to search by doing one of the following:

Important: When you enter file path locations, be sure to end the path with a slash character (“/”) to identify the location as a folder and not a file.

- If the file URL is on your local machine or network, select **File Path** and browse to or enter the location.

Note: To specify a file URL for a shared location, use the following syntax: *FILE:///<host>/SharedFolder/*. Make sure that the OS user running the ActiveTransfer Server instance has full access to the shared location.

- If the file URL is on a remote machine or network, select **Remote File Path** and browse to or enter the location in the format: *protocol://<host>:<port>/DestinationFolder/*

Note: If you want to find and copy files from remote, third-party HTTP(S) servers, ensure that the you provide appropriate file path here.

- If the file URL is a virtual folder in the ActiveTransfer VFS, do the following:
 - i. Select **Virtual Folder**
 - ii. Type in the virtual folder details in the text box or use the browse option.
If you use the browse button, the **Select virtual folder** look up window opens.
 - iii. In the **Select virtual folder** window, select the virtual folder by highlighting the element and click on **Select**.
 - iv. If you want to point to a subfolder in the virtual folder, append the URL in the text box with the details of the subfolder.

Note: The virtual folder that you select should be configured on the same ActiveTransfer Server instance on which the event is configured.

Tip: If you want to connect to a remote server using a secure protocol (FTPES, FTPS, HTTPS or SFTP) and want to configure authentication using secure key exchange, create a virtual folder for the remote server in the VFS and configure the **Keystore**, **Keystore Password**, and **Key**

Password parameters. You can then use the Virtual folder that you configured in the **Virtual Folder** option of the **File Path** in the event action. For additional details see ["Associating a Virtual Folder with a Physical Folder Location"](#) on page 118.

2. For **File Name**, specify the name of the file to find by doing one of the following:
 - If you want to find files with any name, select **Any file name**.
 - If you want to find files with a specific name, select **File name** and enter the name of the file.
3. If **File URL** is a third-party HTTP(S) server, clear the **ActiveTransfer HTTP(S) Servers** selection.

Note: This field appears only if the **File URL** specified:

- Is an HTTP(S) URL.
- Is not a server variable.

For more information on how ActiveTransfer handles remote or external HTTP(S) servers, see ["Connecting to HTTP\(S\) Servers"](#) on page 41.

4. Select one of the following options to determine the file name for subsequent copy actions:
 - If the **File URL** specified ends with a file name, select **Extract file name from URL**. Active transfer uses this file name in subsequent copy actions.
 - If the **File URL** specified does not end with a file name or you want to use a different file name, select **Specify file name**, and then enter the file name to use in the text box. You can also use a server variable or event parameter here.
5. Type a **User Name** and **Password** for the remote system.
6. If you want to route file transfers to remote servers through a proxy server, select the appropriate proxy server options:
 - a. Select **Use Proxy**.
 - b. Select one of these options:
 - **Global proxy settings**. If you want ActiveTransfer to use the default proxy server alias set up in Integration Server or ActiveTransfer.
 - **Select proxy alias**. If you want to use a specific proxy server alias for the event. Then select the appropriate proxy server alias to use from the available list.
7. To check the connection to the remote server with or without a proxy server, click **Test Connection**.
8. To assign partners for the event, do the following:

Note: For virtual folders, use this option only if you want to override the partners configured for the virtual folders.

- a. Select **Assign partner**.
 - b. Click in the text box and do one of the following:
 - Select the partner to assign from the list of configured partners in ActiveTransfer.
 - Type a parameterized value for the partner using the following format:
`[partner_name], [remote_partner_name]`
 9. If you want to include subfolders in the search criteria for the Find action, specify **Folder Depth**. The default value is 1 which restricts the search to the root folder.
 10. If you want to restrict the number of items in the Find action results, specify the **Maximum Items to Find**. The default is 0 which includes all the items that match the search criteria for the Find action.
 11. If you want to narrow the search by the time period in which the file was last modified, specify suitable time details:
 - a. In the **Last file modification** list, select the appropriate time variable to which to apply the time criteria:
 - **Before**. Select this option to specify the time before which files were modified.
 - **Within**. Select this option to specify the time (including the current date) within which files were modified.
- Note:** You must specify at least one time criteria if you select a time variable.
- b. In the appropriate boxes, type the days, hours, and minutes to which to apply the selected time variable.

Example: Let us assume that you have specified the time variable as **Before**, with 2 days and 6 hours as the time variable. When ActiveTransfer executes the Find file action on 30 April, it searches for all files that were modified before 4 pm on 27 April. If you change the time variable to **Within**, when ActiveTransfer executes the Find file action at 12 pm on 30 April, it searches for files that were modified between 28 April and 30 April 4 am.
 12. If you want the find operation to fail if no files are found, select **Fail if no files are found**.
 13. For **File Stability and Scanning**, if you want to remove files that are being processed from the list of files, select **Exclude files that are being updated**. Then, if you want to delay processing of all files until no further file changes are made, select **Delay processing until all files are available for use**.
 14. For **Scan for Files and Check for Stability**, do one of the following:
 - If you want the find operation to scan and check one time only, select **Once**.
 - If you want to check at regular intervals, select **Every** and enter the seconds and minutes.

15. If you want ActiveTransfer to retry a failed find action, specify the number of retries and the retry interval in **Retry [] times, at intervals of [] second(s)**.
16. If you want to execute an error action if the file operation fails, select **Execute error action**.
17. Click **Save**.
18. If you selected the **Execute error action** check box, define an error action as described in ["Defining an Error Action" on page 175](#).
19. If you are finished defining actions for this event, activate the event as described in ["Activating an Event" on page 176](#).

Result:

A "find" action retrieves a list of files from a specified location. The files listed by a find action are passed on to the subsequent action for processing. If there are multiple find actions in an event, the files found by each "find" action are added to the list passed on to it from the previous action.

For example, consider the following sequence of event actions and the ActiveTransfer behavior for each event action:

Event Action Sequence	What does ActiveTransfer do?
1. Find files in source <i>A</i>	Finds files in the given source location <i>A</i> . Let us call these files list 1.
2. Execute Integration Server Service	Executes the Integration Service on file list 1.
3. Find files in source <i>B</i>	Finds files in the given source location <i>B</i> . Let us call these files list 2.
4. Execute Integration Server Service	Executes the Integration Server service on both list 1 and list 2 files.
5. Encrypt files	Encrypts the files in list 1 and list 2.

Copying or Moving Files

After you create a basic file copy or move action as described in ["Creating a Basic File Operation Action" on page 136](#), use this procedure to set the properties of the action.

To set the properties of a file copy or move action

1. In the **Source Filter** box, enter the name of the file whose transfer will trigger this event. By default, ActiveTransfer Server considers all files.

Note: You can use wildcard characters to filter the file names. For example, enter `*.zip` to trigger the event only when zip files are uploaded or downloaded. To trigger an event based on a name string in the zip files, use the name string in the **Source Filter** box, preceded and followed by wildcard characters. For example, enter `*invoice*.zip` to trigger the event based on the file URLs, when zip files containing the character string `invoice` in their file names are uploaded or downloaded. If you define a **Source Filter** for an action, the action acts only on the files that are filtered out.

For information on the use of wildcards in ActiveTransfer Server, see "[Use of Special Characters in Search](#)" on page 26.

2. If you want to use regular expression in the source filter, specify a valid regular expression in **Source Filter** and select **Use regular expression**.

Examples for regular expressions:

<code>(. (?!purchaseorder)) *</code>	Excludes files with the file URL containing <code>purchaseorder</code>
<code>.*out/.*</code>	Include files with the file URL containing the folder <code>out</code>
<code>^abc (.*) 123\$</code>	Includes anything that starts with <code>abc</code> and ends with <code>123</code> . Matches <code>abc123</code> , <code>abcxyz123</code> , but not <code>abcxyz123def</code>
<code>NEW- ((*.doc) (*_backup_*))</code>	Includes anything starting with <code>NEW-</code> that either ends in <code>.doc</code> , or is followed by the string <code>_backup_</code>

3. Select the **Destination URL** to which the file will be copied or moved by doing one of the following:

Important: When you enter file path locations, be sure to end the path with a slash character (`"/`) to identify the location as a folder and not a file.

- If the destination URL is on your local machine or network, select **File Path** and browse to or enter the location.

Note: To specify a file URL for a shared location, use the following syntax: *FILE:///<host>/SharedFolder/*. Make sure that the OS user running the ActiveTransfer Server instance has full access to the shared location.

- If the destination URL is on a remote machine or network, select **Remote File Path** and browse to or enter the location in the format: *protocol://<host>:<port>/DestinationFolder/*
- If the destination URL is a virtual folder in the ActiveTransfer VFS, do the following:
 - i. Select **Virtual Folder**
 - ii. Type in the virtual folder details in the text box or use the browse option.
If you use the browse button, the **Select virtual folder** look up window opens.
 - iii. In the **Select virtual folder** window, select the virtual folder by highlighting the element and click on **Select**.
 - iv. If you want to point to a subfolder in the virtual folder, append the URL in the text box with the details of the subfolder.

Note: The virtual folder specified here should be configured on the same ActiveTransfer Server instance on which the event is configured.

Tip: If you want to connect to a remote server using a secure protocol (FTPES, FTPS, HTTPS or SFTP) and want to configure authentication using secure key exchange, create a virtual folder for the remote server in the VFS and configure the **Keystore**, **Keystore Password**, and **Key Password** parameters. You can then use the Virtual folder that you configured in the **Virtual Folder** option of the **File Path** in the event action. For additional details see "[Associating a Virtual Folder with a Physical Folder Location](#)" on page 118.

4. If **File URL** is a third-party HTTP(S) server, clear the **ActiveTransfer HTTP(S) Serverselection** and do the following:

Note: This field appears only if the **File URL** specified is an HTTP(S) URL and is not a server variable. For more information on how ActiveTransfer handles remote or external HTTP(S) servers, see "[Connecting to HTTP\(S\) Servers](#)" on page 41.

- a. In **Request Method**, select either POST or PUT HTTP request method.
- b. In the **Request Headers** table, add any additional headers and values to use for the HTTP request method in the respective text boxes.

For information on the header information specific to chunking (`Transfer-Encoding=chunked`) and multipart messages (`Content-Type= multipart/form-data`), see "[Connecting to HTTP\(S\) Servers](#)" on page 41.

5. Select **Create Directory** to enable ActiveTransfer to create the destination folder if the folder specified in **Destination URL** is not present.
If **Destination URL** path does not include a folder, ActiveTransfer copies or moves the file directly to the specified directory path.
6. Type a **User Name** and **Password** for the remote system.
7. If you want to route file transfers to remote servers through a proxy server, select the appropriate proxy server options:
 - a. Select **Use Proxy**.
 - b. Select one of these options:
 - **Global proxy settings.** If you want ActiveTransfer to use the default proxy server alias set up in Integration Server or ActiveTransfer.
 - **Select proxy alias.** If you want to use a specific proxy server alias for the event. Then select the appropriate proxy server alias to use from the available list.
8. To check the connection to the remote server with or without a proxy server, click **Test Connection**.
9. To assign partners for the event, do the following:

Note: For virtual folders, use this option only if you want to override the partners configured for the virtual folders.

- a. Select **Assign partner**.
 - b. Click in the text box and do one of the following:
 - Select the partner to assign from the list of configured partners in ActiveTransfer.
 - Type a parameterized value for the partner using the following format:
[partner_name],[remote_partner_name]
10. Select additional properties for the copy or move action as follows:

Select this option...	To...
Rename file to	Rename the file to the specified name.
Wait for	Wait for the specified number of seconds before starting the copy or move operation to ensure that an outside process is not writing to the file.
Give up after	Stop the copy or move operation if it does not complete within the specified number of seconds.

Select this option...	To...
Retry [] times, at intervals of [] second(s)	Retry a failed copy or move operation for the specified number of times, at the interval specified in seconds.
Resume transfer from the point of interruption	Resume an interrupted copy or move operation from the point of interruption.
Preserve file modification date	Retain the time stamp indicating when the file was last modified.
Execute error action	Execute an error action if the file operation fails.
Execute asynchronously	Execute the file operation in a different thread so that it does not interfere with other actions.

11. If you are using FTP, FTPS, or FTPES protocols, configure the following additional settings:
 - **ASCII Transfer**, to change the file transfer mode to ASCII.
 - **Simple Mode**, to change the file transfer mode to simple mode. Select this option if you are transferring files to AS/400 systems.
 - If you selected the ASCII mode, select the **Convert Line Endings** option for ActiveTransfer Server to change the line endings of the file. Select **No Change** if you do not want ActiveTransfer Server to alter the line endings.

ActiveTransfer Server uses the **Binary** file transfer mode as the default for **Move** and **Copy** actions.
12. Click **Save**.
13. If you selected the **Execute error action** check box, define an error action as described in ["Defining an Error Action" on page 175](#).
14. If you are finished defining actions for this event, activate the event as described in ["Activating an Event" on page 176](#).

Result:

A “copy” action copies all the files passed on from the previous action to the location specified in **Destination URL**. However, the files copied to the specified destination will not be available to the subsequent action for processing. The list of files in the source location is passed on to the subsequent action.

A “move” action moves all the files passed on from the previous action to the location specified in **Destination URL**. The files are removed from the source folder. The list of files in the destination location is passed on to the subsequent action.

Example: An event configured with the following actions:

1. Find action: Find files in **File URL** = *<source folder>*
2. Encrypt action: Encrypt the files
3. Move Action: Moves the files to the **destination URL** = *<destination folder>*

The event results in the following:

1. Find action lists all the files in the *<source folder>*.
2. Encrypt action encrypts all the files listed by the find action.
3. Move action moves the files that are encrypted by the encrypt action to the *<destination folder>*.

Deleting Files

After you create a basic file delete action as described in "[Creating a Basic File Operation Action](#)" on page 136, use this procedure to set the properties of the action.

To set the properties of a file delete action

1. In the **Source Filter** box, enter the name of the file whose transfer will trigger this event. By default, ActiveTransfer Server considers all files.

Note: You can use wildcard characters to filter the file names. For example, enter `*.zip` to trigger the event only when zip files are uploaded or downloaded. To trigger an event based on a name string in the zip files, use the name string in the **Source Filter** box, preceded and followed by wildcard characters. For example, enter `*invoice*.zip` to trigger the event based on the file URLs, when zip files containing the character string `invoice` in their file names are uploaded or downloaded. If you define a **Source Filter** for an action, the action acts only on the files that are filtered out.

For information on the use of wildcards in ActiveTransfer Server, see "[Use of Special Characters in Search](#)" on page 26.

2. If you want to use regular expression in the source filter, specify a valid regular expression in **Source Filter** and select **Use regular expression**.

Examples for regular expression:

`(. (?!purchaseorder)) *`

Excludes files with the file URL containing `purchaseorder`

`.* / out / .*`

Include files with the file URL containing the folder `out`

`^abc (.*) 123$`

Includes anything that starts with `abc` and ends with `123`. Matches `abc123`, `abcxyz123`, but not `abcxyz123def`

`NEW- ((* .doc) | (* _backup_*))`

Includes anything starting with `NEW-` that either ends in `.doc`, or is followed by the string `_backup_`

3. Select additional properties for the file delete action as follows:

Select this option...	To...
Retry [] times, at intervals of [] second(s)	Retry a failed delete action for the specified number of times, at the interval specified in seconds.
Execute error action	Execute an error action if the file operation fails.
Execute asynchronously	Execute the file operation in a different thread so that it does not interfere with other actions.

4. Click **Save**.
5. If you selected the **Execute error action** check box, define an error action as described in ["Defining an Error Action" on page 175](#).
6. If you are finished defining actions for this event, activate the event as described in ["Activating an Event" on page 176](#).

Result:

A “delete” action deletes the files that are passed on from the previous action. The deleted files are not passed on to the subsequent action. If a source filter is configured in the action, then only the files that do not match the source filter are passed on to the next action.

Encrypting and Decrypting Files

After you create a basic file encryption or decryption action as described in ["Creating a Basic File Operation Action" on page 136](#), use this procedure to set the properties of the action.

To set the properties of a file encrypt or decrypt action

1. In the **Source Filter** box, enter the name of the file whose transfer will trigger this event. By default, ActiveTransfer Server considers all files.

Note: You can use wildcard characters to filter the file names. For example, enter `*.zip` to trigger the event only when zip files are uploaded or downloaded. To trigger an event based on a name string in the zip files, use the name string in the **Source Filter** box, preceded and followed by wildcard characters. For example, enter `*invoice*.zip` to trigger the event based on the file URLs, when zip files containing the character string `invoice` in their file names are uploaded or downloaded. If you define a **Source Filter** for an action, the action acts only on the files that are filtered out.

For information on the use of wildcards in ActiveTransfer Server, see "[Use of Special Characters in Search](#)" on page 26.

- If you want to use regular expression in the source filter, specify a valid regular expression in **Source Filter** and select **Use regular expression**.

