



Informatica® B2B Data Exchange  
HIPPA Accelerator 10.5.0

# HIPAA Accelerator Guide

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# Preface

Use the *B2B Data Exchange HIPAA Accelerator User Guide* to learn how to install and configure HIPAA Accelerator. The guide also contains a reference section documenting the transformation components and their properties.

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To find online support resources on the Informatica Network, visit <https://network.informatica.com> and select the eSupport option.

# CHAPTER 1

## Overview

B2B Data Exchange Accelerators provide a packaged B2B Data Exchange solution that addresses common business-to-business integration use cases for vertical industries, and reduces implementation effort.

The HIPAA Accelerator serves Healthcare Payers and Providers that need to connect to Regional Exchanges, or to the Federally-Facilitated Marketplace (FFM), or need a HIPAA Message Gateway to integrate with their providers or with health care plan customers or employers.

The B2B Data Exchange HIPAA Accelerator is used to receive HIPAA X12 messages (inbound), and validate (HIPAA Level 1 and 2 validations) and parse them into Informatica canonical xml format. In the same manner, it is used to send HIPAA X12 messages (outbound), serialized from the canonical structure to the HIPAA X12 format

For more information about the Informatica canonical format, see the Data Transformation Libraries Guide.

HIPAA ASC X12 is an industry standard for administrative and financial health-care transactions. For more information about HIPAA, see the following websites:

<http://aspe.hhs.gov/ADMNSIMP/FAQTX.HTM>

<http://www.hipaa.org>

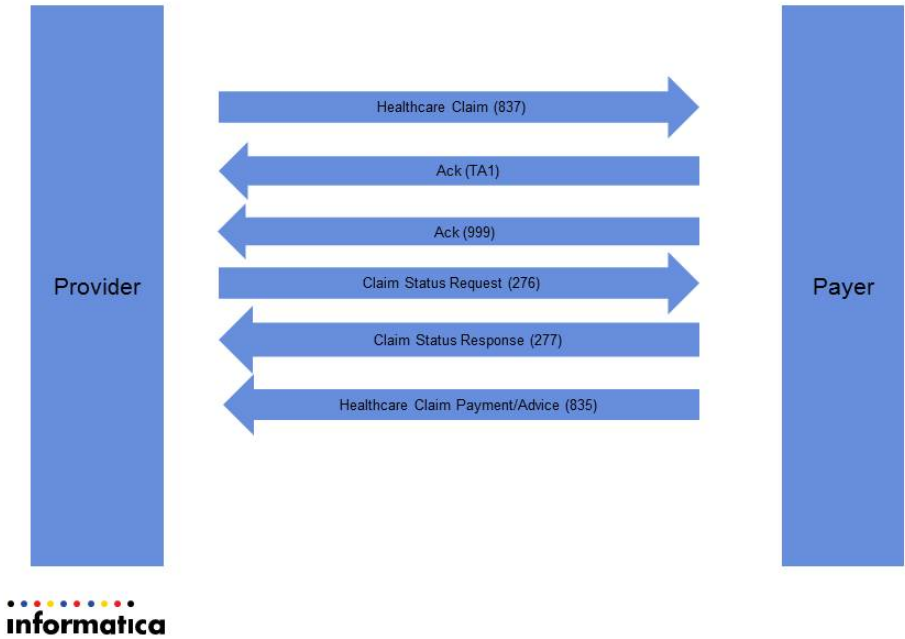
The HIPAA Accelerator supports the following HIPAA EDI transactions (version 5010A) for both Inbound and Outbound traffic:

- EDI 270 Eligibility, Coverage or Benefit Inquiry
- EDI 271 Eligibility, Coverage or Benefit Information
- EDI 276 Health Care Claim Status Request
- EDI 277 Health Care Information Status Notification
- EDI 278 Health Care Services Review - Request for Review and Response
- EDI 820 Payment Order/Remittance Advice
- EDI 824 Application Advice
- EDI 834 Benefit Enrollment and Maintenance
- EDI 835 Health Care Claim Payment/Advice
- EDI 837 Health Care Claim, including 837P for professionals, 837I for institutions and 837D for dental practices
- EDI 999 Implementation Acknowledgment

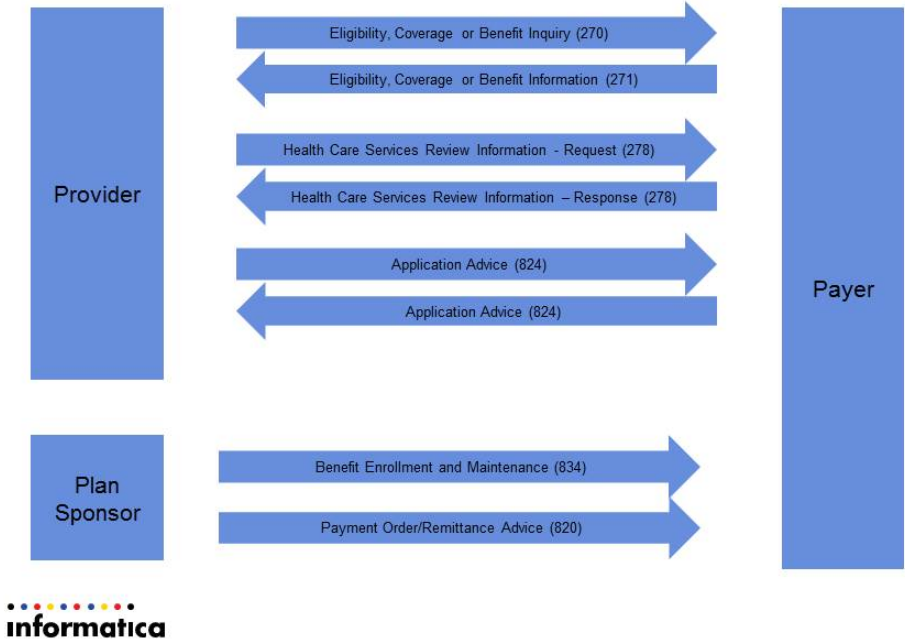


- TA1 Transactional Acknowledgement

## Healthcare Claim Information Data Flow



## Additional Data Flows



# CHAPTER 2

## Package Installation

Before you can use a HIPAA Accelerator, you must install it.

### Package Contents

The HIPAA Accelerator package includes the following components

#### **B2B Data Exchange Deliverables**

1. Sample Partner
  - **p\_HCO\_PARTNER\_1**
2. Sample Profiles
  - **prof\_HCO\_IB\_PARTNER\_1** - a DX profile to handle inbound workflow
  - **prof\_HCO\_OB\_PARTNER\_1** - a DX profile to handle outbound workflow
3. Sample Account
  - **acc\_HCO\_1**
4. Sample Endpoints
  - **ep\_HCO\_receive** - A file receive endpoint used to receive files from the sample partner for inbound processing and receive files from the back end system for outbound processing
  - **ep\_HCO\_send** - A file Send endpoint used to send files to the sample partner
5. Workflows, including Portal parameters
  - **wf\_HCO\_OB** - A workflow to be used for processing outbound EDI messages
  - **wf\_HCO\_IB** - A workflow to be used for processing inbound EDI messages , including acknowledgement messages
6. The following event statuses

| Event Status               | Description  |
|----------------------------|--|
| Group Processing Initiated | The HIPAA message processing has been initiated at the functional group (GS) level |
| TA1 Rejected Sent          | The HIPAA Accelerator created and sent a TA1 message for an invalid interchange    |

| Event Status           | Description  |
|------------------------|--|
| Transaction initiated  | HIPAA document processing has been initiated at the transaction (ST) level   |
| Transaction processed  | HIPAA document has been processed to the transaction (ST) level  |
| Validation Error       | The file failed validation process (functional group or transaction level)   |
| 999 Rejected           | The outbound file failed functional group validation, or had bad input at the transaction level                          |
| 999 Accepted           | The outbound file received a positive functional group validation acknowledgement  |
| Waiting for Ack        | Outbound functional group raised a reconciliation flag for the corresponding 999 arrival                                 |
| exception              | Data Transformation service does not exist in data transformation server service DB                                      |
| Invalid File           | Non-HIPAA file or unrecognized format  |
| Timed Out              | The event status timed out since acknowledgment message did not arrive. The timeout period is defined in the DX profile. |
| Authentication Error   | The values in ISA are different than agreed by partners  |
| Authorization Error    | The message type is not authorized for the partner   |
| Complete Not Supported | Outbound HIPAA message is not agreed by partners   |
| Submitted              | Claim has been sent\received. Wait for 277CA   |
| 227 Claim Accepted     | Claim has been Accepted (appears on 837 Claim event). Wait for paid status   |
| 227 Claim Rejected     | Claim has been Rejected (appears on 837 Claim event)   |
| Paid                   | Claim paid (appears at 837 Claim event)  |
| Claim Accepted         | Claim has been Accepted (appears on 277CA Claim event)   |
| Claim Rejected         | Claim has been Rejected (appears on 277CA Claim event)   |

7. Event Attributes

8. Dashboard Charts - see [Chapter 4, "DX Dashboard Additional Charts" on page 36](#)

9. Monitor

The monitor "Overdue" changes events' status "Waiting for ACK" that are still pending to the status "Timed Out", according to the timeout period set in profiles. The Reconciliation tab of the Details of Event shows the timeout period according to the Initiated time and the timeout set in the profile parameter.

By Default the timeout period is set to 86400 seconds and the monitor's run interval is set to one hour.

