IBM Software Group

IBM® WebSphere® Partner Gateway V6.0 Advanced and Enterprise Editions

Basic Document Flow Configuration: Document Flow Definitions, Interactions, B2B Capabilities and Participant Connections

@business on demand.

The goal of this presentation is to help you understand the basic configuration required for all document flow through WebSphere Partner Gateway V6.0.

A simple EDI pass through example is used to illustrate the minimum configuration steps required for a document flow through the hub.

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Agenda

- Basic document flow and high level configuration
- Example used in the presentation
- Document Flow Definitions
- Interactions
- Trading Partner's B2B Capabilities
- Participant Connections
- Specifying Attributes
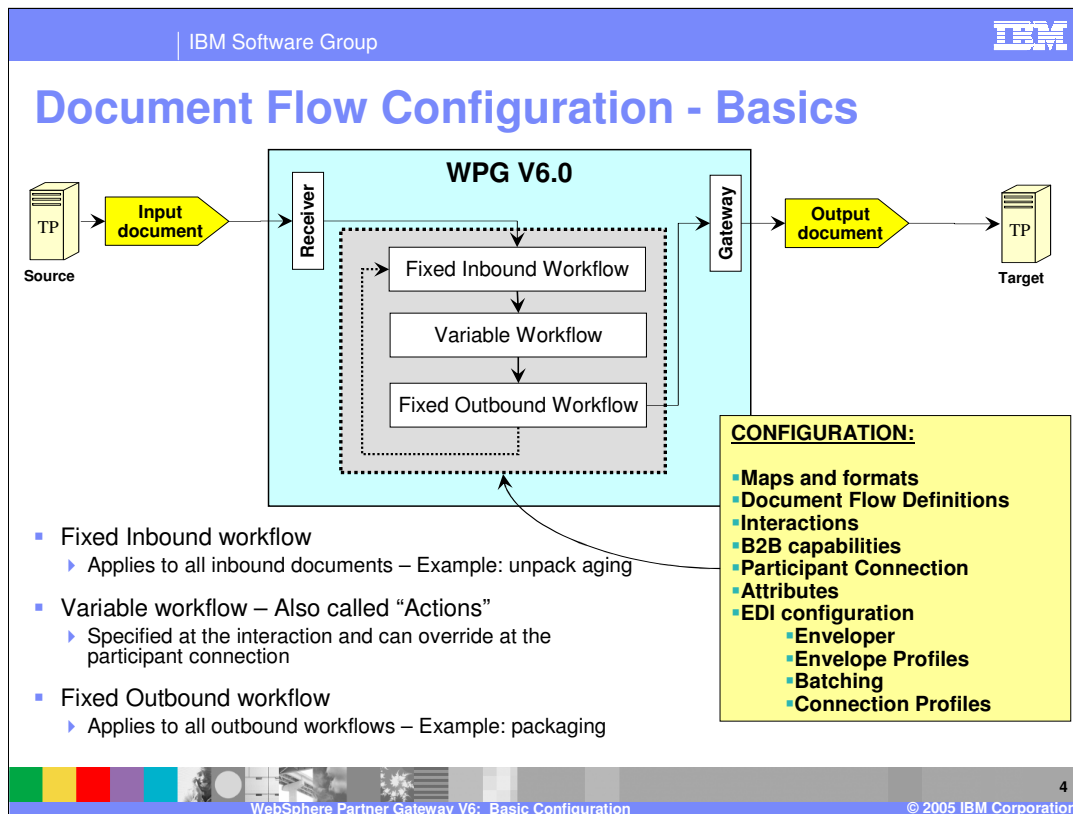- XML Formats
- Typical Configuration Steps
- Summary

The following topics will be covered by this presentation:

•Basic document flow

•Example document flow

•Document Flow Definitions

•Interactions

•Trading partner B2B capabilities

•Participant Connections

•Specifying Attributes

•XML Formats

•Typical Configuration Steps

•Summary

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Section

Basic document flow and high level configuration steps

This section will provide the basic document flow and high level configuration steps.

Document Flow Configuration - Basics

WPG V6.0

Source — TP — **Input document** → Receiver → [Fixed Inbound Workflow → Variable Workflow → Fixed Outbound Workflow] → Gateway → **Output document** → TP — Target

CONFIGURATION:
- **Maps and formats**
- **Document Flow Definitions**
- **Interactions**
- **B2B capabilities**
- **Participant Connection**
- **Attributes**
- **EDI configuration**
  - **Enveloper**
  - **Envelope Profiles**
  - **Batching**
  - **Connection Profiles**

- Fixed Inbound workflow
  - Applies to all inbound documents – Example: unpack aging
- Variable workflow – Also called "Actions"
  - Specified at the interaction and can override at the participant connection
- Fixed Outbound workflow
  - Applies to all outbound workflows – Example: packaging

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For every document passing through the document manager, there are 3 different workflows that the document is passed through for potential processing.

•Fixed inbound workflow is used for fixed set of work actions that apply to all incoming documents such as un-packaging the document from an incoming AS2 document.

•Fixed outbound workflow is used for a fixed set of work actions that apply to all outgoing documents such as packaging the outgoing document to an AS2 packaged document.

•Variable workflow is based on the actions specified by the administrator for the specific incoming document. Examples are Validation and XML Translation, which applies to EDI and XML document flow.

Different configuration steps needed for setting up a document flow are listed on the page. The rest of this presentation will focus on these configuration steps in more detail.

Document Flow Configuration

- For any specific document flow between the 2 trading partners, following 4 criteria must be established

1. Will the hub support the source and the target document flow? This is called **Document Flow Definitions**

2. Will the hub support the flow between 2 trading partners for the source document processed to the target document? This is called the **Interaction**

3. Will the source trading partner support the source document type and the target trading partner support the target document type? This is called the **B2B capabilities** of the trading partners

4. Is the connection between the source and the target TP for that interaction active? This is called the **participant connection** between the source and the target TP

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There are 4 criteria to flow a specific source document and process it into the target document through the hub.

1. The hub must support those source and target documents, their protocols and packaging. This referred to as the Document Flow Definition or DFD.

2. The hub must support a flow between 2 trading partners to pass the source document and be processed into the target document. This is called the interaction. So far, there is no discussion of the capabilities of the trading partner.