Examples for regular expressions:

<code>(.(!purchaseorder))*</code>	Excludes files with the file URL containing <code>purchaseorder</code>
<code>.*out/.*</code>	Include files with the file URL containing the folder <code>out</code>
<code>^abc(.*?)123\$</code>	Includes anything that starts with <code>abc</code> and ends with <code>123</code> . Matches <code>abc123</code> , <code>abcxyz123</code> , but not <code>abcxyz123def</code>
<code>NEW-((*.doc) (*_backup_*))</code>	Includes anything starting with <code>NEW-</code> that either ends in <code>.doc</code> , or is followed by the string <code>_backup_</code>

- In the **Encryption Key File** box, do one of the following:
 - For decrypt operations, enter the name of the private key file (for example, `xyz.pgp`).

Note: ActiveTransfer Server can decrypt the file only if the file was encrypted with the corresponding public key.

- For encrypt operations, enter the name of the public key file (for example, `xyz.pgp`).
- For decrypt operations, enter the password for the encryption file, in the **Password** box.
 - Select additional properties for the file encrypt and decrypt actions as follows:

Select this option...	To...
ASCII Armor	Wrap PGP files in BASE64-encoded format to make them more secure when emailing them.
Delete original file	Delete the original file and retain only the decrypted files (for decrypt action) and the encrypted files (for encrypt action).
Execute error action	Execute an error action if the file operation fails.
Execute asynchronously	Execute the file operation in a different thread so that it does not interfere with other actions.

- Click **Save**.
- If you selected the **Execute error action** check box, define an error action as described in ["Defining an Error Action" on page 175](#).
- If you are finished defining actions for this event, activate the event as described in ["Activating an Event" on page 176](#).

Result:

An Encrypt action encrypts files passed on from the previous action. ActiveTransfer supports only PGP-based file encryption. The encrypted file is saved with the name *Original-filename*.PGP. After the successful execution of an Encrypt action, the source folder location contains both the original files and the corresponding encrypted files, but only the encrypted files are passed on to the subsequent action for processing. If you have selected **Delete original file**, the original files are deleted. If you configure a Move action after an Encrypt action, the Move action moves the encrypted file and not the original file.

A Decrypt action decrypts files passed on from the previous action and creates decrypted files without the .PGP extension. The source folder location contains both the original files and the corresponding decrypted files. If you have selected **Delete original file**, the original files are deleted. For example, you have configured a post-processing event which is triggered by a file uploaded to a virtual folder that points to a physical location, say a folder named `incoming`. You have also configured the following actions in the event:

- Move action: To move a file that matches the filter, `*invoice*.PGP` from the `incoming` folder to the `working` folder.
- Decrypt action: To decrypt the file with the **Delete original file** option selected.

After the event is executed successfully, the decrypted file (without the PGP extension) is available in the `working` folder, and ActiveTransfer deletes the original encrypted

file. If you want to make the files from the `incoming` folder available to an action that is configured to execute after the decrypt action, ensure that you do the following:

- Do not select **Delete original file** for the decrypt action.
- Configure a Find action to find the original files from the `incoming` folder in the `incoming` folder.

Renaming Files

After you create a basic file rename action as described in "[Creating a Basic File Operation Action](#)" on page 136, use this procedure to set the properties of the action.

To set the properties of a file rename action

1. In the **Source Filter** box, enter the name of the file whose transfer will trigger this event. By default, ActiveTransfer Server considers all files.

Note: You can use wildcard characters to filter the file names. For example, enter `*.zip` to trigger the event only when zip files are uploaded or downloaded. To trigger an event based on a name string in the zip files, use the name string in the **Source Filter** box, preceded and followed by wildcard characters. For example, enter `*invoice*.zip` to trigger the event based on the file URLs, when zip files containing the character string `invoice` in their file names are uploaded or downloaded. If you define a **Source Filter** for an action, the action acts only on the files that are filtered out.

For information on the use of wildcards in ActiveTransfer Server, see "[Use of Special Characters in Search](#)" on page 26.

2. If you want to use regular expression in the source filter, specify a valid regular expression in **Source Filter** and select **Use regular expression**.

Examples for regular expressions:

<code>(. (?!purchaseorder)) *</code>	Excludes files with the file URL containing <code>purchaseorder</code>
<code>.* /out /.*</code>	Include files with the file URL containing the folder <code>out</code>
<code>^abc (.*) 123\$</code>	Includes anything that starts with <code>abc</code> and ends with <code>123</code> . Matches <code>abc123</code> , <code>abcxyz123</code> , but not <code>abcxyz123def</code>
<code>NEW- ((*.doc) (*_backup_*))</code>	Includes anything starting with <code>NEW-</code> that either ends in <code>.doc</code> , or is followed by the string <code>_backup_</code>

- In the **New File Name** box, enter the new file name for the file.
- Select additional properties for the file rename action as follows:

Select this option...	To...
Retry [] times, at intervals of [] second(s)	Retry a failed rename operation for the specified number of times, at the interval specified in seconds.
Skip sub-items, if parent is already renamed	Rename a folder but not the files beneath the folder.
Execute error action	Execute an error action if the file operation fails.
Execute asynchronously	Execute the file operation in a different thread so that it does not interfere with other actions.

- Click **Save**.
- If you selected the **Execute error action** check box, define an error action as described in ["Defining an Error Action" on page 175](#).
- If you are finished defining actions for this event, activate the event as described in ["Activating an Event" on page 176](#).

Result:

A "Rename" action renames the files passed on from the previous action. The files that are renamed are not passed on to the next action.

Unzipping Files

After you create a basic file unzip action as described in ["Creating a Basic File Operation Action" on page 136](#), use this procedure to set the properties of the action.

To set the properties of a file unzip action

- In the **Source Filter** box, enter the name of the file whose transfer will trigger this event. By default, ActiveTransfer Server considers all files.

Note: You can use wildcard characters to filter the file names. For example, enter `*.zip` to trigger the event only when zip files are uploaded or downloaded. To trigger an event based on a name string in the zip files, use the name string in the **Source Filter** box, preceded and followed by wildcard characters. For example, enter `*invoice*.zip` to trigger the event based on the file URLs, when zip files containing the character string `invoice` in their file names are uploaded or downloaded. If you define a

Source Filter for an action, the action acts only on the files that are filtered out.

For information on the use of wildcards in ActiveTransfer Server, see ["Use of Special Characters in Search" on page 26](#).

- If you want to use regular expression in the source filter, specify a valid regular expression in **Source Filter** and select **Use regular expression**.

Examples for regular expressions:

<code>(. (?!purchaseorder)) *</code>	Excludes files with the file URL containing <code>purchaseorder</code>
<code>.* /out /.*</code>	Include files with the file URL containing the folder <code>out</code>
<code>^abc (.*) 123\$</code>	Includes anything that starts with <code>abc</code> and ends with <code>123</code> . Matches <code>abc123</code> , <code>abcxyz123</code> , but not <code>abcxyz123def</code>
<code>NEW- ((*.doc) (*_backup_*))</code>	Includes anything starting with <code>NEW-</code> that either ends in <code>.doc</code> , or is followed by the string <code>_backup_</code>

- If you want to delete the original zip file after it is unzipped, select **Delete original zip file**.
- Select the **Destination URL** to which the contents of the file will be extracted by doing one of the following:

Important: When you enter file path locations, be sure to end the path with a slash character ("`/`") to identify the location as a folder and not a file.

- If the destination URL is on your local machine or network, select **File Path** and browse to or enter the location.

Note: To specify a file URL for a shared location, use the following syntax: `FILE:/// <host> /SharedFolder/`. Make sure that the OS user running the ActiveTransfer Server instance has full access to the shared location.

- If the destination URL is on a remote machine or network, select **Remote File Path** and browse to or enter the location in the format: `protocol:// <host> : <port> / DestinationFolder/`
- If the destination URL is a virtual folder in the ActiveTransfer VFS, do the following:
 - Select **Virtual Folder**

- ii. Type in the virtual folder details in the text box or use the browse option.
If you use the browse button, the **Select virtual folder** look up window opens.
- iii. In the **Select virtual folder** window, select the virtual folder by highlighting the element and click on **Select**.
- iv. If you want to point to a subfolder in the virtual folder, append the URL in the text box with the details of the subfolder.

Note: The virtual folder that you select should be configured on the same ActiveTransfer Server instance on which the event is configured.

Tip: If you want to connect to a remote server using a secure protocol (FTPES, FTPS, HTTPS or SFTP) and want to configure authentication using secure key exchange, create a virtual folder for the remote server in the VFS and configure the **Keystore**, **Keystore Password**, and **Key Password** parameters. You can then use the Virtual folder that you configured in the **Virtual Folder** option of the **File Path** in the event action. For additional details see "[Associating a Virtual Folder with a Physical Folder Location](#)" on page 118.

5. Type a **User Name** and **Password** for the remote system.
6. If you want to route file transfers to remote servers through a proxy server, select the appropriate proxy server options:
 - a. Select **Use Proxy**.
 - b. Select one of these options:
 - **Global proxy settings.** If you want ActiveTransfer to use the default proxy server alias set up in Integration Server or ActiveTransfer.
 - **Select proxy alias.** If you want to use a specific proxy server alias for the event. Then select the appropriate proxy server alias to use from the available list.
7. To check the connection to the remote server with or without a proxy server, click **Test Connection**.
8. To assign partners for the event, do the following:

Note: For virtual folders, use this option only if you want to override the partners configured for the virtual folders.

- a. Select **Assign partner**.
- b. Click in the text box and do one of the following:
 - Select the partner to assign from the list of configured partners in ActiveTransfer.
 - Type a parameterized value for the partner using the following format:

```
[partner_name], [remote_partner_name]
```

9. If you want to execute an error action if the file operation fails, select **Execute error action**.
10. Click **Save**.
11. If you selected the **Execute error action** check box, define an error action as described in ["Defining an Error Action" on page 175](#).
12. If you are finished defining actions for this event, activate the event as described in ["Activating an Event" on page 176](#).

Result:

The "Unzip" action decompresses the specified zip file. After a successful unzip action, both the original zip file and the extracted files are passed on to the subsequent action. If the "Unzip" action occurs after parallel processing starts, all files resulting from the "Unzip" action are treated as part of a single thread. Therefore, in the **Activities** tab of the Event Log page, ActiveTransfer maintains the **File Seq No** of the original zip file for the particular thread until the event execution completes.

Writing Content to a File

After you create a basic write action as described in ["Creating a Basic File Operation Action" on page 136](#), use this procedure to set the properties of the action.

To set the properties for the write action

1. In the **Source Filter** box, enter the name of the file to trigger this event. By default, ActiveTransfer Server considers all files.

Note: You can use wildcard characters to filter the file names. For example, enter *.txt to trigger the event only when text files are uploaded or downloaded. To trigger an event based on a name string in the text files, use the name string in the **Source Filter** box, preceded and followed by wildcard characters. For example, enter *invoice*.txt to trigger the event based on the file URLs, when text files containing the character string `invoice` in their file names are uploaded or downloaded. If you define a **Source Filter** for an action, the action acts only on the files that are filtered out.

For information on the use of wildcards in ActiveTransfer Server, see ["Use of Special Characters in Search" on page 26](#).

2. If you want to use regular expression in the source filter, specify a valid regular expression in **Source Filter** and select **Use regular expression**.

Examples for regular expressions:

<code>(.(!purchaseorder))*</code>	Excludes files with the file URL containing <code>purchaseorder</code>
<code>*/out/*</code>	Include files with the file URL containing the folder <code>out</code>
<code>^abc(.*)123\$</code>	Includes anything that starts with <code>abc</code> and ends with <code>123</code> . Matches <code>abc123</code> , <code>abcxyz123</code> , but not <code>abcxyz123def</code>
<code>NEW-(*.doc) (*_backup_*)</code>	Includes anything starting with <code>NEW-</code> that either ends in <code>.doc</code> , or is followed by the string <code>_backup_</code>

3. In the **File Path** box, enter the path containing the file to write to.

Important: Be sure to end the path with a slash character ("/") to identify the location as a folder and not a file.

4. If the file already exists and you want to replace the entire contents of the existing file with the new content, select the **Overwrite** check box.
5. If the file does not exist, type or paste the content to write to the file in the **Contents If File Does Not Exist** box.
6. If you want to insert new content before existing content in the file, select **Add before** and then do one of the following:
 - If you want to insert the content at the beginning of the file, select **Beginning of file** and then type or paste the new content in the **Contents** box.
 - If you want to insert the content before a specific string of existing content in the file, select **Find**, enter the string in the box beneath this option, and then type or paste the new content in the **Contents** box.
7. If you want to insert new content after existing content in the file, select **Add after** and then do one of the following:
 - If you want to insert the content at the end of the file, select **End of file** and then type or paste the new content in the **Contents** box.
 - If you want to insert the content after a specific string of existing content in the file, select **Find**, enter the string in the box beneath this option, and then type or paste the new content in the **Contents** box.
8. If you want to execute an error action if the file operation fails, select **Execute error action**.
9. Click **Save**.

10. If you selected the **Execute error action** check box, define an error action as described in ["Defining an Error Action" on page 175](#).
11. If you are finished defining actions for this event, activate the event as described in ["Activating an Event" on page 176](#).

Result:

The "Write Content to File" action adds the specified information about the list of files to an existing file in **File Path** or to a new file created for this purpose. After the successful execution of the action, the list of files from the previous action is passed on to the subsequent action. The file created or modified by this action is not passed on to the next action.

Example: An event configured with the following actions:

1. Find action: Find files in **File URL** = *<source folder>*
2. Write Content to File action: Writes information regarding the files in a specified file
3. Move Action: Moves the files to the **destination URL** = *<destination folder>*

The event results in the following:

1. Find action lists all the files in the *<source folder>*.
2. The Write Content to File action writes information on the files passed on to it by the find action. For example, the action could write the file names of all the files passed on to it to a *<file.ext>* file specified in the action.
3. Move action moves the files that are encrypted by the encrypt action to the *<destination folder>*.

Zippping Files

After you create a basic file zip action as described in ["Creating a Basic File Operation Action" on page 136](#), use this procedure to set the properties of the action.

To set the properties for a file zip action

1. In the **Source Filter** box, enter the name of the file whose transfer will trigger this event. By default, ActiveTransfer Server considers all files.

Note: You can use wildcard characters to filter the file names. For example, enter `*.zip` to trigger the event only when zip files are uploaded or downloaded. To trigger an event based on a name string in the zip files, use the name string in the **Source Filter** box, preceded and followed by wildcard characters. For example, enter `*invoice*.zip` to trigger the event based on the file URLs, when zip files containing the character string `invoice` in their file names are uploaded or downloaded. If you define a **Source Filter** for an action, the action acts only on the files that are filtered out.

For information on the use of wildcards in ActiveTransfer Server, see ["Use of Special Characters in Search" on page 26](#).

- If you want to use regular expression in the source filter, specify a valid regular expression in **Source Filter** and select **Use regular expression**.

Examples for regular expressions:

<code>(. (?!purchaseorder)) *</code>	Excludes files with the file URL containing <code>purchaseorder</code>
<code>.* /out /.*</code>	Include files with the file URL containing the folder <code>out</code>
<code>^abc (.*) 123\$</code>	Includes anything that starts with <code>abc</code> and ends with <code>123</code> . Matches <code>abc123</code> , <code>abcxyz123</code> , but not <code>abcxyz123def</code>
<code>NEW- ((*.doc) (*_backup_*))</code>	Includes anything starting with <code>NEW-</code> that either ends in <code>.doc</code> , or is followed by the string <code>_backup_</code>

- Select the **Zip File Path** where the file will be zipped by doing one of the following:

Important: When you enter file path locations, be sure to end the path with a slash character ("`/`") to identify the location as a folder and not a file.

- If the path is on your local machine or network, select **File Path** and browse to or enter the location.

Note: To specify a file URL for a shared location, use the following syntax: `FILE:/// <host> /SharedFolder/`. Make sure that the OS user running the ActiveTransfer Server instance has full access to the shared location.

- If the path is on a remote machine or network, select **Remote File Path** and browse to or enter the location in the format: `protocol:// <host> : <port> /DestinationFolder/`
- If the path is a virtual folder in the ActiveTransfer VFS, do the following:
 - Select **Virtual Folder**
 - Type in the virtual folder details in the text box or use the browse option.

If you use the browse button, the **Select virtual folder** look up window opens.
 - In the **Select virtual folder** window, select the virtual folder by highlighting the element and click on **Select**.
 - If you want to point to a subfolder in the virtual folder, append the URL in the text box with the details of the subfolder.

Note: The virtual folder that you select should be configured on the same ActiveTransfer Server instance on which the event is configured.

Tip: If you want to connect to a remote server using a secure protocol (FTPES, FTPS, HTTPS or SFTP) and want to configure authentication using secure key exchange, create a virtual folder for the remote server in the VFS and configure the **Keystore**, **Keystore Password**, and **Key Password** parameters. You can then use the Virtual folder that you configured in the **Virtual Folder** option of the **File Path** in the event action. For additional details see "[Associating a Virtual Folder with a Physical Folder Location](#)" on page 118.

4. Select **Create Directory** to enable ActiveTransfer to create the destination folder if the folder specified in **Destination URL** is not present.

If **Zip File Path** path does not include a folder, ActiveTransfer zips the file directly to the specified directory path.

