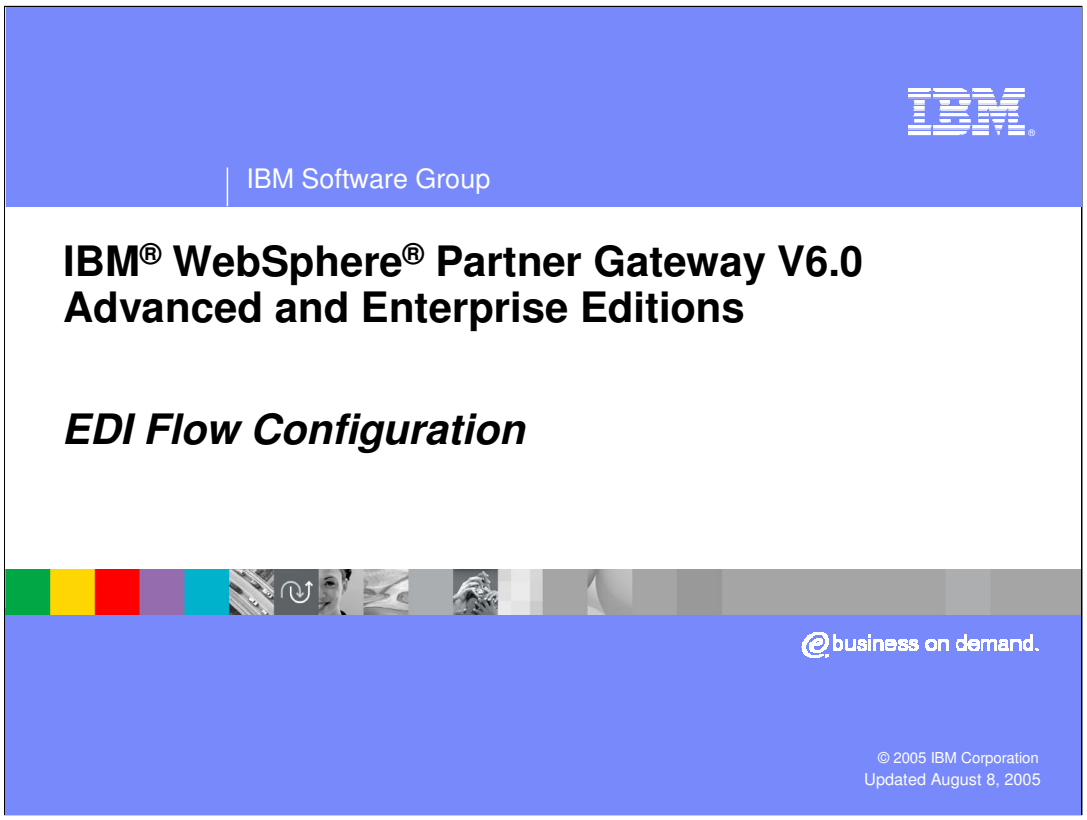
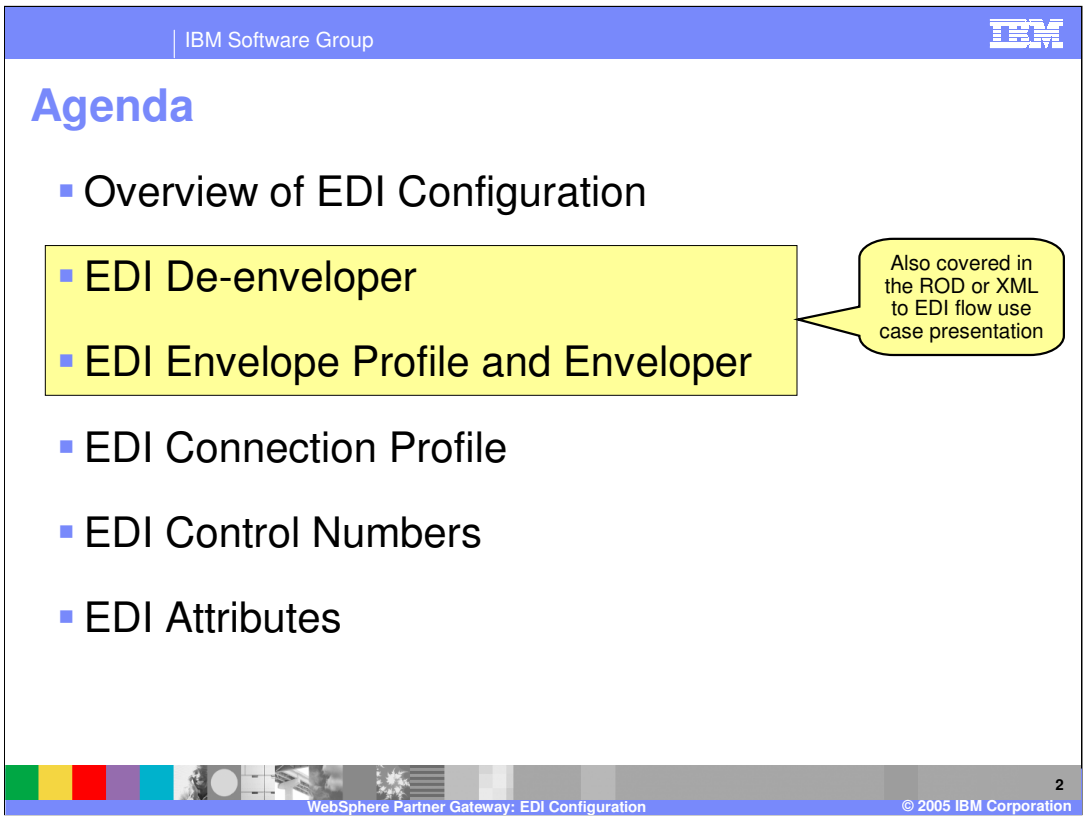
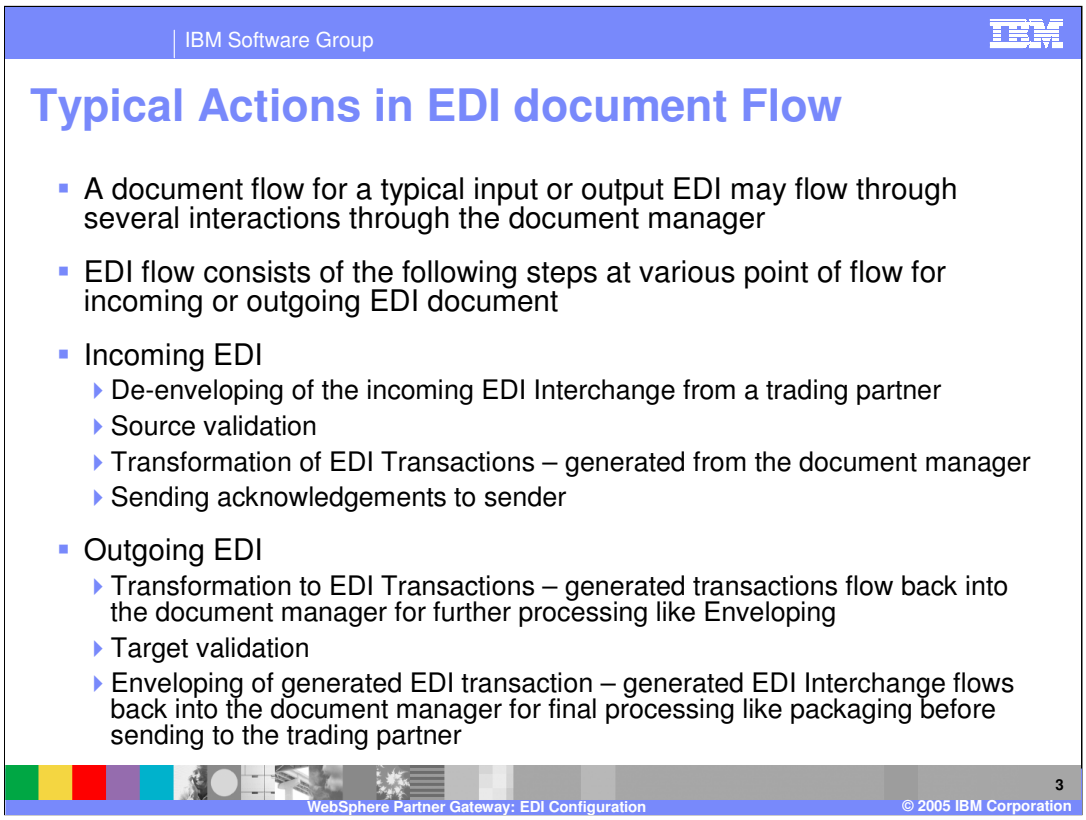


This presentation will focus on understanding what and how to configure WebSphere Partner Gateway for EDI input or output. The new native EDI capability brings in new settings for EDI that need to be configured. This presentation will focus on those EDI configurations.



The agenda for this presentation looks at the EDI configuration focusing on EDI De-enveloper, Enveloper, Connection Profile, Control numbers and EDI specific attributes.

Note that the EDI De-enveloper and Enveloper are covered in the ROD/XML to EDI flow use case presentation also.



Understanding the different actions for EDI document within the document manager will help understand the different EDI configuration settings.

Unlike simple flows, that have a simple flow of the document and probably one participant connection. EDI configuration is slightly more complex since a EDI document contain EDI transactions that require their own flow. Hence, an incoming EDI document flow requires several participant connections to handle incoming EDI, each different type of transactions. Similarly, an outgoing EDI document requires an connection defined for the generated EDI Interchange, besides the flow for each type of transaction.

An incoming EDI document goes through the actions of de-enveloping, transformation for the transactions to the required output that may be EDI, ROD or XML. An outgoing EDI document goes through the actions of transformation that generates the EDI transactions, and enveloping of the EDI transactions into EDI Interchange.

Section

EDI Acknowledgements

The next section provides an overview of the EDI Acknowledgements.

EDI X12 Acknowledgements

- Acknowledgement to the sender indicating the status of EDI document or its transactions
- Two types of acknowledgement:

1. ISA acknowledgement for the entire EDI X12 Interchange document – referred to as TA1 acknowledgement
   - Specified in the EDI Interchange ISA segment of the document (Field # 14)
   - Indicates a high level acknowledgement
   - Can be turned off at the hub to ignore the TA1 flag from the incoming EDI Interchange
2. EDI X12 Transaction acknowledgement – referred to as FA or 997
   - Specified as FA Map attribute value on the Participant Connection, B2B capabilities or Interaction of the EDI transaction

- When the hub sends an EDI, any receiving TA1 and FA acknowledgement from the target trading partner are consumed by the hub

There are 2 types of acknowledgement in EDI X12 documents. A high level acknowledgement for the entire EDI Interchange called TA1 acknowledgement. The incoming EDI document specifies to the document manager that a TA1 acknowledgement is required by the sender trading partner. This is done by setting a flag in the ISA segment of the EDI document. An option is available in the hub to ignore the TA1 flag in the incoming EDI.

