SeeBeyond ICAN Suite

eXchange Integrator User's Guide

Release 5.0.3

SEEBEYOND®

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Chapter 1

Introduction

This chapter introduces you to this guide, its general purpose and scope, and its organization. It also provides sources of related documentation and information.

In this chapter

1.1 Overview

The User's Guide provides instructions and background information for all users of the eXchange Integrator application. This guide is designed for managers, system administrators, and others who use eXchange Integrator.

The purpose of this guide is to help you do the following:

- Understand the nature of eXchange.
- Understand the function of eXchange.
- Understand the relationship of eXchange to other components of the SeeBeyond Integrated Composite Application Network (ICAN) Suite.
- Learn about the eXchange components and editors and how to use them in your environment.

1.2 Contents of This Guide

This guide is arranged as follows:

- Chapter 1, **"Introduction"** provides an overview of this document's purpose, contents, writing conventions, and supported documents.
- Chapter 2, **"Overview"** discusses general features and architecture of eXchange.
- Chapter 3, **"Installing eXchange"** provides step-by-step instructions for installing the eXchange product and setting it up for use.
- Chapter 5, **"Using eXchange in Enterprise Designer"** provides step-by-step procedures for working with eXchange at design time and deploying projects.
- Chapter 6, **"Designing B2B Protocols"** provides step-by-step procedures for designing and deploying B2B protocols using eXchange Protocol Designer.
- Chapter 7, **"Exception Handling"** explains the use of B2B protocols for handling exceptions.
- Chapter 8, **"Using eXchange Web Facilities"** provides step-by-step procedures for working with eXchange's Web-based GUIs—Partner Manager (ePM) and Message Tracking—as well as using Monitor for B2B protocols.
- Chapter 9, **"Implementation Scenario: AS2"** provides step-by-step for creating implementation scenarios that provide a sample of how eXchange can be used to achieve B2B solutions.
- Appendix A, **"Method Palette"** lists and describes the tools available to you in eXchange Protocol Designer.

1.3 Writing Conventions

The following writing conventions are observed throughout this document.

Table 1 Writing Conventions

Text	Convention	Example
Names of buttons, files, icons, parameters, variables, methods, menus, and objects	**Bold** text	▪ Click **OK** to save and close. ▪ From the **File** menu, select **Exit**. ▪ Select the **logicalhost.exe** file. ▪ Enter the **timeout** value. ▪ Use the **getClassName()** method. ▪ Configure the **Inbound** File eWay.
Command-line arguments, code samples	`Fixed` font. Variables are shown in ***bold italic***.	`bootstrap -p` ***password***
Hypertext links	**Blue** text	For more information, see **"Writing Conventions" on page 15**.

Additional Conventions

Windows Systems

For the purposes of this guide, references to "Windows" will apply to Microsoft Windows Server 2003, Windows XP, and Windows 2000.

1.4 Supporting Documents

For more information about eXchange and the ICAN Suite, refer to the following:

Title	Filename
SeeBeyond ICAN Suite Primer	Primer.pdf
eGate Integrator Release Notes	eGate_Release_Notes.pdf
eGate Tutorial	eGate_Tutorial.pdf
eGate Integrator Installation Guide	eGate_Install_Guide.pdf
eGate User's Guide	eGate_User_Guide.pdf
eGate Integrator JMS Reference Guide	eGate_JMS_Reference.pdf
Oracle eWay Intelligent Adapter User's Guide	Oracle_eWay.pdf
SeeBeyond ICAN Suite Deployment Guide	Deployment_Guide.pdf
Readme for ICAN 5.0.3	Readme.txt

1.5 Online Documents

The documentation for the SeeBeyond ICAN Suite is distributed as a collection of online documents. These documents are viewable with the Acrobat Reader application from Adobe Systems. Acrobat Reader can be downloaded from:

http://www.adobe.com

1.6 The SeeBeyond Web Site

The SeeBeyond Web site is your best source for up-to-the-minute product news and technical support information. The site's URL is:

http://www.seebeyond.com

Chapter 2

Overview

This chapter provides a general overview of eXchange and its place in the ICAN Suite, including system descriptions, general operation, and basic features.

In this chapter

2.1 SeeBeyond Integrated Composite Application Network

Businesses face tremendous challenges in managing dynamic partner relationships and the many processes that control inventory, absorb shifting transaction volumes, and help to transform raw data into capital. Among other things, organizations and their trading partners must manage disparate component applications and align proprietary software requirements while conforming to common data exchange and security standards.

The SeeBeyond Integrated Composite Application Network (ICAN) Suite merges traditional Enterprise Application Integration (eAI) and Business-to-Business (B2B) interactions into a unified eBusiness infrastructure that connects, integrates, and optimizes data flow across the extended enterprise for customers, suppliers, and partners alike.

ICAN enables you to:

- Leverage your existing technology and applications.
- Create an application consisting of component applications that are managed by your organization for exchanging messages with your trading partners.
- Rapidly execute business strategies.
- Create and manage virtual organizations across the entire value chain.
- Rapidly implement industry-standard business protocols.
- Quickly and easily establish new business partners, or update existing ones.

- Secure transmissions sent through the public domain.

The ICAN Suite also provides:

- Extensive back-office connectivity.
- Powerful data transformation and mapping.
- Content-based routing.
- Unparalleled scalability based on a fully distributed architecture.

2.1.1. ICAN Suite Components

The ICAN Suite includes eGate Integrator components, together with servers and business integration applications.

Projects

SeeBeyond ICAN Suite components are used in *projects*. A project represents a logical solution for a business problem.

Environments

Project components are hosted by a collection of physical resources and their configurations, called an *environment*.

eGate Integrator Components

eGate Integrator ("eGate") is an Enterprise Application Integration (eAI) platform that runs on a distributed and open architecture. Depending on the communications protocols and adapters you choose, eGate can communicate with and link multiple applications and databases across a variety of operating systems.

Enterprise Designer

Enterprise Designer is the primary application for configuring eGate to create Projects. It includes subsidiary applications such as a Connectivity Map Editor and Collaborations that you use to develop Projects.

eGate Enterprise Manager

eGate Enterprise Manager is a client-side web application that communicates with the Integration Server and is used to manage service status (stopped, running, starting, or stopping). Enterprise Manager generates "alert," "event" and "trace" notifications.

Enterprise Manager also includes the JMS Administrator, which enables you to manage messages for both the SeeBeyond Message Server and the Nonstop Server for Java Message Service (NSJMS) and WebSphereMQ. With JMS Administrator, you can add, delete, refresh, connect to, or disconnect from message servers. You can also bind objects and show bindings.

Diagnostic tools

Diagnostic tools such as Impact Analyzer and Version Control are applications accessed through Enterprise Designer that can be used to examine individual Project components.

Servers

Servers handle back-end processing and storage of various kinds for ICAN Suite components.

SeeBeyond Integration Server

The SeeBeyond Integration Server is a J2EE-compliant software platform that provides application server features such as transaction services, persistence, load balancing, and external connectivity. Integration Server houses the business logic container used to run Collaborations, which are encoded business rules and the information that enables them to interact with other components.

SeeBeyond JMS IQ Manager

The message server is a JMS-compliant, guaranteed delivery, store, forwarding, and queueing service.

Business Integration Applications

Business integration applications extend the ICAN functionality provided by eGate.

eWay Intelligent Adapters

eWay Intelligent Adapters (“eWays”) connect eGate with external applications, message servers, and databases . When integrating different systems, the appropriate eWay on each end of the route provides the adaptation necessary for seamless flow of data.

eXchange Integrator

eXchange Integrator (“eXchange”) provides a library of prebuilt B2B protocol processes for industry-standard protocols such as AS2 and ebXML. It also provides a Web-based trading partner configuration and management solution for automating and securely managing business partner relationships for real-time interaction between the enterprise and its partners, suppliers, and customers.

eTL Integrator

eXtract Transform and Load Integrator (“eTL”) is an integrated Collaboration editor used to perform high-volume, high-speed extractions, transformations, and loads, primarily from databases and flat files in tabular format. eTL Collaborations are deployed through eGate’s Enterprise Designer.

eInsight Business Process Manager

eInsight Business Process Manager (“eInsight”) facilitates the automation and administration of business process flow across business activities. Real-time graphical modeling and monitoring enables users to assess the state of a business process instance and identify any bottlenecks in that process.

eInsight Enterprise Service Bus

eInsight Enterprise Service Bus ("eInsightESB") facilitates the automation and administration of business process flow across Web services (services written in the WSDL format of XML) to the exclusion of all other types of objects. eInsight ESB does not recognize eWays other than the SOAP (Simple Object Access Protocol) eWay.

eVision Studio

eVision Studio ("eVision") is SeeBeyond's Web application development product. eVision applications enable users to interact with eInsight activities through the ePortal Composer framework. eVision applications also enable users to send data to or receive data from eGate.

eView Studio

eView Studio ("eView") is a plug-in for eGate, and an application-building tool that enables you to design, configure, and create a master index for uniquely identifying and cross-referencing the business objects (customers, vendors, members, hardware parts, and so on) stored in your system databases. Using eView, you can define the structure of your business objects and the logic that determines how business object data is updated, standardized, weighted, and matched in the master index database.

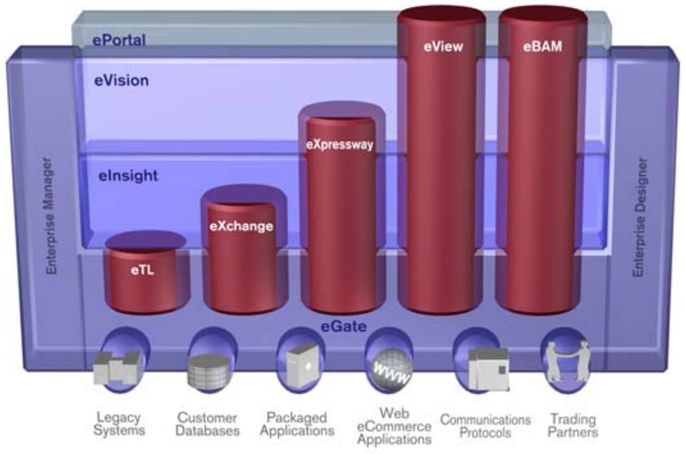
eIndex Global Identifier

eIndex Global Identifier ("eIndex") is a highly customized instance of eView with added plug-in modules to facilitate person matching. eIndex automates identification and matching of member data across disparate source systems to simplify the process of sharing that data. eIndex creates a single view of all member data by providing a common identification process regardless of the system from which data originates.

ePortal Composer

ePortal Composer ("ePortal") is a plug-in for eGate. ePortal enables people to interact with designated business processes over the Intranet or Internet.

Figure 1 SeeBeyond Integrated Composite Application Network (ICAN) Suite



For more information about the ICAN Suite, see the documentation associated with each products.

2.2 About eXchange Integrator

eXchange Integrator is an application that runs on the SeeBeyond Integration Server in distributed computing environments. eXchange manages interactions with trading partners by facilitating the reception, validation, transmission, and tracking of messages in supported formats.

Design, runtime, and administrative tools

eXchange provides three major sets of tools for design, runtime, and monitoring.

- Integrated with the Enterprise Designer framework, eXchange's design-time tools, libraries, and prebuilt B2B protocols supplement and extend the eGate tool set with the following editors and components:
  - B2B Host Designer, along with Channel Manager, allow you to create and manage internal and external delivery channels tailored to the exact needs of each trading partner.
  - Attribute definition editors allow you to extend or modify standard transport and messaging attributes definitions.
  - The eXchange Protocol Designer is a powerful graphical modeling tool that lets you apply business logic to message flow through a B2B protocol.
  - The eXchange Service Designer, for editing messaging services and dialogs, helps you choreograph message-exchange interactions between your enterprise and trading partners.
- Running on the SeeBeyond Integration Server, eXchange's B2B Host, B2B protocols, and Message Tracker application enable your enterprise to:
  - Receive, validate, process, and route inbound and outbound messages.
  - Look up trading partner configurations and access custom-tailored delivery channels that use agreed-upon protocols to envelope/de-envelope, encrypt/decrypt, and compress/decompress messages.
  - Generate and reconcile acknowledgments; handle and report errors; and store message history, acknowledgments, and errors in a database.
- On the Web, plugged into the Enterprise Manager framework, eXchange's administrative and monitoring tools allow you to define and manage trading partner profiles, track message access, view message history, and record/monitor the status of completed and running B2B protocols.

2.3 Architectural Overview

eXchange centers around the concept of a *Delivery Channel Profile* for each trading partner relationship. Delivery Channel Profiles are used within the eXchange runtime components to specify which B2B protocol(s) to use, where and how to receive inbound messages from trading partners, how to configure and secure messages in this channel, and how and where to deliver outbound messages to trading partners.

eXchange uses the following key components:

- **B2B Host Designer** — Using the **Enterprise Designer** GUIframework, eXchange provides an editor for setting up B2B environments, called the *B2B Host Designer*. Each B2B Host provides one or more protocol-specific delivery channels that are exposed to the eXchange database via the Repository. Delivery channels provided by the B2B Host can then be accessed by specific trading partners and reused. See **Figure 5 on page 24**.

- **B2B Services and Protocols** — eXchange provides two other special editors: The *eXchange Service Designer*, for modeling the choreography of B2B interactions between the internal system and an external trading partner, as mediated by the B2B Host; and the *eXchange Protocol Designer*, for setting up the message flow logic (*B2B protocol processes*) required to address a specific business challenge, using such activity elements as branching activities, timers, and exception handling. See **Figure 3 on page 23**.

