



IBM Software Group

IBM WebSphere Partner Gateway V6.1 Advanced and Enterprise Editions

AS3 protocol support



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This presentation provides details on the new AS3 protocol support on WebSphere® Partner Gateway V6.1 hub.

Agenda

- Overview
- AS3 Support in WebSphere Partner Gateway hub
- Administration and configuration
- Problem determination and best practices
- Summary and references

The agenda for this presentation starts with an overview followed by AS3 support, required configuration and explains the inbound and outbound flow of AS3 documents in the hub. Next in the agenda is problem determination that discusses common recurring mistakes made during the configuration of AS3 and how to resolve them. Last in the agenda is the summary and references.

Section

Overview

The next section covers the overview of AS3 support.

AS3 overview

- AS3 is a new standard protocol to communicate data using FTP or secure FTP
 - ▶ Supports EDI, XML or any data over FTPS
- Security and reliable delivery
 - ▶ Digital signatures
 - ▶ Encryption
 - ▶ Over SSL
 - ▶ Signed and unsigned receipts
- Large file transfer support
 - ▶ Compression
 - ▶ Sending plain document



AS3 is a new specification standard protocol that describes how to exchange structured business data securely using the File Transfer Protocol (FTP) or secure FTP. Using this protocol allows applications to communicate Electronic Data Interchange (EDI) or XML data or any other data using FTP over the internet, enabling user to connect, deliver and reply to data securely and reliably.

AS3 provides security for the transport payload through digital signatures and data encryption and ensures reliable delivery through the use of receipts called MDNs (Message Disposition Notification).

WebSphere Partner Gateway supports large file handling through sending plain documents or compressed documents.

AS3 headers - overview

- AS3 message required headers
 - ▶ As3-to
 - ▶ As3-from
 - ▶ Date
 - ▶ Message-id
 - ▶ Content-type
- AS3 message requesting a receipt must contain
 - ▶ Disposition-notification-to
 - ▶ Disposition-notification-options (if receipt is to be signed)
- AS3 feature headers are not supported in WebSphere Partner Gateway
 - ▶ Multiple attachments
 - ▶ Certificate exchange

The content of AS3 message is shown here.

An AS3 message must contain the headers for “AS3-To”, “AS3-From”, “Date”, a “Message-ID” and “Content-Type”.

An AS3 message may optionally contain the headers for “Subject”, “AS3-Version” which default to 1.0, and “Content-Length”.

An AS3 message requesting a receipt must contain Disposition-Notification-To header and may optionally contain a “Disposition-Notification-Options” header, if the receipt is to be signed. Additional headers may be present but are ignored.