Another kind of acknowledgement is referred to as FA or 997 acknowledgement and is for the EDI transaction. This is specified by the administrator in the hub, based on the mutual understanding between the administrator and the sender trading partner. If FA acknowledgement is set, the hub will create one FA for each transaction, and then envelope these FA transactions into EDI interchange and send it to the sender of the original EDI document.

EDIFACT only has CONTRL acknowledgements and can cover various aspects of the entire Interchange, although their concept is the same as functional acknowledgement in EDI X12.

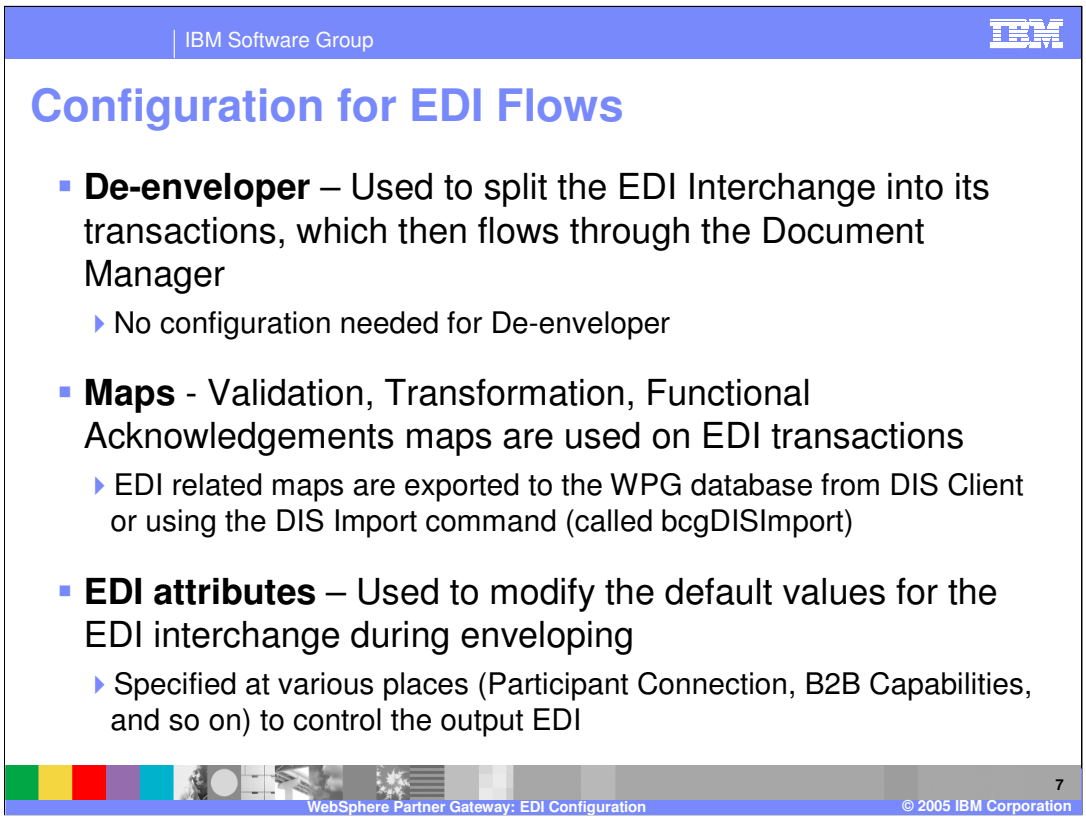
In UCS standard there is a 999 FA. WPG supports this by specifying FA map name "&DT_FA999V3R3".

There is also a newer X12 999 FA acknowledgment. WPG does not handle that acknowledgment yet.

Section

EDI Configuration

The next section will give more details on the EDI configuration.



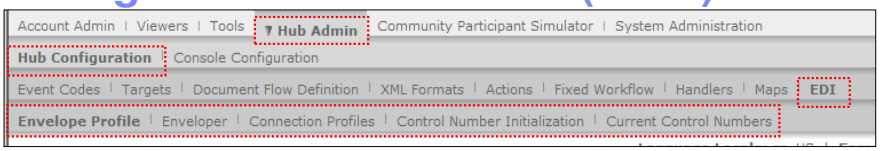
An EDI flow requires several configuration settings. This page and the next one provides a high level description of the different settings. Later, each of the settings are described in more details.

De-enveloper is used to EDI Interchanged into its transactions. Each transaction then flows back through the document manager for its own processing, based on the connection configured for those transactions.

There are several different types of maps associated with EDI documents. Validation maps are used to validate the source or the target EDI. Transformation maps are used to transform EDI transactions to or from another format, like EDI, XML or ROD. Functional acknowledgement maps are used to create FA transactions. The maps are created by the EDI map developer using the DIS Client tool and exported to the WPG database.

The last EDI configuration setting on this page are the EDI attributes. There are many EDI attributes that can be set at various places within the configuration setting. These EDI attributes control the generated EDI output or control the EDI input processing.

Configuration for EDI Flow (cont.)



Community Operator

- **Enveloper** - the process of grouping the EDI transactions in a EDI Interchange for a specific source/target trading partners
- **Envelope Profile** - specifies attributes needed to create the envelope
- **Connection Profiles** – provides mechanism to process EDI Transaction and Interchange differently for the same route connection
- **Control Number Initialization** - determines the control numbers in the output EDI Interchange, Group and Transaction segments
  - Administrator can see the Current Control Numbers used by the trading partners

Community Operator has the permission for setting most EDI Configuration

The console screen shows the buttons for the EDI configuration.

Enveloper and Envelope profile are related to process of generating EDI Interchange for the EDI transactions as the transactions are generated by the document manager based on some transformation from ROD, XML or another EDI.

Connections profiles are used to control processing of the EDI transaction or EDI interchange differently even though they use the same participant connection.

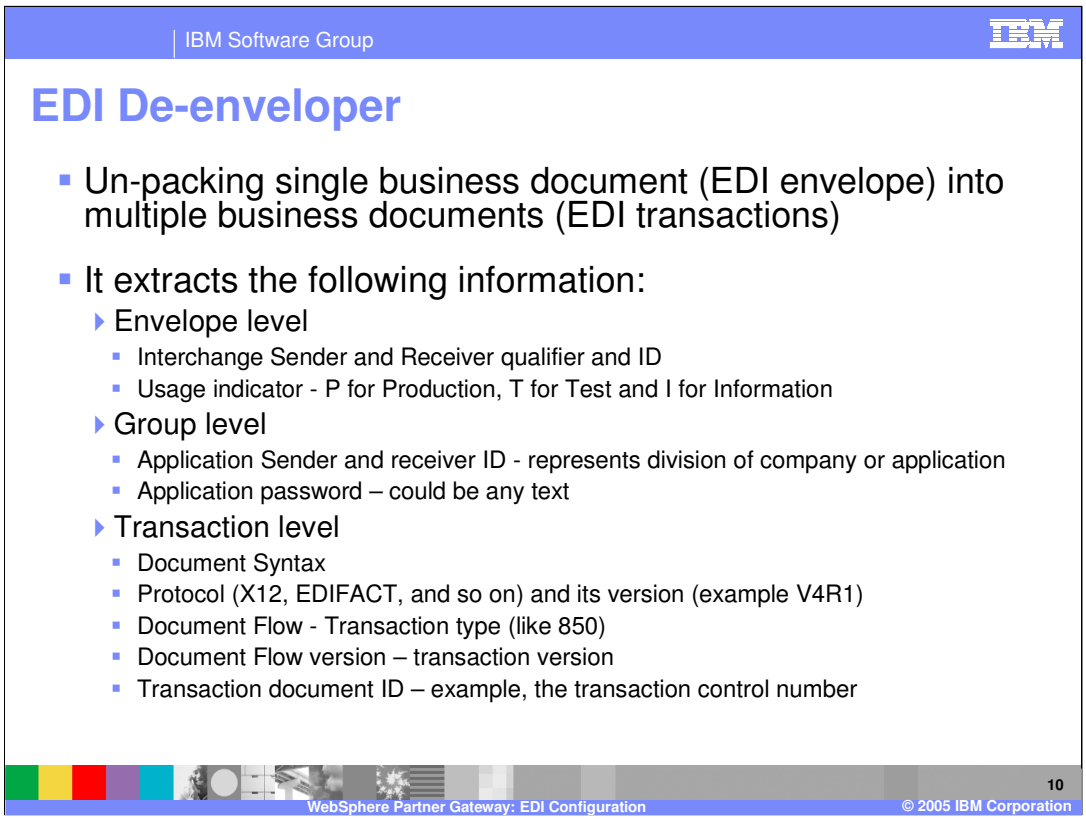
Control numbers are used when generating output EDI Interchange to create unique numbers when generating EDI Interchange.

Most of EDI configuration can be performed only by Community Operator.

Section

EDI De-enveloper

The next section goes into more specifics of the EDI De-enveloper.



De-Enveloping refers to un-packing single EDI Interchange document into its multiple EDI business documents, called transaction. For EDIFACT, these are called messages.

Each of these transaction flows thru the document manager as individual business document flows. Depending on business protocol requirements, there may be additional constraints on the way document manager needs to process these documents. For example in-sequence processing, discard envelope on error. It is important to note that splitting is different than de-enveloping. Splitting applies when multiple EDI Interchange documents are placed together in a file. The documents may not have any relationship with each other.

EDI De-enveloper extracts the Enveloper level, Group level and Transaction level information.

The EDI usage indicator shown at the Envelope level has no relationship with the gateway type. In the participant connection, the administrator can assign different attributes for different usage type. Based on the EDI usage indicator, the appropriate attributes will be applied. For example, if the incoming EDI had a usage type of T for test, and the administrator had set an EDI attribute for participant connection for Test, then those EDI attributes will be applied. This allows an administrator to test EDI flows that may require special attributes without affecting the configuration of the production EDI flows.

