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Informatica® B2B Data Exchange
10.0

HIPAA Accelerator Guide

Informatica B2B Data Exchange HIPAA Accelerator Guide
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Table of Contents

Abstract iv

Chapter 1: Overview 5

HIPAA Data Processing Flow 6

Interchange Processing (ISA) 7

Functional Group Processing (GS) 9

Transaction Processing (ST) 10

Chapter 2: Installation and Configuration Procedures 12

Installing the HIPAA Accelerator Library 12

Using the HIPAA Accelerator 15

Abstract

This document contains important information about the functions, installation and configuration, and features of the B2B Data Exchange HIPAA Accelerator.

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 efforts.

The HIPAA Accelerator serves Healthcare Insurance providers or payers 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 parse and validate inbound HIPAA messages.

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

- <http://http://aspe.hhs.gov/ADMNSIMP/FAQTX.HTM>
- <http://www.hipaa.org>

The HIPAA Accelerator package uses the HIPAA and HIX Data Format Library bundle. The bundle includes HIPAA without validations, and HIPAA and HIX with validations. The HIPAA Accelerator works with the Data Transformation HIX Library, which includes HIPAA Level 1 and 2 validation.

HIPAA Accelerator Package

The HIPAA Accelerator package includes the following components:

- B2B Data Exchange:
 - Profiles
 - Workflows
 - Workflow Parameters
 - Event Types
 - Attributes
 - Dashboard Charts
- PowerCenter Workflows: Includes workflows to receive, parse, validate (HIPAA Level 1 and 2 validation) and transform messages to canonical format.

The HIPAA Accelerator package includes the following HIPAA and HIX messages:

- Inbound Messages:
 - 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 (HIPAA and HIX)
- 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
- Outbound Messages:
 - EDI 999 Implementation Acknowledgment
 - TA1 Transactional Acknowledgement

HIPAA messages can 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 customers can add specific B2B Data Exchange and PowerCenter implementations for mapping and loading, and define endpoint connectivity for B2B Data Exchange communication.

HIPAA Data Processing Flow

For each partner, a workflow processes the inbound HIPAA X12 data. A workflow has three levels of segment processing, for the interchange (ISA) segment, the functional group (GS) segment, and the transaction (ST) segment.

The ISA level processing includes the following steps:

1. Receive file
2. Validate file
3. Authenticate file
4. Split file at the GS level
5. Create a TA1 message

During ISA level processing, File Receive, Authentication and Validation events are recorded. You can view processing events in the B2B Data Exchange Operation Console.

The GS level processing includes the following steps:

1. Authenticate file
2. Validate file
3. Split file at the ST level
4. Create a 999 message

During GS level processing, Authentication and Validation events are recorded.

The ST level processing uses the Translate process that includes the following steps:

1. Parse and validate the file at the ST level.

During ST level processing, Translation events are recorded.

Note: The HIPAA Validation library includes parsing to HIPAA XML internal format. To map the HIPAA XML format to customer-specific formats, you can create and configure a Mapper and Serializer in the Data Processor transformation that contains the Parser. For more information about how to create a Mapper and Serializer, see the *Data Transformation User Guide*.

A more detailed general workflow contains the following steps:

1. The X12 file is sent to a 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 X12 file, authenticates and validates the X12 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 and authentication, the Accelerator splits the X12 file into files that each contain one ISA segment with one GS segment. The GS segment can contain multiple ST segments of the same transaction type, such as transaction type 834.
4. Every GS segment is authenticated by comparing data with the configuration data in the B2B Data Exchange profile.
5. The Accelerator validates each file with one ISA segment and one GS segment at the GS level. The Accelerator creates a 999 message to determine if the file is HIPAA compliant.
6. If the file is HIPAA compliant, the Accelerator splits the input into files with one ISA segment, one GS segment, and one ST segment, and then parses the files into HIPAA XML format.

Steps 4-6 repeat for every GS group contained in the original X12 file.

Example

The HIPAA Accelerator receives the following file:

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

When the Accelerator splits the X12 file into files that each contain one ISA segment with one GS segment, the Accelerator creates the following two files:

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

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

When the Accelerator splits the files with one ISA segment and one GS segment files with one ISA segment, one GS segment, and one ST segment, the Accelerator creates the following four files:

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

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

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

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

Interchange Processing (ISA)

The ISA segment is the interchange header for the X12 document, and includes sender and recipient information. File processing starts with ISA segment processing. Each file is expected to contain a single ISA segment. As part of the interchange processing, an incoming file undergoes an ISA envelope validation process. If the ISA validation process is successful, the library authenticates the ISA segment. In ISA authentication, the HIPAA Accelerator checks selected fields to see if they contain expected values according to B2B Data Exchange profile parameters.

After successful ISA validation and authentication, the HIPAA Accelerator splits the file/Interchange and functional group (GS) segments into multiple files, with one GS segment in each file.