5. Type a **User Name** and **Password** for the remote system.
6. If you want to route file transfers to remote servers through a proxy server, select the appropriate proxy server options:
 - a. Select **Use Proxy**.
 - b. Select one of these options:
 - **Global proxy settings.** If you want ActiveTransfer to use the default proxy server alias set up in Integration Server or ActiveTransfer.
 - **Select proxy alias.** If you want to use a specific proxy server alias for the event. Then select the appropriate proxy server alias to use from the available list.
7. To check the connection to the remote server with or without a proxy server, click **Test Connection**.
8. To assign partners for the event, do the following:

Note: For virtual folders, use this option only if you want to override the partners configured for the virtual folders.

- a. Select **Assign partner**.
- b. Click in the text box and do one of the following:
 - Select the partner to assign from the list of configured partners in ActiveTransfer.
 - Type a parameterized value for the partner using the following format:


```
[partner_name],[remote_partner_name]
```
9. In the **Zip File Name** box, enter a name for the zip file. Alternatively, you can provide a variable name such as *{stem}.zip* for the zip file name.

For more information about specifying variables, see "[Server Configuration Parameters and Variables](#)" on page 217.

10. If you want to execute an error action if the file operation fails, select **Execute error action**.
11. Click **Save**.
12. If you selected the **Execute error action** check box, define an error action as described in "[Defining an Error Action](#)" on page 175.
13. If you are finished defining actions for this event, activate the event as described in "[Activating an Event](#)" on page 176.

Result:

The "Zip" action compresses a specified file or a set of files and copies the compressed file to the location specified in **Zip File Path**. After the successful execution of the zip action, the original source file(s) and the target zip file are available to the subsequent action. If the input path is that of a folder, ActiveTransfer does not compress the files/ contents of the specified folder.

In single-thread, sequential processing, each event results in a single zip file. However, if the "Zip" action occurs after parallel processing starts, each thread results in a separate zip file.

Executing an Integration Server Service

To execute an Integration Server service

1. In My webMethods: **Administration > Integration > Managed File Transfer > Event Management**.
2. Select the server instance. For details, see "[Selecting the Instance to Work With](#)" on page 62.
3. Click the tab containing the event for which you are creating the file operation action (**Post-Processing Events** or **Scheduled Events**).
4. Select the event in the event list.
5. In the **Actions** section, click the **Select Action** list.
6. In the resulting dialog box, do the following:
 - a. Click the **Select Category** list and select **Execute Integration Server Service**.
 - b. Click the **Package** box and select the Integration Server package that contains the service you want to execute.
 - c. Click the **Service** box and select the service you want to execute.
 - d. Click **OK**.

- In the **Source Filter** box, enter the name of the file whose transfer will trigger this event. By default, ActiveTransfer Server considers all files.

Note: You can use wildcard characters to filter the file names. For example, enter `*.zip` to trigger the event only when zip files are uploaded or downloaded. To trigger an event based on a name string in the zip files, use the name string in the **Source Filter** box, preceded and followed by wildcard characters. For example, enter `*invoice*.zip` to trigger the event based on the file URLs, when zip files containing the character string `invoice` in their file names are uploaded or downloaded. If you define a **Source Filter** for an action, the action acts only on the files that are filtered out.

For information on the use of wildcards in ActiveTransfer Server, see "[Use of Special Characters in Search](#)" on page 26.

- If you want to use regular expression in the source filter, specify a valid regular expression in **Source Filter** and select **Use regular expression**.

Examples for regular expressions:

<code>(. (?!purchaseorder)) *</code>	Excludes files with the file URL containing <code>purchaseorder</code>
<code>.*out/.*</code>	Include files with the file URL containing the folder <code>out</code>
<code>^abc (.*) 123\$</code>	Includes anything that starts with <code>abc</code> and ends with <code>123</code> . Matches <code>abc123</code> , <code>abcxyz123</code> , but not <code>abcxyz123def</code>
<code>NEW- ((*.doc) (*_backup_*))</code>	Includes anything starting with <code>NEW-</code> that either ends in <code>.doc</code> , or is followed by the string <code>_backup_</code>

- In the **Configure input to IS service** section, specify values for the input parameters of the service that you select. For more information about the Integration Server services and their signatures, see the Integration Server documentation.

You can directly enter the values for the input parameters or specify a file path variable, `{path}` that contains the value to be passed to the parameter.

- In the **Extract Service Output** section, list the variables that you want to assign to the output parameters of the service and the path (iData path) of the output parameter.
- Select the **Execute action even if there are no files** option if you want to execute the action even when no files are passed on to this action from the previous action. For example, you might have a requirement to trigger an Integration Server service from a scheduled event after all the files in a folder have been successfully deleted.

Another example could be invoking an Integration Server service for audit purposes even if there are no files available to be processed.

12. If you want to execute an error action if the file operation fails, select **Execute error action**.
13. Click **Save**.
14. If you selected the **Execute error action** check box, define an error action as described in ["Defining an Error Action" on page 175](#).
15. If you are finished defining actions for this event, activate the event as described in ["Activating an Event" on page 176](#).

Result:

The "Execute an Integration Server Service" action, runs the specified Integration Server service for each file in the list that is passed on to the action by the previous action. This action does not modify the list of files from the previous action.

Executing a Script

To execute a script

1. In My webMethods: **Administration > Integration > Managed File Transfer > Event Management**.
2. Select the server instance. For details, see ["Selecting the Instance to Work With" on page 62](#).
3. Click the tab containing the event for which you are creating the file operation action (**Post-Processing Events** or **Scheduled Events**).
4. Select the event in the event list.
5. In the **Actions** section, click the **Select Action** list.
6. In the resulting dialog box, click the **Select Category** list, select **Execute Script**, and then click **OK**.
7. In the **Source Filter** box, enter the name of the file whose transfer will trigger this event. By default, ActiveTransfer Server considers all files.

Note: You can use wildcard characters to filter the file names. For example, enter `*.zip` to trigger the event only when zip files are uploaded or downloaded. To trigger an event based on a name string in the zip files, use the name string in the **Source Filter** box, preceded and followed by wildcard characters. For example, enter `*invoice*.zip` to trigger the event based on the file URLs, when zip files containing the character string `invoice` in their file names are uploaded or downloaded. If you define a **Source Filter** for an action, the action acts only on the files that are filtered out.

For information on the use of wildcards in ActiveTransfer Server, see ["Use of Special Characters in Search" on page 26](#).

- If you want to use regular expression in the source filter, specify a valid regular expression in **Source Filter** and select **Use regular expression**.

Examples for regular expressions:

<code>(. (?!purchaseorder)) *</code>	Excludes files with the file URL containing <code>purchaseorder</code>
<code>.* /out /.*</code>	Include files with the file URL containing the folder <code>out</code>
<code>^abc (.*) 123\$</code>	Includes anything that starts with <code>abc</code> and ends with <code>123</code> . Matches <code>abc123</code> , <code>abcxyz123</code> , but not <code>abcxyz123def</code>
<code>NEW- ((*.doc) (*_backup_*))</code>	Includes anything starting with <code>NEW-</code> that either ends in <code>.doc</code> , or is followed by the string <code>_backup_</code>

- In the **Command** box, type a command. Keep in mind that running a batch (.bat) file requires running `cmd.exe` at a command prompt and passing it the arguments to execute the batch file.
- In the **Arguments** box, type the command's arguments. For example, enter `{real_path}/archive/{name}:`. If the file is uploaded to `/uploads/stuff.zip`, it will be copied to `/archive/stuff.zip`.
- In the **Separator** box, type a regular expression to separator arguments.
- In the **Working Directory** box, type the path to the directory where the command will execute. For example, when an application looks for a resource such as a configuration file, the application looks in the location specified here.

Important: Make sure the path ends with `"/` to identify the location as a folder and not a file.

You should configure the **Execute Script** action settings depending on your operating system. One example each for the Windows and Unix/Linux platforms are listed below:

- **Windows Platform:** If you want to execute the batch file `C:\SAG\batchfiles\test.bat`, the properties that you need to specify for the Execute Script action are:

Command `C:\Windows\System32\cmd.exe`

Argument `/c;start;test.bat`

Separator ;

Working Directory C:\SAG\batchfiles\

- **Unix/Linux Platforms:** You can directly specify the script file name. If you want to execute the batch file `/home/data/batchfiles/test.sh`, use the following settings in the Execute Script action.

Command /bin/bash

Argument test.sh;arg1;arg2

Separator ;

Working Directory /home/data/batchfiles

The above configuration settings can vary depending on the specific operating system that hosts your ActiveTransfer Server. In some of the operating systems, you might require an exit command at the end of the script file to properly terminate the command process.

13. If you want to execute an error action if the file operation fails, select **Execute error action**.
14. Click **Save**.
15. If you selected the **Execute error action** check box, define an error action as described in ["Defining an Error Action" on page 175](#).
16. If you are finished defining actions for this event, activate the event as described in ["Activating an Event" on page 176](#).

Result:

The "Execute a Script" action runs a script for each file in the list that is passed on to the action by the previous action. The script should be available in the same location as the files. The script is run on the machine on which ActiveTransfer is installed. The "Execute a Script" action waits for the script to complete execution before passing on the control to the next action. The script that is executed as part of this action should include an `exit` command so that the execution control is transferred back to ActiveTransfer. This action does not modify the list of files from the previous action.

Executing a Trading Networks Service

Prerequisites:

- If you need to send large files to Trading Networks, configure your target Trading Networks appropriately. For details on how to configure Trading Networks to process large files, see the Trading Networks documentation.
- For remote installations of ActiveTransfer and Trading Networks, list the remote server aliases of the remote Trading Network instances in the parameter `mft.aliases.tn`. For details on `mft.aliases.tn`, see ["mft.aliases.tn" on page 218](#).

- If you have ActiveTransfer, list remote server aliases of ActiveTransfer nodes in the parameter `mft.group.aliases`. For details on `mft.group.aliases`, see "[mft.group.aliases](#)" on [page 221](#).

Use this procedure to create an event action that sends a file to Trading Networks for processing. For details on how ActiveTransfer and Trading Networks file transfers work, see "[How does ActiveTransfer work with Trading Networks?](#)" on [page 19](#).

To execute a Trading Networks service

1. In My webMethods: **Administration > Integration > Managed File Transfer > Event Management**.
2. Select the server instance. For details, see "[Selecting the Instance to Work With](#)" on [page 62](#).
3. Click the tab containing the event for which you are creating the file operation action (**Post-Processing Events** or **Scheduled Events**).
4. Select the event in the event list.
5. In the **Actions** section, click the **Select Action** list.
6. In the resulting dialog box, click the **Select Category** list, and then select **Execute Trading Networks Service**.
7. In the **Select Type** box and do one of the following:
 - If you want to execute the Trading Networks service `wm.tn:receive` to process XML document types, select **XML**.
 - If you want to execute the Trading Networks service `wm.tn:receive` to process EDI document types, select **EDI**.
 - If you want to execute a particular Trading Networks service to process flat file document types, do the following:
 - i. Select **Flat File**.
 - ii. In the **Package** box, select a package.
 - iii. In the **Service** box, select your document gateway service for processing and sending the flat file to Trading Networks.For details on flat file processing, see the Trading Networks documentation.
8. Click **OK**.

Note: If you are submitting flat files to a remote Trading Networks instance, you must have the document gateway service defined on your local Integration Server. This local service is used for the configuration of input and output parameters in My webMethods Server. For details on the document gateway service, see the Trading Networks documentation.

9. In the **Source Filter** box, enter the name of the file whose transfer will trigger this event. By default, ActiveTransfer Server considers all files.

Note: You can use wildcard characters to filter the file names. For example, enter `*.zip` to trigger the event only when zip files are uploaded or downloaded. To trigger an event based on a name string in the zip files, use the name string in the **Source Filter** box, preceded and followed by wildcard characters. For example, enter `*invoice*.zip` to trigger the event based on the file URLs, when zip files containing the character string `invoice` in their file names are uploaded or downloaded. If you define a **Source Filter** for an action, the action acts only on the files that are filtered out.

For information on the use of wildcards in ActiveTransfer Server, see "[Use of Special Characters in Search](#)" on page 26.

10. If you want to use regular expression in the source filter, specify a valid regular expression in **Source Filter** and select **Use regular expression**.

Examples for regular expressions:

<code>(. (?!purchaseorder)) *</code>	Excludes files with the file URL containing <code>purchaseorder</code>
<code>.*out/.*</code>	Include files with the file URL containing the folder <code>out</code>
<code>^abc (.*) 123\$</code>	Includes anything that starts with <code>abc</code> and ends with <code>123</code> . Matches <code>abc123</code> , <code>abcxyz123</code> , but not <code>abcxyz123def</code>
<code>NEW- ((*.doc) (*_backup_*))</code>	Includes anything starting with <code>NEW-</code> that either ends in <code>.doc</code> , or is followed by the string <code>_backup_</code>

11. In the **Configure input to IS service** section, specify values for the input parameters of the Trading Networks service that you selected, and add any content types as required, respectively. For more information about the Trading Networks services and their signatures, see the Trading Networks documentation.
12. In the **Extract Service Output** section, list the variables that you want to assign to the output parameters of the service and the path (iData path) of the output parameter.
13. If you want to execute an error action if the file operation fails, select **Execute error action**.
14. Click **Save**.

15. If you selected the **Execute error action** check box, define an error action as described in ["Defining an Error Action" on page 175](#).
16. If you are finished defining actions for this event, activate the event as described in ["Activating an Event" on page 176](#).

Result:

The "Execute a Trading Networks Service" action, runs the specified Trading Networks service for each file in the list that is passed on to the action by the previous action. This action does not modify the list of files from the previous action.

Sending a Broker Notification

Note: This feature is deprecated.

To send a Broker notification

1. In My webMethods: **Administration > Integration > Managed File Transfer > Event Management**.
2. Select the server instance. For details, see ["Selecting the Instance to Work With" on page 62](#).
3. Click the tab containing the event for which you are creating the file operation action (**Post-Processing Events** or **Scheduled Events**).
4. Select the event in the event list.
5. In the **Actions** section, click the **Select Action** list.
6. In the resulting dialog box, do the following:
 - a. Click the **Select Category** list and select **Send Broker Notification**.
 - b. Click the **Package** box and select the package that contains the Integration Server document type you want to use.
 - c. Click the **Service** box and select the Integration Server document type you want to use.
 - d. Click **OK**.
7. In the **Source Filter** box, enter the name of the file whose transfer will trigger this event. By default, ActiveTransfer Server considers all files.

Note: You can use wildcard characters to filter the file names. For example, enter *.zip to trigger the event only when zip files are uploaded or downloaded. To trigger an event based on a name string in the zip files, use the name string in the **Source Filter** box, preceded and followed by wildcard characters. For example, enter *invoice*.zip to trigger the event based on the file URLs, when zip files containing the character string

`invoice` in their file names are uploaded or downloaded. If you define a **Source Filter** for an action, the action acts only on the files that are filtered out.

For information on the use of wildcards in ActiveTransfer Server, see ["Use of Special Characters in Search" on page 26](#).

8. If you want to use regular expression in the source filter, specify a valid regular expression in **Source Filter** and select **Use regular expression**.

Examples for regular expressions:

<code>(. (?!purchaseorder)) *</code>	Excludes files with the file URL containing <code>purchaseorder</code>
<code>.* /out /.*</code>	Include files with the file URL containing the folder <code>out</code>
<code>^abc (.*) 123\$</code>	Includes anything that starts with <code>abc</code> and ends with <code>123</code> . Matches <code>abc123</code> , <code>abcxyz123</code> , but not <code>abcxyz123def</code>
<code>NEW- ((*.doc) (*_backup_*))</code>	Includes anything starting with <code>NEW-</code> that either ends in <code>.doc</code> , or is followed by the string <code>_backup_</code>

9. If you want ActiveTransfer to provide the path of the target file to the respective service, select **Include file path**. The file path information is available as input parameter `filePath`.
10. If you want to populate the `fileContent` parameter, select **Include file content**.
11. Specify content for the document type that you selected, and add any content types as required. For more information about document types or Broker notifications, see the Broker and Integration Server documentation.
12. If you want to execute an error action if the file operation fails, select **Execute error action**.
13. Click **Save**.
14. If you selected the **Execute error action** check box, define an error action as described in ["Defining an Error Action" on page 175](#).
15. If you are finished defining actions for this event, activate the event as described in ["Activating an Event" on page 176](#).

Result:

The “Send a Broker Notification Service” action, sends a Broker notification for each file in the list that is passed on to the action by the previous action. This action does not modify the list of files from the previous action.

Sending an Email Message

Use this procedure to configure sending of emails for file actions.

To send an email message

1. In My webMethods: **Administration > Integration > Managed File Transfer > Event Management**.
2. Select the server instance. For details, see ["Selecting the Instance to Work With" on page 62](#).
3. Click the tab containing the event for which you are creating the file operation action (**Post-Processing Events** or **Scheduled Events**).
4. Select the event in the event list.
5. In the **Actions** section, click the **Select Action** list.
6. In the resulting dialog box, click the **Select Category** list, select **Send Email**, and then click **OK**.
7. In **Source Filter**, type the name of the file whose transfer will trigger this event. By default, ActiveTransfer Server considers all files.

Note: You can use wildcard characters to filter the file names. For example, enter `*.zip` to trigger the event only when zip files are uploaded or downloaded. To trigger an event based on a name string in the zip files, use the name string in the **Source Filter** box, preceded and followed by wildcard characters. For example, enter `*invoice*.zip` to trigger the event based on the file URLs, when zip files containing the character string `invoice` in their file names are uploaded or downloaded. If you define a **Source Filter** for an action, the action acts only on the files that are filtered out.