Section

EDI Enveloper and Envelope Profile

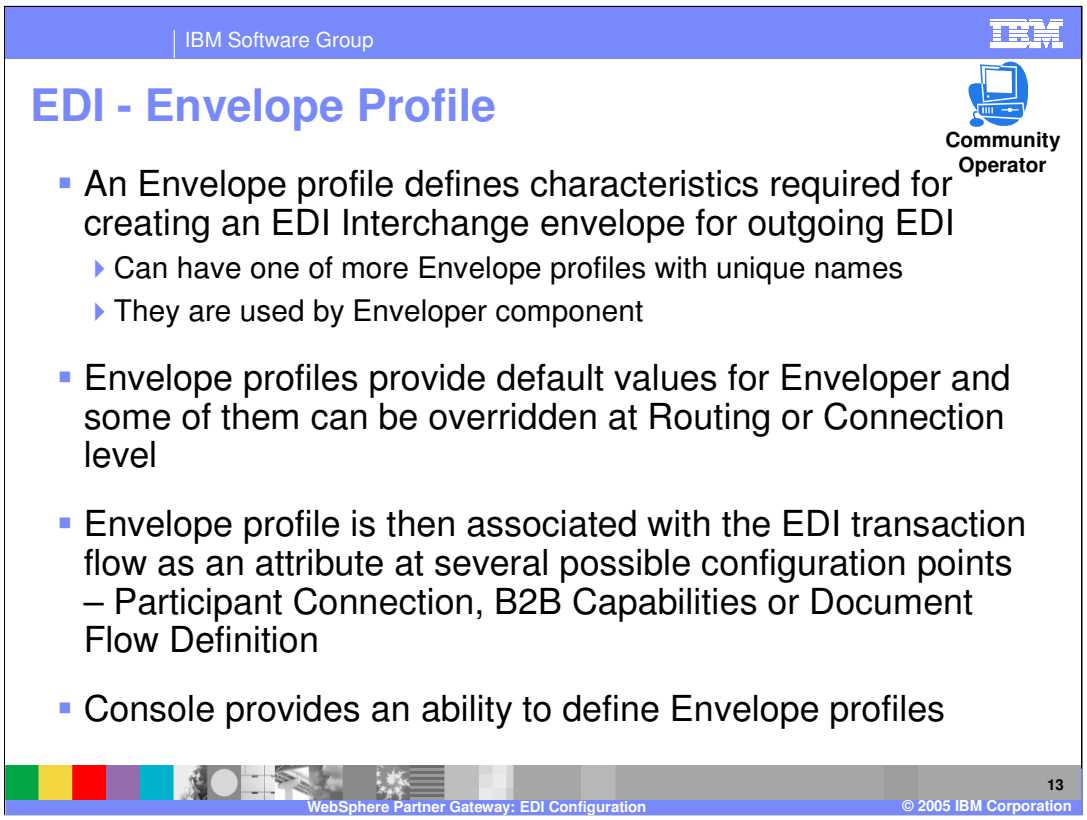
The next section will provide more details on EDI Enveloper and Envelope Profile.

EDI – Enveloper

- EDI enveloper puts a EDI envelope wrapper around the generated EDI transactions
  - Individual EDI transactions are never send to the Trading partner – they must be within an EDI envelope
- EDI enveloper groups transactions that have the same values listed below:
  - Envelope Profile – provides attributes used by Enveloper for output EDI
  - Trading partner pair: Sender and Receiver qualifiers and IDs
  - Connection Profile
  - # of transactions are within the global maximum # of transactions setting
- When enveloping, the Enveloper assigns EDI control numbers to the different parts (Interchange, Group and Transaction) within the EDI Interchange
  - Control start numbers can be controlled by administrator
- Administrator can set the global batching and scheduling attributes on the Enveloper

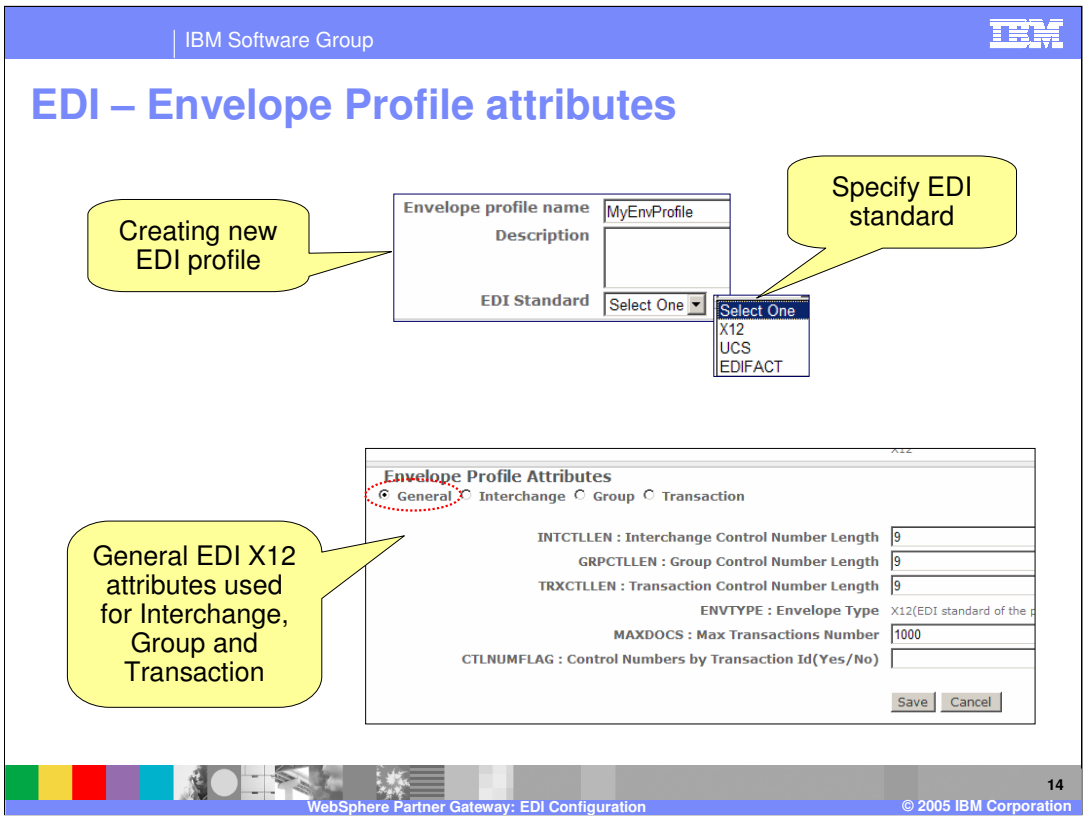
EDI Enveloper creates an EDI envelope for the generated EDI transactions that have the same characteristics, like EDI profile, sender and receiver trading partners, connection profiles. The Enveloper assigns unique EDI control numbers for the different parts of the EDI Interchange, based on the control start numbers provided in the Control number administration.

Global attributes like batching, scheduling can be configured by the Community Operator. The details of these global values are discussed later.



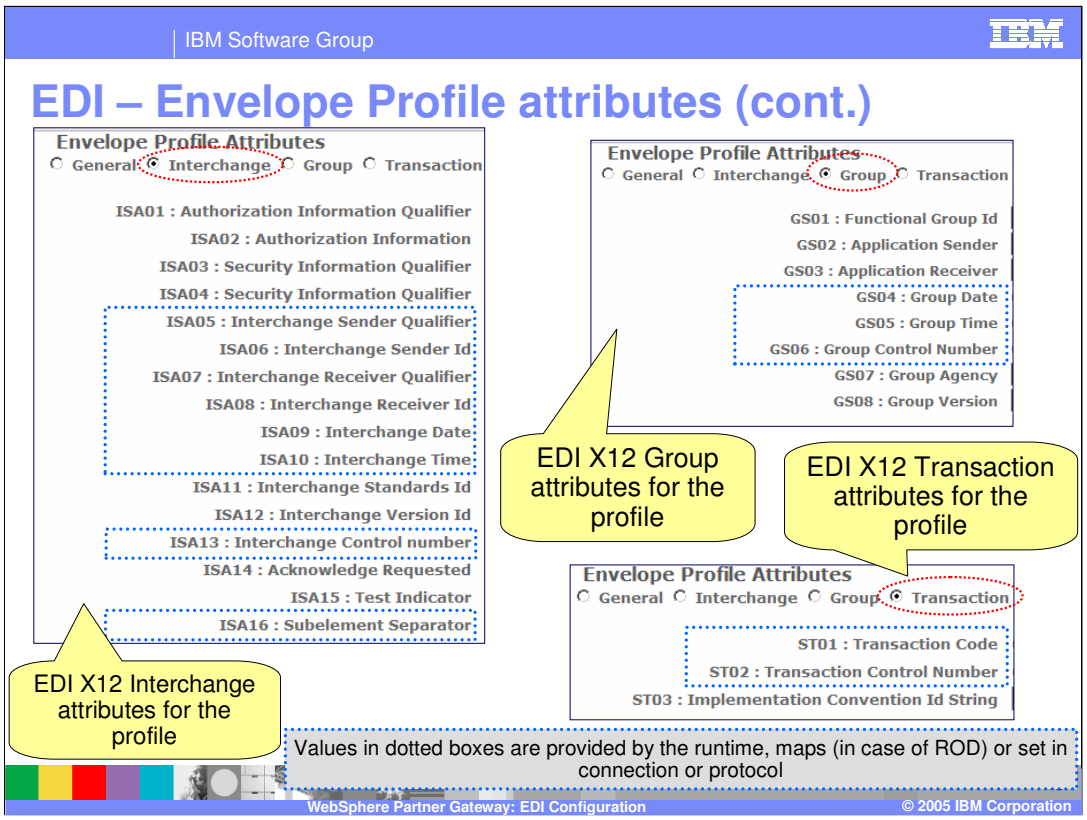
Envelope profile defines attributes that the Enveloper uses when generating the EDI Interchange. Some examples of attributes are ISA Security attributes, Interchange standard ID, Acknowledge requested, and so on. Envelope profiles are associated with the connection. The enveloper will use the attributes in the Envelope profile for the generated EDI interchange.

Envelope profile can be created only by the Community Operator.



This page shows the console panels to enter the attributes within the EDI envelope profile.

The attributes depends on the type of EDI standard used. This page shows the selection box for the EDI standards, and based on that, the appropriate attributes for the Interchange, Group and transactions are shown.

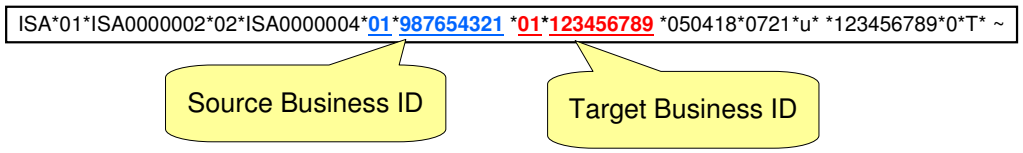


This page shows the Interchange, Group and Transaction attributes of the EDI X12 Envelope profile.

Attributes in the dotted boxes are either set some other place like participant connection or document flow definition protocol, or they are provided by the runtime.

