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IBM WebSphere® Partner Gateway V6.1.1

Integrated FTP server



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This presentation covers the new integrated FTP Server feature added in WebSphere Partner Gateway V6.1.1 release.

This new feature enhances capability of WebSphere Partner Gateway by having an in-built FTP Server, unlike the external FTP server dependencies in earlier WebSphere Partner Gateway releases.

Goals

- Understand the integrated FTP server bundled with WebSphere Partner Gateway V6.1.1 release
- You will learn about:
 - ▶ FTP Server Installation and deployment scenario options
 - ▶ Important configuration parameters
 - ▶ FTP Server user administration through WebSphere Partner Gateway console
 - ▶ Usage for FTP and FTPS modes of operation
 - ▶ Reports on FTP Server usage
 - ▶ Troubleshooting



The goal of this presentation is to understand the integrated FTP server that is bundled with WebSphere Partner Gateway V6.1.1 release.

You will learn about various FTP Server installation options and deployment scenarios that will help in planning the required topology before you get started with the actual installation of product.

You will learn about the important configuration parameters and FTP user administration in the WebSphere Partner Gateway console.

Subsequently, you will understand the FTP and FTPS modes of operation. Finally, you will learn how FTP Server reports can help administrators monitor FTP activity, and understand logging, tracing information that helps in troubleshooting any runtime issues.

Agenda

- Overview of the integrated FTP server feature
- Use cases
 - ▶ Installation of integrated FTP server
 - ▶ Logging of events, tracing and exception information
 - ▶ FTP server configuration management and statistics
 - ▶ Certificate management for FTP server
 - ▶ Un-installation of integrated FTP server
- Deployment scenarios
 - ▶ Deployment options for integrated FTP server
- Problem determination
- Summary



To have a clear understanding of the bundled FTP server, it is better to know about the requirement of integrating an FTP server with the WebSphere Partner Gateway product. A walk through of key features offered by the FTP server will also help you to know in-depth about this feature.

The use cases presented in this presentation will highlight the installation of FTP server, information regarding FTP events, tracing, and exception handling. You will touch base with the FTP server configuration, statistics, and understand the certificate management, along with un-installation of integrated FTP Server.

You will then learn about the deployment options available during installation of the FTP Server, and will look at the key information that helps in problem determination.

Overview

- Previous WebSphere partner gateway releases were dependent on external FTP server
 - ▶ FTP server user accounts were managed externally
 - ▶ No integrated console administration for starting or stopping FTP server
- Administration tasks for community manager and community participant



This page provides an overview on the integrated FTP Server feature.

In previous WebSphere Partner Gateway releases (V6.1 and earlier), an external FTP server was required for supporting AS3 protocol, FTP Scripting Gateway, FTP Scripting Receiver, FTP / FTPS receiver and gateway. While there are a few good FTP servers available that WebSphere Partner Gateway customers currently make use of, there is no specific FTP server that is recommended only for WebSphere Partner Gateway.

WebSphere Partner Gateway customers now have an option of using the recommended FTP Server for use with other WebSphere Partner Gateway components like FTP, FTP Scripting Gateway and Receiver. There are various benefits of having an integrated FTP Server.

The FTP Server is completely managed from WebSphere Partner Gateway console. The management tasks include FTP user management, security management, starting and stopping of FTP server. The events generated from the FTP server for the actions such as file upload, download, and user logins are integrated with WebSphere Partner Gateway. These can be viewed from WebSphere Partner Gateway console, which helps the administrators to monitor WebSphere Partner Gateway runtime environment. The logging and tracing information is well formatted, similar to that of the other WebSphere Partner Gateway logs, and will aid in analysis and troubleshooting of runtime problems, if any.

Apart from the above mentioned benefits, there are some administration tasks that can be run by both Community Manager and Community Participant. These tasks include creating and managing FTP server user accounts, and defining FTP operation related parameters for each of the users. The FTP operations for users include specifying user home directory location, limiting data upload and download rates, and specifying write access and create directory access. Also, a community manager can also view FTP reports and monitor FTP server usage statistics. The community manager can also manage FTP Server Certificate to be used during server authentication, whereas the community participant can manage certificates to be used for client authentication.