3. The source trading partner must support sending the type of document as indicated by the source document. Similarly, the target trading partner must support sending the type of document as indicated by the target document. These are called the B2B capabilities of the trading partner.

4. The hub and the trading partners can send the source document and get transformed to the target document. That connection between the source and the target partner for that specific source to target document flow must be activated. This is called the participant connection.

The remaining part of the presentation will discuss in details how to configure the steps discussed here.

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Configuration Components – Document Flows

- ## Document Flow Definition
  - ▸ Defines all the protocols, packages and documents supported by the WPG hub
  - ▸ Defines the global capabilities of the hub

- ## Interactions
  - ▸ Interactions define the possible combinations of document flows that the hub will support and a sequence of actions for the document flow
  - ▸ Example: How to go from a AS2 packaged EDI document to an unpackaged EDI document

Document Flow definitions define all the protocols, packages and documents supported by the hub. Any trading partner can only send the types of documents supported by the hub.

The interactions specify the source and target document pair that can flow through the hub for any source and target trading partners. In a given hub, there will be many interactions defined for all the possible source and target document pairs.

Both the DFD and Interaction specify the capabilities of the hub. What a specific trading partner will support through the hub will be a subset of the capabilities of the hub.

Document Flows (Cont).

- **Participant's B2B capabilities**
  - ▸ Defines the types of documents the participant will be allowed to send or receive, from the set of global document flow definitions defined for the hub

- **Participant Connections between trading partners**
  - ▸ A connection is a defined Interaction with specific to-and-from Partner B2B capabilities and Gateway configurations applied
  - ▸ Participant connections contain the information necessary for the proper exchange of each document flow between a source and target participant
  - ▸ A document cannot be routed unless a connection exists between the source and the target participant

Participant B2B capabilities define the types of documents the participant can send and receive.

Participant connections define the information necessary for the exchange of documents between a source and target participant.

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Section

Example used for Simple Document flow configuration

This section will provide details on the example that will be used to show the configuration needed for a document flow through the hub

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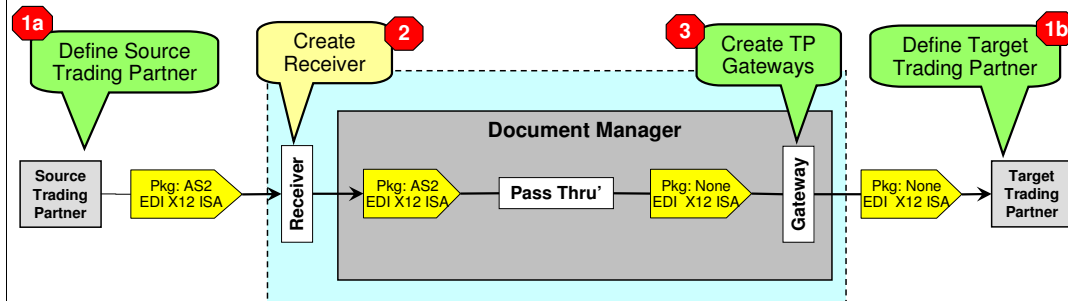
Simple Document Flow – Example
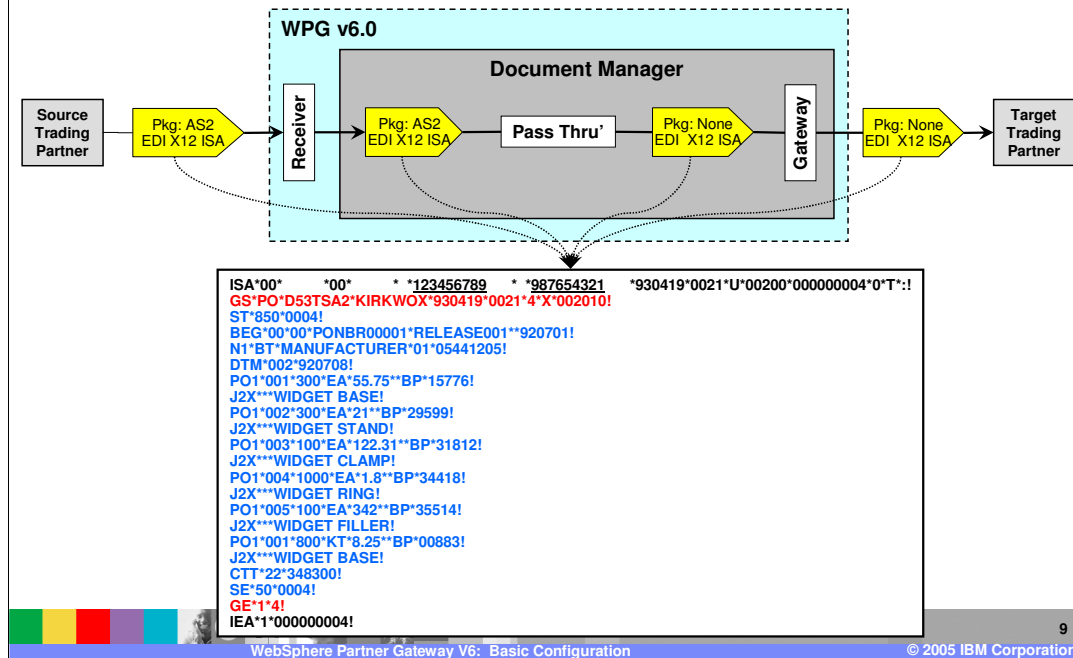
The simple example used in this presentation involves an incoming EDI X12 ISA packaged in AS2 being received by the hub and as it passes through the hub with the final unpackaged (package None) EDI sent to the target trading partner through the gateway.

The EDI document is shown on the page, with the EDI source business ID as **123456789** and the target business ID to be **987654321**. The source and target trading partners must have those business IDs for the document to flow through the hub.

Within the document manager, a connection must be established that takes in AS2 packaged EDI X12 ISA and passes through the document manager. The output is EDI X12 ISA packaged as none, which is sent to the target trading partner through its gateway.