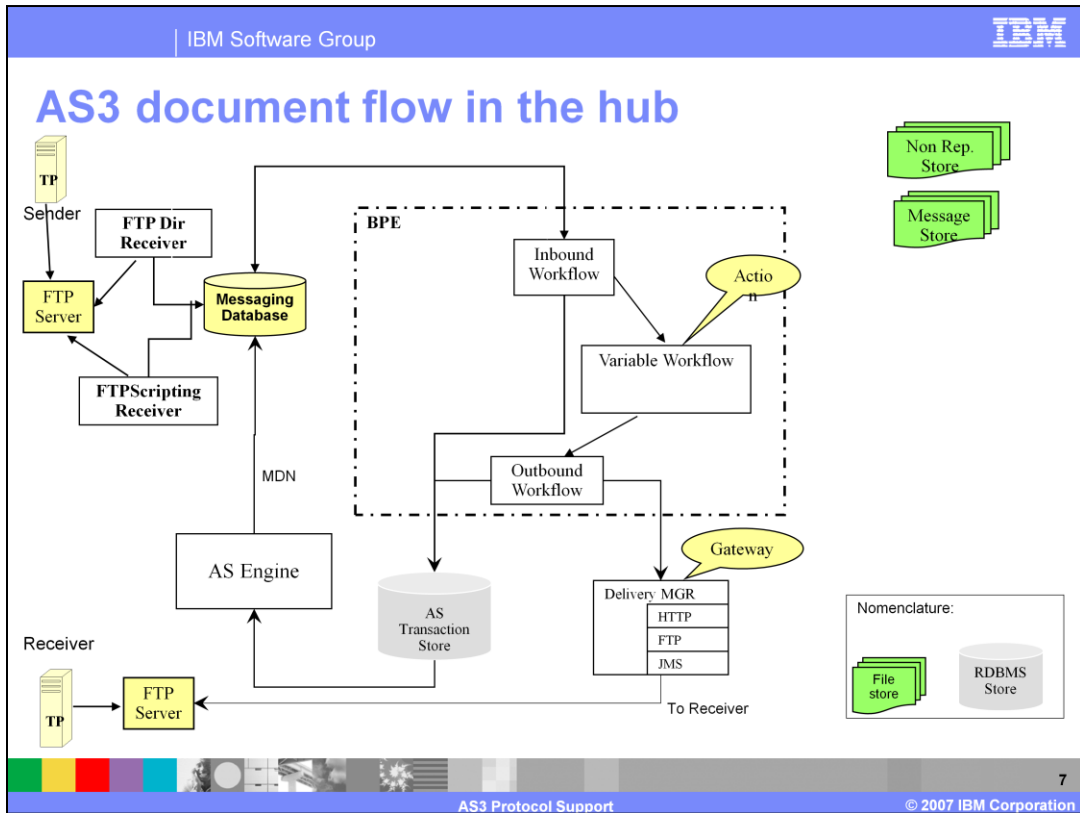
AS3 feature headers which are present with the AS3-Version as 1.2 are not supported in WebSphere Partner Gateway V6.1. These feature headers will indicate what feature the sender of the message supports. For example, “Multiple Attachments” feature where the sender is capable of sending multiple EDI documents over AS3 or the Certificate exchange feature for exchange of certificates.

Section

AS3 Support in WebSphere Partner Gateway V6.1



The next section covers the list of supported AS3 features in WebSphere Partner Gateway V6.1



The flow on the page shows the AS3 document flow within WebSphere Partner Gateway hub.

The first case is the inbound AS3 to None flow.

In this case, the partner places the AS3 document on the FTP server. The FTP receivers configured in hub will pick up the AS3 file and will be placed on the main inbound queue of Business Processing Engine (BPE) of the Document manager. BPE picks up the messages on the inbound queue and applies AS un-package handler. The document goes through un-package, parsing and logging. During the logging the document information is written to AS transaction store. The AS Engine will use this information to generate the MDN. The unpackaged document will go through the outbound flow where it is sent to destination through the Delivery Manager.

Another case is the "None" to outbound AS3 flow.

In this case, the EDI document is picked by the receiver in any of the supported protocols. The document is placed on to Main_InboundQ of BPE application. The BPE process will pick the messages from the main inbound queue, the document goes through the inbound workflow steps. If any variable flow is defined, then the configured action will be performed on the document. Then the document proceeds through the outbound workflow. In this case the EDI document is packaged with AS packaging and will be sent to Delivery Manager. In this case the delivery manager uses FTP transport to send the document to FTP server. The Partner can pick the document from the FTP

server.

AS3 support in hub

- Receiving and Sending AS3 Messages
- Digital Signature
- Encryption
- gLib based Compression
- Signed, Unsigned Asynchronous MDN
- Content Transfer Encoding
 - ▶ Base-64
 - ▶ Quotable-Printable
 - ▶ 7-bit, 8-bit

Listed on this page are the AS3 support in WebSphere Partner Gateway V6.1. It allows sending and receiving plain and secured documents. It supports signature, encryption and compression. It uses “gLib” based compression. It can generate and asynchronously send MDN for the receiving document depending on sending agent’s request. The MDN could be signed or unsigned. It supports content transfer of Base-64, quotable-printable, 7-bit and 8-bit encodings.

AS3 support in hub (cont.)