Overview (continued)

- Features available with the integrated FTP server
 - ▶ User virtual directory, write permission, idle time-out, and upload/download bandwidth limitation support
 - ▶ Hub administrator can monitor all the user activities
 - ▶ IP address restriction support to allow/ban IPs



In addition to the significant advantages, there are various features that are available with integrated FTP Server.

The first one being, the integrated FTP Server allows administering the user virtual directory from where the FTP 'put' and FTP 'get' operations occur. Also, administering the write permission, idle time-out, and upload/download bandwidth limitation for every FTP user account is supported.

Another feature allows hub administrator to monitor all the user activities, such as number of current connections open, total number of connections, and total number of bytes uploaded/downloaded.

Also, the FTP Server has a feature to restrict client requests coming from specific IP addresses. Administrator can allow/ban IP addresses through WebSphere Partner Gateway console, so as to have a tighter control on who can communicate with the FTP Server.

The FTP Server also has support for implicit/explicit SSL. You can resume both file upload and download operations.

FTP server installation, troubleshooting, and events

- Installation of integrated FTP server
 - ▶ Simple mode installation
 - ▶ Simple distributed and fully distributed mode installation
- Logging of events generated during document processed by FTP server
 - ▶ Levels of logging
- Integrated tracing and exception information
 - ▶ Log file location and log file format.
 - ▶ The log file format is like:
 - ▶ [mm/dd/yy hh:mm:ss] source=<source class name> thread = <thread_name> message text



This section details the Installation, Event logging, and Trouble shooting use cases of the integrated FTP Server.

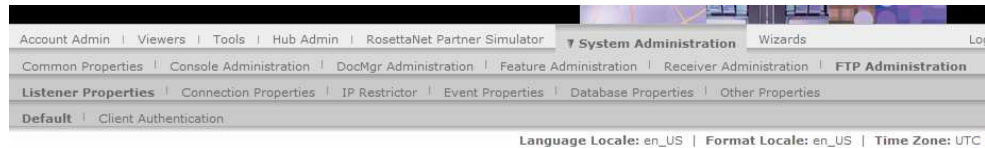
In case of WebSphere Partner Gateway simple mode installation, the FTP server is installed as one of the WebSphere Partner Gateway components, by default. In case of the distributed mode installation, FTP server can be optionally installed. There can be only one FTP server instance running under a single WebSphere Partner Gateway installation topology.

The FTP Server installation location is relative to the hub installation location. Typically on a Linux platform, this is installed at the location “/opt/IBM/bcghub-distrib/ftpserver”. The default ports with which FTP Server is installed are 3021 for FTP mode and 3022 for FTPS mode.

As stated earlier, the events generated by FTP server for actions such as file upload, file download, user login attempts are integrated with WebSphere Partner Gateway. There are new events added to capture these operational notifications from FTP Server. These events are viewable in the WebSphere Partner Gateway event viewer screens. The FTP server specific events codes are in the range of BCG 610001 to BCG 610007. The level of events is configurable through WebSphere Partner Gateway console. By default, only the error and critical FTP events are logged.

For trouble shooting the FTP Server operation, the tracing and exception information is captured in the log file. This log file is located under the directory <FTP Server install location>/conf/log. The log file can be defined as a rolling file and the size for each log file can also be configured.

FTP server configuration properties



- Listener properties
 - Default, client authentication
- Connection properties
- IP restrictor properties
 - Pattern based, priority wise restriction



In this session, you will learn about a few important FTP server configuration properties.

The FTP server administration can be done by navigating to the System Administration → FTP Administration tab of WebSphere Partner Gateway console.

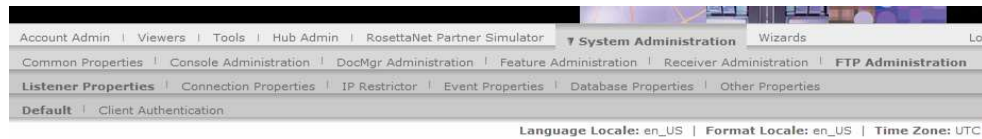
The administration properties are classified into Listener Properties, Connection Properties, IP Restrictor, Event Properties, Database Properties, and Other Properties.

Listener properties capture data regarding default port, default host address, data connection passive ports, and SSL protocol. The default listener is used for normal FTP and FTP over SSL operations. The client authentication listener is used when FTP with client authentication is used.

