SeeBeyond ICAN Suite

HIPAA Implementation Guide with Claredi

Release 5.0.5 for Schema Run-time Environment (SRE)

SEEBEYOND®

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Chapter 1

Introduction

This chapter introduces you to the HIPAA Implementation Guide.

The Health Insurance Portability & Accountability Act of 1996 (HIPAA) is a federal mandate that was developed specifically for the healthcare industry. For transactions related to healthcare, HIPAA uses a customization of X12. For pharmaceutical transactions, the HIPAA standard uses NCPDP (National Council for Prescription Drug Programs) transactions.

This book includes an overview of HIPAA, and then specific information relating to the installation and contents of SeeBeyond's HIPAA implementations.

1.1 Introduction to HIPAA

HIPAA amends the Internal Revenue Service Code of 1986. Its primary purpose is to set standards for transactions and information within the healthcare industry. HIPAA requires:

- Improved efficiency in healthcare delivery by standardizing electronic data interchange
- Protection of confidentiality and security of health data through setting and enforcing standards.

More specifically, HIPAA calls for:

- Standardization of electronic patient health, administrative, and financial data
- Unique health identifiers for individuals, employers, health plans, and healthcare providers
- Security standards protecting the confidentiality and integrity of "individually identifiable health information," past, present or future

1.2 Intended Reader

The reader of this guide is presumed to be a developer or system administrator with responsibility for developing components of the e*Gate™ system or the SeeBeyond™ eBusiness Integration Suite, to be thoroughly familiar with Windows operations and administration, and to be familiar with Microsoft Windows graphical user interfaces.

Chapter 2

HIPAA Overview

This chapter provides an overview of HIPAA, including general information, a list of the specific transactions that comprise the HIPAA standard, and the structure of HIPAA envelopes, data elements, and syntax.

2.1 Introduction to HIPAA

The following sections provide an introduction to HIPAA.

2.1.1. What Is HIPAA?

HIPAA is an acronym for the Health Insurance Portability and Accountability Act of 1996. This Act is designed to protect patients. Among other things, it defines specifications affecting standards of treatment and privacy rights. It provides a number of standardized transactions that can be used for such things as a healthcare eligibility inquiry or a healthcare claim. HIPAA legislates that all of the healthcare industry will be on the same implementation timetable. All institutions performing electronic healthcare insurance transactions must implement these standardized transactions by October 2002, unless an extension to October 2003 has been granted to the institution.

HIPAA has three primary goals.

- Define standards for electronic transactions and code sets used for financial and clinical electronic data interchange (EDI).
- Establish unique identifiers for the three participants in the provision of healthcare services: providers, payers, and employers.
- Mandate security and privacy standards for the protection of individually identifiable healthcare information.

HIPAA regulations affect many organizations dealing with the medical industry, such as:

- providers
- health plans
- employers

For provider systems, HIPAA does not mandate they perform EDI and therefore many of the standards do not apply. However, if a provider elects to perform EDI, then their

EDI transactions are required to be in compliance with all of the HIPAA transaction requirements.

The impact of HIPAA on health plans is potentially far greater than the impact on provider systems. Where providers have the option to perform EDI, HIPAA requires health plans to support nine standard EDI transactions.

2.1.2. HIPAA Goals

Electronic Health Transactions Standards

Historically, health providers and plans used many different electronic formats. Implementing a national standard means that everyone uses one format, thereby simplifying and improving transaction efficiency. HIPAA defines standards for nine healthcare transactions, and mandates that all providers, health plans, and employers performing EDI comply with the standards. The HIPAA transactions cover the following situations:

- eligibility for a health plan
- claims or equivalent encounter information
- payment and remittance advice
- coordination of benefits
- health claims status
- referral certification and authorization
- first report of injury
- enrollment and disenrollment in a health plan
- health plan premium payments
- pending transaction - health claims attachments

For transactions relating to such things as healthcare claims, the HIPAA standard uses a range of customized X12 transactions as listed above. For transactions relating to prescriptions, HIPAA uses NCPDP transactions.

Health organizations must also adopt standards for the coding of information within the individual transactions. For example, coding systems that describe diseases, injuries, and other health problems, as well as their causes, symptoms, and actions taken must be uniform. HIPAA also establishes national standards for these code sets based on currently available standards (for example, ICD9, CPT4, and so on).

Unique Identifiers

As well as meeting the need for standard encoding of information within the transactions, HIPAA also establishes the requirement to uniquely identify the participants involved in the provision of and payment for healthcare services. These participants include the provider, the payer (health plan), and the employer.

Security and Electronic Signatures

The security standards provide a level of protection for all health information that is housed or transmitted electronically and that pertains to an individual. Organizations that use electronic signatures also have to meet a standard ensuring message integrity, user authentication, and non-repudiation.

The security standard mandates safeguards for physical storage and maintenance, transmission, and access of individual health information. It applies not only to the transactions adopted under HIPAA, but to all individual health information that is maintained or transmitted.

The security standard does not require specific technologies to be used; solutions vary from business to business, depending on the needs and technologies in place.

No transactions adopted under HIPAA currently require an electronic signature.

Privacy and Confidentiality

In general, privacy is about who has the right to access personally identifiable health information. This covers all individually identifiable health information regardless of whether the information is, or has been, in electronic form.

The privacy standards:

- Limit non-consensual use and release of private health information.
- Give patients the right to access their medical records and to know who else has accessed them.
- Restrict most disclosure of health information to the minimum needed for the intended purpose.
- Establish new criminal and civil sanctions for improper use or disclosure.
- Establish new requirements for access to records by researchers and others.

2.1.3. Trading Partner Agreements

Although the regulations mandated by HIPAA are very strict and specific, it is still important to have trading partner agreements for individual trading relationships.

Following the HIPAA standard ensures that transactions comply with the regulations mandated by the government. HIPAA requirements are completely described in the HIPAA implementation guide for each transaction, and must not be modified by a trading partner.

However, there is room for negotiation in terms of the specific processing of the transactions in each trading partner's individual system. The specifics might vary between sites. The trading partner agreement is a useful repository for this type of site-specific information.

There are three levels of information that guide the final format of a specific transaction. These three levels are:

- The HIPAA standard

HIPAA publishes a standard structure for each HIPAA transaction.

- Industry-specific Implementation Guides

  Specific industries, including healthcare, publish implementation guides customized for that industry. Normally, these are provided as recommendations only. However, in the case of HIPAA, it is extremely important to follow these guidelines since HIPAA regulations are law.

- Trading Partner Agreements

  It is normal for trading partners to have individual agreements that supplement the standard guides. The specific processing of the transactions in each trading partner's individual system might vary between sites. Because of this, additional documentation that provides information about the differences is helpful to the site's trading partners and simplifies implementation. For example, while a certain code might be valid in an implementation guide, a specific trading partner might not use that code in transactions. It would be important to include that information in a trading partner agreement.

2.2 NCPDP

The following section provides an introduction to NCPDP, including information about NCPDP transactions and message structures.

2.2.1. What Is NCPDP?

NCPDP (National Council for Prescription Drug Programs) is an organization, accredited by ANSI, that is tasked with standards development for the pharmaceutical industry.

The mission of NCPDP is twofold:

- To create and promote standards for data interchange in pharmaceutical services (including electronic data interchange)
- To provide educational information and resources to members

In following the above, NCPDP hopes to enhance the quality of healthcare by creating, and encouraging the use of, a high-quality data interchange standard.

2.2.2. History

Pharmacies started moving toward computerization in the late 1970s. By 1977, standardization of forms was seen as a need and NCPDP was formed to meet that need. The first NCPDP standardized form was released in 1978. By 1987, electronic claims were introduced. In 1988, version 1.0 of the NCPDP Telecommunications Standard was released. Since then, the standard has continued to be developed.

2.2.3. What Is the NCPDP Telecommunications Standard?

The NCPDP Telecommunications Standard (Telecom) is a data transmission standard specifically designed for the communication of prescription information between pharmacies and payers. It was developed to provide a consistent standard for pharmaceutical drug claims. This standard defines the structure for prescription claim transactions between providers (for example, pharmacies or doctors) and claims adjudicators. It provides for communications in both directions.

The HIPAA standard for electronic healthcare transactions and code sets adopts the following NCPDP standards for pharmacy claims:

- NCPDP Telecommunication Standard Format, Version 5.1
- NCPDP Batch Standard, Version 1 Release 1 (1.1)

Note: *At the request of NCPDP, DSMO (Designated Standards Maintenance Organization) has revised support from Batch Standard Version 1.0 to Batch Standard Version 1.1 for usage with Telecommunication Standard Version 5.1. For backwards compatibility, Batch 1.0 files are still provided in the NCPDP-HIPAA ETD Library.*

Health plans, healthcare clearinghouses, and healthcare providers who use electronic transactions are required to use these standards after October 2002, unless they have been granted an extension to October 2003.

2.2.4. Components of an NCPDP Envelope

NCPDP messages are all ASCII text with the exception of the delimiters, which are hexadecimal.

Structure of a Request Transaction

An NCPDP Business Request Transaction has the following main parts:

- An electronic envelope, including such items as sender ID, receiver ID, message type, password, and date/time.
- A prescriber section, including such items as prescriber identifier (for example, State License), prescriber name, business name, business address, and specialty code.
- A pharmacy section, including such items as NCPDP provider identifying code, pharmacy name, pharmacist name, pharmacy address, and pharmacy phone number.
- A patient section, including such items as patient name, date of birth, gender, address, and the pharmacy or prescriber’s internal ID code for the patient.

Structure of a Response Transaction

An NCPDP Response Transaction includes:

- An electronic envelope.
- A response status, which can be any one of the following:
  - An acknowledgment of receipt of the transaction
  - A “paired” response transaction (this might approve the request, deny it, or approve it with changes)
  - An error acknowledgment

2.2.5. Batching in NCPDP

NCPDP supports batching of transactions.

An NCPDP batch file is comprised of three sections:

- A transaction header (one per batch)
- Data (one or many, to a maximum of 9,999,999,997), each containing a Transaction Reference Number to uniquely identify the transaction within the file
- A transaction trailer (one per batch)

2.2.6. Acknowledgment Types

The transactions defined within NCPDP are of two types: request transactions and response transactions. There are no discrete acknowledgment transactions.

However, a “captured” response (one of the several types of response transactions) can be used when information transactions are sent and require nothing more than acknowledgment of their receipt at the processor or endpoint.

2.2.7. Transaction Codes

NCPDP uses transaction codes to indicate the type of transaction being performed.

2.3 Additional Information

For more information on HIPAA, visit the following Web sites:

- **http://www.hcfa.gov/HIPAA/HIPAAHM.HTM**
- **http://www.hipaa-dsmo.org**
- **http://www.wedi.org/**
- **http://www.claredi.com/**
- **http://aspe.os.dhhs.gov/admnsimp/**

For more information on NCPDP, visit the official NCPDP Web site at this address:

- **http://www.ncpdp.org/**

Note: *This information is correct at the time of going to press; however, SeeBeyond has no control over these sites. If you find the link is are no longer correct, use a search engine to search for* ***HIPAA*** *or* ***NCPDP****.*

Chapter 3

The SeeBeyond Solution

This chapter provides an overview of SeeBeyond's solution for HIPAA implementations, which was developed in partnership with Claredi Corporation.

3.1 Introduction

The SeeBeyond eBusiness Integration Suite supports the translations and field mapping features needed to comply with nationally mandated code sets while preserving local autonomy. It also includes the pre-built message structures for all HIPAA transactions, and the ability to map proprietary, internal messaging formats to the appropriate HIPAA transactions.

3.1.1. e*Xchange Partner Manager

e*Xchange Partner Manager allows organizations to use technology for business-to-business (B2B) and business-to-consumer (B2C) e-commerce. In addition to the standard e*Xchange functionality, SeeBeyond has partnered with Claredi Corporation to provide pre-built validation rules for the standard X12 transactions for HIPAA that are Claredi compliant, as well as optional HIPAA-compliant security for transmission over public networks.

3.1.2. e*Gate Integrator

e*Gate Integrator can be used without e*Xchange Partner Manager to transform data from other formats to the standard X12 format for HIPAA. It also provides connectivity with, and between, the diverse systems and applications that participate in the HIPAA transactions. e*Gate cannot attach to the Claredi appliance, however; you must use e*Xchange for that. To write schemas or perform post-validation collaboration, the HIPAA solution uses e*Gate add-ons available through ESRs.

3.1.3. e*Index Global Identifier

e*Index Global Identifier provides the ability to maintain internal numbering for providers, health plans, employers, and patients, and cross-indexes these internal numbers to the nationally assigned identifiers for external communication. This may become useful when introducing the HIPAA requirement of unique identifiers.

3.2 e*Xchange Partner Manager

e*Xchange Partner Manager provides functionality to receive, process, and route inbound and outbound messages in batch, fast batch, and interactive transmission modes.

For HIPAA, e*Xchange works with a networked appliance from Claredi Corporation that includes pre-built validation rules for the standard transactions, as well as optional HIPAA-compliant security for transmission over public networks.

This solution does the following:

- Validates messages based on the May 2000 HIPAA standards and the revised February 2003 Addenda for those standards.
- Automatically generates and reconciles acknowledgments, providing the acknowledgment handling required by HIPAA.
- Stores trading partner information, messages, acknowledgments, and errors in a database. HIPAA requires that seven years of patient data be stored. This is handled by the e*Xchange database; and the e*Xchange Repository Manager allows management and archiving of data.
- Allows users to view messages and supports security of data access via user ID and password verification via the e*Xchange Web interface.
- Provides an audit of who views the data. This is a HIPAA mandate that SeeBeyond supports via the Web interface Message Tracking audit feature.
- Tracks transactions per trading partner, which is also a HIPAA mandate supported via Message Tracking.

eSecurity Manager offers the following additional functionality that may be desired by HIPAA:

- Exchange content integrity.
- Origin authentication via digital signatures.
- Non-repudiation of transmission and receipt.

3.2.1. The HIPAA ETD Library

The HIPAA ETD Library e*Gate add-on provides JAVA ETD files (including Addenda files available through an ESR) for each HIPAA X12 transaction. These files work together with the e*Xchange HIPAA Collaboration Rules to validate the HIPAA rules in the X12 implementation guides. Each ETD includes Java methods to provide error message handling, indicate national identifier preferences, and set or retrieve delimiters. These ETDs cannot be modified.

The output ETD for all of the Claredi HIPAA validations is **X12ValidationResult**, which contains information about any data, envelope, or unmarshalling errors found while processing HIPAA transactions.

Note that the ETD library add-on is only required if you’re writing an e*Gate schema or doing post-validation collaboration.

3.2.2. Complete HIPAA Transaction ETDs

In addition to the standard e*Xchange format files, installation also includes a version of HIPAA Monk ETD files that include the GS/GE and ISA/IEA enveloping. These are suitable for use outside e*Xchange when a complete Event structure is required; for example, when using e*Gate to translate from X12 to a business application's proprietary data format. Note that these files do not provide the comprehensive HIPAA validations that are provided in the e*Xchange/Claredi solution.

There are HIPAA X12 ETD files for the May 1999 and May 2000 HIPAA implementation guide releases.

The Monk ETD file names have "_xlate" (for May 1999 files) or "_xlat" (for May 2000 files) appended to the file name to indicate that these are the translation files and that they include the interchange control and functional group header and footer. To indicate that the files match the HIPAA standard, they have "hipaa" in the file name. Java ETD files names have a ".xsc" suffix. Examples are shown below.

- Monk ETD file for an X12 270, Eligibility Coverage Inquiry, May 1999 release: **X12_270EligibCoverageBenefitInquiry_004010X092_hipaa_xlate.ssc**
- Java ETD file for an X12 270, Eligibility Coverage Inquiry, May 2000 release: **X12_004010X092_00_hipaa270_EligCoveOrBeneInqu.xsc**
- Java Addenda ETD file for an X12 270, Eligibility Coverage Inquiry: **X12_004010X092A1_00_hipaa270_EligCoveOrBeneInqu.xsc**

ETD files are stored in the following locations:

- **C:\eGate\server\registry\repository\default\etd\templates\Hipaa_1999**
- **C:\eGate\server\registry\repository\default\etd\templates\Hipaa_2000**
- **C:\eGate\server\registry\repository\default\etd\templates\Hipaa_2003**

For a complete list of files, see **"HIPAA e*Xchange Files for e*Gate" on page 99**.

Note: *These files use dynamic delimiters, and can only be used in translating from X12 to a proprietary format.*

The Claredi network appliance also supports Java ETDs for the Addenda to HIPAA Implementation Guides that were approved in October, 2002 and formally adopted in February, 2003. ETDs are available through software patches (ESRs). Contact your SeeBeyond support representative for details.

3.3 e*Gate Integrator

The HIPAA ETD Library includes the pre-built Java message structures for all HIPAA transactions, and the ability to map proprietary, internal messaging formats to the appropriate HIPAA transactions. For more information on the HIPAA ETD Library, refer to the *HIPAA ETD Library User's Guide*.

Note: *Although you can use e*Gate to create EDI messages that conform to HIPAA standards, you also need to ensure that other HIPAA standards are also met; for example, privacy and security. e*Xchange Partner Manager provides a more complete HIPAA solution.*

All the HIPAA X12 ETDs accept either standard ANSI X12 format or XML format as input. By default, output is ANSI. However, you can optionally define that the output is XML. Although the XML format does not meet the HIPAA requirements for EDI, this format is useful when displaying the data in a Web browser.

3.3.1. e*Gate Files for HIPAA Transactions

The X12 portion of the HIPAA ETD Library provides Java Event Type Definitions (**.xsc** and **.jar** files) for all standard X12 transactions that have been adopted by HIPAA. These ETDs are stored in the following locations:

- **\<eGate>\server\registry\repository\default\etd\templates\Hipaa_1999**
- **\<eGate>\server\registry\repository\default\etd\templates\Hipaa_2000**

These transactions are based on the October 1997 X12 standard; that is, Version 4, Release 1, Sub-release 0 (004010) (version 4010).

For a list of files, see **"e*Gate Files for HIPAA Transactions" on page 102**.

The NCPDP portion of the HIPAA ETD Library provides request and response transactions for all the HIPAA-approved NCPDP transaction codes. These ETDs are stored in:

- **\<eGate>\server\registry\repository\default\etd\templates\NCPDP**

For a list of NCPDP-HIPAA files, see **"e*Gate Files for HIPAA Transactions" on page 102**.

3.4 Testing the SeeBeyond Solution

Claredi Corporation and the WEDI SNIP (Workgroup for Electronic Data Interchange, Strategic National Implementation Process) task group have developed recommended types of HIPAA testing. Testing is performed in six different areas, ranging from basic integrity checking to a more detailed level of testing. The types of HIPAA tests include:

- Level 1: Syntax Integrity Testing
- Level 2: Implementation Guide Syntax Requirement Testing
- Level 3: Balancing Testing
- Level 4: Situation Testing
- Level 5: External Code Set Testing
- Level 6: Product Types or Lines of Service Testing

Additional (“Level 7”) testing specific to Trading Partners is also identified, and available as an additional service. Because the HIPAA validation testing supported by e*Xchange is actually performed by Claredi Corporation, you can be assured of having the highest accuracy possible in the industry.

Chapter 4

e*Xchange HIPAA Validations

This chapter provides information about how e*Xchange supports the HIPAA validations for each type. HIPAA validation rules are described for each transaction set in the X12 implementation guides.

4.1 Overview

Under HIPAA regulations, several validations must be performed at the segment and element levels to comply with the rules stated in the HIPAA implementation guides. SeeBeyond meets this requirement by incorporating automatic validations into the HIPAA ETD libraries and by integrating with the appliance from Claredi Corporation.

Validation as discussed in this chapter applies to the May 2000 standards and the Addenda for those standards proposed in October 2002 and formally adopted in February 2003.

4.1.1. Validated Transaction Sets

Validations need to be performed at the element, segment, and loop levels against HIPAA transactions to be sure that the data contained within each transaction meet the rules put forth in the HIPAA implementation guides. Standard X12 transaction types have been adopted by HIPAA. e*Xchange supports validations for all nine transaction sets, based on the May 2000 standards and the Addenda adopted for them in 2002 that were formally approved in 2003.

4.1.2. HIPAA Validations Summary

Every HIPAA transaction received by e*Xchange must pass three validation phases before it can be accepted as a valid message. Error messages are generated for errors that occur at each phase.

The primary phases of validation are:

- Interchange Control Receipt and Acknowledgement.
- Functional Group Receipt and Acknowledgement.
- HIPAA Transaction-specific Validation.

Interchange Control Receipt and Acknowledgement

All messages containing HIPAA transactions must be received in ASC X12 format. When e*Xchange receives a HIPAA transaction, the first step in validation is to check the Interchange Control Envelope information to determine the sender of the document and to confirm receipt of the message with a TA1 Interchange Acknowledgement. If a message is not properly formatted and cannot be read by e*Xchange, it fails validation and no further processing occurs for the failed message. For information about the format of the error messages produced during this phase, see "getICValidation Result" in Chapter 5 of the *HIPAA ETD Library User's Guide*.

Functional Group Receipt and Acknowledgement

Once a message passes the Interchange Control Receipt and Acknowledgement process, the message is validated at the Functional Group level. At the Functional Group level, messages are verified to ensure that the number of transactions in the file is correct and that the control numbers agree. If a message is not properly formatted and cannot be read by e*Xchange, it fails validation and no further processing occurs for the failed message. For information about the format of the error messages produced during this phase, see "getFGValidation Result" in Chapter 5 of the *HIPAA ETD Library User's Guide*.

HIPAA Transaction-specific Validation

If a message passes validations for both of the previous phases, the whole Functional Group of which it is part is then passed to the Claredi appliance for HIPAA validation processing. All ST-SE messages in the Functional Group sent to Claredi in a set.

Any errors encountered during this phase are identified, passed back to e*Xchange, and recorded for review in the e*Xchange Message Tracking system.

Overriding HIPAA Validations

The standard HIPAA ETDs and Claredi validations adhere strictly to the rules set forth in the X12 implementation guides. To ensure that the standard components are HIPAA-compliant, the ETDs cannot be modified to provide less restrictive validations or to perform additional validations. If your implementation requires that additional validations be performed against HIPAA transactions or that HIPAA validations be less restrictive for certain transactions, you can create Collaboration Rules scripts to reprocess HIPAA transactions. For more information, see Chapter 5, **"Post-validation Collaboration"**.

4.2 Code Set Validations

The Claredi appliance validates the code sets mandated under the HIPAA regulations for format and, in most cases, for content. Table 1 lists the code sets supported by the Claredi appliance.

Table 1 HIPAA External Code Sets

Code Set ID	Code Set Description	Notes
5	Countries, Currencies, and Funds	Both 2-letter and 3-letter country codes are validated. Includes the following code set names: - 5_Country - 5_Country_2 - 5_Country_3 - 5_Currency
130	Health Care Financing Administration Common Procedural Coding System	The 130_ProcedureModifier code set modifier is used to modify this code set.
131	ICD-9-CM	Accepts data with or without decimal points. Includes the following code set names: - 131_Procedure - 131_Disease
132	National Uniform Billing Committee (NUBC) Codes	Includes the following code set names: - 132_Revenue - 132_PlaceOfService - 132_Occurrence - 132_OccurrenceSpan - 132_Value - 132_Condition
133	Current Procedural Terminology (CPT) Codes	The 133_ProcedureModifier code set modifier is used to modify this code set.
134	National Drug Codes	
135	American Dental Association Codes	
139	Claim Adjustment Reason Codes	
235	Claim Frequency Type Codes	
236	Uniform Billing Claim Form Bill Type	
411	Remittance Remark Codes	
NO	HCPCS Modifiers	Supported code set name is HIPPS_Nursing_Rate_Code.

4.2.1. Message Tracking

The e*Xchange error messages can be viewed using the Message Tracking feature of the e*Xchange Web interface. Message Tracking allows you to view any messages that have been processed by e*Xchange, including any errors that might be associated with a message. This tool helps you to pinpoint the source of an error so it can be resolved, and provides a way for you to fix and resend any messages that had errors. For more information about Message Tracking, see Chapter 10, "Web Interface: Message Tracking", in the *e*Xchange Partner Manager User's Guide*.

Message Tracking Error Message Format

The error messages displayed in Message Tracking do not include level indicator or AK304 and AK403 error codes. Message Tracking format lists errors in a table where the leftmost column contains error detail and the column adjoining that lists the error number, as follows:

```
N2 at 18 [N2]: Unexpected segment (N2) 110023
```

Chapter 5

Post-validation Collaboration

This chapter provides information about post-validation processing and instructions for using post-validation Collaboration Rules, including creating new post-validation Collaboration Rules, specifying the Collaboration Rules to use for each message, and viewing reprocessed transactions in Message Tracking.

5.1 Overview

e*Xchange with the Claredi appliance strictly validates HIPAA transactions against the rules set forth in the HIPAA implementation guides. For certain transactions from certain Trading Partners, you may find that additional validations are required or that the standard HIPAA validations must be relaxed in order for transactions to be processed. e*Xchange provides a method of reprocessing X12 transactions to allow all transactions to pass through (even those that do not pass the HIPAA validations) and to put transactions through additional validations that produce custom error messages.

Messages are reprocessed using post-validation Collaboration Rules scripts to strip error data, add error data, and perform custom validations, including validating against non-standard code sets. This allows a message to pass through e*Xchange even though it does not conform strictly to the HIPAA rules.

5.2 Post-validation Processing Components

In order to implement post-validation processing of HIPAA transactions, you need to work with four different components of e*Xchange:

- Collaboration Rules
- HIPAA ETD Library Methods
- Post-validation Collaboration Indicator
- Message Tracking

5.2.1. Collaboration Rules

The Claredi Faciledi application that validates incoming HIPAA transactions strictly adheres to the rules as outlined in the implementation guides and does not allow flexibility in determining how to process incoming information. This means if data from a specific Trading Partner is not in compliance with the HIPAA rules, transactions from that Trading Partner will continually fail. However, you can create post-validation Collaboration Rules scripts to reprocess the failed transactions while still flagging the messages as containing HIPAA errors.

In addition, some transactions may pass the HIPAA validations, but contain other errors specific to your business requirements. You can define new validations and their corresponding error messages for reprocessing messages.

5.2.2. Post-validation Java Methods

Several methods are provided specifically for use when creating the Collaboration Rules for post-validation processing of HIPAA transactions. These methods allow you to remove error data (for less strict validations), to add new error data (for more strict validations), and to redirect standard code set validations to validate against user-defined code sets.

The new methods are:

- **addDataError**
  This method uses the given parameters to create error messages to add to the error message string. Use this method to define error messages for the custom validations you define in the post-validation processing Collaboration Rules script.

  Syntax

  ```
  public final void addDataError(short level, String segmIDCode, int
  segmPosiInTransSet, String loopIDCode, short segmSyntErroCode,
  short elemPosiInSegm, short compDataElemPosiInComp,String
  dataElemRefeNumb, short dataElemSyntErroCode, String
  CopyOfBadDataElem)
  ```

- **addUserDataError**
  This method uses the given parameters to create customized error messages to add to the error message string. The error data you define should be as complete as possible. Use this method to define error messages for the custom validations you define in the post-validation processing Collaboration Rules script.

  Syntax

  ```
  public final void addUserDataError(int errorCode, String
  errorDesc, short level, String loopIDCode, String segmIDCode, int
  segmPosiInTransSet, short segmSyntErroCode, short elemPosiInSegm,
  short compDataElemPosiInComp, String dataElemRefeNumb, short
  dataElemSyntErroCode, String CopyOfBadDataElem)
  ```

- **clearDataErrors**
  This method strips out all errors. PVC processing continues as though the stripped errors did not exist.

  Syntax

  ```
  public final void clearDataErrors()
  ```

- **countDataError**
  This method returns a value indicating the total number of errors.

  Syntax

  ```
  public final int countDataErrors()
  ```

- **getClarediRawData**
  This method retrieves the entire validation result for a given message as returned by Claredi Corporation's Faciledi appliance.

  Syntax

  ```
  public final java.lang.String getClarediRawData()
  ```

- **removeDataError**
  This method deletes the error specified in a particular line of its associated index.

  Syntax

  ```
  public final void removeDataError(int index)
  ```

- **stripDataError**
  This method uses the given parameters as search criteria to find the error data to strip from the HIPAA error message string. You can define the search as strictly or loosely as you need to remove the appropriate errors. For example, if you only enter a loop and segment ID code, all error data for that segment in the specified loop are removed. This method allows you to loosen the restrictions of HIPAA validations.

  Syntax

  ```
  public void stripDataError(int ErrorCode, short level,
  java.lang.String loopIDCode, java.lang.String segmIDCode, int
  segmPosiInTransSet, short segmSyntErroCode, short elemPosiInSegm,
  short compDataElemPosiInComp, java.lang.String dataElemRefNumb,
  short dataElemSyntErroCode, java.lang.String CopyOfBadDataElem)
  ```

Any additional Java methods and functions inherited from the base class are not used for Post-Validation Collaboration.

Java Method Parameters

Many of the same parameters are common to multiple Java methods.

Table 2 Definitions of Java Method Parameters

Name	Type	Description
Parameter descriptions in this table apply to all methods but use the example of the stripDataError method unless otherwise indicated.		
ErrorCode	int	The error code number for the error message to be stripped. ***Note:*** *In previous versions, HIPAA error code numbers began at 5000; for the current version, they begin at 15000.*

Table 2 Definitions of Java Method Parameters (Continued)

Name	Type	Description
level	short	The Claredi level of the error message.
loopIDCode	java.lang.String	The loop identifier of the loop in which the error data is located.
segmIDCode	java.lang.String	The segment identifier of the segment in which the error data is located.
segmPosiInTransSet	int	The position of the segment in the transaction set.
segmSyntErroCode	short	The segment syntax error as it appears in the AK304 segment of the 997 Functional Acknowledgment.
elemPosiInSegm	short	The position of the element within the segment.
compDataElemPosiInComp	short	The position of the element in the composite.
dataElemRefeNumb	java.lang.String	The reference number of the data element.
dataElemSyntErroCode	short	The element error code as it appears in the AK403 segment of the 997 Functional Acknowledgment.
CopyOfBadDataElem	java.lang.String	A copy of the bad data value.
errorDesc	java.lang.String	The description of the customized error message you want to add (in addUserDataError).
clearDataErrors	data.String	The command to strip out all errors (in clearDataErrors).
countDataErrors	int	The total number of errors.
getClarediRawData	java.lang.String	The command to retrieve the entire validation result from the Claredi appliance.
removeDataError	int	The command to remove the error at the specified index line.