Validation and Authentication

During the authentication process, the HIPAA Accelerator extracts data from the X12 file fields and compares the data to a set of parameters in the B2B Data Exchange Operation Console (using the partner's profile). The Accelerator compares the following fields:

- ISA01-Authorization Information Qualifier
- ISA02-Authorization Information
- ISA03-Security Information Qualifier
- ISA04-Security Information
- ISA05-Interchange Sender ID Qualifier
- ISA06-Interchange Sender ID
- ISA07-Interchange Receiver ID Qualifier
- ISA08-Interchange Receiver ID
- ISA11-Repetition Separator
- ISA12-Interchange Control Version
- ISA14-Acknowledgment Requested
- ISA15-Interchange Usage Indicator

The HIPAA Accelerator does not authenticate empty parameters in the profile. If there is an error when the HIPAA Accelerator matches any of the parameters to the file fields, the authentication process fails. If the ISA envelope is not valid or not authenticated, the HIPAA Accelerator rejects the X12 message and sends a TA1 message. In addition, B2B Data Exchange changes the event status to **TA1 Rejected Sent**.

If the ISA envelope is valid and authenticated, the ISA processing stage continues. The HIPAA Accelerator sends a TA1 message, if requested by the originating message. B2B Data Exchange changes the event status to **TA1 Accepted Sent**.

The TA1 message field 04 indicates the results of the ISA envelope validation with the following codes:

- A: Accepted. The envelope is well formed.
- E: Accepted with errors. There are minor errors in the envelope.
- R: Rejected. The ISA envelope is malformed and the file is rejected.

If ISA validation and authentication is successfully completed, the ISA processing stage splits the X12 file at the GS level, into separate files that contains a single interchange (ISA) and a single functional group (GS). The ISA processing stage ends and the workflow moves to the GS processing stage.

Events

B2B Data Exchange assigns the ISA processing stage an event status according to the outcome of the entire file processing procedure. The ISA processing stage can have the following event statuses:

Event Status	Description
Complete	The file is valid and finished processing successfully.
Error	The file failed to process correctly.
File Received	The HIPAA Accelerator library received the X12 file and started the workflow.
Interchange Accepted	The ISA/IEA interchange is valid and authenticated.

Event Status	Description
TA1 Accepted Sent	The HIPAA Accelerator library created and sent a TA1 message for a valid, authenticated interchange.
TA1 Rejected Sent	The HIPAA Accelerator library created and sent a message for a not valid, not authenticated interchange.
TP Not Authenticated	The file failed interchange authentication, or had bad input at the ISA/IEA interchange level.

For the ISA processing stage, the B2B Data Exchange event type is **<transaction type> ISA**, such as 834 ISA for 834 transaction type.

B2B Data Exchange assigns the event a Subject with the following syntax: **File Received <input file name>**.

Files

The input to the ISA processing stage is the original input X12 file. In B2B Data Exchange, the file is attached to the related ISA processing stage event as a log entry.

The output for the ISA processing stage is a TA1 message and multiple HIPAA files based on the number of GS segments. In B2B Data Exchange, the file is attached to the related ISA processing stage event in the event log.

Functional Group Processing (GS)

The GS segment is the functional group header segment of an X12 document. The elements in this segment provide information related to the functional group, such as the codes that identify the sender and recipient, and the date and time of preparation. The GS processing stage processes the functional group segment in the X12 document. After the ISA processing stage, there is just one GS segment in each split file.

Authentication and Validation

During the authentication process, the HIPAA Accelerator extracts data from the GS file fields and compares the data to a set of parameters in the B2B Data Exchange Operation Console. B2B Data Exchange compares the following fields:

- GS01-Functional Group Code ID
- GS02-Group Sender Code
- GS03-Group Receiver Code
- GS08-Version/Release Code

The HIPAA Accelerator library does not authenticate empty parameters in the profile. If the GS segment is authenticated, the GS processing stage continues to the validation stage. The validation stage can include validation level 1 or validation level 2, based on the profile configured in B2B Data Exchange. The HIPAA Accelerator creates a 999 message as part of the acknowledgment process. The functional group is split based on the transaction segment (ST) into multiple files, with one ISA, one GS, and one ST segment in each file.

If validation is successful, B2B Data Exchange changes the event status to **HIPAA Validation Passed**.

If there is an error when the HIPAA Accelerator matches any of the parameters to the file fields, the validation and authentication process fails. The HIPAA Accelerator sends a 999 message and creates an HTML error report. B2B Data Exchange changes the event status to **HIPAA Validation Failed** and **999 Fail Sent**.

If there is an error in this processing stage, B2B Data Exchange assigns the parent ISA level event an **Error** status.

If GS validation and authentication is successfully completed, the GS processing stage splits the file at the ST level, into separate files that contains a single interchange (ISA), a single functional group (GS), and a single transaction (ST). The GS processing stage ends and the workflow moves to the ST processing stage, with HIPAA parsing and validation.

Events

B2B Data Exchange assigns the GS processing stage an event level status according to the outcome of the validation and authentication process. The GS processing stage can have the following event status:

Event Status	Description
999 Fail Sent	Authentication failed, and the HIPAA Accelerator library sent a 999 message for the failed functional group.
Error	The file failed to process correctly.
Group Authentication Failed	The functional group authentication process failed.
Group Processing Initiated	The functional group authentication process started in a separate child event.
Hipaa Validation Error	The functional group validation process failed.
Hipaa Validation Passed	The functional group was successfully validated.