Configuration properties for maximum connections, maximum logins, and default connection manager idle time are available under the connection properties tab.

The administrator can configure IP patterns and permission is given to each pattern as either allowed or not allowed. The IP pattern can be of the form of 9.150.*.* so as to restrict all the client connection coming from 9.150 network. The sequence of given IP patterns is taken into consideration. The higher pattern takes precedence over the other lower order patterns.

FTP server configuration properties (continued)



- Event properties
 - Event logging threshold, logging level
- Database properties
- Other properties



The event properties tab captures the data required for handling the FTP Server notification events. The number of event processing threads, event store interval, event threshold level, serialize file interval and event logging level can be configured. The event logging level values are 0-Info, 1- debug, 2-error (default), and 3- critical events.

The database related information such as the database host name, port, database user and password are captured in the Database properties tab.

Finally, the Other properties tab captures FTP Server root directory under which the user home directories are located. This can point to any folder location on the system where FTP Server is installed or to any mount location.

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FTP server user management

Account Admin | Viewers | Tools | Hub Admin | RosettaNet Partner Simulator | System Administration | Wizards | Logo

Profiles | Connections | Alerts | Exclusion List | Error Flow | FTP User Management

Language Locale: en_US | Format Locale: en_US | Time Zone: UTC (GMT)

FTP User search | Welcome, Hub Admin

FTP user Name

- FTP User Details
 - ▶ Creating FTP Server users
 - ▶ User Name, Password
 - ▶ Virtual home directory
 - ▶ Maximum upload, download rate
 - ▶ Permissions to create directory, Read-only access

Account Admin | Viewers | Tools | Hub Admin | RosettaNet Partner Simulator | System Administration | Wizards

Profiles | Connections | Alerts | Exclusion List | Error Flow | FTP User Management

Partner | Destinations | B2B Capabilities | Certificates | Users | Groups | Contacts | Addresses

Language Locale: en_US | Format Locale: en_US

Profile > Hub Operator > User Detail > ftpadmin > FTP Configuration

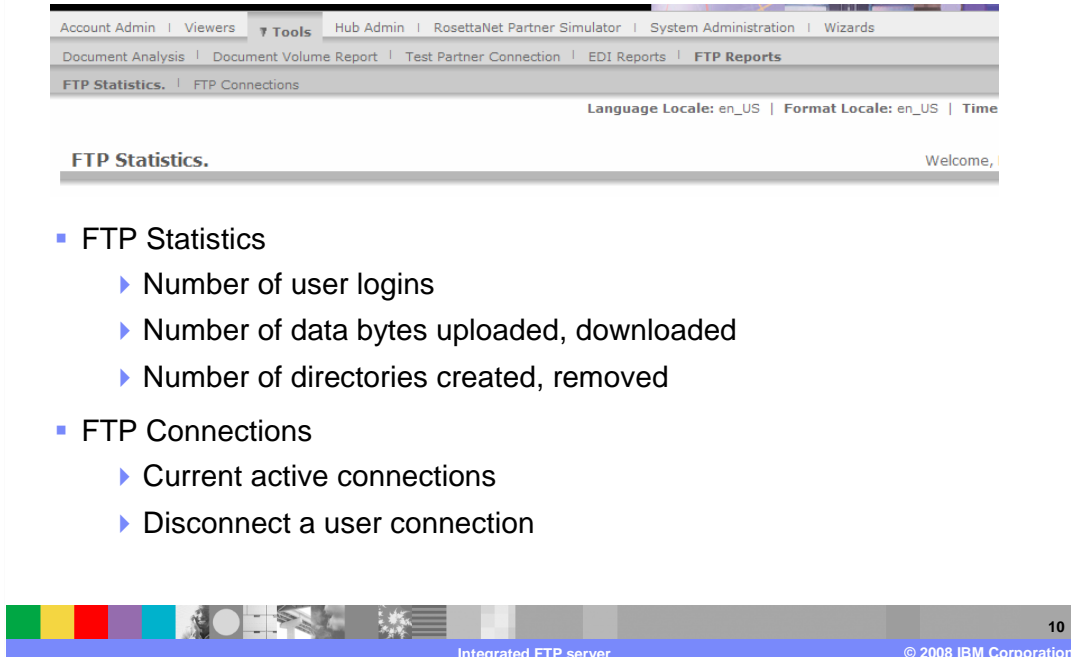
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Here are few FTP management related screens.