Simple Document Flow Configuration – Basics

1a Define Source Trading Partner

2 Create Receiver

3 Create TP Gateways

1b Define Target Trading Partner

Source Trading Partner → Pkg: AS2 EDI X12 ISA → Receiver → **Document Manager** → Pkg: AS2 EDI X12 ISA → Pass Thru' → Pkg: None EDI X12 ISA → Gateway → Pkg: None EDI X12 ISA → Target Trading Partner

1. Create the source and target Trading Partners

2. Create Receiver target to receive the incoming EDI

3. Create the Target Trading Partner's Gateway for sending the final document

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For any document flowing through the hub, a set of minimum configuration must be performed. The hub administrator defines the source and the target trading partners, the receiver or the target for the incoming document and the target trading partner gateway for sending the output document.

These basic configurations are described in details in a separate presentation.

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Section

Document Flow Definitions and Interactions

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This section will provide details on Document flow definitions and interactions.

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Package, Protocol and Document type

- Each document has an associated package, protocol and document type

Example:

- Examples of Package
  - AS2, None, Binary

- Examples of Protocol
  - EDI X12, EDI UNIFACT

- Examples of document type
  - EDI 850 transactions, EDI ISA

- Package: AS
  - Protocol: Binary (1.0)
    - Document Flow: Binary (1.0)
  - Protocol: EDI-Consent (ALL)
    - Document Flow: BG (ALL)
  - Protocol: EDI-EDIFACT (ALL)
    - Document Flow: UNB (ALL)
  - Protocol: EDI-X12 (ALL)
    - Document Flow: ISA (ALL)

- WPG comes with the support for pre-defined packages, protocols and document types

- Custom package, protocols and document types can be added through the console

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Documents flow between trading partners through the WebSphere Partner Gateway hub. The document might or might not be processed within the hub, based on the hub configuration for that document flow. Each document has an associated package, protocol and document type. Package defines how the document will be packaged when it is received from the source trading partner or when it is sent to the target trading partner. Document protocols include EDI X12 or EDI/UNIFACT. The document type defines what the document contains, such as EDI 850 transaction or EDI ISA interchange.

The document definition defined with the hub specifies the package, protocol and the document type supported by the hub.

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Simple Document Flow Configuration – Part 1
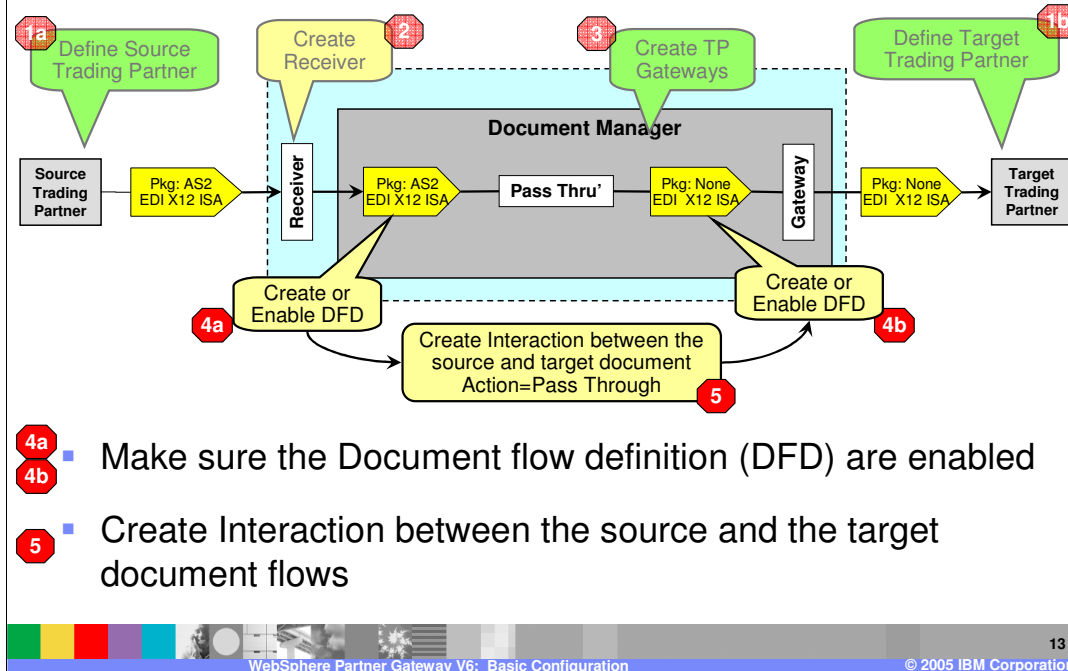
Using the Simple document flow example, enabling the DFD and creating the interaction is shown here, as indicated by steps 4a, 4b and 5.

At the interaction level, the appropriate action that applies to the source and target document flow is specified. In this example, the action is "pass through". Actions represent the variable work flow.

Document Flow definitions define the global set of packages, protocols and document types supported by the hub. Each trading participant can then support all or a subset of the document flow definitions.

A package flow is the logic that is required to package a document according to a specification, such as AS2.

A protocol flow is the logic that is required to process a document that adheres to a certain protocol, such as EDI-X12. A document flow details what should be done with the contents of a flow.

Interactions specify the type of documents that can flow from any source to any target trading partners within the hub. It also specifies any action that must be taken for that document flow within the document manager as it flows from the source to the target.

In general, interactions specify all the document flows that can then be used for any source to any target trading partner. Later, you will see that once an interaction is created, source and target trading partner flows can be enabled using the trading partners B2B capabilities and participant connections.

The capabilities of the source or the target are within the set of the Document Flow Definitions defined for the hub.

Create New Interaction Console

This slide shows the creation of the new interaction panel. On the left is the source document and on the right is the target document of the interaction. Clicking the directory icons shows the protocols and the documents under the packages. Alternatively, the numbers on the top of source or target indicate the hierarchy levels and can be used to expand the source and target lists.

The action indicates the processing that should occur on the source document to create the target document. "Pass through" is an action where there is no processing needed. Examples of actions are "Validate and Transform" for EDI to XML or EDI to ROD, or "De-envelope" for de-enveloping an incoming EDI X12 ISA document into its transactions.

Based on the selected source and target documents and the actions, the appropriate valid target maps are shown and one of them can then be selected.

Section

Trading Partner's B2B Capabilities

This section will provide details on the B2B capabilities of the trading partner.