- FTP URL which is present in the AS3 headers takes precedence over the configured FTP gateway URL
- Support for Folded headers
- Support for transferring the document with temporary location and moving to destination
 - ▶ New FTP Script command : `mputren * *.tmp /destination/*`

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AS3 Protocol Support

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Continuing with the AS3 support, AS3 engine uses the ftp URL supplied on the document to send the MDN instead of FTP destination URL defined on the gateway. That is the document URL takes precedence over gateway URL.

It supports the folded headers. If an AS3 header like content-type appear on two lines, the AS3 engine takes care of such situation.

Some partners require the document to be transferred to some temp location and once it is completely written, it needs to be moved to a destination directory. A new command has been added to support this.

“mputren “ will take the document passed and puts as *.tmp and renames the *.tmp file to original file name.

In the above example, it is renamed and moved to “/destination” directory.

Section

Administration and configuration

The next section covers the administration or configuration steps needed for this function.

AS3 configuration

- Configure the FTP address for receiving MDN
- To send AS3 document, configure the target destination as FTPS or FTPS scripting
- To receive AS3 document, configure the FTP scripting receiver
- No additional configuration is required for AS3
 - ▶ Same as AS1 and AS2

If MDN is requested for AS3, you will need to configure FTP address for the requested MDN.

The hub's receiver needs to be configured as FTP scripting receiver for receiving the AS3 document. Similarly, the partner's destination needs to be configured as FTP or FTP scripting.

All other configurations remain the same like in AS1 or AS2.

Configuring destination - FTP scripting

Destination Name: ftpScript *

Status: Enabled Disabled

Online/Offline: Online Offline

Description:

Transport: FTP Scripting

Destination Configuration

Server IP: 9.184.236.95 ** { Script parameter}

User Id: sathishm { Script parameter}

Password: **** { Script parameter}

FTPS Mode: Yes No

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

Retry Count: 3

Retry Interval: 300 seconds

Connection Timeout: 120 seconds

Lock User: Yes No Change this value to 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

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The panel shows the configuration of the destination for transport of FTP Scripting. FTP scripting sender can be configured by specifying the IP address, user ID and password of the FTP server. When using for AS3, set the Lock User to “No”. The lock user option is used for EDI documents. Next step is to upload and save the script file. The destination uses FTP “mput” command or variant of “mput” command.

The configuration of the receiver is done in a similar way. The receiver uses FTP mget command.

If the FTP server is not running on the default port of 21, then you need to specify the port number along with the IP address in the Server IP field.

Sample FTP script files

Sample script file for destination

```
Open %BCGSERVERIP% %BCGUSERID% %BCGPASSWORD%  
binary  
mputren * *.tmp /destination/*  
quit
```

Sample script file for receiver

```
Open %BCGSERVERIP% %BCGUSERID% %BCGPASSWORD  
cd receive  
bin  
mgetdel *  
quit
```

Here's a sample of the FTP script files, one for the destination and one for the receiver. On the destination, the sample script does multiple puts multiple files as temporary file and moves to the right destination with the correct file names. The variables used are substituted by the destination's server IP address, user ID and password. The script file will have mput command or variants of mput for sending the document. On the receiver side, the sample gets all the files from the "receive" directory and deletes the files. This is done by the "mgetdel" command.

Sample participant connections

Sender:
None to AS

| Source | | Target | |
|---------|--|--|--|
| Manager | Search Reset | Partner | |
| Enabled | B2B Capabilities | Connection Details | B2B Capabilities Deactivate |
| ✓ | Package: None (N/A) Protocol: EDI-X12 (ALL) Document Type: ISA (ALL) | Attributes Actions Destinations Attributes | Package: AS (N/A) Protocol: EDI-X12 (ALL) Document Type: ISA (ALL) ✕ |

Receiver:
AS to None

| Source | | Target | |
|---------|--|--|--|
| Partner | Search Reset | Manager | |
| Enabled | B2B Capabilities | Connection Details | B2B Capabilities Deactivate |
| ✓ | Package: AS (N/A) Protocol: EDI-X12 (ALL) Document Type: ISA (ALL) | Attributes Actions Destinations Attributes | Package: None (N/A) Protocol: EDI-X12 (ALL) Document Type: ISA (ALL) ✕ |

The participant connection of None to AS and AS to None are shown. The None to AS will be on the sender side whereas the AS to None will be on the receiver side.