The FTP Server users can be created by navigating to the Account Admin → FTP User Management link. The existing users can be modified by searching and editing a particular user account. The FTP Server user configuration can also be changed by navigating to the Account Admin Users → FTP Administration link.

The FTP User has attributes such as user account enabled, home directory location, write permission, and ability to create directories. The attributes also include maximum number of logins, maximum number of logins from the same IP, maximum idle time, maximum upload, and download rate. These user attributes can be administered from the WebSphere Partner Gateway console.

FTP server reports



- FTP Statistics
 - ▶ Number of user logins
 - ▶ Number of data bytes uploaded, downloaded
 - ▶ Number of directories created, removed
- FTP Connections
 - ▶ Current active connections
 - ▶ Disconnect a user connection

This section covers the FTP reports available for the Hub Administrator.

The FTP Server statistics can be viewed to monitor FTP Server activity. These statistics can be viewed by navigating to Tools → FTP Reports → FTP Statistics. The data reported has information on server start time, number of directories created and removed, number of files uploaded, downloaded and deleted, and total number of bytes uploaded and downloaded.

Statistics are also maintained on logins and connections, and detail out the number of current, total, and failed login attempts, along with data on number of current and total connections.

The FTP Server connections can be viewed by navigating to the Tools → FTP Reports → FTP Connections tab. The current client connections are listed with information on client login name, login time, last access time and client IP address. The Hub administrator can disconnect any of the current connections based on the user activity. This is helpful for terminating suspicious long running client connections.

Certificates for FTP over SSL

- FTP client certificate management
- FTP server certificate management



Account Admin | Viewers | Tools | Hub Admin | RosettaNet Partner Simulator | System Administration | Wizards

Profiles | Connections | Alerts | Exclusion List | Error Flow | FTP User Management

Partner | Destinations | B2B Capabilities | **Certificates** | Users | Groups | Contacts | Addresses

Language Locale: en_US | Format Locale: en_US

Profile: Hub Operator > Certificate Detail

 Certificate Type: Digital Signature Encryption
 SSL Client SSL Server
 Root and Intermediate

FTP Server Authentication:

Certificate Name: FTP Server Cert

Description:

Status: Enabled

Un-installation of integrated FTP server

11

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This section presents the use cases on certificate management and un-installation of integrated FTP Server.

Integrated FTP Server can be used for FTP over SSL modes. To configure the FTP transfers over SSL, the required certificates are to be uploaded. The FTP over SSL mode is supported for both Server Authentication and Client Authentication.

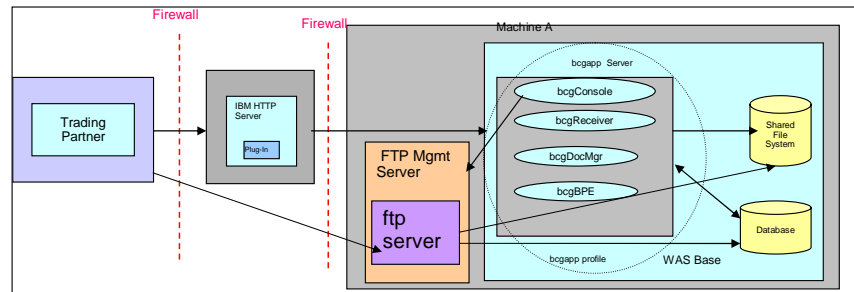
For Server Authentication, the required certificate must be uploaded at the Hub Operator level. This is similar to any other WebSphere Partner Gateway certificate upload, except that the check box next to FTP Server Authentication must be selected.

For Client Authentication, the required certificate must be uploaded at the respective user level.

The last use case is un-installation of integrated FTP Server. For WebSphere Partner Gateway simple mode installation, the integrated FTP Server is un-installed implicitly along with the WebSphere Partner Gateway product uninstall. In case of WebSphere Partner Gateway distributed mode installations, you have an option of not uninstalling the integrated FTP Server. However, un-installation of integrated FTP Server is mandated before un-installing the WebSphere Partner Gateway application database.

