



IBM Software Group

2006 B2B Customer Conference

B2B – Catch the Next Wave

C5: Utilizing FTP and FTP Scripting in WPG

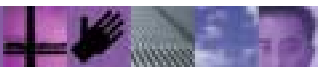
Matt Lishok

WebSphere. software



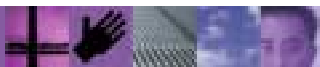
Objectives

- List some of the reasons for using FTP
- Provide an overview of FTP with WPG
- Describe FTP Gateways and Targets as they relate to configuration and security
- Describe FTP Scripting Gateways and Targets as they relate to configuration, security, and VAN connectivity.
- Compare and contrast implementation alternatives



Overview : Why use FTP?

- Extensive Use
 - Common, well known and heavily used standard
 - Many existing B2B solutions utilize FTP
 - Relatively basic and easy to use
- Partner Relationships
 - Requirements from new partners
 - Stopgap solution until another protocol can be brought online



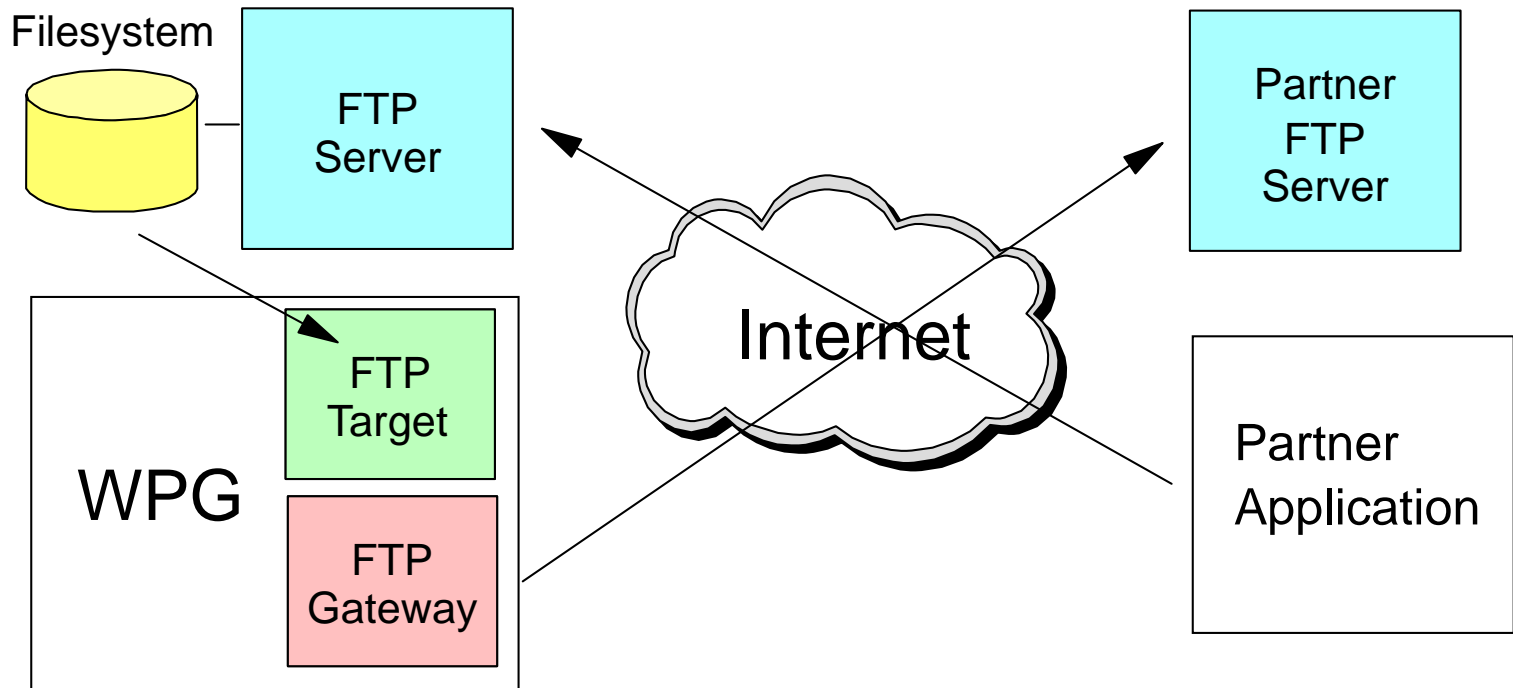
Overview: Brief History of FTP Support in WPG

- WBIC 4.2.1 supported FTP as method to send and receive documents
- WBIC 4.2.2 added FTP over SSL (FTPS) to secure these transfers
- WPG 6.0.0 added FTP scripting support for greater flexibility and VAN connectivity

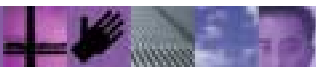
Note: WebSphere Business Integration Connect (WBIC) is the previous release of WebSphere Partner Gateway (WPG)