Parameter Notes

When defining parameters, follow these guidelines.

- For parameters of the data type **short**, you must use a cast for the parameter value. For example, if the parameter value is “3”, the parameter must be defined as “(short)3” (without the double quotes).
- For parameters of the data type **java.lang.String**, the value of the parameter must be placed in double quotes. For example, “Element value is not valid.”
- To specify that a parameter not be used in a specific call to a method:
  - Enter **-1** for parameters of the type **int**.
  - Enter **(short)-1** for parameters of the type **short**.
  - Enter **null** (the actual text “null” with no quotes) for parameters of the type **java.lang.String**.

  For example, if in using the **stripDataError** method, you do not know the Claredi level of the message you want to strip, enter “(short)-1” (no quotes) for the **level** parameter for **stripDataError**. The method will then ignore the Claredi level when searching for errors to remove.

5.2.3. Post-validation Collaboration Indicator

The Message Profile window in the web interface contains a field named “Post Validation Collaboration” that allows you to specify a post-validation Collaboration Rules script. If there is no value in this field, e*Xchange does not perform any reprocessing of HIPAA transactions for the displayed Trading Partner and message profile after they are processed through the standard HIPAA validations. If a post-validation Collaboration is specified, the transactions are reprocessed according to the logic defined in the specified Collaboration Rules script.

5.2.4. Message Tracking

You can view any standard errors and any custom errors for a given transaction in Message Tracking. Message Tracking also displays a list of any errors you stripped from the transaction to allow it to pass through.

Standard HIPAA validation errors are indicated in the **Error Data** column on the Message Details window, and any custom errors that were generated during reprocessing are appended to the end of the error list. The **Error Audit** column indicates whether errors were stripped from the original error string for the displayed transaction. If this column is **Yes** for a transaction, you can click **Yes** to view a list of errors that were stripped to allow the transaction to pass through the validations.

5.3 Standard Validation Processing

Using a post-validation Collaboration Rules script slightly modifies the method by which HIPAA transactions are validated by performing extra steps to reprocess the transactions you specify.

5.3.1. HIPAA Transaction Validation without Reprocessing

If no post-validation Collaboration Rules script is specified, e*Xchange performs the following general sequence when a HIPAA transaction is received. This sequence does not reprocess transactions and adheres strictly to the X12 implementation guide rules.

1. e*Xchange receives the HIPAA transaction and uses the Claredi appliance to validate the transaction for HIPAA compliance.
2. Strict validations are performed, as outlined by the X12 implementation guide for the specified transaction type.
3. A string is returned from Claredi that contains any error messages created while processing.
4. The HIPAA validator writes the transaction to the database and sends the error message string to the error handler for processing.

5.3.2. HIPAA Transaction Validation with Reprocessing

If a post-validation Collaboration Rules script is specified, the processing sequence changes to include additional steps that allow error data to be removed or added. The new processing sequence allows you to ignore certain errors or perform additional validations with their own custom error messages. You can specify that the validations performed during reprocessing be as strict or loose as you prefer.

1. e*Xchange receives the HIPAA transaction and uses the Claredi appliance to validate the transaction for HIPAA compliance.
2. Strict validations are performed, as outlined by the X12 implementation guide pertaining to the specified transaction.
3. The Collaboration checks the Message Profile properties for an entry in the Post Validation Collaboration field specifying new Collaboration Rules for post-validation processing.
4. If there is no value in the Post Validation Collaboration field, processing continues as outlined in steps 3 and 4 under “HIPAA Transaction Validation without Reprocessing” on page 33.
5. If there is a value in the Post Validation Collaboration field, the error message from the HIPAA validation is forwarded for processing through the Collaboration Rules specified in the field.
6. The post-validation Collaboration Rules reprocess the information and alters the error message string in one or both of the following ways.

A Errors that were previously identified as acceptable for your business applications are removed from the error message string, making the overall validation less restrictive.

B Additional validations are performed against the transaction, and user-defined errors are added to the error message string, making the overall validation more restrictive.

7 Upon completion of the Post Validation Collaboration, processing control is returned to **eX_X12_Validate** and the error message string is returned as a parameter.

8 The validation continues as described in steps 3 and 4 under “HIPAA Transaction Validation without Reprocessing” on page 33.

5.4 Implementing Post-validation Collaboration Rules

There are two steps to implementing post-validation Collaboration Rules for HIPAA transactions. You need to perform these steps for each message type you want to reprocess and possibly for each Trading Partner from which the messages are processed. The implementation steps are:

1 **Creating Post-validation Collaboration Rules** on page 34

2 **Specifying Post-validation Collaboration Rules for a Message Profile** on page 37

5.4.1. Creating Post-validation Collaboration Rules

You can design the post-validation Collaboration Rules for HIPAA transactions to adhere as strictly or loosely to the requirements of the X12 implementation guides as you desire for a specific Trading Partner or Trading Partners. You must create different post-validation Collaboration Rules for each message type you want to reprocess, and you may need to define different Collaboration Rules for the same message type but for different Trading Partners. An analysis of the data in the messages from each Trading Partners and the HIPAA errors produced from these messages will help you define the structure of the post-validation Collaboration Rules.

Specifying Input and Output ETDs

To create post-validation collaboration rules, you specify input and output ETDs as follows:

1 Open the HIPAA schema in the Schema Manager.

2 In the Components Pane of the Schema Manager, highlight **Collaboration Rules**, and then click **New Collaboration Rules**.

3 Name the Collaboration Rules file, and then click **OK**.

4 In the Service field on the Collaboration Rules Properties window, select **Java**.

5 Select the Collaboration Mapping tab of the Collaboration Rules Properties window and create two instances as defined in Table 3 and illustrated in Figure 1.

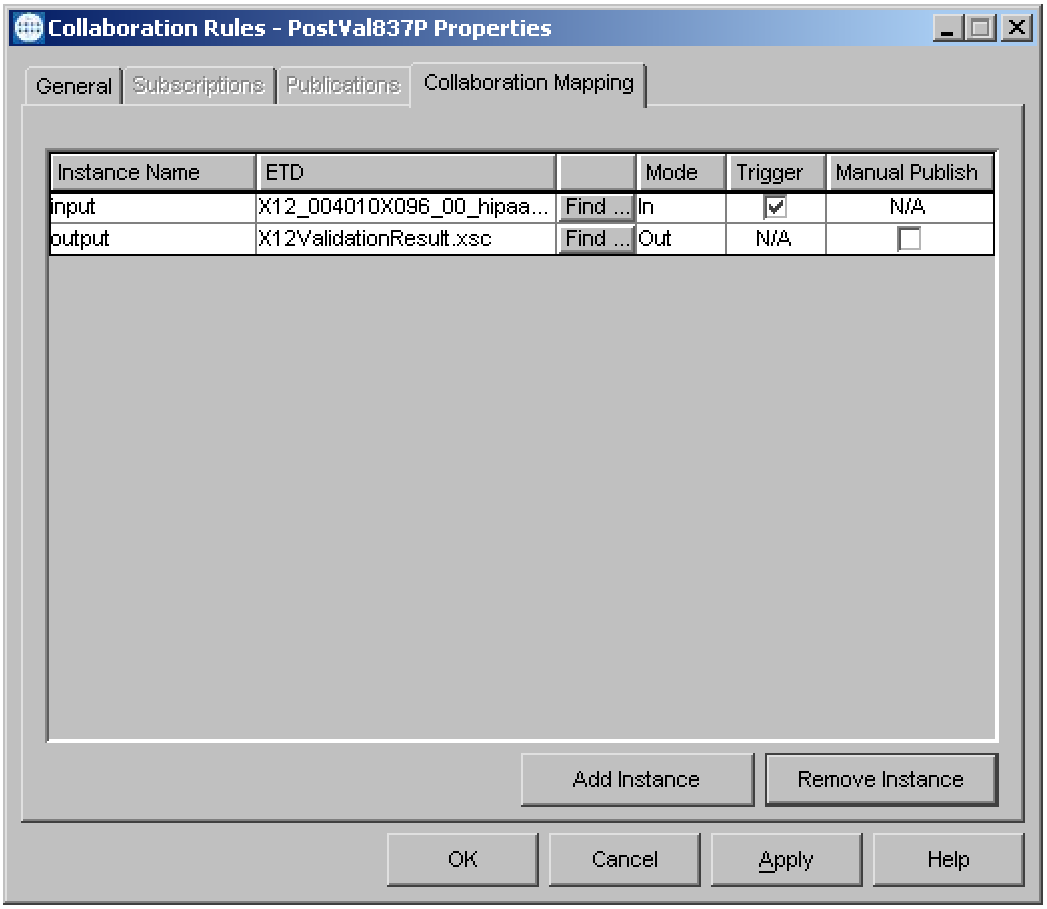
Table 3 Post-validation Collaboration Mapping

Instance Name	ETD	Mode	Trigger	Manual Publish
input	The name of the HIPAA ETD that corresponds to the transaction type for which you are creating the Collaboration Rules. The name of this ETD must be exactly the same as the input ETD for the standard HIPAA validation Collaboration that originally processes this transaction type.	In	Selected	Accept the default.
output	X12ValidationResult.xsc	Out	NA	Accept the default.

The following rules apply to these instances:

- The instances must be named **input** (with a Mode of "In") and **output** (with a Mode of "Out").
- The name of the input ETD must exactly match the name of the Java HIPAA ETD of the message you are validating. For example, if you are reprocessing 837 Institutional transactions, the input ETD must be **X12_004010X096_00_hipaaQ3_837_HealCareClai.xsc**.
- The output ETD must be **X12ValidationResult.xsc**.

Figure 1 Collaboration Mapping Instances

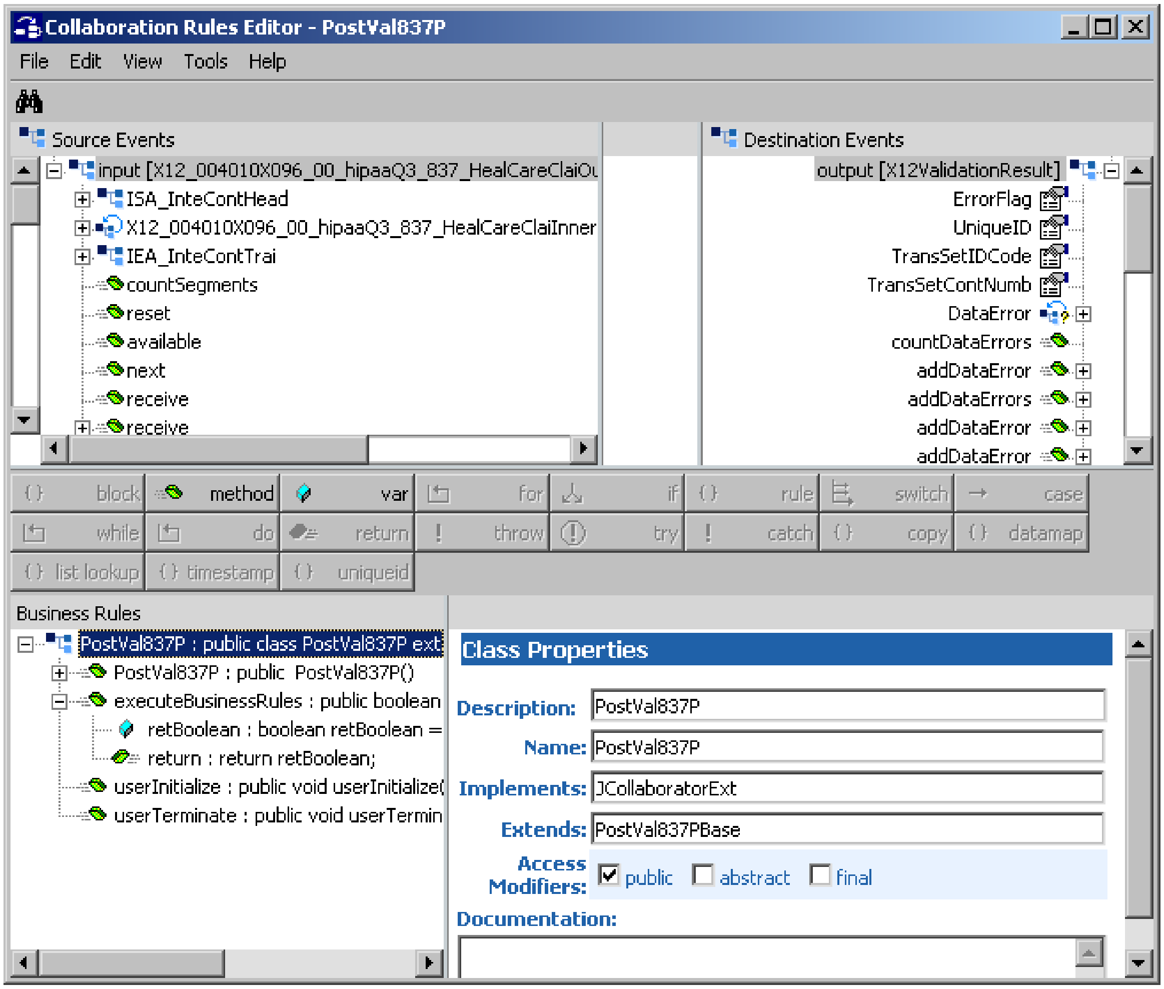


Instance Name	ETD		Mode	Trigger	Manual Publish
input	X12_004010X096_00_hipaa...	Find ...	In	☑	N/A
output	X12ValidationResult.xsc	Find ...	Out	N/A	□

6 After you create the two instances above, click **Apply** and then select the General tab of the properties window.

7 In the Collaboration Rules box, click **New**. The Collaboration Rules Editor appears, and displays the input and output ETDs you specified in step 5.

Figure 2 Collaboration Rules Editor


Collaboration Rules Editor - PostVal837P
File
Edit
View
Tools
Help
Source Events
input [X12_004010X096_00_hipaaQ3_837_HealCareClaiOu
ISA_InteContHead
X12_004010X096_00_hipaaQ3_837_HealCareClaiInner
IEA_InteContTrai
countSegments
reset
available
next
receive
receive
Destination Events
output [X12ValidationResult]
ErrorFlag
UniqueID
TransSetIDCode
TransSetContNumb
DataError
countDataErrors
addDataError
addDataErrors
addDataError
addDataError
block
method
var
for
if
rule
switch
case
while
do
return
throw
try
catch
copy
datamap
list lookup
timestamp
uniqueid
Business Rules
PostVal837P : public class PostVal837P ext
PostVal837P : public PostVal837P()
executeBusinessRules : public boolean
retBoolean : boolean retBoolean =
return : return retBoolean;
userInitialize : public void userInitialize(
userTerminate : public void userTermin
Class Properties

Description: PostVal837P

Name: PostVal837P

Implements: JCollaboratorExt

Extends: PostVal837PBase

Access Modifiers: ☑ public ☐ abstract ☐ final

Documentation:

8 Define the validation rules for the new Collaboration Rules Script using the methods provided. The ETDs contain several methods to assist with reprocessing. For more information about these methods, see Chapter 5, “HIPPA ETD Library Java Methods”, in the *HIPAA ETD Library User's Guide*. You can also add custom validation rules using the existing methods.

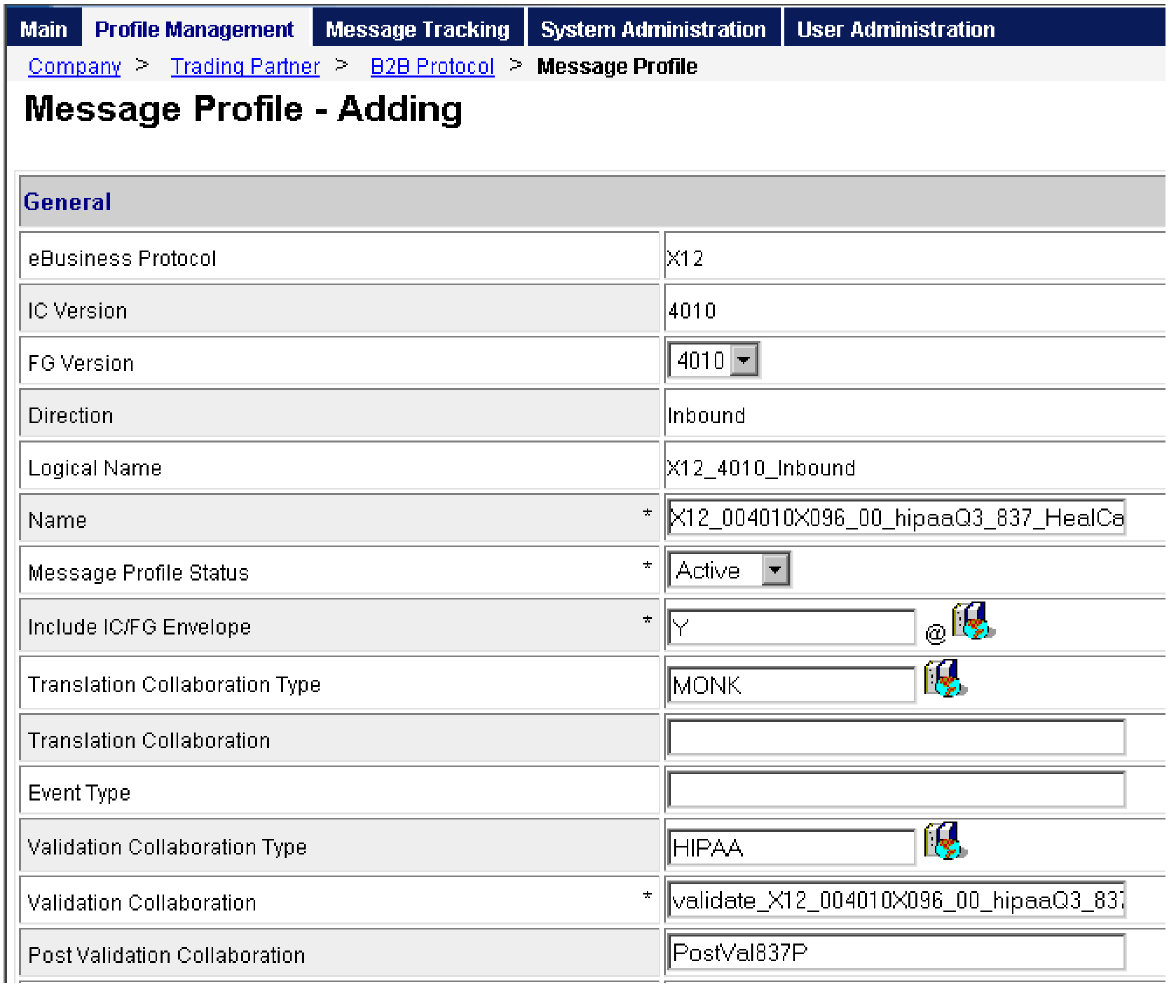
9 Save and compile the Collaboration Rules.

5.4.2. Specifying Post-validation Collaboration Rules for a Message Profile

The Message Profile window of the Web Interface includes a field that allows you to specify the post-validation Collaboration Rules to use for the displayed HIPAA transaction type and Trading Partner.

To specify a post-validation Collaboration Rules script for a Message Profile, display that profile on the Web Interface in Adding or Editing mode, and enter the name of the Collaboration Rules in the Post Validation Collaboration field. Note that the input and output ETDs used by the Validation Collaboration and the Post Validation Collaboration must be identical.

Figure 3 New Post Validation Collaboration Field for Message Profiles (Example)



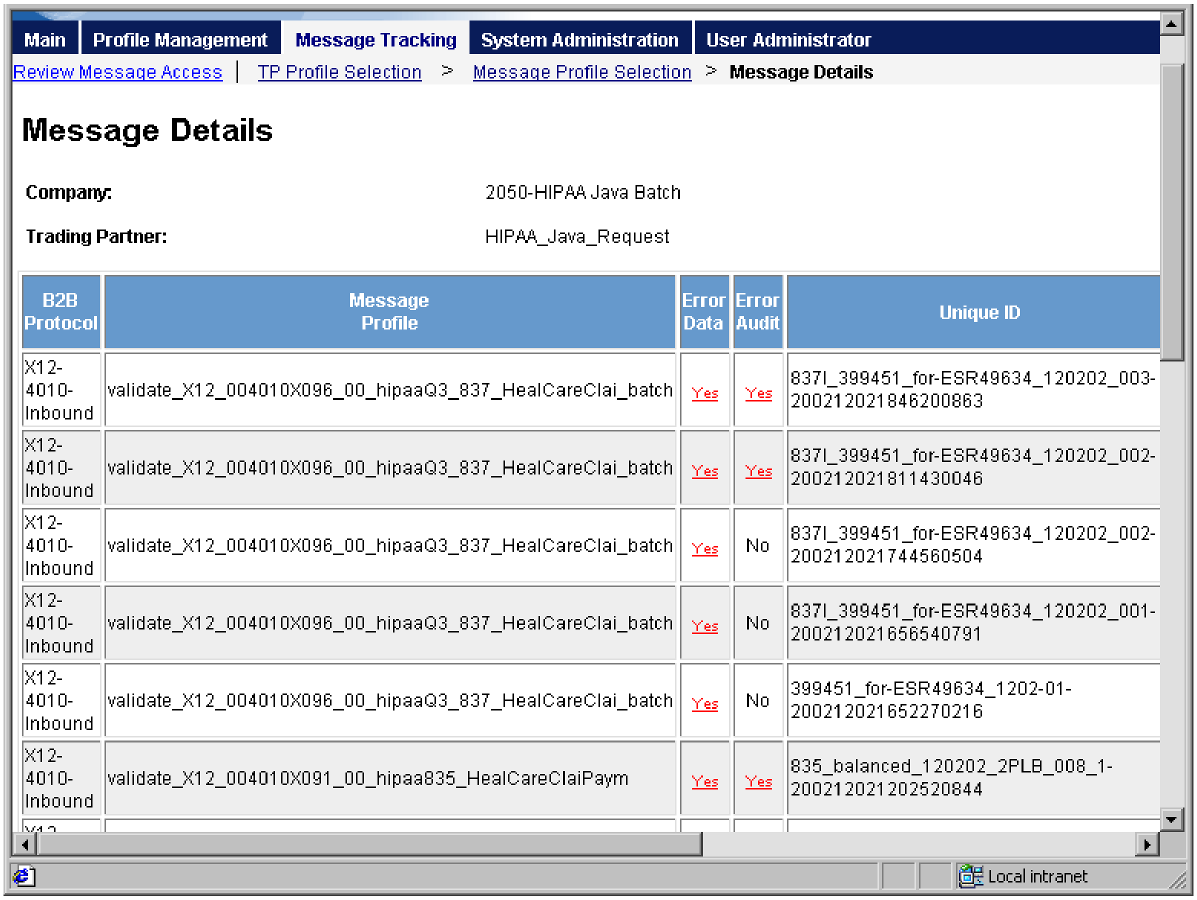
Message Profile - Adding

General	
eBusiness Protocol	X12
IC Version	4010
FG Version	4010
Direction	Inbound
Logical Name	X12_4010_Inbound
Name *	X12_004010X096_00_hipaaQ3_837_HealCa
Message Profile Status *	Active
Include IC/FG Envelope *	Y @
Translation Collaboration Type	MONK
Translation Collaboration	
Event Type	
Validation Collaboration Type	HIPAA
Validation Collaboration *	validate_X12_004010X096_00_hipaaQ3_83
Post Validation Collaboration	PostVal837P

5.5 Viewing Reprocessed Transactions in Message Tracking

Information about the HIPAA transactions that are reprocessed with post-validation Collaboration Rules is stored in the e*Xchange database and displayed on the Message Tracking windows of the Web Interface. A new column on the Message Details window, **Error Audit**, indicates whether there is information about stripped messages for a given transaction. This column is illustrated in Figure 4.

Figure 4 New Error Audit Column in Message Tracking



Message Details

Company: 2050-HIPAA Java Batch

Trading Partner: HIPAA_Java_Request

B2B Protocol	Message Profile	Error Data	Error Audit	Unique ID
X12-4010-Inbound	validate_X12_004010X096_00_hipaaQ3_837_HealCareClai_batch	Yes	Yes	837I_399451_for-ESR49634_120202_003-20021202184620086З
X12-4010-Inbound	validate_X12_004010X096_00_hipaaQ3_837_HealCareClai_batch	Yes	Yes	837I_399451_for-ESR49634_120202_002-200212021811430046
X12-4010-Inbound	validate_X12_004010X096_00_hipaaQ3_837_HealCareClai_batch	Yes	No	837I_399451_for-ESR49634_120202_002-200212021744560504
X12-4010-Inbound	validate_X12_004010X096_00_hipaaQ3_837_HealCareClai_batch	Yes	No	837I_399451_for-ESR49634_120202_001-200212021656540791
X12-4010-Inbound	validate_X12_004010X096_00_hipaaQ3_837_HealCareClai_batch	Yes	No	399451_for-ESR49634_1202-01-200212021652270216
X12-4010-Inbound	validate_X12_004010X091_00_hipaa835_HealCareClaiPaym	Yes	Yes	835_balanced_120202_2PLB_008_1-200212021202520844

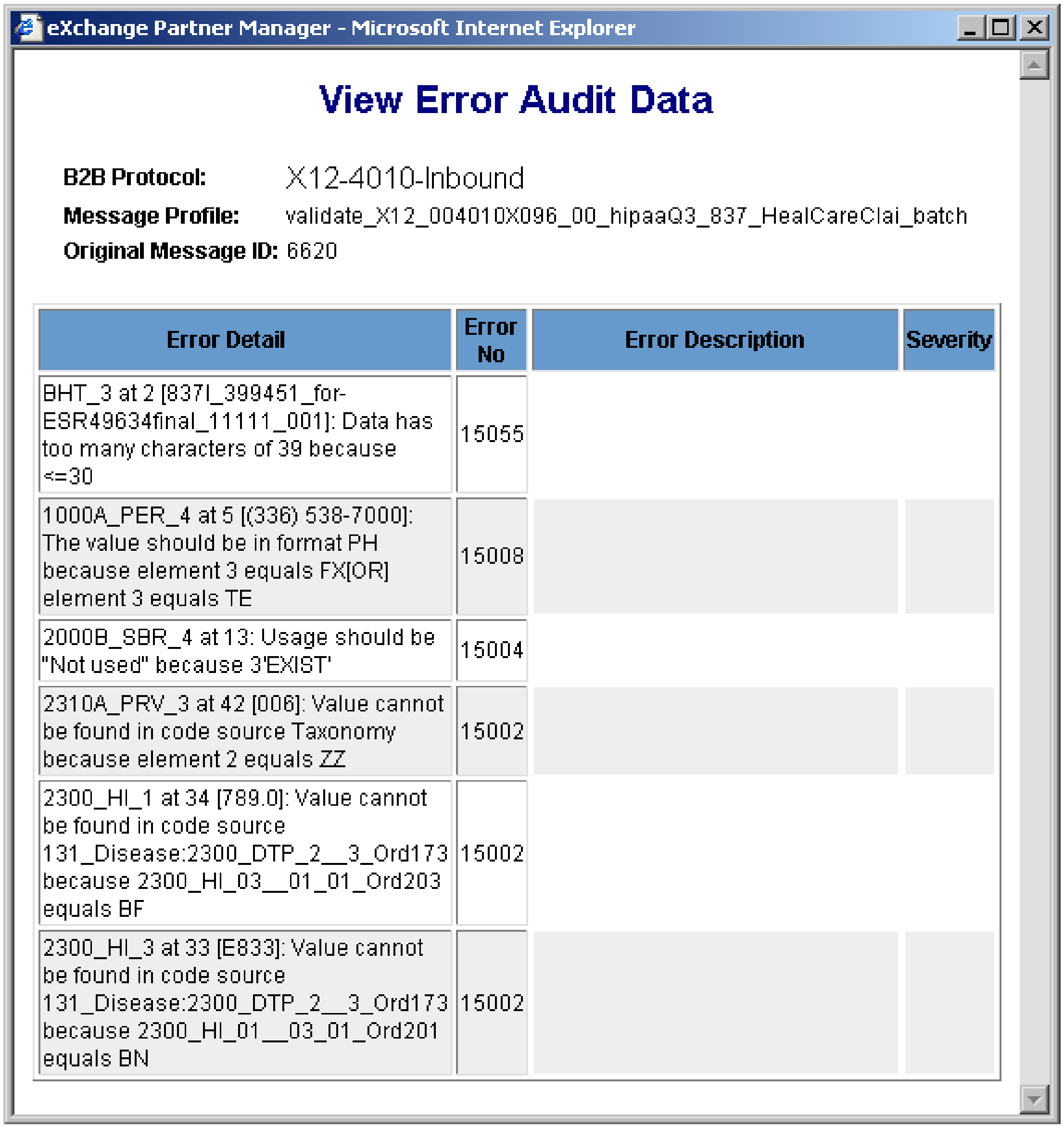
5.5.1. Viewing the Stripped Error Messages

After a HIPAA transaction is reprocessed through post-validation Collaboration Rules, the error data that was stripped from the original error message string can be viewed in Message Tracking on the View Error Audit Data window, as shown in Figure 5. This window displays the error code and description of the errors that were removed.

To access the View Error Audit Data window

1. In Message Tracking, perform a search to display the message on the Message Details window (Figure 4).
2. If the value of the Error Data column for the message is **Yes**, click **Yes** in the appropriate row. The View Error Audit Data window appears, displaying a list of any errors that were removed from the original error string.