Section

Best practices and problem determination





The next section covers the best practices and problem determination.

Problem determination walk-through

■ Problem

- ▶ Send an EDI document with NONE package and protocol as EDI-X12, with target destination as FTP. In the hub console document is shown as failed with this error:

| Event Filter: <input type="radio"/> Debug <input checked="" type="radio"/> Information <input type="radio"/> Warning <input type="radio"/> Error <input type="radio"/> Critical | | | | | |
|---|--------------------|----------|------------|----------|--------------|
| Total Event Count: 3 | | | | | |
| Event Name | TimeStamp | Type | Event Code | Location | Source IP |
|  AS Packager Failure | 2/7/07 11:20:57 AM | Critical | BCG240415 | System | 9.184.251.80 |
| Event Details | | | | | |
| AS Packager Error: com.ibm.bcg.utl.BcgException: Attribute 'AS MDN FTP URL' must be defined | | | | | |
|  Document Rejected | 2/7/07 11:20:57 AM | Error | BCG210004 | Unknown | 9.184.251.80 |

■ Cause and solution

- ▶ From the event details it is clear that FTP MDN url is not defined.
- ▶ Provide value for FTP URL on 'AS' package attributes on the connection "None → AS" Or Set "AS MDN Requested" to false
- ▶ FTP URL format is ftp://host:port/directory_path

One cause of the problem is that MDN FTP URL is not defined when MDN is requested. You will see the message as shown in the panel.



If FTP MDN URL is not defined and an MDN is requested then the error 'AS MDN FTP URL' is thrown by hub, as seen in the panel.

The solution is to define the FTP MDN URL or set the MDN request to false. The FTP MDN flag and URL attributes are set on the target side of the "None" to "AS" participant connection.

Problem determination walk-through

■ Problem

- ▶ Send a document with None package with protocol as EDI-X12 and target destination as FTP. In the hub console document is shown as failed with the following error.

| Event Filter: <input type="radio"/> Debug <input checked="" type="radio"/> Information <input type="radio"/> Warning <input type="radio"/> Error <input type="radio"/> Critical | | | | | | |
|---|--------------------|----------|------------|----------|--------------|--|
| Total Event Count: 3 | | | | | | |
| Event Name | TimeStamp | Type | Event Code | Location | Source IP | |
|  AS Packager Failure | 2/7/07 12:07:58 PM | Critical | BCG240415 | System | 9.184.251.80 | |
| Event Details | | | | | | |
| AS Packager Error: com.ibm.bcg.util.BcgException: Attribute 'AS MDN' must be configured as Async | | | | | | |
|  Document Rejected | 2/7/07 12:07:58 PM | Error | BCG210004 | Unknown | 9.184.251.80 | |

■ Cause and solution

- ▶ From the event details it is clear that AS MDN is set as synchronous
- ▶ AS3 does not support synchronous flow. Hence change the attribute value "AS MDN Asynchronous" value to "yes" on the AS attributes for "NONE → AS" connection

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If a sync MDN is requested then an error saying AS MDN must be configured as Async will be encountered.

AS3 supports only async mode of operation, Hence change the attribute value of AS MDN Asynchronous to Yes.

Problem determination walk-through

■ Problem

- ▶ Send an EDI document with NONE package and protocol as EDI-X12 and target destination as FTP. In the hub console document viewer shows AS3 document is created and delivered successful. But the delivered document is not encrypted.

■ Cause and solution

- ▶ As the document is not encrypted , it may be due to encryption parameters are not set on the Channel.
- ▶ On the Channel, set the following attributes on the AS package.
 - AS Encrypted : Yes






If the EDI document, sent with AS3 packaging, is not encrypted, it is because the “ASEncrypted” attribute is set to “no”.

The solution is to set the “ASEncrypted” attribute to “Yes”.