For information on the use of wildcards in ActiveTransfer Server, see ["Use of Special Characters in Search" on page 26](#).

8. If you want to use a regular expression in the source filter, specify a valid regular expression in **Source Filter** and select **Use regular expression**.

Examples for regular expressions:

`(. (?!purchaseorder)) *`

Excludes files with the file URL containing `purchaseorder`

<code>.*out/.*</code>	Include files with the file URL containing the folder <code>out</code>
<code>^a bc(.*)123\$</code>	Includes anything that starts with <code>abc</code> and ends with <code>123</code> . Matches <code>abc123</code> , <code>abcxyz123</code> , but not <code>abcxyz123def</code>
<code>NEW- ((* .doc) (* _backup_*))</code>	Includes anything starting with <code>NEW-</code> that either ends in <code>.doc</code> , or is followed by the string <code>_backup_</code>

- Address the email by entering valid email addresses in the **From**, **To**, **CC**, and **BCC** boxes.

The value you specify for **From** overrides the value specified in the `mft.user.email.from` parameter for this action. For more information about this parameter, see ["Server Configuration Parameters" on page 218](#).

- In the **Subject** box, enter text to appear in the subject line of the email (for example, `Disconnect:?User %user_name%`).

The value you specify overrides the value specified in the `mft.user.email.subject` parameter for this action. For more information about this parameter, see ["Server Configuration Parameters" on page 218](#).

- To assist you in completing the body of the email, several examples of common email messages are available. Select the appropriate template from the **Variables/Template** list.

- Modify the content in the **Body** box, or type your own text.

You can use variables in the body of the email. For more information, see ["Server Variables" on page 225](#) and ["Server Configuration Parameters and Variables" on page 217](#).

- If you want to execute an error action if the file operation fails, select **Execute error action**.

- Click **Save**.

- If you selected the **Execute error action** check box, define an error action as described in ["Defining an Error Action" on page 175](#).

- If you are finished defining actions for this event, activate the event as described in ["Activating an Event" on page 176](#).

Result:

Based on the name of files specified in the source filter, the *send email* action sends emails to the recipients configured in a file action. Transfer of the specified files triggers the *send email* action.

In single-thread, sequential processing, ActiveTransfer runs the *send email* action only once for all files of an event, and includes the information for all files in a single, consolidated email. Therefore, each event results in one email. However, if the *send email* action occurs after parallel processing of files starts in an event, the number of emails ActiveTransfer sends depends on the number of threads in the event. Let us consider the example of an event having three parallel threads for processing. When the event execution completes, ActiveTransfer sends one email for each thread, resulting in a total of three emails for the event.

Writing File Content to the Database

To write file content to the database

1. In My webMethods: **Administration > Integration > Managed File Transfer > Event Management**.
2. Select the server instance. For details, see ["Selecting the Instance to Work With" on page 62](#).
3. Click the tab containing the event for which you are creating the file operation action (**Post-Processing Events** or **Scheduled Events**).
4. Select the event in the event list.
5. In the **Actions** section, click the **Select Action** list.
6. In the resulting dialog box, do the following:
 - a. Click the **Select Category** list and select **Write File to Database**.
 - b. Click the **Package** box and select the package that contains the service you want to execute.
 - c. Click the **Service** box and select the service you want to execute.
 - d. Click **OK**.
7. In the **Source Filter** box, enter the name of the file whose transfer will trigger this event. By default, ActiveTransfer Server considers all files.

Note: You can use wildcard characters to filter the file names. For example, enter `*.zip` to trigger the event only when zip files are uploaded or downloaded. To trigger an event based on a name string in the zip files, use the name string in the **Source Filter** box, preceded and followed by wildcard characters. For example, enter `*invoice*.zip` to trigger the event based on the file URLs, when zip files containing the character string `invoice` in their file names are uploaded or downloaded. If you define a **Source Filter** for an action, the action acts only on the files that are filtered out.

For information on the use of wildcards in ActiveTransfer Server, see ["Use of Special Characters in Search" on page 26](#).

8. If you want to use regular expression in the source filter, specify a valid regular expression in **Source Filter** and select **Use regular expression**.

Examples for regular expressions:

<code>(. (?!purchaseorder)) *</code>	Excludes files with the file URL containing <code>purchaseorder</code>
<code>.* /out /.*</code>	Include files with the file URL containing the folder <code>out</code>
<code>^abc (.*) 123\$</code>	Includes anything that starts with <code>abc</code> and ends with <code>123</code> . Matches <code>abc123</code> , <code>abcxyz123</code> , but not <code>abcxyz123def</code>
<code>NEW- ((*.doc) (*_backup_*))</code>	Includes anything starting with <code>NEW-</code> that either ends in <code>.doc</code> , or is followed by the string <code>_backup_</code>

9. If you want ActiveTransfer to provide the path of the target file to the respective service, select **Include file path**. The file path information is passed to the service as input parameter `filePath`.
 10. If you want to pass the contents of the file to the service, select the **Include file content** check box and select the transmission method (**as bytes** or **as stream**). The file content is passed to the service as input parameters `fileContent` and `fileBytes`, or as `fileContent` and `fileStream`. Code your input parameter as `fileContent + fileBytes` or `fileContent + fileStream`.
- Note:** Selecting this check box is not necessary if your service does not require the file content as input (for example, if the service only writes the name of the files being uploaded, or the names of the users who uploaded them).
11. Specify values for the input parameters of the service that you selected, as required.
 12. If you want to execute an error action if the file operation fails, select **Execute error action**.
 13. Click **Save**.
 14. If you selected the **Execute error action** check box, define an error action as described in ["Defining an Error Action" on page 175](#).
 15. If you are finished defining actions for this event, activate the event as described in ["Activating an Event" on page 176](#).

Result:

The "Write File to Database" action delivers the contents of a file to an Integration Server service for the purpose of writing the content to the database. ActiveTransfer Server provides the content in byte or stream form to the service according to the format that

the service's input signature requires. This action does not modify the list of files from the previous action.

Jumping to a Designated Action

You can define a Jump action that causes ActiveTransfer Server to skip one or more actions and execute a designated action in the event. A Jump action is unconditional by default. You can also define a jump condition based on which Jump action is executed. ActiveTransfer Server executes the actions defined in an event sequentially until it encounters a Jump action. The Jump action is triggered if any one file in the list satisfies the Jump condition.

To define a Jump action

1. In My webMethods: **Administration > Integration > Managed File Transfer > Event Management**.
2. Select the server instance. For details, see ["Selecting the Instance to Work With" on page 62](#).
3. Click the tab that contains the event for which you are creating the Jump action (**Post-Processing Events** or **Scheduled Events**).
4. Select the event in the event list.
5. In the **Actions** section, click the **Select Action** list.
6. In the resulting dialog box, click the **Select Category** list and select **Jump Action**.
7. Type an action name in **Action Name** or retain the name that is automatically assigned by ActiveTransfer Server.

Note: Each action in an event must have a unique name. ActiveTransfer Server assigns a default name for an action which is the action type itself. For example, `Jump Action` for a Jump action. When you add an action that already exists in the event with its default name, ActiveTransfer Server appends the default name with a numeral starting at 1; for example, `Jump Action1`.

8. In the **Source Filter** box, enter the name of the file whose transfer will trigger this event. By default, ActiveTransfer Server considers all files.

Note: You can use wildcard characters to filter the file names. For example, enter `*.zip` to trigger the event only when zip files are uploaded or downloaded. To trigger an event based on a name string in the zip files, use the name string in the **Source Filter** box, preceded and followed by wildcard characters. For example, enter `*invoice*.zip` to trigger the event based on the file URLs, when zip files containing the character string `invoice` in their file names are uploaded or downloaded. If you define a

Source Filter for an action, the action acts only on the files that are filtered out.

For information on the use of wildcards in ActiveTransfer Server, see "[Use of Special Characters in Search](#)" on page 26.

9. If you want to use regular expression in the source filter, specify a valid regular expression in **Source Filter** and select **Use regular expression**.

Examples for regular expressions:

<code>(. (?!purchaseorder)) *</code>	Excludes files with the file URL containing <code>purchaseorder</code>
<code>.* /out /.*</code>	Include files with the file URL containing the folder <code>out</code>
<code>^abc (.*) 123\$</code>	Includes anything that starts with <code>abc</code> and ends with <code>123</code> . Matches <code>abc123</code> , <code>abcxyz123</code> , but not <code>abcxyz123def</code>
<code>NEW- ((*.doc) (*_backup_*))</code>	Includes anything starting with <code>NEW-</code> that either ends in <code>.doc</code> , or is followed by the string <code>_backup_</code>

10. If you want to configure ActiveTransfer Server to execute a Jump action based on a condition, specify the **Jump Condition**.

Note: The jump condition has three parts: *server variables*, the *qualifier*, and the *value of the server variables*. For example, `{ext} Equals xml` triggers a Jump action for all XML files. For additional details on configuring jump conditions, see "[Working with Jump Conditions](#)" on page 235.

11. Specify the **Jump to action**.
12. If you want to execute an error action if the file operation fails, select **Execute error action**.
13. Click **Save**.
14. If you selected **Execute error action**, define an error action as described in "[Defining an Error Action](#)" on page 175.
15. If you are finished defining actions for this event, activate the event as described in "[Activating an Event](#)" on page 176.

Result:

The "Jump" action changes the sequence in which the event actions are executed. The action specified in the "Jump" action is executed instead of the next action in the sequence. The "Jump" action however does not modify the list of files that are passed

on from the action prior to the Jump action to the action that is triggered by the Jump action.

Excluding Files from an Action

You can exclude files from an action or a set of actions by defining an Exclude action prior to these actions. The Exclude action uses a **Source Filter** to exclude files from all the actions in the event that follow the Exclude action. The files that match the exclude criteria are not be passed on to the next action.

To define an Exclude action

1. In My webMethods: **Administration > Integration > Managed File Transfer > Event Management**.
2. Select the server instance. For details, see ["Selecting the Instance to Work With" on page 62](#).
3. Click the tab that contains the event for which you are creating the file operation action (**Post-Processing Events** or **Scheduled Events**).
4. Select the event in the event list.
5. In the **Actions** section, click the **Select Action** list.
6. In the resulting dialog box, click the **Select Category** list and select **Exclude Action**.
7. Type an action name in **Action Name** or retain the name that is automatically assigned by ActiveTransfer Server.
8. In the **Source Filter** box, enter the name of the file that you want to exclude in the actions following this action. By default, ActiveTransfer Server considers all files.

Note: You can use wildcard characters to exclude files. For example, enter *.zip to exclude zip files. To exclude a file based on a name string in the zip files, use the name string in the **Source Filter** box, preceded and followed by wildcard characters. For example, enter *invoice*.zip to exclude files based on the file URLs, where zip files contain the character string `invoice` in their file names. If you define a **Source Filter** for an action, the action acts only on the files that are filtered out.

For information on the use of wildcards in ActiveTransfer Server, see ["Use of Special Characters in Search" on page 26](#).

9. If you want to use regular expression in the source filter, specify a valid regular expression in **Source Filter** and select **Use regular expression**.

Examples for regular expressions:

`(. (?!purchaseorder)) *`

Excludes files with the file URL containing `purchaseorder`

<code>.*out/.*</code>	Include files with the file URL containing the folder <code>out</code>
<code>^abc(.*)123\$</code>	Includes anything that starts with <code>abc</code> and ends with <code>123</code> . Matches <code>abc123</code> , <code>abcxyz123</code> , but not <code>abcxyz123def</code>
<code>NEW- ((* .doc) (* _backup_*))</code>	Includes anything starting with <code>NEW-</code> that either ends in <code>.doc</code> , or is followed by the string <code>_backup_</code>

- If you want to execute an error action if the file operation fails, select **Execute error action**.
- Click **Save**.
- If you selected **Execute error action**, define an error action as described in ["Defining an Error Action" on page 175](#).
- If you are finished defining actions for this event, activate the event as described in ["Activating an Event" on page 176](#).

Defining an Error Action

You can have ActiveTransfer execute an error action if any of the configured actions for a post-processing or scheduled event fail. You can use any of the event actions that ActiveTransfer offers as the defined error action. For example, if a file copy action fails, you can use the Send Email action to notify an administrator of the failure.

The error action is subject to the following conditions:

- You can create only one error action per event.
- You must configure an event action to execute the error action by selecting the **Execute error action** check box for the action.
- You must configure the error action just as you would configure any other post-processing or scheduled event action.

To define an error action

- In My webMethods: **Administration > Integration > Managed File Transfer > Event Management**.
- Select the server instance. For details, see ["Selecting the Instance to Work With" on page 62](#).
- Click the tab containing the event for which you are creating the file operation action (**Post-Processing Events** or **Scheduled Events**).
- Select the event from the event list.

5. In the **Actions** section, click the **Select Error Action** list, highlighted in pink.
6. In the resulting dialog box, click the **Select Category** list, and then select the type of action you want to execute if an error occurs. For more information about these actions, see ["Defining Actions to Execute when an Event Is Triggered" on page 135](#).
7. Define the properties for the selected error action. For more information, see the reference table in ["Defining Actions to Execute when an Event Is Triggered" on page 135](#).
8. Click **Save**.
9. If you are finished defining event and error actions for this event, activate the event. See ["Activating an Event" on page 176](#).

Activating an Event

By default, a newly created post-processing or scheduled event is inactive. This enables you to work on configuring the event without any concern that the partially configured event is actually running. After you have fully configured the event, you can activate it to put it into service.

You can also select and delete more than one event at a time. For more information on how to delete multiple events, see ["Activating, Deactivating, and Deleting Multiple Events" on page 176](#).

To activate an event

1. In My webMethods: **Administration > Integration > Managed File Transfer > Event Management**.
2. Select the server instance. For details, see ["Selecting the Instance to Work With" on page 62](#).
3. Click either the **Post-Processing Events** tab or the **Scheduled Events** tab.
4. Select the event from the event list.
5. Select the **Active** check box beneath the event description.
6. Click **Save**.

To deactivate an event, clear the **Active** check box.

Activating, Deactivating, and Deleting Multiple Events

You can select multiple post-processing events or scheduled events to activate, deactivate, or delete in a single action.

To activate, deactivate, or delete multiple events

1. In My webMethods: **Administration > Integration > Managed File Transfer > Event Management**.
2. Select the server instance. For details, see "[Selecting the Instance to Work With](#)" on [page 62](#).
3. Click either the **Post-Processing Events** tab or the **Scheduled Events** tab.
4. In the event list, select the rows corresponding to the required events.

Tip: Each page of the event list displays a maximum of 50 events. Only select the events visible in a single page.

5. Do one of the following:

Click...	To...
Activate	Activate all selected events.
	<p>Note: Ensure that you define the execution Criteria for all the scheduled events you want to activate. ActiveTransfer ignores any scheduled event that has no execution Criteria defined.</p>
Deactivate	Deactivate all selected events.
<input type="checkbox"/>	Delete all selected events.
	You can even delete active events. If you delete any event being executed at the time of deletion, the though the event is deleted, ActiveTransfer completes the event execution.

6. Click **OK** to confirm the action.
7. If you have more events to select in additional pages of the event list, click **Next >>** or the required page number, and repeat steps 4 to 6.

Parameterizing Scheduled Event Actions

You can parameterize the settings of a scheduled event action at runtime. By parameterizing the event action settings, you reduce the number of events you would otherwise need to configure, especially when files are transferred across several source and destination file systems.

To parameterize a configuration setting of a scheduled event action

1. In My webMethods: **Administration > Integration > Managed File Transfer > Event Management > Scheduled Events** tab.
2. Select the event in the event list or add a new event.
3. In the **Actions** section, click the **Select Action** list.
4. Select the action that you want to configure.
5. Type *[variable_name]* in the setting to parameterize.

Where, *variable_name* is the variable assigned to the configuration setting that you want to parameterize.

For more information on parameterization of specific settings, see "[Additional Information on Parameterizing Event Actions](#)" on page 178.

6. Click **Save**.

Additional Information on Parameterizing Event Actions

- For any remote file path, you can parameterize the URL but not the username and password. The runtime value for the URL should contain the username and password to be used. Provide the URL information in the format `<protocol>://<username>:<password>@<host>:<port>/<path>/`. For example, `FTP://user:password@ftp.softwareag.com/outbound/`

Note: If you use this format to parameterize the file path URL with values for the username and password, at runtime, ActiveTransfer ignores the values specified for the username and password parameters. This rule is applicable to the remote file URLs configured in the following actions:

Find action	: Find URL
Copy action	: Destination URL
Move action	: Destination URL
Unzip action	: Destination URL
Zip action	: Zip File Path

- Use the `wm.mft.schedule:createRemoteURL` service to create URLs in the ActiveTransfer Server format.
- You can parameterize only the following event action settings:

Action	Action Settings
Find	File URL File Name Source Filter Folder Depth Stability Check Delay Stability Check Minutes Maximum Items to Find Last Modification Days Last Modification Hours Last Modification Minutes Retry Interval Retry Count
Copy	Destination URL Rename file to Source Filter File Name Wait for Sec Give up After Retry Interval Retry Count
Decrypt	Decryption Key File Source Filter
Delete	Retry Interval Retry Count
Send Email	From To CC

Action	Action Settings
	BCC Subject Body Source Filter
Encrypt	Decryption Key File Source Filter
Execute Script	Command Arguments Separator Working Directory Source Filter
Jump	variable variable2 Source Filter
Move	Destination URL Rename file to Source Filter File Name Wait for Sec Give up After Retry Interval Retry Count
Rename	New File Name Source Filter Retry Interval Retry Count
Unzip	Destination URL

Action	Action Settings
	Source Filter
Write Content	File Path Source Filter
Zip	Zip File Path File Name Source Filter Zip File Name

Parameterizing Scheduled Events to Poll Source URLs and Transfer Files to Destination URLs

Parameterize only those scheduled events that you have set to run in `Manual` mode. If you parameterize an event action scheduled to run at a specific time, the event fails or gives you unexpected results because you cannot assign values to the parameterized settings at runtime.