FTP server deployment behind DMZ

- Possible with both WebSphere Partner Gateway simple and distributed mode installations
- Common file system access not necessary when used only for FTP Scripting receiver



12

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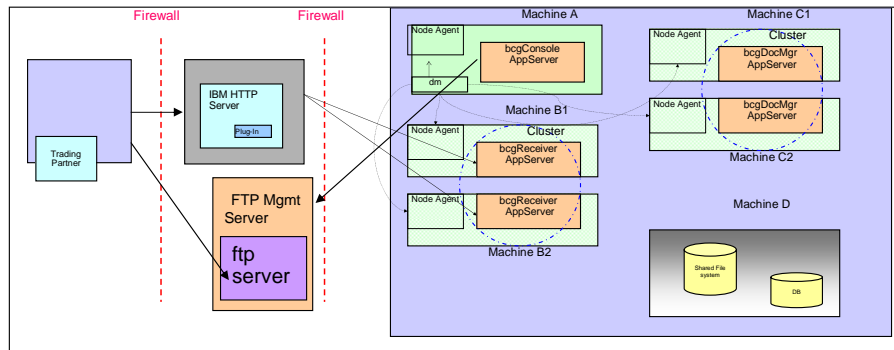
Now that you have seen the installation, configuration, and other use cases, you will learn about a couple of deployment scenarios. The FTP Server can be behind a DMZ zone or itself lie within a DMZ zone.

As you see in the diagram, the FTP Server is installed behind DMZ. In such configuration scenario, the FTP Server port (default 3021 for FTP mode and 3022 for FTPS mode) must be accessible from outside firewall. Also, the FTP Server must be able to access the common file system when used with the WebSphere Partner Gateway FTP receiver and sender.

The integrated FTP Server might not have access to the common file system when FTP Scripting receiver and FTP Scripting Sender is being used.

FTP server deployment in the DMZ

- FTP Server can use the file system available within DMZ
- Integrated FTP Server can also be configured to make use of WebSphere Partner Gateway common file system



13

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The other option of deploying the integrated FTP Server is to have it placed within the DMZ.

In such configuration scenario, the FTP Server port (default 3021 and 3022 for client authentication) must be accessible from outside the first firewall. Also, FTP Server management port (default 2048, can be changed during installation time) must be accessible from the system running WebSphere Partner Gateway console. With reference to the diagram, port 2048 must be accessible from the second firewall.

The integrated FTP Server must be able to access the common file system when used with WebSphere Partner Gateway FTP receiver and sender. The integrated FTP Server might not have access to the common file system when FTP Scripting receiver and FTP Scripting Sender is being used.

Problem determination – Log files

- The integrated FTP Server tracing and exception information is available in the <FTP Server Install Location>/conf/log
- The log file can be made a debug mode rolling file, so as to maintain the history files
- The logging is also based on Apache log4j, so the format of the information is pretty easy and standardized
- WebSphere Partner Gateway receiver / senders log is collected under WebSphere Application Server profile logging



The integrated FTP Server log has its separate log file generated under the FTP Server install location. This log file is by default set to have only the error messages, and can be changed to have debug level messages as well. Typically, the FTP protocol level debug traces, and any connection failures can easily be traced in the log files.

The WebSphere Partner Gateway logs are under the WebSphere Application Server profile logging location. For trouble shooting WebSphere Partner Gateway FTP receivers / senders or FTP Scripting receiver / sender, working along with the integrated FTP Server, the logs in both these locations are checked simultaneously.

With this, the session on integrated FTP Server feature comes to an end. The summary of this feature is presented in the next section.

Summary

- WebSphere Partner Gateway includes integrated FTP server
- Server authentication and client authentication modes for FTPS data transfer
- Configurable FTP control and data ports
- Easy FTP statistics reporting and ability to disconnect long running FTP client sessions
- Integrated log and event notifications



An overview of various features supported by the integrated FTP server was presented, important ones being that of integrated management of FTP server, FTP events, logging and tracing information.

Going through the presentation you understood the various installation and deployment modes, important properties and certificate configuration that are required by the integrated FTP Server. You also saw the information details reported in FTP Statistics and the ability to disconnect long running client connections. Finally you learned about the information helpful in troubleshooting any runtime problems.

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