Figure 5 View Error Audit Data Window



View Error Audit Data

B2B Protocol: X12-4010-Inbound

Message Profile: validate_X12_004010X096_00_hipaaQ3_837_HealCareClai_batch

Original Message ID: 6620

Error Detail	Error No	Error Description	Severity
BHT_3 at 2 [837I_399451_for-ESR49634final_11111_001]: Data has too many characters of 39 because <=30	15055		
1000A_PER_4 at 5 [(336) 538-7000]: The value should be in format PH because element 3 equals FX[OR] element 3 equals TE	15008		
2000B_SBR_4 at 13: Usage should be "Not used" because 3'EXIST'	15004		
2310A_PRV_3 at 42 [006]: Value cannot be found in code source Taxonomy because element 2 equals ZZ	15002		
2300_HI_1 at 34 [789.0]: Value cannot be found in code source 131_Disease:2300_DTP_2__3_Ord173 because 2300_HI_03__01_01_Ord203 equals BF	15002		
2300_HI_3 at 33 [E833]: Value cannot be found in code source 131_Disease:2300_DTP_2__3_Ord173 because 2300_HI_01__03_01_Ord201 equals BN	15002		

5.5.2. Viewing Post-validation Processing Errors

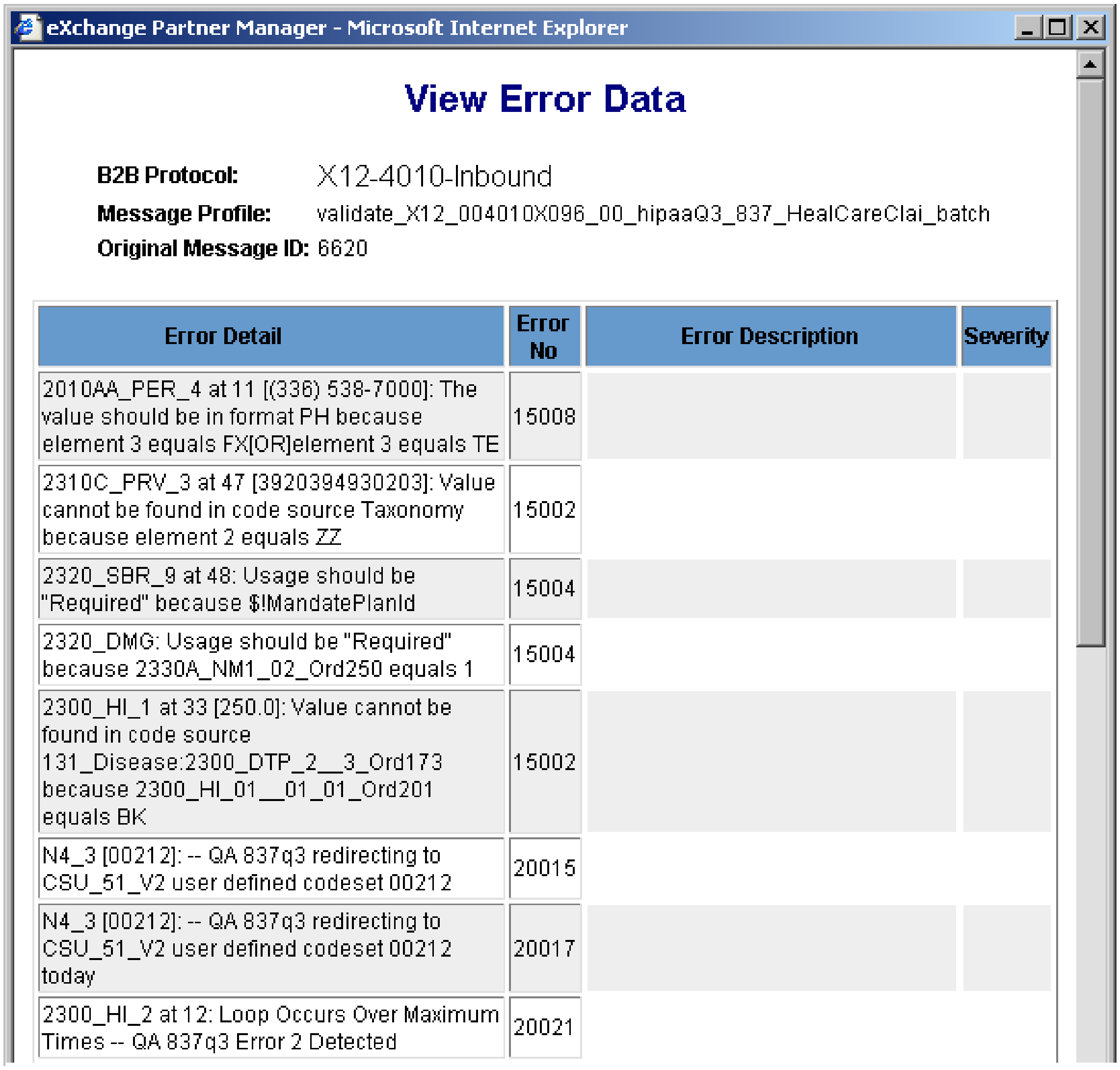
After a HIPAA transaction is reprocessed through post-validation Collaboration Rules, any custom error data that was added to the original error message string can be viewed in Message Tracking on the View Error Data window, as shown in Figure 6. The custom messages are appended to the end of the error message string, and should appear at the bottom of error list on the View Error Data window.

To view post-validation processing errors

1. In Message Tracking, perform a search to display the message on the Message Details window (Figure 4).
2. If the value of the Error Data column for the message is **Yes**, click **Yes** in the appropriate row. The View Error Data window appears.

3 Scroll to the bottom of the error list to see any custom error messages that were added as a result of reprocessing.

Figure 6 View Error Data Window



View Error Data

B2B Protocol: X12-4010-Inbound
Message Profile: validate_X12_004010X096_00_hipaaQ3_837_HealCareClai_batch
Original Message ID: 6620

Error Detail	Error No	Error Description	Severity
2010AA_PER_4 at 11 [(336) 538-7000]: The value should be in format PH because element 3 equals FX[OR]element 3 equals TE	15008		
2310C_PRV_3 at 47 [3920394930203]: Value cannot be found in code source Taxonomy because element 2 equals ZZ	15002		
2320_SBR_9 at 48: Usage should be "Required" because $!MandatePlanId	15004		
2320_DMG: Usage should be "Required" because 2330A_NM1_02_Ord250 equals 1	15004		
2300_HI_1 at 33 [250.0]: Value cannot be found in code source 131_Disease:2300_DTP_2__3_Ord173 because 2300_HI_01__01_01_Ord201 equals BK	15002		
N4_3 [00212]: -- QA 837q3 redirecting to CSU_51_V2 user defined codeset 00212	20015		
N4_3 [00212]: -- QA 837q3 redirecting to CSU_51_V2 user defined codeset 00212 today	20017		
2300_HI_2 at 12: Loop Occurs Over Maximum Times -- QA 837q3 Error 2 Detected	20021		

Chapter 6

Processing Large Transactions

e*Xchange processes large outbound transactions by breaking them up into smaller sections before validation. This chapter describes how large messages are processed and the settings that need to be modified to use this feature.

6.1 Overview

e*Xchange provides the ability to process large HIPAA X12 835 outbound messages in an interactive manner through the **eX_ePM** and **eX_Batch_to_External** e*Ways within the e*Xchange Schema. Large messages are processed by breaking the messages up into smaller, more manageable pieces during processing. The large message processing components provided with e*Xchange are specifically designed to handle X12 835 transactions. You can extend the framework for other transaction types by using the 835 as a template.

6.1.1. Considerations

Certain HIPAA transactions consist of very large messages, which can cause processing errors unless the large message feature is in use. This depends on many factors in the processing environment, such as available disk size, memory, message volume, and so on. For example, you might find that there is a problem with files larger than 60 MB unless you use the large message feature. In some cases larger files might process smoothly, and in other cases smaller files might cause errors. Your processing environment will determine whether you should use large message processing, and the size at which a message should be processed as a large message. You can use large message processing for any size message, however there are a few considerations.

- You cannot view large messages using the Message Tracking feature.
- Large message processing uses additional disk space.
- Large message processing may slow down processing speed due to the additional processing performed.

This section describes the ability of the **eX_ePM** and **eX_Batch_to_External** e*Ways to process large outbound messages in an interactive manner.

6.1.2. Methodology

Source System e*Way Requirements

To enable large message processing, a message must be flagged as a large message before it reaches the **eX_ePM** e*Way. This logic should be written into the e*Way processing messages from the source system into e*Xchange. If the message is to be processed as a large message, the source system e*Way must send the file name (in the format FILE:<file_name>) instead of the message body to e*Xchange.

The file name must include the full path to the file, be base64-encoded, and be populated in the Payload section of the e*Xchange Standard Event. The file must be stored in a directory location that is accessible by the e*Xchange e*Way components. If the file is already in an X12 format, the enveloping can be in ST/SE or ISA/IEA formats.

Translation Requirements

If an X12 translation must be performed once a large message file name reaches the **eX_ePM** e*Way, the translation Collaboration must be able to accept a file name as input. The output of the translation Collaboration must be the file name of the translated message in the format of FILE:<file_name>. Each translation must create an output file that contains a single transaction, which is in X12 835 format with ST/SE or ISA/IEA enveloping.

Note: *Performing translations creates a second file of approximately the same size as the original file in the data directory. This can cause the size of the directory to grow quickly, so frequent archival or removal of the data files is recommended.*

Splitting the Message

e*Xchange provides a custom large message Collaboration for the 835 transaction, **HIPAA_2K_835_Outb_validation,** that breaks up the large message into well-formed, manageable pieces that are then validated. After any translations have been performed, the name of the new file created by the translation is sent to the large message Collaboration, and the file is divided into smaller files, each containing the specified number of CLP files and each including header information and SE/ST enveloping.

Each file is sent to the Claredi appliance. Once validation is completed successfully, a new file is created that contains a copy of the message, including the correct enveloping and delimiters as defined in the Trading Partner Profile settings. This file is named by appending a 12-digit unique number to the end of the original file name. The end result of the validation is as if the message were processed as a single entity.

Post-Processing

After validation processing is complete and the final copy of the original message is created, the **eX_ePM** e*Way sends the file name to the **eX_Batch_to_External** e*Way to be sent to the appropriate trading partner using FTP. When the file transfer to the trading partner is complete, two copies (three if translations were performed) of the message are stored in the specified data directory. These files should be archived or deleted as needed to maintain disk space on the e*Xchange server.

6.2 Implementing Large Message Processing

Large message settings are specified at the Message Profile level and within Trading Partner Attribute pairs that you add to the e*Xchange Standard Event. These settings apply whether you are using the 835 message processing functionality provided or you are using custom Collaborations and Monk scripts to split large messages of a different transaction type.

Trading Partner Attributes

Two Trading Partner Attribute name and value pairs must be added to the structure defined in **eX_StandardEvent.xsc**; two optional attribute pairs can be added for additional control. These attributes can be added using the **addNameValuePair** method (see the *e*Xchange Implementation Guide* for more information about this method). Table 4 lists each Trading Partner Attribute used for large message processing, along with the value and description for each.

Table 4 Trading Partner Attributes for Large Message Processing

TPAttribute Name	Optional/ Required	TPAttribute Value	Description
LARGE_MSG	Required	Y	This is an indicator that the message should be processed using large message processing.
MSG_ALT_ID	Required	Must exactly match the value set in the Message Alt ID field of the Message Profile of the applicable outbound Trading Partner Profile.	This is used to identify the message profile level of the Trading Partner Profile.
LARGE_MSG_SIZE	Optional	Numeric value Default: 1000	This value determines the number of CLP segments to include in each portion of the file that is sent for validation.
LARGE_MSG_INDX	Required only for files with multiple large transactions	Numeric value Default: 1	This value identifies the transactions to be processed as a large message in a file where multiple transactions require large message processing.

LARGE_MSG_SIZE

The “LARGE_MSG_SIZE” attribute determines the number of CLP loops that are pulled out of the large message file for each partial validation that is performed, controlling both the size and the number of the message portions that are sent to validation for each large message. Use this attribute if you determine that a value other than the default of “1000” would optimize performance for your system.

LARGE_MSG_INDX

The “LARGE_MSG_INDX” attribute is not required if the message file sent to e*Xchange by the source system e*Way has a single transaction set. The default value, 1, specifies that the first large transaction in a file will be processed using large message processing. If the message file contains many large transaction sets, this attribute is required to identify which of the transaction sets should be processed as large messages.

e*Xchange processes a single transaction for each subscription to an eX_eBPM queue Event. Therefore, if a message file has 20 transactions and four of them are to be processed as large transactions, the source system e*Way must publish the e*Xchange Standard Event four times. Each time the Event is published, the same file name is populated in the Payload segment, but a different index value is included to identify the transaction to be processed.

Message Profile Settings

Certain settings in the General section of the Message Profile for the outbound message must be configured for processing large messages. You can configure these settings in the e*Xchange Web interface. Table 5 lists the required settings for large message processing.

Table 5 Message Profile Settings for Large Messages

Attribute Name	Optional/ Required	Possible Values	Description
Message Alt ID	Required	Must exactly match the value set in the MSG_ALT_ID attribute in the eX_StandardEvent structure	This value is used to identify the message profile level of the Trading Partner Profile.
Validation Collaboration Type	Required	Must be set to **JAVA**.	This value indicates that the validation Collaboration file called by the splitter function is written in Java.
Validation Collaboration	Required	Must be set to **HIPAA_2K_Outb_validation** (or the name of your custom Collaboration)	This value indicates that a Collaboration that processes large messages will be used.

The validation Collaboration used for processing large messages, **HIPAA_2K_Outb_validation**, checks whether the input string is a message or a file name. If the input string is a file name, the Collaboration calls a function,

HIPAA_835_Outb_splitter, to break up the message into smaller, well-formed messages that are passed to the standard validation. If the input string is a message, the message is sent to the standard 835 validation Collaboration. If you are configuring the Message Profile for a custom configuration of large message processing, enter the name of the validation Collaboration you created for processing messages of the specified type in this field.

A Note on Transfer Modes

For large messages, the X12 Outbound processing ignores the settings of the transfer mode in the Trading Partner Profile and processes the message in an interactive manner.

6.3 Customizing Large Message Processing Components

You can use the logic provided in the files **HIPAA_2K_835_Outb_validation.tsc** and **HIPAA_835_Outb_splitter.monk** to create a custom Collaboration and splitter to process additional types of large X12 transactions by breaking them up into smaller pieces that are validated one piece at a time. To enable this process for alternate transaction types, you must create or customize three e*Gate components:

- The e*Way for the source system
- The large message Collaboration
- The Monk splitter function

Note: *When using customized components for processing large transactions, make sure to modify the Trading Partner Attributes and Message Profile settings described earlier in this chapter accordingly.*

Source System e*Way

When processing large messages, the e*Way that processes data from the source system must be configured to be able to determine whether a message should be processed as a large message or a standard message. This is based on a file size that you determine to be the cut-off size for processing standard messages. Any messages at or above the cut-off value you specify will be processed as large messages. When a message is to be processed as a large message, the source system e*Way must save the message in a file and send the file name (in the format FILE:<file name>) to e*Xchange. Make sure the file name includes the full path of the file to be processed, and the message contained in the file is in a standard X12 messaging format with the appropriate enveloping in place.

Large Message Collaboration

You can base your large message Collaboration on the existing 835 Collaboration, **HIPAA_2K_835_Outb_validation.tsc**. The purpose of this Collaboration is primarily to direct the flow of data once it determines whether it is processing a large message or a standard message. The Collaboration specifies the name of the splitter function and of the Java validation Collaboration or Monk validation Collaboration to be used for data validation.

The logic in the large message Collaboration is as follows. If the Collaboration determines that a standard message is being processed, the message is sent directly to the HIPAA validation Collaboration. If the large message Collaboration determines that a large message is being processed, it calls the Monk splitter function to break the message up into smaller pieces. Once the message has been broken up and smaller files are created, the splitter function sends each file to the appropriate Collaboration for validation or processing. On completion, the large message Collaboration joins the message back together, including the appropriate header information, and saves the message in a file to be picked up by the FTP e*Way. This file is named by appending a 12-digit unique number to the end of the original file name.

When you customize the large message Collaboration, make sure you specify the appropriate names for the splitter function and the validation Collaborations.

Monk Splitter Function

The Monk splitter function defines how each large message will be divided into smaller, more manageable messages. Each message split from the large message must be a well-formed X12 message, including SE/ST enveloping. In the default splitter, several functions are defined that are used to retrieve information from the large message and to parse the message into smaller pieces. You can customize these functions to define the loops or segments that exist in the transaction type you are processing.

The splitter reads the Trading Partner settings to determine how many CLP segments to include in each message and which transaction in the file to process (in cases where the file contains multiple transactions). By default, the size of the parsed messages is based on the number of CLP segments. You can modify the splitter so the size of each parsed message is based on a more appropriate segment for the transaction type you are processing.

After reading the Trading Partner settings, the splitter parses the large message and sends each piece of the message to the appropriate validation Collaboration (as defined in the large message processing Collaboration).

There are several issues to consider when determining how to break up a large message, including the following:

- Any “balance” fields that need to be verified in the parsed messages.
- Segment repetition. You can base the size of each parsed message on the number of repetitions of a particular segment. In the case of 835 large message processing, the size of each partial message is based on the CLP segments since many 835 transactions contain a very large number of CLP segments.
- The best method of parsing the message, and the appropriate structure for the parsed messages.
- Any header or trailer information that needs to be appended to the file.
- Required enveloping formats.

Chapter 7

e*Xchange Implementation

This chapter discusses the steps involved to create an e*Xchange implementation that transfers HIPAA X12 data.

7.1 Overview

An e*Xchange implementation makes use of the features designed to add and remove the EDI enveloping information for messages exchanged between trading partners.

In an e*Xchange implementation, use the e*Xchange Web Interface to set up trading partner information, and the e*Gate Schema Designer GUI to add user-defined e*Gate components to provide connectivity to the business application or trading partner. Once this is done, the pre-configured e*Xchange e*Gate Schema components handle enveloping and de-enveloping Events as they travel through the e*Xchange system.

The major steps for an e*Xchange implementation are as follows:

1. Verify the e*Gate and e*Xchange installation.
2. Create the trading partner profiles.
3. Configure the user-defined e*Ways that will connect the business application to e*Xchange and exchange messages with the trading partner.
4. Configure the e*Xchange e*Way.
5. Run and test the scenario.

SeeBeyond supplies the sample files needed to run the e*Xchange HIPAA scenario. If you would prefer to use the files that are already set up for you, skip steps 2 through 4, and install the sample schema files, as described under **"Installing the Sample Files" on page 51**.

7.1.1. Case Study: Sending a Health Care Claim

The case study discussed in this chapter illustrates one possible implementation of sending a health care claim to a trading partner.

In this example, a Health Care Claim (837) is sent to an external trading partner, the insurance provider. The enveloping is automatically added to the message by e*Xchange based on trading partner information retrieved from the e*Xchange database, and then the message is sent to the external system. An acknowledgment message (997) is immediately returned by the insurance provider. Then the Health Care Payment (835) is sent from the insurance provider trading partner, and an acknowledgment message (997) is returned to complete the cycle. Figure 7 shows the message flow.

Figure 7 HIPAA Message Flow

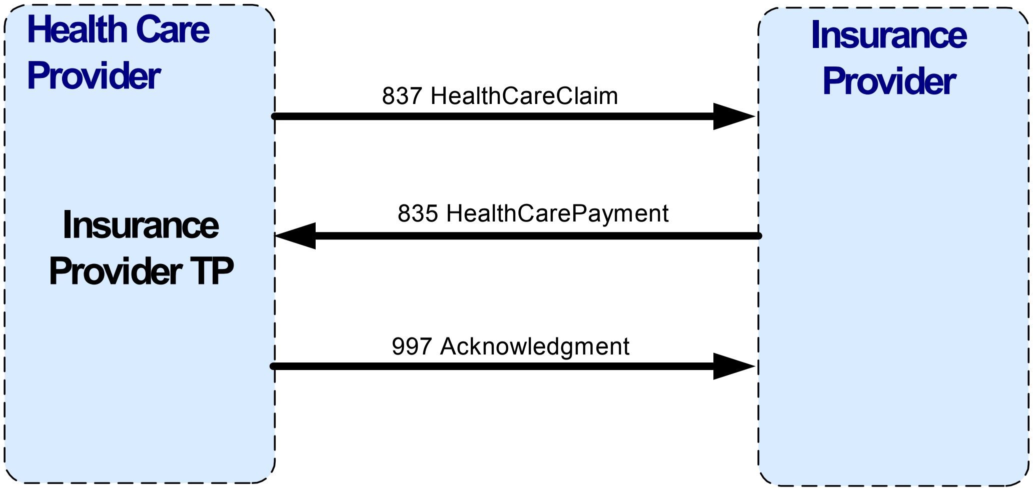


Figure 8 shows the flow of data through the sample scenario.

Figure 8 e*Xchange Scenario Data Flow

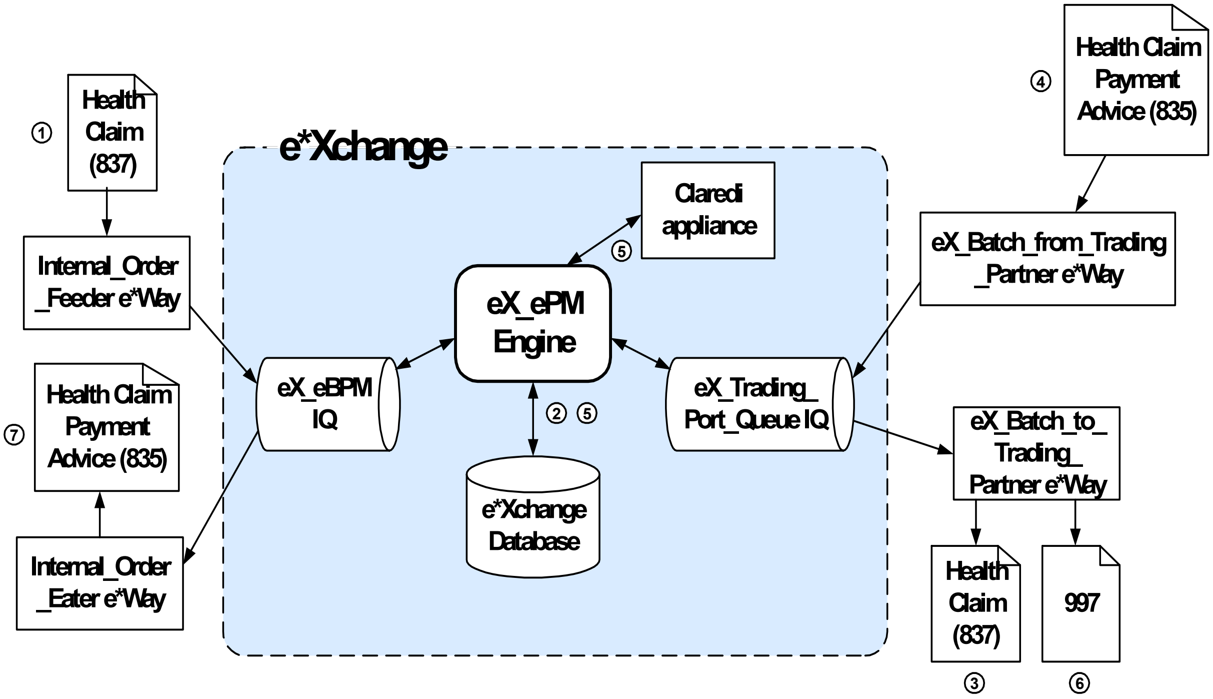

① Health Claim (837)
Internal_Order _Feeder e*Way
⑦ Health Claim Payment Advice (835)
Internal_Order _Eater e*Way
e*Xchange
Claredi appliance
⑤
eX_ePM Engine
eX_eBPM IQ
eX_Trading_ Port_Queue IQ
② ⑤
e*Xchange Database
④ Health Claim Payment Advice (835)
eX_Batch_from_Trading _Partner e*Way
eX_Batch_to_ Trading_ Partner e*Way
Health Claim (837) ③
997 ⑥

Figure 8 data flow description

1. The **Internal_Order_Feeder** e*Way picks up the health care claim message (837) and publishes it to the **eX_eBPM** IQ.
2. The e*Xchange engine picks it up from the IQ, validates it, saves it to the database, and publishes the message to the **eX_Trading_Port_Queue** IQ.
3. The **eX_Batch_to_Trading_Partner** e*Way picks up the message from the IQ and sends it out to the trading partner. The trading partner (customer) then sends a response in the form of an 835 message.
4. The **eX_Batch_from_Trading_Partner** e*Way sends the healthcare payment advice message (835) to the **eX_Trading_Port_Queue** IQ.
5. The e*Xchange engine picks the message up from the IQ, passes it to the Claredi appliance for validation, saves it to the database, and publishes two messages:
   - an acknowledgment (997) to the **eX_Trading_Port_Queue** IQ.
   - the health claim payment advice (835) to the **eX_eBPM** IQ.
6. The **eX_Batch_to_Trading_Partner** e*Way picks up the 997 acknowledgment and sends it to the trading partner.
7. The **Internal_Order_Eater** e*Way picks up the health claim payment advice (835) from the **eX_eBPM** IQ and sends it to the internal system.

7.2 Verify the e*Gate and e*Xchange Installation

This end-to-end scenario requires e*Xchange and e*Gate to be installed on your system. For e*Xchange, you must have the Web interface and e*Xchange sample Schema installed. You also need a working e*Xchange database with the correct database connections set up. For e*Gate, install the Java HIPAA ETD Library add-on, the Database e*Way appropriate to the database platform of the e*Xchange database, and the Java Generic e*Way Extension Kit.

Refer to the *e*Xchange Partner Manager Installation Guide* for system requirements and instructions to install the e*Xchange components. The *e*Gate Integrator Installation Guide* describes e*Gate system requirements and provides instructions to install the e*Gate components.

7.3 Installing the Sample Files

The components for this implementation are provided on your installation CD, and are located in **\setup\ex\sample\HIPAA_SAMPLE_IMPLEMENTATION.zip**. You can either install the sample files and import them into the e*Gate and e*Xchange environments, or you can go through the steps of creating and configuring the required components. Either way, you need the data files located in the "data" subdirectory of the .zip file to be copied to the e*Gate environment. Follow these steps to install the components:

1. Unzip the file to a local directory.
2. Copy the folder named "data", along with all of its subfolders and files, to the e*Gate home directory.

Note: *The default registry port number is 23001.*

3. Install the e*Gate Schema using one of the following commands. The instructions refer to the schema name **HealthClaim**, however, this is user-defined.

   A For UNIX, type the following command:

   ```
   sh install_hipaa_sample.sh <egate_registry_host_name>
   <schema_name> <user_name> <password> <egate_registry_port_num>
   ```

   B For Windows, type the following command:

   ```
   install_hipaa_sample.bat <egate_registry_host_name> <schema_name>
   <user_name> <password> <egate_registry_port_num>
   ```

4. Use the e*Xchange Import function in e*Xchange Repository Manager to import **HIPAA.exp** into e*Xchange Partner Manager.
5. If your e*Gate home directory is named something other than "eGate", modify the file names specified for the inbound and outbound B2B protocols accordingly. See step 7 in both **"Step 3: Set up the Inbound B2B Protocol Information" on page 54** and **"Step 5: Set Up Outbound B2B Protocol Information" on page 56** for more information.
6. If your e*Gate home directory is named something other than "eGate", modify the OutputDirectory setting for the **Internal_Order_Eater** e*Way (for more information, see **"Step 1: Create and Configure the Internal_Order_Eater e*Way" on page 61**).
7. If your e*Gate home directory is named something other than "eGate", modify the PollDirectory setting for the **Internal_Order_Feeder** e*Way (for more information, see **"Step 1: Create and Configure the Internal_Order_Feeder e*Way" on page 64**
8. Configure the return message for the inbound message. See **"Step 7: Configure Return Messages for Inbound" on page 60** for detailed instructions.
9. Modify the database configuration settings in the **eX_ePM** and **eX_Poll_Receive_FTP** e*Ways by entering your e*Xchange database name, login ID, and password (for more information see **"Configure the eX_ePM e*Way" on page 67** and **"Configure the eX_Poll_Receive_FTP e*Way" on page 68**).

The steps on the following pages describe how to create each component for this implementation. You can perform these steps instead of installing the sample files as described above. See **"Running the Scenario" on page 69** for instructions to run the implementation.

7.4 Create the Trading Partner Profiles

Trading partner profiles in e*Xchange act as repositories for the information necessary to send EDI messages back and forth between entities. They contain all of the information needed to properly envelope an Event and forward it to its correct destination.

Refer to the *e*Xchange Partner Manager User's Guide* for detailed assistance with the process of creating trading partner profiles.

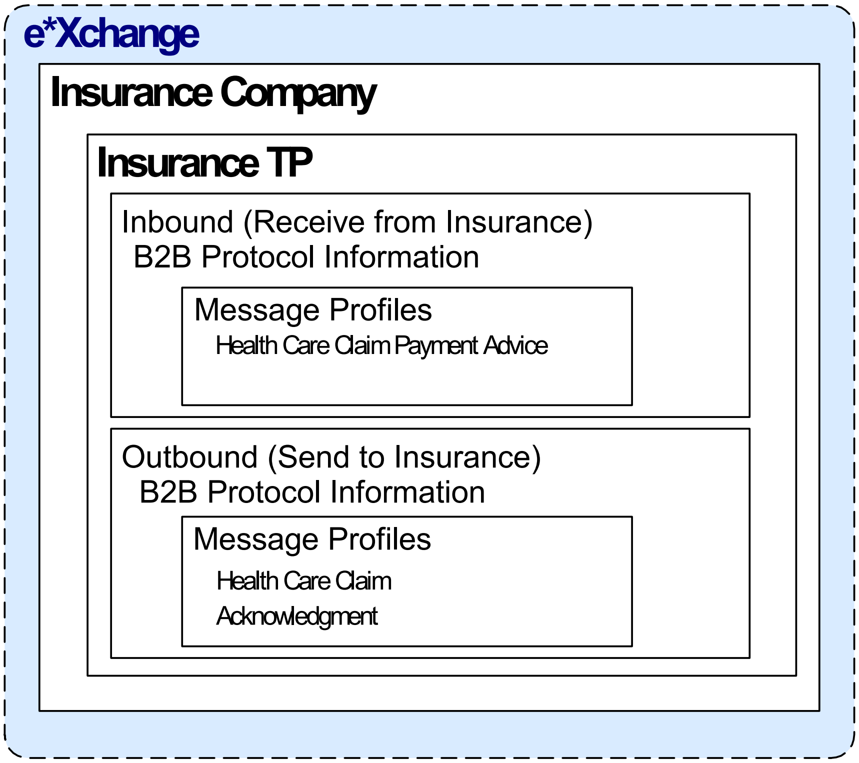
Trading Partner Information Hierarchy

e*Xchange stores trading partner information at various levels. The process of creating a trading partner profile proceeds from the most general inclusive level, that of a company with which you do business, to the most specific information regarding a message that you wish to send (the message profile).