To configure a parameterized event to transfer files from a set of source URLs to the corresponding destination URLs

1. Create a scheduled event with **event type**, `manual`.
2. Add a find action to this event and set the value of the property `FindURL` to `[myFindURL]`.
3. Add a copy action to this event and set the value of the property `DestinationURL` to `[myDestinationURL]`.
4. Run the service `wm.mft.schedule:executeEventwith` following values:
 - Create an `eventParams` entry for each parameterized event setting, type in the `name` of the setting and specify a `value` to the parameterized setting.
 - `scheduleName = Name of the event`
 - `eventParams[0]\name = myFindURL`
 - `eventParams[0]\value = <source path>`
 - `eventParams[1]\name = myDestinationURL`
 - `eventParams[1]\value = <destination path>`

For information on the event action settings than you can parameterize, see `wm.mft.schedule.executeEvent` in *webMethods ActiveTransfer Built-In Services Reference*.

Examples of Event Configurations and Actions

Let us configure a scheduled event, `ParamEvent` which finds a set of files that match the filter `invoice*` in a remote server and copies the files to another remote server after renaming the files. Let us parameterize the source URL and the destination URL in the event actions.

1. Create a new scheduled event, `ParamEvent`.
2. Set the event criteria **Execute actions** to `Manual`.
3. Configure a find action in the event and parameterize the **Find URL** field as follows:
 - Select the **Remote File Path** option.
 - Type in `[sourceURL]` in the field.
 - Specify `invoice*` in the **File Name** field.
4. Configure a copy action after the find action and parameterize the **Destination URL** as follows:
 - Select the **Remote File Path** option.
 - Type in `[destinationURL]` in the field.
 - Configure the **Rename file to** option as `{stem}_processed{ext}`
5. Execute the service `wm.mft.schedule.executeEvent` as follows:
 - Create an `eventParams` entry for each parameterized event setting, type in the `name` of the setting and specify a `value` to the parameterized setting.
 - `scheduleName = ParamEvent`
 - `eventParams[0]\name = [sourceURL]`
 - `eventParams[0]\value = ftp://enterprise.ftp.server/invoices/partner1/`
 - `eventParams[1]\name = [destinationURL]`
 - `eventParams[1]\value = ftp://partner1.ftp.server:21/incoming/invoices/`

Let us consider the following files in the source folder, `ftp://enterprise.ftp.server/invoices/partner1/`:

```
P1-currentmonth-invoice.xml
P1-currentmonth-invoice.pdf
P1-currentmonth-details.xml
P1-currentmonth-ack.xml
```

Result: After the successful execution of the event, `ParamEvent` the `/incoming/invoices/` folder on the `ftp://partner1.ftp.server` server contains the following files:

P1-currentmonth-invoice_processed.xml P1-currentmonth-invoice_processed.pdf

Examples for Configuring and Event

The examples specified in this section show how you can configure events with up to two actions.

Scheduled Event:

Let us configure a scheduled event, `Payables` that consists of two actions - find and copy. The event when triggered, finds the monthly invoice for a specific partner in the Enterprise's server and copies the same to the partner's FTP server on the fourth day of the month. You can configure such an event as follows:

- Create a new scheduled event, `Payables`.
- Schedule the event to run on the fourth day of every month. Configure a new schedule for the event with the following parameters:

Execute Actions	Monthly
Days of Month	4
Hours	17

- Define a `find` action in the event with the following parameters:

File URL

Select the **Virtual Folder** option and browse to a folder in the VFS say, `EnterpriseFTP`

This virtual folder is mapped to a remote server, `ftp://enterprise.ftp.server/invoices/partner1/` in the **Virtual Folder Management** page.

The folder `invoices/partner1` in the `enterprise.ftp.server` contains the following files before the event is executed:

```
P1-currentmonth-invoice.xml
P1-currentmonth-invoice.pdf
P1-currentmonth-details.xml
P1-currentmonth-ack.xml
```

NoteThe virtual folder used in this example should already exist in the Active Transfer VFS.

File name `*invoice*`

- Define a `copy` action in the event after the `find` action with the following parameters:

Destination URL Select the **Virtual Folder** option and browse to a folder in the VFS say, `Partner1FTP`

This virtual folder is mapped to a remote server, `ftp://partner1.ftp.server:21/incoming/invoices/` in the **Virtual Folder Management** page.

Let us assume that the folder `incoming/invoices` in the partner's FTP server has no files.

Retry [] times, at intervals of [] second(s) Select the checkbox and input the values, 2 for retry times and 10 for retry interval.

- Activate the event, `Payables`.

Result -When the event executes successfully, the result is as follows: The `incoming/invoices` folder in the partner's FTP server contains the following files:

`P1-currentmonth-invoice.xml`
`P1-currentmonth-invoice.pdf`

Note: If the Copy action fails the first time, ActiveTransfer will retry the copy action two more times at intervals of 10 seconds.

Post-processing Event:

Let us configure a post-processing event, `Notify` which is triggered when a file is uploaded to the `invoices` folder corresponding to a specific partner in the enterprise's server. The event when executed sends an email to the partner with the subject - `Invoice for the month - {MM}/{YY}` and specifies the URL of the file. You could configure such an event as follows:

- Create a new post-processing event.
- Define the trigger for the event as follows:

Execute the actions below when a user	uploads files
The folder name is	<p>Select the The following name: option and browse to a folder in the VFS say, EnterpriseFTP</p> <p>This virtual folder is mapped to a remote server ftp://enterprise.ftp.server/invoices/partner1/ in the Virtual Folder Management page.</p> <p>The folder invoices/partner1 in the enterprise.ftp.server contains the following files:</p> <pre>P1-currentmonth-invoice.xml P1-currentmonth-invoice.pdf P1-currentmonth-details.xml P1-currentmonth-ack.xml</pre>
The file transfer status is	Success
The operation is carried out by	Any user
Execute the actions	After the user exits all sessions
■ Define a send_email action in the event with the following parameters:	
Source Filter	<pre>*/invoice/*.pdf</pre> <p>For information on the use of wildcards in ActiveTransfer Server, see "Use of Special Characters in Search" on page 26.</p>
From	%user_email%
To	incoming@partner1.com
Subject	Invoice for the month - {MM}/{YY}
Variables / Template	Name to current file
Body	<p>Modify the template as follows: The current invoice is available for download at: ftp://</p>

```
enterprise.ftp.server/invoices/  
partner1/%the_file_name%
```

■ **Activate the event, Notify.**

Result - When the event executes successfully, an email is sent to partner1 with the following content: **Subject** Invoice for this month -12/2014The current invoice is available for download at:ftp://enterprise.ftp.server/invoices/partner1/P1-currentmonth-invoice.pdf

10 Monitoring ActiveTransfer

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Overview

You can monitor the activity within your environment using the following:

- **File Transactions** log. ActiveTransfer Server logs all file transactions. You can filter file transactions based on such criteria as period of time, trigger source, file name, status of the file transfer, and view additional details for a specific file transaction. For more information about viewing the file transaction log, see "[Monitoring File Transaction Activity](#)" on page 188.
- **Event Log**. ActiveTransfer Server logs the event details for all (post-processing and scheduled) events. You can filter the event log based on the criteria: period of time, event type, and status. For more information about viewing event logs, see "[Monitoring Events](#)" on page 191.
- **Analytics** dashboard. ActiveTransfer analytics dashboard provides insight into all the file transfers happening within your environment by showing metrics, making comparisons, and summarizing key activity. For more information about viewing this information, see "[Viewing ActiveTransfer Analytical Information](#)" on page 193.

Monitoring File Transaction Activity

To monitor file transaction activity on your ActiveTransfer Server, you first define a file transaction filter to populate a search results list. You can then view the details of a transaction and the activities that occurred during a transaction.

Defining a File Transaction Filter

You define a file transaction filter to narrow the search results list to a specific time period, transfer direction, protocol, partner or user, or status.

To define a file transaction filter

1. In My webMethods: **Monitoring > Integration > Managed File Transfer > File Transactions**
2. Select the server instance. For details, see "[Selecting the Instance to Work With](#)" on page 62.
3. In the **Filters** section, define a filter for the file transactions you want to view, based on the following criteria:
 - For **Period of Time**, select from the available time periods in the list or specify a custom date range, and then click **OK**.
 - For **Trigger Source**, select the source that triggered the file transaction (**All**, **User**, **Event**, or **Trading Networks**).

- If you have selected the **Trigger SourceUser**, you can specify additional filters for:
 - **Partner**, select **All Partners**. Or, select **The Following Partner**, click the box to select a partner, and then click **OK**.
 - **User**, select **All Users**. Or, select **The Following User**, click the box to select a user, and then click **OK**.
 - **Direction**, select a file transaction direction (**Upload**, **Download**, or **All Directions**).
 - **Protocols**, select one or more transmission protocols. You can select all protocols, all secure protocols (FTPS, SFTP, HTTPS, SCP, and WebDAVs), or all protocols that are not secure (HTTP, FTP, and WebDAV). You can also select individual protocols by selecting the appropriate check boxes.
 - If you have selected the **Trigger SourceEvent**, you can specify additional filters for:
 - **Source Path**,
 - **Destination Path**,
 - For **Status**, select whether to show all transactions or only the successful or unsuccessful ones.
 - If you want to search the transactions for matches to the specified text. type the text in the **Comment** box.
 - If you want to search the transactions for matches to a specified file name, type the same in the **File Name** box.
 - For **File Name**, enter the partial or complete file name based on which you want to filter out or search the event log entries. To search for a file with the exact name entered in **File Name**, select the **Match whole word** checkbox.
 - For **Transaction ID**, enter the transaction ID of the file transfer.
4. If you want to search for a specific file transfer transaction ID, type the transaction ID in **Transaction ID**.

Viewing File Transaction Details

You can view detailed information for any of the file transactions shown in the results list.

To view the details of a file transaction

1. Determine the specific file transactions you want to appear in the results list, as described in "[Defining a File Transaction Filter](#)" on page 188.
2. In the results list, click the file transaction you want to work with.
3. You can view the message generated by ActiveTransfer Server for the transaction in **Comment Text**.
4. View the following information in the **Transaction Details** section of the **Details** tab:

Field	Description
Trigger Source	Source of the file transaction. Could be a User or an Event .
User	Name of the user who executed the file transfer.
Transfer Date (Start time)	Start time of the transfer.
Elapsed Time	Amount of time that the file transfer took to complete.
File Name	Name of the file that was transferred.
File Size	Size of the file.
Transfer Status	Whether the transfer was successful or unsuccessful.
Transaction ID	Transaction ID for the file transfer.
Transfer Direction	Direction of the transaction (upload or download).
Protocol	Protocol used for the file transfer.
Port Name	Name of the ActiveTransfer Server port on which the file transfer took place.
Client IP Address	IP address of the client that asked for the file transfer.
Compression	Whether compression was used to perform the file transfer.

Viewing File Transaction Activities

You can view activities that occurred as part of a file transaction.

To view file transaction activities

1. Determine the specific file transactions you want to appear in the results list, as described in "[Defining a File Transaction Filter](#)" on [page 188](#).
2. In the results list, click the file transaction you want to work with.

3. Click the **Activities** tab.
4. View the following file transaction activity information:

Field	Description
Timestamp	Date and time of the associated activity.
Status	Whether the transfer was successful or unsuccessful.
Type	The event type, post-processing or Scheduled event
Event Name	Name of the event in ActiveTransfer Server.
Brief Message	Actual activity executed during the file transaction.
Full Message	Full list of the parameters and their values that were applied to the file transaction activity.

Monitoring Events

To monitor events on your ActiveTransfer Server, you first define a filter to populate a search results list. You can then view the details of an event and the activities that occurred during the event.

Defining an Event Filter

You define an event filter to narrow the search results list to a specific time period, event type, or status.

To define an event filter

1. In My webMethods: **Monitoring > Integration > Managed File Transfer > Event Log**
2. Select the server instance. For details, see ["Selecting the Instance to Work With" on page 62.](#)
3. In the **Filters** section, define a filter for the events you want to view, based on the following criteria:
 - For **Period of Time**, select from the available time periods in the list or specify a custom date range, with a time range in the *HH:MM:SS* (12-hour clock) format, and then click **OK**.
 - For **Event Type**, select the type of event (**Post-Processing**, **Scheduled**, or **All**).

- For **Status**, select whether to show all events or only the successful or unsuccessful ones.
4. Click **Apply** to apply the filter.

Viewing Event Details

You can view detailed information for any of the events shown in the results list.

To view the details of an event

1. Determine the specific events you want to appear in the results list, as described in ["Defining a File Transaction Filter" on page 188](#).
2. In the results list, click the event you want to work with.
3. View the following information in the **Event Details** section of the **Details** tab:

Field	Description
Start Time	Time at which the event was triggered.
Event Type	Type of event, Post-Processing or Scheduled
Status	Whether the event was successful or unsuccessful.

Viewing Event Activities

You can view activities that occurred as part of an event.

To view event activities

1. Determine the specific events you want to appear in the results list, as described in ["Defining a File Transaction Filter" on page 188](#).
2. In the results list, click the event you want to work with.
3. Click the **Activities** tab.
4. View the following event activity information:

Field	Description
Timestamp	Date and time of the associated activity.
Status	Whether the event was successful or unsuccessful.

Field	Description
Type	The event type, post-processing or Scheduled event
Brief Message	Actual activity executed during the file transaction.
Full Message	Full list of the parameters and their values that were applied to the file transaction activity.

Viewing ActiveTransfer Analytical Information

You can view ActiveTransfer analytical information by way of the following components:

- The analytics user interface in My webMethods: **Monitoring > Integration > Managed File Transfer > Analytics**
- Software AG MashZone Server and MashApps created with Software AG MashZone. Both contain predefined formats for ActiveTransfer analytical information. For instructions on configuring MashZone, see "[Configuring MashZone NextGen](#)" on page 48.
- ActiveTransfer data sources that contain the analytical data. Software AG MashZone Server connects to the appropriate data sources, retrieves the data to create the analytical details, and displays this information in the Analytics user interface. If you want to view analytical details other than those that ActiveTransfer provides, contact your Software AG sales representative.

Note: Analytical details are available only in English. However, Software AG MashZone supports the localization of those details. For more information, refer to the MashZone documentation.

Types of Analytical Information

ActiveTransfer Server offers a variety of analytical details for transfer volume, rates, and other metrics:

- The ActiveTransfer transfer analysis details show file transfer volume trends and summary, details about all successful and unsuccessful file transfers, and details about the top 10 largest files.
- The ActiveTransfer transfer rate details show the average transfer rates by partners (number of files and MB per second) and the average file size by partner.
- The ActiveTransfer "Top 10 Metrics" details include the top 10 largest files, top 10 partners by file volume, and top 10 busiest servers.

Viewing Analytical Details in My webMethods

To view analytical details in My webMethods

1. In My webMethods: **Monitoring > Integration > Managed File Transfer > Analytics**
 2. Select the server instance. For details, see "[Selecting the Instance to Work With](#)" on [page 62](#).
 3. In the **Filters** section, specify filter criteria for the file transactions for which you want to view analytical details:
 - For **Period of Time**, select from the available time periods in the list or specify a custom date range, and then click **OK**.
 - For **Direction**, select a file transaction direction (**Upload**, **Download**, or **All Directions**).
 - For **Status**, select a file transaction status (**Success**, **Failure**, or **Show All**).
 - For **Sender**, select **All Partners** or select **The Following Partner** and click the box to select a partner, and then click **OK**.
 - For **Receiver**, select **All Partners** or select **The Following Partner** and click the box to select a partner, and then click **OK**.
 - For **User**, select **All Users** or select **The Following User** and click the box to select a user, and then click **OK**.
 - For **Protocols**, select one or more transmission protocols. You can select all protocols, all secure protocols (FTPS, SFTP, HTTPS, SCP, and WebDAVs), or all protocols that are not secure (File, HTTP, FTP, and WebDAV). You can also select individual protocols by selecting the appropriate check boxes.
- Note:** You can click **Reset** at any time to restore the default filter settings.
4. Click **Apply**.

11 Managing and Viewing Log Information

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Managing Log Files

ActiveTransfer uses the Integration Server OSGi log framework. Log entries for ActiveTransfer Server and ActiveTransfer Gateway are available in the log file, ActiveTransfer.log located in the *Integration Server_directory*\profiles\IS_default\logs directory.