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Simple Document Flow Configuration – Part 2
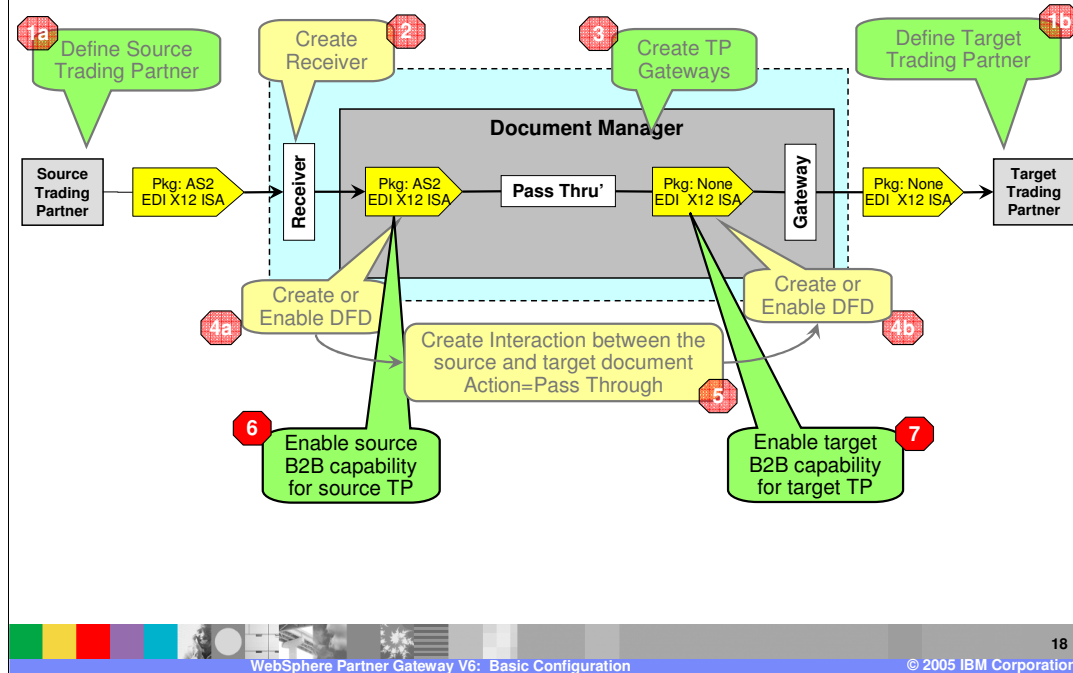
Using the Simple document flow example, enabling of the B2B capabilities of the source and target trading partner is depicted here, as indicated by steps 6 and 7.

B2B capabilities specify the types of documents that will be supported by the trading partner to send or receive from the hub. Therefore, the source trading partner must enable the source document type, and the target trading partner must enable the target document type.

It is assumed that both the source and the target document types are supported by the hub. In fact, it is not even possible to select any document type that is not supported by the hub when enabling the B2B capabilities of the trading partner.

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B2B Capabilities specify the documents supported by a trading partner when the trading partner acts as a source of the document, as a target of the document, or as both source and target.

The console panel shows the interface where the B2B capabilities of a trading partner are enabled or disabled for the source and target document types.

The list of options available are from the document flows defined by the hub in the document flow definitions.

Section

Participant Connections

This section will provide details on participant connections.

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Simple Document Flow Configuration – Part 3
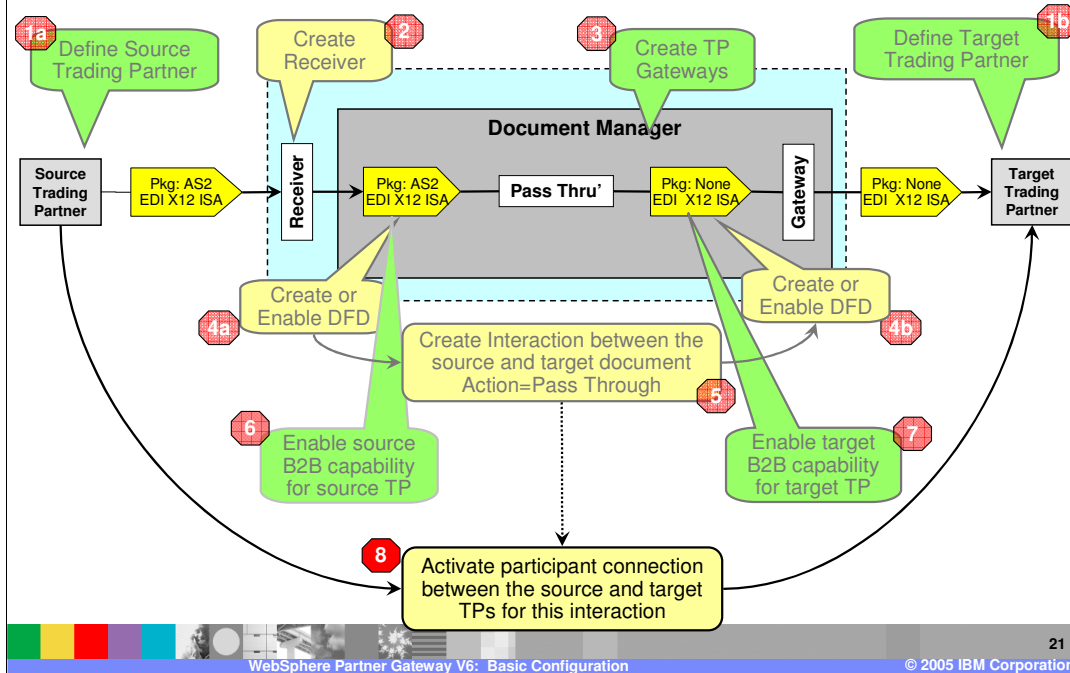
Again using the Simple document flow example, the activation of the participant connection between the source and the target trading partner is shown here, as indicated by step 8.

Participant Connection

- Activate the specific document flows between a source and target trading partner
  - Available from the defined Interactions and the B2B capabilities of the trading partners

The administrator creates the interactions supported by the hub. The Community participant or Community manager specifies the B2B capabilities of the trading partners.

For the specific source and target trading partners, all the interactions where the B2B capabilities for the source and target match are available for activation as a participant connection between that source and target trading partner.

The list of interactions available for activation can be seen in the console view for a given source and target. On this page, both interactions have been activated for this source target pair.