  In addition, eXchange supplies prebuilt B2B protocol processes for industry-standard B2B protocols such as AS2 and ebXML, and it also provides the flexibility of allowing the enterprise to create and configure custom protocol processes. See **Figure 4 on page 23**.

  eXchange also supplies **Channel Manager**, a collection of eXchange Services that provides trading partner–specific integration to the enterprise. Industry-standard transport protocols (FTP, HTTP, HTTPS, SMTP) are supported by Channel Manager and other eWays.

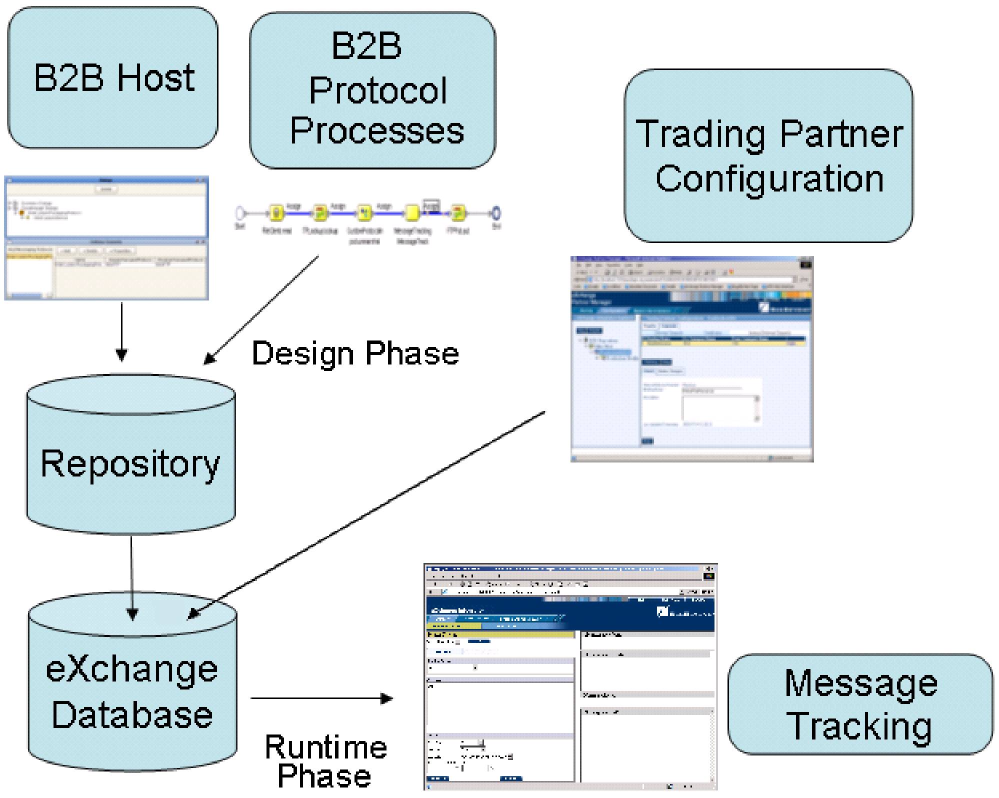
- **Trading Partner Configuration** — eXchange provides a Web-based GUI, eXchange Partner Manager (ePM), for configuring and managing B2B trading partners. Each trading partner has one or more delivery channels that specify the protocols to be used, with corresponding transport mechanisms—encryption parameters such as certificate, signature, and keystore information, acknowledgment-handling preferences, and so forth. See **Figure 6 on page 24**.

- **eXchange Database** — eXchange uses an Oracle database to mediate retrieval of trading partner information and to store run-time information on message tracking.

- **Message Tracking**— eXchange provides a specific MessageTracker application that can be combined with other processes in a project just by dragging it into the Connectivity Map, as well as a Web-based message tracking GUI with powerful filtering and searching capabilities. See **Figure 7 on page 25**.

The interaction of these components is illustrated in Figure 2.

Figure 2 eXchange Architecture



The illustrations in Figure 5 through Figure 7 indicate some of the features provided by the various GUIs.

Figure 3 User-Created B2B Protocol Process

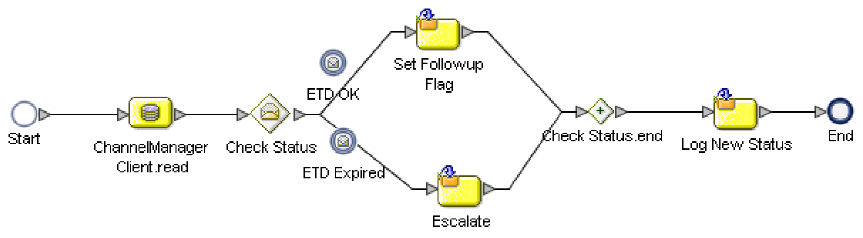


Figure 4 Prebuilt B2B Protocol Process (for AS2 Inbound)

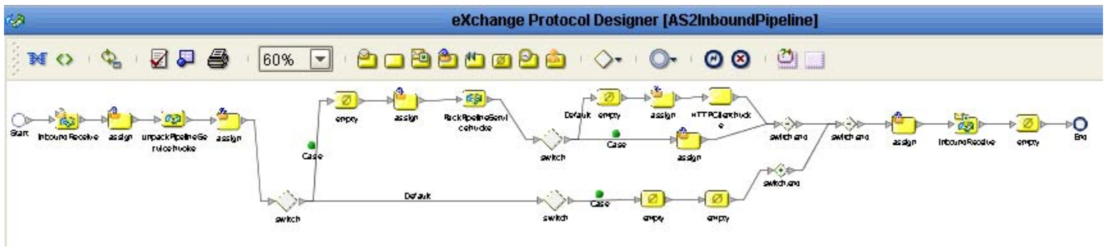
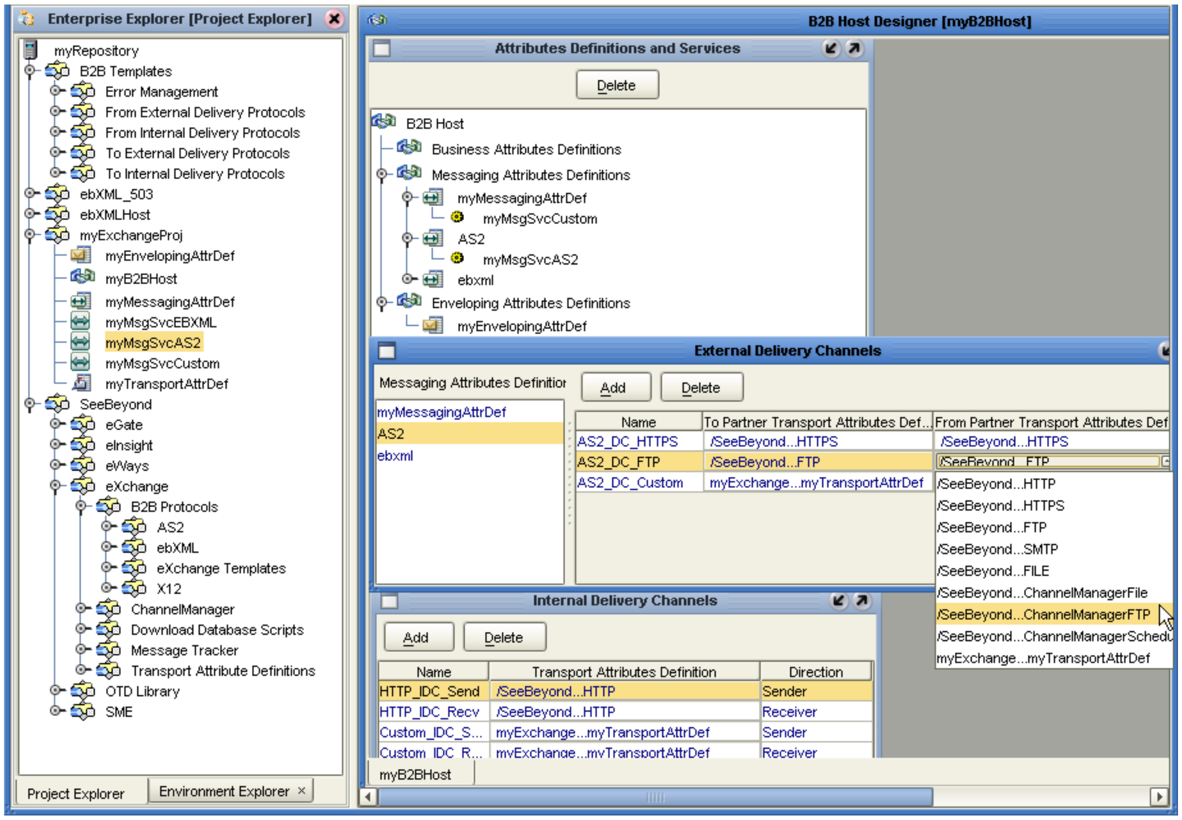


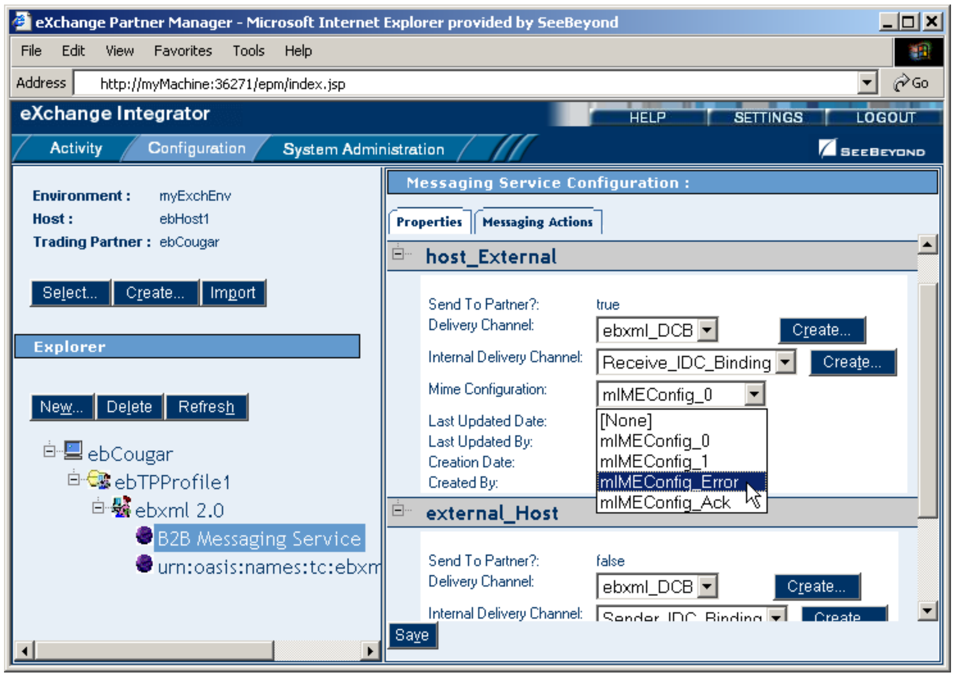
Figure 5 B2B Host Designer in Enterprise Designer


Enterprise Explorer [Project Explorer]
myRepository
B2B Templates
Error Management
From External Delivery Protocols
From Internal Delivery Protocols
To External Delivery Protocols
To Internal Delivery Protocols
ebXML_503
ebXMLHost
myExchangeProj
myEnvelopingAttrDef
myB2BHost
myMessagingAttrDef
myMsgSvcEBXML
myMsgSvcAS2
myMsgSvcCustom
myTransportAttrDef
SeeBeyond
eGate
eInsight
eWays
eXchange
B2B Protocols
AS2
ebXML
eXchange Templates
X12
ChannelManager
Download Database Scripts
Message Tracker
Transport Attribute Definitions
OTD Library
SME
Project Explorer
Environment Explorer
B2B Host Designer [myB2BHost]
Attributes Definitions and Services
Delete
B2B Host
Business Attributes Definitions
Messaging Attributes Definitions
myMessagingAttrDef
myMsgSvcCustom
AS2
myMsgSvcAS2
ebxml
Enveloping Attributes Definitions
myEnvelopingAttrDef
External Delivery Channels
Messaging Attributes Definitior
Add
Delete
myMessagingAttrDef
AS2
ebxml
/SeeBeyond...HTTP
/SeeBeyond...HTTPS
/SeeBeyond...FTP
/SeeBeyond...SMTP
/SeeBeyond...FILE
/SeeBeyond...ChannelManagerFile
/SeeBeyond...ChannelManagerFTP
/SeeBeyond...ChannelManagerSchedu
myExchange...myTransportAttrDef
Internal Delivery Channels
Add
Delete
myB2BHost

Name	To Partner Transport Attributes Def...	From Partner Transport Attributes Def
AS2_DC_HTTPS	/SeeBeyond...HTTPS	/SeeBeyond...HTTPS
AS2_DC_FTP	/SeeBeyond...FTP	/SeeBeyond...FTP
AS2_DC_Custom	myExchange...myTransportAttrDef	

Name	Transport Attributes Definition	Direction
HTTP_IDC_Send	/SeeBeyond...HTTP	Sender
HTTP_IDC_Recv	/SeeBeyond...HTTP	Receiver
Custom_IDC_S...	myExchange...myTransportAttrDef	Sender
Custom_IDC_R...	myExchange...myTransportAttrDef	Receiver