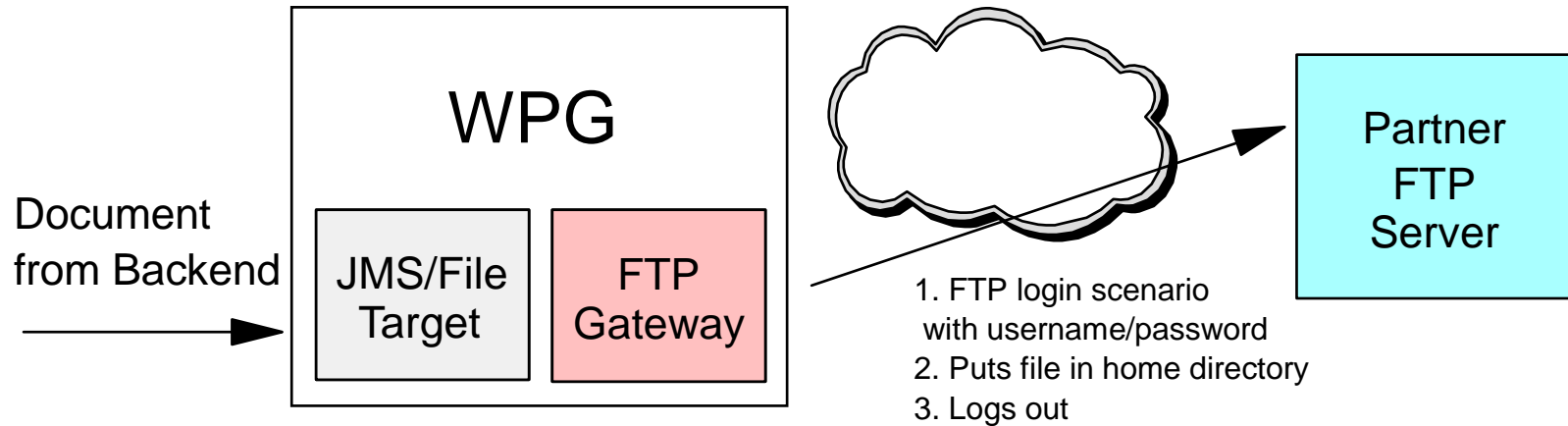
Overview: FTP and WPG



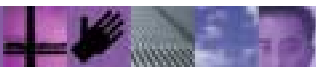
- Targets are the entrance points into WPG
- Gateways are the exit points from WPG
- Note : WPG does not have FTP Server functionality, it acts as a client in all negotiations



FTP Gateway Example



- FTP Gateway is a small FTP client that interacts with Partner's FTP Server
- Minimal Configuration
- Login, deliver file (put), Logout



FTP Gateway Example : Configuration Screen

Account Admin | Viewers | Tools | Hub Admin | Community Participant Simulator | System Administration

Profiles | Participant Connections | Alerts | Exclusion List

Community Participant | Gateways | B2B Capabilities | Certificates | Users | Groups | Contacts | Addresses

Language Locale: en_US

Profile > PartnerA > Gateway List

Gateway Name: PartnerAFTP Gateway *

Status: Enabled Disabled

Online/Offline: Online Offline

Description: Gateway for PartnerA to FTP destination.
Server=bcmaix5.rtp.raleigh.ibm.com

Gateway Configuration

Transport: FTP

Address: ftp://bcmaix5.rtp.raleigh.ibm.com *

User Name: mlshok1

Password: *****

Retry Count: 3

Retry Interval: 300 seconds

Number of Threads: 3

Validate Client IP: No Yes

Auto Queue: No Yes

Connection Timeout: 120 seconds

Use Unique File Name:

Handlers



FTP Gateway Example : Configuration Screen

Manage Connections

Source: MyCompany Search Reset Target: PartnerA

Attributes Package: None (NA) Protocol: Binary (1.0) Document Flow: Binary (1.0)

Connection Management Gateways

Gateway Type	Source Gateways	Target Gateways
Production	Local File System	PartnerA FTP Gateway
Test	Local File System	PartnerA FTP Gateway
CPS Participant	Select One	Select One
CPS Manager	Select One	Select One

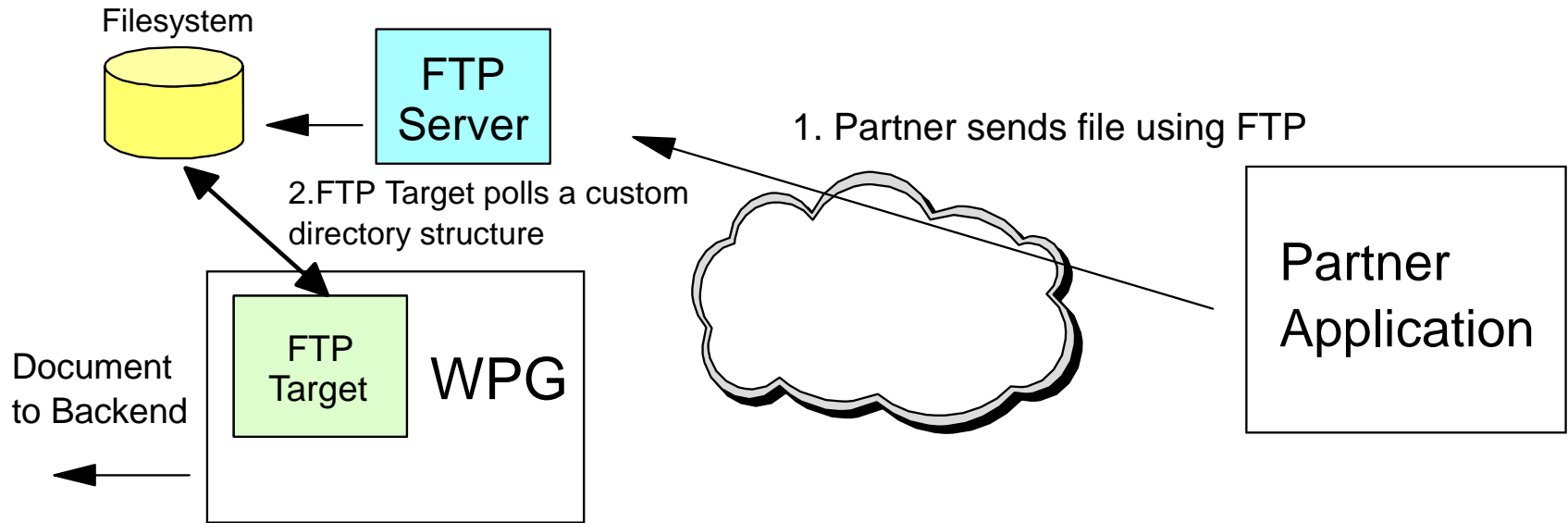
Save Close Window

Done Disabled

- Participant Connections Screen
- FTP Gateway becomes selectable Target Gateway
- “None” packaging on Target side