Figure 9 shows an overview of the components that you need to create for this example, including:

- Company
- Trading Partner
- B2B Protocol Information
- Message Profiles

Figure 9 Insurance Overview



To configure the Insurance trading partner profile you must follow the steps listed below:

- **Step 1: Create the Company** on page 53
- **Step 2: Create the Trading Partner** on page 54
- **Step 3: Set up the Inbound B2B Protocol Information** on page 54
- **Step 4: Create the Inbound Message Profiles** on page 55
- **Step 5: Set Up Outbound B2B Protocol Information** on page 56
- **Step 6: Create the Outbound Message Profiles** on page 57
- **Step 7: Configure Return Messages for Inbound** on page 60

Step 1: Create the Company

To create the company

1. Log in to the e*Xchange Web interface.
2. From the **Main** page, click **Profile Management**.
3. From the **Company** page, click **New**.
4. In the **Company - adding** page, enter the **Company** name, “Insurance”.
5. Click **Next**.

   This saves your changes and returns to the **Company** page.

Note: *The security information is automatically configured for the current user.*

Step 2: Create the Trading Partner

To create the trading partner

1. From the **Company** page, ensure that the “Insurance” trading partner is selected, and then click **Continue: Trading Partner**.
2. From the **Trading Partner** page, click **New** to access the **Trading Partner - adding** page.
3. Enter the **Trading Partner Name**, “Insurance”.
4. Click **Next**.

   This saves your changes and returns to the **Trading Partner** page.

Note: *The required security information defaults from the company level.*

Step 3: Set up the Inbound B2B Protocol Information

To set up the inbound B2B protocol information

1. From the **Trading Partner** page, ensure that “Insurance” is selected, and then click **Continue: B2B Protocol**.
2. From the **B2B Protocol** page, click **New** to access the **B2B Protocol - adding** page.
3. Enter the information listed in Table 6.

   In an actual implementation, your local administrator can provide you with the B2B Protocol information.

HIPAA message validations performed by the Faciledi appliance from Claredi Corporation working in conjunction with e*Xchange Partner Manager support the following for X12:

- Transmission-level duplicate checking
- Unique ID assignment through internal or validation processes
- Journal file Error copying to the Error Queue

For an explanation of the B2B Protocol parameters, see the *e*Xchange Partner Manager User’s Guide*.

Table 6 B2B Protocol Information

Parameter	Value
eBusiness Protocol	X12
Version	4010
Direction	Inbound

4. Click **Next** to save your changes and access the **General** section.
5. Enter the information listed in Table 7.

Table 7 B2B Protocol Information, General Page

Parameter	Value
Logical Name	Insurance
Status	Active
Communication Protocol	FTP(BATCH)

6 Click **Next** to save your changes and access the **Transport Component** section.

7 In the **File Name** window, enter **<egate>\data\hipaa\TP\input\*.dat**.

8 Click **Next** to access the **Message Security** section.

9 No changes are required. Click **Finish** to save the information and return to the **B2B Protocol** page.

Step 4: Create the Inbound Message Profiles

For the purposes of this scenario, you must set up the following inbound message profile:

- Health Claim Payment Advice (X12_004010X091_00_hipaa835_HealCareClaiPaym)

To set up the X12_004010X091_00_hipaa835_HealCareClaiPaym order inbound message profile

1 From the **B2B Protocol** page, click **Continue: Message Profile**.

2 From the **Message Profile** page, click the **New** button to access the **Message Profile - adding** page.

3 Enter the information listed in Table 8.

Note: *This table only lists the attributes required to make this scenario work.*

Table 8 Inbound Message Profile, General Settings

Name	Value
Name	X12_004010X091_00_hipaa835_HealCareClaiPaym
Validation Collaboration Type	FACILEDI
Validation Collaboration	FACILEDI
Transfer Mode	Interactive

4 Click **Next** to access the **Interchange Control Envelope** section. Enter the information listed in Table 9.

Table 9 Inbound Message Profile, Interchange Control Envelope

Name	Value
ISA05 Interchange Sender Identification Qualifier	01
ISA06 Interchange Sender Identifier	6264712000
ISA07 Interchange Receiver Identification Qualifier	01

Name	Value
ISA08 Interchange Receiver Identifier	6264716000
ISA12 Interchange Version Number	00401
ISA13 Interchange Control Number	000000001

5 Click **Next** to access the **Functional Group Envelope** section. Enter the information listed in Table 10.

Note: *This table only lists the attributes required to make this scenario work.*

Table 10 Inbound Message Profile, Functional Group Envelope

Name	Value
GS01 Functional Identification Code	HP
GS02 Application Sender Code	6264712000
GS03 Application Receiver Code	6264716000
GS06 Group Control Number	1
GS07 RESP Agency Code	X
GS08 Version/Release/Industry Identification Code	004010X091

6 Click **Next** to access the **Transaction Set Envelope** section. Enter the information listed in Table 11.

Note: *The X12 standard accepts non-numeric transaction set control numbers.*

Table 11 Inbound Message Profile, Transaction Set Envelope

Name	Value
ST01 Transaction Set Identification Code	835
ST02 TS Control Number	1

7 Click **Next** to access the **Return Messages** section.

8 No changes are required. Click **Finish** to save the information and return to the **Message Profile** page.

Step 5: Set Up Outbound B2B Protocol Information

To set up the outbound B2B protocol information

As a shortcut, you can copy the inbound B2B protocol information as a model for the outbound B2B protocol information.

1 On the **B2B Protocol** page, select the X12-4010-Inbound protocol that you created in **“To set up the inbound B2B protocol information” on page 54**.

2 Click **Copy**.

The **Copy Type** page appears.

3 Clear the **Include Sub-components** check box and then click **OK**.

The **B2B Protocol - copying** page appears.

4 In the **Direction** field, ensure that **Outbound** is selected.

5 Click **Next**.

The **B2B Protocol - copying**, **General** page appears.

6 No changes are needed: click **Next** to accept the values and access the **Transport Component** page.

7 In the **File Name** window, enter **<egate>\data\hipaa\TP\output\output%#.dat**.

8 Click **Next** to accept the values and access the **Message Security** page.

9 No changes are required. Click **Finish** to save the information and return to the **B2B Protocol** page.

Step 6: Create the Outbound Message Profiles

For the purposes of this scenario, you must set up the following outbound message profiles:

- Health Care Claim Message (X12_004010X098_00_hipaaQ1_837_HealCareClai)
- Acknowledgment (X12-4010-997)

To set up the X12_004010X098_00_hipaaQ1_837_HealCareClai order outbound message profile

1 From the **B2B Protocol** page, click **Continue: Message Profile**.

2 From the **Message Profile** page, click the **New** button to access the **Message Profile - adding** page.

3 Enter the information listed in Table 12.

Note: *This table only lists the attributes required to make this scenario work.*

Table 12 Outbound Message Profile, General Settings

Name	Value
Name	X12_004010X098_00_hipaaQ1_837_HealCareClai
Validation Collaboration Type	FACILEDI
Validation Collaboration	FACILEDI
Transfer Mode	Interactive

4 Click **Next** to access the **Interchange Control Envelope** section. Enter the information listed in Table 13.

Table 13 Outbound Message Profile, Interchange Control Envelope

Name	Value
ISA06 Interchange Sender Identifier	6264716000
ISA08 Interchange Receiver Identifier	6264712000

Name	Value
ISA11 IC Standards Identifier	U
ISA13 IC Control Number	36
ISA15 Test Indicator	T

5 Click **Next** to access the **Functional Group Envelope** section. Enter the information listed in Table 14.

Note: *This table only lists the attributes required to make this scenario work.*

Table 14 Outbound Message Profile, Functional Group Envelope

Name	Value
GS01 Functional Identification Code	HC
GS02 Application Sender Code	6264716000
GS03 Application Receiver Code	6264712000
GS06 Group Control Number	1209
GS08 Version/Release/Industry Identification Code	004010X098

6 Click **Next** to access the **Transaction Set Envelope** section. Enter the information listed in Table 15.

Note: *The X12 standard accepts non-numeric transaction set control numbers.*

Table 15 Outbound Message Profile, Transaction Set Envelope

Name	Value
ST01 Transaction Set Identification Code	837
ST02 TS Control Number	1

7 Click **Next** to access the **Return Messages** section.

8 Select the return message (select the **Include** check box), and then enter the values shown in Table 16.

Table 16 Return Message Values: Inbound

Name	Response Time	Period	# Retries
X12_004010X091_00_hipaa835_HealCareClaiPaym	10	Minutes	1

9 Click **Finish** to save the information and return to the **Message Profile** page.

To set up the X12-4010-997 outbound inner envelope

1 From the **Message Profile** page, click the **New** button to access the **Message Profile - adding** page.

2 Enter the information listed in Table 17.

Note: *This table only lists the attributes required to make this scenario work.*

Table 17 Functional Acknowledgment, General Settings

Name	Value
Name	X12-4010-997
Transfer Mode	Interactive

3 Click **Next** to access the **Interchange Control Envelope** section. Enter the information listed in Table 18.

Table 18 Functional Acknowledgment, Interchange Control Envelope

Name	Value
ISA06 Interchange Sender Identifier	6264716000
ISA08 Interchange Receiver Identifier	6264712000
ISA11 Interchange Standards Identifier	U
ISA13 Interchange Control Number	38
ISA15 Test Indicator	T

4 Click **Next** to access the **Functional Group Envelope** section. Enter the information listed in Table 19.

Note: *This table only lists the attributes required to make this scenario work.*

Table 19 Functional Acknowledgment, Functional Group Envelope

Name	Value
GS01 Functional Identification Code	FA
GS02 Application Sender Code	6264716000
GS03 Application Receiver Code	6264712000
GS06 Group Control Number	1209
GS08 Version/Release/Industry Identification Code	004010X091

5 Click **Next** to access the **Transaction Set Envelope** section. Enter the information listed in Table 20.

Table 20 Functional Acknowledgment, Transaction Set Envelope

Name	Value
ST01 Transaction Set Identification Code	997
ST02 TS Control Number	36

6 Click **Next** to access the **Return Messages** section.

7 No changes are required. Click **Finish** to save the information and return to the **Message Profile** page.

Step 7: Configure Return Messages for Inbound

To set up the return message profile values for inbound

Once you have set up inbound and outbound message profiles, you can specify return messages.

1. From the **B2B Protocol** page, select **X12-4010-Inbound**.
2. Click **Continue: Message Profile**.
3. From the **Message Profile** page, select **X12_004010X091_00_hipaa835_HealCareClaiPaym** from the drop-down list.
4. Click the **Return Messages** link to access the **Return Messages** section.
5. Click **Edit**.
6. Select the return messages (select the check boxes), and the enter the values shown in Table 21.

Table 21 Return Message Values: Outbound

Name	Response Time	Period	# Retries
X12-4010-997	3	Minutes	1

7. Click **Apply** to save the information and return to the **Message Profile** page.
8. Click **OK**.

7.5 Clone the eXSchema

The supplied Schema named eXSchema contains the components required to run e*Xchange. Make a copy of this Schema and then configure the copy for this implementation.

To make a copy of eXSchema

1. Open eXSchema in the e*Gate Schema Designer GUI.
2. Export eXSchema.
3. Create a new Schema named **HealthClaim** using the exported file.

7.6 Configure the Internal_Order_Eater e*Way

This component sends the message to the internal system.

The e*Xchange Internal_Order_Eater e*Way

The e*Xchange example simulates the publication of the message to the internal system.

Follow these steps to configure the **Internal_Order_Eater** e*Way.

- **Step 1: Create and Configure the Internal_Order_Eater e*Way** on page 61
- **Step 2: Create the Internal_Order_Eater Collaboration Rule Script** on page 61
- **Step 3: Create the Internal_Order_Eater Collaboration Rule** on page 62
- **Step 4: Create the Inbound Message Profiles** on page 55

Step 1: Create and Configure the Internal_Order_Eater e*Way

To create and configure the Internal_Order_Eater e*Way

1. Create an e*Way called **Internal_Order_Eater**.
2. Open the **e*Way Properties** dialog box and, in the **Executable file** area of the **General** tab, browse for **stcewfile.exe**.
3. In the **e*Way Properties** dialog box, in the **Configuration file** area of the **General** tab, click **New**.
4. Configure the **Internal_Order_Eater** e*Way parameters using the values specified in Table 22.

Table 22 Internal_Order_Eater e*Way Parameters

Screen	Parameter	Setting
General Settings	AllowIncoming	NO
	AllowOutgoing	YES
Outbound (send) settings	OutputDirectory	<eGate>\data\hipaa\internal\output
	OutputFileName	output_order%d.dat
	(All others)	(Default)
Poller (inbound) settings	(All)	(Default)
Performance Testing	(All)	(Default)

5. When finished editing the e*Way configuration file, save your work and close the e*Way Editor.
6. Click **OK** to close the **e*Way Properties** dialog box.

Step 2: Create the Internal_Order_Eater Collaboration Rule Script

The **Internal_Order_Eater.tsc** Collaboration Rule script helps prepare the data leaving the e*Xchange system by converting the message to raw data, and then copying it from the Payload node of the TP_EVENT section of the e*Xchange standard Event to the output ETD.

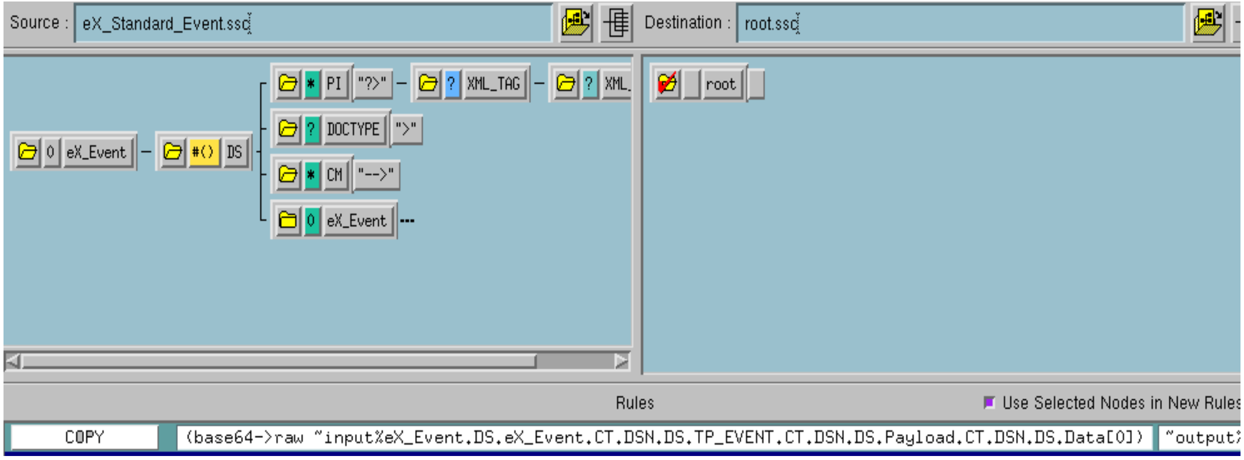
To create and configure the Internal_Order_Eater Collaboration Rule Script

1. Open the Collaboration Editor.

2 Create a new Collaboration Rules script named **Internal_Order_Eater.tsc**. The Source Event Type Definition is **eX_Standard_Event.ssc**. The Destination Event Type Definition is **root.ssc**.

3 Add the rule shown at the bottom of Figure 10.

Figure 10 Internal_Order_Eater.tsc



Source : eX_Standard_Event.ssc

Destination : root.ssc

```
COPY   (base64->raw ~input%eX_Event.DS.eX_Event.CT.DSN.DS.TP_EVENT.CT.DSN.DS.Payload.CT.DSN.DS.Data[0])  ~output%
```

4 Save the Collaboration Rules script and close the Collaboration Rules Editor.

Step 3: Create the Internal_Order_Eater Collaboration Rule

Once the Collaboration Rule script has been created, you must set up the Collaboration Rules properties for the **Internal_Order_Eater** component in the Schema Designer GUI.

To create and configure the Internal_Order_Eater Collaboration Rule

1 Create a new Collaboration Rule named **Internal_Order_Eater**.

2 Open the **Internal_Order_Eater Collaboration Rule Properties** dialog box, and then select the **General** tab. Configure as shown in Table 23.

Table 23 Internal_Order_Eater Collaboration Rule Configuration - General Tab

Section	Value
Service	Monk
Collaboration Rule	monk_scripts\common\Internal_Order_Eater.tsc
Initialization File	monk_scripts\common\load_ext

Important: *To use the Monk function **base64->raw**, you must make sure the file containing this function has been loaded.*

3 Select the **Subscriptions** tab. Select **eX_to_eBPM** and move to the right pane.

4 Select the **Publications** tab. Select **eX_External_Evt** and move to the right pane.

5 Click **OK** to save the properties information and close the dialog.

Step 4: Create the Internal_Order_Eater Collaboration

The **Internal_Order_Eater** Collaboration must prepare the data leaving the e*Xchange system. The complexity of this task depends on the state of the data before the **Internal_Order_Eater** Collaboration processes it.

The **Internal_Order_Eater** Collaboration must do the following:

- Put the data into the appropriate EDI format.
- Convert the data to raw data.

To create and configure the Internal_Order_Eater Collaboration

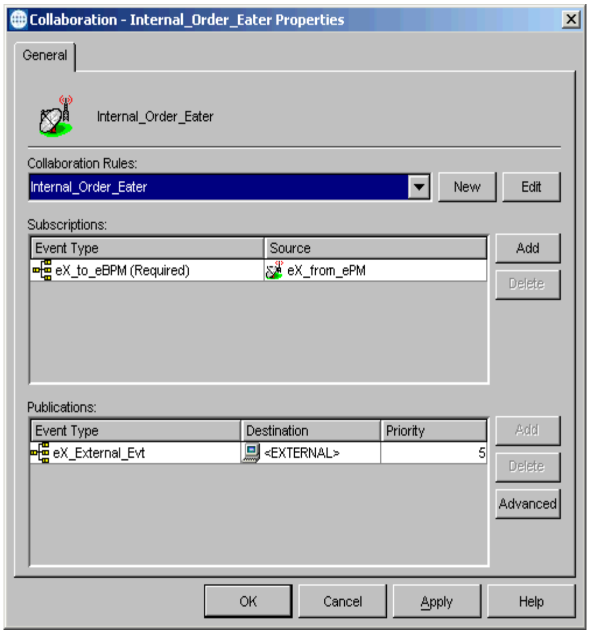
1. Select the **Internal_Order_Eater** e*Way.
2. Create a new Collaboration named **Internal_Order_Eater**.
3. Configure the Internal_Order_Eater Collaboration properties using Table 24.

Table 24 Internal_Order_Eater Collaboration configuration

Section	Value
Collaboration Rules	Internal_Order_Eater
Subscriptions	Event Type: eX_to_eBPM Source: eX_from_ePM
Publications	Event Type: eX_External_Evt Destination: <EXTERNAL>

Verify the information in the **Collaboration - Internal_Order_Eater Properties** dialog box as shown in Figure 11.

Figure 11 Collaboration - Internal_Order_Eater Properties


Collaboration - Internal_Order_Eater Properties

General

Internal_Order_Eater

Collaboration Rules: Internal_Order_Eater

Subscriptions:

Event Type	Source
eX_to_eBPM (Required)	eX_from_ePM

Publications:

Event Type	Destination	Priority
eX_External_Evt	<EXTERNAL>	5

4. Click OK to save the Collaboration and close the dialog.

7.7 Configure the Internal_Order_Feeder e*Way

The component (e*Way or BOB) that feeds data into e*Xchange must put the data into the appropriate business protocol format. It must also populate the required fields in the Event that is processed by e*Xchange.

This component is entirely user-defined and must be added to the e*Xchange Schema. The type of component to use depends on whether a connection to a system outside e*Gate must be made, and if so, what type of system. Typically, this component is an e*Way that connects to a business application, such as SAP, that sends out electronic messages. These messages may or may not be in the format required by the trading partner to which they are being sent. If the data is not in the correct format, the e*Way must translate the data into the required format before it is sent to the e*Xchange system for enveloping and forwarding to the trading partner.

The e*Xchange Internal_Order_Feeder e*Way

The e*Xchange example simulates sending the health claim message from the internal system.

Follow these steps to configure **Internal_Order_Feeder** e*Way.

- **Step 1: Create and Configure the Internal_Order_Feeder e*Way** on page 64
- **Step 2: Create the Internal_Order_Feeder Collaboration Rule Script** on page 65
- **Step 3: Create the Internal_Order_Feeder Collaboration Rule** on page 66
- **Step 4: Create the Internal_Order_Feeder Collaboration** on page 66

Step 1: Create and Configure the Internal_Order_Feeder e*Way

To create and configure the Internal_Order_Feed e*Way

1. Create a new e*Way named **Internal_Order_Feeder**.
2. Open the **e*Way Properties** dialog box and, in the **Executable file** area of the **General** tab, browse for **stcewfile.exe**.
3. In the **e*Way Properties** dialog box, in the **Configuration file** area of the **General** tab, click **New**.
4. Configure the **Internal_Order_Feeder** e*Way parameters using Table 25.

Table 25 Internal_Order_Feeder e*Way Parameters

Screen	Parameter	Setting
General Settings	(All)	(Default)
Outbound (send) settings	(All)	(Default)
Poller (inbound) settings	PollDirectory	<eGate>\data\hipaa\internal\input
	MultipleRecordsPerFile	NO
	(All others)	(Default)

Table 25 Internal_Order_Feeder e*Way Parameters

Screen	Parameter	Setting
Performance Testing	(All)	(Default)

5 When finished editing the e*Way configuration file, save your work and close the e*Way Editor.

6 Click **OK** to close the **e*Way Properties** dialog box.

Step 2: Create the Internal_Order_Feeder Collaboration Rule Script

The **Internal_Order_Feeder.tsc** Collaboration Rule script does the following:

- Converts the message to base 64 encoding, and copies it to the Payload node of the TP_EVENT section of the e*Xchange standard Event.
- Copies "O" for outbound to the direction node of the TP_EVENT section.
- Copies the trading partner logical name "Insurance" to the PartnerName node of the TP_EVENT section.

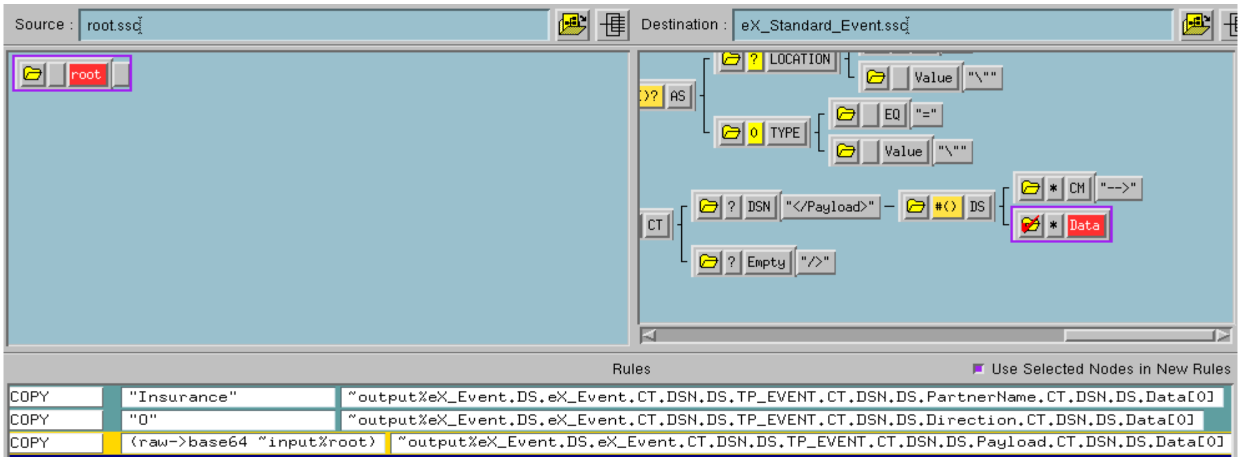
To create and configure the Internal_Order_Feeder Collaboration Rule Script

1 Open the Collaboration Editor.

2 Create a new Collaboration Rules script named **Internal_Order_Feeder.tsc**. The Source Event Type Definition is **root.ssc**. The Destination Event Type Definition is **eX_Standard_Event.ssc**.

3 Add the rules shown at the bottom of Figure 12.

Figure 12 Internal_Order_Feeder.tsc (Monk example)



Source : root.ssc

Destination : eX_Standard_Event.ssc

```
COPY  "Insurance"             ~output%eX_Event.DS.eX_Event.CT.DSN.DS.TP_EVENT.CT.DSN.DS.PartnerName.CT.DSN.DS.Data[0]
COPY  "O"                     ~output%eX_Event.DS.eX_Event.CT.DSN.DS.TP_EVENT.CT.DSN.DS.Direction.CT.DSN.DS.Data[0]
COPY  (raw->base64 ~input%root) ~output%eX_Event.DS.eX_Event.CT.DSN.DS.TP_EVENT.CT.DSN.DS.Payload.CT.DSN.DS.Data[0]
```

4 Save the Collaboration Rules script and close the Collaboration Editor.

Step 3: Create the Internal_Order_Feeder Collaboration Rule

Once the Collaboration Rule script has been created, you must set up the Collaboration and Collaboration Rules properties for the **Internal_Order_Feeder** component in the Schema Designer GUI.

To create and configure the Internal_Order_Feeder Collaboration Rule

1. Create a new Collaboration Rule named **Internal_Order_Feeder**.
2. Open the **Internal_Order_Feeder Collaboration Rule Properties** dialog box, and then select the **General** tab. Configure as shown in Table 26.

Table 26 Internal_Order_Feeder Collaboration Rule Configuration - General Tab

Section	Value
Service	Monk
Collaboration Rules	monk_scripts\common\Internal_Order_Feeder.tsc
Initialization File	monk_scripts\common\load_ext

Important: *To use the Monk function **raw->base64**, you must make sure the file containing this function has been loaded.*

3. Select the **Subscriptions** tab. Select **eX_External_Evt** and move it to the right pane.
4. Select the **Publications** tab. Select **eX_to_ePM** and move it to the right pane.
5. Click **OK** to save the Collaboration Rule and close the properties dialog.

Step 4: Create the Internal_Order_Feeder Collaboration

The **Internal_Order_Feeder** Collaboration must prepare the data coming into the e*Xchange system. The complexity of this task depends on the state of the data before the **Internal_Order_Feeder** Collaboration processes it.

The **Internal_Order_Feeder** Collaboration must do the following:

- Put the data into the appropriate EDI format.
- Convert the data to base 64 encoding.
- Populate the required nodes in the Event sent to e*Xchange for processing.

To create and configure the Internal_Order_Feeder Collaboration

1. Select the **Internal_Order_Feeder** e*Way.
2. Create a new Collaboration named **Internal_Order_Feeder**.
3. Open the **Internal_Order_Feeder Collaboration Properties** dialog box, and then configure the properties using the values specified in Table 27.

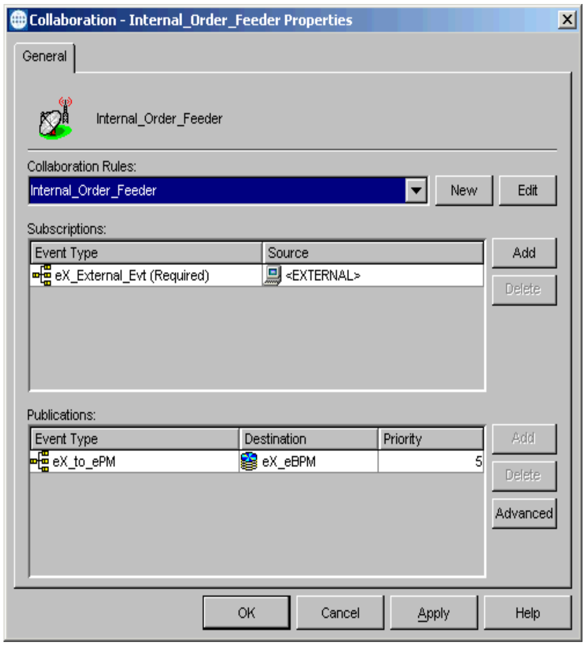
Table 27 Internal_Order_Feeder Collaboration Configuration

Section	Value
Collaboration Rules	Internal_Order_Feeder

Section	Value
Subscriptions	Event Type: eX_External_Evt Source: <EXTERNAL>
Publications	Event Type: eX_to_ePM Destination: eX_eBPM

Verify the information in the **Collaboration - Internal Order Feeder Properties** dialog box as shown in Figure 13.

Figure 13 Internal_Order_Feeder Collaboration Properties



Collaboration - Internal_Order_Feeder Properties

Internal_Order_Feeder

Collaboration Rules: Internal_Order_Feeder

Subscriptions:

Event Type	Source
eX_External_Evt (Required)	<EXTERNAL>

Publications:

Event Type	Destination	Priority
eX_to_ePM	eX_eBPM	5

4 Click **OK** to save the properties information and close the properties dialog box.

7.8 Configure the eX_ePM e*Way

The **eX_ePM** e*Way requires only minimal configuration. You must give it the logon information for the e*Xchange database.

To configure the eX_ePM configuration file

1 Open the **eX_ePM e*Way Properties** dialog box, and then select the **General** tab.

2 In the **Configuration File** area, click **Edit**.

3 Configure the parameters as shown in Table 28.

Table 28 eX_ePM e*Way Parameters

Screen	Parameter	Setting
General Settings	(All)	(Default)
Communication Setup	(All)	(Default)
Monk Configuration	(All)	(Default)
Database Setup	Database Name	(service name of the e*Xchange database)
	User name	(administrator user login ID)
	Password	(administrator user password)
	(All others)	(Default)

4 Save the configuration settings and close the **Edit Settings** dialog box.

7.9 Configure the eX_Poll_Receive_FTP e*Way

Although the **eX_Poll_Receive_FTP** e*Way does not appear in Figure 8, it is used to send information to the **eX_Batch_from_Trading_Partner** e*Way.

The **eX_Poll_Receive_FTP** e*Way requires only minimal configuration. You must give it the logon information for the e*Xchange database.

To configure the eX_Poll_Receive_FTP configuration file

1 Open the **eX_Poll_Receive_FTP e*Way Properties** dialog box, and then select the **General** tab.

2 In the **Configuration File** area, click **Edit**.

3 Configure the parameters as shown in Table 29.

Table 29 eX_Poll_Receive_FTP e*Way Parameters

Screen	Parameter	Setting
General Settings	(All)	(Default)
Communication Setup	(All)	(Default)
Monk Configuration	(All)	(Default)
Database Setup	Database Name	(service name of the e*Xchange database)
	User name	(administrator user login ID)
	Password	(administrator user password)
	(All others)	(Default)

4 Save the configuration settings and close the **Edit Settings** dialog box.

7.10 Running the Scenario

Running the scenario performs two functions:

1 Sends the health claim to the trading partner.

2 Processes the health claim payment sent from the trading partner.

Before you run the scenario, make sure you have performed steps 1 through 3 under **"Installing the Sample Files" on page 51**. This ensures your data files are in the correct locations.