Figure 6 eXchange Trading Partner Configuration



Address: http://myMachine:36271/epm/index.jsp

Environment : myExchEnv
Host : ebHost1
Trading Partner : ebCougar

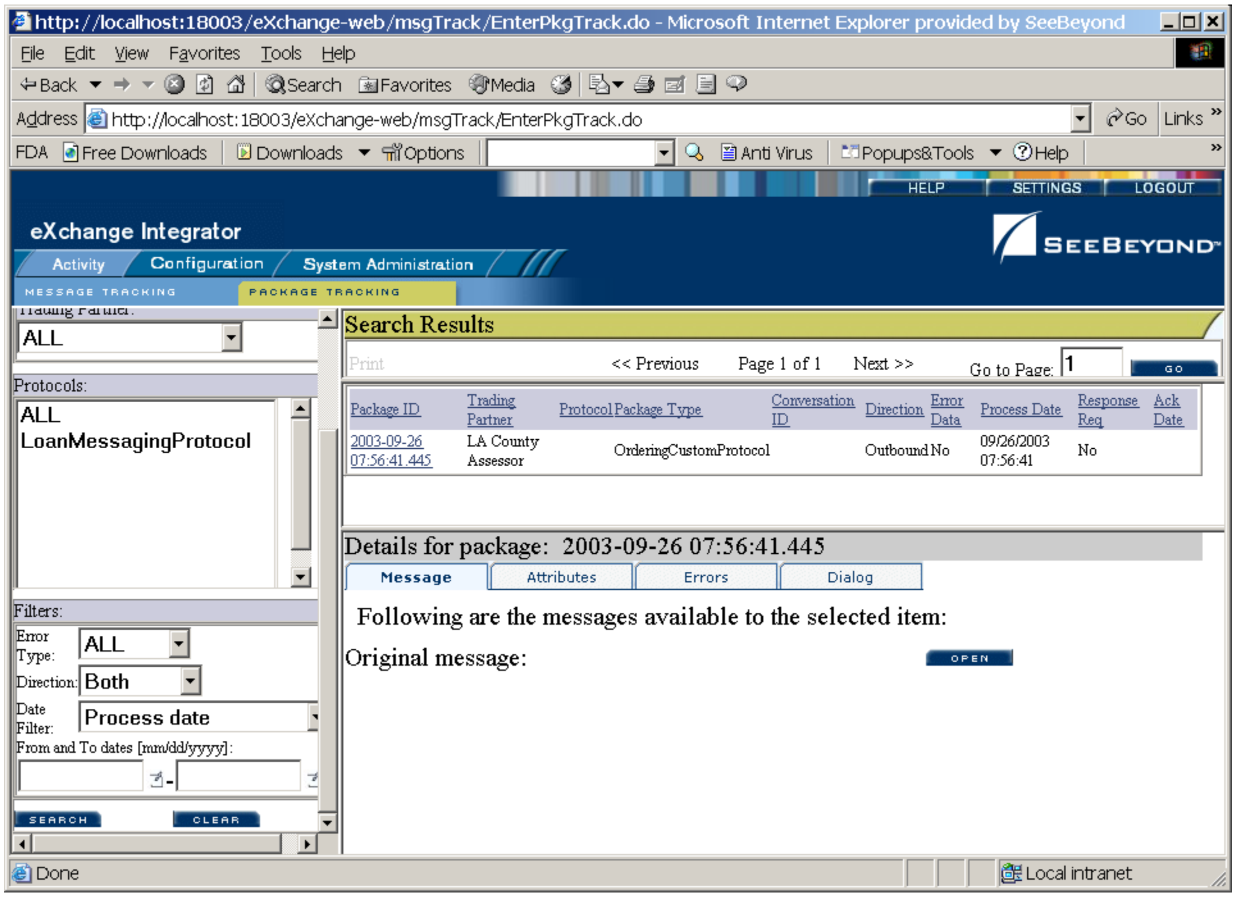
host_External

Send To Partner?:	true
Delivery Channel:	ebxml_DCB
Internal Delivery Channel:	Receive_IDC_Binding
Mime Configuration:	mIMEConfig_0
Last Updated Date:	
Last Updated By:	
Creation Date:	
Created By:	

external_Host

Send To Partner?:	false
Delivery Channel:	ebxml_DCB
Internal Delivery Channel:	Sender_IDC_Binding

Figure 7 eXchange Message Tracking


http://localhost:18003/eXchange-web/msgTrack/EnterPkgTrack.do - Microsoft Internet Explorer provided by SeeBeyond
File Edit View Favorites Tools Help
Back Search Favorites Media
Address http://localhost:18003/eXchange-web/msgTrack/EnterPkgTrack.do Go Links
FDA Free Downloads Downloads Options Anti Virus Popups&Tools Help
HELP SETTINGS LOGOUT
eXchange Integrator
SEEBEYOND
Activity Configuration System Administration
MESSAGE TRACKING PACKAGE TRACKING
SEARCH CLEAR
Print << Previous Page 1 of 1 Next >> GO
Message Attributes Errors Dialog
OPEN
Done Local intranet

Trading Partner: ALL

Protocols: ALL, LoanMessagingProtocol

Filters:
Error Type: ALL
Direction: Both
Date Filter: Process date
From and To dates [mm/dd/yyyy]:

Search Results

Go to Page: 1

Package ID	Trading Partner	Protocol Package Type	Conversation ID	Direction	Error Data	Process Date	Response Req	Ack Date
2003-09-26 07:56:41.445	LA County Assessor	OrderingCustomProtocol		Outbound	No	09/26/2003 07:56:41	No	

Details for package: 2003-09-26 07:56:41.445

Following are the messages available to the selected item:

Original message:

2.4 Process Overview

Using eXchange to create a business solution consists of three phases:

- Design phase within Enterprise Designer
- Design phase within eXchange Partner Manager
- Runtime phase

The purpose of the design phases is to: Create metadata for Delivery Channel Profiles; set up business logic for B2B protocol processes; configure connections with external systems; create and configure trading partners; and associate each trading partner relationship with a Delivery Channel Profile (DCP) configuration. Activating a trading partner exposes its DCP configuration settings to the eXchange database.

At run time, the Logical Host reads the DCP configuration from the database to determine: How to receive and process inbound messages; which business logic to run; and how to process and deliver outbound messages. Results are written to the database, where they can be filtered and viewed by the Message Tracker facility.

2.4.1. Design Phase: Using Enterprise Designer

Within Enterprise Designer, the B2B Host Designer is used to create B2B Hosts. Each B2B Host is a logical collection of:

- *Messaging services* associated with standard (AS2, ebXML) or custom B2B protocols.
- *Attribute definitions* for transport, enveloping (packaging), and messaging.

The B2B Host Designer is used to choose which messaging services are to be used, and to associate each service with one or more sets of transport attribute definitions (such as HTTP, FTP, and many others) to create the metadata for a Delivery Channel Profile—in other words, the *types* of parameters to be supplied for transporting, [de]enveloping, and [receiving]sending messages [from]to trading partners.

After the B2B Host is set up, a Connectivity Map is created to connect its output, and the output of the Message Tracker application, to an Oracle database. Activation causes the DCPs to be stored in the database, and also creates an eXchange Service as an external server in the same Environment that contains the Oracle external. As needed, the eXchange Service corresponding to the B2B Host is configured with keystores, trust stores, and certificates for authentication and nonrepudiation.

Standard B2B Protocol processes (such as for AS2 or ebXML) are supplied with the eXchange product. In addition, the eXchange Protocol Designer can also be used to create and configure business logic in custom B2B Protocol processes in the same way the eInsight Business Process Designer is used for Business Processes.

B2B Protocol processes for inbound and/or outbound messages are dragged into a Connectivity Map, where they are represented as services. There, they are connected in usual fashion with externals (including the eXchange Service for channel management) and with other services. Activation of a corresponding Deployment Profile exposes the map's components for processing by Logical Hosts. As before, it also stores the DCPs into the eXchange database, making them available to eXchange Partner Manager.

2.4.2. Design Phase: Using eXchange Partner Manager

eXchange Partner Manager (ePM) is used to create and configure trading partners and to create trading partner profiles—an association between a particular trading partner and a set of Delivery Channel Profile parameters. For example, if a DCP uses HTTP, then each trading partner profile must be supplied with a value for the URL parameter; or, if a DCP uses FTP, then each trading partner profile must be supplied with values for hostname, target directory, and so forth.

Activating a trading partner stores all of its profiles' DCP configuration settings into the eXchange database.

2.4.3. Runtime Phase

The Logical Host reads the DCP configuration and receives inbound messages from all the channels it references. The DCP parameters for each channel dictate how to handle the inbound message (acknowledgment, decryption, de-enveloping, authentication, ...); the business logic of the associated B2B Protocol and Connectivity Map provide further routing and processing; and for an outbound message, the DCP parameters dictate how to handle it (compression, encryption, signature, enveloping, ...) and how and where to send it.

In addition to the process monitoring tools, eXchange also provides a Message Tracking facility for searching, filtering, and viewing all information written to the eXchange database—errors, acknowledgments, notifications, message attributes, and so forth.

2.5 Summary of Features

eXchange provides an open protocol framework to support standard B2B protocols, messaging protocols, enveloping protocols, and transport protocols. Not only does it support existing standard B2B protocols, with an extensive set of prebuilt B2B protocol processes, it also provides the tools and framework to create custom modifications and extensions to the attribute definitions for standard protocols, and to design the business logic of custom B2B protocol processes.

B2B modeling semantics are exposed so that business rules can be added and tailored to address the particular needs of each eBusiness challenge. The tight integration with the rest of the ICAN Suite provides validation, logging, and reporting capabilities, and because each logical step within any business rule is accessible anywhere along the entire business pipeline, the design tools provide complete end-to-end visibility.

The trading partner management facility is provided via a Web interface. For easy interoperability, trading partners can be configured by importing Collaboration Protocol Agreements (CPAs); or trading partner profiles can be configured manually. Each trading partner profile is identified by a unique ID determined by the enterprise, and delivery channels can be configured for acknowledgments, compression, industry-standard encryption and decryption, and nonrepudiation.

At run time, all steps in the business process, from initial receipt of the message to final delivery to the trading partner, are tracked in real time and also stored in the eXchange database. The Web-based message/package tracker provides tools for retrieving and filtering tracked message and envelope information. Used in conjunction with the other monitoring tools of the ICAN suite, this provides the enterprise with a complete solution for troubleshooting and managing all eBusiness activities.

Chapter 3

Installing eXchange

This chapter provides the prerequisites and steps for installing eXchange Integrator.

3.1 System Requirements

This section lists system requirements and database requirements. The Readme.txt file, available on the product media and via Enterprise Manager (Documentation tab), contains up-to-date operating system requirements for each supported platform.

3.1.1. Platform Support

eXchange supports the following operating systems:

- Microsoft Windows Server 2003, Windows XP SP1a, and Windows 2000 SP3 or SP4
- HP Tru64 V5.1A with required patches
- HP-UX 11.0 and 11i (RISC), with required patches and parameter changes
- Sun Solaris 8 and 9, with required patches
- IBM AIX 5.2 and 5.1L (either 64-bit kernel or 32-bit kernel with 64-bit extension), with required maintenance level patches
- Red Hat Linux 8 (Intel Version) and Linux Advanced Server 2.1 (Intel Version)

3.1.2. Database Support

Database for eXchange Partner Management and Message Tracking

The eXchange database provides a run-time persistent store for trading partner management and message tracking. eXchange supports the following databases:

- Oracle 8.1.7
- Oracle 9.01
- Oracle 9.2

3.2 Installation Steps

The steps for installing eXchange are the same as for other products in the ICAN Suite. You can find general product installation instructions in the *ICAN Suite Installation Guide,* which is available on the product media and can also be accessed via Enterprise Manager (Documentation tab).

3.2.1. Uploading eXchange to the Repository

Before you begin

- A Repository server must be running on the machine where you will be uploading the eXchange product files.
- The following ICAN products must have already been uploaded to this Repository:
  - eGate Enterprise Designer (eGate.sar)
  - Batch eWay adapter (BatcheWay.sar)
  - File eWay adapter (FileeWay.sar)
  - HTTP eWay adapter (HTTPeWay.sar)
  - Oracle eWay adapter (OracleeWay.sar)

To upload eXchange product files to the Repository

1. On a Windows machine, start a Web browser and point it at the machine and port where the Repository server is running:

   ```
   http://<hostname>:<port>
   ```

   where

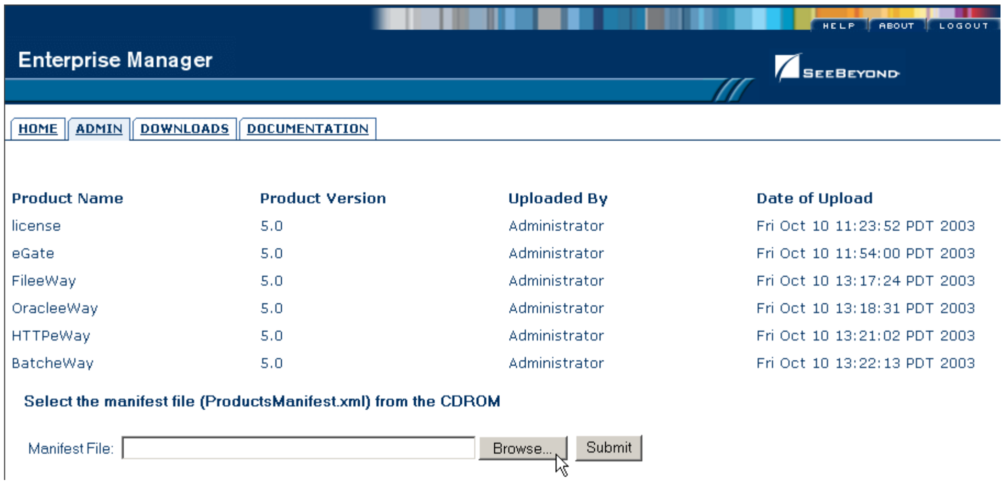
   - *<hostname>* is the name of the machine running the Repository server.
   - *<port>* is the starting port number assigned when the Repository was installed.