FTP Target Example



- FTP Server is external to WPG
- FTP Target polls a specific directory structure which determines the sender/receiver identifiers

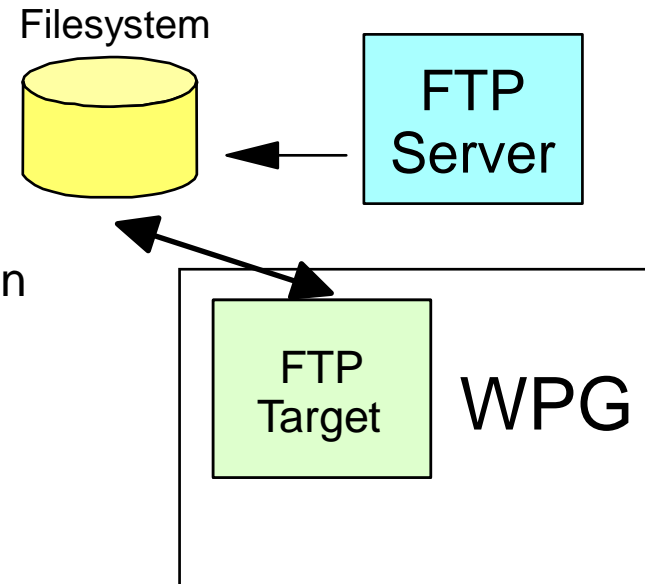


FTP Target Example : Custom Directory structure

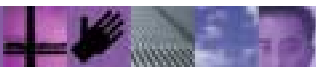
Polling Base Directory = /ftphome

Example :

/ftphome/PartnerA/binary/Production
/ftphome/PartnerA/binary/Test
/ftphome/PartnerA/documents/Production
/ftphome/PartnerA/documents/Test
/ftphome/PartnerZ/binary/Production
/ftphome/PartnerZ/binary/Test
/ftphome/PartnerZ/documents/Production
/ftphome/PartnerZ/documents/Test



- FTP Target gets configured for a single base polling directory
- The directory structure allows WPG to determine the sending participant from the directory it retrieves from
- For binary files the receiving identifier is contained in the filename
- “bcguser” user must have read/write access to the directories
- Many ways to configure this shared structure through FTP Server configuration or using partner software



FTP Target Example : Configuration Screen

Account Admin | Viewers | Tools | **Hub Admin** | Community Participant Simulator | System Administration

Hub Configuration | Console Configuration

Event Codes | **Targets** | Document Flow Definition | XML Formats | Actions | Fixed Workflow | Handlers | Maps | EDS

Language Locale: en_US

Target Details

Target Name: *

Status: Enabled Disabled

Description:

Transport: *

Target Configuration

FTP Root Directory: *

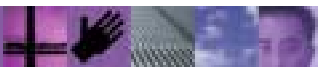
File Unchanged Interval: seconds

Thread Nbr:

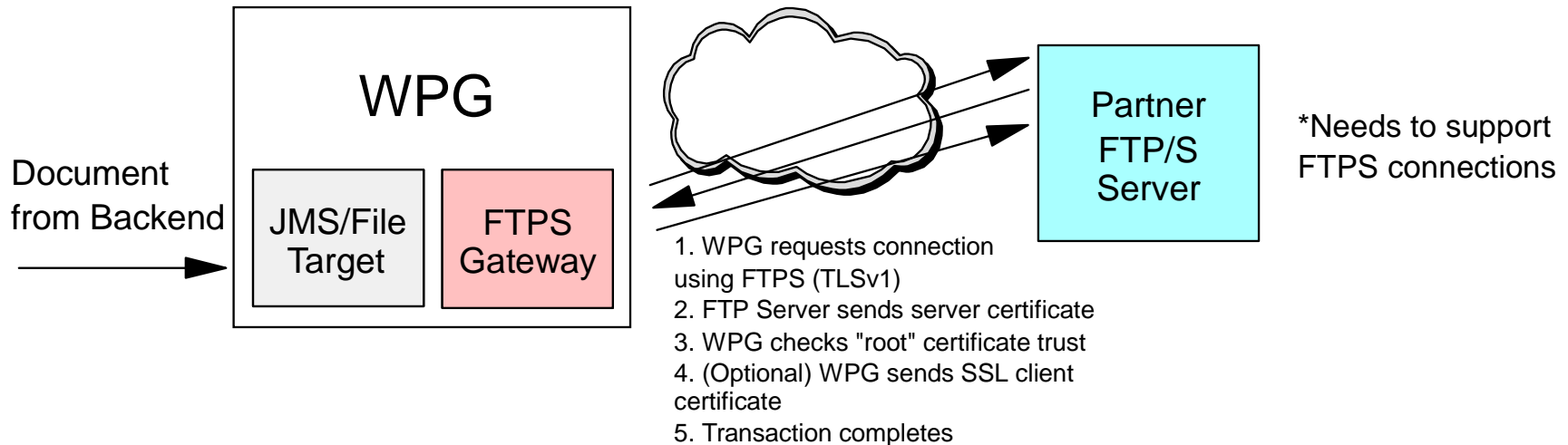
Exclude File Ext: (Omit '.' from file extension (enter '.bit' as 'bit'))

(Add)

(Remove)



FTPS Gateway Example : Security



- FTPS is an extension of FTP that allows the control and data channel to be secured using SSL/TLS security mechanisms
- SSL/TLS is a client/server security protocol that encrypts and decrypts data over a negotiated connection
- Server and Client Authentication supported
- WPG uses TLS version 1



FTPS Gateway Example : Security Configuration

Account Admin | Viewers | Tools | Hub Admin | Community Participant Simulator | System Administration

Profiles | Participant Connections | Alerts | Exclusion List

Community Participant | Gateways | B2B Capabilities | Certificates | Users | Groups | Contacts | Addresses