Problem determination walk-through

■ Problem

- ▶ Send an EDI document with None package and protocol as EDI-X12, with target destination as FTP and channel attribute 'AS Encrypted' to yes. But the document failed with this error:

| Event Filter: <input type="radio"/> Debug <input checked="" type="radio"/> Information <input type="radio"/> Warning <input type="radio"/> Error <input type="radio"/> Critical | | | | | | |
|---|--------------------|----------|------------|----------|--------------|--|
| Total Event Count: 4 | | | | | | |
| Event Name | TimeStamp | Type | Event Code | Location | Source IP | |
|  Certificate Not Found | 2/14/07 6:33:12 AM | Critical | BCG240029 | System | 9.184.251.80 | |
|  AS Packager Failure | 2/14/07 6:33:12 AM | Critical | BCG240415 | System | 9.184.251.80 | |
| Event Details | | | | | | |
| AS Packager Error: No encryption certificate for the partner | | | | | | |
|  Document Rejected | 2/14/07 6:33:12 AM | Error | BCG210004 | Unknown | 9.184.251.80 | |

■ Cause and solution

- ▶ The problem is due to certificate not uploaded
- ▶ Upload the encryption public certificate of the target partner at the participant level

When sending a document using AS3 causes the error “No encryption certificate for the partner”, the problem is that the partner certificate has not been uploaded in the hub. The solution is to upload the partner certificate.

Problem determination walk-through

Problem

- ▶ Send an EDI document with none package and protocol as EDI-X12 with target destination as FTP Scripting, Channel Attribute 'AS Encrypted' to yes and encryption certificate is loaded. But the document failed with this error:

| Event Name | TimeStamp | Type | Event Code | Location | Source IP |
|---|--------------------|---------|--------------|----------|--------------|
|  FTP Command Timed Out | 2/14/07 6:54:11 AM | Error | BCGEDIFT0120 | Unknown | 9.184.251.80 |
|  FTP script Processing Stopped | 2/14/07 6:54:11 AM | Error | BCGEDIFT0110 | Unknown | 9.184.251.80 |
|  First Delivery Attempt Failed | 2/14/07 6:54:11 AM | Warning | BCG250011 | Unknown | 9.184.251.80 |
| Event Details | | | | | |
| First delivery attempt failed for message 1171436039839000D60F9F07F002464000000000000017 due to No reply from server , on Destination FTP Scripting | | | | | |
|  Document Delivery Failed | 2/14/07 6:54:11 AM | Error | BCG250001 | Unknown | 9.184.251.80 |

Cause and solution

- ▶ The problem is due to no reply from FTP server.
- ▶ Make sure Target FTP server is started. Check the Start the ftp server and make sure FTP scripting gateway has correct FTP address, Lock user is set to NO

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When sending an EDI document with AS encryption and hub already has the certificate uploaded, if you see an error message indicating that the delivery failed, it may be several reasons. It could be due to no reply from the FTP server or the Lock user on destination or receiver is set to Yes (default) or incorrect FTP server information.

Check that the lock user is set to "No", the FTP server information is correct and the FTP server is running.

Problem determination walk-through

■ Problem

- ▶ Send an EDI document with none package and protocol as EDI-X12, with target destination as FTP, Channel Attribute “AS Signed” set to “yes”. But the document failed with this error:

| Event Name | TimeStamp | Type | Event Code | Location | Source IP |
|---|--------------------|----------|------------|----------|--------------|
|  Certificate Not Found | 2/14/07 7:16:07 AM | Critical | BCG240029 | System | 9.184.251.80 |
|  AS Packager Failure | 2/14/07 7:16:07 AM | Critical | BCG240415 | System | 9.184.251.80 |
| Event Details | | | | | |
| AS Packager Error: There is no Signing Certificate | | | | | |
|  Document Rejected | 2/14/07 7:16:07 AM | Error | BCG210004 | Unknown | 9.184.251.80 |

■ Cause and solution

- ▶ The problem is due to certificate not uploaded
- ▶ Upload the Signature private certificate of the at the Hub Operator level






Signing an AS3 requires certificates to be loaded. Otherwise an error message saying “NO signing certificate” is encountered. The solution is to upload the private certificate at the Hub Operator.