   For example, the URL you enter might look like either of the following:

   ```
   http://localhost:12001
   http://serv1234.company.com:19876
   ```

2. On the Enterprise Manager **SeeBeyond Customer Login** page, enter your username and password.
3. When Enterprise Manager responds, click the **ADMIN** tab. See Figure 8.

Figure 8 Enterprise Manager ADMIN page



Product Name	Product Version	Uploaded By	Date of Upload
license	5.0	Administrator	Fri Oct 10 11:23:52 PDT 2003
eGate	5.0	Administrator	Fri Oct 10 11:54:00 PDT 2003
FileeWay	5.0	Administrator	Fri Oct 10 13:17:24 PDT 2003
OracleeWay	5.0	Administrator	Fri Oct 10 13:18:31 PDT 2003
HTTPeWay	5.0	Administrator	Fri Oct 10 13:21:02 PDT 2003
BatcheWay	5.0	Administrator	Fri Oct 10 13:22:13 PDT 2003

Select the manifest file (ProductsManifest.xml) from the CDROM

4 In the ADMIN page, click **Browse**.

5 In the **Choose file** dialog, click **ProductsManifest.xml**, and then click **Open**.

6 In the ADMIN page, click **Submit**.

The lower half of the ADMIN page lists the product files you are licensed to upload.

7 In the Products column, find **eXchange**, and then click the **Browse** button for it.

8 In the **Choose file** dialog, click **eXchange.sar**, and then click **Open**.

9 Repeat the previous two steps for other eXchange-related product **.sar** files you are licensed to upload, such as SME Web Services (for **S**ecure **M**essaging **E**xtension) or OTD libraries (such as for X12).

10 For documentation and samples, also upload the corresponding [...]**Docs.sar** files, such as eXchangeDocs.sar (and SMEWebServicesDocs.sar, and so forth).

Note: *SMEWebServices.sar is required for such features as encryption/decryption, signature verification, certificate authentication, and compression/decompression.*

11 In the ADMIN page, click the | upload now :: | button.

3.2.2. Refreshing Enterprise Designer with eXchange

Before you begin

- You must have already downloaded and installed Enterprise Designer.
- A Repository server must be running on the machine where you uploaded the eXchange product files.

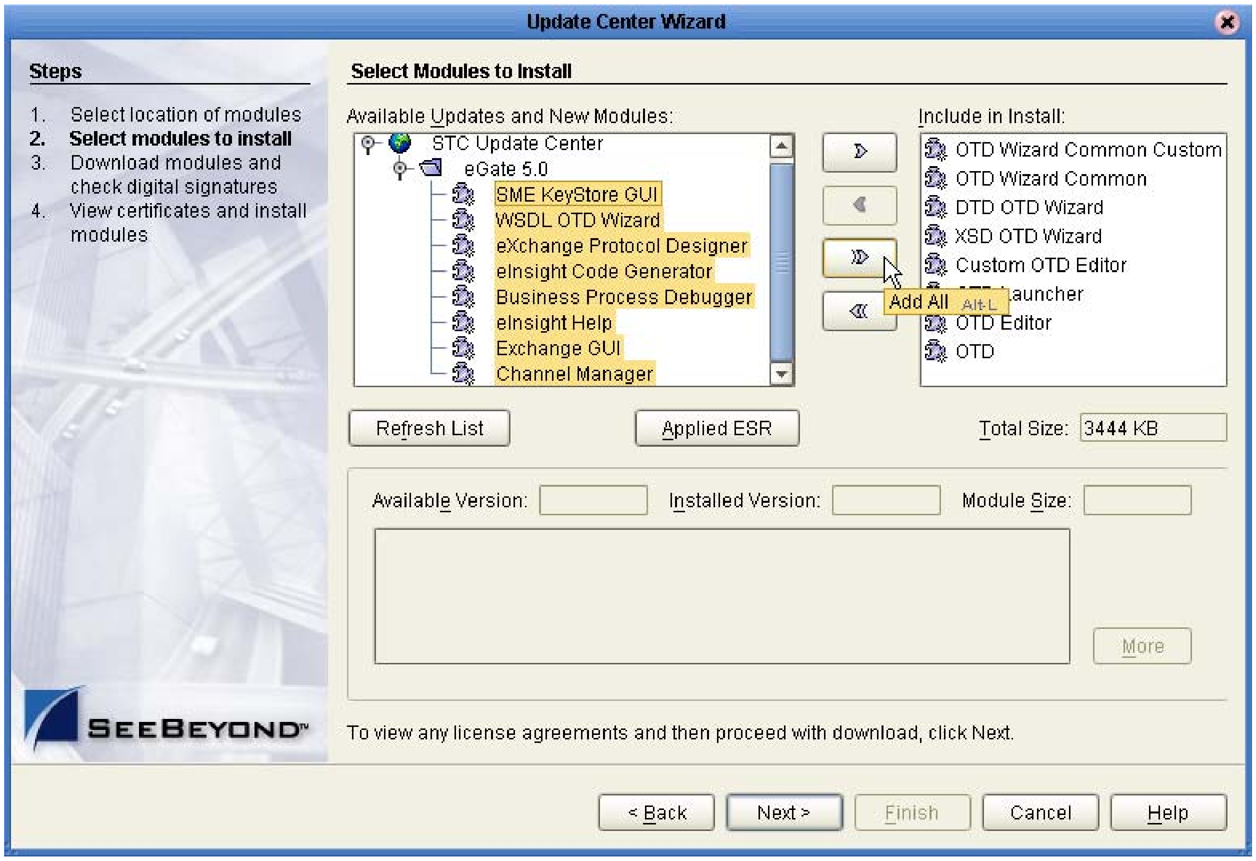
To refresh an existing installation of Enterprise Designer

1 Start Enterprise Designer.

2 On the **Tools** menu, click **Update Center**.

The Update Center shows a list of components ready for updating. See Figure 9.

Figure 9 Update Center Wizard: Select Modules to Install



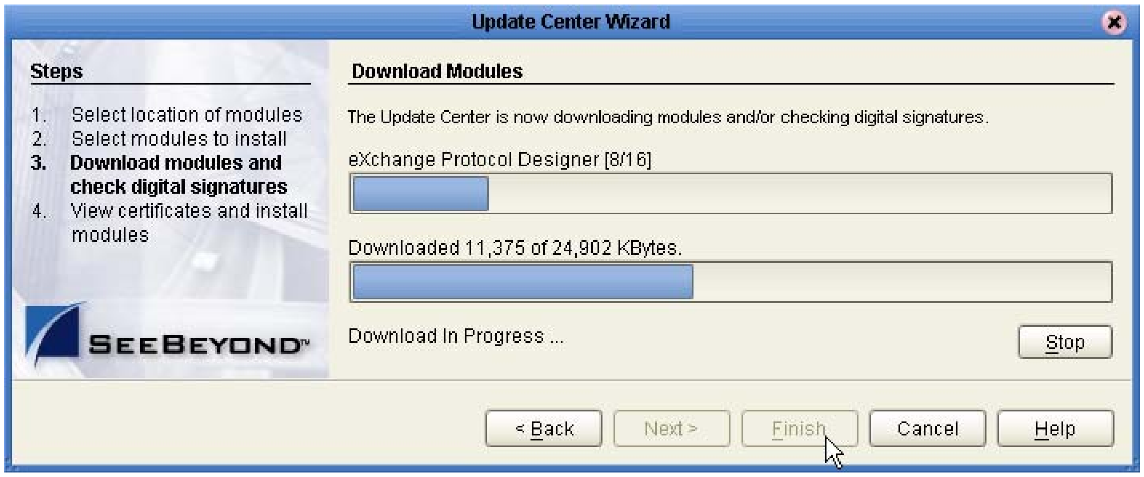
3 Click **Add All** (the button with a doubled chevron pointing to the right).

All modules move from the Available/New pane to the **Include in Install** pane.

4 Click **Next** and, in the next window, click **Accept** to accept the license agreement.

The wizard shows you the progress of the download. See Figure 10.

Figure 10 Update Center Wizard: Progress Bars


Update Center Wizard

Steps

1. Select location of modules
2. Select modules to install
3. **Download modules and check digital signatures**
4. View certificates and install modules

Download Modules

The Update Center is now downloading modules and/or checking digital signatures.

eXchange Protocol Designer [8/16]

Downloaded 11,375 of 24,902 KBytes.

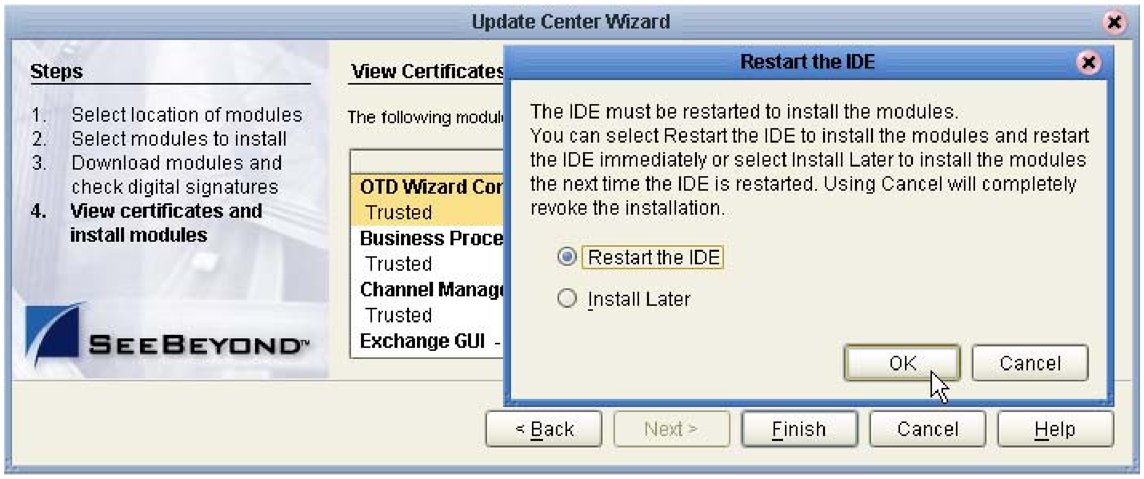
Download In Progress ...

5 When the progress bars indicate the download has ended, click **Next**.

6 Review the certificates and installed modules, and then click **Finish**.

7 When prompted to restart Enterprise Designer, click **OK**. See Figure 11.

Figure 11 Update Center Wizard: Restart Enterprise Designer


Update Center Wizard

Steps

1. Select location of modules
2. Select modules to install
3. Download modules and check digital signatures
4. **View certificates and install modules**

View Certificates

The following modul

OTD Wizard Cor
Trusted
Business Proce
Trusted
Channel Manag
Trusted
Exchange GUI -

Restart the IDE

The IDE must be restarted to install the modules.
You can select Restart the IDE to install the modules and restart the IDE immediately or select Install Later to install the modules the next time the IDE is restarted. Using Cancel will completely revoke the installation.

[✓ Restart the IDE] Install Later

When Enterprise Designer restarts, the installation of eXchange Integrator is complete, and you can use all eXchange tools provided on the Enterprise Designer framework.

3.3 Database Scripts

eXchange provides database scripts to create the database schemas for eXchange.

- The eXchange database schema collects and persists data about your trading partner profiles, and also allows you to track message delivery history.

For eXchange, the areas to be configured are:

- **Creating and Configuring the eXchange Database Instance** on page 33
- **Extracting and Customizing Database Scripts for eXchange** on page 33
- **Running Database Scripts to Set Up the eXchange Database** on page 34

3.3.1. Creating and Configuring the eXchange Database Instance

Before you begin: You need to have already created an Oracle database instance with an entry in the **tnsnames.ora** file. Your TNSlistener service must be running, and you will need to know the name of the database instance (default: **eXchange**) and to temporarily use the system username and password (default: **sys,manager**).

If you have never installed an Oracle database, ask your Oracle database administrator for help. The following constitutes a brief reminder of how to use the Oracle 9i wizard.

To create a new Oracle database instance

1. Step 1 ("Operations"): Choose **Create a database**.
2. Step 2 ("Database Templates"): Choose **New Database**.
3. Step 3 ("Database Identification"): Enter (for example) **eXchange**
4. Step 4 ("Database Features"): Deselect all checkboxes and reply **Yes** to all prompts.
5. Step 5 ("Database Connection Options"): Choose **Dedicated** [...].
6. Step 6 ("Initialization Parameters"): Keep all values unchanged.
7. Step 7 ("Database Storage"): Under Datafiles, click \{DB_Name}\undotbs01.dbf (the fifth entry). In the **General** tab, reduce **File Size** from 200 to 100.
8. Step 8 ("Creation Options"): Choose **Create Database**, and then click Finish.

After this, to set up the eXchange database, you will extract the files supplied in the Database Scripts project folder, edit scripts so they have the correct parameters for your Oracle database setup, and run the scripts to set up and initialize the database.

Extracting and Customizing Database Scripts for eXchange

Note: *If you have already created and populated an eXchange database for 5.0, you will need to upgrade it to 5.0.3. Skip past this section, and continue to* **"Updating an eXchange 5.0 Database to 5.0.3" on page 35**.

To extract and customize the database scripts

1. In Enterprise Explorer, in the project tree, expand the following folders: **SeeBeyond > eXchange > DBScripts**
2. Right-click each of the following files and, on the popup context menu, click **Export**; then use the **Save** dialog box to save each file to a local directory.
   - **createdb.sql**
   - **createtablespaces.sql**

- **createuser.sql**
- **eXchange50Runtime.sql**
- **in_user_seq.sql**
- **x12_datamodel.sql**

3 If your Oracle location is not **c:\oracle\oradata**, or if your database instance name (SID) is other then **eXchange**, then open the **createtablespaces.sql** file and make the appropriate change or changes in the first line.