Language Locale: en_US

Profile > PartnerA > Gateway List

Gateway Name: PartnerAFTPS gateway *

Status: Enabled Disabled

Online/Offline: Online Offline

Description: Gateway for PartnerA to FTPS destination

Gateway Configuration

Transport: FTPS

Address: ftp://roadtruck.rtp.raleigh.ibm.com *

User Name: mishok1

Password: *****

Retry Count: 3

Retry Interval: 300 seconds

Number of Threads: 3

Validate Client IP: No Yes

Auto Queue: No Yes

Connection Timeout: 120 seconds

Use Unique File Name:

Handlers



FTPS Gateway Example : Configuration Screen

Account Admin | Viewers | Tools | Hub Admin | Community Participants Simulator | System Administration

Profile | Participant Connections | Alerts | Enduser List

Language Locale: en_US | Format Locale: en_US

Manage Connections

Source: MyCompany [v] Search Reset Target: PartnerA [v]

Package Details | B2B Capabilities | Deactivate - Help

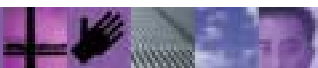
Gateways | Attributes

Package: None (M4)
Protocol: Binary (1.0)
Document Flow: Binary (1.0)

Gateway Type	Source Gateways	Target Gateways
Production	Local File System [v]	PartnerA FTPS gateway [v]
Test	Local File System [v]	PartnerA FTP Gateway [v]
CPS Participant	Select One [v]	Select One [v]
CPS Manager	Select One [v]	Select One [v]

Save Close Window

- “PartnerA FTPS gateway” is the new selection for Production
- “PartnerA FTP gateway” remains from previous example
- These are 2 distinct configurations




FTPS Certificate Considerations

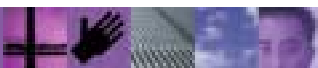
Profile › Hub Operator › Certificate List

Welcome, Hub Administrator

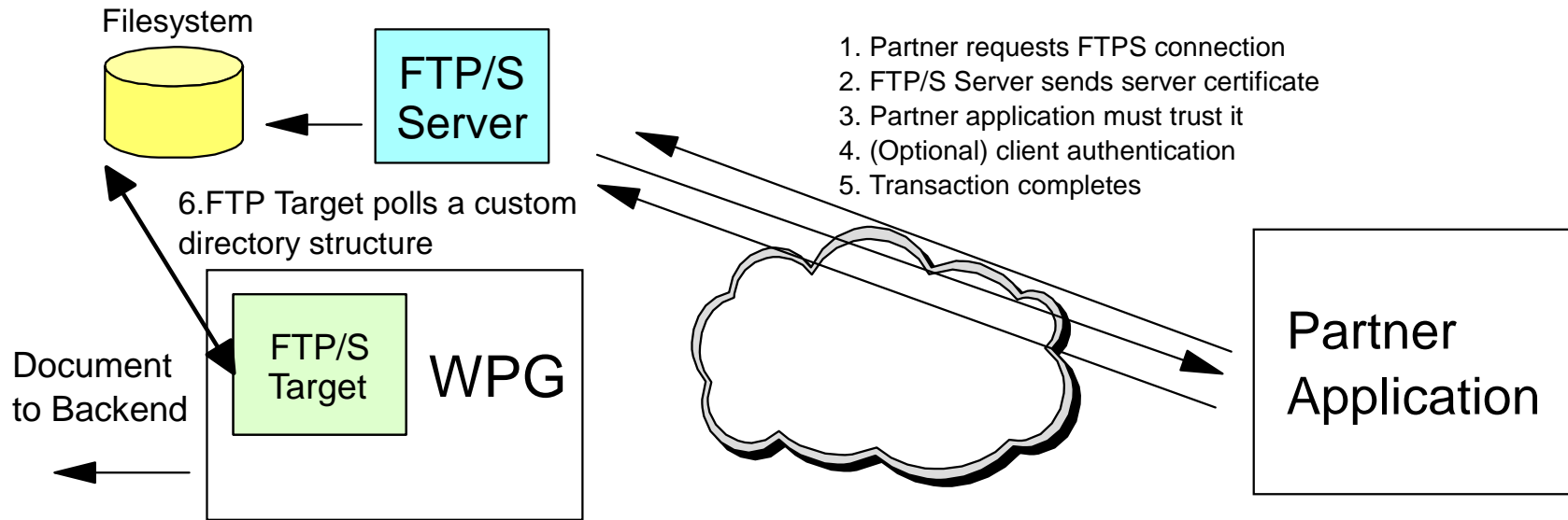
[Load Certificate](#) • [Load PKCS12](#) • [Help](#)

Description	SSL	DigS	Encr	Root/Int	Status	Gateway Type (SSL only)	Valid	Certificate Usage
 PartnerA FTP Server Root Certificate				✓	Enabled	Production	9/11/06 - 9/12/07	

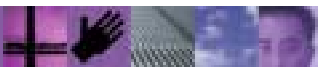
- Since WPG is always FTP client in the negotiations
 - Server Authentication will need a “Root/Int” certificate under Hub Operator profile to trust the FTPS Server certificate
 - Client Authentication you will need an “SSL” certificate configured to send to the Server upon request (which must be trusted by the Server)



FTP/S Target Example

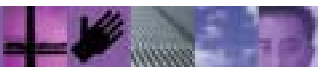


- No additional configuration needed
- WPG is not directly involved in the channel negotiation, the file is received after the local FTP Server has placed the file in shared directory structure