To process the Health Claim message

1 Start the Control Broker. At the command line, enter:

```
stccb.exe -rh localhost -rs HealthClaim -ln localhost_cb -un
Administrator -up STC
```

2 Open the Schema Manager. Select the HealthClaim Schema.

3 Start the **ewHipaaValidation** e*Way.

4 Start the **Internal_Order_Feeder** e*Way.

This e*Way retrieves the health care claim message and sends it to e*Xchange.

5 Start the **eX_ePM** e*Way.

6 Rename **<eGate>\data\hipaa\internal\input\hipaa-837.~in** to **hipaa-837.fin**.

The file is renamed **hipaa-837.~in** as it is picked up.

7 Start the **eX_Batch_to_Trading_Partner** e*Way.

This e*Way sends the message to the trading partner.

8 Look in the **<egate>\data\hipaa\TP\output** folder. The file **output0.dat** appears.

9 Start the **eX_Poll_Receive_FTP** e*Way.

This e*Way sends configuration information to the **eX_Batch_from_Trading_Partner** e*Way.

10 Start the **eX_Batch_from_Trading_Partner** e*Way.

This e*Way retrieves messages from the trading partner.

11 Start the **Internal_Order_Eater** e*Way.

This e*Way sends the message to the internal system.

12 Rename **<egate>\data\hipaa\TP\input\hipaa-835.dat.backup** to **hipaa-835.dat**.

This sends the health claim payment advice message from the trading partner. The file is renamed **hipaa-835.dat.backup** as it is picked up.

13 Look in the **<egate>\data\hipaa\internal\output** folder. The file **output_order1.dat** appears.

That completes the first part of the exercise. You can view the results in Message Tracking in the e*Xchange Partner Manager Web Interface.

Viewing the Results in Message Tracking

You can view the results of the message processing by using the Message Tracking feature of e*Xchange.

Message Tracking shows two entries for the incoming message. This is because an acknowledgment can be sent out immediately, and a response message is sent out later. These two responses to the trading partner are tracked separately.

To view the inbound message in Message Tracking

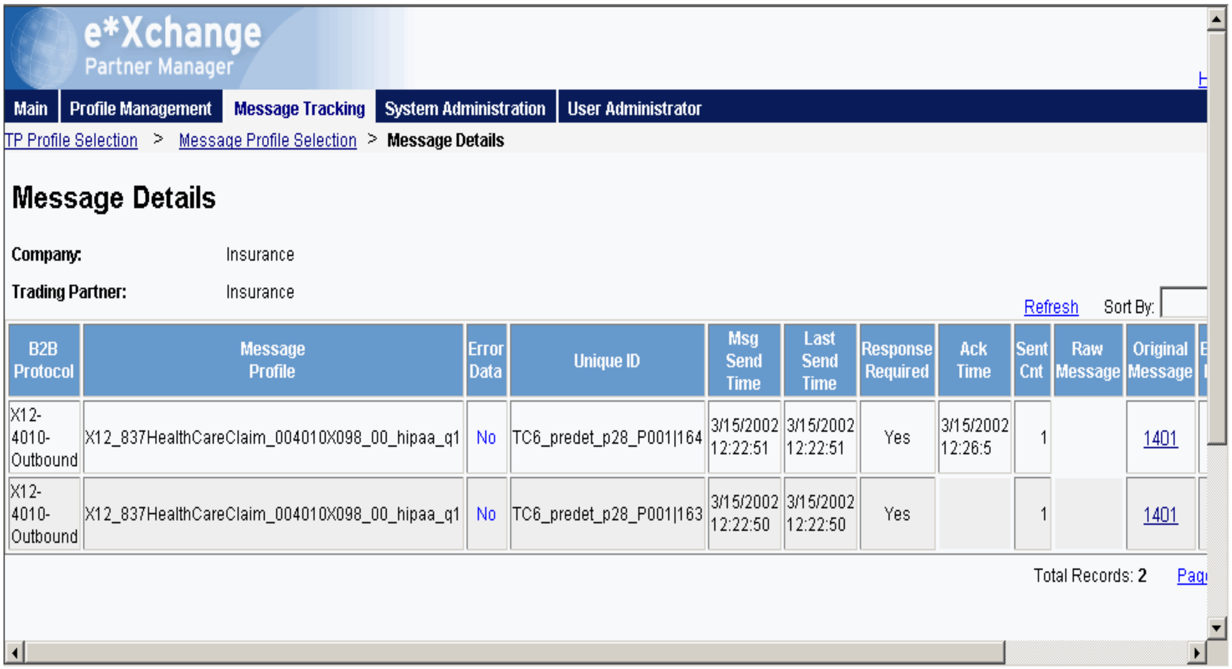
1. From the **Main** page of the e*Xchange Web interface, select **Message Tracking**.

   The **TP Profile Selection** page appears.

2. In the **Company Profile** field, select **Insurance**.
3. In the **Trading Partner Profile** field, select **Insurance**.
4. In the **eBusiness Protocol** field, select **X12**.
5. In the **Direction** field, select **Outbound**.
6. Click the **Message Profile Selection**.
7. Select the **X12_837HealthCareClaim_004010X098_00_hipaa_q1** message.
8. Click the **Message Details** link to view the resulting list.

   The results are shown in Figure 14.

Figure 14 Message Tracking: Outbound



Message Details

Company: Insurance

Trading Partner: Insurance

B2B Protocol	Message Profile	Error Data	Unique ID	Msg Send Time	Last Send Time	Response Required	Ack Time	Sent Cnt	Raw Message	Original Message	E I
X12-4010-Outbound	X12_837HealthCareClaim_004010X098_00_hipaa_q1	No	TC6_predet_p28_P001|164	3/15/2002 12:22:51	3/15/2002 12:22:51	Yes	3/15/2002 12:26:5	1		1401	
X12-4010-Outbound	X12_837HealthCareClaim_004010X098_00_hipaa_q1	No	TC6_predet_p28_P001|163	3/15/2002 12:22:50	3/15/2002 12:22:50	Yes		1		1401	

Total Records: **2**

As shown in Figure 14, e*Xchange records two entries for the message. The top entry is for the original message, for which a response message will be sent. The second entry is for the acknowledgment message.

For one entry, the **Ack Message** column has a link to the message information. Click it to view the acknowledgment message.

Chapter 8

e*Gate Implementation

This chapter discusses the steps involved to create an implementation that converts HIPAA X12 data to or from XML.

8.1 Overview

The proposed e*Gate solution makes use of the e*Gate Java Collaboration Service to transform the data from the System A format to the System B format. e*Gate is very flexible about where the actual transformation processing can occur as the data moves from System A to System B. This solution uses the Multi-Mode e*Way as the main transformation component and two Java Pass Through file e*Ways to bring data into and send data out from the e*Gate system. Figure 15 shows all the components and their relationships to one another in the complete e*Gate Schema.

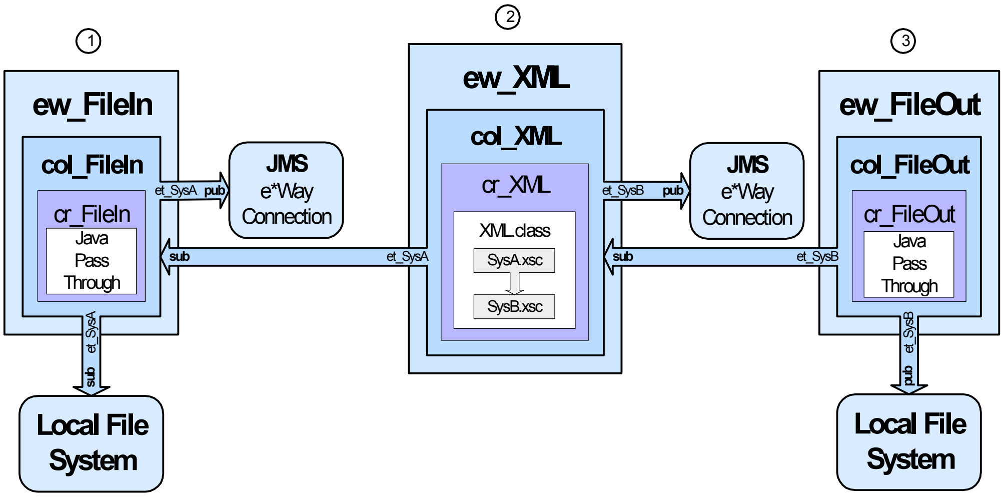
The major steps for implementing the e*Gate solution are as follows:

1. Verify the e*Gate installation.
2. Create a new Schema.
3. Create the Event Types and Java ETDs.
4. Create the Collaboration Rules.
5. Add and configure the e*Ways and the JMS e*Way Connection.
6. Add and define the Collaborations that route the data.
7. Test the Scenario.

8.1.1. The e*Gate XML Scenario

By examining Figure 15 you notice that the Schema components are created and configured from the inside out. That is, the Event Types and Collaborations are created before creating the e*Ways that use them. This method has the advantage of letting you create all the components of the same type at the same time. It also ensures that the required components are available when you need them.

Figure 15 XML Scenario Overview



Notes on the XML Scenario Overview

① **ew_FileIn** brings data from System A into e*Gate.

The **col_FileIn** Collaboration in the **ew_FileIn** e*Way subscribes to a location on the local file system. It polls this location for a text file with extension **".fin"** containing data from System A. Then it reads the message**,** packages the data as an **et_SysA** Event, and publishes the Event to the JMS e*Way Connection.

② **ew_XML** changes the data format.

The **col_XML** Collaboration in the **ew_XML** e*Way subscribes to **et_SysA** Events published by **col_FileIn**. It uses the Java Collaboration Rule **cr_XML** to convert to XML. This rule uses the **XML.class** which implements the transformation. Finally, **col_XML** publishes the **et_SysB** Event to the JMS e*Way Connection.

③ **ew_FileOut** writes the transformed data out to a local file system.

The **col_FileOut** Collaboration in the **ew_FileOut** e*Way subscribes to **et_SysB** Events published by a JMS e*Way Connection. The **cr_FileOut** Collaboration Rule uses the Java Pass Through service to move the data without modifying it. When an **et_SysB** Event is retrieved, the e*Way packages it as a text file and writes it to the specified location on the local file system, completing the end-to-end scenario.

8.2 Verify the e*Gate Installation

This end-to-end scenario is designed to run on a single machine. Before beginning the configuration process, you must verify that you have all the required software installed on the target machine. In addition to a standard e*Gate installation, you need to install the Multi-mode e*Way and the Java HIPAA ETD Library. Refer to the *e*Gate Integrator Installation Guide* for e*Gate system requirements and instructions to install the e*Gate components.

8.3 Create a New Schema

To create a new Schema

1. Start the e*Gate Schema Designer and log in as **Administrator** (or another user with administrator privileges) to the appropriate Registry Host.
2. In the **Open Schema on Registry Host** dialog box, click **New**.
3. In the **Enter New Schema Name** box, type **HIPAA**, and then click **Open**.

   The Schema Designer opens and displays the new **HIPAA** Schema.
4. At the bottom of the navigator (left) pane, click the **Components** tab.

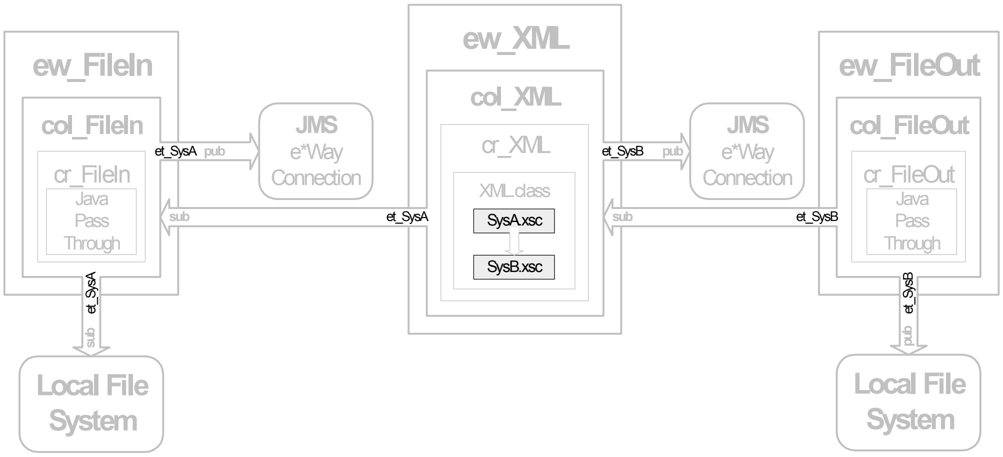
   You will perform all configuration steps in the **Components** tab.

8.4 Create the Event Types and Java ETDs

This scenario uses two Event Types. The first Event Type, **et_SysA**, models the ASCII format of the data received from System A. The second Event Type, **et_SysB**, models the XML format required by System B.

Figure 16 shows where these parts fit into the collection of interrelated components that make up the finished Schema.

Figure 16 Event Types and Java ETDs

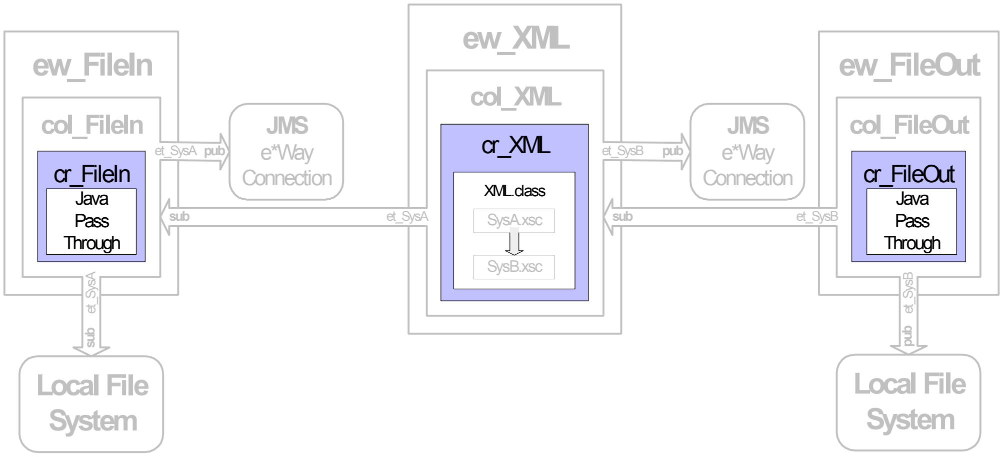


8.5 Create the Collaboration Rules

This scenario uses three Collaboration Rules: two Java Pass Through rules and one Java Collaboration. The Java Pass Through rules, **cr_FileIn** and **cr_FileOut**, are used to route the Events through the e*Gate system and the Java Collaboration Rule **cr_XML** is used to transform the Event from Event Type **et_SysA** to Event Type **et_SysB**.

Figure 17 shows where these parts fit into the collection of interrelated components that make up the finished Schema.

Figure 17 Collaboration Rules



8.5.1. Create the Java Pass Through Collaborations

The Java Pass Through Collaborations are used to bring data into and take data away from the e*Gate system. The following procedure explains how to create the Java Pass Through Collaborations used in this scenario.

To create the cr_FileIn and cr_FileOut Collaboration Rules

1. In the **Navigator** pane of the e*Gate Schema Designer, click the **Collaboration Rules** folder.
2. On the **File** menu, point to **New**, and then click **Collaboration Rules**.
3. In the **New Collaboration Rules Component** dialog box, type **cr_FileIn** for the Collaboration Rule name, and then click **OK**.

   cr_FileIn is added to the list of Collaboration Rules in the e*Gate Schema Designer **Editor** pane.
4. On the list of Collaboration Rules, double-click **cr_FileIn**.
5. In the **Collaboration Rules** section, click **Find** and navigate to **collaboration_rules\STCLibrary**, and then double-click **STCJavaPassThrough.class**.

   The path to **STCJavaPassThrough.class** appears in the **Collaboration Rules** section of the dialog box, and the path to **STCJavaPassThrough.ctl** appears in the **Initialization File** section. The **STCJavaPassThrough.class** file configures the Collaboration Mapping Instances for you. You are not required to make any other changes to **cr_FileIn**.

6 Click **OK** to close the **Collaboration Rules - cr_FileIn Properties** dialog box.

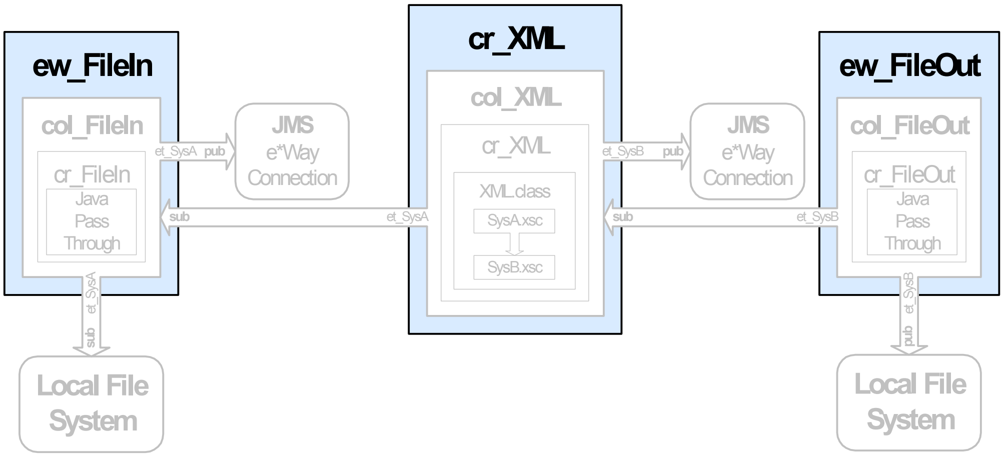
7 Repeat steps 2 through 6 to create the **cr_FileOut** Collaboration Rule. Substitute **cr_FileOut** for the Collaboration Rule name.

8.6 Add the e*Ways and e*Way Connection

After you have created your ETDs and Collaborations, you are ready to add and configure the e*Gate components that use these parts.

Figure 18 highlights the components added in this step.

Figure 18 e*Ways and JMS e*Way Connection



8.6.1. Add and Configure the File e*Ways

For the e*Gate XML scenario, you must create two file e*Ways, **ew_FileIn** and **ew_FileOut**, to simulate bringing data in from System A and sending it out to System B.

To add and configure the ew_FileIn file e*Way

1 In the e*Gate Schema Designer, in the **Navigator** pane, click the Control Broker (***hostname*_cb**).

2 On the **File** menu, point to **New**, point to **Module**, and then click **e*Way**.

3 In the **New e*Way Component** dialog box, type **ew_FileIn** for the e*Way name, and then click **OK**.

The **ew_FileIn** e*Way is added to the Schema.

4 Right-click **ew_FileIn**, and then click **Properties**.

5 In the **e*Way - ew_FileIn Properties** dialog box, in the **Executable file** area, click **Find**.

6 In the **File Selection** dialog box, browse for and double-click the file **stcewfile.exe**.

The **bin\stcewfile.exe** file is added as the executable file, causing the component to become a file e*Way.

7 In the **Configuration file** area, click **New**.

The e*Way Configuration File Editor opens with a default file e*Way configuration file ready for editing.

8 In the **Goto Section** list, click **Poller (inbound) settings**.

9 In the **PollDirectory** box, type **C:\eGate\Client\Data\HIPAA** and then press **ENTER**.

C:\eGate\Client\Data\HIPAA is added as the directory to be polled to the **PollDirectory** list. No other changes are necessary to the **ew_FileIn** e*Way's configuration file.

10 On the **File** menu, click **Save**.

11 In the **Save As** dialog box, click **Save** to accept the default filename (**ew_FileIn.cfg**) and save the file.

12 On the **File** menu, click **Close** to quit the e*Way Configuration File Editor.

The **configs\stcewfile\ew_FileIn.cfg** file is added to the **Configuration file** area in the **e*Way - ew_FileIn Properties** dialog box.

13 Click the **Start Up** tab, and then select the **Start automatically** check box.

14 Click **OK** to close the **e*Way - ew_FileIn Properties** dialog box.

To add and configure the ew_FileOut file e*Way

Adding the **ew_FileOut** e*Way follows the same general procedure as that outlined for adding the **ew_FileIn** e*Way above.

1 Use steps 1 through 7 from **"To add and configure the ew_FileIn file e*Way" on page 76** to add another file e*Way named **ew_FileOut** and open its configuration file for editing.

2 In the e*Way Configuration File Editor, in **General Settings**, click **NO** for **AllowIncoming**, and **YES** for **AllowOutgoing**.

3 In the **Goto Section** list, click **Outbound (send) settings**.

4 Add **C:\eGate\Client\Data\HIPAA** as the default **OutputDirectory**.

5 Add **HIPAAoutput%d.dat** as the default **OutputFileName**.

No other changes are necessary to the **ew_FileOut** e*Way's configuration file.

6 On the **File** menu, click **Save**.

7 In the **Save As** dialog box, click **Save** to accept the default file name (**ew_FileOut.cfg**) and save the file.

8 On the **File** menu, click **Close** to quit the e*Way Configuration File Editor.

9 Click the **Start Up** tab, and then select the **Start automatically** check box.

10 Click **OK** to close the **e*Way - ew_FileOut Properties** dialog box.

8.6.2. Add the Multi-Mode e*Way

To add the multi-mode e*Way

1. In the e*Gate Schema Designer, in the **Navigator** pane, click the Control Broker (***hostname_cb***).
2. On the **File** menu, point to **New**, point to **Module**, and then click **e*Way**.
3. In the **New e*Way Component** dialog box, type **ew_XML** for the e*Way name, and then click **OK**.

   The **ew_XML** e*Way is added to the Schema.
4. Right-click the **ew_XML** e*Way in the **Editor** pane, and then click **Properties**.
5. In the **Configuration file** area, click **New**.

   The e*Way Configuration File Editor opens with a default Multi-Mode e*Way configuration file.
6. Scroll to the bottom of the **JVM Settings** parameters and click **Remote debugging port number**.
7. In the **Remote debugging port number** box, type **8000**, and then press **ENTER**.

   8000 is listed as the **Remote debugging port number**. No other changes are necessary to the **ew_XML** e*Way's configuration file.

Important: *In-schema debugging must be enabled on the Participating Host for this to work. See the e*Gate Integrator Installation Guide for more information.*

8. On the **File** menu, click **Save**.
9. In the **Save As** dialog box, click **Save** to accept the default filename (**ew_XML.cfg**) and save the file.
10. On the **File** menu, click **Close** to quit the e*Way Configuration File Editor.
11. Click the **Start Up** tab, and then select the **Start automatically** check box.
12. Click **OK** to close the **e*Way - ew_XML Properties** dialog box.

8.6.3. Configure the IQ Manager

To configure the IQ Manager

1. In the e*Gate Schema Designer, in the **Navigator** pane, double-click the IQ manager (***hostname*_iqmgr**).
2. In the **Configuration File** area, click **New**.
3. On the **File** menu, click **Save**, and then click **Save** again to accept the default name.
4. On the **File** menu, click **Close** to quite the editor.
5. Click the **Start Up** tab, select the **Start automatically** check box, and then click **OK**.

8.6.4. Add the JMS e*Way Connection

To add the JMS e*Way Connection

1 In the **Navigator** pane of the e*Gate Schema Designer, click the **e*Way Connections** folder.

2 In the **Editor** pane, right-click, and then click **New e*Way Connection**.

3 In the **New e*Way Connection Component** dialog box, type **JMS** for the e*Way Connection name, and then click **OK**.

JMS is added to the list of e*Way Connections.

4 In the editor pane, double-click **JMS**.

The **e*Way Connection - JMS Properties** dialog box displays.

5 From the **e*Way Connection Type** drop-down list, select **SeeBeyond JMS**.

6 In the **Configuration File** area, click **New**.

7 From the **JMS IQ Manager** drop-down list, select your IQ Manager.

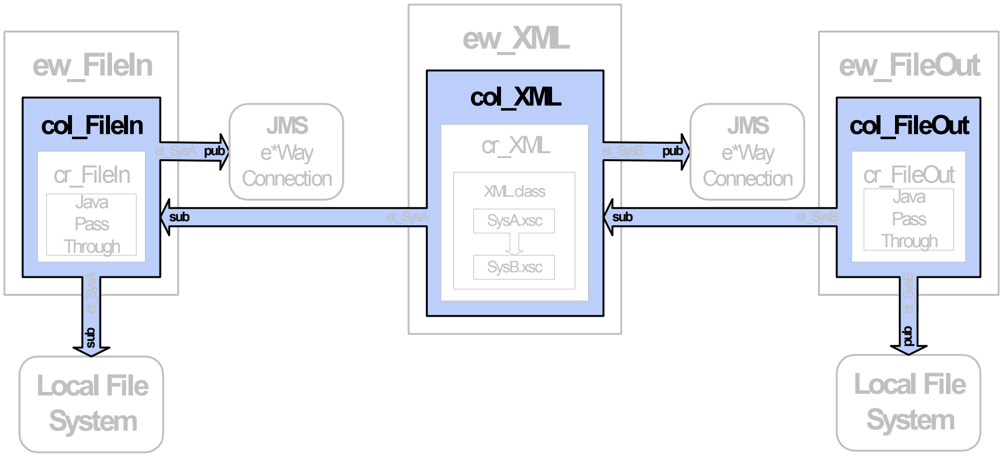
8 Click **OK** to save your configuration file.

9 Click **OK** to close the **e*Way Connection - JMS Properties** dialog box.

8.7 Add the Collaborations that Route the Data

The e*Ways in this example use Collaborations to route data through the e*Gate system. Typically, the Collaborations are configured in upstream to downstream order. Figure 19 shows the relationships of the Collaborations to the remaining components that make up the complete Schema.

Figure 19 Collaborations Showing Publish and Subscribe Relationships



8.7.1. Add and Configure col_FileIn

The **col_FileIn** Collaboration brings the data into the e*Gate system from the specified data file.

To add and configure col_FileIn

1. In the e*Gate Schema Designer, in the **Navigator** pane, click the **ew_FileIn** e*Way.
2. On the **File** menu, point to **New**, and then click **Collaboration**.
3. In the **New Collaboration Component** dialog box, type **col_FileIn** for the Collaboration name, and then click **OK**.
4. In the editor pane, double-click **col_FileIn**.

   The **Collaboration - col_FileIn Properties** dialog box displays.
5. In the **Collaboration Rules** list, click **cr_FileIn**.
6. In the **Subscriptions** area, click **Add**.

   A row is added to the **Subscriptions** box.
7. In the **Instance Name** column, select **JavaPassThroughIn**. In the **Event Type** column, click **et_SysA** on the list, and then in the **Source** column, select **<EXTERNAL>** from the list.
8. In the **Publications** area, click **Add**.

   A row is added to the **Publications** box.
9. In the **Instance Name** column, select **JavaPassThroughOut**. In the **Event Type** column, click **et_SysA** on the list, and then in the **Destination** column, select **JMS** from the list.
10. Click **OK** to close the **Collaboration - col_FileIn Properties** dialog box.

8.7.2. Add and Configure col_XML

The **col_XML** Collaboration changes the data from the **et_SysA** Event Type to the **et_SysB** Event Type.

To add and configure col_XML

1. Use steps 1 through 4 from **"Add and Configure col_FileIn" on page 80** to add a Collaboration to the **ew_XML** e*Way named **col_XML** and open its properties dialog box.
2. In the **Collaboration Rules** list, click **cr_XML**.
3. In the **Subscriptions** area, click **Add**.

   A row is added to the **Subscriptions** box.
4. Double-click in the **Instance Name** column and click **In** on the list.
5. Double-click in the **Event Type** column and click **et_SysA** on the list.
6. Double-click in the **Source** column and click **JMS** on the list.
7. In the **Publications** area, click **Add**.

A row is added to the **Publications** area.

8 Double-click in the **Instance Name** column, and then click **Out** on the list.

9 Double-click in the **Event Type** column, and then click **et_SysB** on the list.

10 Double-click in the **Destination** column, and then click **JMS** on the list.

11 Click **OK** to close the **Collaboration - col_XML Properties** dialog box.

8.7.3. Add and Configure col_FileOut

The **col_FileOut** Collaboration sends the transformed data out of the e*Gate system. Use the following procedure to add and configure **col_FileOut**.

To add and configure col_FileOut

1 Use steps 1 through 4 from **"Add and Configure col_FileIn" on page 80** to add a Collaboration to the **ew_FileOut** e*Way named **col_FileOut** and open its properties dialog box.

2 In the **Collaboration Rules** list, click **cr_FileOut**.

3 In the **Subscriptions** area, click **Add**.

4 A row is added to the **Subscriptions** box.

5 In the **Instance Name** column, select **JavaPassThroughIn**. In the **Event Type** column, click **et_SysB** on the list, and then in the **Source** column, select **JMS** from the list.

6 In the **Publications** area, click **Add**.

A row is added to the **Publications** area.

7 In the **Instance Name** column, select **JavaPassThroughOut**. In the **Event Type** column, click **et_SysB** on the list, and in the **Destination** column, select **<EXTERNAL>** from the list.

8 Click **OK** to close the **Collaboration - col_FileOut Properties** dialog box.

8.8 Test the Scenario

Testing the scenario includes the following steps:

1 Review the complete Schema.

2 Test the Schema.

3 Troubleshoot any problems.

8.8.1. Review the Complete Schema

Table 30 lists all the components for the Schema. Check all the settings. Substitute the name of the machine running the Schema for *hostname* where applicable.