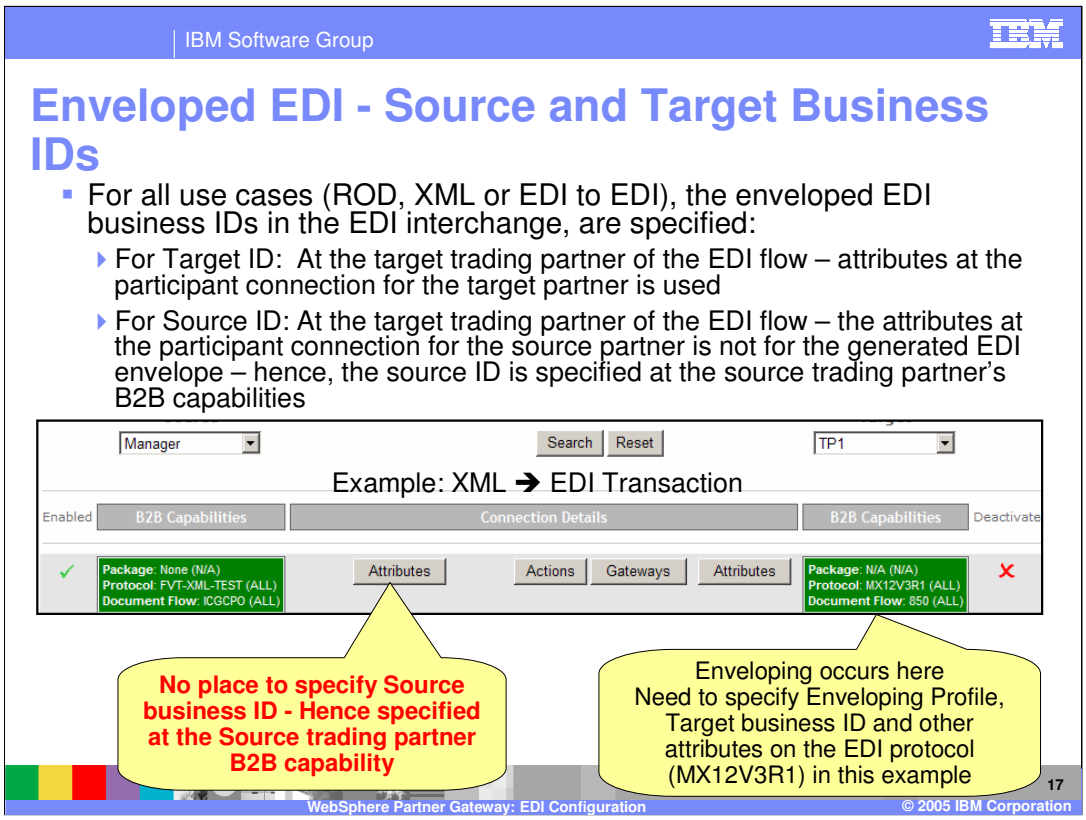
The help system will provide more details on each of these attributes.

Enveloped EDI - Source and Target Business IDs

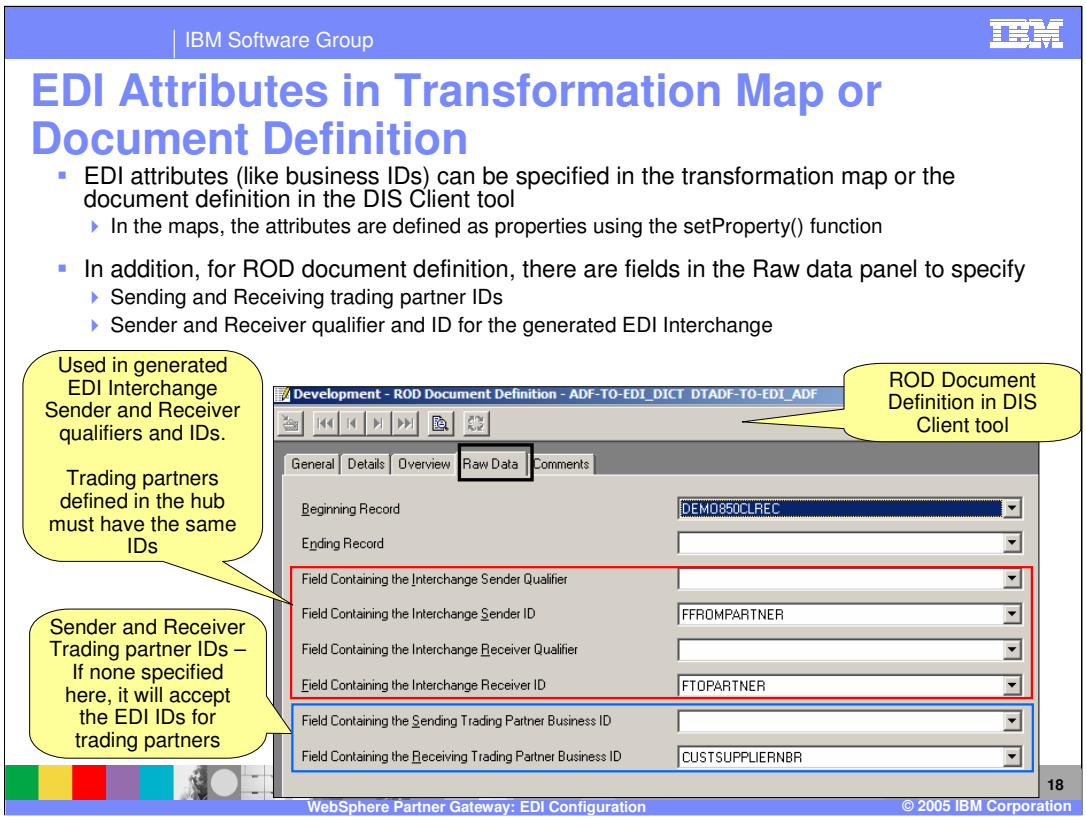


- The source and the target business qualifier and IDs used in the enveloped EDI can be different than the business IDs of the trading partner
- This provides flexibility of being able to generate the business qualifiers and IDs in the enveloped EDI

The source and business IDs for the generated EDI interchange can be different than the business IDs of the trading partners. This provides the flexibility of not tying the generated EDI interchange IDs to have the same value as the trading partner business IDs.

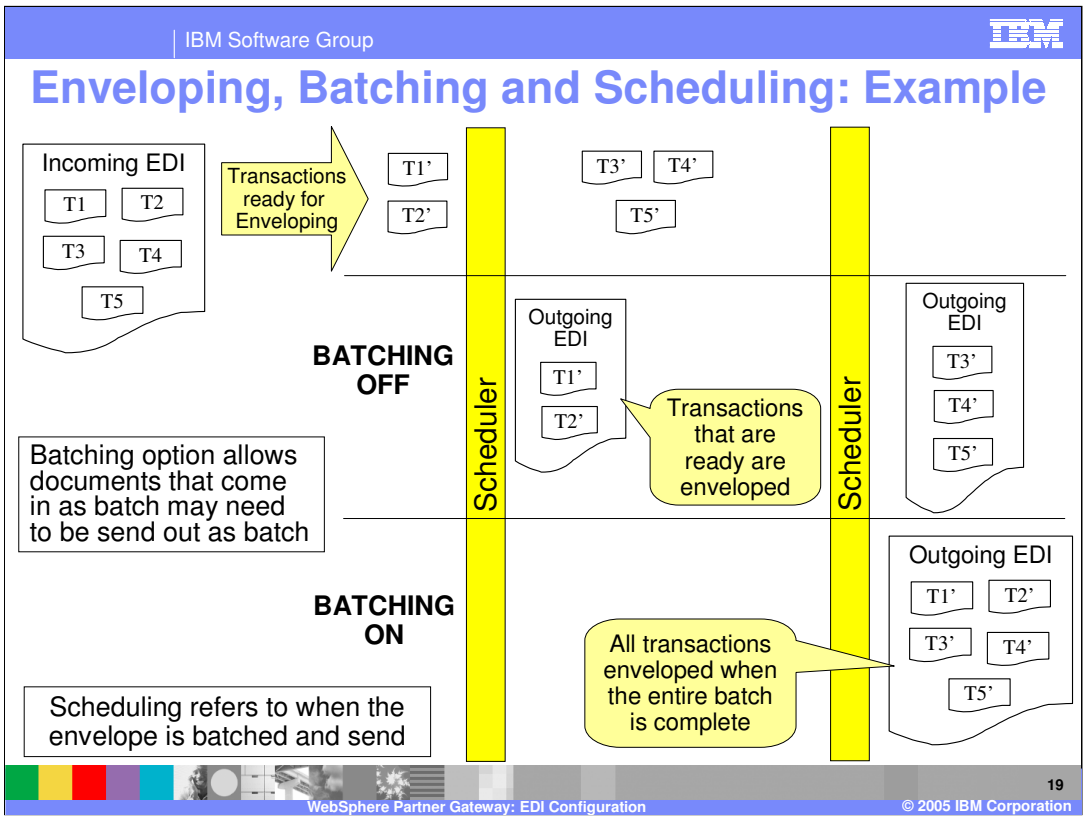


Normally, the source and target attributes of the source and the target in the participant connection. However, when having a ROD to EDI, or XML to EDI or source EDI to another target EDI, the source document at the connection is not the final EDI document. In the example, shown on this page for the XML to EDI participant connection, the target business ID for the EDI interchange can be set on the target EDI at the connection. There is no place to set the source business ID for the EDI interchange, since the source is the XML document for the connection. To work around this case, the source business IDs is set on the B2B capabilities attribute for the source trading partner. Recall that attributes can be set at different levels, at the participant connection, B2B attributes and so on. Hence, you can use the B2B capabilities for the source trading partner to specify the source business ID to be used for the EDI interchange.



Using the DIS Client tool, the EDI mapping specialist can specify the EDI attributes as properties in the transformation maps, using the setProperty() function.

For the ROD document definition, as part of the ROD raw data, the mapping specialist can specify the EDI ISA sender and receiver qualifier and business ID fields. The values of these fields in the ROD document are used by the EDI enveloper in the generated output EDI. Within the raw data, the sender and receiver trading partner business id fields.



Customers expect that the transactions which either came in one batch or which need to be sent out as a batch are enveloped together. Therefore it is expected that envelopers should try to envelope the transactions which are part of one batch, in a single envelope and in the same sequence as in the source document. For example, if input file to WPG receiver is a document containing multiple XML documents which should be transformed into EDI, the customer expectation is that the resultant EDI transactions need to be enveloped together.

Batching applies to processing the documents that come in as a batch to be send out as a batch in one EDI envelope.