10. Event Types

HIPAA Accelerator defines specific event types indicating the message type, the level of processing (ISA/GS/ST) and whether it is inbound (IB) or outbound (OB) through the entire file life cycle. For acknowledgement messages (999, TA1), reject or acceptance is noted ('A' for accepted, 'R' for rejected).

| Event Type    | Description                          |
|---------------|--------------------------------------|
| 270 (ISA)     | HIPAA 270 processing, ISA level (IB) |
| 270 (ISA) --> | HIPAA 270 processing, ISA level (OB) |
| 270 (GS)      | HIPAA 270 processing, GS level (IB)  |
| 270 (GS) -->  | HIPAA 270 processing, GS level (OB)  |
| 270 (ST)      | HIPAA 270 processing, ST level (IB)  |
| 270 (ST) -->  | HIPAA 270 processing, ST level (OB)  |
| 271 (ISA)     | HIPAA 271 processing, ISA level (IB) |
| 271 (ISA) --> | HIPAA 271 processing, ISA level (OB) |
| 271 (GS)      | HIPAA 271 processing, GS level (IB)  |
| 271(GS) -->   | HIPAA 271 processing, GS level (OB)  |
| 271 (ST)      | HIPAA 271 processing, ST level (IB)  |
| 271 (ST) -->  | HIPAA 271 processing, ST level (OB)  |
| 276 (ISA)     | HIPAA 276 processing, ISA level (IB) |
| 276 (ISA) --> | HIPAA 276 processing, ISA level (OB) |
| 276 (GS)      | HIPAA 276 processing, GS level (IB)  |
| 276 (GS) -->  | HIPAA 276 processing, GS level (OB)  |
| 276 (ST)      | HIPAA 276 processing, ST level (IB)  |
| 276 (ST) -->  | HIPAA 276 processing, ST level (OB)  |
| 276 (ISA)     | HIPAA 276 processing, ISA level (IB) |
| 276 (ISA) --> | HIPAA 276 processing, ISA level (OB) |
| 276 (GS)      | HIPAA 276 processing, GS level (IB)  |
| 276 (GS) -->  | HIPAA 276 processing, GS level (OB)  |
| 276 (ST)      | HIPAA 276 processing, ST level (IB)  |
| 276 (ST) -->  | HIPAA 276 processing, ST level (OB)  |

| <b>Event Type</b> | <b>Description</b>                       |
|-------------------|--|
| 277 (ISA)         | HIPAA 277 processing, ISA level (IB)     |
| 277 (ISA) -->     | HIPAA 277 processing, ISA level (OB)     |
| 277 (GS)          | HIPAA 277 processing, GS level (IB)      |
| 277 (GS) -->      | HIPAA 277 processing, GS level (OB)      |
| 277 (ST)          | HIPAA 277 processing, ST level (IB)      |
| 277 (ST) -->      | HIPAA 277 processing, ST level (OB)      |
| 277 (ISA)         | HIPAA 277 processing, ISA level (IB)     |
| 277 (ISA) -->     | HIPAA 277 processing, ISA level (OB)     |
| 277 (GS)          | HIPAA 277 processing, GS level (IB)      |
| 277 (GS) -->      | HIPAA 277 processing, GS level (OB)      |
| 277 (ST)          | HIPAA 277 processing, ST level (IB)      |
| 277 (ST) -->      | HIPAA 277 processing, ST level (OB)      |
| 277CA (ISA)       | HIPAA 277CA processing, ISA level (IB)   |
| 277CA (ISA) -->   | HIPAA 277CA processing, ISA level (OB)   |
| 277CA (GS)        | HIPAA 277CA processing, GS level (IB)    |
| 277CA (GS) -->    | HIPAA 277CA processing, GS level (OB)    |
| 277CA (ST)        | HIPAA 277CA processing, ST level (IB)    |
| 277CA (ST) -->    | HIPAA 277CA processing, ST level (OB)    |
| 277CA (ISA)       | HIPAA 277CA processing, ISA level (IB)   |
| 277CA (ISA) -->   | HIPAA 277CA processing, ISA level (OB)   |
| 277CA (GS)        | HIPAA 277CA processing, GS level (IB)    |
| 277CA (GS) -->    | HIPAA 277CA processing, GS level (OB)    |
| 277CA (ST)        | HIPAA 277CA processing, ST level (IB)    |
| 277CA (ST) -->    | HIPAA 277CA processing, ST level (OB)    |
| 277CA Claim       | HIPAA 277CA processing, Claim level (IB) |
| 277CA Claim -->   | HIPAA 277CA processing, Claim level (OB) |

| <b>Event Type</b> | <b>Description</b>                      |
|-------------------|---|
| 278Res (ISA)      | HIPAA 278Res processing, ISA level (IB) |
| 278Res (ISA) -->  | HIPAA 278Res processing, ISA level (OB) |
| 278Res (GS)       | HIPAA 278Res processing, GS level (IB)  |
| 278Res (GS) -->   | HIPAA 278Res processing, GS level (OB)  |
| 278Res (ST)       | HIPAA 278Res processing, ST level (IB)  |
| 278Res (ST) -->   | HIPAA 278Res processing, ST level (OB)  |
| 278Res (ISA)      | HIPAA 278Res processing, ISA level (IB) |
| 278Res (ISA) -->  | HIPAA 278Res processing, ISA level (OB) |
| 278Res (GS)       | HIPAA 278Res processing, GS level (IB)  |
| 278Res (GS) -->   | HIPAA 278Res processing, GS level (OB)  |
| 278Res (ST)       | HIPAA 278Res processing, ST level (IB)  |
| 278Res (ST) -->   | HIPAA 278Res processing, ST level (OB)  |
| 278Req (ISA)      | HIPAA 278Req processing, ISA level (IB) |
| 278Req (ISA) -->  | HIPAA 278Req processing, ISA level (OB) |
| 278Req (GS)       | HIPAA 278Req processing, GS level (IB)  |
| 278Req (GS) -->   | HIPAA 278Req processing, GS level (OB)  |
| 278Req (ST)       | HIPAA 278Req processing, ST level (IB)  |
| 278Req (ST) -->   | HIPAA 278Req processing, ST level (OB)  |
| 278Req (ISA)      | HIPAA 278Req processing, ISA level (IB) |
| 278Req (ISA) -->  | HIPAA 278Req processing, ISA level (OB) |
| 278Req (GS)       | HIPAA 278Req processing, GS level (IB)  |
| 278Req (GS) -->   | HIPAA 278Req processing, GS level (OB)  |
| 278Req (ST)       | HIPAA 278Req processing, ST level (IB)  |
| 278Req (ST) -->   | HPAA 278Req processing, ST level (OB)   |
| 824 (ISA)         | HIPAA 824 processing, ISA level (IB)    |
| 824 (ISA) -->     | HIPAA 824 processing, ISA level (OB)    |

| <b>Event Type</b> | <b>Description</b>                    |
|-------------------|---------------------------------------|
| 824 (GS)          | HIPAA 824 processing, GS level (IB)   |
| 824 (GS) -->      | HIPAA 824 processing, GS level (OB)   |
| 824 (ST)          | HIPAA 824 processing, ST level (IB)   |
| 824 (ST) -->      | HIPAA 824 processing, ST level (OB)   |
| 824 (ISA)         | HIPAA 824 processing, ISA level (IB)  |
| 824 (ISA) -->     | HIPAA 824 processing, ISA level (OB)  |
| 824 (GS)          | HIPAA 824 processing, GS level (IB)   |
| 824 (GS) -->      | HIPAA 824 processing, GS level (OB)   |
| 824 (ST)          | HIPAA 824 processing, ST level (IB)   |
| 824 (ST) -->      | HIPAA 824 processing, ST level (OB)   |
| 834 (ISA)         | HIPAA 834 processing, ISA level (IB)  |
| 834 (ISA) -->     | HIPAA 834 processing, ISA level (OB)  |
| 834 (GS)          | HIPAA 834 processing, GS level (IB)   |
| 834 (GS) -->      | HIPAA 834 processing, GS level (OB)   |
| 834 (ST)          | HIPAA 834 processing, ST level (IB)   |
| 834 (ST) -->      | HPAA 834 processing, ST level (OB)    |
| 834 (ISA)         | HIPAA 834 processing, ISA level (IB)  |
| 834 (ISA) -->     | HIPAA 834 processing, ISA level (OB)  |
| 834 (GS)          | HIPAA 834 processing, GS level (IB)   |
| 834 (GS) -->      | HIPAA 834 processing, GS level (OB)   |
| 834 (ST)          | HIPAA 834 processing, ST level (IB)   |
| 834 (ST) -->      | HIPAA 834 processing, ST level (OB)   |
| 8371 (ISA)        | HIPAA 8371 processing, ISA level (IB) |
| 8371 (ISA) -->    | HIPAA 8371 processing, ISA level (OB) |
| 8371 (GS)         | HIPAA 8371 processing, GS level (IB)  |
| 8371 (GS) -->     | HIPAA 8371 processing, GS level (OB)  |

| <b>Event Type</b> | <b>Description</b>                    |
|-------------------|---------------------------------------|
| 837I (ST)         | HIPAA 837I processing, ST level (IB)  |
| 837I (ST) -->     | HPAA 837I processing, ST level (OB)   |
| 837I (ISA)        | HIPAA 837I processing, ISA level (IB) |
| 837I (ISA) -->    | HIPAA 837I processing, ISA level (OB) |
| 837I (GS)         | HIPAA 837I processing, GS level (IB)  |
| 837I (GS) -->     | HIPAA 837I processing, GS level (OB)  |
| 837I (ST)         | HIPAA 837I processing, ST level (IB)  |
| 837I (ST) -->     | HIPAA 837I processing, ST level (OB)  |
| 837D (ISA)        | HIPAA 837D processing, ISA level (IB) |
| 837D (ISA) -->    | HIPAA 837D processing, ISA level (OB) |
| 837D (GS)         | HIPAA 837D processing, GS level (IB)  |
| 837D (GS) -->     | HIPAA 837D processing, GS level (OB)  |
| 837D (ST)         | HIPAA 837D processing, ST level (IB)  |
| 837D (ST) -->     | HPAA 837D processing, ST level (OB)   |
| 837D (ISA)        | HIPAA 837D processing, ISA level (IB) |
| 837D (ISA) -->    | HIPAA 837D processing, ISA level (OB) |
| 837D (GS)         | HIPAA 837D processing, GS level (IB)  |
| 837D (GS) -->     | HIPAA 837D processing, GS level (OB)  |
| 837D (ST)         | HIPAA 837D processing, ST level (IB)  |
| 837D (ST) -->     | HIPAA 837D processing, ST level (OB)  |
| 837P (ISA)        | HIPAA 837P processing, ISA level (IB) |
| 837P (ISA) -->    | HIPAA 837P processing, ISA level (OB) |
| 837P (GS)         | HIPAA 837P processing, GS level (IB)  |
| 837P (GS) -->     | HIPAA 837P processing, GS level (OB)  |
| 837P (ST)         | HIPAA 837P processing, ST level (IB)  |
| 837P (ST) -->     | HIPAA 837P processing, ST level (OB)  |



| Event Type    | Description                            |
|---------------|--|
| 837 Claim     | HIPAA 837 processing, Claim level (IB) |
| 837 Claim --> | HIPAA 837 processing, Claim level (OB) |

### **PowerCenter Workflows**

- **wf\_IB\_Processing** - an inbound workflow to receive, parse, validate, and transform HIPAA files to Informatica canonical format
- **wf\_OB\_Processing** - an outbound workflow to receive files in Informatica canonical format, serialize into HIPAA text format and Send to Partner

### **Data Transformation Services**

Both Inbound and Outbound workflows use Data Transformation services. These services are included within the HIPAA Accelerator Package.

| Data Transformation Service | Description  |
|-----------------------------|--|
| Infa_B2B_ExtractMessageType | Determine if the file is HIPAA message or acknowledgment (999,TA1)                       |
| Infa_B2B_get_TA104_TA105    | Get the error code within the TA1 message  |
| Infa_B2B_getX12Details      | Extract ISA\GS\ST data common to all HIPAA file  |
| Infa_B2B_IB_ACK             | Extract attribute to display in TA1 or 999 root event                                    |
| Infa_B2B_GS_Splitter        | Split HIPAA file into files containing one GS each and extract common data for the split |
| Infa_B2B_ST_Splitter        | Split GS file into files containing one ST each and extract common data for the split    |
| Infa_HCO_CLM_Splitter       | Split ST files of 837, 277CA, and 835 into Claims  |

For each HIPAA message there is a Data Transformation service that extracts attributes from the message. Those attributes are displayed at the ST level event in the attributes tab. The Data Transformation Service name is Infa\_HCO\_eventAttributes\_XXX (XXX stands for the HIPAA message id).