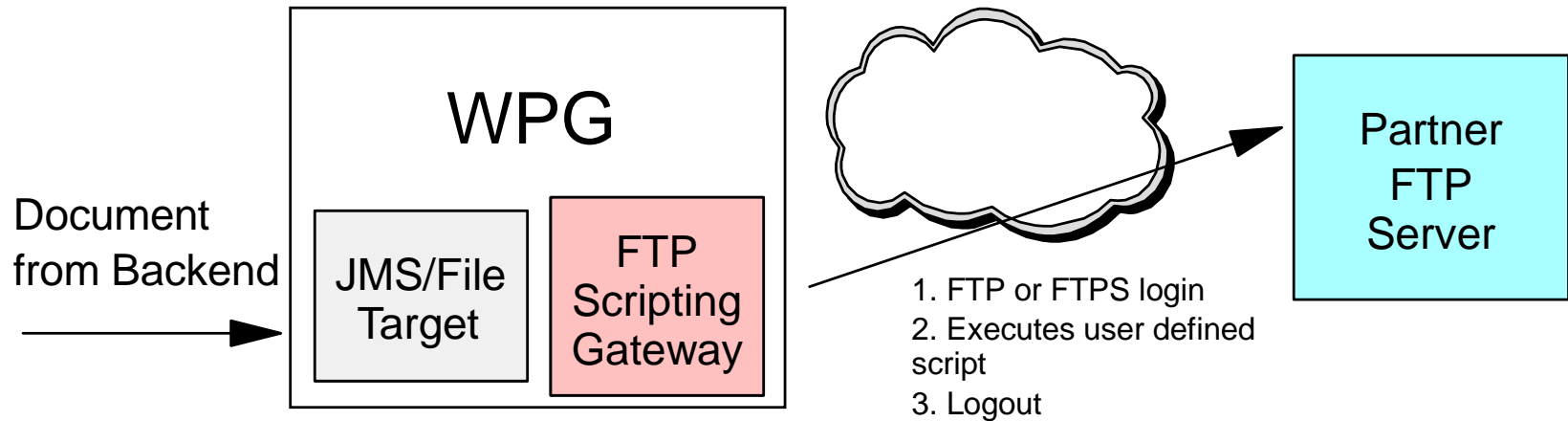


FTP Gateways and Targets in WPG : Summary

- “FTP” Gateway
 - Minimal configuration
 - WPG as FTP client delivers file to Partner’s FTP Server
- “FTPS” Gateway
 - Same configuration as FTP, but separate selection in gateway type
 - Server or Client Authentication supported (certificates are needed)
- “FTP/S” Target
 - WPG not directly involved in negotiation
 - Receives the file shared directory structure after local FTP Server has handled the transaction



FTP Scripting Gateway Example



- Document Delivery is user defined through a simple text file
- Flexibility
 - Can choose the delivery schedule
 - Change directory from the /home directory of user
 - Same gateway can be used for FTP or FTPS connections



FTP Scripting Gateway Example : Configuration

[Account Admin](#) | [Viewers](#) | [Tools](#) | [Hub Admin](#) | [Community Participant Simulator](#) | [System Administration](#)
[Profiles](#) | [Participant Connections](#) | [Alerts](#) | [Exclusion List](#)
[Community Participants](#) | [Gateways](#) | [B2B Capabilities](#) | [Certificates](#) | [Users](#) | [Groups](#) | [Contacts](#) | [Addresses](#)

Language Locale: en_US

Profile > PartnerB > Gateway List

Gateway Name *
Status Enabled Disabled
Online/Offline Online Offline
Description

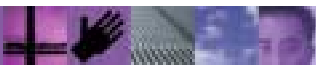
Gateway Configuration

Transport ▾
Server IP: * [Script parameter BCGSERVERIP]
User Id: [Script parameter BCGUSERID]
Password: [Script parameter BCGPASSWORD]
FTPS Mode: Yes No

Script File(maximum 2kb): *
Retry Count:
Retry Interval: seconds
Connection Timeout: seconds
Lock User: Yes No
Use Unique File Name:

Global FTP Scripting Attributes

Lock Retry Interval (Seconds): 260
Lock Retry Count: 3
Maximum Lock Time (Seconds): 240
Maximum Queue Age (Seconds): 740