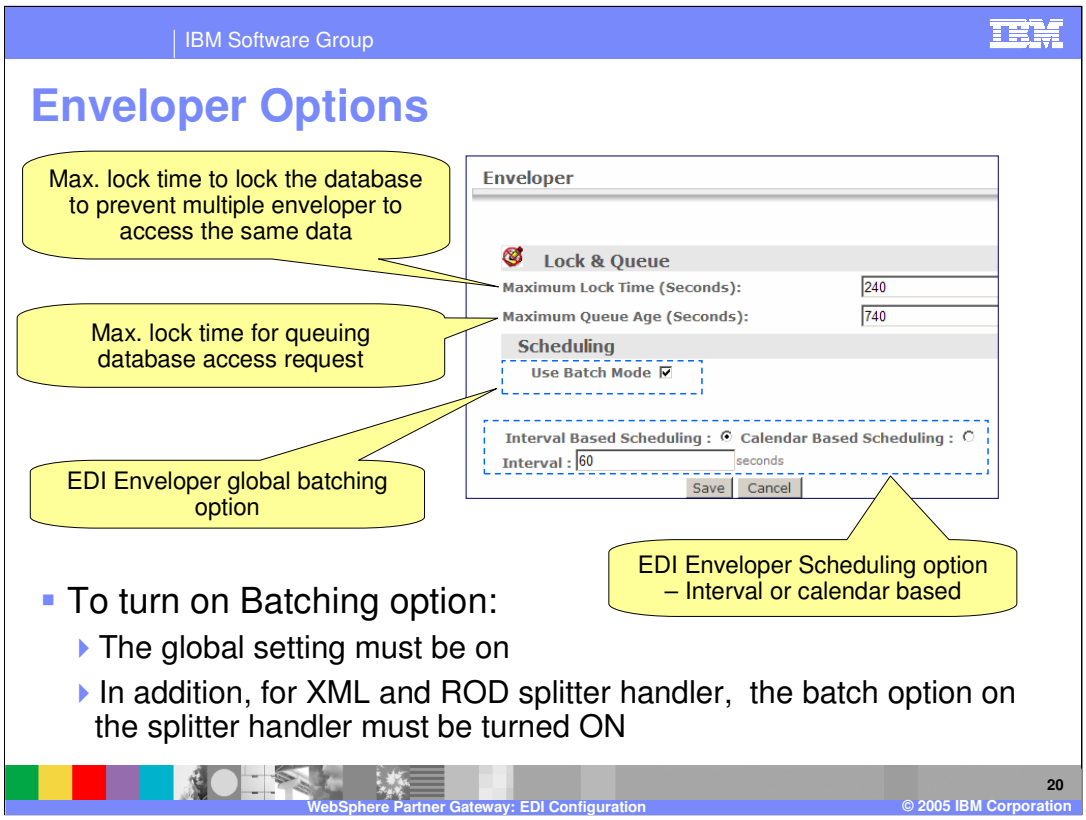
Batching is important requirement because of various reasons:

- Many applications have been developed with processing logic of transactions coming in one batch are flowing out in one batch.
- Automated testing suites developed by customers expect that transactions incoming in a batch will flow out as one batch.

Scheduling refers to when the envelope is batched and send.

Without batching, the Enveloper will envelope and send the processed transactions when the scheduler time is up. What gets enveloped may not be all the transactions from the incoming document. The receiver may get one or more EDI envelopes from an incoming input document. there may be more that may be enveloped later.

With Batching turned ON, the enveloper will wait until all the transactions related to the batch are processed and can be enveloped. Hence batching may not send any envelope when the scheduler cycle complete, if there are pending transactions of that batch.



The global panel for Enveloper configuration are shown on this page.

WPG supports multiple document manager as part of the hub topology. This leads to multiple active enveloper within the hub.

It is possible, therefore, for two (or more) instances of an Enveloper to attempt to poll transactions waiting to be enveloped. To ensure that a given transaction is polled by exactly one Enveloper, locks are used.

The database lock indicates the max. time the database is locked for a enveloper to access data, and the queue time indicates the maximum time the enveloper will wait for database access to be made available.

The scheduling is based on 2 factors, batching and scheduler interval.

For the batching to be on for a input document from a trading partner, the global setting shown here must be ON. In addition, when using the ROD or XML splitter handler on a receiver, the batch option on the Receiver splitter handler must also be turned ON. EDI splitter handler does not have any , there is no special flag needed, only the global setting applies.

Scheduling can be interval based (like, every 60 seconds) or calendar based (like, 1 AM every day or every Monday)

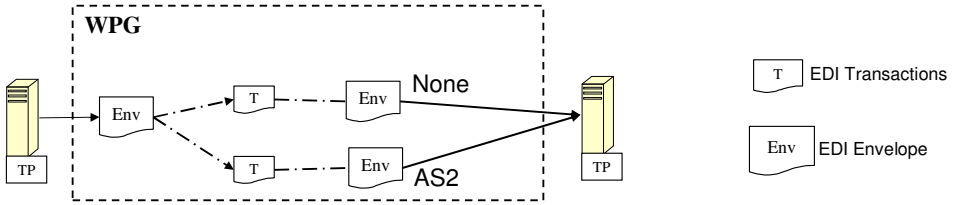
Enveloper Configuration determines how often to perform the envelope operation, by time interval or schedule (date/time) for each destination trading partner.

Section

EDI Connection Profile

The next section will give provide more details for the Connection Profile.

EDI – Connection Profile – Use Case



- EDI Transactions from same input EDI need to be enveloped into different output EDI envelopes
- Generated EDI envelopes may need to be sent differently via different packages or Gateways
- Connection Profiles are used to help make the decisions
- Participant connections can have multiple connection profiles – for each connection profile, different attribute values can be specified

Two different EDI Interchanges with the same Transaction types, but different Group information, can require either different validation maps or transformation maps. Similarly, two different enveloped EDI Interchanges may require different packaging (i.e. None or AS2) or gateways.

However because the basic connection lookup criteria is the same for the Transactions with the different Group information, there is a need to provide additional Connection sub-criteria for connection lookup.

A new feature will enable supplying Connection sub-criteria profiles on the Source document. Although there is no restriction on what business protocols can set the sub-criteria, only EDI will make use of the information during runtime.

For Source documents converted into EDI Transactions it does not make sense to define a Target Gateway for that connection since the transactions will get put into an Interchange that has its own Target Gateway. To help make this clearer, create a dummy Gateway named "Not Applicable" to use as the Target Gateway on the transaction connection.

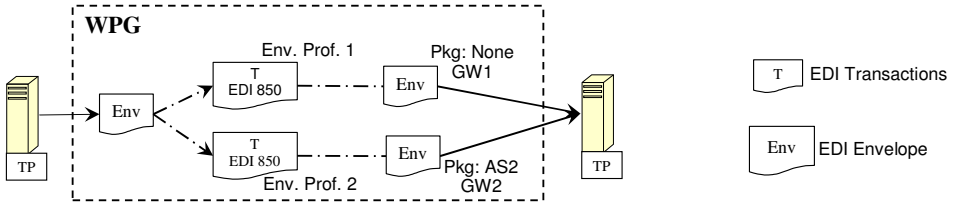
Some transactions that are de-enveloped from an Interchange may have different transformation mapping requirements depending on the group information or EDI Usage indicator. In this case the Source criteria for the connection lookup is identical so the Connection Profile can be used as additional criteria to distinguish the connections.

EDI – Connection Profiles

- For EDI documents, there can be several connections that apply to the same participants - the various connections are differentiated using connection profiles
  - Instead of creating different participant connection between the participants, the same connection is used, associating different connection profiles on the connection
  - For each connection profile, different attributes, gateways, actions can be modified
- Connection Profiles (CP) are used for 2 purposes:
  - With de-enveloped transaction or generated transactions
  - With interchanges to allow the same interchange to be delivered in different ways

Connection Profiles in WPG are used for 2 purposes – one for the de-enveloped or generated transaction, if they need to be enveloped differently. Second for the generated Interchange, if they need to be delivered differently. There is only 1 participant connection for the flow defining transaction o the flow defining the generated EDI ISA. Using different Connection profiles on the same connection provides a mechanism to defined different attributes like envelope profile for EDI transactions, or different gateways for the generated EDI interchange.

EDI – Connection Profile – Use Case



- EDI Transactions (like 850) from same input EDI need to be enveloped into different output EDI envelopes
- Generated EDI envelopes may need to be sent differently via different packages or Gateways
- Connection Profiles are used to help make the decisions
- Participant connections can have multiple connection profiles – for each connection profile, different attribute values can be specified

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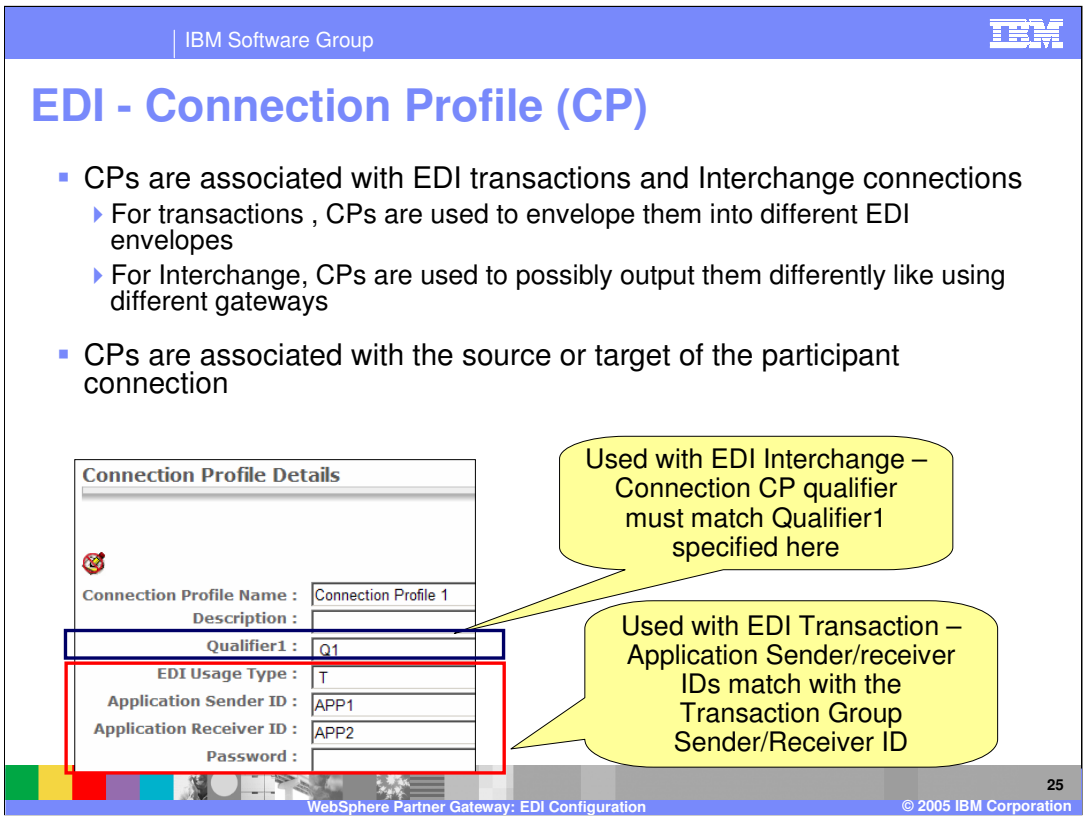
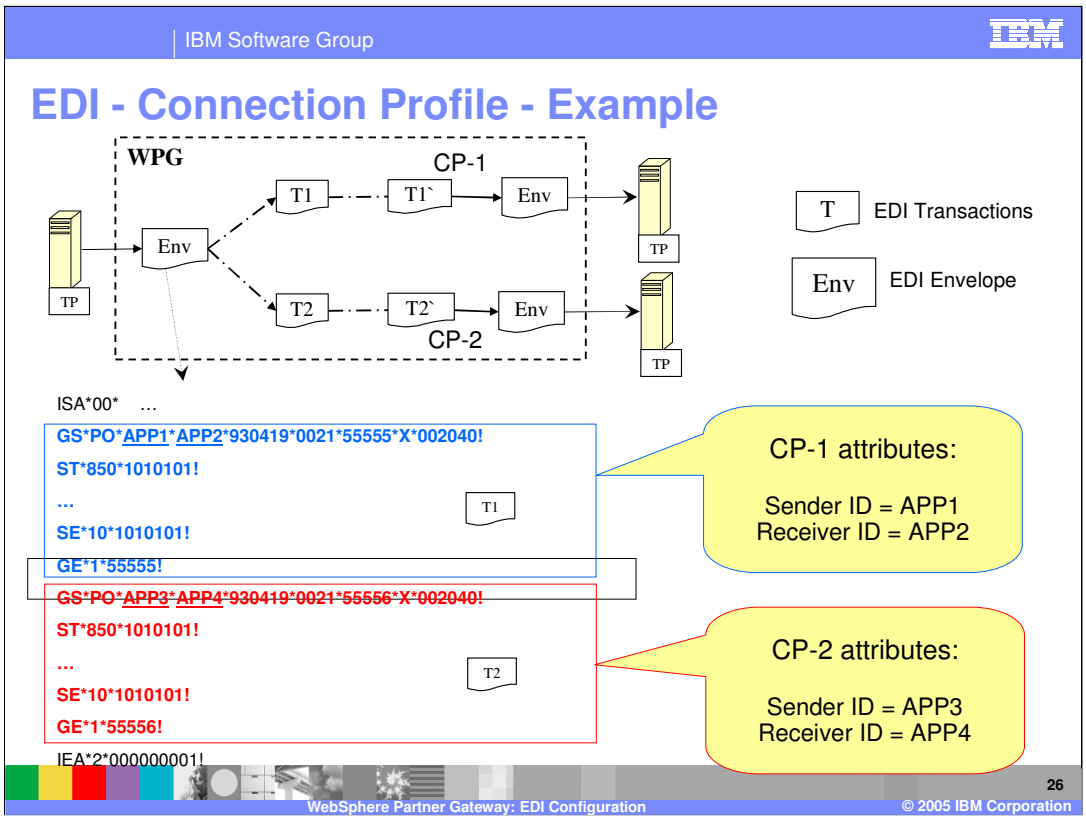