Table 30 HIPAA Components

Component	Logical Name	Settings
Schema	HIPAA	
Control Broker	*hostname*_cb	
IQ Manager	*hostname*_iqmgr	Service = SeeBeyond JMS Config file = *hostname*_iqmgr.cfg Start Up = Auto
Event Type	et_SysA	SysA.xsc
	et_SysB	SysB.xsc
Java ETD	SysA.xsc	Package Name = SysApackage
	SysB.xsc	Package Name = SysBpackage
Collaboration Rule	cr_FileIn	Service = Java JavaPassThroughIn GenericInEvent.xsc Trigger JavaPassThroughOut GenericOutEvent.xsc
	cr_XML	Service = Java In SysA.xsc In Trigger Out SysB.xsc Out
	cr_FileOut	Service = Java JavaPassThroughIn GenericInEvent.xsc Trigger JavaPassThroughOut GenericOutEvent.xsc

Java Collaboration Rule	cr_XML.class	Source = In
		Destination = Out

Inbound e*Way	ew_FileIn	Executable = stcewfile.exe
		Config file = ew_FileIn.cfg
		Start Up = Auto
		Collaboration = col_FileIn

Outbound e*Way	ew_FileOut	Executable = stcewfile.exe
		Config file = ew_FileOut.cfg
		Start Up = Auto
		Collaboration = col_FileOut

Multi-Mode e*Way	ew_XML	Executable = stceway.exe
		Config file = ew_XML.cfg
		Start Up = Auto
		Collaboration = col_XML

JMS e*Way Connection	JMS	Service = SeeBeyond JMS Config file = jms*hostname*_iqmgr.cfg

Table 30 HIPAA Components

Component	Logical Name	Settings

Collaboration	col_FileIn	Collab Rule = cr_FileIn
		Subscription = et_SysA from <EXTERNAL>
		Publication = et_SysA to JMS

	col_XML	Collab Rule = cr_XML
		Subscription = et_SysA from JMS
		Publication = et_SysB to JMS

	col_FileOut	Collab Rule = cr_FileOut
		Subscription = et_SysB from JMS
		Publication = et_SysB to <EXTERNAL>

8.8.2. Test the Schema

Test the scenario by sending data into the system and verifying the output.

Start the Schema

Begin the test by starting the Schema using the **stccb.exe** command. Monitor the components from the Schema Manager.

To start the Schema

1 Use the following command to start the Control Broker from a command line.

```
stccb.exe -rh hostname -rs HIPAA -ln hostname_cb -un username -up
password
```

2 Start the Schema Manager.

3 Verify that all the components in the Schema are running.

Testing in Windows 2000

1 Once all the scenario components have been started successfully, use Windows Explorer to navigate to **c:\eGate\client\data\HIPAA\**.

2 Change the file extension on the input file **HIPAAinput.txt** to **.fin**.

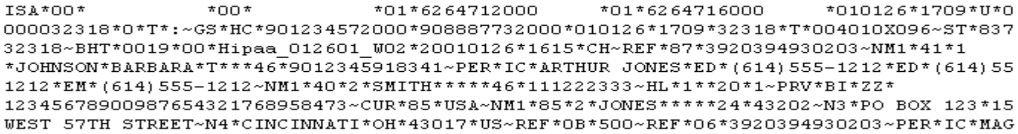
3 Click **Yes** to confirm this choice.

4 Verify that the extension changes to **.~in** indicating that the **ew_FileIn** e*Way has retrieved the file.

5 Almost immediately, the output file, **HIPAAoutput#.dat**, should appear in the directory, indicating a successful conclusion to the test.

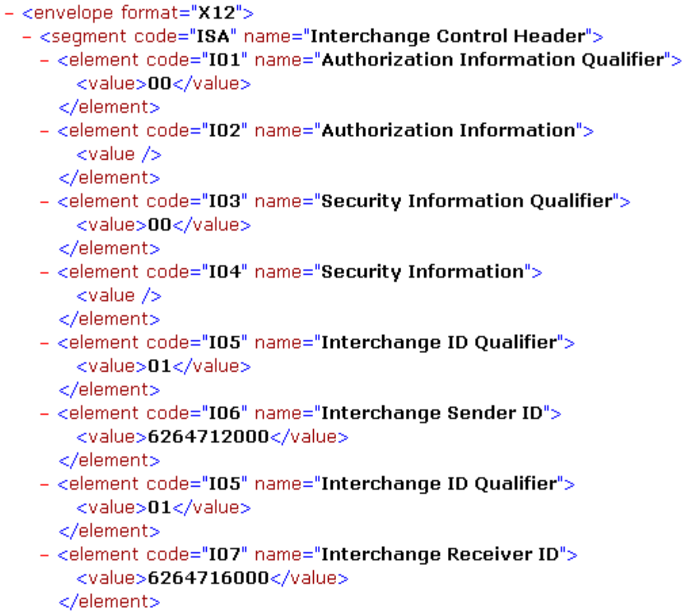
Figure 20 shows a section of the original HIPAA X12 data, and Figure 21 shows a section of the converted HIPAA XML data.

Figure 20 Original data



```
ISA*00*          *00*          *01*6264712000     *01*6264716000     *010126*1709*U*0
000032318*0*T*:~GS*HC*901234572000*908887732000*010126*1709*32318*T*004010X096~ST*837
32318~BHT*0019*00*Hipaa_012601_W02*20010126*1615*CH~REF*87*3920394930203~NM1*41*1
*JOHNSON*BARBARA*T***46*9012345918341~PER*IC*ARTHUR JONES*ED*(614)555-1212*ED*(614)55
1212*EM*(614)555-1212~NM1*40*2*SMITH*****46*111222333~HL*1**20*1~PRV*BI*ZZ*
12345678900987654321768958473~CUR*85*USA~NM1*85*2*JONES*****24*43202~N3*PO BOX 123*15
WEST 57TH STREET~N4*CINCINNATI*OH*43017*US~REF*0B*500~REF*06*3920394930203~PER*IC*MAG
```

Figure 21 Converted data



```
- <envelope format="X12">
  - <segment code="ISA" name="Interchange Control Header">
    - <element code="I01" name="Authorization Information Qualifier">
        <value>00</value>
      </element>
    - <element code="I02" name="Authorization Information">
        <value />
      </element>
    - <element code="I03" name="Security Information Qualifier">
        <value>00</value>
      </element>
    - <element code="I04" name="Security Information">
        <value />
      </element>
    - <element code="I05" name="Interchange ID Qualifier">
        <value>01</value>
      </element>
    - <element code="I06" name="Interchange Sender ID">
        <value>6264712000</value>
      </element>
    - <element code="I05" name="Interchange ID Qualifier">
        <value>01</value>
      </element>
    - <element code="I07" name="Interchange Receiver ID">
        <value>6264716000</value>
      </element>
```

Chapter 9

Claredi Implementation

This chapter provides an overview of the HIPAA validation process enabled by the partnership between e*Xchange and a validation engine called Faciledi from Claredi Corporation.

9.1 Introduction

The partnership between SeeBeyond Technology Corporation and Claredi Corporation enables HIPAA validation using an external appliance provided by Claredi rather than proprietary Monk- or Java-based validations written by SeeBeyond.

The Claredi configuration uses a separate Linux server installed as a network appliance to perform HIPAA validations. The networked "Faciledi" appliance is a server that communicates with e*Xchange. Faciledi tests inbound and outbound HIPAA transactions for compliance against Claredi's interpretation of the HIPAA Implementation Guides. Faciledi can also test against Rational Business edits (to verify whether a transaction makes sense in addition to being HIPAA-compliant), against published Companion Guides that have been incorporated into Faciledi, against regionally prevalent business edits, and against Medicare adjudication tables. For more information about Faciledi, see **www.claredi.com**.

Claredi-based HIPAA validations conform to standards endorsed by WEDI/SNIP (see **"Testing the SeeBeyond Solution" on page 22** or **www.wedi.org/snip/** for information about the WEDI organization or its SNIP forum). You can store messages and compliance test results from the Faciledi appliance for debugging purposes.

Following installation of the Faciledi appliance on your network, you enable the Claredi implementation by applying an ESR to e*Xchange and then modifying the following e*Xchange settings:

- System defaults
- Trading Partner profiles

Installation of the appropriate ESR, which is available from your account manager and from SeeBeyond Customer Support, enables the following:

- Claredi (Faciledi) HIPAA validations
- Improved error handling, including conformance to the X12 standard of accepting non-numeric transaction set control numbers.

The rest of this chapter explains each of these points in detail.

9.2 About Validation Flow

In older versions of e*Xchange, the trading partner profile specified only a proprietary Monk or Java validation type and Collaboration to call for HIPAA message processing.

When the Faciledi appliance has been installed on your network and system default settings and message profile properties have been configured to support it, e*Xchange does the following with an incoming X12 transmission for a Trading Partner:

1. Strip out a functional group from the message envelope
2. Repackage the functional group, including multiple ST-SEs, into its own Interchange envelope
3. Send the repackaged X12 transaction to the Faciledi appliance.

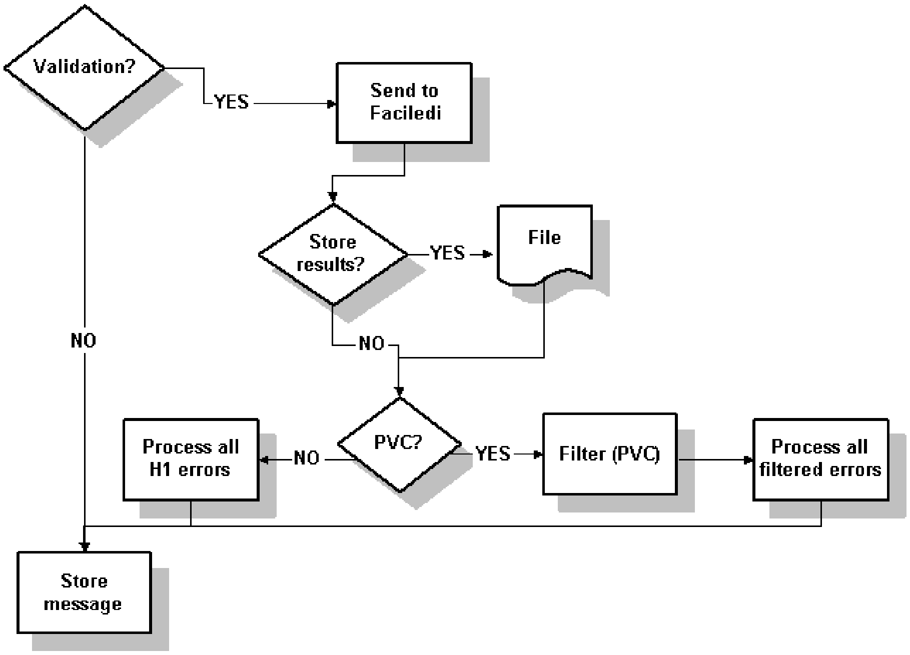
The Faciledi appliance then returns an appropriate error string to e*Xchange.

e*Xchange stores the result and typically generates a positive or negative 997 acknowledgement for each processed group (for more on 997, see **"997, Functional Acknowledgment" on page 117**).

Note: *The 997 transaction type is used for all errors. Errors in levels H2 to H6 (that is, errors in levels other than H1) can optionally generate a generic 824 application acknowledgement as described in* **"Application Acknowledgments" on page 117***.*

The Faciledi-based HIPAA validation process is shown in Figure 22.

Figure 22 Validation Flow (Detail)



The software patch that accompanies this user guide adds three functions to the **X12ValidationResult** output ETD in support of post-validation collaboration with Claredi

Function Name	Purpose
getClarediRawData()	Returns the entire result received from the Facileledi server as a string that sophisticated users can optionally parse themselves.
stripDataError(String aRecordType)	Strips errors according to Claredi record type: ▪ H - HIPAA error ▪ W - Warning ▪ B - Business error
stripDataError(String aRecordType, short aLevel)	Strips errors by Claredi record type and level (1 to 6)

Note: *The Facileledi server stores external codesets formerly stored in the e*Xchange Partner Manager database. External codeset configuration through the Web is not supported in this configuration.*

9.3 Error Handling and Reporting

In keeping with the X12 standard, Facileledi gives e*Xchange users the option of specifying “accept transactions with errors” to ensure that message transmission continues even if one or more claims in an ST-SE containing multiple claims fails HIPAA validation testing.

When “accept transactions with errors” is selected, for example, one or more errors in an inbound transaction do not keep that transaction from being transmitted into e*Gate. Each inbound error is flagged with a 997 acknowledgment.

To enable transaction processing with errors (setting E in Table 31), do the following:

1. From the main page of the Web interface, select **System Administration**.
2. In the System Administration window, select **System Defaults**.
3. In the System Defaults - Viewing window, select **Edit**.
4. In the “Accept Transactions With Errors” field of the System Defaults - Editing window, enter **Y**.
5. Click **OK**.

The default setting (**N**) for the field in step 4 above rejects transactions containing errors.

In HIPAA terms, the error handling settings in this section apply to the AK5 transaction set response trailer.,

Table 31 Error Handling Options

Setting	Meaning
A	Accepted
R	Rejected
E	Accepted But Errors Were Noted

9.4 Configuring System Default Settings

To enable HIPAA validation testing through the Faciledi appliance after it has been installed on your network, ensure that system defaults accessed through the **System Administration** tab of e*Xchange Partner Manager are set as follows:

Table 32 System Default Settings for Faciledi Validation

Field	Setting
Place Journal Errors in Error Queue	Enter either **Y** or **N**. The Y option supports users who want to track errors but do not have access to the server where the flat-file Journal is stored. Placing all errors in a queue ensures that they can be picked up by error handlers built during installation. Entering Y may also create duplicate instances of certain errors in the Dead Letter (Error) Queue.

Table 32 System Default Settings for Faciledi Validation (Continued)

Field	Setting
FACILEDI - Path to Store Retrieved Records in File	Enter the path in which to store records. Data entered here is written to the sb_defaults table, and used for handling large messages. An entry in this field is required.
FACILEDI - Path to Store Interleaved Records as File	Enter the path and file where Interleaved Report records will be stored. No records are stored if you leave this field blank.
FACILEDI - Retrieve Faciledi Records	Enter the type(s) of records to be retrieved from Faciledi. You can specify one or more of several possible types by entering the appropriate letter: ▪ **A**- Aggregate HIPAAmetrics data about all claims in the file ▪ **B** - Business errors or messages as defined by WEDI/SNIP ▪ **C** - Certification messages produced for many of the elements in the X12 message ▪ **E** - Unsupported file format or other system-level error that prevents parsing ▪ **H** - HIPAA errors ▪ **K**- Complex records useful when evaluating HIPAAmetrics ▪ **L** - Records that provide scoping information but are ignored in calculating errors, metrics, or business units in a given file ▪ **M** - (HIPAA) Metric records associated with a business unit ▪ **P**- Errors that result from Payer Specific Edits ▪ **T** - ST and SE records generated at the end of each transaction ▪ **U** - Records that mark the end of a "business unit" and contain information about the segments in that unit ▪ **V**- Version information about the server producing the output ▪ **W** - Warning messages as defined by WEDI/SNIP ▪ **Z** - The last record in a response composed of multiple messages. If no Z record is received, then a file processing error occurred Note that older versions of Faciledi only generate records of types H, T, and Z.
Accept Transactions With Errors	Enter either **Y** or **N**

Table 32 System Default Settings for Faciledi Validation (Continued)

Field	Setting
FACILEDI - URL for Faciledi Server	Example: **http://<ip address>/Analyze**
FACILEDI - Comm Failure Resend Max	Enter a value to specify the number of times e*Xchange should attempt to re-send a message in the event of a communications or connection error.
FACILEDI - Comm Timeout [sec]	Enter the time in seconds to complete a transaction with the Faciledi server. The default value is 60.
FACILEDI - Faciledi Records Treated as Errors	Enter one or more of H1, H2, H3, H4, H5, H6, H7, B, or W, as follows: ▪ **Hn,** where n is a whole number between 1 and 7 corresponding to the WEDI/SNIP transaction test error levels. ▪ **B**: Business errors ▪ **W**: Warnings Use commas as delimiters between multiple entries. Record types not specified in this field are ignored on receipt by e*Xchange. You also have the option of leaving this field blank. A 997 acknowledgment is generated for each specified record type. When the field is blank, only H1 errors generate 997 acknowledgments.

9.4.1. Configuring the Error Filter Table

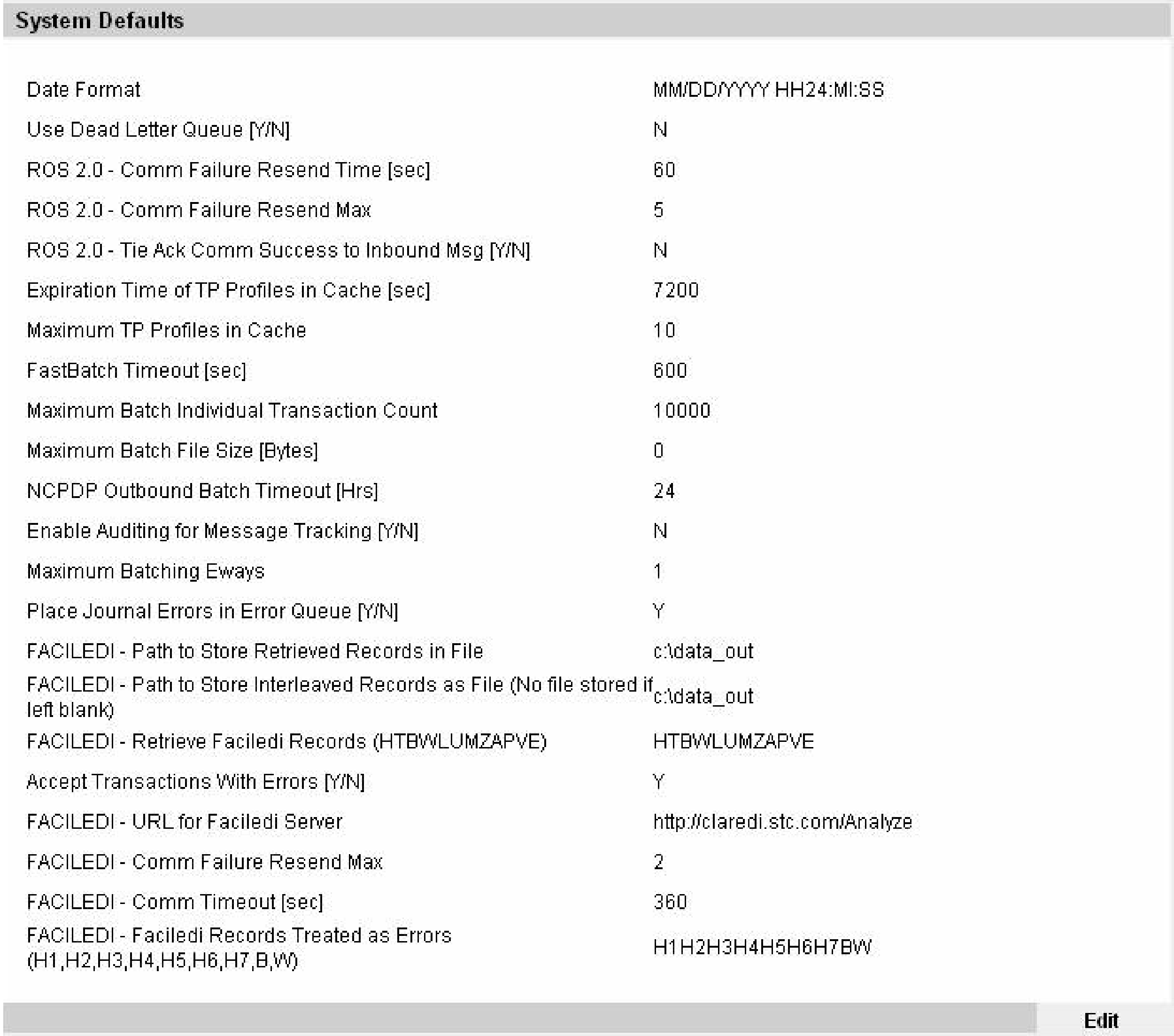
To enable basic post-validation collaboration, do the following:

1. Open the ES_CLAREDIFILTER table in the database.
2. Enter one or more of the H,B, W error codes as described in Table 32 above.

Note: *Do not enter the * character. Asterisks are reserved for use by SeeBeyond developer teams.*

Errors corresponding to the codes that you enter in ES_CLAREDIFILTER are filtered out of the transmission stream and logged in the ES_MTRK_AUDIT table.

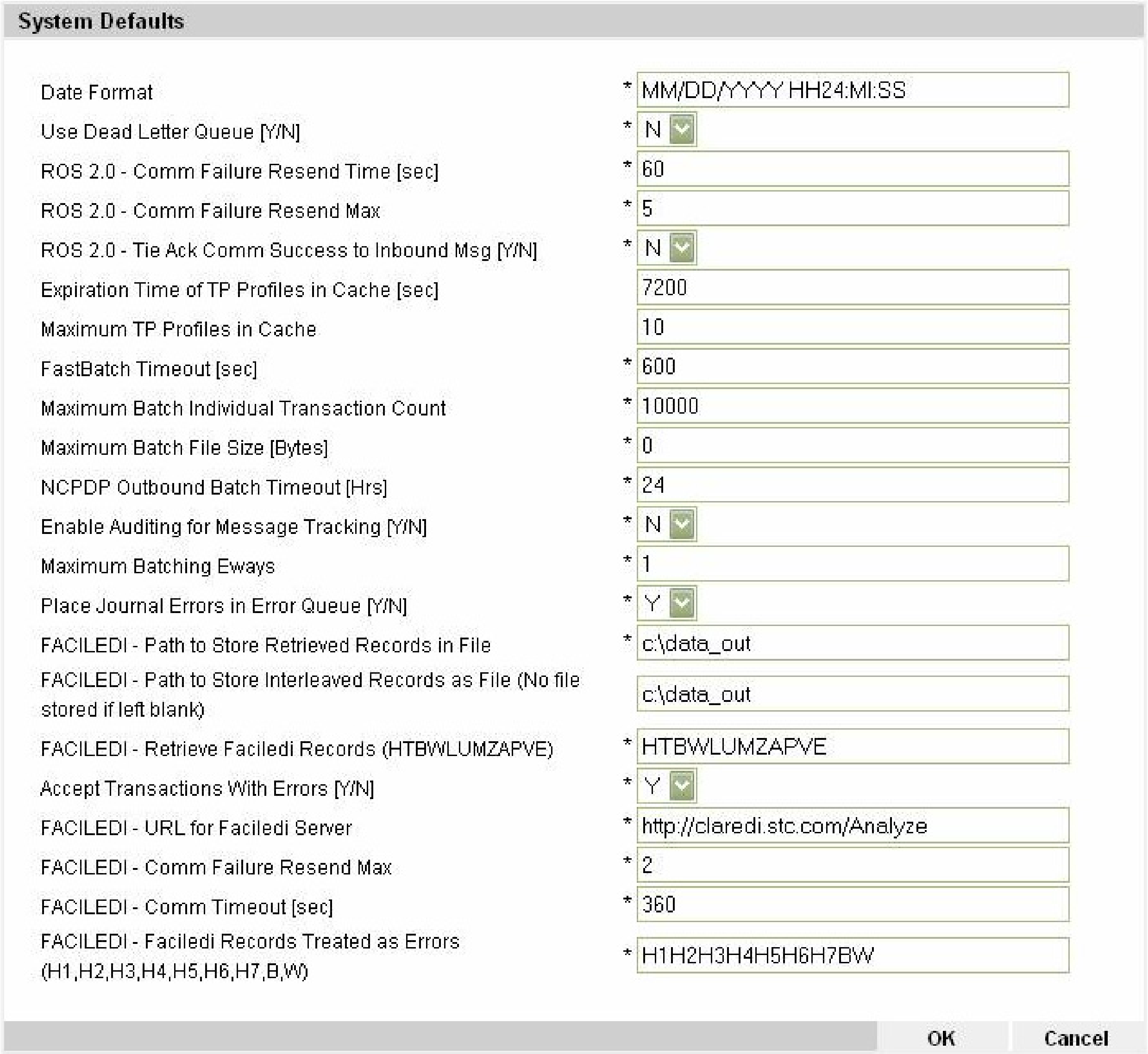
Figure 23 Viewing e*Xchange System Defaults



System Defaults

Date Format	MM/DD/YYYY HH24:MI:SS
Use Dead Letter Queue [Y/N]	N
ROS 2.0 - Comm Failure Resend Time [sec]	60
ROS 2.0 - Comm Failure Resend Max	5
ROS 2.0 - Tie Ack Comm Success to Inbound Msg [Y/N]	N
Expiration Time of TP Profiles in Cache [sec]	7200
Maximum TP Profiles in Cache	10
FastBatch Timeout [sec]	600
Maximum Batch Individual Transaction Count	10000
Maximum Batch File Size [Bytes]	0
NCPDP Outbound Batch Timeout [Hrs]	24
Enable Auditing for Message Tracking [Y/N]	N
Maximum Batching Eways	1
Place Journal Errors in Error Queue [Y/N]	Y
FACILEDI - Path to Store Retrieved Records in File	c:\data_out
FACILEDI - Path to Store Interleaved Records as File (No file stored if left blank)	c:\data_out
FACILEDI - Retrieve Faciledi Records (HTBWLUMZAPVE)	HTBWLUMZAPVE
Accept Transactions With Errors [Y/N]	Y
FACILEDI - URL for Faciledi Server	http://claredi.stc.com/Analyze
FACILEDI - Comm Failure Resend Max	2
FACILEDI - Comm Timeout [sec]	360
FACILEDI - Faciledi Records Treated as Errors (H1,H2,H3,H4,H5,H6,H7,B,W)	H1H2H3H4H5H6H7BW

Figure 24 Editing e*Xchange System Defaults (Sample)



System Defaults

Date Format	*	MM/DD/YYYY HH24:MI:SS
Use Dead Letter Queue [Y/N]	*	N
ROS 2.0 - Comm Failure Resend Time [sec]	*	60
ROS 2.0 - Comm Failure Resend Max	*	5
ROS 2.0 - Tie Ack Comm Success to Inbound Msg [Y/N]	*	N
Expiration Time of TP Profiles in Cache [sec]		7200
Maximum TP Profiles in Cache		10
FastBatch Timeout [sec]	*	600
Maximum Batch Individual Transaction Count	*	10000
Maximum Batch File Size [Bytes]	*	0
NCPDP Outbound Batch Timeout [Hrs]	*	24
Enable Auditing for Message Tracking [Y/N]	*	N
Maximum Batching Eways	*	1
Place Journal Errors in Error Queue [Y/N]	*	Y
FACILEDI - Path to Store Retrieved Records in File	*	c:\data_out
FACILEDI - Path to Store Interleaved Records as File (No file stored if left blank)		c:\data_out
FACILEDI - Retrieve Faciledi Records (HTBWLUMZAPVE)	*	HTBWLUMZAPVE
Accept Transactions With Errors [Y/N]	*	Y
FACILEDI - URL for Faciledi Server	*	http://claredi.stc.com/Analyze
FACILEDI - Comm Failure Resend Max	*	2
FACILEDI - Comm Timeout [sec]	*	360
FACILEDI - Faciledi Records Treated as Errors (H1,H2,H3,H4,H5,H6,H7,B,W)	*	H1H2H3H4H5H6H7BW

9.4.2. Generating 997 Message Acknowledgements

Messages passing through the e*Xchange Partner Manager system are passed to the Claredi appliance for validation. Inbound messages are typically presented to the validation engine one functional group at a time. Claredi returns the resulting records of analysis to e*Xchange, and the returned analysis records are made available to troubleshooting in a raw and (optionally) interleaved format. Analysis records are saved to file if a destination file path for that option has been specified.

Errors related to the interchange or functional group envelopes are generated from and controlled by e*Xchange rather than the Claredi Corporation appliance. TA1 generation is controlled within the Trading Partner profile.

For each H record generated during the analysis of a transaction set, e*Xchange attempts to generate one of the following:

- An AK 3/4 pair
- An AK3 alone

Segment-level errors typically generate only an AK3. Data element-level errors typically generate an AK 3/4 pair. What happens is driven both by the content of the returned analysis record and by the code table in the e*Xchange database, ES_CLAREDI_ERRCODE, that matches the H error number to AK3/4 codes.

An AK4 is not generated if either of the following conditions applies:

- The Claredi analysis record does not point to specific data element
- The error code table does not show an error code for the AK4

The validation engine can generate several different error messages against the same segment or data element to reflect different errors. For example, in a BHT04 segment, if both the month and day fields have errors, the Claredi appliance generates two H records with two different error codes. When these error codes are mapped to the 997, they generate two AK3/4 segments that look identical but report two different errors within the BHT04. Because, in this example, no data element data is returned to e*Xchange, the AK404 segment is not populated.

If an expected AK4 segment is not received, it may be because a 0 character in the Element Position identifies the error as originating from segment level rather than element level, and consequently returning an AK3 alone.

9.5 Configuring Message Profile Settings

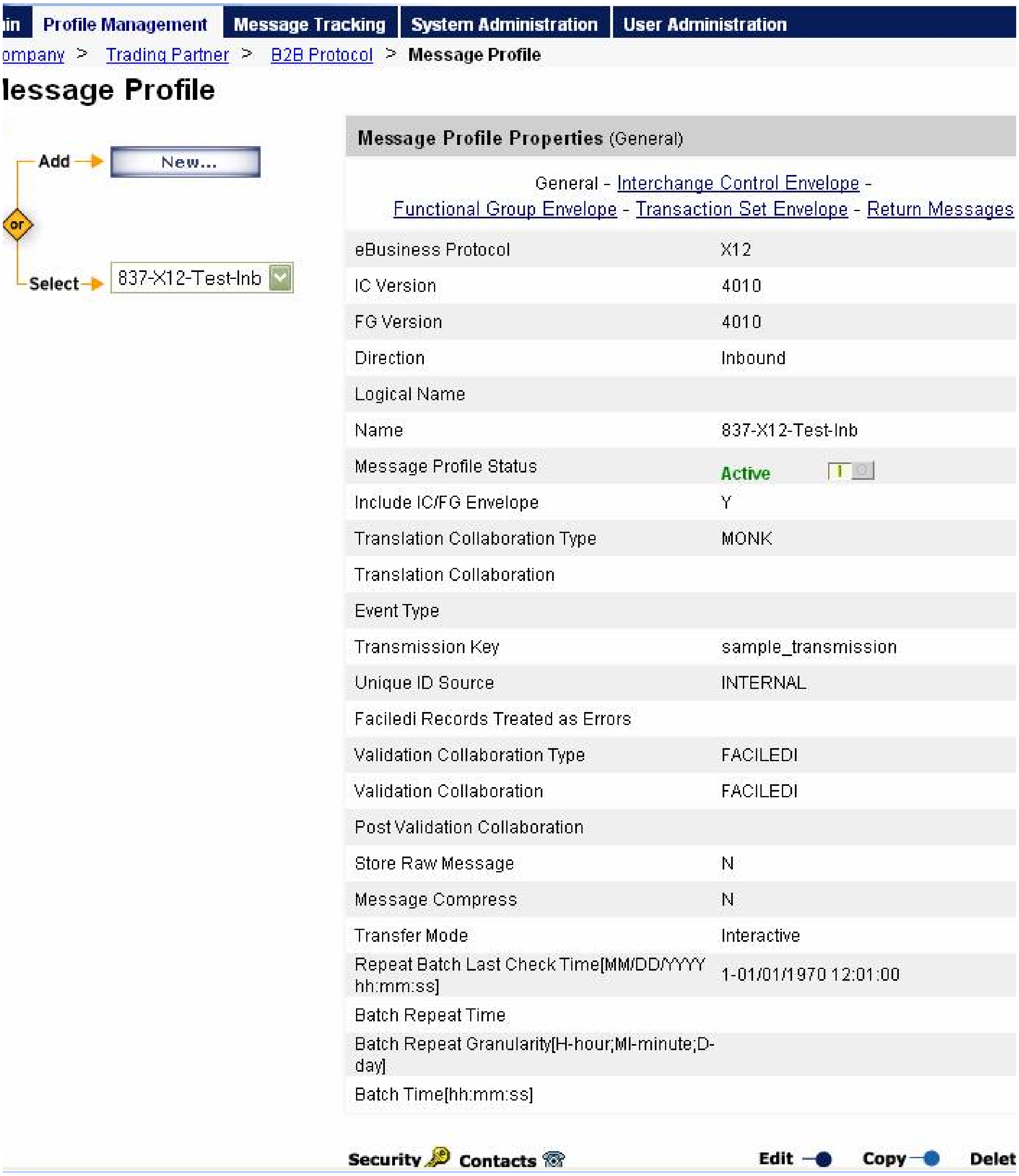
To validate HIPAA compliance through the Faciledi appliance after it has been installed on your network, ensure that message profile properties accessed through the **Profile Management** tab of the e*Xchange Partner Manager are set as follows

Field	Setting
Transmission Key	Enter a Monk function name that defines the variable, “transmission_key”. This B2B Protocol-level value is used to support optional Transmission-level duplicate checking, in contrast to the default Transaction-level duplicate checking. If this variable is used, duplicate transmissions return a TA1 with a TA105 value of 25 (duplicate control ID), while unique transmissions process normally. You can use “sample_transmission.tsc” in the Monk_Scripts/common directory, or modify that sample.