Running Database Scripts to Set Up the eXchange Database

Important: *The database user who runs these **.sql** scripts must have permission to create tables.*

To run the database scripts that install the schema

1 Open a command prompt, change directories to the location where you saved the **.sql** scripts, and enter the following SQL*Plus command:

```
sqlplus system/<SYSTEMPWD>@<TNSNAME> @createtablespaces.sql
```

where:

<SYSTEMPWD> is the password for the **system** login ID

<TNSNAME> is the name of the Oracle database instance you created for eXchange.

Here are two examples of valid commands, depending on the password and name:

```
sqlplus system/manager1@eX50 @createtablespaces.sql
sqlplus system/oraclePW@eXchange @createtablespaces.sql
```

When this finishes, you will have created new tablespaces.

2 In the command prompt, enter the following SQL*Plus command:

```
sqlplus system/<SYSTEMPWD>@<TNSNAME> @createuser.sql
```

where, as before, *<SYSTEMPWD>* is the password for the **system** login ID and *<TNSNAME>* is the name of the Oracle database instance you created for eXchange.

Here is an example of a valid command:

```
sqlplus system/myPassWd@eX500DB @createuser.sql
```

3 In response to the system prompt, enter the username. For example: **ex_admin**

4 After the system finishes dropping tables, it asks for username and password so it can create the eXchange Administrator for the database instance). For example: **ex_admin ex_admin**

5 After the system finishes creating the eXchange Administrator, it asks a third time for the username, this time so it can grant resources and connect. Enter: **ex_admin** (or whatever you use as the username).

6 After running the previous two SQL script, there is one more. In the command prompt, enter the following SQL*Plus command:

```
sqlplus ex_admin/ex_admin@<TNSNAME> @createdb.sql
```

where, as before, *`TNSNAME`* is the name of the eXchange Oracle database instance, and your eXchange administrator username and password are both **ex_admin**.

The system populates the tables, and you are now ready to use the database instance as your eXchange database. You can create Oracle OTDs based on this database, and use Enterprise Manager GUIs for trading partner configuration and message tracking.

Updating an eXchange 5.0 Database to 5.0.3

Note: *The following steps should be performed only if you have a pre-existing eXchange database for 5.0.*

To extract and customize the database scripts

1. In Enterprise Explorer, in the project tree, expand the following folders: **SeeBeyond** > **eXchange** > **DBScripts** > **Upgrade_500_to_501**
2. Right-click each of the following files and, on the popup context menu, click **Export**; then use the **Save** dialog box to save each file to a local directory.
   - **copy_ex_dcp_service_from_temp.sql**
   - **copy_ex_dcp_service_to_temp.sql**
   - **eXchange_500_2_501_script.sql**
3. In a command prompt, change to the directory where you extracted these files, start a SQL*Plus session and log into the eXchange database instance. For example:

```
G:\> cd \ican50\dbscripts
G:\ican50\dbscripts> C:\oracle\ora92\bin\sqlplus
SQL*Plus: Release 9.2.0.1.0 - Production on Fri Jan 09 18:38:26 2004
Copyright (c) 1982, 2002, Oracle Corporation.  All rights reserved.
Enter user-name: ex_admin
Enter password:
Connected to:
Oracle9i Enterprise Edition Release 9.2.0.1.0 - Production
With the Partitioning, OLAP and Oracle Data Mining options
JServer Release 9.2.0.1.0 - Production
SQL>
```

4. Execute the **eXchange_500_2_501_script.sql** script, wait for the prompt to reappear, and then exit. The console should resemble the following:

```
SQL> @eXchange_500_2_501_script.sql
Table altered.
Table altered.
Table altered.
1 row created.
1 row created.
Table created.
Input truncated to 1 characters
Procedure created.
PL/SQL procedure successfully completed.
2 rows deleted.
Commit complete.
Input truncated to 1 characters
Procedure created.
PL/SQL procedure successfully completed.
Table dropped.
Commit complete.
Procedure dropped.
Procedure dropped.
Table altered.
Table created.
Table altered.
5 rows updated.
Commit complete.
Table created.
Index created.
SQL> exit
```

3.4 Additional Policy JAR Files Required to Run SME

If you will be using encryption/decryption, and/or signatures and verification, and/or the compression/decompression libraries supplied with Secure Messaging Extension (SME), you must download and apply additional policy **.jar** files. The type of **.jar** files required depends on the JVM are using. Refer to your JVM vendor for exact details on the specific policy **.jar** file requirements.

Use Table 2 to determine which JRE is included in the eGate logical host.

Table 2 JRE Versions Listed by Operating System

Operating System	JRE	URL
Windows, Solaris, HP-UX, Linux, Tru64	1.4.2	**http://java.sun.com/j2se/1.4.2/download.html**
AIX	1.4.1	**http://java.sun.com/products/archive/j2se/1.4.1_07/index.html**

To download the required policy.jar files

1. Scroll to the bottom of the web page listed in Table 2 for your logical host's JRE.
2. Click the link to the Unlimited Strength Jurisdiction Policy Files 1.4.1 or 1.4.2.
3. Click the link to download the **.zip** file containing the required policy **.jar** files: either **jce_policy-1_4_2.zip** for JRE 1.4.2, or **jce_policy-1_4_1.zip** for JRE 1.4.1.
4. Extract the following required policy **.jar** files:
   - **local_policy.jar**
   - **US_export_policy.jar**
5. Then, for each of your logical hosts, replace the versions of these files in:

   <*logicalhost*>\jre\lib\security\
6. In addition, if you are running a repository on AIX, also replace the versions of these files in:

   <*AIXrepository*>/jre/1.4.*x*/security/

For complete information on SME, see the *Secure Messaging Extension User's Guide*.

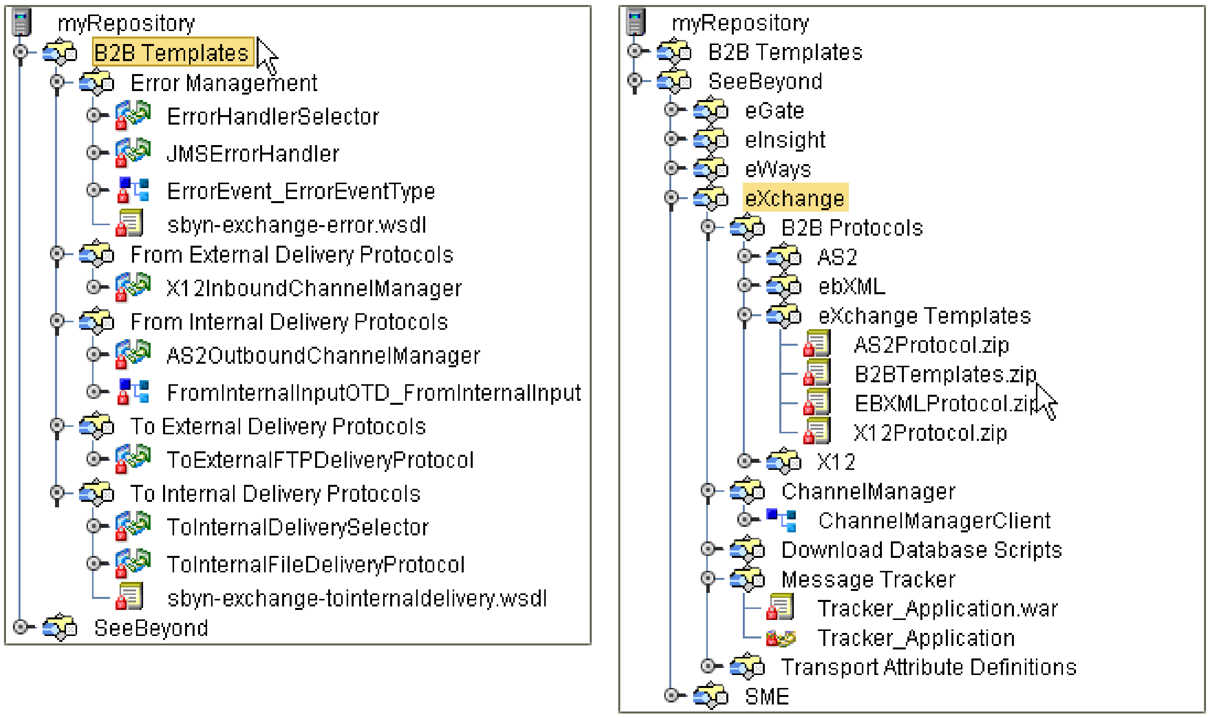
Chapter 4

eXchange Features

This chapter provides brief descriptions of components prepackaged with eXchange, as well as an overview of SME processes.

The components in the root **B2B Templates** folder are intended to be customized, and so the descriptions that appear here reflect the as-shipped versions of the components. Components in the SeeBeyond > **eXchange** folder must not be changed or customized. However, the SeeBeyond > eXchange > B2B Protocols > **eXchange Templates** folder contains the as-shipped versions of all prepackaged B2B protocols and B2B Templates; you can export any of these **.zip** files and then re-import it as a project. See Figure 12.

Figure 12 Prepackaged Folders: B2B Templates, and SeeBeyond > eXchange



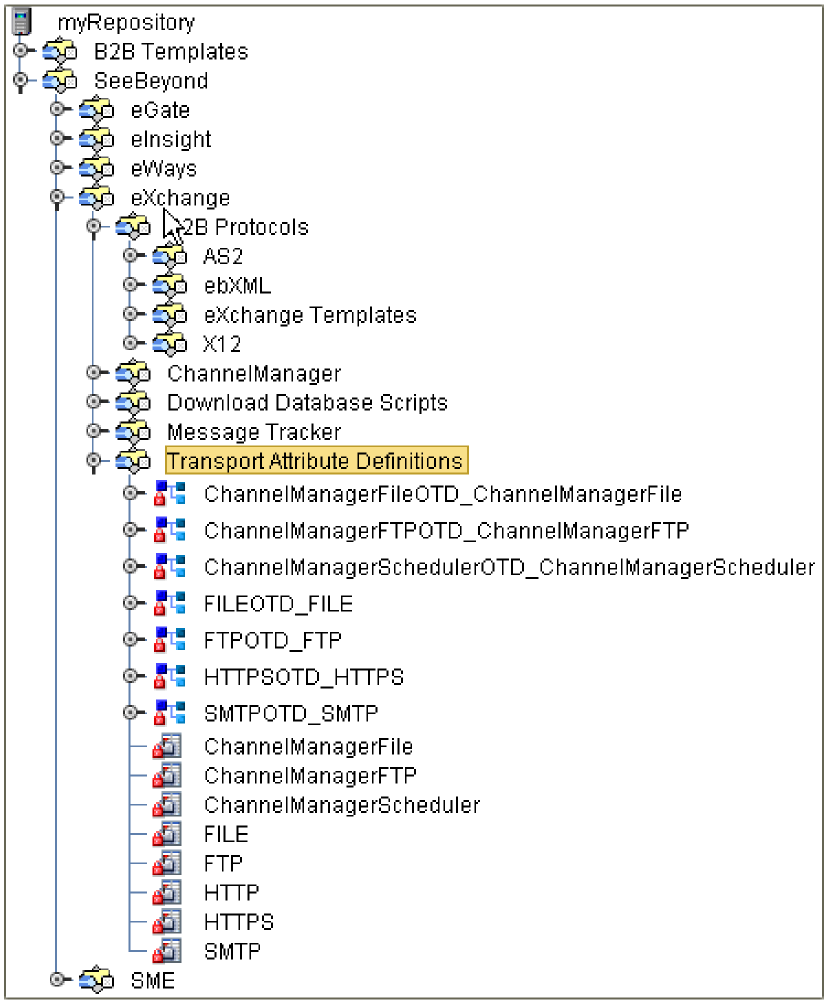
In this chapter

4.1 Transport Attribute Definitions

Transport attribute definitions provide the metadata required at the transport layer. (In this context, “metadata” means the *categories* of information, not any actual values.) Once a transport attributes definition has been included in a B2B host, it is exposed to ePM so that specific values can be supplied for specific trading partner configurations.

The SeeBeyond > eXchange > **Transport Attribute Definitions** folder (see Figure 13) contains eight transport attribute definitions (TAD)s and their corresponding OTDs.

Figure 13 SeeBeyond > eXchange > Transport Attribute Definitions Folder



```
myRepository
  B2B Templates
  SeeBeyond
    eGate
    eInsight
    eWays
    eXchange
      B2B Protocols
        AS2
        ebXML
        eXchange Templates
        X12
      ChannelManager
      Download Database Scripts
      Message Tracker
      Transport Attribute Definitions
        ChannelManagerFileOTD_ChannelManagerFile
        ChannelManagerFTPOTD_ChannelManagerFTP
        ChannelManagerSchedulerOTD_ChannelManagerScheduler
        FILEOTD_FILE
        FTPOTD_FTP
        HTTPSOTD_HTTPS
        SMTPOTD_SMTP
        ChannelManagerFile
        ChannelManagerFTP
        ChannelManagerScheduler
        FILE
        FTP
        HTTP
        HTTPS
        SMTP
    SME
```

Overview

Different transport protocols require different types of attributes; for example, HTTP requires little more than a URL, but FTP requires a username, password, hostname, port, path, and file pattern, and possibly other attributes as well. For this reason, the metadata for HTTP-based and FTP-based TADs are quite different. When a TAD is referenced by a delivery channel, its attributes govern the appearance and behavior of ePM for users who supply values for that channel.

At runtime, a TAD's metadata is made available to the application through the two methods of its associated OTD: **unmarshal** parses an inbound stream into an internal data structure, and **marshal** serializes the internal data into a linear outbound stream.

All TADs define their metadata using the format shown in Table 3.