Problem determination walk-through

■ Problem

- ▶ Receive AS3 message from partner. When the hub processes the document, it fails saying “AS Partner id” does not exist in the console

| Event Name | TimeStamp | Type | Event Code | Location | Source IP |
|--|--------------------|----------|------------|----------|--------------|
|  AS Unpackager Failure | 2/14/07 7:38:44 AM | Error | BCG240409 | System | 9.184.251.80 |
| Event Details | | | | | |
| From AS Partner id [977666667] doesn't exist | | | | | |
|  AS State Engine DB Failure | 2/14/07 7:38:44 AM | Critical | BCG240412 | System | 9.184.251.80 |
|  Document Rejected | 2/14/07 7:38:44 AM | Error | BCG210004 | Unknown | 9.184.251.80 |

■ Cause and solution


- ▶ This error occurs when the partner IDs are not configured properly.
- ▶ The solution is to change the participant ID to reflect the correct ID.

AS partner ID does not exist occurs when the partner ID's are not configured properly. The solution is to change the participant ID to reflect the correct ID.

Problem determination walk-through

■ Problem

- ▶ Receive AS3 message from partner. Requesting an MDN. The MDN is not sent to partner. An error delivery attempt failed appears on the screen

| Event Name | TimeStamp | Type | Event Code | Location | So |
|---|-------------------|---------|------------|----------|-----|
|  First Delivery Attempt Failed | 3/6/07 9:20:04 AM | Warning | BCG250011 | System | 9.1 |
| Event Details | | | | | |
| First delivery attempt failed for message 1173172802609000D609C1E48002776000000000006008 due to 'java.net.ConnectException : C connect', on Destination 'HTTPGW@9.184.236.47' (id=41) | | | | | |

■ Cause and solution

- ▶ This error occurs when the source gateway on the partner connection is not defined properly. In this case an HTTP gateway is defined as source gateway. Hence the error.
- ▶ The solution is create a source gateway, either FTP or FTP scripting to point to the partner's ftp URL. The generated MDN will flow through this gateway to the partner.


An error delivery attempt failed is observed when the source gateway on the partner is not an ftp gateway instead of http gateway.

Ensure that the source gateway defined is FTP or FTP scripting.

Problem determination walk-through

■ Problem

- ▶ Receive EDI-X12 wrapped in AS3 message from Partner . Document fails with the following error

| Event Name | TimeStamp | Type | Event Code | Location | Source IP |
|--|--------------------|-------|------------|----------|--------------|
|  Package and Content Business Id's map to different partners. | 3/6/07 10:37:05 AM | Error | BCG210066 | Unknown | 9.184.251.91 |
| Event Details | | | | | |
| From Content Partner ID = 21, To Content Partner ID = 22, From Package Partner ID = 22, To Package Partner ID = 21 | | | | | |

■ Cause and solution

- ▶ This error occurs when the source business ID and target business ID on the inbound AS3 document does not match the content partner ID's defined in the EDI-X12 document.
- ▶ The solution is to correct the content ID on the document or change the business ID's on the partner

An error "Package and Content ID's map to different partners" will be observed if the source business ID and the target business ID on the inbound AS3 document does not match. Ensure that correct EDI document is sent or change the business ID's on the partner.

Section

Summary and references

The next section covers the summary and references.

Summary and references

- WebSphere Partner Gateway 6.1 supports AS3 1.1
- AS3 supports transfer of business documents over FTPS.
- This presentation covers the details of AS3 support in WebSphere Partner Gateway V6.1
- Configuration is similar to AS1 and AS2
- References:
 - ▶ AS3 Specification 1.1
 - <http://www.imc.org/draft-ietf-ediint-as3>

AS3 is a protocol supported over FTP. WebSphere Partner Gateway V6.1 supports AS3 version 1.1 to transport business documents over FTP or FTPs. This presentation covered the details of AS3.

The configuration is similar to AS1 and AS2 support.

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