Connection Profile attributes are used by EDI interchange and transactions. The "Qualifier1" attribute is used by the EDI interchange to decide the Interchange attributes, gateways, whereas the Application Sender ID, Receiver ID, EDI usage type are used by the EDI transactions. This allows the administrator to have different attributes for the same participant connection for different EDI transactions and Interchanges.

Here's a scenario to show how it works:

You are in the midst of migrating your company from using a VAN (None packaging) or the Internet (AS2 packaging). You want 840 (Request for Quote) Transactions to use VAN and 850 (Purchase Order) Transactions to use the Internet as AS2. There will be two participant connections, both with the same Source Interchange but different Targets (one with None packaging and the other with AS2 packaging). Set the Connection Qualifier 1 attribute on both the 840 and 850 transactions. The value should be meaningful, such as AS2 and None respectively. Then define two connection profiles (could name AS2 and None) each with the Qualifier 1 attribute set to match the transactions (i.e. AS2 and None). The Enveloper will use the Connection Qualifier 1 attribute as one of the break points to separate the Transactions into two different Interchanges. The Connection Qualifier 1 value will also be set on each created Interchange so that the appropriate Connection will be looked up for each.

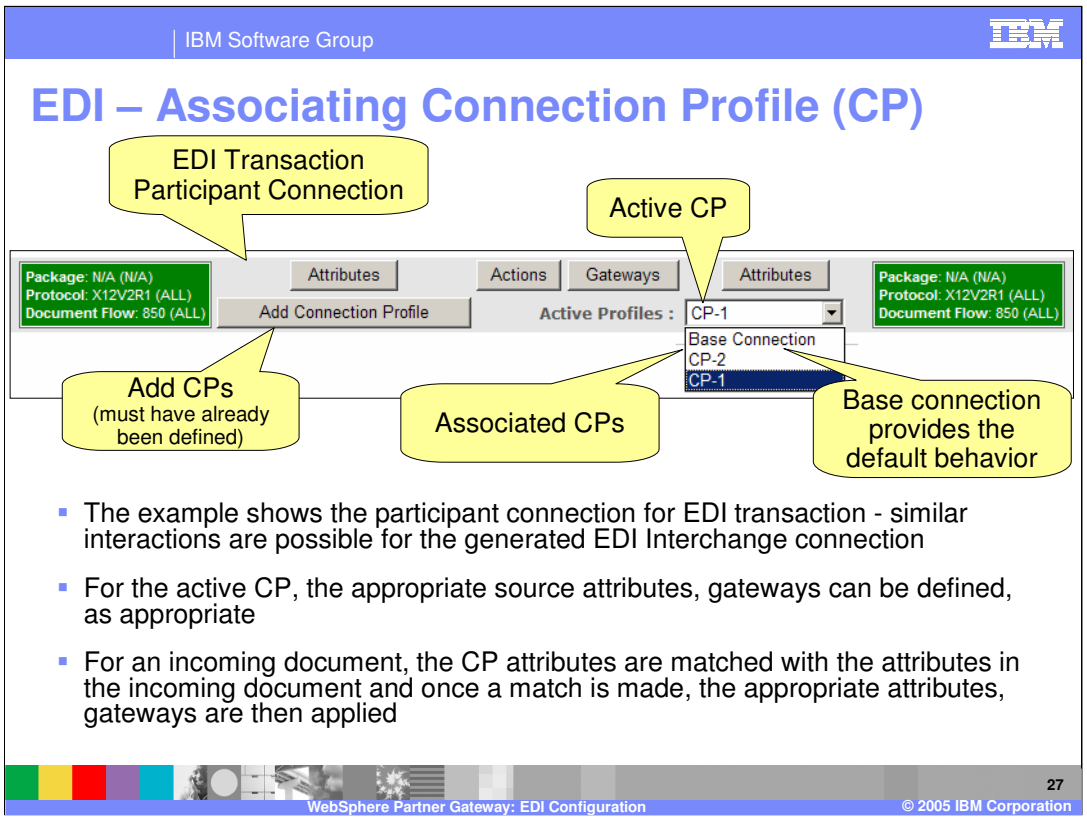


This page shows an example of the use of Connection profile using a simple example of an EDI envelope that has 2 groups, each containing 1 850 transaction, T1 and T2 as shown in the EDI document. The goal is to translate T1 to T1` document and T2 to T2` document and apply different attributes. There is one participant connection for the 850 transaction. Using Connection profiles, the administrator can specify different attributes, maps, actions on the same participant connection.

The connection profile will be used to specify different maps on the participant connection. The participant connection will use 2 different connection profiles, CP-1 and CP-2, as shown. The attributes of CP-1 match the first group application sender and receiver attributes, namely APP1 and APP2. Similarly, the attributes of CP-2 match the second group application sender and receiver attributes, namely APP3 and APP4.

The map and attributes specified for the participant connection for CP-1 will be used for T1 transaction. whereas, the map and attributes specified for the participant connection for CP-2 will be the used for T2 transaction.

Hence, connection profiles can be used as part of participant connections to change the attributes, maps, gateways for the document flows using the same participant connection.



The participant connection is shown on this page, where the administrator can associate different connection profiles through the “Add Connection profile” button. Once the connection profile is added, they appear in the profiles list.

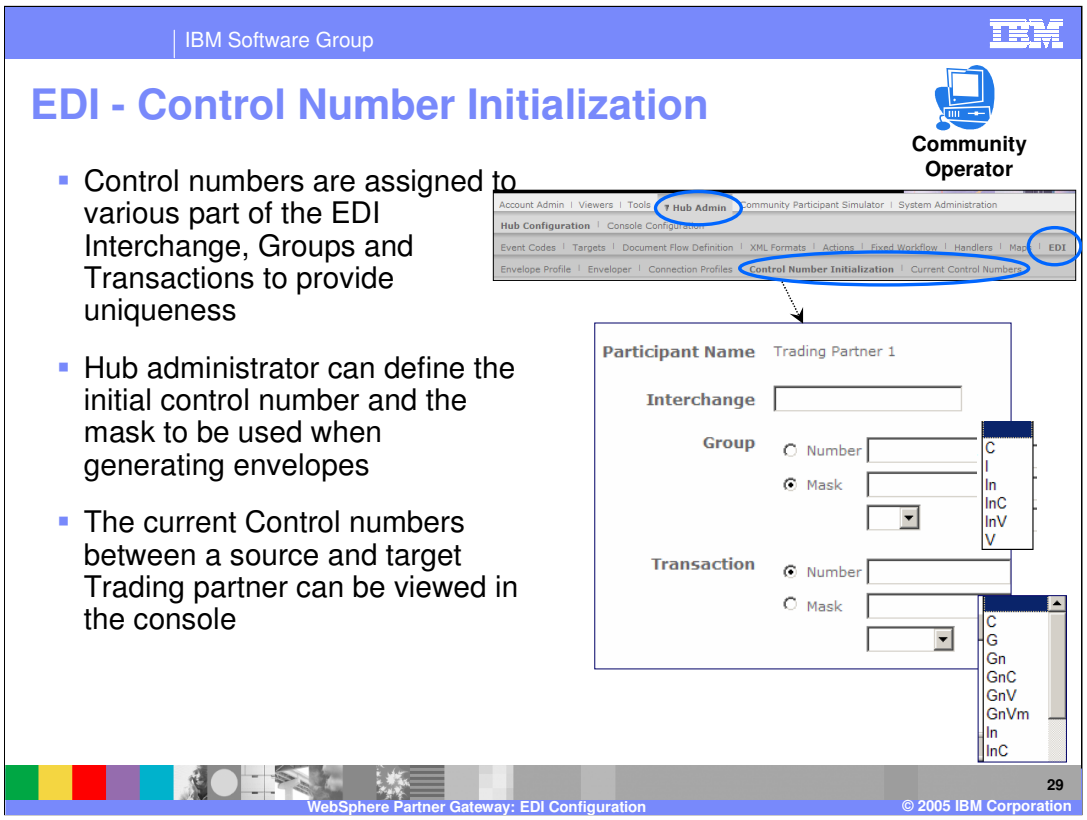
To change the attribute of the participant connection for a given connection profile, make the connection profile active, and then change the attributes, gateway, actions, through the buttons shown on the console.