The attributes button allows the administrator to override or specify the attributes for the source or target B2B capabilities.

The gateway button allows the administrator to specify the gateways to be used for the specific participant connection.

The action button allows the administrator to override the actions.

The connection profiles apply to EDI output where for the same connection, you might want different actions or attributes based on grouping of transactions within the EDI. More details on connection profiles is provided in the EDI configuration presentation.

New Participant Connections Capabilities

- Validation maps can now be overridden at the connection level via the Source or Target attributes

- An Envelope Profile attribute can be overridden on the Target attributes

- Transformation maps can override the Document Interaction map by using the Actions button

- Ability to specify Connection profiles for EDI outputs – this allow different attributes and actions to be applied on the connection based on attributes of the EDI transaction/ISA
  - More details on Connection Profile in the EDI configuration

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Some new WebSphere Partner Gateway functions related to participant connections are listed on this page.

New functions include the ability to override validation and transformation maps and envelope profile attributes and to specify EDI connection profiles for EDI outputs.

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Section

Example – Configuration at a Glance

This section will outline the steps required for the administrator to create a participant connection to allow the document flow through the connection.

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Simple Document Flow Configuration – All Steps
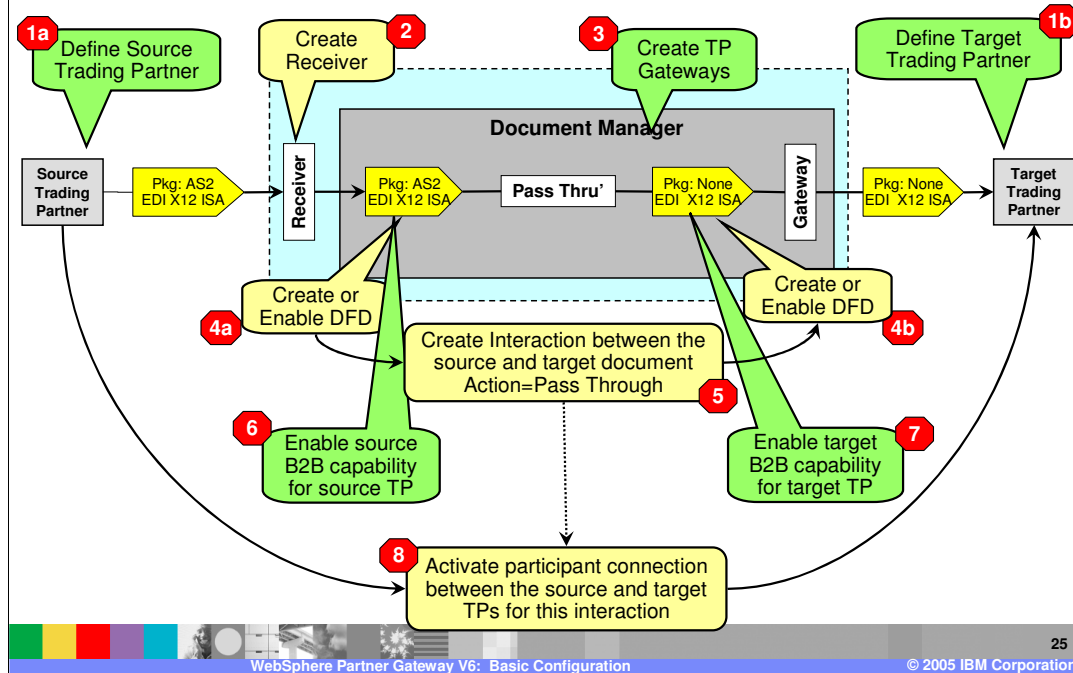
This graphic summarizes the steps necessary to set up the simple document flow. Although this scenario might seem complex, many of the steps are reused for other document flows. For example, the definitions of trading partners and gateways are done once for all document flows between those partners. Similarly, receivers are defined just once.

Configuration of Simple Document Flow - Summary

- Create Receiver for the hub to receive the incoming document

- Create or Enable Document Flow Definitions for the source and target document flows

- Create interaction between source and target document flows

- Trading Partner configurations (called partner's profile)
  - Create and Source and Trading Partners
  - Create Gateways for the Trading Partners
  - For the source TP, enable the B2B Capabilities for the incoming document
  - For the target TP, enable the B2B Capabilities for the outgoing document

- Activate the participant connection between the source and target trading partners for that interaction

- Next few slides will walk through setting the configuration

The steps shown here summarize the configuration for document flows.

Section

Create Document Flow Route Example

This section will outline the steps required for the administrator to create a participant connection to allow the document flow through the connection.

Step 1: Document Flow Definitions

1 ROD-1

2 EDI-ISA

3 EDI-855

4 XML-1

5 XML-2

6 ROD-2

7 EDI-850

8 ROD-3

Symbols

	Document Flow definition
TP1	Trading Partner 1
TP2	Trading Partner 2
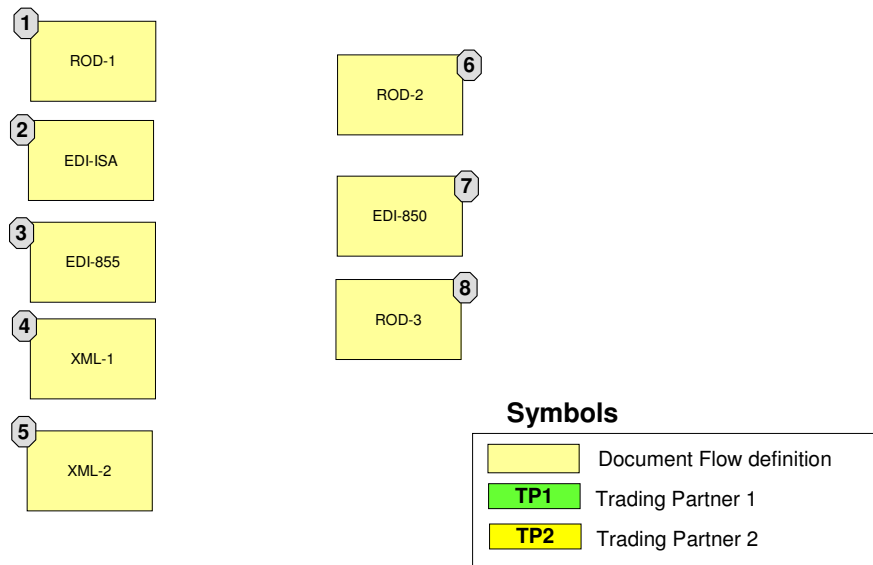
The first step in creating a participant connection is to define the document flow definitions (DFDs). DFDs defines the capabilities of the hub to support different document flows (packages, protocols and document types) that the hub will support.