Table 3 Metadata for All Transport Attribute Definitions

Field Name	Explanation
Name	The (internal) parameter name. Used programmatically; never seen in ePM.
Display	The parameter label as seen by the ePM user.
Type	Data type. Used programmatically; never seen in ePM.
Required	Checkbox governing whether a value must be supplied in ePM. If yes, ePM displays an red asterisk to signal the user that this is a required value.
Direction	FromPartner, ToPartner, or Both. Used programmatically.
Default	The value supplied before the ePM user takes action, or takes no action.
List of Values	Items to display in a drop-down list for the ePM user to choose from
Fixed	*(not used in any of SeeBeyond-supplied TADs)*
Format String	*(not used in any of SeeBeyond-supplied TADs)*

4.1.1. FILE

The File eWay uses the FILE transport attributes definition to read from a file or write to a file. When designating a pattern of files to be read, the * (asterisk) is a wildcard meaning "zero or more characters." Table 4 lists the attributes of the FILE TAD.

Table 4 Attributes for the FILE Transport Attributes Definition

Name	Display	Type	Req?	Direction	Default	List
FilePattern	FilePattern	String	Yes	Both		
Directory	Directory	String	Yes	Both		

4.1.2. FTP

For File Transfer Protocol, the BatchFTP eWay uses the FTP transport attributes definition to read from a file or write to a file in a remote location. When designating a pattern of files to be read, the * (asterisk) is a wildcard meaning "zero or more characters." Table 5 lists the attributes of the FTP TAD.

Table 5 Attributes for the FTP Transport Attributes Definition

Name	Display	Type	Req?	Direction	Default	List
FilePattern	FilePattern	String	Yes	Both		
Directory	Directory	String	Yes	Both		

Table 5 Attributes for the FTP Transport Attributes Definition (Continued)

Name	Display	Type	Req?	Direction	Default	List
UserName	UserName	String	Yes	Both		
Password	Password	Password	Yes	Both		
HostName	HostName	String	Yes	Both		
PortNumber	PortNumber	Integer	No	Both		
SocksEnabled	SocksEnabled	Boolean	No	Both	false	
SocksHostName	SocksHostName	String	No	Both		
SocksUserName	SocksUserName	String	No	Both		
SocksPassword	SocksPassword	Password	No	Both		
SocksServerPort	SocksServerPort	String	No	Both		

4.1.3. HTTP

For Hypertext Transfer Protocol, the HTTP(S) eWay can use the HTTP transport attributes definition to access Web pages. The HTTP TAD has no attributes.

4.1.4. HTTPS

For Hypertext Transfer Protocol over SSL (Secure Sockets Layer), the HTTP(S) eWay uses the HTTPS transport attributes definition to access secure Web page. Table 6 lists the attributes of the HTTPS TAD.

Table 6 Attributes for the HTTPS Transport Attributes Definition

Name	Display	Type	Req?	Direction	Default	List
ClientCertAlias	ClientCertAlias	String	Yes	Both		
UserName	UserName	String	Yes	Both		
Password	Password	Password	Yes	Both		

Note: *To use HTTPS, two environment components require nondefault settings: in the integration server, the Web server configuration must have its "Enable SSL" parameter set to "True", and in the HTTP(S) external, the SSL configuration must supply a value for its "TrustStore" parameter.*

4.1.5. SMTP

For Simple Mail Transfer Protocol, the e-mail eWay uses the SMTP transport protocol to send and receive e-mail. Table 7 lists the attributes of the SMTP TAD.

Table 7 Attributes for the SMTP Transport Attributes Definition

Name	Display	Type	Req?	Direction	Default	List
SenderAddress	SenderAddress	String	Yes	ToPartner		
Host	Host	String	Yes	ToPartner		
PortNumber	PortNumber	String	Yes	ToPartner		
UserName	UserName	String	No	Both		

4.1.6. ChannelManagerFile

The ChannelManagerFile transport attributes definition is the same as the FILE TAD, with the addition of Channel Manager functionality (trading partner lookup, tracking, request/response, and so forth). Table 8 lists the attributes of the ChannelManagerFile TAD.

For more information, see **"FILE" on page 39** and/or **"Channel Manager" on page 43**.

Table 8 Attributes for the ChannelManagerFile TAD

Name	Display	Type	Req?	Directn	Default	List
ChannelManagerMode	ChannelManagerMode	List of Values	Yes	Both	FILE	FILE
FilePattern	FilePattern	String	Yes	Both		
Directory	Directory	String	Yes	Both		
PollMilliSeconds	PollMilliSeconds	Integer	Yes	Both		

4.1.7. ChannelManagerFTP

The ChannelManagerFTP transport attributes definition is the same as the FTP TAD, with the addition of Channel Manager functionality (trading partner lookup, tracking, request/response, and so forth). For more information, see **"FTP" on page 39** and/or **"Channel Manager" on page 43**. Table 9 lists the attributes of the ChannelManagerFTP TAD.

Table 9 Attributes for the ChannelManagerFTP TAD

Name	Display	Type	Req?	Directn	Default	List
ChannelManagerMode	ChannelManagerMode	List of Values	Yes	Both	FTP	FTP

Table 9 Attributes for the ChannelManagerFTP TAD (Continued)

Name	Display	Type	Req?	Directn	Default	List
FilePattern	FilePattern	String	Yes	Both		
Directory	Directory	String	Yes	Both		
UserName	UserName	String	Yes	Both		
Password	Password	Password	Yes	Both		
HostName	HostName	String	Yes	Both		
PortNumber	PortNumber	Integer	No	Both		
SocksEnabled	SocksEnabled	Boolean	No	Both	false	
SocksHostName	SocksHostName	String	No	Both		
SocksUserName	SocksUserName	String	No	Both		
SocksPassword	SocksPassword	Password	No	Both		
SocksServerPort	SocksServerPort	String	No	Both		

4.1.8. ChannelManagerScheduler

The ChannelManagerScheduler transport attributes definition invokes the Channel Manager functionality (server read, tracking of messages and packages, request/response association, trading partner lookup, and so forth) and starts the B2B protocol process. Table 10 lists the attributes of the ChannelManagerScheduler TAD.

For more information, see **"Channel Manager" on page 43**.

Table 10 Attributes for the ChannelManagerScheduler TAD

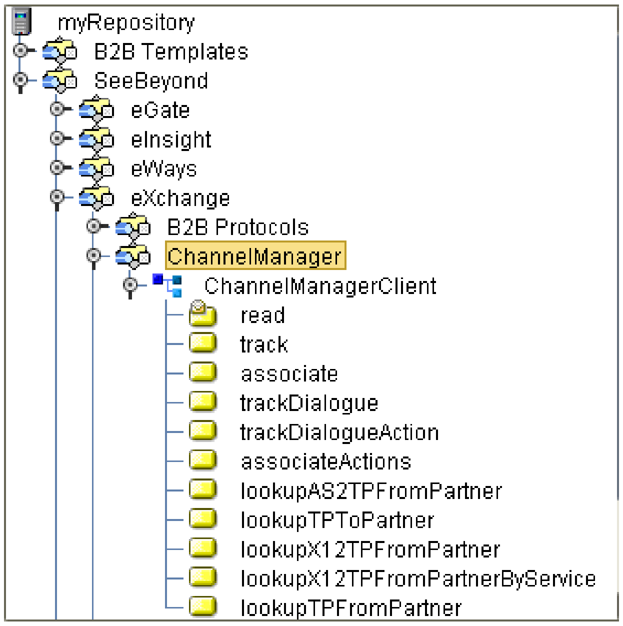
Name	Display	Type	Req?	Direction	Default	List
ChannelManagerMode	ChannelManagerMode	List	Yes	Both	SCHEDULER	SCHEDULER
PollMilliSeconds	PollMilliSeconds	Integer	Yes	Both		

4.2 Channel Manager

The Channel Manager facility provides several services to access or write information in the eXchange database. It tracks messages and packages, associates responses to requests and tracks them, and retrieves trading partner information.

The SeeBeyond > eXchange > **ChannelManager** folder (see Figure 14) contains the ChannelManagerClient OTD.

Figure 14 eXchange > ChannelManager Folder



In this section

associate

ChannelManagerClient.**associate** is used to associate a response to a request. This operation can only be used for message level documents—in other words envelopes, as opposed to business documents.

The service associates the response to the request using a message identifier to tie the two messages to each other.

Table 11 Input Containers for ChannelManagerClient.associate

Name	Description
OrigPkgHdrId	Database ID of the original message
AckPkgHeaderId	Database ID of the acknowledgement message
PkgType	Name of the messaging or packaging envelope used for the message, such as **ISA** or **GS**.
TPId	The database's unique ID for the trading partner; in other words, the foreign key to ex_trading_partner.
MsgUniqId	Unique ID for the message.
ErrorFlag	A value of **Y** signifies that the message contains a "business" type of error: could not decrypt, could not verify signature, and so forth.
ErrorNo	*(reserved)*
ErrorStr	A description of the error.

Table 12 Output Container for ChannelManagerClient.associate

Name	Description
PkgAssocId	Association ID used to associate the response package to the request package.

associateActions

ChannelManagerClient.**associateActions** is similar to the associate operation, in that it associates a document response to a document request (for example, in X12, a 997 or 855 response to an original 850 request).

Table 13 Input Containers for ChannelManagerClient.associateActions

Name	Description
OrigPkgHdrId	Database ID of the original message
AckPkgHeaderId	Database ID of the acknowledgment message
PkgType	Name of the messaging or packaging envelope used for the message, such as **ISA** or **GS**.

Table 13 Input Containers for ChannelManagerClient.associateActions (Continued)

Name	Description
TPId	The database's unique ID for the trading partner; in other words, the foreign key to ex_trading_partner.
MsgUniqId	Unique ID for the message.
ErrorFlag	A value of **Y** signifies that the message contains a "business" type of error: could not decrypt, could not verify signature, and so forth.
ErrorNo	*(reserved)*
ErrorStr	A description of the error.

Table 14 Output Container for ChannelManagerClient.associateActions

Name	Description
isAssociated	A value of **Y** signifies that an associated action exists.

lookupAS2TPFromPartner

ChannelManagerClient.**lookupAS2TPFromPartner** is used to fetch trading partner information (the delivery channel profile, or DCP) from an inbound AS2 message. For example, if an HTTP server got a Post, it could be used to determine which trading partner sent the message and to look up parameters associated with that partner.

This is not a generic operation; its use is reserved for SeeBeyond only at this time.

lookupTPFromPartner

ChannelManagerClient.**lookupTPFromPartner** is used to fetch trading partner information (the delivery channel profile, or DCP) from a generic inbound message.

Table 15 Input Containers for ChannelManagerClient.lookupTPFromPartner

Name	Description
PartnerName	Name of the trading partner whose information is to be fetched.
ServiceName	Name of the messaging service being used to process the message.
ActionName	Name of the messaging action being used to process the message.

Table 16 Output Containers for ChannelManagerClient.lookupTPFromPartner

Name	Description
text	See output containers for **"lookupTPToPartner" on page 46**, especially the extensive descriptions in Table 18 and Tables 19 through 23.

lookupTPToPartner

ChannelManagerClient.**lookupTPToPartner** is used to fetch trading partner information (the delivery channel profile, or DCP) from a generic inbound message.

Table 17 Input Containers for ChannelManagerClient.lookupTPToPartner

Name	Description
PartnerName	Name of the trading partner whose information is to be fetched.
TPProfileId	Trading partner profile ID to be used.
ServiceName	Name of the messaging service being used to process the message.
ActionName	Name of the messaging action being used to process the message.

Table 18 DCP Root Output Containers for lookupTPToPartner

Name	Description
ChannelId	*(not currently used)*
Retries	The maximum number of retries permitted.
RetryInterval	The interval between retries.
TradingPartnerId	*(not currently used)*
HostGenId	eXchange-generated unique ID identifying the B2B host.
TPGenId	eXchange-generated unique ID identifying the trading partner.
ActionBindingProfile	See Table 19: **DCP Output Containers: lookupTPToPartner... ActionBindingProfile** on page 46.
ToPartnerTransport	See Table 20: **DCP Output Containers: lookupTPToPartner... ToPartnerTransport** on page 50.
FromPartnerTransport	See Table 21: **DCP Output Containers: lookupTPToPartner... FromPartnerTransport** on page 51.
ToPartnerPackager	See Table 22: **DCP Output Containers: lookupTPToPartner... ToPartnerPackager** on page 52.
FromPartnerUnpackager	See Table 23: **DCP Output Containers: lookupTPToPartner... FromPartnerUnpackager** on page 55.

Table 19 DCP Output Containers: lookupTPToPartner... ActionBindingProfile

Name	Description
CPAId	Trading profile ID that unique identifies a trading partner agreement.
ActionId	*(not currently used)*
ActionName	Name of the business transaction associated with this delivery channel.

Table 19 DCP Output Containers: lookupTPToPartner... ActionBindingProfile (Continued)

Name	Description
ToPartnerFlag	A value of **TRUE** signifies that this message is outbound to the trading partner.
ServiceName	Name of the messaging service being used to deliver the message.
RoleName	Name of the role that the trading partner assumes in the CPA.
HostId	Party ID identifying the B2B host to the trading partner.
Start	CPA effective data.
End	CPA expiration date.
ConcurrentConversations	The maximum number of concurrent conversations allowed by the CPA.
InvocationLimit	The maximum number of conversations that can be processed under the CPA.
ProtocolName	Name of the protocol being used to deliver the message.
ProtocolVersion	Version of the protocol being used to deliver the message.
IsNonRepudiationRequired	A value of **TRUE** signifies that nonrepudiation is required and a digital signature is to be used.
IsConfidential	A value of **TRUE** signifies that the message is to be encrypted.
IsAuthenticated	A value of **TRUE** signifies that the delivery channel requires authentication of the sender of the message before the message is delivered.
IsAuthorizationRequired	*(not currently used)*
IsTamperProof	*(not currently used)*
IsIntelligibleCheckRequired	*(not currently used)*
IsSecureTransportRequired	*(not currently used)*
BatchType	*(not currently used)*
Operation	*(not currently used)*
GeneratedPortType	*(not currently used)*
GeneratedPortTypeNS	*(not currently used)*
ServiceExtAttrValueXML	*(not currently used)*
ValidationExtAttrValueXML	*(not currently used)*
EnvelopeExtAttrValueXML	*(not currently used)*
InternalSenderTransport ExtAttrValueXML	TAD to be used when sending messages from eXchange to the internal system.
InternalReceiverTransport ExtAttrValueXML	TAD to be used when receiving messages into eXchange from the internal system.