Scripting the Gateway

Gateway Configuration

Transport: FTP Scripting

Server IP: 9.42.82.5 *

User Id: mlishok1 { Script

Password: ***** { Script

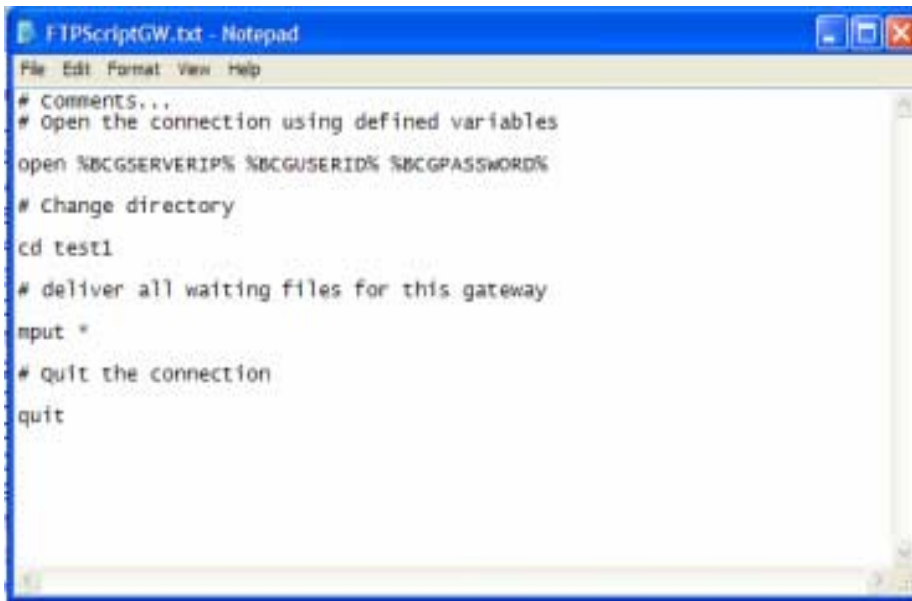
FTPS Mode: Yes No

Script File(maximum 2kb): Upload Script File *

Retry Count: 3

Retry Interval: 300 seconds

Connection Timeout: 120 seconds

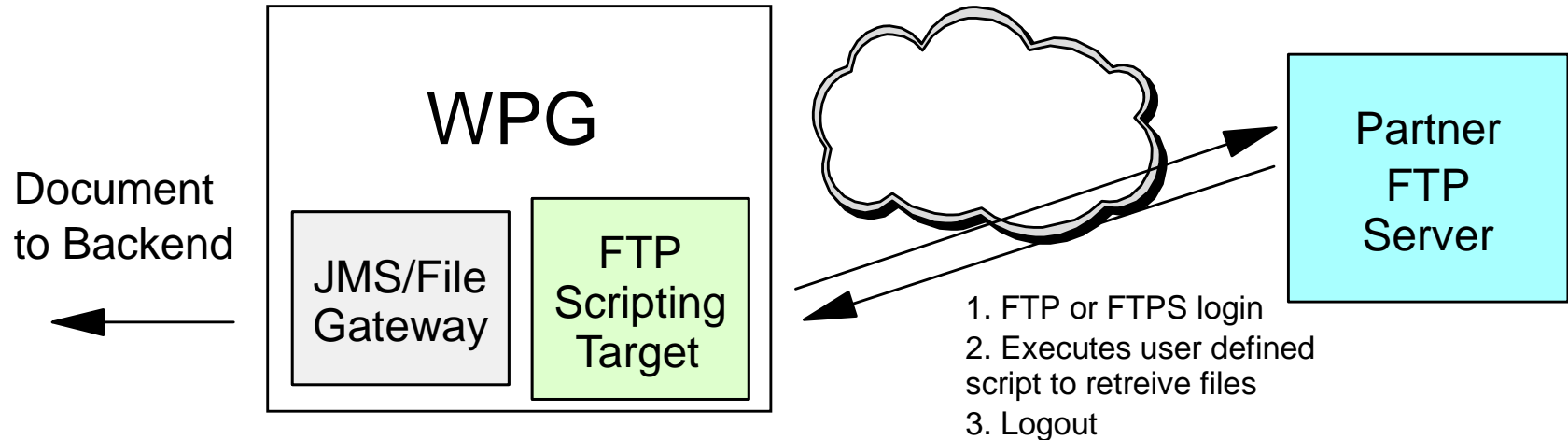


```

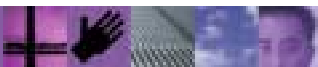
File Edit Format View Help
# COMMENTS...
# Open the connection using defined variables
open %BCGSERVERIP% %BCGUSERID% %BCGPASSWORD%
# Change directory
cd test1
# deliver all waiting files for this gateway
mput *
# quit the connection
quit
  
```

- “Upload Script File” button will popup Browse/Load window
- Script file itself is simple text file
 - Comments allowed
 - “open” command uses variable substitution
 - Example commands : cd, mput, mkdir, delete, quit, bye

FTP Scripting Target Example



- Similar to FTP Scripting gateway configuration with same benefits
- Remotely connects to FTP Server, executes user-defined script and retrieves the files
- Takes one of the FTP Servers out of the deployment
- FTP or FTPS is radio button configurable



FTP Scripting Target Example : Configuration

Account Admin | Viewers | Tools | **Hub Admin** | Community Participant Simulator | System Administration

Hub Configuration | Console Configuration

Event Codes | **Targets** | Document Flow Definition | XML Formats | Actions | Fixed Workflow | Handlers | Maps | EDI

Language Locale: en_US

Target Details

Target Name: *

Status: Enabled Disabled

Description:

Transport: *

Target Configuration

Gateway Type: *

Server IP: * { Script parameter BCGSERVERIP }

User Id: { Script parameter BCGUSERID }

Password: { Script parameter BCGPASSWORD }

FTPS Mode: Yes No

Script File(maximum 2kb): *

Connection Timeout: seconds

Lock User: Yes No

Global FTP Scripting Attributes

Lock Retry Interval (Seconds): 260

Lock Retry Count: 3

Maximum Lock Time (Seconds): 240

Maximum Queue Age (Seconds): 740



Scripting the Target

Schedule

Interval Based Scheduling : Calendar Based Scheduling :

Daily Schedule : Weekly Schedule : Custom Schedule:

Hour: Minutes:

(Select all days that apply)

Sun	Mon	Tue	Wed	Thu	Fri	Sat
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

```

FTPScriptTarget.txt - Notepad
File Edit Format View Help
# Comments...
# open the connection using defined variables
open %BCGSERVERIP% %BCGUSERID% %BCGPASSWORD%
# change directory
cd target1
# deliver all waiting files for this gateway
mget *
# quit the connection
quit
  
```

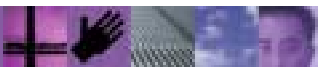
- Interval or Calendar based scheduling
 - Gateway generally small interval
 - Target generally longer interval or calendar based
- FTP Scripting Target Script
 - Same upload procedure as FTP Scripting gateway
 - Example commands : cd, mget, get, mkdir, delete, quit, bye