## Installing the HIPAA Accelerator

Before you install the HIPAA Accelerator, ensure that you have a license with the HIPAA options and activate the license. Also ensure that you have installed the following programs:

- Data Transformation
- PowerCenter
- B2B Data Exchange
- HIX Data Transformation Library

Follow these steps to install the HIPAA Accelerator:

1. Unzip the HIPAA Accelerator installation .zip file, HIPAA\_Accelerator.zip, to the directory c:\temp. The .zip file contains the following folders: DT\_Services, DX\_Partners, PowerCenter\_Workflows, and Reports. Use these folders to install the HIPAA Accelerator on the Data Transformation machine, the B2B Data Exchange machine, and the PowerCenter Integration Service machine.
2. Copy the files from the c:\temp\DT\_Services folder to the <B2B Data Transformation installation folder> \DataTransformation\ServiceDB folder on the Informatica Data Transformation server machine.
3. To define the endpoint file path, in the B2B Data Exchange Operation Console, in the **Navigator**, select the **System Properties** node under the **Administration** node. In the **System Properties** view, define the property **dx.endpoint.file.prefix.path**. The default value is the B2B Data Exchange installation directory.
4. To import all the B2B Data Exchange data, perform the following steps on the B2B Data Exchange server machine:
  - a. The HIPAA Accelerator contains definitions for a sample partner, sample endpoints, sample profiles and workflows, DX event types, DX event statuses and DX event attributes. The sample partner, endpoints and profiles can be used later as an example. To import them, run the following command on the B2B Data Exchange server machine: <B2B Data Exchange installation folder> \DataExchange\dx-tools\import-all.bat -f C:\temp\DX\_Partners\DX\_HIPAA\_Accelerator\_export.xml -u <user\_name> -p <password>.  
  
Note: The default behavior is to override the existing DX artifacts with the imported defaults. If you want to change that behavior, follow the DX installation and configuration document.
  - b. Verify that **LogiXML license** (.lic) is installed under the <B2B Data Exchange installation folder> \apache-tomcat-<tomcat version>\webapps\dx-dashboard folder.
  - c. To save the previous default Dashboard definitions, rename the file dxdashboard.lgx to another name, such as dxdashboard.lgxORG, in the directory <B2B Data Exchange installation folder> \DataExchange\apache-tomcat-<tomcat version>\webapps\dx-dashboard\\_Definitions\\_Reports.
  - d. To save the previous default dashboard, rename the file dx\_default\_dashboard.xml to another name, such as dx\_default\_dashboard.xmlORG, in the directory <B2B Data Exchange installation folder> \DataExchange\apache-tomcat-<tomcat version>\webapps\dx-dashboard\dx\saved\_dashboards.
  - e. To update the new default dashboard, copy the dx\_default\_dashboard.xml file from the C:\temp\Reports\HIPAA\_Accelerator\_dashboard\_extension\dx\saved\_dashboards folder to <B2B Data Exchange installation folder>\apache-tomcat-<tomcat version>\webapps\dx-dashboard\dx\saved\_dashboards.
  - f. To update the default dashboard definitions and copy the new reports, copy all the files (including the new dxdashboard.lgx ) from C:\temp\Reports\HIPAA\_Accelerator\_dashboard\_extension\\_Definitions\\_Reports to <B2B Data Exchange installation folder>\apache-tomcat-<tomcat version>\webapps\dx-dashboard\\_Definitions\\_Reports.
  - g. To copy the new reports images, copy all the files from C:\temp\Reports\HIPAA\_Accelerator\_dashboard\_extension\\_SupportFiles to <B2B Data Exchange installation folder>\apache-tomcat-<tomcat version>\webapps\dx-dashboard\\_SupportFiles.
  - h. Copy \_Settings.lgx from C:\temp\Reports\HIPAA\_Accelerator\_dashboard\_extension\\_Definitions to <B2B Data Exchange installation folder>\apache-tomcat-<tomcat version>\webapps\dx-dashboard\\_Definitions.
  - i. To enable the links of the reports, open the new \_Settings.lgx file and search for `DX_CONSOLE_URL=http://localhost:18080/dx-console`. Modify **localhost** to the name of the computer.
  - j. To install the new HIPAA Accelerator dashboard, refresh the DX dashboard and press 'Restore Default Dashboard'.

- k. According to your preferences, modify the "Timeout for ACK (seconds)" profile parameter in the profiles and set the run interval of the monitor "Overdue". By Default the timeout is set to 86400 seconds and the monitor's run interval is set to one hour.
5. The ODS Database should preferably be named "DX\_ODS", since the ACKs reports are set by default to the DX\_ODS Database. Otherwise, if you choose not to use this name, open the new file <B2B Data Exchange installation folder>\apache-tomcat-<tomcat version>\webapps\dx-dashboard\\_Definitions\\_Settings.lgx, and search for DB\_ODS="DX\_ODS". Modify **DX\_ODS** to the name of the ODS Database name used.
6. Before importing the PowerCenter workflows into PowerCenter, create an application connection (inbound and outbound) for a JNDI connection. Specify the connection name as **DX\_JNDI\_Connection**. The context factory value is **com.informatica.b2b.dx.jndi.DXContextFactory**. The provider URL is **failover:tcp://localhost:18616**, where 18616 is the value of the AMQ port. If you changed the value of the AMQ port, change the URL accordingly.
7. Then create the following application inbound connections for a JMS connection. The destination type is **QUEUE** and the JMS connection factory value is **connectionfactory.local**.

| Connection Name       | JMS Destination   |
|-----------------------|---|
| DX_JMS_TSSA_RETURN    | queue.tssa.return   |
| Infa_B2B_IB_input     | queue.wf_HCO_IB<br>The name wf_HCO_IB is also the name of a workflow in B2B Data Exchange |
| DX_JMS_TSSA_RETURN    | queue.tssa.return   |
| Infa_B2B_IB_ST_Split  | queue.Infa_B2B_IB_ST_Split  |
| Infa_B2B_IB_ACK_input | queue.Infa_B2B_IB_ACK_input   |
| Infa_B2B_IB_GS_Split  | queue.Infa_B2B_IB_GS_Split  |
| Infa_B2B_ST_Details   | queue.Infa_B2B_ST_Details   |

8. Next, create the following application outbound connections for a JMS connection. The destination type is **QUEUE** and the JMS connection factory value is **connectionfactory.local**.

| Connection Name      | JMS Destination            |
|----------------------|----------------------------|
| Infa_B2B_OB_input    | queue.wf_HCO_OB            |
| Infa_B2B_OB_ST_Split | queue.Infa_B2B_OB_ST_Split |

The outbound connections include **DX\_JMS\_TSSA\_RETURN**, **Infa\_B2B\_IB\_ST\_Split** and **Infa\_B2B\_ST\_Details** which you created in the previous step.

9. Create a folder in the PowerCenter repository. Use the Repository Manager to import the workflows to that folder.
  - a. Import wf\_IB\_Processing.xml PowerCenter workflow from the c:\temp\PwC\_Workflows directory.
  - b. Import wf\_OB\_Processing.xml PowerCenter workflow from the c:\temp\PwC\_Workflows directory.

- c. Import wf\_m\_HCO\_Claim\_processing.xml PowerCenter workflow from the c:\temp\PwC\_Workflows directory.
10. From PowerCenter Workflow Manager open the created folder as follows:
  - a. Drag wf\_IB\_Processing.xml to the workflow pane
  - b. Assign a PowerCenter Integration Service
  - c. Start the inbound workflow (wf\_IB\_Processing)
  - d. Drag wf\_OB\_Processing.xml to the workflow pane
  - e. Assign integration service
  - f. Start the outbound workflow (wf\_OB\_Processing)
  - g. Drag wf\_m\_HCO\_Claim\_Processing.xml to the workflow pane
  - h. Assign integration service
  - i. Start the outbound workflow (wf\_m\_HCO\_Claim\_Processing)

## CHAPTER 3

# Detailed Overview of Processing Flows

The HIPAA file received from each partner is processed and a separate DX event is created for interchange (ISA), functional group\s (GS), and the transaction\s (ST). The events are created hierarchically to reflect the hierarchical structure of the HIPAA file. A root event will be created for an ISA, a child event will be created for every GS within the ISA, and a child event will be created for every ST in a GS.

Every DX event type of a processed HIPAA file reflects its envelope level (ISA\GS\ST), its HIPAA Document type (e.g. 837,820,277 etc.), and direction (inbound or outbound).The event life cycle is reflected by using DX event statuses which signify success or failure of processing, or any significant event in the processing lifecycle.

Different logs are attached to the DX events to provide additional information. For example, the inbound HIPAA file is attached to the root event (ISA) and, if needed, the TA1 message that is created and sent back to the partner.