In this example, there are 8 DFDs present in the hub, some for ROD, some for EDI, some for XML for some package and protocol.

This also assumes that the 2 trading partners, TP1 and TP2 have already been defined.

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Step 2: Create Interactions between DFDs
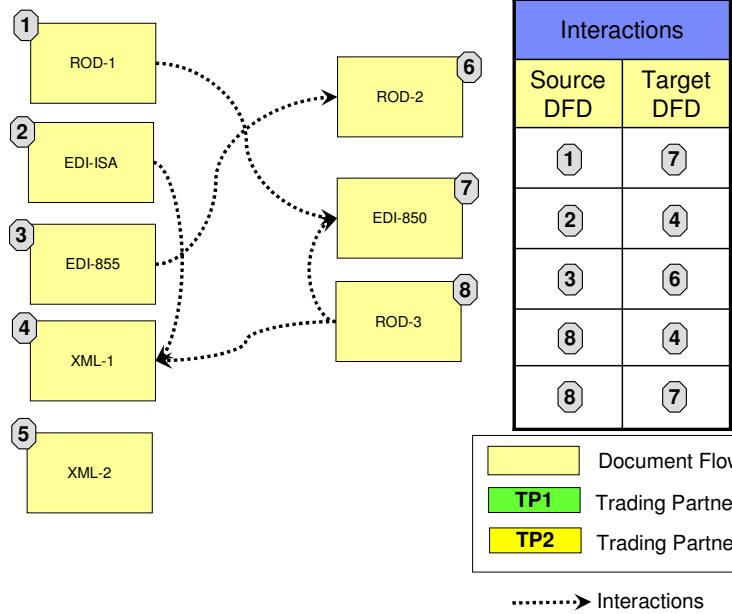
The next step is to create the interactions, which define the possible document routes, providing the trading partners support the document flows that make up the interaction. It also defines the kind of action to be taken when these interactions are applied to a source and target trading partner. The administrator creates the interactions from the defined DFDs.

In this example, there are 5 interactions created as shown through the dotted arrow and the table.

Step 3: Enable B2B Capabilities for TP1
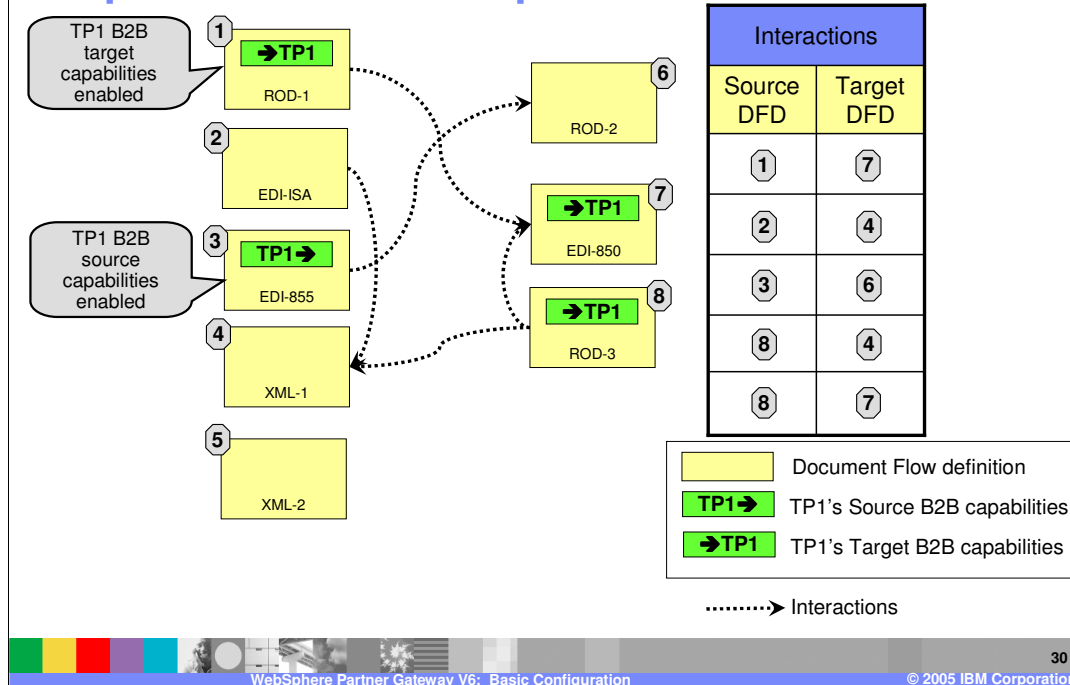
The next step is to enable the B2B capabilities. As part of the Trading partner profile, the B2B capabilities define what types of documents the trading partner will support either as a source or target or both. The trading partner will enable from the set of document flows that are defined for the hub. B2B capabilities are defined for the source and the target separately.

We start with TP1, and enable its B2B capabilities. For DFD 3, it is enabled as the source B2B capability, and for DFDs 1, 7 and 8, they are enabled as the target B2B capability. The arrows after the TP1 indicate the source B2B capability and the arrow before the TP1 indicates the target B2B capability.

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Step 4: Enable B2B Capabilities for TP2

The next step is to enable the B2B capabilities for trading partner TP2.

For DFD 1 and 2, they are enabled as the source B2B capability. For DFDs 6 and 8, they are enabled as the target B2B capability.

Step 5: Activate Participant Connections

TP1 & TP2 B2B capabilities enabled	①	→TP1 / TP2→ ROD-1
TP2 B2B capabilities enabled	②	TP2→ EDI-ISA
TP1 B2B capabilities enabled	③	TP1→ EDI-855
No B2B capabilities enabled	④	XML-1
	⑤	XML-2

⑥ →TP2 ROD-2

⑦ →TP1 EDI-850

⑧ →TP1 / →TP2 ROD-3

Interactions		Participant Connection
Source DFD	Target DFD	
①	⑦	TP2 → TP1
②	④	None
③	⑥	TP1 → TP2
⑧	④	None
⑧	⑦	None

DONE !!!