Field	Setting
Unique ID Source	Select "INTERNAL" or "VALIDATION." Validation, the default option, assigns unique IDs to incoming transaction sets based on an algorithm embedded in validation routines. Internal ID assignment supports environments where multiple valid responses to a single unique ID are permissible. Note: Using Internal assignment disables message associations for message types other than 997. A 270, for example, returns only a 997 rather than a 271 and a 997.
Faciledi Records Treated as Errors	Enter one or more of H1, H2, H3, H4, H5, H6, H7, B, or W, as follows: ▪ **Hn,** where n is a whole number between 1 and 7 corresponding to the WEDI/SNIP transaction test error levels. ▪ **B**: Business errors ▪ **W**: Warnings Use commas as delimiters between multiple entries. Record types not specified in this field are ignored on receipt by e*Xchange. You also have the option of leaving this field blank. A 997 acknowledgment is generated for each specified record type. When the field is blank, only H1 errors generate 997 acknowledgments. Records entered at this level take precedence over the same data entered at system level so that error handling can be customized for particular Trading Partners. If this field is left empty at the Message Profile level, error handling specified at system level still applies.
Validation Collaboration Type	Enter **FACILEDI** to turn on the FACILEDI appliance.
Validation Collaboration	Enter **FACILEDI**
Post Validation Collaboration	If PVC is implemented, enter the exact Collaboration name

Note: *Retain default settings for elements of the Message Profile Properties screen not listed in the above table.*

Figure 25 Message Profile Settings (Faciledi Configuration)



Message Profile Properties (General)

General - Interchange Control Envelope - Functional Group Envelope - Transaction Set Envelope - Return Messages

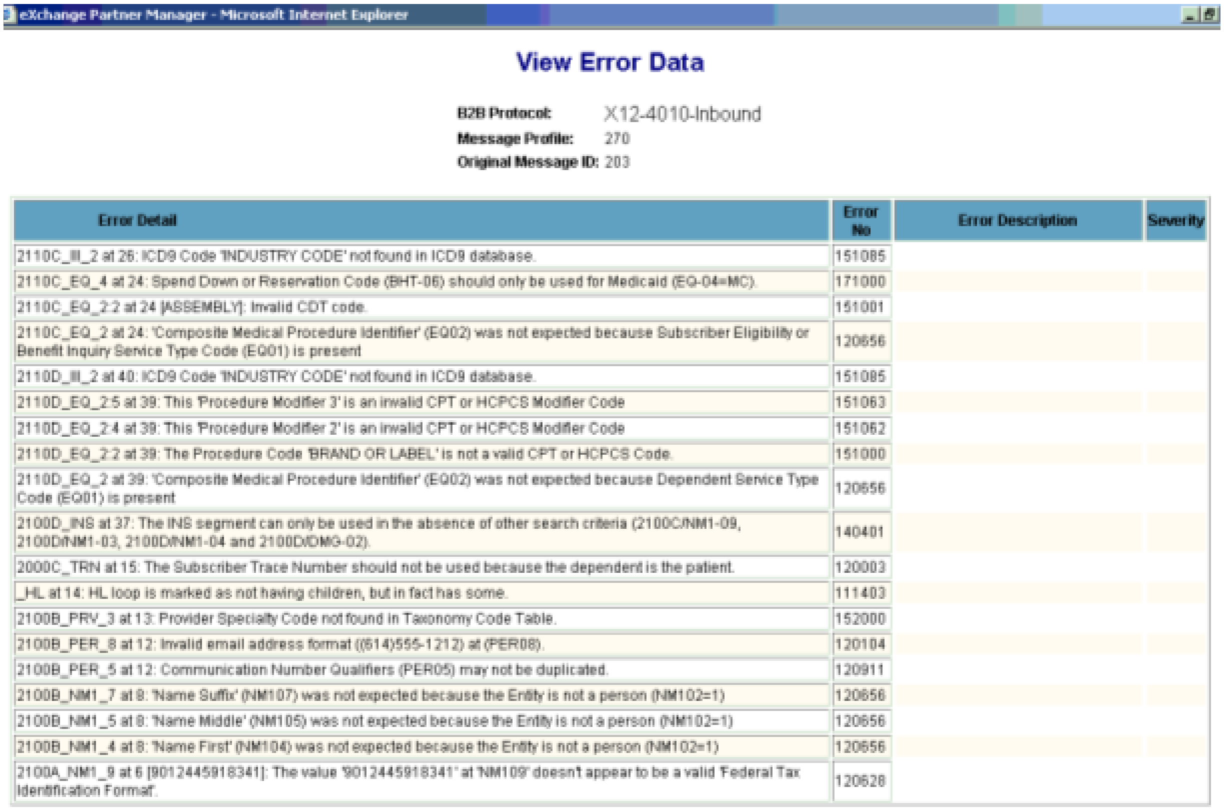
eBusiness Protocol	X12
IC Version	4010
FG Version	4010
Direction	Inbound
Logical Name	
Name	837-X12-Test-Inb
Message Profile Status	Active
Include IC/FG Envelope	Y
Translation Collaboration Type	MONK
Translation Collaboration	
Event Type	
Transmission Key	sample_transmission
Unique ID Source	INTERNAL
Faciledi Records Treated as Errors	
Validation Collaboration Type	FACILEDI
Validation Collaboration	FACILEDI
Post Validation Collaboration	
Store Raw Message	N
Message Compress	N
Transfer Mode	Interactive
Repeat Batch Last Check Time[MM/DD/YYYY hh:mm:ss]	1-01/01/1970 12:01:00
Batch Repeat Time	
Batch Repeat Granularity[H-hour;MI-minute;D-day]	
Batch Time[hh:mm:ss]	

9.6 Viewing a Message and its Errors

To view a message and any errors associated with that message, open the **Message Tracking** tab of e*Xchange Partner Manager.

1. In the TP Profile Selection dialog box, specify the following:
   - Company Profile
   - Trading Partner Profile
   - eBusiness Protocol
   - B2B Protocol/Message Profile
   - Direction
2. In addition to the required information in step 1, you may optionally specify the following:
   - B2B Protocol Version
   - Transfer Mode
   - Message Profile Version
   - Message Profile Status
3. Select the desired B2B Profile.

Figure 26 View Error Data Screen (Sample)



View Error Data

B2B Protocol: X12-4010-Inbound
Message Profile: 270
Original Message ID: 203

Error Detail	Error No	Error Description	Severity
2110C_III_2 at 26: ICD9 Code 'INDUSTRY CODE' not found in ICD9 database.	151085		
2110C_EQ_4 at 24: Spend Down or Reservation Code (BHT-06) should only be used for Medicaid (EQ-04=MC).	171000		
2110C_EQ_2:2 at 24 [ASSEMBLY]: Invalid CDT code.	151001		
2110C_EQ_2 at 24: 'Composite Medical Procedure Identifier' (EQ02) was not expected because Subscriber Eligibility or Benefit Inquiry Service Type Code (EQ01) is present	120656		
2110D_III_2 at 40: ICD9 Code 'INDUSTRY CODE' not found in ICD9 database.	151085		
2110D_EQ_2:5 at 39: This 'Procedure Modifier 3' is an invalid CPT or HCPCS Modifier Code	151063		
2110D_EQ_2:4 at 39: This 'Procedure Modifier 2' is an invalid CPT or HCPCS Modifier Code	151062		
2110D_EQ_2:2 at 39: The Procedure Code 'BRAND OR LABEL' is not a valid CPT or HCPCS Code.	151000		
2110D_EQ_2 at 39: 'Composite Medical Procedure Identifier' (EQ02) was not expected because Dependent Service Type Code (EQ01) is present	120656		
2100D_INS at 37: The INS segment can only be used in the absence of other search criteria (2100C/NM1-09, 2100D/NM1-03, 2100D/NM1-04 and 2100D/DMG-02).	140401		
2000C_TRN at 15: The Subscriber Trace Number should not be used because the dependent is the patient.	120003		
_HL at 14: HL loop is marked as not having children, but in fact has some.	111403		
2100B_PRV_3 at 13: Provider Specialty Code not found in Taxonomy Code Table.	152000		
2100B_PER_8 at 12: Invalid email address format ((614)555-1212) at (PER08).	120104		
2100B_PER_5 at 12: Communication Number Qualifiers (PER05) may not be duplicated.	120911		
2100B_NM1_7 at 8: 'Name Suffix' (NM107) was not expected because the Entity is not a person (NM102=1)	120656		
2100B_NM1_5 at 8: 'Name Middle' (NM105) was not expected because the Entity is not a person (NM102=1)	120656		
2100B_NM1_4 at 8: 'Name First' (NM104) was not expected because the Entity is not a person (NM102=1)	120656		
2100A_NM1_9 at 6 [9012445918341]: The value '9012445918341' at 'NM109' doesn't appear to be a valid 'Federal Tax Identification Format'.	120628		

9.7 Generating Interleaved Error Reports

Messages returned by the Faciledi appliance optionally generate HTML files called Interleaved Error Reports that embed any error messages generated by validation testing within the original message content. By displaying errors together with the data that triggered them, Interleaved Error Reports simplify the debugging process.

To generate Interleaved Error Reports, do the following:

1. Open the **System Administration Tab** of e*Xchange Partner Manager
2. Enter a path in which to store Interleaved records as a file in the **FACILEDI-Path to Store Interleaved Records as File** field.
3. Enter **Y** as the value in the **Accept Transactions With Errors** field.

Figure 23 shows system defaults set to enable Interleaved Error Reports.

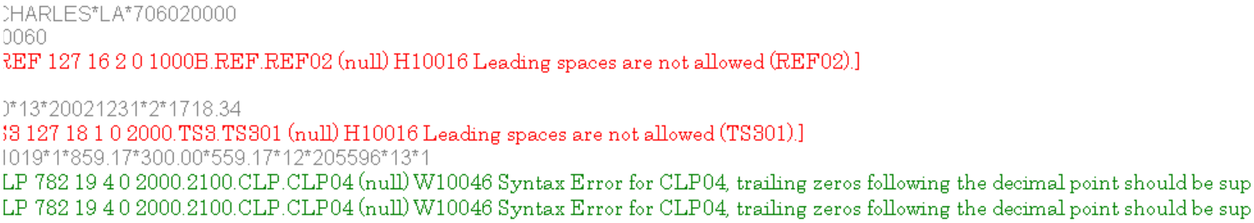
Figure 27 and Figure 28 show parts of sample Interleaved Error Reports.

The Interleaved Error Report includes every error received from the Faciledi server, not just those specified in the “Faciledi Records Treated as Errors” field of the **System Defaults** screen. Interleaved Error Reports are not generated in cases where the Faciledi server generates more than a million characters in a functional group.

Note that Interleaved Error Reports use color to differentiate errors from other data. Color coding corresponds roughly to the severity of an error and is as follows:

- Blue: Business errors
- Green: Warnings
- Red: HIPAA errors

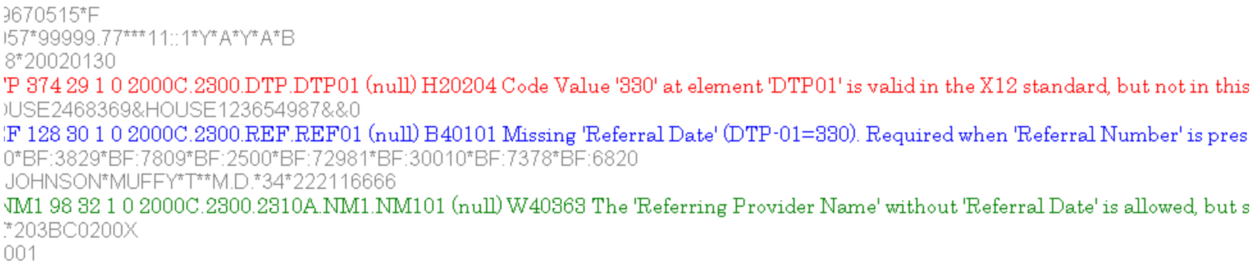
Figure 27 Interleaved Error Report (Sample)



```
:HARLES*LA*706020000
)060
REF 127 16 2 0 1000B.REF.REF02 (null) H10016 Leading spaces are not allowed (REF02).]

)*13*20021231*2*1718.34
;3 127 18 1 0 2000.TS3.TS301 (null) H10016 Leading spaces are not allowed (TS301).]
I019*1*859.17*300.00*559.17*12*205596*13*1
LP 782 19 4 0 2000.2100.CLP.CLP04 (null) W10046 Syntax Error for CLP04, trailing zeros following the decimal point should be sup
LP 782 19 4 0 2000.2100.CLP.CLP04 (null) W10046 Syntax Error for CLP04, trailing zeros following the decimal point should be sup
```

Figure 28 Interleaved Error Report (Sample with Business Errors)



```
)670515*F
)57*99999.77***11::1*Y*A*Y*A*B
8*20020130
'P 374 29 1 0 2000C.2300.DTP.DTP01 (null) H20204 Code Value '330' at element 'DTP01' is valid in the X12 standard, but not in this
)USE2468369&HOUSE123654987&&0
:F 128 30 1 0 2000C.2300.REF.REF01 (null) B40101 Missing 'Referral Date' (DTP-01=330). Required when 'Referral Number' is pres
0*BF:3829*BF:7809*BF:2500*BF:72981*BF:30010*BF:7378*BF:6820
JOHNSON*MUFFY*T**M.D.*34*222116666
NM1 98 32 1 0 2000C.2300.2310A.NM1.NM101 (null) W40363 The 'Referring Provider Name' without 'Referral Date' is allowed, but s
:*203BC0200X
001
```

Appendix A

HIPAA Files

This appendix provides information on the HIPAA files provided with e*Gate and e*Xchange. For more information on the SeeBeyond HIPAA solution, refer to **Chapter 3, "The SeeBeyond Solution" on page 19**.

A.1 e*Xchange Files for HIPAA Transactions

Java ETDs for HIPAA transactions are provided in the e*Gate HIPAA ETD Library for both X12 and NCPDP transactions.

The Faciledi server stores external code sets formerly stored in the e*Xchange Partner Manager database.

Note: *The HIPAA solution also requires the X12 4010 ETD Library to work properly.*

A.1.1. HIPAA e*Xchange Files for e*Gate

The following Monk ETDs are available through SeeBeyond. They include the GS/GE and ISA/IEA enveloping and are suitable for use outside e*Xchange when a complete Event structure is required. For example, they are appropriate when using e*Gate to translate from X12 to a business application's proprietary data format.

These files are stored in the following location:

- **\<eGate>\server\registry\repository\default\monk_scripts\eXchange\HIPAA**

The file names have "_xlate" (for May 1999 files) or "_xlat" (for May 2000 files) appended to the file name to indicate that these are the translation files and include the interchange control and functional group header and footer. The May 2000 files have "00" in their file names to further distinguish them from the May 1999 files.

May 1999 Files

The May 1999 HIPAA Monk ETDs that are in Table 33.

Table 33 HIPAA Monk ETDs (May 1999) Provided with e*Xchange for e*Gate

File Name	Transaction
X12_270EligibCoverageBenefitInquiry_004010X092_hipaa_xlate	270 (Eligibility Coverage or Benefit Inquiry)
X12_271EligibCoverageBenefitInfo_004010X092_hipaa_xlate	271 (Eligibility Coverage or Benefit Information)
X12_276HealthCareClaimStatusRequest_004010X093_hipaa_xlate	276 (Health Care Claim Status Request)
X12_277HealthCareClaimStatusNotification_004010X093_hipaa_xlate	277 (Health Care Claim Status Notification)
X12_278HealthCareServicesReviewInfo_004010X094_hipaa_a1_xlate	278 (Health Care Services Review Information: Request for Review)
X12_278HealthCareServicesReviewInfo_004010X094_hipaa_a3_xlate	278 (Health Care Services Review Information: Response to Request)
X12_820PaymentOrderRemittanceAdvice_004010X061_hipaa_xlate	820 (Payment Order Remittance Advice)
X12_834BenefitEnrollmentandMaint_004010X095_hipaa_xlate	834 (Benefit Enrollment and Maintenance)
X12_835HealthCareClaimPaymentAdvice_004010X091_hipaa_xlate	835 (Health Care Claim Payment Advice)
X12_837HealthCareClaim_004010X098_hipaa_q1_xlate	837 (Health Care Claim: Professional)
X12_837HealthCareClaim_004010X097_hipaa_q2_xlate	837 (Health Care Claim: Dental)
X12_837HealthCareClaim_004010X096_hipaae_q3_xlate	837 (Health Care Claim: Institutional)

May 2000 Files

The May 2000 HIPAA Monk ETDs that are listed in Table 34.

Table 34 HIPAA Monk ETDs (May 2000) provided with e*Xchange for e*Gate

File Name	Transaction
X12_270EligibCoverageBenefitInquiry_004010X092_00_hipaa_xlat	270 (Eligibility Coverage or Benefit Inquiry)
X12_271EligibCoverageBenefitInfo_004010X092_00_hipaa_xlat	271 (Eligibility Coverage or Benefit Information)
X12_276HealthCareClaimStatusRequest_004010X093_00_hipaa_xlat	276 (Health Care Claim Status Request)
X12_277HealthCareClaimStatusNotification_004010X093_00_hipaa_xlat	277 (Health Care Claim Status Notification)

Table 34 HIPAA Monk ETDs (May 2000) provided with e*Xchange for e*Gate (Continued)

File Name	Transaction
X12_278HealthCareServicesReviewInfo_004010X094_00_hipaa_a1_xlat	278 (Health Care Services Review Information: Request for Review)
X12_278HealthCareServicesReviewInfo_004010X094_00_hipaa_a3_xlat	278 (Health Care Services Review Information: Response to Request)
X12_820PaymentOrderRemittanceAdvice_004010X061_00_hipaa_xlat	820 (Payment Order Remittance Advice)
X12_834BenefitEnrollmentandMaint_004010X095_00_hipaa_xlat	834 (Benefit Enrollment and Maintenance)
X12_835HealthCareClaimPaymentAdvice_004010X091_00_hipaa_xlat	835 (Health Care Claim Payment Advice)
X12_837HealthCareClaim_004010X096_00_hipaa_q3_xlat	837 (Health Care Claim: Professional)
X12_837HealthCareClaim_004010X097_00_hipaa_q2_xlat	837 (Health Care Claim: Dental)
X12_837HealthCareClaim_004010X098_00_hipaa_q1_xlat	837 (Health Care Claim: Institutional)

February 2003 Files

The February 2003 HIPAA Monk Addenda ETDs are listed in Table 35.

Table 35 HIPAA Monk Addenda ETDs (February 2003)

File Name	Transaction
X12_270_EligCoveOrBeneInqu_004010X092A1_00_hipaa.ssc	270 (Eligibility Coverage or Benefit Inquiry)
X12_271_EligCoveOrBeneInfo_004010X092A1_00_hipaa.ssc	271 (Eligibility Coverage or Benefit Information)
X12_276_HealCareClaiStatRequ_004010X093A1_00_hipaa.ssc	276 (Health Care Claim Status Request)
X12_277_HealCareClaiStatNoti_004010X093A1_00_hipaa.ssc	277 (Health Care Claim Status Notification)
X12_278_HealCareServReviInfo_004010X094A1_00_hipaaA1.ssc	278 (Health Care Services Review Information: Request for Review)
X12_278_HealCareServReviInfo_004010X094A1_00_hipaaA3.ssc	278 (Health Care Services Review Information: Response to Request)
X12_820_PaymOrdeRemiAdvi_004010X061A1_00_hipaa.ssc	820 (Payment Order Remittance Advice)
X12_834_BeneEnroAndMain_004010X095A1_00_hipaa.ssc	834 (Benefit Enrollment and Maintenance)

Table 35 HIPAA Monk Addenda ETDs (February 2003) (Continued)

File Name	Transaction
X12_835_HealCareClaiPaymAdvi_004010X091A1_00_hipaa.ssc	835 (Health Care Claim Payment Advice)
X12_837_HealCareClai_004010X096A1_00_hipaaQ3.ssc	837 (Health Care Claim: Professional)
X12_837_HealCareClai_004010X097A1_00_hipaaQ2.ssc	837 (Health Care Claim: Dental)
X12_837_HealCareClai_004010X098A1_00_hipaaQ1.ssc	837 (Health Care Claim: Institutional)

A.2 e*Gate Files for HIPAA Transactions

e*Gate provides HIPAA ETD libraries for both HIPAA X12 transactions and HIPAA NCPDP transactions. The May 2000 HIPAA X12 ETDs, available through a software patch, are designed for use with the HIPAA Collaboration Rules of e*Xchange.

X12 HIPAA ETDs

The X12 portion of the HIPAA ETD Library provides Java Event Type Definitions (**.xsc** and **.jar** files) for all standard X12 transactions that have been adopted by HIPAA, as listed in Table 36 and Table 37. These ETDs are stored in the following locations:

- **\<eGate>\server\registry\repository\default\etd\templates\Hipaa_1999**
- **\<eGate>\server\registry\repository\default\etd\templates\Hipaa_2000**

These transactions are based on the October 1997 X12 standard; that is, Version 4, Release 1, Sub-release 0 (004010) (version 4010).

Addenda ETDs are also available through a software patch. Addenda files are stored in a “Hipaa_2003” directory.

Table 36 HIPAA 1999 Java X12 ETD Files

File	Transaction Name
X12_004010X092_99_hipaa270_EligCoveOrBeneInqu	270 (Eligibility Coverage or Benefit Inquiry)
X12_004010X092_99_hipaa271_EligCoveOrBeneInfo	271 (Eligibility Coverage or Benefit Information)
X12_004010X093_99_hipaa276_HealCareClaiStatRequ	276 (Health Care Claim Status Request)
X12_004010X093_99_hipaa277_HealCareClaiStatNoti	277 (Health Care Claim Status Notification)
X12_004010X094_99_hipaaA1_278_HealCareServReviInfo X12_004010X094_99_hipaaA3_278_HealCareServReviInfo	278 (Two versions: Health Care Services Review Information and Request for Review/Response to Request)

Table 36 HIPAA 1999 Java X12 ETD Files

File	Transaction Name
X12_004010X061_99_hipaa820_PaymOrdeAdvi	820 (Payment Order Remittance Advice)
X12_004010X095_99_hipaa834_BeneEnroAndMain	834 (Benefit Enrollment and Maintenance)
X12_004010X091_99_hipaa835_HealCareClaiPaym	835 (Health Care Claim Payment Advice)
X12_004010X098_99_hipaaQ1_837_HealCareClai X12_004010X097_99_hipaaQ2_837_HealCareClai X12_004010X096_99_hipaaQ3_837_HealCareClai	Health Care Claim (three versions: Professional, Dental, and Institutional)

Table 37 HIPAA 2000 Java X12 ETD Files

File	Transaction Name
X12_004010X092_00_hipaa270_EligCoveOrBeneInqu	270 (Eligibility Coverage or Benefit Inquiry)
X12_004010X092_00_hipaa271_EligCoveOrBeneInfo	271 (Eligibility Coverage or Benefit Information)
X12_004010X093_00_hipaa276_HealCareClaiStatRequ	276 (Health Care Claim Status Request)
X12_004010X093_00_hipaa277_HealCareClaiStatNoti	277 (Health Care Claim Status Notification)
X12_004010X094_00_hipaaA1_278_HealCareServReviInfo X12_004010X094_00_hipaaA3_278_HealCareServReviInfo	278 (Two versions: Health Care Services Review Information and Request for Review/Response to Request)
X12_004010X061_00_hipaa820_PaymOrdeAdvi	820 (Payment Order Remittance Advice)
X12_004010X095_00_hipaa834_BeneEnroAndMain	834 (Benefit Enrollment and Maintenance)
X12_004010X091_00_hipaa835_HealCareClaiPaym	835 (Health Care Claim Payment Advice)
X12_004010X098_00_hipaaQ1_837_HealCareClai X12_004010X097_00_hipaaQ2_837_HealCareClai X12_004010X096_00_hipaaQ3_837_HealCareClai	Health Care Claim (three versions: Professional, Dental, and Institutional)
X12ValidationResult	Specialized validation output ETD containing the error message structure

NCPDP HIPAA ETDs

The NCPDP portion of the HIPAA ETD Library provides request and response transactions for all the HIPAA-approved NCPDP transaction codes, as listed in Table 38. These ETDs are stored in:

- **\<eGate>\server\registry\repository\default\etd\templates\NCPDP\Telecom_5_1**

Table 38 NCPDP-HIPAA ETD Files for Telecom 5.1

Code	Transaction Name
NCPDP_T51_E1_REQ_EligVeriRequ NCPDP_T51_E1_RESP_EligResp	E1 (Eligibility Verification)
NCPDP_T51_B1_REQ_BillRequ NCPDP_T51_B1_RESP_BillResp	B1 (Billing)
NCPDP_T51_B2_REQ_ReveRequ NCPDP_T51_B2_RESP_ReveResp	B2 (Reversal)
NCPDP_T51_B3_REQ_RebiRequ NCPDP_T51_B3_RESP_RebiResp	B3 (Rebill)
NCPDP_T51_P1_REQ_PrioAuthRequAndBillRequ NCPDP_T51_P1_RESP_PrioAuthReqeAndBillResp	P1 (Prior Authorization Request and Billing)
NCPDP_T51_P2_REQ_PrioAuthReveRequ NCPDP_T51_P2_RESP_PrioAuthReveResp	P2 (Prior Authorization Reversal)
NCPDP_T51_P3_REQ_PrioAuthInquRequ NCPDP_T51_P3_RESP_PrioAuthInquResp	P3 (Prior Authorization Inquiry)
NCPDP_T51_P4_REQ_PrioAuthRequOnlyRequ NCPDP_T51_P4_RESP_PrioAuthRequOnlyResp	P4 (Prior Authorization Request Only)
NCPDP_T51_N1_REQ_InfoRepoRequ NCPDP_T51_N1_RESP_InfoRepoResp	N1 (Information Reporting)
NCPDP_T51_N2_REQ_InfoRepoReveRequ NCPDP_T51_N2_RESP_InfoRepoReveResp	N2 (Information Reporting Reversal)
NCPDP_T51_N3_REQ_InfoRepoRebiRequ NCPDP_T51_N3_RESP_InfoRepoRebiResp	N3 (Information Reporting Rebill)
NCPDP_T51_C1_REQ_ContSubsRepoRequ NCPDP_T51_C1_RESP_ContSubsRepoResp	C1 (Controlled Substance Reporting)
NCPDP_T51_C2_REQ_ContSubsRepoReveRequ NCPDP_T51_C2_RESP_ContSubsRepoReveResp	C2 (Controlled Substance Reporting Reversal)
NCPDP_T51_C3_REQ_ContSubsRepoRebiRequ NCPDP_T51_C3_RESP_ContSubsRepoRebiResp	C3 (Controlled Substance Reporting Rebill)

Note: *Because of a limitation in NCPDP, the E1 (Eligibility Verification) Request and Response messages are not associated in Message Tracking (unless you perform customization to circumvent this problem). Because of this limitation, you might see timeout errors on outbound Request messages when the responses have already been received.*

NCPDP Batch 1.1 files for HIPAA are stored in:

- **\<eGate>\server\registry\repository\default\etd\templates\NCPDP\Batch_1_1**

The Batch files are named **NCPDP_Batch11**, and include a Monk ETD (**.ssc**), a Java ETD (**.xsc**), and an executable **.jar** file.

NCPDP Batch 1.0 files for HIPAA are supplied only for backwards compatibility. Batch 1.1 is now the mandated standard for HIPAA transactions. The Batch 1.0 files are stored in:

- **\<eGate>\server\registry\repository\default\etd\templates\NCPDP\Batch_1_0**

The Batch files are named **NCPDP_Batch_1_0**, and include a Monk ETD (**.ssc**), a Java ETD (**.xsc**), and an executable **.jar** file.

Appendix B

ASC X12 Overview

This appendix provides an overview of the X12 standard, including:

- An overview of ASC X12, including the structure of an X12 envelope, data elements, and syntax.
- An explanation of how to use the generic message structures provided as an add-on to e*Gate to help you quickly create the structures you need for various X12 transactions.

For specific information on HIPAA, refer to **Chapter 2**, **"HIPAA Overview" on page 12**.

B.1 Introduction to X12

The following sections provide an introduction to X12.

B.1.1. What Is ASC X12?

ASC X12 is an EDI (electronic data interchange) standard, developed for the electronic exchange of machine-readable information between businesses.

The Accredited Standards Committee (ASC) X12 was chartered by the American National Standards Institute (ANSI) in 1979 to develop uniform standards for interindustry electronic interchange of business transactions—electronic data interchange (EDI). The result was the X12 standard.