## Inbound Process Overview

1. The HIPAA file is received at the landing zone. The file can contain no more than one ISA segment, with multiple GS groups and multiple ST transactions.
2. The HIPAA Accelerator receives the HIPAA file, validates the HIPAA file at the ISA level, generates a TA1 message, and sends the TA1 message to the sender based on the input ISA14 element.
3. If the file passes ISA level validation, the Accelerator splits the HIPAA file into separate files, for each GS, where each file contains one ISA segment with one GS segment. The GS segment can contain multiple ST segments of the same HIPAA document, such as transaction type 837D.
4. The Accelerator validates each file with one ISA segment and one GS segment at the GS level. When the "999 Acknowledgment" workflow parameter is enabled (default), the Accelerator creates and sends a 999 message to determine if the file is HIPAA compliant. If there is a validation error, an HTML report with error descriptions will be attached to the event.
5. If the file is HIPAA compliant, the Accelerator splits the input into files with one ISA segment, one GS segment and one ST segment. The accelerator then parses the files into Informatica HIPAA XML canonical format. For 837I, 837P, 837D, 277CA, and 835, each transaction is split to claims. Information is extracted and added to the event.

Steps 4-5 are repeated for every GS group contained in the original HIPAA file.

# Inbound Process - Detailed description

Inbound processing starts when a HIPAA file arrives to the landing zone. You can use the sample DX file receive endpoint, or any DX endpoint according to client requirements. The HIPAA Accelerator de-envelopes the input file down to the HIPAA documents (STs) in the file. An inbound file can contain any of the HIPAA documents supported by HIPAA Accelerator. Files containing a TA1 or 999 are processed.

Assumption: *Each file must contain a single ISA segment and a single HIPAA document type (837, 820 etc.).*

## Interchange (ISA) Processing

As part of the interchange processing, an incoming file undergoes an ISA envelope validation (TA1).

If the ISA envelope is not valid, the HIPAA Accelerator rejects the file and sends a TA1 message and changes the event status to 'TA1 rejected sent'. If it is valid, processing continues. and a TA1 is sent if requested by the originating message.

### Event statuses

| DX Event Status | Description  |
|-----------------|--|
| Invalid File    | Non-HIPAA file   |
| Exception       | The HIPAA document is not supported by the HIPAA accelerator or the corresponding Data Transformation HIPAA library service does not reside in the Data Transformation server Service DB |
| TA1 reject sent | Envelope contained errors. A corresponding TA1 was sent.   |
| Complete        | ISA envelope is valid. Processing continues to next level.   |

### Event types

The event type format is '<Hippa document identifier> (ISA)'. For example, the event type will be '**820 (ISA)**' for HIPAA Document 820.

### Event attributes

none

### Document attached

| Log Name | Description  |
|----------|--|
| Input    | The incoming HIPAA file received from a partner                                    |
| TA1 Data | TA1 file sent back to the partner in case it was requested by the incoming message |

## Functional Group (GS) Processing

GS level validation is done, for each file with one ISA and one GS segment.

The file is processed in these steps.

1. Split the incoming HIPAA file into separate files for each functional group (GS-GE).

2. Create a DX child event for every split (functional group) and attach the split to the DX event.
3. Validate functional group file using the corresponding Data Transformation library service. (e.g. for 820 document and 5010A1 HIPAA control version, the **HIPAA\_5010A1\_820\_Parser** DT Service is used).
4. Create a 999 message, if requested in the incoming message, and send it back to the partner. Attach the HTML validation report if errors are found.

### Event statuses

| DX Event Status            | Description                                       |
|----------------------------|---|
| Group Processing Initiated | Start processing of Functional Group              |
| Complete                   | End processing of Functional Group without errors |
| Validation Error           | A validation error was found                      |

### Event types

The event type format is '<Hipaa document identifier> (GS)'. For example, the event type will be '**820 (GS)**' for HIPAA Document 820.

### Event attributes

none

### Documents attached

| Log Name    | Description   |
|-------------|---|
| HTML Report | HTML Report of the errors found in the Functional Group. If no errors are found, the document is not attached |
| 999 ACK     | Errors formatted to 999 EDI document. Sent to the partner if requested  |

## Transaction Set (ST) Processing

Parsing is done for each file with one ISA and one GS and one ST segment.

The file is processed in the following steps.

1. Split the file into separate files for each transaction set (single ST).
2. Create a DX event for every file and attach the file to the DX event.
3. Parse the files to Informatica canonical xml format and add that output to the event.
4. Event attributes are also extracted and can be reviewed from the event attributes tab of the event.

**Note:** The HIPAA library includes parsing to HIPAA Informatica canonical XML format. To map the Informatica canonical XML format to customer-specific formats, you can create and configure a DT Mapper and/or DT Serializer. For more information about how to create a DT Mapper or a DT Serializer, see the *Data Transformation User Guide*.

Note that converting from Canonical XML, to load the data into the backend systems, needs to be developed as part of the project implementation, and is beyond the scope of the HIPAA Accelerator.

## Event statuses

| DX Event Status       | Description                             |
|-----------------------|---|
| Transaction initiated | Start processing of HIPAA document type |
| Transaction processed | HIPAA document has been parsed          |

## Event types

The event type format is '<Hipaa document identifier> (ST)'. For example, the event type will be **'820 (ST)'** for HIPAA Document 820.

## Event attributes

| DX Event Attribute  | Description  |
|---------------------|--|
| GS_control_number   | Functional Group control number as appears in GS\R06 |
| ISA_control_number  | Interchange control number as appears in ISA\R13     |
| ST_control_number   | HIPAA Document Control Number as appears in ST\R02   |
| ST_transaction_type | HIPAA Document type as appears in ST\R01             |

The following table describes the specific event attributes extracted per HIPAA document:

**Note:** All the event attributes in this table are calculated from the claims level events.

| DX Event Attribute Name                  | Transaction Type |
|--|------------------|
| Total_Number_Of_Claims                   | 837              |
| Total_Monetary_Amount_Of_Claims          | 837              |
| Total_Number_Of_Accepted_Claims          | 277CA            |
| Total_Monetary_Amount_Of_Rejected_Claims | 277CA            |
| Total_Number_Of_Rejected_Claims          | 277CA            |
| Total_Monetary_Amount_Of_Paid_Claims     | 835              |

## Documents attached

The following documents are attached:

| Log Name      | Description                                |
|---------------|--|
| ST Data       | Transaction Set wrapped by ISA and GS      |
| Converted XML | Output in Informatica canonical XML format |



## Claim Level Processing and Reconciliation

For HIPAA messages 837I, 837D, 837P, 277CA, and 835, Claim level information is also extracted. The file is processed in the following steps:

1. Split the file into separate claims
2. Create a DX event for each claim
3. Add the corresponding attributes to the event
4. Calculate totals (number of claims and total amounts)
5. Add the totals as attributes to the transaction's event

The correlation between inbound 837 and outbound 277CA and 835 is reflected in these transitions.

- When inbound 837 messages are processed at claim level, a correlation flag is created. The event status is set to 'Submitted' and the reconciliation flag is changed to 'Pending'.
- When the corresponding outbound 277CA claim event is created, the status of the inbound 837 DX event is changed accordingly. The reconciliation flag is changed to 'Complete'.
- If the status was changed by the 277CA to '277 Claim Accepted', another correlation flag is created and its status is changed to 'Pending'.
- The status of the correlation flag will be changed to 'Complete' when outbound 835 claim is created. The status of the Claim will then be changed to 'Paid'.

### Event statuses

| DX Event Status    | Description                               |
|--------------------|---|
| Submitted          | 837i claim was submitted                  |
| 277 Claim Rejected | Claim was rejected by 277CA HIPAA message |
| 277 Claim Accepted | Claim was accepted by 277CA HIPAA message |
| Paid               | Claim paid with 835 HIPAA message         |

### Event types

The event type format is '<Hipaa document identifier> Claim '. For example, the event type will be '**837 Claim**' for HIPAA document 837I.

### Event attributes

| DX Event Attribute Name | Transaction Type | Loop ID | Segment ID | Element ID | HIPAA Name                      |
|-------------------------|------------------|---------|------------|------------|---------------------------------|
| Claim_Id                | 837              | 2300    | CLM        | R01        | <b>Claim Submit Identifier</b>  |
| Claim_Monetary_Amount   | 837              | 2300    | CLM        | R02        | <b>Monetary Amount</b>          |
| Claim_Id                | 277CA            | 2200D   | TRN        | R02        | <b>Reference Identification</b> |

| DX Event Attribute Name                | Transaction Type | Loop ID | Segment ID | Element ID | HIPAA Name                           |
|--|------------------|---------|------------|------------|--------------------------------------|
| Claim_Monetary_Amount                  | 277CA            | 2200D   | STC        | R04        | <b>Monetary Amount</b>               |
| Health_Care_Claim_Status_Category_Code | 277CA            | 2200D   | STC        | R10        | <b>HEALTH CARE CLAIM STATUS</b>      |
| Claim_Id                               | 835              | 2100    | CLP        | R01        | <b>Patient Control Number</b>        |
| Claim_Paid_Amount                      | 835              | 2100    | CLP        | R04        | <b>Claim Payment Amount</b>          |
| Claim_Submitted_Amount                 | 835              | 2100    | CLP        | R03        | <b>Total Claim Charge Amount</b>     |
| Claim_Patient_Responsibility_Amount    | 835              | 2100    | CLP        | R05        | <b>Patient Responsibility Amount</b> |

## Inbound Authentication

The goal of the Authentication process is to make sure that the incoming file is sent according to the agreement with the partner.