The ActiveTransfer.log file contains details of the run-time operations that ActiveTransfer Server performs, including connecting to clients, transferring files, and executing events. The log file also contains information and error messages related to configuration activities that you perform using My webMethods pages such as Server Management, Templates, and Event Management.

The ActiveTransfer.log file name and location are configurable. For details on how to configure the log name, location, and log level see ["Configuring Logging in the Installation Directory" on page 196](#).

Configuring Logging in the Installation Directory

Pre-requisites: The relevant ActiveTransfer fix version is installed.

Use this procedure to configure the log file name, log file location, and logging levels on both the ActiveTransfer Server and ActiveTransfer Gateway. If you omit this configuration, all log entries are made in the default log file sag-osgi.log, which is available in the *Integration Server_directory*\profiles\IS_default\logs directory.

To configure ActiveTransfer logging

1. In ActiveTransfer Server installation, navigate to the following directory:
Integration Server_directory\IS_default\configuration\logging
2. Using a text editor, open the log_config.xml file.
3. Follow these steps to configure the log appender, which specifies the log file name, log file location, and global log level:
 - a. Add the following entry:

```

<!-- Standard Log4j appenders -->:
<appender name="Product.ActiveTransfer" class="org.apache.log4j.►
RollingFileAppender">
  <param value="
Integration Server_directory
\profiles\IS_default\logs\►
ActiveTransfer.log" name="file"/>
  <param value="10MB" name="MaxFileSize"/>
  <param value="10" name="MaxBackupIndex"/>
  <layout class="com.webmethods.sc.logging.log4j.AlignedG8dEventLayout"/>
</appender><logger name="com.softwareag.mft" additivity="false">
  <level value="info"/>
  <appender-ref ref="Product.ActiveTransfer"/>

```

```
</logger>
```

- b. In the log appender, make suitable modifications to the log file name, log file location, and global log level:

```
<param value="Integration Server_directory\profiles\IS_default\logs
\ActiveTransfer.log" name="file"/>
```

Provides the log file location and log file name. Make the following modifications:

- In place *Integration Server_directory*, specify the exact Integration Server installation directory, or provide any other location of your choice for the log file.
- If required, you can modify the default log file name, *ActiveTransfer.log*, to a file name of your choice.

```
<level value="info"/>
```

Is the default log level. You can modify it, if required. The possible log levels are:

- *fatal*: Severe errors that might cause ActiveTransfer to abort.
- *error*: Errors that caused during the execution of ActiveTransfer operations.
- *info*: Informational messages about ActiveTransfer events.
- *warn*: Non-critical errors that might potentially lead to unexpected results.
- *debug*: Debug information for errors and analysis.
- *trace*: Trace information for analysis.
- *off*: Turn off logging. If you turn off logging important log messages are not logged. Not recommended at the global level.

- Note:**
- If you use *off*, important log messages are not logged. Software AG does not recommend its use at the global level.
 - *trace* and *debug* log levels will result in large amount of log messages for analysis.

Note: If you omit the next step, the global setting for the log level is applied to all modules unless you set the log modules from the user interface. For details on how set up audit logging for modules or sub-modules

from the user interface, see ["Setting Up Audit Logging from the My webMethods User Interface"](#) on page 199.

4. Add the following logger entries for all relevant modules and sub-modules:

```
<logger name="com.software.mft.module.sub-module">
  <level value="info"/>
</logger>
```

Where, *module* or *sub-module* can be:

<u>ActiveTransfer Module</u>	<u>Possible Module and Sub-Module Values</u>
Ports	com.softwareag.mft.port com.softwareag.mft.port.ftp com.softwareag.mft.port.sftp com.softwareag.mft.port.http
Event	com.softwareag.mft.event
Remote Server Session	com.softwareag.mft.external.session com.softwareag.mft.external.session.ftp com.softwareag.mft.external.session.sftp com.softwareag.mft.external.session.http com.softwareag.mft.external.session.file
Asset Management	com.softwareag.mft.asset
Common Framework	com.softwareag.mft.common
Database	com.softwareag.mft.database
Tunnel	com.softwareag.mft.acceleration
ActiveTransfer Gateway	com.softwareag.mft.gateway
Security	com.softwareag.mft.security

Example:

To get trace level logs for all FTP user sessions, add the following logger entry:

```
<logger name="com.softwareag.mft.external.session.ftp">
  <level value="trace"/>
</logger>
```

5. Repeat the procedure in the ActiveTransfer Gateway installation.

Setting Up Audit Logging from the My webMethods User Interface

Use this procedure to select the ActiveTransfer assets for which ActiveTransfer must create audit logs in the My webMethods user interface.

To set up audit logging

1. In My webMethods: **Administration > Integration > Managed File Transfer > MFT Settings**
2. Select **Create audit logs**.
3. Remove or retain the default selections for the available ActiveTransfer assets.
4. Click **Save**.

Result: ActiveTransfer Server immediately creates or stops creating audit logs for the enabled and disabled assets, respectively.

Viewing ActiveTransfer Server Logs in My webMethods

You can view the contents of ActiveTransfer.log for ActiveTransfer Server in the My webMethods user interface.

Note: ActiveTransfer Gateway logs are not available in My webMethods. To access ActiveTransfer Gateway logs, use the ActiveTransfer.log file available in the configured log directory of the ActiveTransfer Gateway installation: *Integration Server_directory\profiles\IS_default\logs*. For details on how to configure the log file location, see "[Configuring Logging in the Installation Directory](#)" on page 196.

To access ActiveTransfer Server log content in My webMethods

1. In My webMethods: **Administration > Integration > Managed File Transfer > Server Log**
2. Select the server instance. For details, see "[Selecting the Instance to Work With](#)" on page 62.
3. Do one of the following:
 - To view logged information for ActiveTransfer Servers, click the **Server Info** tab. For more information, see "[Viewing Server Information in My webMethods](#)" on page 200.
 - To view logged information for ActiveTransfer users, click the **User Info** tab. For more information, see "[Viewing User Information in My webMethods](#)" on page 201.

Viewing Server Information in My webMethods

The **Server Info** tab of the Logs page contains entries for port activity, server login and session information, and data transfer summaries.

The **Servers** section shows the following details about the ActiveTransfer Server:

- Protocol in use
- Host name or external IP address
- Security mode, if applicable
- Number of users connected
- Number of connections processed

The **Info** tab displays the following details about the ActiveTransfer Server:

The **Login Information** section of the **Info** tab shows details about the last login that occurred, the total number of logins, and the total number of successful and unsuccessful login attempts.

The **Data Transferred** section shows the total number of bytes transferred in and out, the number of files uploaded and downloaded, and the number of files sent and received.

The **Speed Information** section shows the average speed of outgoing and incoming transfers.

The **Session Information** section shows the number of concurrent users presently connected, the number of connected sessions, and the number of busy and free threads.

The **Log** tab contains the following:

You can view the ActiveTransfer Server logs on this page. The **find and filter** section provides a search box for keywords in the log entries. For additional details, see ["Searching for Keywords in ActiveTransfer Server Log" on page 200](#). You can also filter the server logs using keywords and choose to display only the log entries containing the keyword, or hide the log entries containing the keyword. For additional details, see ["Filtering ActiveTransfer Server Logs for Keywords" on page 201](#).

Searching for Keywords in ActiveTransfer Server Log

You can search for keywords in the ActiveTransfer.log.

To search for a specific keyword in the ActiveTransfer.log entries

1. In My webMethods: **Administration > Integration > Managed File Transfer > Server Log**
2. Click the **Server Info** tab.
3. In the **Servers** section, click the **Log** tab.

4. Click the **Show Find and Filters** link.
5. Enter the keyword (for example: `READ`) in the text box below **Find in Log**.
6. Click the colored box next to the **Find in Log** text box to view and select a color for the highlighter, from the color palette.
7. If you want to specify additional keywords for **Find in Log**, click  .
8. Click the **Find and Filter** button.

Filtering ActiveTransfer Server Logs for Keywords

You can filter the ActiveTransfer.log for specific keywords and choose one of the following display options:

- Only show lines containing this text
- Hide lines containing this text

To filter the ActiveTransfer Server logs entries for a specific keyword

1. In My webMethods: **Administration** > **Integration** > **Managed File Transfer** > **Server Log**
2. Click the **Server Info** tab.
3. In the **Servers** section, click the **Log** tab.
4. Click the **Show Find and Filters** link.
5. Enter the keyword (for example: `READ`) in the text box below **Filter**.
6. Select a display option. **Only show lines containing this text** or **Hide lines containing this text**.
7. If you want to specify additional keywords for **Filter**, click  .
8. Click the **Find and Filter** button.

Viewing User Information in My webMethods

The **User Info** tab enables you to monitor and act on individual user sessions on ActiveTransfer Server. You can view session information by selecting a session in either of the following lists:

- The **Current Sessions** list displays the current sessions on the ActiveTransfer Server.
 - To terminate a session, select the session and click **Terminate Session**.
 - To permanently ban the connected user, select a user session and click **Permanent Ban**. Consult the live log entry for **Accepting connection from:** to determine where the connection originates.

- To temporarily ban the connected user, select a user session and click **Temporary Ban**.
- The **Recent Sessions** list displays recent live and completed user sessions running on ActiveTransfer Server. This section retains up to 100 sessions, after which older sessions are removed and replaced with newer ones.

For a selected session, the **Session Information** section provides the following information:

Field	Description
Login Time	Time that the user logged in to ActiveTransfer Server.
Working Directory	Directory that the user is working on.
IP	IP address of ActiveTransfer Server.
Bytes Sent	Bytes sent in the file transfer.
Bytes Received	Bytes received in the file transfer.
Upload Count	Number of files uploaded.
Download Count	Number of files downloaded.
Overall Speed	Average speed of the transfer.
Current Speed	Current speed of the transfer.
Position in Transfer	Number of the transfer in the queue.
File Size	Size of the file being transferred.
Time Remaining	Time remaining in the transfer.

You can view log entries for the selected session in the **Live Log** section. To refresh the log at any point, click **Refresh Log**. For a live update of new server log entries, click **Live update**. For a live scroll of new server log entries, click **Scroll with activity**.

Viewing Audit Logs in My webMethods

You can view the audit logs for all ActiveTransfer assets for which audit logging is enabled in the Audit Log page.

The audit logs are strictly limited to information about:

- The ActiveTransfer assets, and do not include any linked external Software AG or third party product assets that might be your organization uses. For example, My webMethods Server user profiles, Integration Server services, JDBC pools, and so on.
- Configuration of VFS and partners, but not their behavioral changes caused by dependent assets. For example, let us consider that a VFS referenced in an event. If the VFS path is changed, no audit log is available for the change in the corresponding event.

To access audit logs in My webMethods

1. In My webMethods: **Administration > Integration > Managed File Transfer > Audit Log**
2. If you want to use specific filters to locate the audit logs, click **Filters**.
3. Define a filter for the audit logs you want to view, based on the following criteria:
 - a. In **Period of Time**, select from the available time periods in the list or specify a custom date range, with a time range in the *HH:MM:SS* (12-hour clock) format.
 - b. Click **OK**.
 - c. In **Action**, select the required user action (all, create, update, or delete) affecting the asset type:
 - d. In **Asset Type**, select from the required asset type.
 - e. If you want to filter for actions of specific users, in **User**, select **The Following User**.
 - f. Type the user names, separated by commas and click **OK**.
 - g. In **Asset Name**, type the asset name.
 - h. In **Asset ID**, type the asset ID.
 - i. In **Asset Summary**, type the words that the asset summary should include.
4. Click **Apply** to apply the filter.
5. Select the required audit log from the table to view the summary and details of the log.

12 Partitioning the Database

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Partitioning the ActiveTransfer Database

ActiveTransfer transactional data is stored in the database that is configured in the database component (JDBC pool). Transactional data includes event execution details, file transfer information, and so on. However, if you have large volumes of file transfers or event executions, transactional data can grow quite rapidly and become difficult to maintain.

ActiveTransfer database tables are designed to use the partitioning feature offered by most database types. Database partitioning facilitates better product performance and management of data by storing the data of a single table in separate partitions, which can be managed and accessed independently. For example, the Oracle database supports *Interval Partition* that allows you to partition data in a table by a specified date range or interval. All ActiveTransfer database tables that store run-time data are equipped with a *partition key column* or a column that you can use for partitioning. The database tables and their partition key columns are:

ActiveTransfer Table	Partition Key Column	Data Stored in Table is...
MFTTransaction	TransactionDate	File transfer information
MFTEventLog	PartitionTimestamp	Event execution details
MFTActivityLog	PartitionTimestamp	Task execution details associated with a file transfer Task details for each event execution
MFTActivityLogMessage	PartitionTimestamp	Activity Log messages that are larger than the maximum value permitted in VARCHAR columns
MFTActivityDetails	EventExecutionTime	Attribute details of agent activities
MFTAgentEventLog	TimeofExecution	Agent event execution details, at each event execution level
MFTAgentActivity	PartitionTimestamp	Agent activity details Event execution details at the agent level

<u>ActiveTransfer Table</u>	<u>Partition Key Column</u>	<u>Data Stored in Table is...</u>
MFTAgentActivityDetails	PartitionTimestamp	Detailed task level information on agent activities

13 Migrating Assets

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■ How ActiveTransfer Server Detects Assets on the Target System Before Importing Them	213

Overview

You can migrate ActiveTransfer assets from one ActiveTransfer database to another. Migrate assets when:

- You want to deploy assets from a development environment to a production environment.
- You have multiple ActiveTransfer Server instances and you want each instance to have identical assets. You can create the assets on one ActiveTransfer Server instance and then migrate the assets to the other instances.

In this context, a *server instance* is the ActiveTransfer Server instance that you are exporting assets from, or importing assets to, as well as the ActiveTransfer Gateway instances defined for the particular ActiveTransfer Server instance.

- You want to change the type of database you use for ActiveTransfer. For example, you were using an Oracle database and now want to use a SQL Server database.

Important: Only use the procedures in this chapter to migrate ActiveTransfer assets between ActiveTransfer Server instances of the same release. If you need to migrate assets from one release of ActiveTransfer Server to another, follow the instructions in *Upgrading Software AG Products*.

ActiveTransfer Assets You Can Migrate

You can migrate the following ActiveTransfer assets:

- **ActiveTransfer Server instances:** You can migrate the ActiveTransfer Server instances that are configured on the source ActiveTransfer Server.
- **ActiveTransfer Gateway instances:** You can migrate the ActiveTransfer Gateway instances that are configured on the source ActiveTransfer Server.
- **ActiveTransfer Server ports:** You can migrate the configuration for FTP, FTPS, SFTP, HTTP, and HTTPS ports. You can also migration the configuration for server ports associated with ActiveTransfer Gateway instances defined on the source server.
- **ActiveTransfer Server preferences:** You can migrate general ActiveTransfer Server preferences, such as throttling, restrictions, banning, encryption, acceleration, and miscellaneous settings. You can also migrate preferences for the ActiveTransfer Gateway instances defined on the source server.

Note: Merged with server instance asset in Deployer.

- **User templates:** You can migrate templates that are created for user configuration.

- **User configuration:** You can migrate ActiveTransfer users, groups, and roles, as well as their and configuration settings such as, throttling, restrictions, encryption, acceleration, and partner associations.
- **Virtual file system:** You can migrate VFS definitions and configuration settings such as location, partner association, and user access.
- **Partner mapping:** You can migrate the mappings between partners and the users and virtual folders with which those partners are associated. If Trading Networks is installed, ActiveTransfer performs the mapping using the partners available in Trading Networks. If Trading Networks is not installed, ActiveTransfer manages partner information separately.
- **Post-processing events:** You can migrate post-processing event configuration, including actions to execute when the event is triggered.
- **Scheduled events:** You can migrate scheduled event configuration, including actions to execute when the event is triggered.

ActiveTransfer assets are available for migration even if they are disabled. The state of the assets on the source system is maintained on the target system. The migration process does not include deleted assets.

You cannot migrate ActiveTransfer Server or MashZone NextGen instance settings defined on the ActiveTransfer Instances page in My webMethods. These settings are used to connect ActiveTransfer Server and the MashZone NextGen server to My webMethods, and are not specific to any ActiveTransfer Server instance.

When an asset includes a certificate or keystore definition, you can only migrate the file path location of that certificate or keystore. You must manually deploy the actual certificate or keystore file separately.

Migration Methods

You can migrate all ActiveTransfer assets, all assets of a certain type, or selected assets within an asset type. Use any one of the following methods to migrate ActiveTransfer assets:

- The `wm.mft.admin:exportData` and `wm.mft.admin:importData` built-in services. For details on the built-in services, see *webMethods ActiveTransfer Built-In Services Reference*.
- Repository-based deployment in Deployer. For details on how to use Deployer to migrate ActiveTransfer assets, see *webMethods Deployer User's Guide*.

ActiveTransfer Asset Dependencies

Some assets require other assets. For example, users use assets such as templates and partners, and virtual file systems use assets such as users. For migrated assets to work properly, these required assets must also exist on the target system.

When a dependency exists, ActiveTransfer automatically exports or imports the dependent assets.

The following table lists all possible dependencies an asset might have, as well as specific instructions for migration where appropriate. The name you use for an asset on the target system must match the name on the source system, with the same capitalization.