This allows administrator to specify different attributes, gateways, actions for the same participant connection. An incoming document that has a matching connection profile will use the attributes, gateways, actions of the participant connection for that connection profile. If no matching connection profile is found, then the attributes, gateways, actions of the Base connection is used.

Section

EDI Control Numbers

The next section will give



Control numbers in an interchange, group and transactions between a source and target trading partner provides uniqueness. The enveloper uses a set of initial control numbers and, or the mask, defined by the administrator. The hub maintains the current control numbers used between a given source and target trading partner. It increments the numbers as the envelopes are generated for the target trading partner for a given source trading partner.

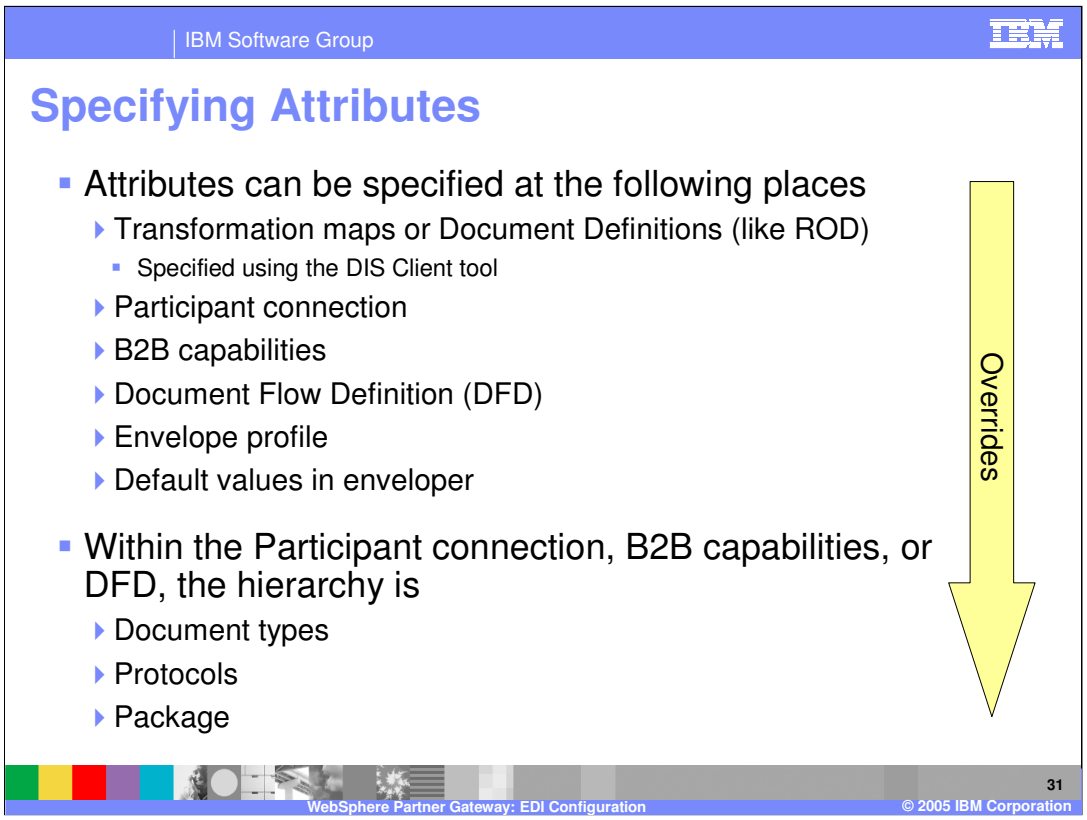
The hub administrator can specify the initialization of the control numbers for the EDI Interchange, Group and the transactions for a specific trading partner.

As the documents flow, the administrator can view the current control numbers using the current control number panel in the console, as shown on the top menu bar, next to the Control number initialization option.

Section

Specifying EDI Attributes

The next section will provide more details on EDI attributes.

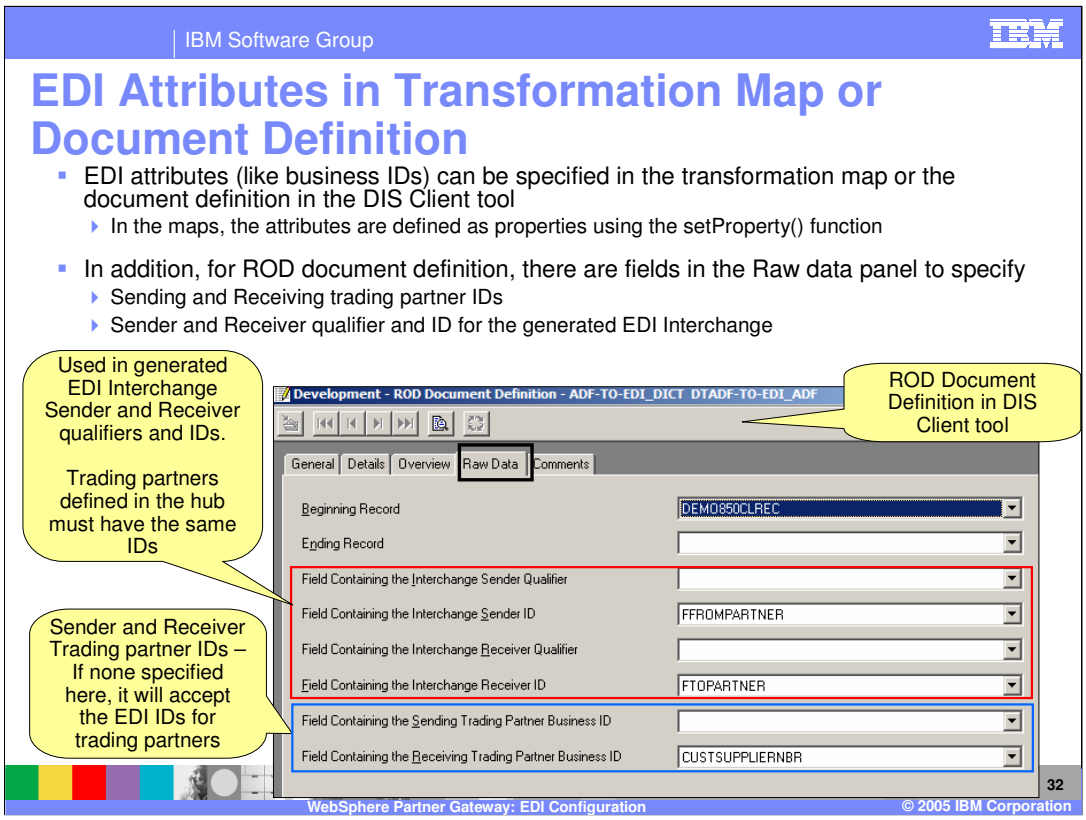


Typically the connection to use is based on criteria such as the From/To partner id, document package/protocol/document type, and gateway type.

Once the connection is determined then the attribute values are obtained for that connection.

Attributes can be specified at several configuration places, starting with Transformation map or Document definitions within the DIS client, or from the console at the participant connection, B2B capabilities, Document flow definition, envelope profile and global enveloper values. There is an order of precedence as shown on the page.

For the Participant connection, B2B capabilities or the Document flow definition, the attributes can be defined for the document types (like EDI ISA), protocols (like EDI X12) or at the package level. Here too there is a order of precedence, as shown.

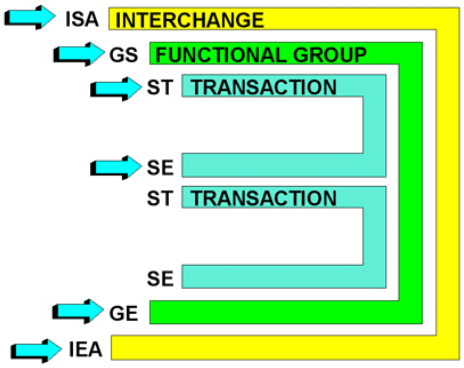


Using the DIS Client tool, the EDI mapping specialist can specify the EDI attributes as properties in the transformation maps, using the setProperty() function.

For the ROD document definition, as part of the ROD raw data, the mapping specialist can specify the EDI ISA sender and receiver qualifier and business ID fields. The values of these fields in the ROD document are used by the EDI enveloper in the generated output EDI. Within the raw data, the sender and receiver trading partner business id fields.

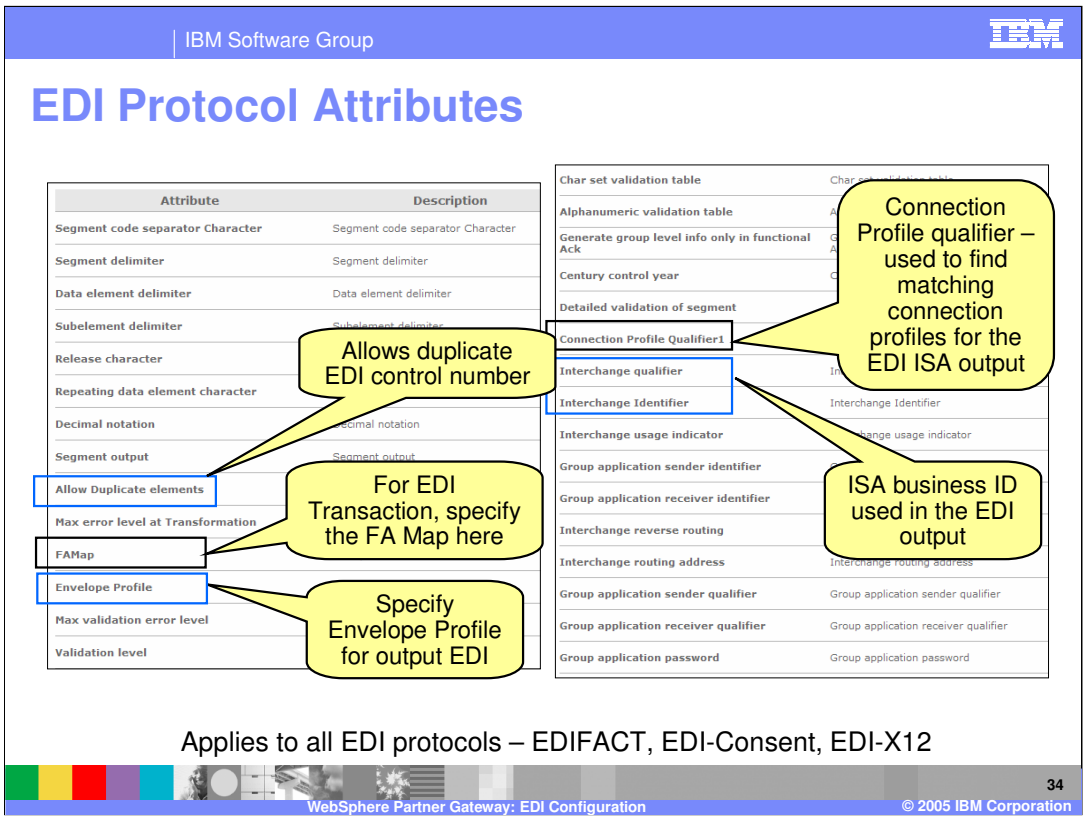
EDI Attributes for Generated EDI Envelop

- All the EDI X12 attributes on the ISA, Group and Transaction can be specified for the outgoing generated EDI documents at various places
- EDIFACT Transactions are called Messages and they do not have to be put into Groups
- EDIFACT uses the UNB segment (this is similar to X12 ISA segment)
- EIDFACT has an optional UNA segment that goes at the beginning of the Interchange – this is supported by WPG, but the Document Flow Definition still uses UNB



A very brief recap of the EDI X12 data structure is shown here where the Interchange contains groups and groups contain transactions.