Once the HIPAA file arrives in the landing zone and the ISA level processing starts, an authentication process takes place. The authentication is done by comparing parameters in the file to the workflow parameters defined in the "Interchange" section of the DX profile (please refer to the Workflow Parameters image below for an example). The Authentication process verifies that the values received in the HIPAA message (ISA level) from a partner are the same as those defined in the configured workflow parameters of the profile. The following parameters are defined:

| ID       | Label                                     | Type | Representation |
|----------|---|------|----------------|
| ISA01_IB | ISA01-Authorization Information Qualifier | Text | Dropdown List  |
| ISA02_IB | ISA02-Authorization Information           | Text | Entry Field    |
| ISA03_IB | ISA03-Security Information Qualifier      | Text | Dropdown List  |
| ISA04_IB | ISA04-Security Information                | Text | Entry Field    |
| ISA05_IB | ISA05-Interchange Qualifier               | Text | Dropdown List  |
| ISA06_IB | ISA06-Interchange Sender ID               | Text | Entry Field    |
| ISA07_IB | ISA07-Interchange Qualifier               | Text | Dropdown List  |
| ISA08_IB | ISA08-Interchange Receiver ID             | Text | Entry Field    |

| ID       | Label                                    | Type | Representation |
|----------|--|------|----------------|
| ISA11_IB | ISA11-Repetition Separator               | Text | Entry Field    |
| ISA12_IB | ISA12-Interchange Control Version        | Text | Dropdown List  |
| ISA14_IB | ISA14-Interchange Acknowledgment Request | Text | Dropdown List  |
| ISA15_IB | ISA15-Interchange Usage Indicator        | Text | Dropdown List  |
| ISA16_IB | ISA16-Component Element Separator        | Text | Entry Field    |

**Figure 1. Workflow Parameters of Inbound profile**

**Edit Profile : prof\_HCO\_IB\_PARTNER\_1**

General **Workflow Parameters** Event Attributes Delayed Processing Categories

- ▶ General
- ▶ Transactions
- ▼ Interchange
  - ISA01-Authorization Information Qualifier: 00
  - ISA02-Authorization Information: [Empty Field]
  - ISA03-Security Information Qualifier: 00
  - ISA04-Security Information: [Empty Field]
  - ISA05-Interchange ID Qualifier: Select item
  - ISA06-Interchange Sender ID: [Empty Field]
  - ISA07-Interchange ID Qualifier: Select item
  - ISA08-Interchange Receiver ID: [Empty Field]
  - ISA11-Repetition Separator: [Empty Field]
  - ISA12-Interchange Control Version: 005010
  - ISA14-Acknowledgment Requested: Select item
  - ISA15-Interchange Usage Indicator: Select item
  - ISA16-Component Element Separator: [Empty Field]

**Note:** An empty workflow parameter in the "Interchange" section indicates that this specific authentication check is skipped.

If the Authentication process fails:

1. The status of the event is updated to "Authentication Error"
2. A TA1 message is sent to the partner
3. The TA1 message is added to the DX Event with a description of the Authentication error as shown in the following image.

**Figure 2.**

| Event Logs   |                                |  |               |            |
|--------------|--------------------------------|--|---------------|------------|
| Log Type     | Date                           | Description  | Doc Size (kB) | Doc Type   |
| Input        | 7 October 2015<br>14:47:51.825 | Input message [TS_4010_856_4010_Valid.txt]   | 1             | text/plain |
| Intermediate | 7 October 2015<br>14:47:52.995 | TA1 Authentication Failed due to (010) Invalid Authorization Information Qualifier Value | 1             |            |
| Output       | 7 October 2015<br>14:47:53.025 | Output message   | 1             |            |

The following table shows the error code that will be shown in the TA1 message for each mismatch.

| Profile Parameter Name                    | TA104 | TA105 | Error Description                                 |
|---|-------|-------|---|
| ISA01-Authorization Information Qualifier | R     | 010   | Invalid Authorization Information Qualifier Value |
| ISA02-Authorization Information           | R     | 011   | Invalid Authorization Information Value           |
| ISA03-Security Information Qualifier      | R     | 012   | Invalid Security Information Qualifier Value      |
| ISA04-Security Information                | R     | 013   | Invalid Security Information Value                |
| ISA05-Interchange Qualifier               | R     | 005   | Invalid Interchange ID Qualifier for Sender       |
| ISA06-Interchange Sender ID               | R     | 006   | Invalid Interchange Sender ID                     |
| ISA07-Interchange Qualifier               | R     | 007   | Invalid Interchange ID Qualifier for Receiver     |
| ISA08-Interchange Receiver ID             | R     | 008   | Invalid Interchange Receiver ID                   |
| ISA11-Repetition Separator                | R     | 026   | Invalid Data Element Separator                    |
| ISA12-Interchange Control Version         | R     | 003   | This Version of the Controls is Not Supported     |
| ISA14-Interchange Acknowledgment Request  | R     | 019   | Invalid Acknowledgment Requested Value            |
| ISA15-Interchange Usage Indicator         | R     | 020   | Invalid Test Indicator Value                      |
| ISA16-Component Element Separator         | R     | 027   | Invalid Component Element Separator               |

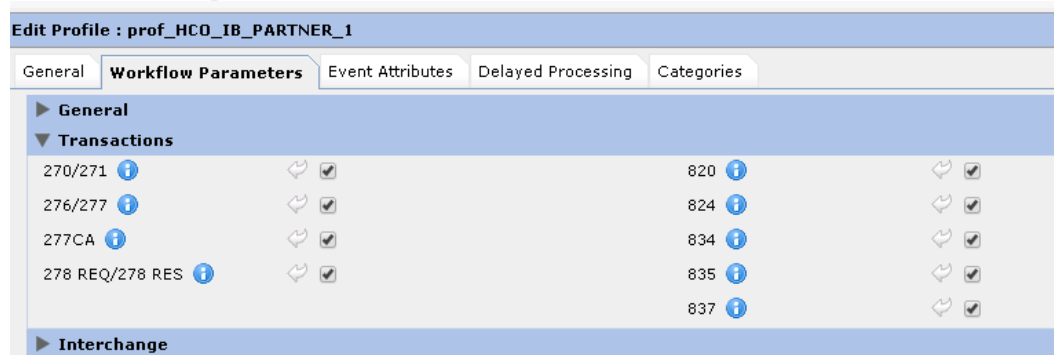
## Inbound Authorization

The authorization process verifies that the partner that sent the specific HIPAA message is, indeed, authorized to send this HIPAA message.

The authorization process is performed as part of the GS level processing. This process is done by comparing the HIPAA message type received in the GS01 and ST01 elements to the DX workflow parameters

defined in the "Transactions" section of the partner's profile. To allow a partner to send a specific HIPAA message, you must check the relevant HIPAA Transaction.

**Figure 3. Workflow Parameters**



If a particular message type is not authorized:

1. The DX event status is updated to "Authorization Error"
2. If 999 Acknowledgment profile parameter is set to 'Enabled' (default), an HIPAA ACK (999) is generated with the appropriate error message and sent back to the partner
3. If 999 Acknowledgment profile parameter is set to 'Enabled' (default), an HIPAA ACK is added to the DX Event
4. The Accelerator splits the input into files with one ISA segment, one GS segment, and one ST segment, and attributes are extracted. For 837I, 837P, 837D, 277CA, and 835, each transaction is split to claims. Information is extracted and added to the event.

as shown in the following image.

**Figure 4.**

| Event Logs   |                                 |                     |               |          |
|--------------|---------------------------------|---------------------|---------------|----------|
| Log Type ▲   | Date                            | Description         | Doc Size (kB) | Doc Type |
| Intermediate | 19 October 2015<br>11:32:06.789 | GS Data             | 3             |          |
| Intermediate | 19 October 2015<br>11:32:06.807 | Authorization Error | 1             |          |
| Output       | 19 October 2015<br>11:32:06.844 | Output message      | 1             |          |

## Outbound Process Overview

The Outbound files are processed in the following steps.

1. A HIPAA interchange in Informatica canonical XML format arrives to the landing zone. The file can contain no more than one ISA segment, with multiple GS groups and multiple ST transactions (HIPAA documents).
2. The HIPAA Accelerator receives the file and validates it. If errors are found, processing stops and an error document is attached to the event.

3. If the file passes validation, the Accelerator serializes it into HIPAA format. (This serialized HIPAA file is sent to the partner at the end of the process). The Accelerator splits the serialized HIPAA file into separate files, where each file contains one ISA segment with one GS segment. The GS segment can contain multiple ST segments of the same HIPAA document, such as transaction type 820.
4. The Accelerator splits the input into files with one ISA segment, one GS segment, and one ST segment, and attributes are extracted.

Steps 3-4 are repeated for every GS group contained in the original HIPAA file.

#### Example

The HCO Accelerator receives the following file:

```
ISA/GS/ST/ST/GE/GS/ST/ST/GE/IEA
```

The Accelerator splits the HIPAA file into files each contains one ISA segment with one GS segment:

```
ISA/GS/ST/ST/GE/IEA
ISA/GS/ST/ST/GE/IEA
```

Next the Accelerator splits the above to files containing one ISA segment, one GS segment, and one ST segment:

```
ISA/GS/ST/GE/IEA
ISA/GS/ST/GE/IEA
ISA/GS/ST/GE/IEA
ISA/GS/ST/GE/IEA
```

## Outbound Process - Detailed Description

Outbound processing starts when HIPAA data in Informatica canonical XML format arrives to the landing zone (DX file receive endpoint). The file is Serialized into a single HIPAA message. If errors are found, the event status is changed to be 'Validation Error' and processing stops. Each file is expected to contain a single ISA segment and single document type (837,820 etc.).

**Note:** Extracting the data from backend systems and converting it to Canonical XML needs to be developed as part of the project implementation, and is beyond the scope of the HIPAA Accelerator.

### Interchange (ISA) Processing

Valid messages are Serialized and sent to the partner and are attached to the DX event. If the message is valid, the DX event status is set to 'Complete' and next level processing begins.

When validation errors are found, a document with errors description is attached to the DX event and the Event status is set to 'Validation Error'.

## Event statuses

| DX Event Status  | Description  |
|------------------|--|
| Invalid File     | File structure is not recognized as Informatica XML canonical format   |
| Exception        | The HIPAA document is not supported by the HIPAA accelerator or the corresponding Data Transformation HIPAA library service does not reside in the Data Transformation server Service DB |
| Validation Error | Document content does not conform to the HIPAA standard  |
| Complete         | ISA envelope valid and processing continues to next level  |

## Event types

The event type format is '<Hipaa document identifier>(ISA)-->'. For example, the event type will be '**820 (ISA)-->**' for HIPAA Document 820.

## Event attributes

none

## Documents attached

| Log Name            | Description  |
|---------------------|--|
| Input message       | The incoming message in Informatica canonical XML format (data from the backend system after transformation to the Informatica XML canonical format) |
| Output message      | Serialized HIPAA file that is sent to the partner  |
| Logging information | Error description and additional information in case of an error   |

## Functional Group (GS) Processing

The serialized file is split into separate files, and each file contains only one functional group (GS). A child event is created for each split (Functional Group) and the split is attached to the child event.

## Reconciliation

The HIPAA Accelerator can reflect the correlation between the outbound functional group sent to a partner and an Inbound 999 received back from that partner for the sent HIPAA message.

When the "999 Acknowledgment" workflow parameter is set to "Enabled" (default), the event status will be changed to 'Waiting for ACK' and a reconciliation flag will be raised. Upon arrival of the corresponding 999, the status will be changed accordingly and the reconciliation flag will be set to 'Complete' .