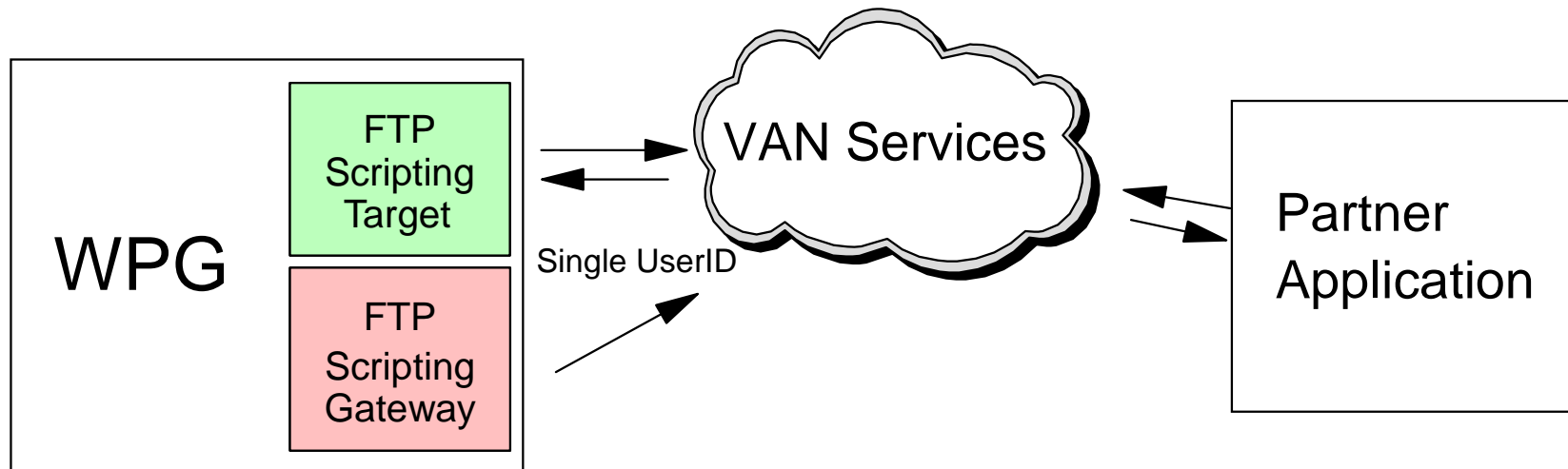
FTP Scripting Target : Binary Files

		RECEIVER.PREPROCESS.FileDirectory	com.ibm.bcg.edi.receiver.preprocesshandler.GenericDocumentFlowHandler	Product
		RECEIVER.PREPROCESS.HttpS	com.ibm.bcg.edi.receiver.preprocesshandler.GenericDocumentFlowHandler	Product
		RECEIVER.PREPROCESS.JMS	com.ibm.bcg.edi.receiver.preprocesshandler.GenericDocumentFlowHandler	Product
		RECEIVER.PREPROCESS.Smtp	com.ibm.bcg.edi.receiver.preprocesshandler.GenericDocumentFlowHandler	Product
		RECEIVER.PREPROCESS.FileDirectory	com.ibm.bcg.server.receiver.preprocesshandler.FileNamePartnerId	Product
		RECEIVER.PREPROCESS.FTPScriptingReceiver	com.ibm.bcg.server.receiver.preprocesshandler.FileNamePartnerId	Product

- Prior to WPG 6.0.0 fix pack 3 the main drawback to FTP Scripting was no Binary File support
- Binary Support was added in fix pack 3 through use of naming convention and new handlers
- New handlers added that can parse the sender/receiver IDs from the name or be configured directly to single participant



VAN Connectivity



- No FTP Server at either side of communication
- FTP Scripting Target and Gateway share a single user ID
- VAN Service Provider handles the routing of the messages between the accounts of the participants



VAN Connectivity Considerations

Retry Count: 3
Retry Interval: 300 seconds
Connection Timeout: 120 seconds
Lock User: Yes No
Use Unique File Name:

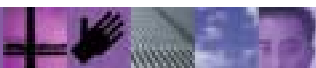
Global FTP Scripting Attributes

Lock Retry Interval (Seconds): 260
Lock Retry Count: 3
Maximum Lock Time (Seconds): 240
Maximum Queue Age (Seconds): 740

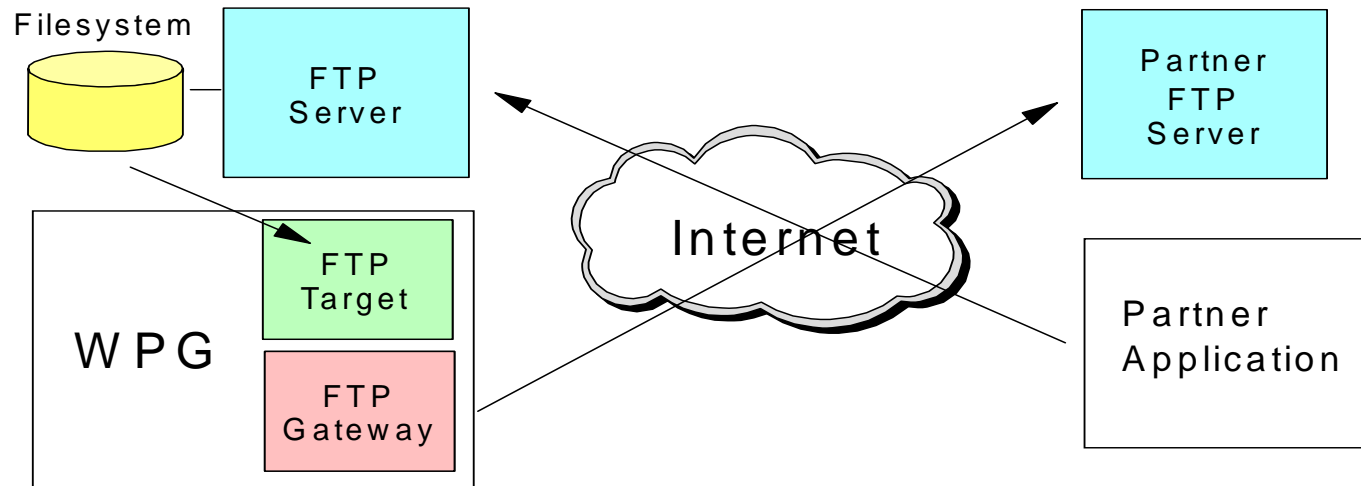
User defined attributes

Schedule

- “Lock User” parameter can be utilized to avoid scheduling conflicts between Targets and Gateways that share the same user ID
- Global FTP scripting settings allow for tuning of the locking mechanism
- Script can contain “site” command which can be used to execute site specific commands