Ready to flow documents between partners

······► Interactions

——► Participant Connection

(yellow box)	Document Flow definition
TP1→	TP1's Source B2B capabilities
→TP1	TP1's Target B2B capabilities
TP2→	TP2's Source B2B capabilities
→TP2	TP2's Target B2B capabilities

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Once the DFDs, interactions and trading partners B2B capabilities are defined and enabled, the last step is to activate the participant connection between the required trading partners.

The participant connection defines what is supported between a source trading partner and a target trading partner from the interactions supported by the hub. This can only occur if the source B2B capabilities of the source trading partner include the source DFD of the interaction, and if the target B2B capabilities of the target trading partner include the target DFD of the interaction.

For the example, of the potential participant connections in the table, only 2 of them are possible in this example.

1. For TP1 to TP2, the participant connection between DFD 1 and DFD 7 can be activated because of the following:
    - There is an interaction created between DFD 1 and DFD 7 (in step 2).
    - The source B2B capability for TP1 is enabled for DFD 1 (in step 3).
    - The target B2B capability for TP2 is enabled for DFD 7 (in step 4).

    Therefore, all the requirements are met for the hub to create a participant connection from TP1 to TP2 for document flow DFD 1 to DFD 7. Once that participant connection is activated, documents can begin flowing through the connection.

2. Similarly, for TP2 to TP1, the participant connection between DFD 3 and DFD 6 can be activated.

The general steps shown here are the basic steps to create a participant connection for a document flow. You might have to modify the attributes on the connection, as required by the document flow.

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Section

Specifying Attributes

This section will provide details on where and how to specify connection attributes.

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Specifying Attributes

- Attributes can be specified at the following places
  - ▶ Transformation maps or Document Definitions
    - Specified using the DIS Client tool
  - ▶ Participant Connection
  - ▶ B2B capabilities
  - ▶ Document Flow Definition (DFD)
  - ▶ Envelope profile
  - ▶ Default values in enveloper

Overrides

The decision for which connection to use is based on criteria such as the From/To partner ID, document package/protocol/document type, and gateway type.

Once the connection is determined the attribute values are obtained for that connection. Attributes can be assigned in the map, in the participant connection, in B2B capabilities, in DFD, and in envelope profiles. These methods are listed in order of precedence.

Attribute Types at Connection, B2B and DFD

- Types of Attributes specified at Participation Connection, B2B Capabilities and Document Flow Definition fall under the following categories:
  - ▸ Document Flow level
    - Example: EDI ISA, EDI 850 transaction, …
  - ▸ Protocol level
    - Example: EDI, Binary, XML, …
  - ▸ Package level
    - Example: AS, None, N/A, …

Overrides

Attributes can be specified at the document flow level, protocol level and at the package level. Again, these attributes are listed in order of precedence.

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Package Attributes

Attribute	Description
Time To Acknowledge	Time To Acknowledge
Retry Count	Retry Count
AS Compress Before Sign	AS Compress Before Sign
AS Compressed	AS Compressed
AS Encrypted	AS Encrypted
AS MDN Http Url	AS MDN Http Url
AS MDN Email Address	AS MDN Email Address
AS MDN Asynchronous	AS MDN Asynchronous
AS MDN Requested	AS MDN Requested
AS Message Digest Algorithm	AS Message Digest Algorithm
AS MDN Signed	AS MDN Signed
AS Signed	AS Signed
AS Business Id	AS Business Id

Package "AS"

Attribute	Description
AS Business Id	AS Business Id

Package "None"

Attribute	Description
Envelope Flag	Envelope Flag

Package "Back end"

Some examples of Package level attributes are shown here. For the AS package, note the MDN flags.

Section

XML Formats

This section will provide details on XML formats.

XML Formats For Input XML

Used to match the incoming XML document and extract elements like business IDs

View XML Format

Routing Format: FVT-XML-TEST ALL *

Available Routing formats from the DFDs

File Type: XML *

Identifier Type: Root Tag * MMDoc

For an input XML file, this tag defines the tag type and value to use to match from input XML

Schema Attributes

Name	Type	Value
Source BusinessId	Element Path	/MMDoc/MMROH/SenderID
Target BusinessId	Element Path	/MMDoc/MMROH/ReceiverID
Source Document Flow	Constant	ICGCPO
Source Document Flow Version	Constant	ALL
Document Identifier	Element Path	
Document Timestamp	Element Path	
Duplicate Check Key 1	Element Path	
Duplicate Check Key 2	Element Path	
Duplicate Check Key 3	Element Path	
Duplicate Check Key 4	Element Path	
Duplicate Check Key 5	Element Path	

Define source and target Business IDs – can be hard coded (constant) or from input XML using element path

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XML formats are defined by the hub administrator.

XML format definitions within the hub are used to match the incoming XML file with the XML schema and extract the necessary attributes. For an input XML file, the identifier type field is used to determine if the incoming XML matches this XML format definition. In this example, the Root tag value is "MMDoc". If the input XML file has the root tag of "MMDoc", this XML format will be the matching one.

Once the XML format is determined, the source and target business IDs can be extracted. They can be hard coded within the XML format, or extracted from the input XML file by specifying the element path for the source and the target business IDs.