Table 19 DCP Output Containers: lookupTPToPartner... ActionBindingProfile (Continued)

Name	Description
InternalReceiverTransport ProtocolName	Name of transport protocol to be used for receiving messages into eXchange when using the internal delivery channel.
InternalReceiverTransport ProtocolVersion	Version of transport protocol to be used for sending messages from eXchange when using the internal delivery channel.
InternalSenderTransport ProtocolName	Name of transport protocol to be used for sending messages from eXchange when using the internal delivery channel.
InternalSenderTransport ProtocolVersion	Version of transport protocol to be used for sending messages from eXchange when using the internal delivery channel.
PartyId >**PartyId**	Unique ID for trading partner, as set in trading partner configuration.
PartyId >**PartyType**	Type of unique ID for trading partner, as set in trading partner configuration.
PartyRef >**XlinkHrefName**	*(ebXML only)* Link to a location containing reference information about the trading partner.
PartyRef >**PartyRefXlinkType**	*(ebXML only)* At this time, always set to **SIMPLE**.
PartyRef >**PartyRefType**	*(ebXML only)* Document type identifier for external reference information about the trading partner.
PartyRef >**SchemaLocation**	*(ebXML only)* Schema location for the PartyRefXlinkType.
MimePackaging >**Id**	*(ebXML only)* Unique ID that identifies the MIME packaging details to be used.
MimePackaging >**Parsed**	*(ebXML only)* A value of **TRUE** signifies that the packaging constructs specified in the other child elements can be produces as well as processed at the software messaging service layer.
MimePackaging >**Generated**	*(ebXML only)* A value of **TRUE** signifies that the packaging constructs specified in the other child elements can be produces as well as processed at the software messaging service layer.
MimePackaging >CompositeList > **Encapsulation >Id**	Encapsulation identifier.
MimePackaging >CompositeList **Encapsulation >MimeType**	Value of the MIME content type for this message part (for example, **application/pkcs7-mime**)
MimePackaging >CompositeList **Encapsulation >MimeParameters**	Values of any significant MIME parameters needed to understand the processing demands of the content type.
MimePackaging >CompositeList Encapsulation > Constituent > **ExcludeFromSignature**	A value of **TRUE** signifies that the message is not to be signed.

Table 19 DCP Output Containers: lookupTPToPartner... ActionBindingProfile (Continued)

Name	Description
MimePackaging > CompositeList Encapsulation > Constituent > **MinOccurs**	*(not currently used)*
MimePackaging > CompositeList Encapsulation > Constituent > **MaxOccurs**	*(not currently used)*
MimePackaging > CompositeList Encapsulation > Constituent > **SignatureTransforms**	*(not currently used)*
MimePackaging > CompositeList Encapsulation > Constituent > **EncryptionTransforms**	*(not currently used)*
MimePackaging > CompositeList Encapsulation > Constituent > **Role**	*(not currently used)*
MimePackaging > CompositeList Encapsulation > Constituent > **MimeType**	Value of the MIME content type for this message constituent (for example, **application/pkcs7-mime**)
MimePackaging > CompositeList Encapsulation > Constituent > **Id**	*(ebXML)* Reference to the Simple Part ID.
MimePackaging > CompositeList Encapsulation > Constituent > **SimplePart > Id**	Simple Part unique ID.
MimePackaging > CompositeList Encapsulation > Constituent > **SimplePart > Role**	*(not currently used)*
MimePackaging > CompositeList Encapsulation > Constituent > **SimplePart > MimeType**	Value of the MIME content type for this message constituent (for example, **application/xml**)
MimePackaging > **Composite > Id**	Composite identifier.
MimePackaging > **Composite > MimeType**	Value of the MIME content type for this message part (for example, **multipart/related** or **multipart/signed**)
MimePackaging > **Composite > MimeParameters**	Values of any significant MIME parameters needed to understand the processing demands of the content type.
MimePackaging > Composite > **Constituent > ExcludeFromSignature**	A value of **TRUE** signifies that the message is not to be signed.
MimePackaging > Composite > **Constituent > MinOccurs**	*(not currently used)*
MimePackaging > Composite > **Constituent > MaxOccurs**	*(not currently used)*

Table 19 DCP Output Containers: lookupTPToPartner... ActionBindingProfile (Continued)

Name	Description
MimePackaging >Composite > **Constituent >SignatureTransforms**	*(not currently used)*
MimePackaging >Composite > **Constituent >EncryptionTransforms**	*(not currently used)*
MimePackaging >Composite > **Constituent >Role**	*(not currently used)*
MimePackaging >Composite > **Constituent >MimeType**	Value of the MIME content type for this message constituent (for example, **application/xml**)
MimePackaging >Composite > **Constituent >Id**	*(ebXML)* Reference to the Simple Part ID.
MimePackaging >Composite > **Constituent >SimplePart >Id**	Simple Part unique ID.
MimePackaging >Composite > **Constituent >SimplePart >Role**	*(not currently used)*
MimePackaging >Composite > **Constituent >SimplePart >MimeType**	Value of the MIME content type for this message constituent (for example, **application/xml**)

Table 20 DCP Output Containers: lookupTPToPartner... ToPartnerTransport

Name	Description
TransportProtocolName	Name of transport protocol to be used for sending to a partner from eXchange.
TransportProtocolVersion	Version of transport protocol to be used for sending to a partner from eXchange.
ServerCertificateRef	*(not currently used)*
ClientSecurityDetailsRef	*(not currently used)*
SecurityProtocolName	Name of transport security protocol to be used for transport to the trading partner.
SecurityProtocolVersion	Version of transport security protocol to be used transport to the trading partner.
ClientCertificateRef	*(not currently used)*
ServerSecurityDetailsRef	*(not currently used)*
TransportExtAttrValueXML	Transport Attributes Definition (TAD) XML to be used when sending to a trading partner from eXchange.
SecurityExtAttrValueXML	*(not currently used)*
EncryptionAlgorithm >**Name**	Name of the encryption algorithm to be used when sending to a trading partner from eXchange.
EncryptionAlgorithm >**OID**	Object identifier for the encryption algorithm.
EncryptionAlgorithm > **EnumerationType**	*(not currently used)*

Table 20 DCP Output Containers: lookupTPToPartner... ToPartnerTransport (Continued)

Name	Description
EncryptionAlgorithm > **MinimumStrength**	*(not currently used)*
EncryptionAlgorithm >**W3C**	*(not currently used)*
EndPoint >**Type**	Type of endpoint specified for the trading partner.
EndPoint >**URI**	Uniform Resource Identifier specified for the trading partner.
AccessAuthentication	*(not currently used)*
TransportExtAttributeValue > **Attribute >name**	*(not currently used)*
TransportExtAttributeValue > **Attribute >value**	*(not currently used)*
SecurityExtAttributeValue > **Attribute >name**	*(not currently used)*
SecurityExtAttributeValue > **Attribute >value**	*(not currently used)*
TransportExtAttrValueXML	TAD attribute values.
SecurityExtAttrValueXML	*(not currently used)*

Table 21 DCP Output Containers: lookupTPToPartner... FromPartnerTransport

Name	Description
TransportProtocolName	Name of transport protocol to be used for receiving into eXchange from a trading partner.
TransportProtocolVersion	Version of transport protocol to be used for receiving into eXchange from a trading partner.
ServerCertificateRef	*(not currently used)*
ClientSecurityDetailsRef	*(not currently used)*
SecurityProtocolName	Name of transport security protocol to be used for transport to the trading partner.
SecurityProtocolVersion	Version of transport security protocol to be used transport to the trading partner.
ClientCertificateRef	*(not currently used)*
ServerSecurityDetailsRef	*(not currently used)*
TransportExtAttrValueXML	Transport Attributes Definition (TAD) XML to be used when receiving into eXchange from a trading partner.
SecurityExtAttrValueXML	*(not currently used)*
EncryptionAlgorithm >**Name**	Name of the encryption algorithm to be used when receiving into eXchange from a trading partner.
EncryptionAlgorithm >**OID**	Object identifier for the encryption algorithm.
EncryptionAlgorithm > **EnumerationType**	*(not currently used)*

Table 21 DCP Output Containers: lookupTPToPartner... FromPartnerTransport (Continued)

Name	Description
EncryptionAlgorithm > **MinimumStrength**	*(not currently used)*
EncryptionAlgorithm >**W3C**	*(not currently used)*
Endpoint >Type	Type of endpoint specified for the trading partner.
Endpoint >URI	Uniform Resource Identifier specified for the trading partner.
AccessAuthentication	*(not currently used)*
TransportExtAttributeValue > **Attribute >name**	*(not currently used)*
TransportExtAttributeValue > **Attribute >value**	*(not currently used)*
SecurityExtAttributeValue > **Attribute >name**	*(not currently used)*
SecurityExtAttributeValue > **Attribute >value**	*(not currently used)*
TransportExtAttrValueXML	TAD attribute values.
SecurityExtAttrValueXML	*(not currently used)*

Table 22 DCP Output Containers: lookupTPToPartner... ToPartnerPackager

Name	Description
Level	*(not currently used)*
EncryptionCertificateRef	Reference to the trading partner's encryption certificate to be used, located in the keystore of the B2B host.
HashFunction	Name of the hash algorithm to be used.
SigningSecurityDetailsRef	Name of the security truststore used for signature.
PackPipeline	Packaging protocol (process) to be used.
PersistDuration	Duration specified for the transaction to be stored and available for review.
EncryptionSecurityDetailsRef	Name of the security truststore used for encryption.
SigningCertificateRef	Reference to the B2B host signature key to be used, located in the keystore of the B2B host.
SyncReplyMode	Message response type (either **SYNC** or **ASYNC**).
MessageOrderSemantics	*(not currently used)*
AckRequested	Specifies to the trading partner that an acknowledgment is requested.
AckSignatureRequested	Specifies to the trading partner that a signature is requested with the acknowledgment.
DuplicateElimination	If set, indicates that the trading partner is to check for a duplicate message.

Table 22 DCP Output Containers: lookupTPToPartner... ToPartnerPackager (Continued)

Name	Description
Actor	*(not currently used)*
PackagingProtocolName	Name of the enveloping protocol to be used to send to a trading partner.
PackagingProtocolVersion	Version of the enveloping protocol to be used to send to a trading partner.
DigitalEnvelopeProtocolName	Name of the signature algorithm to be used to send to a trading partner.
DigitalEnvelopeProtocolVersion	Version of the signature algorithm to be used to send to a trading partner.
NonRepudiationProtocolName	Name of the encryption algorithm to be used to encrypt the message.
NonRepudiationProtocolVersion	Version of the encryption algorithm to be used to encrypt the message.
EnvelopeExtAttrValueXML	Enveloping Attributes Definition (EAD to be used when sending to a trading partner.
EnvelopeExtAttributeValue > Attribute >**name**	*(not currently used)*
EnvelopeExtAttributeValue > Attribute >**value**	*(not currently used)*
EnvelopeExtAttributeDef > Attribute >**name**	*(not currently used)*
EnvelopeExtAttributeDef > Attribute >**displayname**	*(not currently used)*
EnvelopeExtAttributeDef > Attribute >**type**	*(not currently used)*
EnvelopeExtAttributeDef > Attribute >**maxChars**	*(not currently used)*
EnvelopeExtAttributeDef > Attribute >**minChars**	*(not currently used)*
EnvelopeExtAttributeDef > Attribute >**requiredFlag**	*(not currently used)*
EnvelopeExtAttributeDef > Attribute >**fixedFlag**	*(not currently used)*
EnvelopeExtAttributeDef > Attribute >**default**	*(not currently used)*
EnvelopeExtAttributeDef > Attribute >**direction**	*(not currently used)*
EnvelopeExtAttributeDef > Attribute >**mergeOption**	*(not currently used)*
EnvelopeExtAttributeDef > Attribute >**FormatString**	*(not currently used)*

Table 22 DCP Output Containers: lookupTPToPartner... ToPartnerPackager (Continued)

Name	Description
EnvelopeExtAttributeDef > Attribute > **List**	*(not currently used)*
ToPartnerPackProtocolSubVersion > **SubVersion**	*(not currently used)*
ToPartnerPackProtocolSubVersion > **ExtAttrValueXML**	*(not currently used)*
ToPartnerPackProtocolSubVersion > ExtAttributeDef > Attribute > **name**	*(not currently used)*
ToPartnerPackProtocolSubVersion > ExtAttributeDef > Attribute > **displayname**	*(not currently used)*
ToPartnerPackProtocolSubVersion > ExtAttributeDef > Attribute > **type**	*(not currently used)*
ToPartnerPackProtocolSubVersion > ExtAttributeDef > Attribute > **maxChars**	*(not currently used)*
ToPartnerPackProtocolSubVersion > ExtAttributeDef > Attribute > **minChars**	*(not currently used)*
ToPartnerPackProtocolSubVersion > ExtAttributeDef > Attribute > **requiredFlag**	*(not currently used)*
ToPartnerPackProtocolSubVersion > ExtAttributeDef > Attribute > **fixedFlag**	*(not currently used)*
ToPartnerPackProtocolSubVersion > ExtAttributeDef > Attribute > **default**	*(not currently used)*
ToPartnerPackProtocolSubVersion > ExtAttributeDef > Attribute > **direction**	*(not currently used)*
ToPartnerPackProtocolSubVersion > ExtAttributeDef > Attribute > **mergeOption**	*(not currently used)*
ToPartnerPackProtocolSubVersion > ExtAttributeDef > Attribute > **FormatString**	*(not currently used)*
ToPartnerPackProtocolSubVersion > ExtAttributeDef > Attribute > **List**	*(not currently used)*
ToPartnerPackProtocolSubVersion > ExtAttributeValue > Attribute > **name**	*(not currently used)*