For the GS processing stage, the B2B Data Exchange event type is **<transaction type> GS**, such as 834 GS.

B2B Data Exchange assigns the event a Subject with the following syntax: **GS Level event**.

Files

The input to the GS processing stage is the GS split file from the ISA processing stage. In B2B Data Exchange, the file is attached to the related GS processing stage event.

The output for the ISA processing stage is a 999 message, an HTML report, and multiple HIPAA files based on the number of TS segments. In B2B Data Exchange, the 999 message file is attached to the related GS processing stage event. The HTML file is attached to the related GS processing stage event as an event log.

Transaction Processing (ST)

The ST segment is the transaction set header segment of an X12 document. The ST processing stage converts each transaction from its HIPAA representation into the target structure. In the parsing stage, the X12 format is converted to HIPAA XML.

If there is an error in this processing stage, B2B Data Exchange assigns the parent GS level event and ISA level event an **Error** status. If the ST processing stage is successful, B2B Data Exchange assigns the parent GS level event and ISA level event the **Complete** status.

Events

B2B Data Exchange assigns the ST processing stage an event level status according to the outcome of the ST processing stage. The ST event is a child event of the GS processing stage event. The ST processing stage can have the following event status:

Event Status	Description
Complete	The file finished processing successfully.
Error	The HIPAA parsing and validation process failed.
Transaction Initiated	Transaction processing for a specific transaction has started.
Transaction Processed	Transaction processing for a specific transaction completed successfully.

For the ST processing stage, the B2B Data Exchange event type for each transaction is the transaction number. The event type is **<transaction type> ST**, such as 834 ST.

B2B Data Exchange assigns the event a Subject with the following syntax: **Transaction Set <control number>**.

Files

The input to the ST processing stage is the split ST file from the GS stage.

The output for the ST processing stage is the parsed file in HIPAA XML format.

CHAPTER 2

Installation and Configuration Procedures

The following procedures apply when you install the HIPAA Accelerator.

Installing the HIPAA Accelerator Library

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 9.6.1 or 10.0
- PowerCenter 9.6.1 or 10.0
- B2B Data Exchange 9.6.1, 9.6.2 or 10.0
- HIX 9.6.1.2 or 10.0 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 <DTInstall_Dir>\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: <Install_Dir>\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 <DXInstall_Dir> \apache-tomcat-7.0.55\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 <Install_Dir>\DataExchange\apache-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 <Install_Dir>\DataExchange\apache-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 <DXInstall_Dir>\apache-tomcat-7.0.55\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 <DXInstall_Dir>\apache-tomcat-7.0.55\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 <DXInstall_Dir>\apache-tomcat-7.0.55\webapps\dx-dashboard_SupportFiles.
 - h. Copy _Settings.lgx from C:\temp\Reports\HIPAA_Accelerator_dashboard_extension_Definitions to <DXInstall_Dir>\apache-tomcat-7.0.55\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 <DXInstall_Dir>\apache-tomcat-7.0.55\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
Infra_B2B_IB_input	queue.wf_HCO_IB The name wf_HCO_IB is also the name of a workflow in B2B Data Exchange

Connection Name	JMS Destination
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.
- Import wf_IB_Processing.xml PowerCenter workflow from the c:\temp\PwC_Workflows directory.
 - Import wf_OB_Processing.xml PowerCenter workflow from the c:\temp\PwC_Workflows directory.
 - 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:
- Drag wf_IB_Processing.xml to the workflow pane
 - Assign a PowerCenter Integration Service
 - Start the inbound workflow (wf_IB_Processing)
 - Drag wf_OB_Processing.xml to the workflow pane
 - Assign integration service
 - Start the outbound workflow (wf_OB_Processing)
 - Drag wf_m_HCO_Claim_Processing.xml to the workflow pane
 - Assign integration service
 - Start the outbound workflow (wf_m_HCO_Claim_Processing)

Using the HIPAA Accelerator

Before you start, verify that the B2B Data Exchange server is running.

1. In the PowerCenter Workflow Monitor, verify that the following workflows are running on the PowerCenter Integration Service:
 - wf_HCO_GS_Level_Processing
 - wf_HCO_GS_Level_Split
 - wf_HCO_ISA_Level_Processing
 - wf_HCO_ST_Level_Processing
 - wf_HCO_Update_Event_Status_Recursively
2. In the B2B Data Exchange Operation Console, create a partner and configure the partner parameters according to the expected HIPAA messages. You can use the demo partner HCO_SENDER_1, and the related profile and endpoints, as references for the setup.

Note: The B2B Data Exchange values for the partner name, account number, account name, profile name, ISA-06 profile parameter, and GS-02 profile parameter, must be the same as the expected value in the Sender ISA.
3. Create and configure the send and receive endpoints to receive the messages from the partner.
4. To process the messages, copy HIPAA messages to the receiving endpoint of the partner.
5. To view HIPAA Accelerator events and event details, use the B2B Data Exchange Operation Console. For more information about events and event details, see the *B2B Data Exchange Operation Guide*.