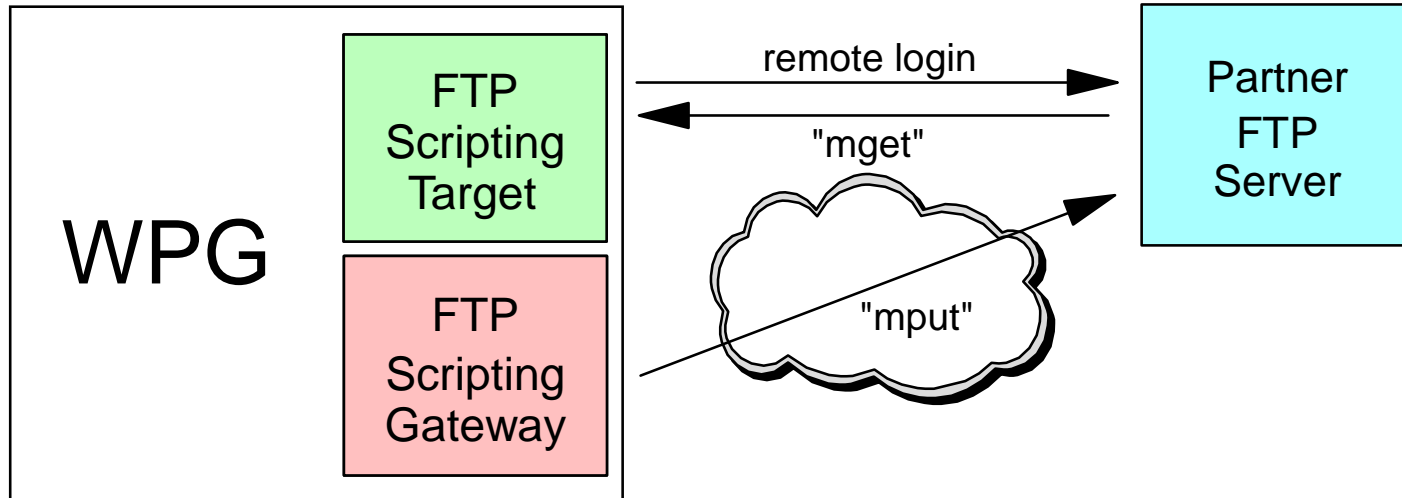
Implementation Comparison : FTP



- FTP Servers at both participants
- FTP Gateway
 - Minimal FTP knowledge needed other than user ID and password
 - New gateway needed for FTP
- FTP Target
 - Binary file support made possible through directory structure



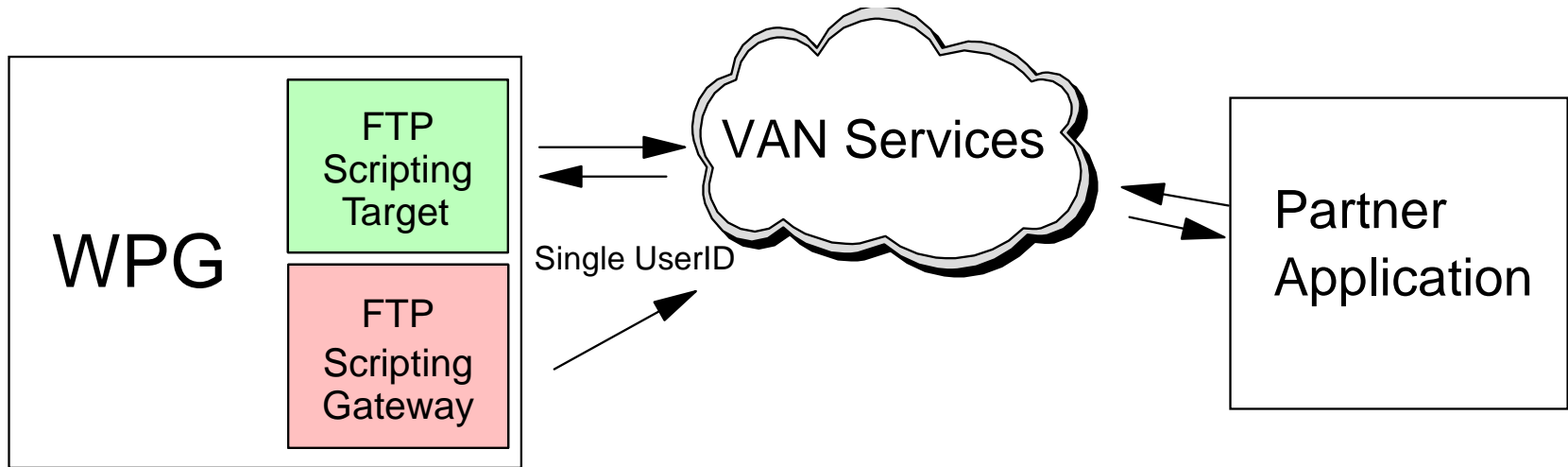
Implementation Comparison : FTP Scripting



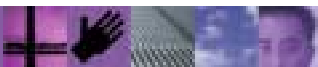
- Single FTP Server needed for 2 way communication
- Binary file support added in 6.0.0 fix pack 3
- User defined interaction through scripting increases flexibility
- FTP to FTPS radio button configuration



Implementation Comparison : VANs

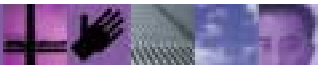


- VAN Services required
- No actual FTP Servers although VAN servers function in similar manner
- Site specific commands issued through the scripting



Summary :

- FTP Gateway, FTPS gateway and FTP/S target with custom directory structure
- FTP Scripting Gateway and FTP Scripting Target and VAN Connectivity
- Comparison of the implementations with major differences outlined



Appendix : Helpful Sites

- General WPG information on the IBM web at <http://www-306.ibm.com/software/integration/wspartnergateway/>
- WPG Redbook chapters on FTP, FTP Scripting and VAN connectivity <http://www.redbooks.ibm.com/abstracts/SG247109.html?Open>
- Product documentation <http://publib.boulder.ibm.com/infocenter/wbihelp/v6rxmx/index.jsp>