## Event statuses

| DX Event Status            | Description   |
|----------------------------|---|
| Group Processing Initiated | Start processing of Functional Group  |
| Waiting for ACK            | The Functional Group is waiting to get acknowledgment from respective partner |
| Complete                   | Acknowledgment is not needed and processing is finished without errors        |
| 999 Accepted               | Functional Group was positively Acknowledged                                  |
| 999 Rejected               | Functional Group was positively Rejected                                      |

## Event types

The event type format is '<Hipaa document identifier>GS'. For example, the event type will be '**820 GS**' for HIPAA document 820.

## Event attributes

none

## Documents attached

| Log name | Description                               |
|----------|---|
| GS Data  | A HIPAA file with only one ISA and one GS |

# Transaction Set (ST) Processing

Each Transaction Set is processed in these steps.

1. Split the file into separate files for each transaction set (single ST).
2. Create a DX child event for each file and attach the file to the event.
3. Event attributes are also extracted and can be reviewed from the event attributes tab of the event.

## Event statuses

| DX Event Status       | Description                             |
|-----------------------|---|
| Transaction initiated | Start processing of HIPAA document type |
| Transaction processed | HIPAA document has been parsed          |

## Event types

The event type format is '<Hipaa document identifier> Claim'. For example, the event type will be '**820 Claim**' for HIPAA Document 820.



## Event attributes

| DX Event Attribute  | Description  |
|---------------------|--|
| GS_control_number   | Functional Group control number as appears in GS\R06 |
| ISA_control_number  | Interchange control number as appears in ISA\R13     |
| ST_control_number   | HIPAA Document Control Number as appears in ST\R02   |
| ST_transaction_type | HIPAA Document type as appears in ST\R01             |

The following describes the specific event attributes extracted per HIPAA document:

**Note:** All the event attributes in this table are calculated from the claims level events.

| DX Event Attribute Name                  | Transaction Name |
|--|------------------|
| Total_Number_Of_Claims                   | 837              |
| Total_Monetary_Amount_Of_Claims          | 837              |
| Total_Number_Of_Accepted_Claims          | 277CA            |
| Total_Monetary_Amount_Of_Rejected_Claims | 277CA            |
| Total_Number_Of_Rejected_Claims          | 277CA            |
| Total_Monetary_Amount_Of_Paid_Claims     | 835              |

## Reconciliation

For HIPAA messages 837I, 837D, 837P, 277CA, and 835, Claim level information is also extracted. The file is processed in the following steps:

1. Split the file into separate claims
2. Create a DX event for each claim
3. Add the corresponding attributes to the event
4. Calculate totals (number of claims and total amounts)
5. Add the totals as attributes to the transaction's event

The correlation between outbound 837 and inbound 277CA and 835 is reflected in these transitions.

- When outbound 837 messages are processed at claim level, a correlation flag is created. The event status is set to 'Submitted' and the reconciliation flag is changed to 'Pending'.
- When the corresponding inbound 277CA claim event is created, the status of the outbound 837 DX event is changed accordingly. The reconciliation flag is changed to 'Complete'.
- If the status was changed by the 277CA to '277 Claim Accepted', another correlation flag is created and its status is changed to 'Pending'.
- The status of the correlation flag will be changed to 'Complete' when inbound 835 claim is created. The status of the message will then be changed to 'Paid'.

## Event statuses

| <b>DX Event Status</b> | <b>Description</b>                        |
|------------------------|---|
| Submitted              | 837I claim was submitted                  |
| 277 Claim Rejected     | Claim was rejected by 277CA HIPAA message |
| 277 Claim Accepted     | Claim was accepted by 277CA HIPAA message |
| Paid                   | Claim paid with 835 HIPAA message         |

## Event types

The event type format is '<Hipaa document identifier> Claim '. For example, the event type will be '**837 Claim**' for HIPAA document 837I.

## Event attributes

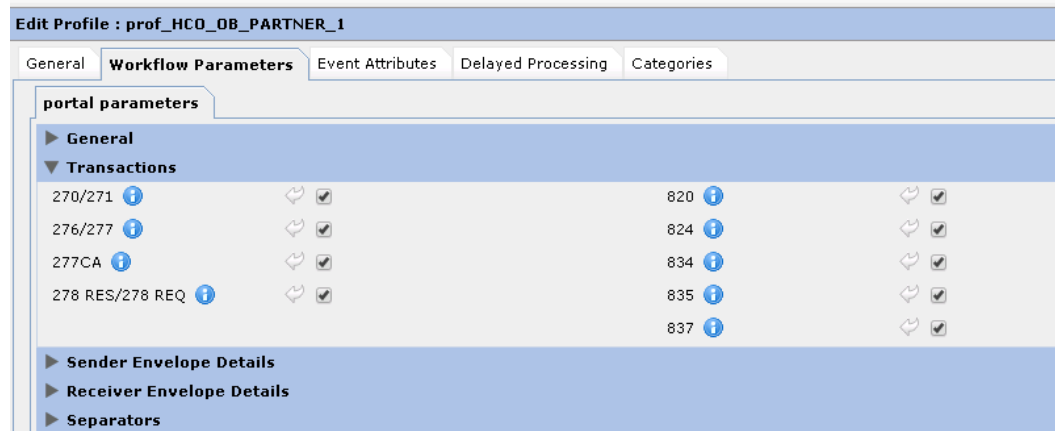
| <b>DX Event Attribute Name</b>         | <b>Transaction Name</b> | <b>Loop ID</b> | <b>Segment ID</b> | <b>Element ID</b> | <b>HIPAA Name</b>                    |
|--|-------------------------|----------------|-------------------|-------------------|--------------------------------------|
| Claim_Id                               | 837                     | 2300           | CLM               | R01               | <b>Claim Submt Identifier</b>        |
| Claim_Monetary_Amount                  | 837                     | 2300           | CLM               | R02               | <b>Monetary Amount</b>               |
| Claim_Id                               | 277CA                   | 2200D          | TRN               | R02               | <b>Reference Identification</b>      |
| Claim_Monetary_Amount                  | 277CA                   | 2200D          | STC               | R04               | <b>Monetary Amount</b>               |
| Health_Care_Claim_Status_Category_Code | 277CA                   | 2200D          | STC               | R10               | <b>HEALTH CARE CLAIM STATUS</b>      |
| Claim_Id                               | 835                     | 2100           | CLP               | R01               | <b>Patient Control Number</b>        |
| Claim_Paid_Amount                      | 835                     | 2100           | CLP               | R04               | <b>Claim Payment Amount</b>          |
| Claim_Submitted_Amount                 | 835                     | 2100           | CLP               | R03               | <b>Total Claim Charge Amount</b>     |
| Claim_Patient_Responsibility_Amount    | 835                     | 2100           | CLP               | R05               | <b>Patient Responsibility Amount</b> |

# Outbound Authorization

The authorization process verifies that the specific HIPAA message sent to the partner is, indeed, authorized by the Partner's Agreement.

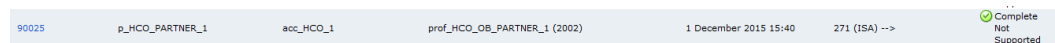
The authorization process is performed as part of the ISA level processing. This process is done by comparing the HIPAA message type in the GS01, GS08, and ST01 elements to the DX workflow parameters defined in the "Transactions" section of the partner's profile. To allow a partner to receive a specific HIPAA message, you must check the relevant HIPAA Transaction.

**Figure 5. Workflow Parameters**



If a particular message is not authorized, the DX event status is updated to "Complete not Supported" and processing stops as shown in the following image.

**Figure 6.**



## CHAPTER 4

# DX Dashboard Additional Charts

The EDI Accelerator dashboard charts are divided into the Customers tab and the Suppliers tab. The Customers tab displays information about EDI data exchange with the organization's customers. The Suppliers tab displays information about the EDI data exchange with the organization's suppliers.

**Note:** The Total displayed in all the charts corresponds to the top 10 or top 20 selected.

## Providers Tab

This tab contains the following panels:

- **Total Monetary Amount of Claims Received from Providers.** This panel displays the top providers from which claims with the highest total monetary amount were received for the selected timeframe.
- **Total Claims Received from Providers.** This panel displays the top providers from which the highest number of claims was received for the selected timeframe. Use this panel to analyze provider activity or to identify potential bottlenecks.
- **Total Monetary Amount of Payments Sent to Providers (835).** This panel displays the top providers to which payments with the highest total monetary amount were sent for the selected time frame.
- **Total Payments Sent to Providers (835).** This panel displays the top providers to which the highest number of invoices was sent for the selected timeframe. Use this panel to analyze provider activity or to identify potential bottlenecks.
- **Overdue 999 by Providers (After Timed Out).** This panel displays the top providers with the highest number of events waiting for the provider's 999 ACK for the selected timeframe and the selected event type. 'After Timed Out' indicates that the timeframe defined by the payer for receiving ACK has passed. Use this panel to identify potential bottlenecks or other issues that might require further attention.  
**Note:** The same partner can potentially appear in the chart three times, each time for data on a different event type - 837D (GS), 837I (GS), 837P (GS). The chart tooltip shows the event type.
- **Overdue Providers' 999 by Event Type (After Timed Out).** This panel displays the top event types with the highest number of events waiting for provider's 999 ACK for the selected timeframe. 'After Timed Out' indicates that the time frame defined by the payer for receiving ACK has passed. Use this panel to identify potential bottlenecks or other issues that might require further attention.
- **Total Received Claims by Status.** This panel displays the claims by final and non-final statuses that were received for the selected timeframe. Use this panel to analyze provider activity or to identify potential bottlenecks
- **Total Received Claims Monetary Amount by Status.** This panel displays the total monetary amount by status, for claims received during the selected time frame. Use this panel to analyze provider activity or to identify potential bottlenecks.

# Payers Tab

This tab contains the following panels:

- **Total Monetary Amount of Claims Sent to Payer.** This panel displays the top payers to which claims with the highest total monetary amount were sent for the selected timeframe.
- **Total Claims Sent to Payer.** This panel displays the top payers to which the highest number of claims was sent for the selected timeframe. Use this panel to analyze payer activity or to identify potential bottlenecks.
- **Total Monetary Amount of Payments Received from Payer (835).** This panel displays the top payers from which payments with the highest total monetary amount were received for the selected timeframe.
- **Total Payments Received from Payer (835).** This panel displays the top payers from which the highest number of payments was received during the selected timeframe. Use this panel to analyze payer activity or identify potential bottlenecks.
- **Overdue 999 by Payer (After Timed Out).** This panel displays the top payers with the highest number of events waiting for the payer's 999 ACK for the selected timeframe and the selected event type. 'After Timed Out' indicates that the timeframe defined by the provider for receiving ACK has passed. Use this panel to identify potential bottlenecks or other issues that might require further attention.