The ASC X12 body develops, maintains, interprets, and promotes the proper use of the ASC X12 standard. Data Interchange Standards Association (DISA) publishes the ASC X12 standard and the UN/EDIFACT standard. The ASC X12 body comes together three times a year to develop and maintain EDI standards. Its main objective is to develop standards to facilitate electronic interchange relating to business transactions such as order placement and processing, shipping and receiving information, invoicing, and payment information.

The ASC X12 EDI standard is used for EDI within the United States. UN/EDIFACT is broadly used in Europe and other parts of the world.

X12 was originally intended to handle large batches of transactions. However, it has been extended to encompass real-time processing (transactions sent individually as they are ready to send, rather than held for batching) for some healthcare transactions to accommodate the healthcare industry.

B.1.2. What Is a Message Structure?

The term *message structure* (also called a transaction set structure) refers to the way in which data elements are organized and related to each other for a particular EDI transaction.

In e*Gate, a message structure is called an Event Type Definition (ETD). Each message structure (ETD) consists of the following:

- Physical hierarchy

  The predefined way in which envelopes, segments, and data elements are organized to describe a particular X12 EDI transaction.

- Delimiters

  The specific predefined characters that are used to mark the beginning and end of envelopes, segments, and data elements.

- Properties

  The characteristics of a data element, such as the length of each element, default values, and indicators that specify attributes of a data element—for example, whether it is required, optional, or repeating.

The transaction set structure of a claim that is sent from a payer to a provider defines the header, trailer, segments, and data elements required by claim transactions. Installation of X12 templates for a specific version includes transaction set structures for each of the transactions available in that version.

e*Xchange Partner Manager uses e*Gate Event Type Definitions, which are based on the X12 message structures, to verify that the data in the messages coming in or going out is in the correct format. There is a message structure for each X12 transaction.

The list of transactions provided is different for each version of X12, and for each customized implementation. This book addresses the transactions covered by the May 1999 and May 2000 implementations of the HIPAA standard.

B.2 Components of an X12 Envelope

X12 messages are all ASCII text, with the exception of the BIN segment which is binary.

Each X12 message is made up of a combination of the following elements:

- Data elements
- Segments
- Loops

Elements are separated by delimiters.

More information on each of these is provided below.

B.2.1. Data Elements

The data element is the smallest named unit of information in the ASC X12 standard. Data elements can be broken down into two types. The distinction between the two is strictly a matter of how they are used. The two types are:

- Simple

  If a data element occurs in a segment outside the defined boundaries of a composite data structure it is called a simple data element.

- Composite

  If a data element occurs as an ordinally positioned member of a composite data structure it is called a composite data element.

Each data element has a unique reference number; it also has a name, description, data type, and minimum and maximum length.

B.2.2. Segments

A segment is a logical grouping of data elements. In X12, the same segment can be used for different purposes. This means that an element's meaning can change based on the segment. For example:

- The NM1 segment is for *any* name (patient, provider, organization, doctor)
- The DTP segment is for *any* date (date of birth, discharge date, coverage period)

For more information on the X12 enveloping segments, refer to **"Structure of an X12 Envelope" on page 109**.

B.2.3. Loops

Loops are sets of repeating ordered segments. In X12 you can locate elements by specifying:

- The transaction set (for example, 270)
- The loop (for example, "loop 1000" or "info. receiver loop")
- The occurrence of the loop
- The segment (for example, BGN)
- The element number (for example, 01)
- The occurrence of the segment (if it is a repeating segment)

B.2.4. Delimiters

In an X12 message, the various delimiters act as syntax, dividing up the different elements of a message. The delimiters used in the message are defined in the interchange control header, the outermost layer enveloping the message. For this reason, there is flexibility in the delimiters that are used.

No suggested delimiters are recommended as part of the X12 standards, but the industry-specific implementation guides do have recommended delimiters.

The default delimiters used by the SeeBeyond HIPAA ETD Library are the same as those recommended by the industry-specific implementation guides. These delimiters are shown in Table 39.

Table 39 Default Delimiters in X12 ETD Library

Type of Delimiter	Default Value
Segment terminator	~ (tilde)
Data element separator	* (asterisk)
Subelement (component) separator	: (colon)

Within e*Xchange Partner Manager, delimiters are specified at the outer envelope level. The delimiters you define are applied to all transaction types.

If you do not specify delimiters, e*Xchange expects the default delimiters as shown in Table 39.

Note: *It is important to note that errors could result if the transmitted data itself includes any of the characters that have been defined as delimiters. Specifically, the existence of asterisks within transmitted application data is a known issue in X12, and can cause problems with translation.*

B.3 Structure of an X12 Envelope

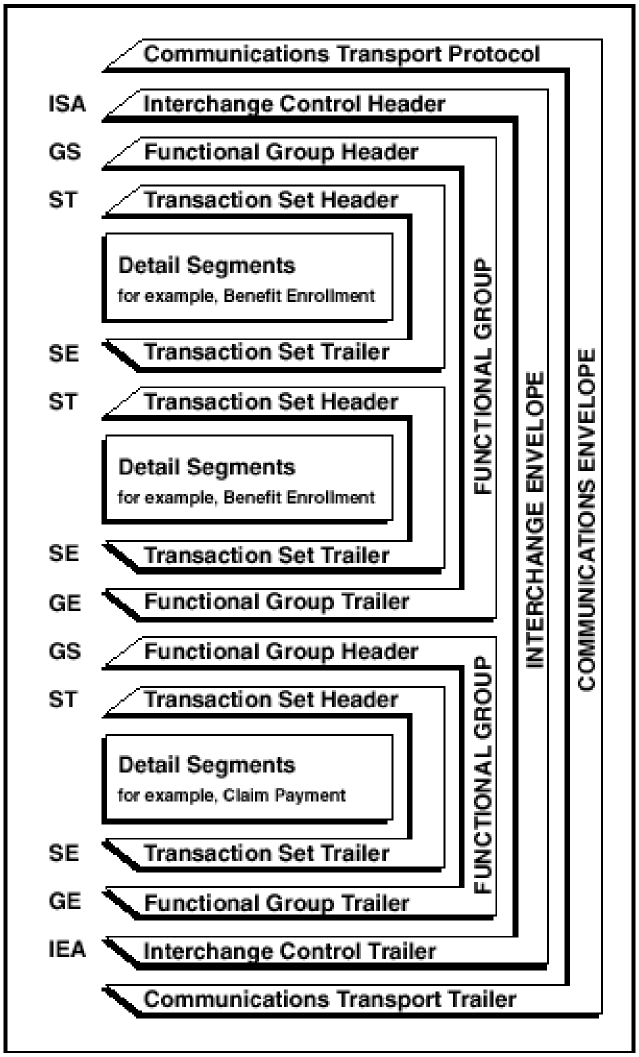
The rules applying to the structure of an X12 envelope are very strict, to ensure the integrity of the data and the efficiency of the information exchange.

The actual X12 message structure has three main levels. From the highest to the lowest they are:

- Interchange Envelope
- Functional Group
- Transaction Set

A schematic of X12 envelopes is shown in Figure 29. Each of these levels is explained in more detail in the following sections.

Figure 29 X12 Envelope Schematic



Note: *The above schematic is from Appendix B of an ASC X12 Implementation Guide.*

Figure 30 shows the standard segment table for an X12 997 (Functional Acknowledgment) as it appears in the X12 standard and in most industry-specific implementation guides.

Figure 30 X12 997 Segment Table

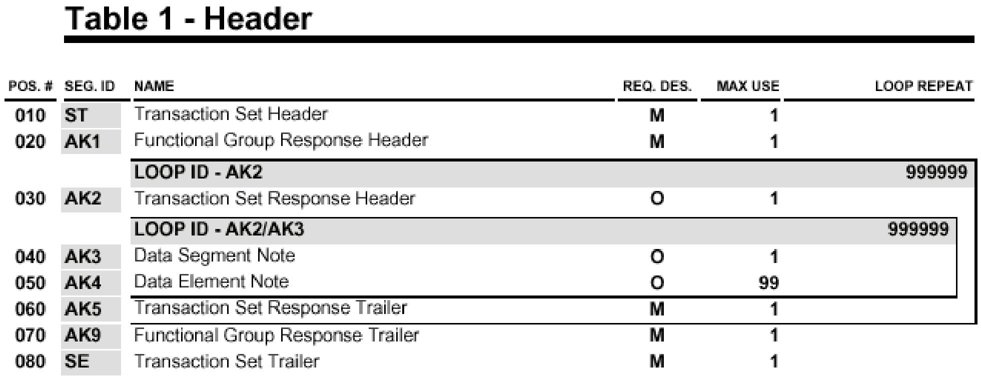


Table 1 - Header

POS. #	SEG. ID	NAME	REQ. DES.	MAX USE	LOOP REPEAT
010	ST	Transaction Set Header	M	1	
020	AK1	Functional Group Response Header	M	1	
		LOOP ID - AK2			999999
030	AK2	Transaction Set Response Header	O	1	
		LOOP ID - AK2/AK3			999999
040	AK3	Data Segment Note	O	1	
050	AK4	Data Element Note	O	99	
060	AK5	Transaction Set Response Trailer	M	1	
070	AK9	Functional Group Response Trailer	M	1	
080	SE	Transaction Set Trailer	M	1	

Figure 31 shows the same transaction as viewed in the Monk ETD Editor in e*Gate.

Figure 31 X12 997 Viewed in Monk ETD Editor

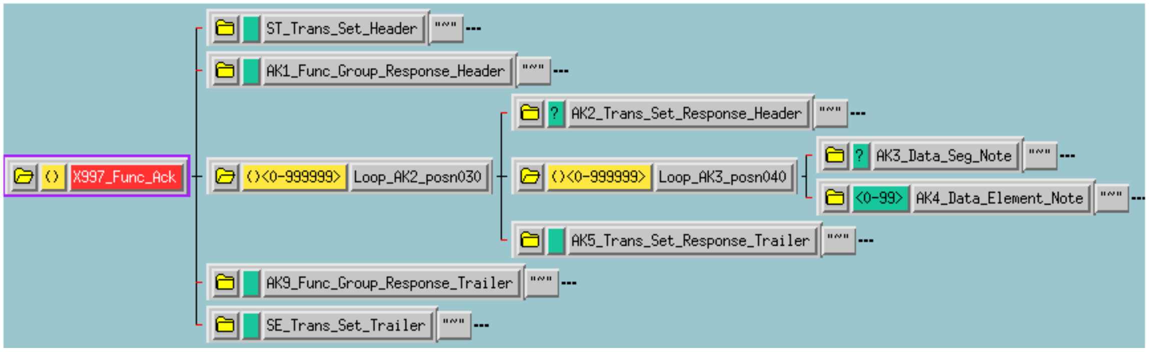
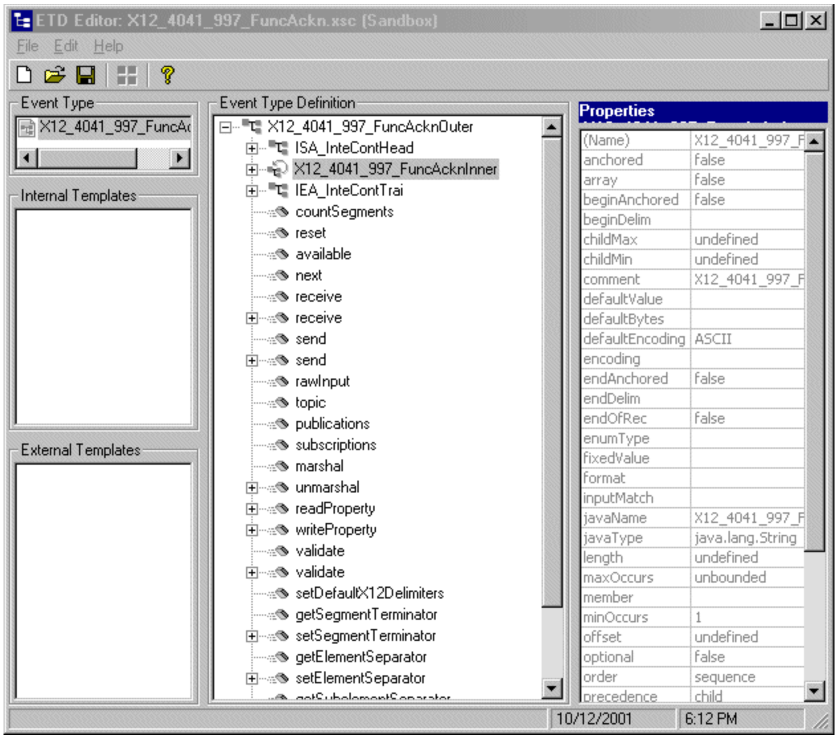


Figure 32 shows the same transaction as viewed in the Java ETD Editor.

Figure 32 X12 997 Viewed in Java ETD Editor



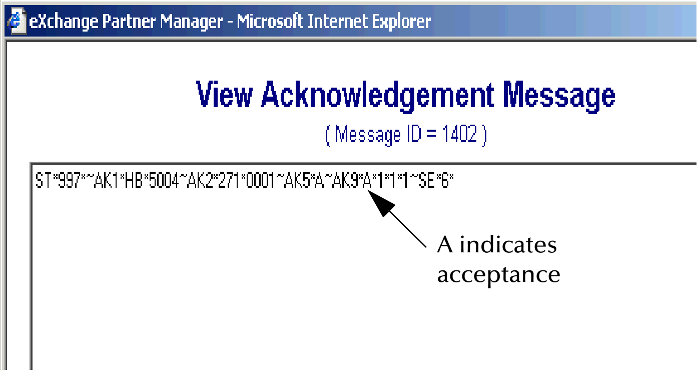
```
X12_4041_997_FuncAcknOuter
  ISA_InteContHead
  X12_4041_997_FuncAcknInner
  IEA_InteContTrai
  countSegments
  reset
  available
  next
  receive
  receive
  send
  send
  rawInput
  topic
  publications
  subscriptions
  marshal
  unmarshal
  readProperty
  writeProperty
  validate
  validate
  setDefaultX12Delimiters
  getSegmentTerminator
  setSegmentTerminator
  getElementSeparator
  setElementSeparator
```

(Name)	X12_4041_997_F
anchored	false
array	false
beginAnchored	false
beginDelim	
childMax	undefined
childMin	undefined
comment	X12_4041_997_F
defaultValue	
defaultBytes	
defaultEncoding	ASCII
encoding	
endAnchored	false
endDelim	
endOfRec	false
enumType	
fixedValue	
format	
inputMatch	
javaName	X12_4041_997_F
javaType	java.lang.String
length	undefined
maxOccurs	unbounded
member	
minOccurs	1
offset	undefined
optional	false
order	sequence
precedence	child

Figure 33 shows an example of a positive 997 acknowledgment, as viewed in the Message Tracking window in the e*Xchange Partner Manager.

Note: *The message shown in Figure 33 was part of a batch and therefore includes only the ST/SE (transaction set) envelope layer.*

Figure 33 Positive 997 (Functional Acknowledgment) Viewed in Message Tracking


eXchange Partner Manager - Microsoft Internet Explorer
View Acknowledgement Message
(Message ID = 1402)

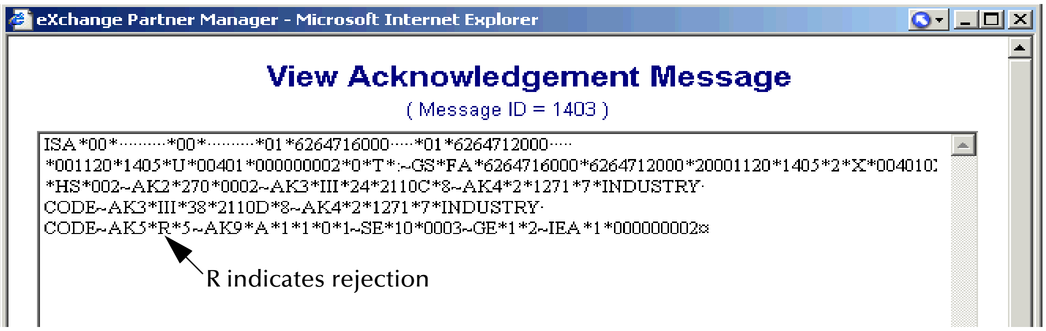
```
ST*997*~AK1*HB*5004~AK2*271*0001~AK5*A~AK9*A*1*1*1~SE*6*
```

A indicates acceptance

Figure 34 shows an example of a negative 997 acknowledgment, as viewed in the Message Tracking window in the e*Xchange Partner Manager.

Note: *The message shown in Figure 34 is an interactive message and therefore includes all enveloping layers.*

Figure 34 Negative 997 (Functional Acknowledgment) Viewed in Message Tracking



View Acknowledgement Message

(Message ID = 1403)

```
ISA*00*··········*00*··········*01*6264716000·····*01*6264712000·····
*001120*1405*U*00401*000000002*0*T*:~GS*FA*6264716000*6264712000*20001120*1405*2*X*004010
*HS*002~AK2*270*0002~AK3*III*24*2110C*8~AK4*2*1271*7*INDUSTRY·
CODE~AK3*III*38*2110D*8~AK4*2*1271*7*INDUSTRY·
CODE~AK5*R*5~AK9*A*1*1*0*1~SE*10*0003~GE*1*2~IEA*1*000000002¤
```

R indicates rejection

B.3.1. Transaction Set (ST/SE)

Each transaction set (also called a transaction) contains three things:

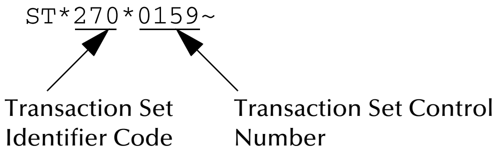
- A transaction set header
- A transaction set trailer
- A single message, enveloped within the header and footer

The transaction has a three-digit code, a text title, and a two-letter code; for example, **997, Functional Acknowledgment (FA)**.

The transaction is comprised of logically related pieces of information, grouped into units called segments. For example, one segment used in the transaction set might convey the address: city, state, ZIP code, and other geographical information. A transaction set can contain multiple segments. For example, the address segment could be used repeatedly to convey multiple sets of address information.

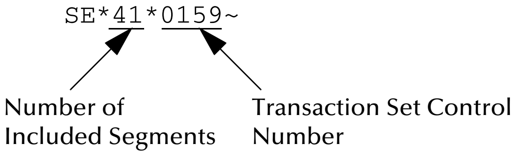
The X12 standard defines the sequence of segments in the transaction set and also the sequence of elements within each segment. The relationship between segments and elements could be compared to the relationship between records and fields in a database environment.

Figure 35 Example of a Transaction Set Header (ST)



```
ST*270*0159~
```

Figure 36 Example of a Transaction Set Trailer (SE)



```
SE*41*0159~
```

B.3.2. Functional Group (GS/GE)

A functional group is comprised of one or more transaction sets, all of the same type, that can be batched together in one transmission. The functional group is defined by the header and trailer; the Functional Group Header (GS) appears at the beginning, and the Functional Group Trailer (GE) appears at the end. Many transaction sets can be included in the functional group, but all transactions must be of the same type.

Within the functional group, each transaction set is assigned a functional identifier code, which is the first data element of the header segment. The transaction sets that comprise a specific functional group are identified by this functional ID code.

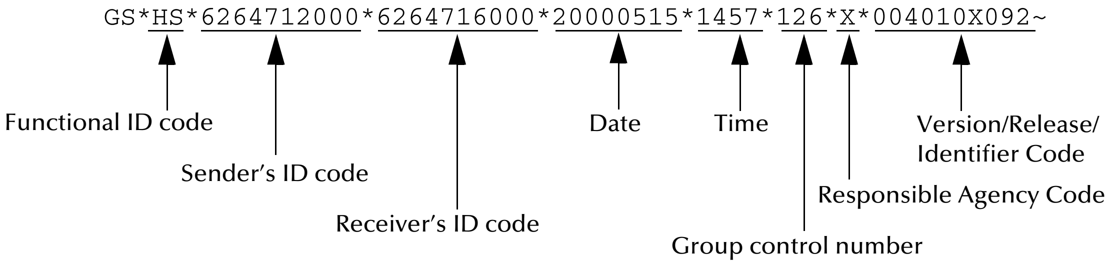
The functional group header (GS) segment contains the following information:

- Functional ID code (the two-letter transaction code; for example, PO for an 850 Purchase Order, HS for a 270 Eligibility, Coverage, or Benefit Inquiry) to indicate the type of transaction in the functional group
- Identification of sender and receiver
- Control information (the functional group control numbers in the header and trailer segments must be identical)
- Date and time

The functional group trailer (GE) segment contains the following information:

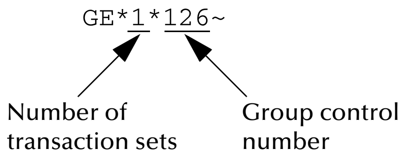
- Number of transaction sets included
- Group control number (originated and maintained by the sender)

Figure 37 Example of a Functional Group Header (GS)



```
GS*HS*6264712000*6264716000*20000515*1457*126*X*004010X092~
```

Figure 38 Example of a Functional Group Trailer (GE)



```
GE*1*126~
```

B.3.3. Interchange Envelope (ISA/IEA)

The interchange envelope is the wrapper for all the data to be sent in one batch. It can contain multiple functional groups. This means that transactions of different types can be included in the interchange envelope, with each type of transaction stored in a separate functional group.

The interchange envelope is defined by the header and trailer; the Interchange Control Header (ISA) appears at the beginning, and the Interchange Control Trailer (IEA) appears at the end.

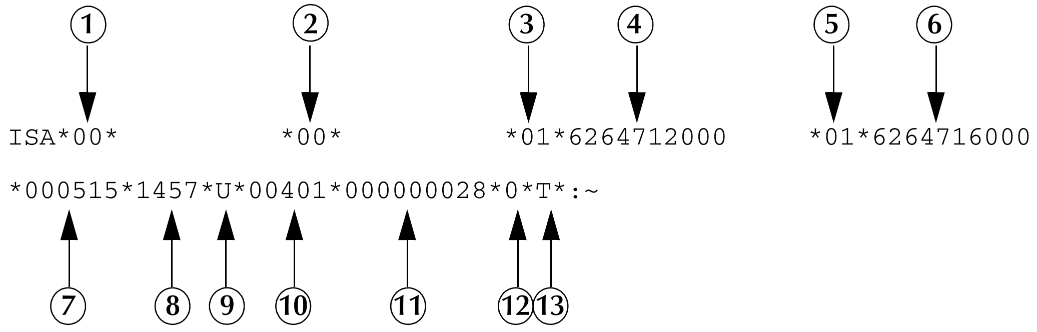
As well as enveloping one or more functional groups, the interchange header and trailer segments include the following information:

- Data element separators and data segment terminator
- Identification of sender and receiver
- Control information (used to verify that the message was correctly received)
- Authorization and security information, if applicable

The sequence of information that is transmitted is as follows:

- Interchange header
- Optional interchange-related control segments
- Actual message information, grouped by transaction type into functional groups
- Interchange trailer

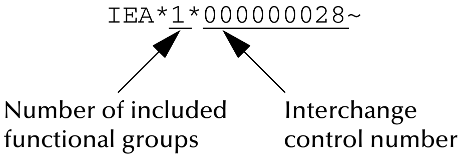
Figure 39 Example of an Interchange Header (ISA)



Interchange Header Segments from Figure 39:

1 Authorization Information Qualifier
2 Security Information Qualifier
3 Interchange ID Qualifier
4 Interchange Sender ID
5 Interchange ID Qualifier
6 Interchange Receiver ID
7 Date
8 Time
9 Repetition Separator
10Interchange Control Version Number
11Interchange Control Number
12Acknowledgment Requested
13Usage Indicator

Figure 40 Example of an Interchange Trailer (IEA)



```
IEA*1*000000028~
```

Number of included functional groups
Interchange control number

B.3.4. Control Numbers

The X12 standard includes a control number for each enveloping layer:

- ISA13—Interchange Control Number
- GS06—Functional Group Control Number
- ST02—Transaction Set Control Number

The control numbers act as identifiers, useful in message identification and tracking. The e*Xchange Partner Manager includes a flag for each control number, so you can choose not to assign control numbers to outgoing messages and not to store control numbers on incoming messages.

ISA13 (Interchange Control Number)

The ISA13 is assigned by the message sender. It must be unique for each interchange. This is the primary means used by e*Xchange Partner Manager to identify an individual interchange.

GS06 (Functional Group Control Number)

The GS06 is assigned by the sender. It must be unique within the Functional Group assigned by the originator for a transaction set.

Note: *The Functional Group control number GS06 in the header must be identical to the same data element in the associated Functional Group trailer, GE02.*

ST02 (Transaction Set Control Number)

The ST02 is assigned by the sender, and is stored in the transaction set header. It must be unique within the Functional Group.

Note: *The control number in ST02 must be identical with the SE02 element in the transaction set trailer, and must be unique within a Functional Group (GS-GE). Once you have defined a value for ST02, e*Xchange Partner Manager uses the same value for SE02.*

B.4 Acknowledgment Types

X12 includes two types of acknowledgment, the TA1 Interchange Acknowledgment and the 997 Functional Acknowledgment.

B.4.1. TA1, Interchange Acknowledgment

The TA1 acknowledgment verifies the interchange envelopes only. The TA1 is a single segment and is unique in the sense that this single segment is transmitted without the GS/GE envelope structures. A TA1 acknowledgment can be included in an interchange with other functional groups and transactions.

B.4.2. 997, Functional Acknowledgment

The 997 includes much more information than the TA1. The 997 was designed to allow trading partners to establish a comprehensive control function as part of the business exchange process.

There is a one-to-one correspondence between a 997 and a functional group. Segments within the 997 identify whether the functional group was accepted or rejected. Data elements that are incorrect can also be identified.

Many EDI implementations have incorporated the acknowledgment process into all of their electronic communications. Typically, the 997 is used as a functional acknowledgment to a functional group that was transmitted previously.

The 997 is the acknowledgment transaction recommended by ASC X12.

The acknowledgment of the receipt of a payment order is an important issue. Most corporate originators want to receive at least a Functional Acknowledgment (997) from the beneficiary of the payment. The 997 is created using the data about the identity and address of the originator found in the ISA and/or GS segments.

Some users argue that the 997 should be used only as a point-to-point acknowledgment and that another transaction set, such as the Application Advice (824) should be used as the end-to-end acknowledgment.

B.4.3. Application Acknowledgments

Application acknowledgments are responses sent from the destination system back to the originating system, acknowledging that the transaction has been successfully or unsuccessfully completed.

Application advice (824) is a generic application acknowledgment that can be used in response to any X12 transaction. However, it has to be set up as a response transaction. Collaborations have to be written outside of e*Xchange to populate the appropriate segments in 824-based or business rules; only TA1 and 997 transactions are sent out automatically by e*Xchange.

Other types of responses from the destination system to the originating system, which may also be considered application acknowledgments, are responses to query transactions—for example, the Eligibility Response (271) which is a response to the Eligibility Inquiry (270).

B.5 Key Parts of EDI Processing Logic

The five key parts of EDI processing logic are listed in Table 40. The table describes each term, and lists its language analogy along with its associated e*Gate Collaboration scripts.

Table 40 Key Parts of EDI Processing

Term	Description	Language Analogy	e*Gate Collaboration Scripts
structures	format, segments, loops	syntax	ETD files or structures
validations	data contents “edit” rules	semantics	validation scripts
translations (also called mapping)	reformatting or conversion	translation	translation scripts
enveloping	header and trailer segments	envelopes	part of translation
acks	acknowledgments	return receipt	e*Way scripts

e*Gate uses the structures, validations, translations, enveloping, and acknowledgments listed below to support HIPAA.

B.5.1. Structures

The Event Type Definition library for HIPAA includes pre-built ETDs for all supported HIPAA versions.

B.5.2. Validations, Translations, Enveloping, Acknowledgments

e*Gate does not include any pre-built validations, transformations, or acknowledgments. These scripts can be built in either the Monk or Java versions of the Collaboration Rules Editor graphical user interface (GUI). These GUIs provide a user-friendly drag-and-drop front end for creating Monk or Java scripts. For HIPAA, e*Gate provides translations in Monk that will add the enveloping information to the HIPAA message.

Installation of the e*Xchange Partner Manager includes a set of custom Monk validations for HIPAA transactions. It also provides acknowledgments, as described in **“X12 Acknowledgments in e*Xchange Partner Manager” on page 119**.

Note: *In e*Gate, translations are called Collaborations.*

B.5.3. X12 Acknowledgments in e*Xchange Partner Manager

All X12 acknowledgments are automatically handled in e*Xchange Partner Manager. This allows you to configure the transaction set, if any, that is expected as the acknowledgment. e*Xchange Partner Manager can automatically create TA1 and 997 acknowledgments of X12. 824 and proprietary advice messages must be written as part of the implementation.

For more information on X12 acknowledgment types, refer to **"Acknowledgment Types" on page 117**.

HIPAA message validations performed by the Faciledi appliance from Claredi Corporation working in conjunction with e*Xchange Partner Manager support the following for X12:

- Transmission-level duplicate checking
- Unique ID assignment through internal or validation processes
- Journal file Error copying to the Error Queue

For more information, see "Configuring System Default Settings" on page 88

B.5.4. Trading Partner Agreements

There are three levels of information that guide the final format of a specific transaction. These three levels are:

- The ASC X12 standard

  ASC X12 publishes a standard structure for each X12 transaction.

- Industry-specific Implementation Guides

  Specific industries publish Implementation Guides customized for that industry. Normally, these are provided as recommendations only. However, in certain cases, it is extremely important to follow these guidelines. Specifically, since HIPAA regulations are law, it is important to follow the guidelines for these transactions closely.

- Trading Partner Agreements

  It is normal for trading partners to have individual agreements that supplement the standard guides. The specific processing of the transactions in each trading partner's individual system might vary between sites. Because of this, additional documentation that provides information about the differences is helpful to the site's trading partners and simplifies implementation. For example, while a certain code might be valid in an implementation guide, a specific trading partner might not use that code in transactions. It would be important to include that information in a trading partner agreement.

B.6 Additional Information

For more information on X12, visit the following Web sites:

- For X12 standard:

  http://www.disa.org
- For Implementation Guides: Washington Publishing Company at

  http://www.wpc-edi.com

Note: *This information is correct at the time of going to press; however, SeeBeyond has no control over these sites. If you find the links are no longer correct, use a search engine to search for **X12**.*

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