Asset	Dependency
ActiveTransfer Server ports	ActiveTransfer Server ports have a dependency on the server instance to which they are configured.
ActiveTransfer Server preferences	ActiveTransfer Server preferences have a dependency on the server instance for which they are configured.
User profiles	User profiles have a dependency on user templates, partners, and server instances that define tunnels for the users. Note: If Trading Networks is installed, migrate partner profiles defined in Trading Networks separately.
Virtual file system folders	VFS folders have a dependency on users and partners who have been granted access to the folders. Note: If Trading Networks is installed, migrate partner profiles defined in Trading Networks separately.
Post-processing events and associated actions	Post-processing events have a dependency on users, associated VFS folders, and partners who have been granted access to the folders.
Partner mapping	Partner mappings have a dependency on Trading Networks partner profiles. Note: If Trading Networks is installed, migrate partner profiles defined in Trading Networks separately.
Scheduled events and associated actions	Scheduled events have a dependency on associated VFS folders and partners who have been granted access to the folders. Note: If Trading Networks is installed, migrate partner profiles defined in Trading Networks separately.

If a dependent asset is not present in the file being imported or is not present on the target server, ActiveTransfer Server does not import the asset. ActiveTransfer Server logs an error message and continues importing the remaining assets.

If the export file contains the dependent assets for any asset, the `wm.mft.admin:importData` service ensures that the required assets are migrated first so that no error occurs.

How ActiveTransfer Server Detects Assets on the Target System Before Importing Them

When you import an asset, ActiveTransfer Server checks whether an asset with the same asset name already exists on the target system. For user assets, ActiveTransfer Server checks the authentication ID (user ID).

The *force* parameter in the `wm.mft.admin:importData` service specifies whether to update an asset when ActiveTransfer Server finds a matching asset on the target system. If *force* is set to `true` and ActiveTransfer Server finds a match, the server overwrites the asset on the target system. The *force* parameter does not apply when mapping partner assets. If the partner information already exists on the target server, ActiveTransfer Server ignores the imported partner asset.

When migrating virtual folders, if ActiveTransfer Server finds a matching folder name on the target system, the server updates the folder with the information from the imported folder. However, this can lead to unexpected results due to the possible conflicts in folder hierarchy and partner association between the source and target systems. If you want to migrate virtual folders, Software AG recommends that you delete the folder on the target system before importing the matching folder from the source system.

14 Administering ActiveTransfer with Command Central

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Overview

The ActiveTransfer run-time component is a layered product of Integration Server and appears listed by its package name WmMFT in the Command Central web user interface. In order to manage ActiveTransfer from the Command Central user interface, you must install ActiveTransfer as a sub-component of My webMethods Server in the Software AG Installer.

You can use Command Central to perform the following operations for ActiveTransfer from **IS_Instance Name > WmMFT**:

- Start, stop, and restart the ActiveTransfer instances.
- Manage ActiveTransfer Server ports.
- Access and download ActiveTransfer log files.
- Manage ActiveTransfer licenses.

For details on how to use each of the Command Central operations listed, see *Software AG Command Central Help*.

Managing ActiveTransfer Licenses in Command Central

In Command Central, you can configure ActiveTransfer licenses, view the details of the configured licenses, and retrieve the location of the license files. However, you cannot change the location of ActiveTransfer license files. For information on how to manage licenses in Command Central, see *Software AG Command Central Help*.

Lifecycle Actions and Statuses of The WmMFT Package

You can perform the following operations on the WmMFT package. The resultant statuses of the WmMFT package are:

Life Action	Description
Start	Starts the WmMFT package. When successful, the runtime status is set to ONLINE.
Stop	Stops the WmMFT package. When successful, the runtime status is set to STOPPED.
Restart	Restarts the WmMFT package. When successful, the runtime status is ONLINE.

A Server Configuration Parameters and Variables

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Server Configuration Parameters

This section contains a description of the parameters you can specify in the ActiveTransfer Server properties configuration file, `properties.cnf` and, in the case of the Command Central parameters, `CommandCentral.cnf`. These files are located in the *Integration Server_directory\instances\instance_name\packages\WmMFT\config* directory on ActiveTransfer Server. To update the files, you should first shut down ActiveTransfer Server and, if you are using ActiveTransfer Gateway, and then edit the file using a text editor. After you make the changes, restart the ActiveTransfer Server and Gateway.

ActiveTransfer Server uses default values for many of the parameters. If a parameter has a default, it is listed with the description of the parameter.

You can also use the `wm.mft.admin:property` service to view and change the current values of some of these parameters. For details, see *webMethods ActiveTransfer Built-In Services Reference*.

mft.aliases.tn

Specifies the remote server aliases for Trading Networks instances hosted on remote Integration Server hosts. These remote server aliases are defined in the Integration Server Administrator portal. When synchronizing partner details and transferring files to remote Trading Networks instances, ActiveTransfer checks this parameter in order to determine to which remote Trading Networks instances it must connect. Use commas to separate the remote server aliases.

For example: `mft.aliases.tn=remote server alias 1,remote alias 2,remote alias 3`

Note: This parameter is applicable only if you have webMethods Product Suite version 9.12 and later.

If you do not specify any value in this parameter, ActiveTransfer only connects to local Trading Networks instances (that is, Trading Networks instances hosted on the same Integration Server host as ActiveTransfer).

mft.client.file.optimizeListing

Specifies if ActiveTransfer's optimized or normal file listing functionality must be used on Microsoft Windows Server directories.

When you have an extremely large number of files for ActiveTransfer to list, set this parameter to `true` to enable the optimized file listing functionality. If you retain the default value of `false`, ActiveTransfer uses its normal file listing functionality.

mft.client.ftp.list.command

Specifies the list command to use on remote FTP servers. The value for this parameter is not case-sensitive. The possible values are:

- `LIST`. ActiveTransfer executes the LIST command to list the file directories on the remote FTP servers. LIST is the default value if you have not specified a value for the parameter, or if the value you specified is invalid.
- `MLST`. If the remote FTP servers support the MLST command, ActiveTransfer executes the MLST command to list the file directories on the remote servers. If the remote FTP servers do not support the MLST command, LIST command is used.

mft.client.http.maxUploadSize

Specifies the maximum file size for non-chunked data in upload operations to HTTP(S) servers. The default value is 10 MB.

mft.client.outbound.useProxy

Specifies if you want to enable the use of proxy server settings for file transfers. The possible values are:

- `true`. Supports outbound connections through proxy servers.
- `false`. Default value. ActiveTransfer ignores all proxy server alias configurations, and creates a direct connection to the remote server.

mft.client.session.

This section describes the parameters that you can configure in the ActiveTransfer Server cache for client sessions. These parameters are only available with ActiveTransfer Server 9.7 fix 7 and higher.

Note: These parameters are provided for advanced configuration settings which are not expected to change unless there is a specific requirement in your ActiveTransfer Server.

mft.client.session.cache.ttl

This parameter relates to the caching of client sessions created to connect to remote servers when ActiveTransfer executes an event. Specifies the time-to-live in seconds for the client session that is stored in the cache. A client session is logged out and removed from the cache when this parameter is exceeded. The default value is 120 seconds.

mft.client.session.cache.pingInterval

This parameter relates to the caching of client sessions created to connect to remote servers when ActiveTransfer executes an event. Specifies the idle time in seconds for

a client session stored in the cache after which a test command is run to verify if the client session is valid, before the session is used again. The default value is 30 seconds. If the value of this property is set to 0, ActiveTransfer runs a test command to verify the validity of the session each time, prior to executing a remote operation. Set the value of this property to a higher value (> 0) to reduce the number of test commands that have to be run in scenarios which involve transfer of a large number of files, and frequent use of remote operations.

mft.event.session.reuse

Important: Do not configure this parameter in your production environment. This parameter is provided to help solution providers debug the individual actions in an event.

ActiveTransfer reuses the connections (sessions) to remote servers that are created by ActiveTransfer event actions. This is achieved by caching the sessions for the event and reusing them later in similar actions within the same event instance. This parameter specifies if client sessions should be reused or not in ActiveTransfer events. The default value is `true`. If you set this parameter to `false`, a new session is created for each operation involving a remote server connection in the ActiveTransfer event actions. The new session is closed soon after the remote operation is completed.

mft.log.sessionlog.disable

Specifies if logging of session information should be disabled for individual user sessions.

If you retain the default value of `false`, ActiveTransfer creates separate log files for each ActiveTransfer Server user session in the following directory:

```
Integration Server_directory\instances\instance_name \packages\WmMFT\resources  
\logs\session_logs
```

If you set this parameter to `true`, ActiveTransfer does not create logs for ActiveTransfer Server user sessions in the given directory.

mft.client.sftp.unmask

Specifies the default unmask used to connect to SFTP servers. The default value is 022.

mft.db

This section describes the parameter you can set in ActiveTransfer to retry a database connection.

mft.db.connection.retry

Specifies the number of times ActiveTransfer should retry a connection to a database when there is a broken connection caused by transient database errors. The default value is 0.

mft.db.connection.retryInterval

Specifies the interval in seconds ActiveTransfer should wait between connection retries to a database. The default value is 10 seconds.

mft.commandcentral.

This section describes the parameters you can use to register the Command Central instance used to install ActiveTransfer Agent instances. These parameters are available in the CommandCentral.cnf file. ActiveTransfer Server uses the information in these parameters to connect to the Command Central instance when synchronizing agent installation details from Command Central.

mft.server.commandCentral.host

Specifies the host name or IP address of the machine that hosts the Command Central instance used to install ActiveTransfer Agent instances.

mft.server.commandCentral.port

Specifies the port for the Command Central instance used to install ActiveTransfer Agent instances.

mft.server.commandCentral.port.secure

Specifies if communication between the Command Central instance and ActiveTransfer Server must use SSL protocol.

mft.server.commandCentral.username

Specifies the user name to use when ActiveTransfer Server connects with Command Central.

mft.server.commandCentral.password

Specifies the password to use when ActiveTransfer Server connects with Command Central.

mft.event.

This section describes the parameter you can set for post-processing events configured on ActiveTransfer Server.

mft.event.sleep.time

Specifies the time interval ActiveTransfer Server should wait to trigger a post-processing event. The default is 1 second. If you set the value of this property to 20 seconds, ActiveTransfer Server holds a post-processing event in a queue and triggers the event along with the other events that are queued, at 20 second intervals.

mft.groupaliases

Specifies the remote server aliases of ActiveTransfer nodes that are part of a group. The remote server aliases are defined in the Integration Server Administrator portal.

ActiveTransfer instance shares asset information with other ActiveTransfer nodes in the group.

For example: `mft.group.aliases=remote server alias 1,remote server alias 2,remote server alias 3`

mft.http.

This section describes the parameters you can configure for HTTP ports.

mft.http.default.port

Specifies the default HTTP port for ActiveTransfer Server to use for collecting data for the Logs page. The default is 2080.

mft.query.maxrows

Specifies the maximum number of asset records to be fetched from the database and displayed in the My webMethods Server management and monitoring pages. The maximum value possible for this parameter is 1000.

mft.never.ban.list

Specifies a list of IP addresses that should be excluded from the hammering settings that you configure in ActiveTransfer Server. The IP addresses listed using this property are not banned by the ActiveTransfer Server or the ActiveTransfer Gateway. If you have an ActiveTransfer Server and an ActiveTransfer Gateway instance, apply the restriction to the ActiveTransfer Gateway. Apply the restriction to the server only in the absence of an ActiveTransfer Gateway instance.

Note: If you have a load balancer, include the load balancer IP in this list.

Restart the ActiveTransfer Server and the ActiveTransfer Gateway instances associated with the server for this property to take effect.

mft.partners.useTNPartners

Specifies if ActiveTransfer must synchronize with and use the partners configured in Trading Networks. You can either use ActiveTransfer partners or Trading Networks partners, not both.

The default value is `false`. Set this parameter to `false` if you want to use partners configured in ActiveTransfer.

Set this parameter to `true` to use partners configured in Trading Networks. On changing the parameter value to `true`, the ActiveTransfer partners become invalid.

Note: This parameter is applicable only if you have webMethods Product Suite version 9.12 and later.

mft.session.replication.

This section describes the parameters you can configure for the ActiveTransfer Servers to enable session replication in a group of ActiveTransfer Servers.

mft.session.replication.enable

Enables session replication for this ActiveTransfer Server node. The default value is `false`. If you want to enable session replication in an ActiveTransfer Server node, change the value of this property to `true`.

mft.session.replication.address

Specifies the IP address or hostname, and port details of this ActiveTransfer Server node. The parameters are as follows:

`IP_address_node_1:port_node_1`

`IP_address_node_1` The IP address or host name of this ActiveTransfer Server node.

`port_node_1` The port number on which the session replicator is running for this node.

For example: `mft.session.replication.address=10.60.30.100:7800`

Note: The IP addresses cannot be loopback addresses (localhost or 127.0.0.1).

mft.session.replication.other.nodes

Specifies the IP address or hostname, and port details of the ActiveTransfer Server nodes that will form a group with this server node. The parameters are as follows:

`IP_address_node_2[port_node_2], IP_address_node_3[port_node_3]...`

`IP_address_node_n[port_node_n]`

`IP_address_node_n` The IP address of the nth node in the group.

`port_node_n` The port on which the session replicator is running on the nth node.

For example:

```
mft.session.replication.other.nodes
=10.60.27.214[7800],10.60.28.89[7800]
```

mft.sharing.account.tempdir

Specifies the shared file location. Use only forward slashes in the file path. For example, `D:/activetransfer/sharedcontent/`.

Software AG recommends that you replace the default shared file location with any local or shared directory.

mft.ssl.client.

This section describes the parameter you can configure for SSL authentication of a remote server.

mft.ssl.client.acceptAnyCert

Specifies if ActiveTransfer Server should validate the SSL certificates from a remote server against the certificates in its truststore and allow communication only from trusted remote servers, or accept all SSL certificates. The default is `true`. Set the value of the property to `false` if you want ActiveTransfer Server to accept SSL certificates only from servers that have a truststore entry.

mft.ssh.client.preferred.publickey

Specifies the preferred public key algorithm that ActiveTransfer Server should use to communicate with a SFTP server. The default is `ssh-dss`. Set the value of the property to `ssh-rsa` if you want ActiveTransfer Server to use the RSA key as the preferred public key algorithm. You must restart Integration Server for this change to take effect. This property is available only on the application of ActiveTransfer Server 9.7 Fix 4 and higher.

mft.user.email.

This section describes the parameters you can configure for the emails that are sent to ActiveTransfer users. For more information about email configuration, see ["Configuring ActiveTransfer to Send Emails" on page 42](#).

mft.user.email.from

Specifies the email address of the ActiveTransfer administrator who will send messages to ActiveTransfer users when adding or editing the user's profile. If this parameter is not set, the message is sent without any "from email" address. The value you specify here is overridden by any value you set in the **File Share** settings.

mft.user.email.public.ip

Specifies the ActiveTransfer Server host name to use for the external server URL that is emailed to users for logging in to the server. If this parameter is not set, the internal IP address is used in the email. This parameter also applies to the email notifications sent for shared files. The shared file link contains either the ActiveTransfer Server or ActiveTransfer Gateway if the source location of the shared file is the ActiveTransfer Server VFS or ActiveTransfer Gateway.

For example, suppose the host for ActiveTransfer Server port 8080 is defined on the Server Management page as `localhost` or `127.9.1.10`. If this parameter is not set, the server URL that is emailed to users will contain the internal IP address of the server (in this example, `http://localhost:8080` or `http://128.1.10:8080`, respectively). If you set this parameter to the external host or domain name that your organization uses to represent the server's internal IP address, the server URL will reflect the external host name (for example, `http://xyz.com:8080`).

mft.user.email.subject

Specifies the subject line of the email message that is sent to the user. If this parameter is not set, messages are sent without any subject.

Security Configuration Parameters

This section contains a description of the parameters you can specify in the ActiveTransfer Server security configuration file (`security.cnf`), which is located in the *Integration Server_directory*\instances*instance_name*\packages\WmMFT\config directory. To update this file, you should first shut down ActiveTransfer Server and ActiveTransfer Gateway and then edit the file on ActiveTransfer Server and ActiveTransfer Gateway using a text editor. After you make the changes, restart Integration Server, ActiveTransfer Server, and ActiveTransfer Gateway.

mft.ssl.

This section describes the SSL security parameters you can configure. For more information about configuring these parameters, see ["Replacing the Default SSL Certificate" on page 34](#).

mft.ssl.privatekey.password

Specifies the private key password for the default SSL certificate.

mft.ssl.keystore.password

Specifies the keystore password for the default SSL certificate.

mft.ssl.certificate.file.name

Specifies the file name of the default SSL certificate.

mft.web.security.

This section describes the web security parameter that you can configure to make the ActiveTransfer web client more secure.

mft.web.security.httpOnly

Sets the cookies used for ActiveTransfer web client on your browser to HTTP-only cookies. Setting this parameter to `true` ensures that the cookies are not accessible through scripts. The default is `false`.

Note: This property is available with ActiveTransfer 9.7 Fix 3 or later.