**Note:** The same partner can potentially appear in the chart twice, each time for data on a different event type - 277, 835. The chart tooltip shows the event type.

By default, the chart shows results by partner and event type. A partner may appear in the chart twice, each time for data on a different event type (277CA (GS), 835 (GS)). The tooltip shows the event type.

- **Overdue 999 by Payer by Event Type (After Timed Out).** This panel displays the top event types with the highest number of events waiting for 999 ACK from payers for the selected timeframe. 'After Timed Out' indicates that the timeframe defined by the provider for receiving ACK has passed. Use this panel to identify potential bottlenecks or other issues that might require further attention.
- **Total Sent Claims by Status.** This panel displays the claims by final and non-final status that were sent for the selected timeframe. Use this panel to analyze payer activity or to identify potential bottlenecks.
- **Total Sent Claims Monetary Amount by Status.** This panel displays the total monetary amount by status, for claims sent during the selected time frame. Use this panel to analyze payer activity or to identify potential bottlenecks.

## CHAPTER 5

# Implementation Guide

This section details assumptions and how to integrate with backend systems.

## Assumptions

Note the following assumptions in using the accelerator.

1. **Received control number (GS06) is unique for a partner-** If a partner sends a functional group with same control number (GS06) and the "999 Acknowledgment" parameter is set to "Enabled" the event status will be set to "Error" due to failure of correlation creation.
2. **Received Claim ID (CLM01,CLP01 and 2200D\TRN02) is unique for a Partner -** If a partner sends a HIPAA claim with the same claim, the event status will be set to "Error" due to failure of correlation creation.

## Extending HIPAA Accelerator with Backend Systems Integration

HIPAA messages should be mapped to customer-specific formats and then loaded into back-end systems. The mapping and the loading process **are not part** of the Accelerator as they are customer specific. Accelerator users can add specific B2B Data Exchange and PowerCenter implementations for mapping and loading, and define endpoint connectivity for B2B Data Exchange communication.

HIPAA Accelerator Outbound messages start from Informatica canonical format since the back-end format is customer specific. Those back-end files need to be mapped to Informatica canonical format. Accelerator users can add specific B2B Data Exchange and PowerCenter implementations for mapping from customer specific format to the Informatica canonical XML format. The Accelerator includes a sample PowerCenter mapping (can be found in the c:\temp\Examples\Pwc\_Workflows) that can be used as a guideline for development of customer specific mappings to Informatica canonical format.

## Partners

The HIPAA accelerator includes definition for a sample Partner (p\_HCO\_Partner\_1), sample account (acc\_HCO\_1), sample profiles (prof\_HCO\_IB\_Partner\_1, prof\_HCO\_OB\_Partner\_1) and sample endpoints (ep\_HCO\_receive, ep\_HCO\_send).

It is recommended to define the backend system internal identification of the provider/payer as the DX Partner account number.

## Profile and Profile Parameters

Each Partner should have a profile for outbound inbound traffic and for inbound traffic.

The following are the profile parameters for **outbound traffic**:

| Parameter                 | Description   |
|---------------------------|---|
| 999 Acknowledgment        | A 999 acknowledgment should be returned by Partner  |
| Timeout for ACK (seconds) | Timeout period for receiving 999 Ack. After time out period event status of the originating GS will be changed to ' <b>Timed Out</b> '. |
| Sender ID Qualifier       | Mutually agreed value (ISA05)   |
| Sender ID                 | The Organization Sender ID as defined in ISA06  |
| Control Version Number    | ASC X12 Release of the HIPAA document (ISA12,GS08)  |
| Receiver ID Qualifier     | Mutually agreed value (ISA07)   |
| Receiver ID               | Received ID as defined in ISA08   |
| Repetition Separator      | Value of separator as agreed by partners  |
| Segment Separator         | Value of separator as agreed by partners  |
| Field Separator           | Value of separator as agreed by partners  |
| Component Separator       | Value of separator as agreed by partners  |

**Note:** Outbound parameters are grouped under "portal parameters" tab, in order to present them in the Partners Portal, which enables Partners to configure their preferences.

**Figure 7.**

The screenshot displays the 'Edit Profile : prof\_HCO\_OB\_PARTNER\_1' interface. The 'Workflow Parameters' tab is active, and the 'portal parameters' section is expanded. The parameters are organized into several categories:

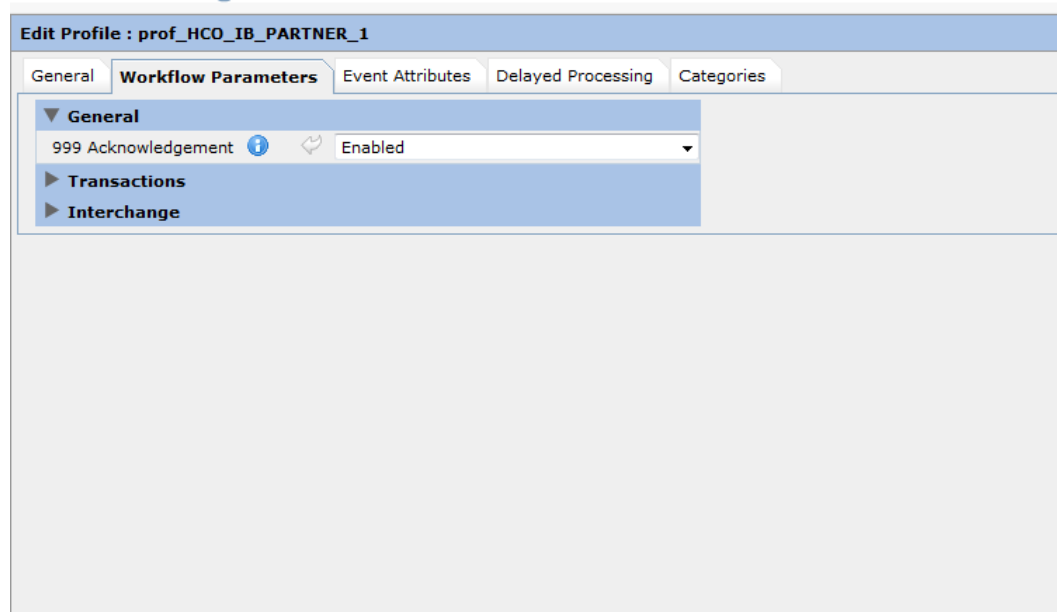
- General** (expanded)
- Transactions** (expanded)
- Sender Envelope Details** (expanded)
  - Sender ID Qualifier: Select item
  - Sender Id: [Text Field]
- Receiver Envelope Details** (expanded)
  - Control Version Number: Select item
  - Receiver Id Qualifier: Select item
  - Receiver Id: [Text Field]
- Separators** (expanded)
  - Repetition Separator: ^
  - Segment Separator: ~
  - Component Separator: :
  - Field Separator: \*



The following are the profile parameters for **inbound traffic**:

| Parameter          | Description   |
|--------------------|---|
| 999 Acknowledgment | Determines whether a 999 acknowledgment will be sent to Partner |

Figure 8.



## Endpoints

**Receive endpoint** - Both inbound and outbound files arrive to the receive endpoint directory and DX server routes them to the corresponding profile based on the file pattern.

**Send endpoint** - Serialized outbound files, 999 acknowledgments and TA1 acknowledgments are routed to the send endpoint to be taken by the partner.

The endpoint type (AS2, FTP etc.) can be determined as part of the project implementation.

## Inbound

As soon as the connection is established and a file arrives to the receive endpoint it will be consumed by the DX server and a DX event will be created and seen on the DX console 'Event List'.

## Outbound

Outbound files are assumed to be in Informatica canonical format. If an outbound file is structured in a back-end customer specific format it must be first mapped to the Informatica canonical format. Informatica canonical format contains information about the HIPAA document structure and version. For more information about the Informatica canonical format see HIPAA library guide.

It is recommended to create a DT Mapper per every HIPAA type. For example, to support HIPAA type 820 and HIPAA type 277 create two separate Mappers, a Mapper per HIPAA type. These Mappers will map from the

back-end customer specific format to the Informatica canonical format. For more information about DT Mappers development see *Data Transformation User Guide*. Please use the Outbound workflow parameters in order to map their values into the Informatica canonical format. For example, use the Separators parameters to populate their values into the Informatica canonical format as part of the Mapper.

A PowerCenter mapping that will use the Data Transformations services should be created. The HIPAA Accelerator package contains an example that can be used as a starting point. More information about PowerCenter mapping development can be found in the *PowerCenter Designer Guide*.

## Inbound/Outbound

For a partner that belongs to a provider's community or to a payer's community, some of the relations that exist between the inbound and outbound traffic are reflected in the HIPAA Accelerator through the DX console. The relations are shown on the functional group, on the transaction set and claims.

### Functional group relations

This relation is captured for outbound traffic for both provider's and payer's community. To capture the relation two profile parameters are used:

| Parameter                 | Description   |
|---------------------------|---|
| 999 Acknowledgment        | Indicates whether a 999 acknowledgment will be returned from Partner  |
| Timeout for ACK (seconds) | Timeout period for receiving 999 Ack. After time out period, the event status of the originate GS will be changed to Timeout. |

If the first parameter (999 Acknowledgment) is set to "Enabled" the 2<sup>nd</sup> parameter (Timeout for ACK (seconds)) will be set as the time out period.

A flag is raised (reconciliation flag) for every functional group of the outbound traffic. This flag will be reconciled when the corresponding 999 acknowledgement is received from the partner. If the Timeout period passed and no acknowledgement was received, the event status of the functional group will be changed to 'Timed Out'.

## Claim level relations

The Claim life cycle is captured for both Payer and Provider communities. The life cycle can be seen when looking on the Claim level DX event history Tab.