EDIFACT uses slightly different conventions and uses UBM segment which is similar to the X12 ISA segment, but basically, they are very similar.

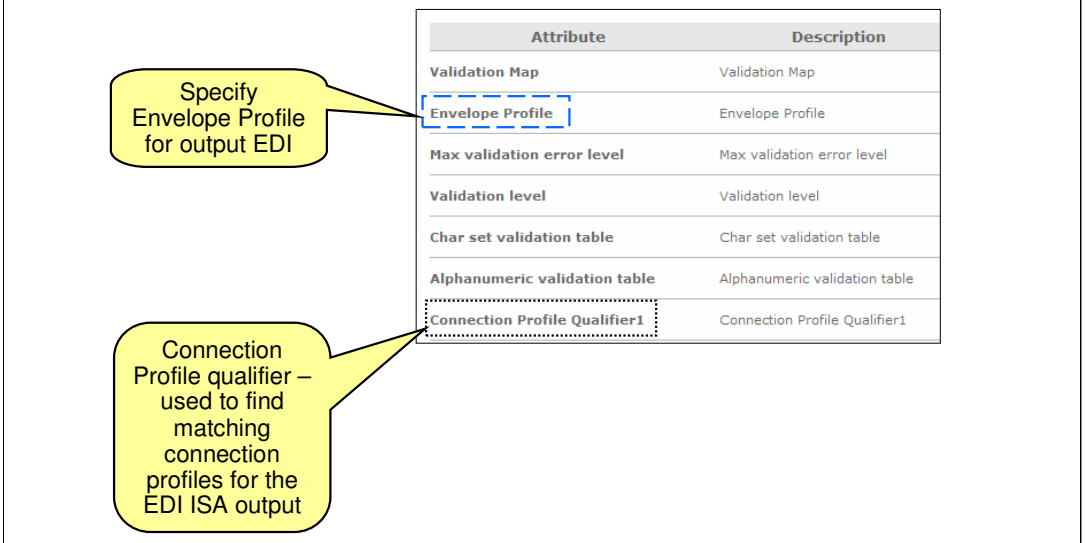


The page shows the EDI protocol attributes when editing the protocol section of the attribute configuration at the participant connection, B2B capabilities or document flow definition.

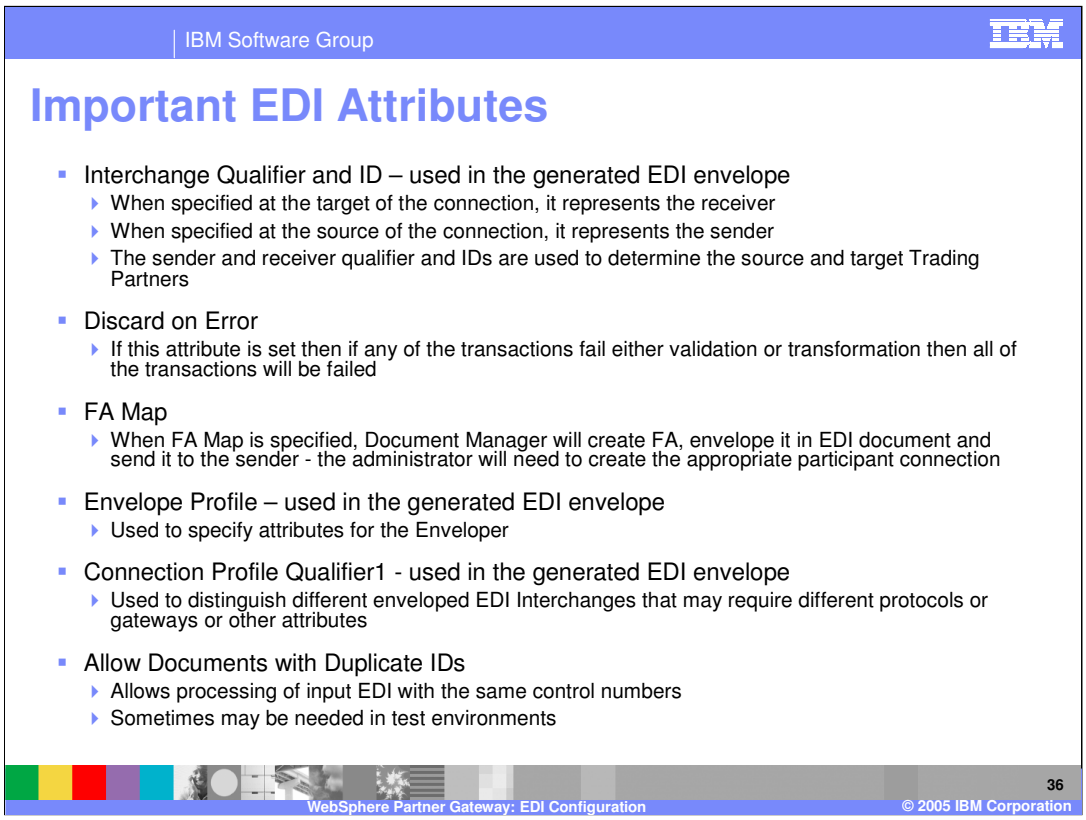
Some of the important EDI attributes are highlighted. The “Allow Duplicate elements” is for allowing duplicate control numbers in the EDI send by the trading partner. This becomes useful when in a test environment, where same EDI document may be send by the trading partner.

If FA needs to be created, then the FAMap attribute must specify the name of the FA map. Other parameters include the EDI profiler name, information about the connection profiles and the business qualifier and id used by the EDI enveloper when generating an EDI document.

EDI Document Attributes



The panel shows the attributes where the different EDI document or transaction attributes, including the Envelope profile, connection profile and so on.



Some of the Important EDI attributes are specified here.

The Interchange qualifier and business ID are used as the business qualifier and ID in the ISA or UNB segment of the generated EDI Interchange. There must be trading partners that have the same business qualifier and ID. It might be necessary to assign multiple business IDs for the trading partner, one to satisfy the trading partners business IDs in the incoming document and one used in the generated EDI Interchange.

The Discard on Error flag will fail all EDI transactions if any one of the transaction validation or transformation fails.

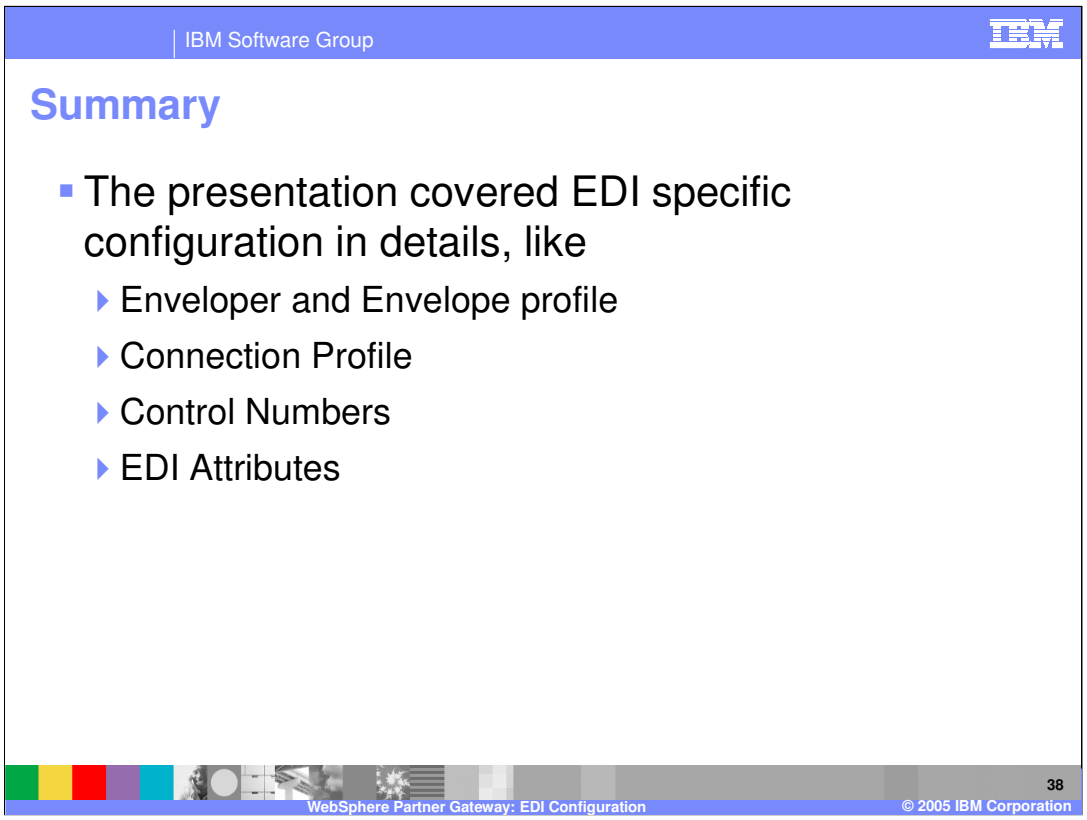
The FA Map attribute, when specified on the EDI transaction, will indicate to the document manager to generate a FA for that transaction. The value of the FA map attribute is the FA transaction map.

The Envelope profile is the profiler to be used for the generated EDI and contains the EDI attributes, discussed earlier.

On a given participant connection, the Connection Profile qualifier 1 is used to associate different attributes, gateways for the different generated EDI envelopes.

The “Allow documents with duplicate IDs” flag is used to accept incoming EDI documents with same control numbers. This can be used in a test environment, where the same EDI is being send to test out the hub configuration.

The next section provides a summary of this presentation.



In Summary, this presentation focused on EDI configuration listed on this page. There are several EDI configuration. Some of the hands on labs provided with this education material will help explore these configurations and how to use them.

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