Once the source and the target IDs are determined, the matching source and target trading partners are established by the hub to find the participant connection for the input XML file.
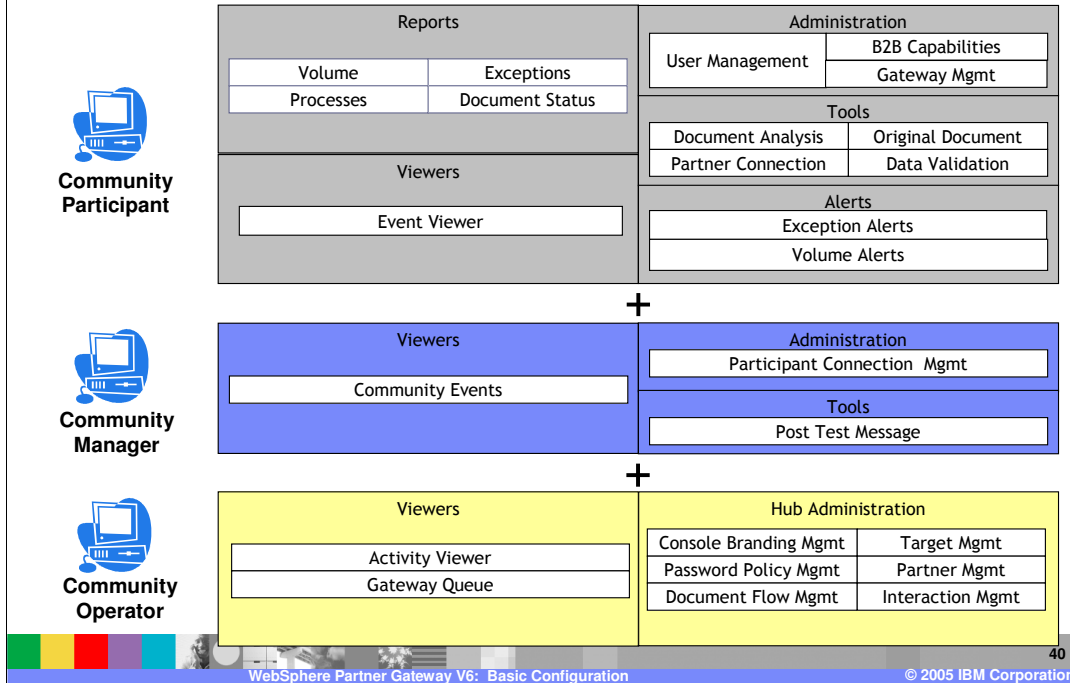
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Section

Hub Administration Scope and Typical Configuration Steps

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This section will provide a summary of hub administration scope and the typical configuration steps to enable a document flow through the hub.

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Hub Administration Scope

Community Participant

Reports	
Volume	Exceptions
Processes	Document Status

Viewers
Event Viewer

Administration	
User Management	B2B Capabilities
	Gateway Mgmt

Tools	
Document Analysis	Original Document
Partner Connection	Data Validation

Alerts
Exception Alerts
Volume Alerts

+

Community Manager

Viewers
Community Events

Administration
Participant Connection Mgmt

Tools
Post Test Message

+

Community Operator

Viewers
Activity Viewer
Gateway Queue

Hub Administration	
Console Branding Mgmt	Target Mgmt
Password Policy Mgmt	Partner Mgmt
Document Flow Mgmt	Interaction Mgmt

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The community console gives participants a complete and thorough view of the configuration information, document flows and exception conditions for the trading community. The three views reflect the different types of participants and the scope of each. They are hierarchical and cumulative as you progress from the lowest (Community Participant) to the highest (Community Operator).   The scope of authority is also different for each level. For example, the Community Operator can view reports for all participants and update any profile in the system. A Community Participant can only view reports that are specific to their document flows and can only administer a subset of their own profile information.

Finally, the browser based dynamically built pages enable customizing screens to only show the options that are available to each user. The drop down lists are customized to each user based on their authority and are updated when higher level choices constrain a specific list. This will be shown in the demonstration portion of this presentation.

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WPG Configuration: Typical Steps and Dependencies
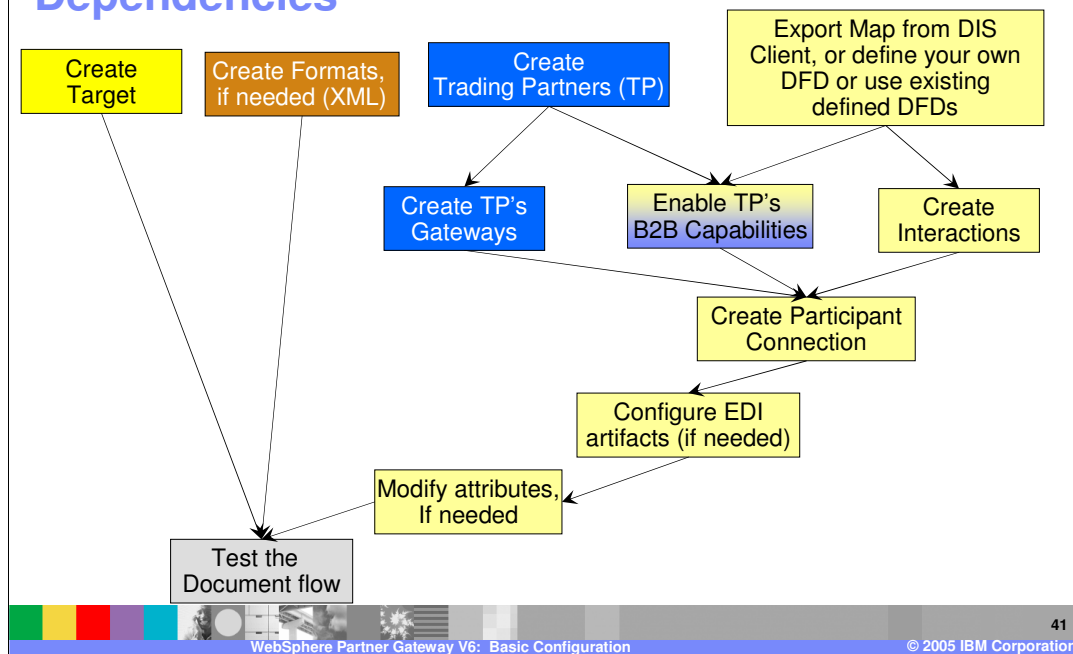
Shown here are the typical steps and dependencies of the different configuration actions that the hub administrator, community manager or a trading partner perform to get a document flow through the hub. These configuration steps have been explained in detail in previous pages.

Section

Summary

This section will provide a summary of this presentation.

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Summary

- Configuration of:
  - ▶ Trading Partners
  - ▶ Document flow definitions
  - ▶ Interactions
  - ▶ B2B capabilities
  - ▶ Participant connections

- For each configuration, who can perform the task

- EDI configuration is covered in more detail in a separate presentation

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This presentation covered the basic configuration steps to enable a simple document flow through the hub. The basic configuration for the Document flow definitions, the interactions, the trading partner B2B capabilities, and the participant connections were also described.

Other presentations provide detail for more complex document flows involving EDI documents.

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