**Figure 9.**

Events drill path: [Root events](#) / [3046](#) / [3047](#) / [3048](#) Act

| <input type="checkbox"/> | Drill Down | Event ID | Partner         | Account   | Profile                      | Start Time            | Event Type | Event Status       | Aggregated Status | Reconciliation                               |
|--------------------------|------------|----------|-----------------|-----------|------------------------------|-----------------------|------------|--------------------|-------------------|--|
| <input type="checkbox"/> |            | 3051     | p_HCO_PARTNER_1 | acc_HCO_1 | prof_HCO_IB_PARTNER_1 (1101) | 9 December 2015 13:43 | 837I Claim | Submitted          |                   | <input type="checkbox"/> Pending             |
| <input type="checkbox"/> |            | 3050     | p_HCO_PARTNER_1 | acc_HCO_1 | prof_HCO_IB_PARTNER_1 (1101) | 9 December 2015 13:43 | 837I Claim | 277 Claim Rejected |                   | <input checked="" type="checkbox"/> Complete |
| <input type="checkbox"/> |            | 3049     | p_HCO_PARTNER_1 | acc_HCO_1 | prof_HCO_IB_PARTNER_1 (1101) | 9 December 2015 13:43 | 837I Claim | Paid               |                   | <input checked="" type="checkbox"/> Complete |

**Details of Event 3049**

| Event Details                |      | Event Status History |             | Reconciliation | Processing Information |
|------------------------------|------|----------------------|-------------|----------------|------------------------|
| Start Time                   | User | Event Status         | Description |                |                        |
| 9 December 2015 13:43:59.513 |      | Submitted            |             |                |                        |
| 9 December 2015 13:47:33.892 |      | 277 Claim Accepted   |             |                |                        |
| 9 December 2015 13:48:59.151 |      | Paid                 |             |                |                        |

Following is the payer's Community Claim Life Cycle:

| Inbound | Outbound | Correlation | Remarks                  |
|---------|----------|-------------|--------------------------|
| 837     | 277CA    | V           |                          |
|         | 835      | V           | Only for accepted Claims |

Following is the provider's Community Claim Life Cycle:

| Inbound | Outbound | Correlation | Remarks                  |
|---------|----------|-------------|--------------------------|
| 277CA   | 850      | V           |                          |
| 835     |          | V           | Only for accepted claims |

A reconciliation flag is raised for every 837 Claim. This flag will be reconciled when the corresponding 277CA acknowledgement arrives. If the Timeout period passed and no acknowledgement was received, the event status will be changed to 'Timed Out'. A new flag will be raised for the 277CA accepted claims. It will be reconciled when the corresponding 835 claim arrives. If the Timeout period passed and no acknowledgement was received, the event status will be changed to 'Timed Out'

Note: Reconciliation between 837, 277CA and 835 occurs for inbound and outbound traffic.

For the Provider's community, a reconciliation flag will be raised for the created outbound 837 and will be reconciled when the corresponding inbound 277CA Acknowledgment is received. A new reconciliation flag will be raised for the accepted claim and will be reconciled when the inbound 835 claim is received.

For the Payer's community, a reconciliation flag will be raised for the inbound 837 and will be reconciled when the respective 277CA outbound acknowledgement is created. A new reconciliation flag will be raised for the accepted claim and will be reconciled when the outbound 835 claim is created.



## CHAPTER 6

# Updating the Dashboard

The dashboard can be updated in these ways.

### Adding new reports

New reports can be added to an existing tab or a new tab.

- To add a report in an existing tab, position the cursor on  (on the right of the title tab), then left click on the icon and choose "add Panels". The panels' list will appear.
- To add a report in a new tab, click on  "add tab".

### Restore default dashboard

Select the dashboard option "Restore Default Dashboard".

### Create new default dashboard

To transform a current dashboard to the permanent default dashboard, rename dxdashboard999.xml located under <DXInstall\_Dir> \apache-tomcat-7.0.55\webapps\dx-dashboard\dx\saved\_dashboards to dx\_default\_dashboard.xml

# CHAPTER 7

## Working with VAN

This chapter includes the following topics:

- [Overview, 45](#)
- [Package Installation , 45](#)
- [Detailed Overview of Processing Flows, 47](#)
- [Implementation Guide, 48](#)

### Overview

The EDI Accelerator enable users that are working with VAN to receive messages, and to authenticate and authorize them with the corresponding Partner that is defined within the EDI Accelerator.

### Package Installation

Installation of VAN support is optional.

#### Package Contents

The VAN package includes the following components.

##### **B2B Data Exchange Deliverables**

1. Partner
  - **VAN**
2. Profile
  - **prof\_VAN\_1**
3. Sample Account
  - **acc\_VAN\_1**
4. Endpoint
  - **ep\_VAN\_receive**

5. Workflow
  - **wf\_IB\_Rout\_To\_Partner**
6. The following event statuses

| Event Status | Description  |
|--------------|--|
| Invalid File | File is not recognized as EDI message  |
| Error        | Routing failed due to either: <ul style="list-style-type: none"> <li>- Partner definition could not be found</li> <li>- More than one partner definition that corresponds to the message is found</li> </ul> |

#### **PowerCenter Workflows**

- **wf\_IB\_Route\_To\_Partner** - A workflow to extract the sender id from ISA06 and locate the partner with the sender id value. It routes the message to the Partner's inbound profile.

#### **Data Transformation Services**

| Data Transformation Service | Description  |
|-----------------------------|--|
| Infa_B2B_Extract_RoutingID  | Extract sender id information from the inbound message |

## Installing VAN Support

Before you install VAN Support, ensure that you have a license with the HIPAA options and activate the license. Also ensure that you have installed the HIPAA Accelerator and its prerequisites.

Follow these steps to install the VAN support:

1. Create the following application connection for a JMS connection. The destination type is **QUEUE** and the JMS connection factory value is **connectionfactory.local**.

| Connection Name    | JMS Destination   |
|--------------------|---|
| Infa_B2B_VAN_input | queue.wf_IB_Rout_To_Partner<br>The name wf_IB_Rout_To_Partner is also the name of a workflow in B2B Data Exchange |

2. Import wf\_IB\_Rout\_To\_Partner.xml PowerCenter workflow from the c:\temp\PwC\_Workflows directory to the same PowerCenter folder you have imported the HIPAA Accelerator workflows .
3. From PowerCenter Workflow Manager open the new defined folder as follows:
  - a. Drag wf\_IB\_Processing.xml to the workflow pane
  - b. Assign a PowerCenter Integration Service
  - c. Start the workflow (wf\_IB\_Rout\_To\_Partner)

# Detailed Overview of Processing Flows

For VAN users, the message routing is done according to the Interchange sender ID that is found in the ISA segment, and the ISA06 interchange ID inbound profile parameter value defined for the partner. VAN routing is based on the assumption that the partner sender id is unique and the value appears in the partner profile parameters. When a HIPAA file is received from VAN, a DX event is created and processed as follows.

1. The ISA06 (Interchange Sender ID) value is extracted from the ISA segment.
2. The DX repository is searched to find a matching profile.
3. If a matching profile is found, the message is routed to that profile via DX return queue. The following screenshot shows the match on Sender ID.

**Figure 10.**

The figure shows an EDI message header and a profile configuration window. The EDI message header is:
 

```
ISA*00*          *00*          *ZZ*1234567890123  *ZZ*1234567890123  *071031*0619*U*00501*
GS*RA*HPWNTY*SLR001*20050202*1338*32046739*X*005030~
```

 The '1234567890123' in the ISA segment is highlighted in yellow. Below it, a profile configuration window titled 'Edit Profile : prof\_ED1\_GW\_IB\_PARTNER\_1' is shown. The 'Workflow Parameters' tab is active, and the 'Interchange' section is expanded. The 'ISA06-Interchange Sender ID' field is highlighted in yellow and contains the value '1234567890123'. An arrow points from the highlighted value in the EDI message to the highlighted field in the profile configuration. Another arrow points from the profile configuration to the text 'parameters settings'.

4. When the message arrives at the Partner, the profile process continues as described in the HIPAA Accelerator Release notes.

## Error Handling

The following errors can occur in processing the message.

- **ISA06 cannot be extracted from input** - The event status is changed to Invalid File and a document is added to the event with the error description.

**Figure 11.**

The figure shows the 'Details of Event 90010' window. The 'Event Details' tab is active, showing the following information:

|                   |                     |                          |                              |
|-------------------|---------------------|--------------------------|------------------------------|
| <b>Event ID</b>   | 90010               | <b>Event status</b>      | Invalid File                 |
| <b>Event Type</b> | File Level Event    | <b>Start Time</b>        | 1 December 2015 15:13:07.169 |
| <b>Partner</b>    | VAN                 | <b>End Time</b>          | 1 December 2015 15:18:23.805 |
| <b>Subject</b>    | file received: temp | <b>Duration</b>          | 00:05:16.636                 |
| <b>Profile</b>    | prof_VAN_1          | <b>Aggregated Status</b> |                              |

The 'Event Logs' section shows the following log entries:

| Log Type     | Date                         | Description                                   |
|--------------|------------------------------|---|
| Input        | 1 December 2015 15:13:07.185 | Input message [temp.txt]                      |
| Intermediate | 1 December 2015 15:18:23.805 | file temp does not contain valid input format |

- **A matching profile with the extracted sender id could not be found** - Either no such sender id is defined or more than one profile with the same sender id is found. The event status is changed to Error and a document is added to the event with the error description. The extracted sender id appears within the error message.

Figure 12.

| Details of Event 90002 |                  |                      |                              |
|------------------------|------------------|----------------------|------------------------------|
| Event Details          |                  | Event Status History |                              |
| Event ID               | 90002            | Event status         | ⊗ Error                      |
| Event Type             | File Level Event | Start Time           | 1 December 2015 13:48:02.932 |
| Partner                | VAN              | End Time             | 1 December 2015 13:48:05.653 |
| Subject                | file received:   | Duration             | 2 seconds, 721 milliseconds  |
| Profile                | prof_VAN_1       | Aggregated Status    |                              |

| Event Logs   |                              |   |
|--------------|------------------------------|---|
| Log Type     | Date                         | Description                                 |
| Input        | 1 December 2015 13:48:02.994 | Input message [8371_1GS_1ST_Valid.txt]      |
| Intermediate | 1 December 2015 13:48:05.638 | unable to locate profile using value CMSFFM |

## Implementation Guide

This section details assumptions and how to integrate with B2B Data Exchange.

### Assumptions

Note the following assumptions in using VAN.

1. The ISA06 Interchange sender id is defined for each partner that sends messages using VAN.
2. The ISA06 Interchange sender id is unique among partners.

### Using the VAN

Every partner must have a Partner definition within the Informatica B2B Data Exchange. Therefore define a profile within the Informatica B2B Data exchange for each partner. Fill in the ISA06 - Interchange sender id parameter value.

As soon as connection is established and the file arrives at the VAN file receive endpoint, the file will be consumed by the DX server, and routed to the matching partner. An event will be created which can be seen on the DX console 'Event List'.



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