Server Variables

By using variables, you can pass values to post-processing and scheduled actions dynamically at run time. For example, when you configure a copy action for a post-processing event, you can specify the destination URL as `{parent_path}` and the "rename file to" parameter as `{name}_processed`. When the event is triggered,

ActiveTransfer Server copies the file to the parent directory and appends “_processed” to the end of the file name.

Note: If you are using the ActiveTransfer Web Client and you want to use these variables, enclose them within percent sign characters (%) instead of curly braces. For example, {user_name} would be represented in the Web Client as %userName%.

ActiveTransfer supports general variables that handle special characters and error messages, variables that pertain to file references, variables that pertain to date and time formats, and user variables that pertain to the content of emails that are sent to ActiveTransfer users.

Note: The variables are case sensitive.

General Variables

Variable	Description
{r}	Return character.
{n}	New line character.
{task_error}	Returns the last error that occurred in an event.
{task_errors}	Returns the list of all the errors in an event.
{error_trace}	Used to get the stack trace in case of any exception.
{event_execution_id}	Returns the event execution ID which is unique for each event.
{task_error_types}	Returns the type of actions where the error occurred.

File Reference Variables

Note: In event actions such as Write File to Database and Send Email which process multiple files, use the variables as per the following example: <LINE>{stem}</LINE>. This syntax ensures that all the files in the list are processed by these actions instead of just the first file.

Variable	Description
{command}	Command forwarded to remote FTP servers to list files.
{end}	End time for the file transfer.
{error}	Error messages related to the file transfer.
{ext}	Last part of the file name, including the period.
{file_metadata}	<p>Applicable only to FTP remote servers. Raw response from the remote server for each file while performing MLST, MLSD, LIST, or NLST commands.</p> <p>Example:</p> <pre>Type=file;Modify=20151006091701; Perm=r,w,a,d,f;Size=584; UNIX.owner=user;UNIX.group=group; properties_4.cnf</pre>
{group}	Applicable only to FTP remote servers. Retrieves information from the UNIX ownership class <code>group</code> , <i>os-depend-fact</i> in MLST RFC 3659.
{md5}	MD5 hash of the uploaded file.
{modified}	Applicable only to FTP remote servers. Date when the file was last modified in UNIX epoch time (milliseconds).
{name}	Name of the file.
{owner}	Applicable only to FTP remote servers. Retrieves information from the UNIX ownership class <code>owner</code> , <i>os-depend-fact</i> in MLST RFC 3659.
{parent_path}	Path to the parent folder.
{path}	Path of the file:

Variable	Description
	<ul style="list-style-type: none"> ■ Local file system. Local directory path. ■ Remote file system. Relative path of the file in a file system with respect to the current folder.
<code>{permissions}</code>	Applicable only to FTP remote servers. Permission for the file on the remote server to which ActiveTransfer is connected. The format is <code>-rw-r--r--</code> . For MLST, this format is maintained only when <code>unix.mode</code> is available. If <code>unix.mode</code> is not available, the format is <code>r,w,a,d,f</code> , and is retrieved from <code>perm</code> .
<code>{real_parent_path}</code>	Local path of the parent folder for the file on the disk.
<code>{real_path}</code>	Complete path to the file in the local or remote file system.
<code>{resume_loc}</code>	Location in the file where the transfer should resume if interrupted.
<code>{size}</code>	Size of the file.
<code>{speed}</code>	Speed of the file transfer.
<code>{start}</code>	Start time for the file transfer.
<code>{stem}</code>	First part of the file name, before the period.
<code>{the_file_error}</code>	Any error during file transfer.
<code>{the_file_name}</code>	Name of the file.
<code>{the_file_size_formatted}</code>	Size of the file.
<code>{the_file_speed}</code>	Speed of the file transfer (upload/download) for post-processing events.
<code>{the_file_path}</code>	Path of the file.

Variable	Description
{url}	Actual URL that points to the file.
{user_dir}	Folder that the user sees when uploading the file.
{user_session_download_count}	Total download count per user session for post-processing events.
{user_session_upload_count}	Total upload count per user session for post-processing events.
{user_time}	User upload/download time for post-processing events.

Date/Time Variables

You can precede any of the date/time variables with the following symbols:

- Preceding a variable with a dot (.) results in replacing the variable with the current value. For example, {.dd} results in the current day, and {.hh} results in the current hour.
- Preceding a variable with an underscore (_) results in replacing the variable with the file's ending transfer time. For example, if a file was downloaded on Monday, and if the event triggered a "file rename" action with a value of Report_{EEE} provided for the new file name, ActiveTransfer Server would rename the downloaded file to Report_Mon.

Variable	Description
{MM}	Month (for example, 06 to represent June).
{dd}	Day (for example, 05 to represent the fifth day of the month).
{yy} or {yyyy}	Year, represented in two digits (for example, 13 to represent 2013) or four digits (for example, 2013).
{HH}	Hours, using the 24-hour time format (for example, 14 to represent the hour of 2 o'clock PM).

Variable	Description
{hh}	Hours, using the 12-hour clock format (for example, 02 to represent the hour of 2 o'clock PM).
{mm}	Minutes.
{aa}	AM or PM.
{ss}	Seconds.
{S}	Milliseconds.
{EEE}	Weekday abbreviation (for example, Mon to represent Monday).

User Variables

User variables enable you to set values in the emails that ActiveTransfer Server sends to users when changes are made to a user's profile. You can also use these variables when setting a virtual folder path.

Variable	Description
{firstName}	First name of the user.
{lastName}	Last name of the user.
{user_name}	User ID of the user.
{serverList}	One or more URLs of the ActiveTransfer Server to which the user has access.

B Calendar and Processing Options for Scheduled Events

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Scheduled Event Options

This section describes the calendar and processing options that are available when you specify conditions for a scheduled event.

Note: Date and time formats are defined in My webMethods. For information about changing the default date and time format, see *Working with My webMethods*.

Date Range

The Date Range settings enable you to specify the start and end date and time for executing actions for scheduled events. These settings apply to all scheduled events except those specified to execute once or manually in "Specifying Conditions for a Scheduled Event" on page 133.

Option	Description
Date Range	Populates the start and end date and time fields according to the value selected in this list. For example, selecting This Week populates Start Date with Sunday's date, Start Time with 12:00:00 AM, End Date with Saturday's date, and End Time with 11:59:59 PM. Selecting Custom enables you to select a custom date range.
Start Date and End Date	Specifies the start date and end date. You can either type a date manually according to the default date format specified in My webMethods or click the calendar icon to select a date.
Start Time and End Time	Specifies the start time and end time. You can either type the time increments manually according to the default time format specified in My webMethods or click the arrow buttons to increase or decrease an individual time unit.
No end date	Indicates that you want the action to execute indefinitely.

Process Actions Every *Time Period*

The Process Actions Every *Time Period* settings enable you to specify exactly when, within the specified date range, ActiveTransfer Server should execute actions for a scheduled event. These settings apply to all scheduled events except those specified to execute once, at a fixed interval, or manually in "Specifying Conditions for a Scheduled Event" on page 133.

Option	Description
Hours and Minutes	Specifies the hour and minute portions of the time to execute an action (for example, 1:00 and 1:30, or 1:15 and 3:15).
On these days	Specifies the days of the week to execute a weekly action.
Days of Month or Weekdays	Specifies whether to specify days by calendar date (for example, 4 for the fourth day of the month) or by days of the week (for example, "second Tuesday of the month") to execute a monthly or yearly action.
During these months	Specifies the months to execute a yearly action.
Do not overlap task	Indicates that ActiveTransfer Server should complete a running action before starting the next one. Note: Selecting this check box might cause actions to start at other than specified times.

Fixed Interval

The Fixed Interval settings enable you to specify the time interval that ActiveTransfer Server should wait (for example, 10 seconds) before executing the next action for a scheduled event. These settings apply to scheduled events that are specified to execute at fixed intervals in "Specifying Conditions for a Scheduled Event" on page 133.

Option	Description
Interval	Specifies the number of seconds, minutes, hours, weeks, or days that ActiveTransfer Server should wait before executing the next action in a scheduled event.
Do not overlap task	Indicates that ActiveTransfer Server should complete a running action before starting the next one. Note: Selecting this check box might cause actions to start at other than specified times.

C Working with Jump Conditions

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Overview

This section describes how to use server variables to define a jump condition in a Jump action.

Jump Condition Elements

The jump condition has three parts: server variables, the qualifier, and the value of the server variables.

Server Variables

The following server variables can be used in the jump condition:

Category	Server Variable	Description
File parameters	{name}	Name of the file.
	{stem}	First part of the filename before the period.
	{ext}	Last part of the filename including the period.
	{size}	Size of the file.
	{items_count}	Count of files.
Filepath parameters	{url}	Actual URL that points to the file.
	{parent_url}	Actual URL that points to the parent folder in which the file resides.
	{path}	Path to the file.
	{parent_path}	Path to the parent folder in which the file resides.

Category	Server Variable	Description
	{user_dir}	Directory the user sees when uploading a file.
	{real_path}	Local path for the file on the disk.
	{real_parent_path}	Local path of the parent folder for the file on the disk.
Transfer parameters	{speed}	Speed of the file transfer.
	{error}	Error messages related to the file transfer.
	{resume_loc}	Resume location in file.
	{md5}	MD5 hash of the uploaded file.
Transfer time window parameters	{start}	Start time for the file transfer.
	{end}	End time for the file transfer.
	{MM}	Month (for example, 06 to represent June).
	{dd}	Day (for example, 05 to represent the fifth day of the month).
	{yy} or {yyyy}	Year, represented in two digits (for example, 13 to represent 2013) or four digits (for example, 2013).
	{HH}	Hours, using the 24-hour time format (for example, 14 to represent the hour of 2 o'clock PM).
	{hh}	Hours, using the 12-hour clock format (for example, 02 to represent the hour of 2 o'clock PM).

Category	Server Variable	Description
	{mm}	Minutes.
	{aa}	AM or PM.
	{ss}	Seconds.
	{S}	Milliseconds.
	{EEE}	Weekday abbreviation (for example, Mon to represent Monday).

Note: If you specify multiple server variables, separate each with a space.

Jump Condition Qualifier

After you select the Jump action in My webMethods: **Administration > Integration > Managed File Transfer > Event Management**, and have specified the server variables for the Jump condition, you can select a qualifier from the drop-down list in the **Jump Condition** section. The following qualifiers can be used in the jump condition:

Qualifier	Description
Contains	Includes items that contain a specified value.
Does Not Contain	Excludes items that contain a specified value.
Equals	Includes items that equal a specified value.
Does Not Equal	Excludes items that equal a specified value.
Matches Pattern	Uses pattern matching to include items that match a specified pattern.
Does Not Match Pattern	Uses pattern matching to exclude items that match a specified pattern.

Values for the Server Variables

You can specify the values that the Jump condition should check for, in the last part of the jump condition.

Note: If you specify multiple server variables values, separate each with a space.

Defining a Jump Condition

To define a jump condition

1. In the **Action** section of the **Event Management** page, select **Jump Action**.
2. Specify the **Action Name** and **Source Filter**.
For information on the use of wildcards in ActiveTransfer Server, see ["Use of Special Characters in Search" on page 26](#).
3. Specify the **Jump Condition** as follows:
 - a. Enter or select server variables. For a list of server variables, see ["Server Variables" on page 236](#).
 - b. Select a qualifier for the drop-down box. For example, **Contains** to include items that contain a specific value.
 - c. Specify values for the server variables. The jump condition uses these values to search for items.
4. Configure other settings for the event and save the event.

Examples

Some examples for jump conditions are listed below:

Example	Description
<code>{EEE} {stem} Contains FRI invoice</code>	ActiveTransfer Server triggers the Jump action if at the time of checking the Jump condition, the weekday is <code>Friday</code> and the file name contains <code>invoice</code> .
<code>{dd} {MM} {yyyy} Equals 12 01 2014</code>	ActiveTransfer Server triggers the Jump action if at the time of checking the Jump condition, the date of the action is <code>12.01.2014</code> .

Example	Description
{url} Matches Pattern ^SFTP	ActiveTransfer Server triggers a Jump action if the file URL starts with SFTP.
{name} Matches Pattern invoice\$	ActiveTransfer Server triggers a Jump action if the string <code>invoice</code> occurs at the end of the file name.

D ActiveTransfer Access Points

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Overview

This appendix summarizes the ports and host names or IP addresses that ActiveTransfer uses, the products to which ActiveTransfer Server and ActiveTransfer Gateway connect, the file paths used for virtual folders and file operations, and where to go for details about configuring these items.

Ports that ActiveTransfer Uses

This section describes the ports that ActiveTransfer uses and where to go for details about configuring those ports.

Port	Where to Go for More Information
HTTP port that ActiveTransfer Server uses to collect data for the Logs page (default is 2080)	"Server Configuration Parameters" on page 218 (mft.http.default.port parameter)
Port for the Integration Server that hosts the ActiveTransfer Server instance (default is 5555)	"Adding an ActiveTransfer Server Instance to My webMethods" on page 32
Registration port for ActiveTransfer Gateway (default is 8500)	<i>Managing File Transfers with webMethods ActiveTransfer Gateway</i> (mft.gatewayServer.port parameter)
FTP and HTTP ports used for file acceleration tunnels	"Configuring Tunnels for Acceleration" on page 45
Ports for destination server for accelerating data transfer (defaults are 55580 and 55555)	"Accelerating Data Transfer" on page 82
Software AG MashZone load balancing port (default is 80)	<i>Installing Software AG Products</i>
Software AG MashZone SSL port, for communication between the MashZone client and the MashZone server (default is 443)	<i>Installing Software AG Products</i>

Port	Where to Go for More Information
Ports used to transfer files and execute commands on ActiveTransfer Server	"Managing ActiveTransfer Ports" on page 66
Port used for passive FTP port connections	"Setting Passive FTP Mode for ActiveTransfer Server " on page 69
HTTP(S) port that ActiveTransfer Server uses to connect to Command Central to synchronize ActiveTransfer Agent installations	<i>Managing File Transfers with webMethods ActiveTransfer Agent</i> (mft.server.commandCentral.port)

IP Addresses and Host Names that ActiveTransfer Uses

This section describes the IP addresses and host names that ActiveTransfer uses and where to go for details about configuring them. For information, see *Managing File Transfers with webMethods ActiveTransfer Gateway*.

IP Address or Host Name	Where to Go for More Information
Host for the ActiveTransfer Server instance being connected to My webMethods Server	"Adding an ActiveTransfer Server Instance to My webMethods" on page 32
Host in the URL that is emailed to users for logging in to the server	"Server Configuration Parameters" on page 218 (mft.user.email.public.ip parameter)
Host used for file acceleration through FTP and HTTP ports	"Configuring Tunnels for Acceleration" on page 45 and "Accelerating Data Transfer" on page 82
Default IP address for destination server for accelerating data transfer (127.0.0.1)	"Configuring Tunnels for Acceleration" on page 45 and "Accelerating Data Transfer" on page 82
	Important: not change this value.
Host name of the Software AG MashZone server	"Setting Up the MashZone NextGen Environment" on page 49

IP Address or Host Name	Where to Go for More Information
Host used to connect ActiveTransfer Gateway to ActiveTransfer Server	<i>Managing File Transfers with webMethods ActiveTransfer Gateway</i>
Hosts used to transfer files and execute commands on ActiveTransfer Server	"Managing ActiveTransfer Ports" on page 66
Host name of the ActiveTransfer Server to connect to using passive FTP mode	"Setting Passive FTP Mode for ActiveTransfer Server " on page 69
IP addresses of the ActiveTransfer Servers from which ActiveTransfer Gateway should accept connections	<i>Managing File Transfers with webMethods ActiveTransfer Gateway</i> (mft.gatewayServer.accept.ip.list parameter)

Products to Which ActiveTransfer Connects

This section describes the products that ActiveTransfer connects to and where to go for details about configuring connections to those products.

Product	Where to Go for More Information
My webMethods Server	"Adding an ActiveTransfer Server Instance to My webMethods" on page 32
Integration Server (for Single Sign On and central user management, by way of My webMethods Server)	<i>webMethods Integration Server Administrator's Guide</i>
SMTP server (for sending emails, by way of Integration Server)	"Configuring ActiveTransfer to Send Emails" on page 42
Software AG MashZone	"Setting Up the MashZone NextGen Environment" on page 49
ActiveTransfer Server (when connecting from ActiveTransfer Gateway)	<i>Managing File Transfers with webMethods ActiveTransfer Gateway</i> (gatewayServer.accept.ip.list parameter)

Product	Where to Go for More Information
ActiveTransfer Gateway (when connecting from ActiveTransfer Server)	<i>Managing File Transfers with webMethods ActiveTransfer Gateway</i>

File Paths

This section describes the physical file paths that ActiveTransfer uses for virtual folders and file operations, and where to go for details about specifying those file paths.

File Path	Where to Go for More Information
Path associated with a virtual folder's physical local or remote location	"Associating a Virtual Folder with a Physical Folder Location" on page 118
Path that represents the destination for copy or move file operations for configured events	"Copying or Moving Files" on page 141
Path that represents the destination for unzip file operations for configured events	"Unzipping Files" on page 151
Path that represents the location of files for find operations for configured events	"Finding Files" on page 138
Path that represents the destination for file write operations for configured events	"Writing Content to a File" on page 154
Path that represents the location of files for zip file operations for configured events	"Zipping Files" on page 156