Table 22 DCP Output Containers: lookupTPToPartner... ToPartnerPackager (Continued)

Name	Description
ToPartnerPackProtocolSubVersion > ExtAttributeValue >Attribute > **value**	*(not currently used)*
ToPartnerSignal > **SignalName**	*(not currently used)*
ToPartnerSignal > **ExtAttributeValue**	*(not currently used)*
EncryptionAlgorithm > **Name**	*(not currently used)*
EncryptionAlgorithm > **OID**	*(not currently used)*
EncryptionAlgorithm > **EnumerationType**	*(not currently used)*
EncryptionAlgorithm > **MinimumStrength**	*(not currently used)*
EncryptionAlgorithm > **W3C**	*(not currently used)*
SignatureAlgorithm > **Name**	*(not currently used)*
SignatureAlgorithm > **OID**	*(not currently used)*
SignatureAlgorithm > **EnumerationType**	*(not currently used)*
SignatureAlgorithm > **W3C**	*(not currently used)*

Table 23 DCP Output Containers: lookupTPToPartner... FromPartnerUnpackager

Name	Description
Level	*(not currently used)*
EncryptionCertificateRef	Reference to the trading partner's decryption private key to be used, located in the keystore of the B2B host.
HashFunction	Name of the hash algorithm to be used.
SigningSecurityDetailsRef	Name of the security truststore used for verification.
UnpackPipeline	Packaging protocol (process) to be used.
PersistDuration	Duration specified for the transaction to be stored and available for review.
EncryptionSecurityDetailsRef	Name of the security truststore used for encryption.
SigningCertificateRef	Reference to the trading partner's signature certificate to be used, located in the keystore of the B2B host.
SyncReplyMode	Message response type (either **SYNC** or **ASYNC**).
MessageOrderSemantics	*(not currently used)*
AckRequested	Specifies that the trading partner has requested an acknowledgment.
AckSignatureRequested	Specifies that the trading partner has requested a signature with the acknowledgment.

Table 23 DCP Output Containers: lookupTPToPartner... FromPartnerUnpackager (Continued)

Name	Description
DuplicateElimination	If set, indicates that eXchange is to check for a duplicate message.
Actor	*(not currently used)*
PackagingProtocolName	Name of the enveloping protocol to be used to send to a trading partner.
PackagingProtocolVersion	Version of the enveloping protocol to be used to send to a trading partner.
DigitalEnvelopeProtocolName	Name of the signature algorithm to be used to verify the message.
DigitalEnvelopeProtocolVersion	Version of the signature algorithm to be used to verify the message.
NonRepudiationProtocolName	Name of the encryption algorithm to be used to decrypt the message.
NonRepudiationProtocolVersion	Version of the encryption algorithm to be used to decrypt the message.
ValidationExtAttrValueXML	Enveloping Attributes Definition (EAD to be used when receiving from a trading partner.
ValidationExtAttributeValue > Attribute >**name**	*(not currently used)*
ValidationExtAttributeValue > Attribute >**value**	*(not currently used)*
ValidationExtAttributeDef > Attribute >**name**	*(not currently used)*
ValidationExtAttributeDef > Attribute >**displayname**	*(not currently used)*
ValidationExtAttributeDef > Attribute >**type**	*(not currently used)*
ValidationExtAttributeDef > Attribute >**maxChars**	*(not currently used)*
ValidationExtAttributeDef > Attribute >**minChars**	*(not currently used)*
ValidationExtAttributeDef > Attribute >**requiredFlag**	*(not currently used)*
ValidationExtAttributeDef > Attribute >**fixedFlag**	*(not currently used)*
ValidationExtAttributeDef > Attribute >**default**	*(not currently used)*
ValidationExtAttributeDef > Attribute >**direction**	*(not currently used)*
ValidationExtAttributeDef > Attribute >**mergeOption**	*(not currently used)*

Table 23 DCP Output Containers: lookupTPToPartner... FromPartnerUnpackager (Continued)

Name	Description
ValidationExtAttributeDef > Attribute > **FormatString**	*(not currently used)*
ValidationExtAttributeDef > Attribute > **List**	*(not currently used)*
FromPartnerPackProtocolSubVersion > **SubVersion**	*(not currently used)*
FromPartnerPackProtocolSubVersion > **ExtAttrValueXML**	*(not currently used)*
FromPartnerPackProtocolSubVersion > ExtAttributeDef > Attribute > **name**	*(not currently used)*
FromPartnerPackProtocolSubVersion > ExtAttributeDef > Attribute > **displayname**	*(not currently used)*
FromPartnerPackProtocolSubVersion > ExtAttributeDef > Attribute > **type**	*(not currently used)*
FromPartnerPackProtocolSubVersion > ExtAttributeDef > Attribute > **maxChars**	*(not currently used)*
FromPartnerPackProtocolSubVersion > ExtAttributeDef > Attribute > **minChars**	*(not currently used)*
FromPartnerPackProtocolSubVersion > ExtAttributeDef > Attribute > **requiredFlag**	*(not currently used)*
FromPartnerPackProtocolSubVersion > ExtAttributeDef > Attribute > **fixedFlag**	*(not currently used)*
FromPartnerPackProtocolSubVersion > ExtAttributeDef > Attribute > **default**	*(not currently used)*
FromPartnerPackProtocolSubVersion > ExtAttributeDef > Attribute > **direction**	*(not currently used)*
FromPartnerPackProtocolSubVersion > ExtAttributeDef > Attribute > **mergeOption**	*(not currently used)*
FromPartnerPackProtocolSubVersion > ExtAttributeDef > Attribute > **FormatString**	*(not currently used)*
FromPartnerPackProtocolSubVersion > ExtAttributeDef > Attribute > **List**	*(not currently used)*
FromPartnerPackProtocolSubVersion > ExtAttributeValue > Attribute > **name**	*(not currently used)*

Table 23 DCP Output Containers: lookupTPToPartner... FromPartnerUnpackager (Continued)

Name	Description
FromPartnerPackProtocolSubVersion > ExtAttributeValue >Attribute >**value**	*(not currently used)*
FromPartnerSignal > **SignalName**	*(not currently used)*
FromPartnerSignal > **ExtAttributeValue**	*(not currently used)*
EncryptionAlgorithm > **Name**	*(not currently used)*
EncryptionAlgorithm > **OID**	*(not currently used)*
EncryptionAlgorithm > **EnumerationType**	*(not currently used)*
EncryptionAlgorithm > **MinimumStrength**	*(not currently used)*
EncryptionAlgorithm > **W3C**	*(not currently used)*
SignatureAlgorithm > **Name**	*(not currently used)*
SignatureAlgorithm > **OID**	*(not currently used)*
SignatureAlgorithm > **EnumerationType**	*(not currently used)*
SignatureAlgorithm > **W3C**	*(not currently used)*

read

ChannelManagerClient.**read** performs a read operation on the server, receiving messages to the B2B host from internal delivery channels or from external trading partners.

Table 24 Output Containers for ChannelManagerClient.read

Name	Description
text	See output containers for **"lookupTPToPartner" on page 46**, especially the extensive descriptions in Table 18 and Tables 19 through 23.

track

ChannelManagerClient.**track** performs a track operation to store the message to the eXchange database

Table 25 Input Containers for ChannelManagerClient.track

Name	Description
Protocol	Name of the protocol being used to handle the message.

Table 25 Input Containers for ChannelManagerClient.track (Continued)

Name	Description
ReceiveFlag	A value of **Y** signifies that the request message was inbound.
BufferId	*ebXML only*. Conversation ID.
OrderNumInBuffer	*ebXML only*. Reserved for use in message ordering.
MsgUniqId	Unique ID for the message.
TPId	The database's unique ID for the trading partner; in other words, the foreign key to ex_trading_partner.
OrdMsgId	*(not currently used)*
Multiple Content	*(not currently used)*
PkgType	Name of the messaging or packaging envelope used for the message, such as ISA or GS.
ErrorFlag	A value of **Y** signifies that the message contains a "business" type of error: could not decrypt, could not verify signature, and so forth.
RespRequired	A value of **Y** signifies that a response to this message is required.
MsgBlob	Container for the message payload.
SignedFlag	A value of **Y** signifies that the message is signed.
CompressedFlag	A value of **Y** signifies that the message is compressed.
EncryptedFlag	A value of **Y** signifies that the message is encrypted.
MessageType	Message type for the message, such as **Message** or **Ack**.
Resendable	A value of **Y** signifies that the message can be re-sent.
Service	Service name for the request message for which the response is received.
Action	Action name for the request message for which the response is received.

Table 26 Output Container for ChannelManagerClient.track

Name	Description
MsgHdrId	Message header ID, used for message association.

trackDialogue

ChannelManagerClient.**trackDialogue** is used to write the initial message—that is, the first business document in a conversation—to message tracking. To write subsequent messages in the same conversation, the trackDialogueAction operation is used.

Table 27 Input Containers for ChannelManagerClient.trackDialogue

Name	Description
tpNetworkId	eXchange-generated unique ID identifying the trading partner.
dialogueID	Database-assigned unique ID identifying the business conversation.

Table 27 Input Containers for ChannelManagerClient.trackDialogue (Continued)

Name	Description
dialogueIdentifier	Dialog ID in the message.
serviceName	Name of the messaging service being used to handle the message.
activeFlag	A value of **Y** signifies that the business conversation is active.
Status	Status of the business conversation.
startDate	Timestamp recording when the business conversation initiated.
endDate	Timestamp recording when the business conversation terminated.
protocol	Name of the protocol being used to handle the message.
hostNetworkId	eXchange-generated unique ID identifying the B2B host.
isResponse	A value of **true** signifies that the message is a response to a previous message.

Table 28 Output Containers for ChannelManagerClient.trackDialogue

Name	Description
tpNetworkId	eXchange-generated unique ID identifying the trading partner.
dialogueID	Database-assigned unique ID identifying the business conversation.
dialogueIdentifier	Dialog ID in the message.
serviceName	Name of the messaging service being used to handle the message.

trackDialogueAction

ChannelManagerClient.**trackDialogueAction** also writes to message tracking, but it writes subsequent messagesin a business conversation (after the initial message was written by trackDialogue operation).

Table 29 Input Containers for ChannelManagerClient.trackDialogueAction

Name	Description
messageId	*(deprecated)* Duplicate of actionMessageId
actionName	Name of the messaging action that is processing the message.
receiveFlag	A value of **Y** signifies that it is an inbound message.
resendFlag	A value of **Y** signifies that this is a re-send of the message
sendCount	A value of **Y** signifies that the business conversation is active.
sequenceNum	Status of the business conversation.
referToType	*(not used)*
actStatus	*(not used)*
pkgMsgHdrId	Database-assigned unique ID for the message packaging.

Table 29 Input Containers for ChannelManagerClient.trackDialogueAction (Continued)

Name	Description
msgType	Message type for the message, such as **Message** or **Ack**.
msgEncoding	Encoding to which the message conforms.
compressedFlag	A value of **Y** signifies that the message is compressed.
encryptedFlag	A value of **Y** signifies that the message is encrypted.
envelopedFlag	A value of **Y** signifies that the message is enveloped.
signedFlag	A value of **Y** signifies that the message is signed.
msgContent	The payload of the message.
attributeMap	Extended attributes for the message.
isStoreOriginal	*(not used)* A value of **Y** signifies that the original (raw) message is to be stored in the database.
errorFlag	A value of **Y** signifies that the message has an error associated with it.
respRequiredFlag	A value of **Y** signifies that a response is required for the message.
actionMessageId	Message ID.
messageType	A value of **msg** signifies a message; **ack** signifies an acknowledgment.

Table 30 Output Containers for ChannelManagerClient.trackDialogueAction

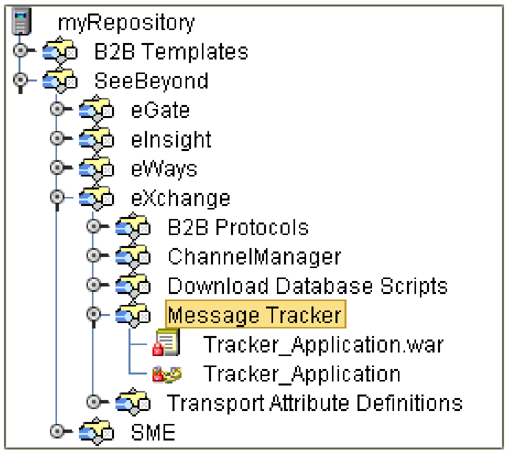
Name	Description
ActionId	ID of the service action (business transaction)
dialogueID	ID of the business dialog.

4.3 Message Tracker

The tracker application is used to record processing, packaging, and error information about messages and acknowledgments as they flow through the eXchange system.

The SeeBeyond > eXchange > **Message Tracker** folder (see Figure 15) contains two items: the tracker application itself, and its **.war** (Web archive) file.

Figure 15 eXchange > Message Tracker Folder



myRepository
B2B Templates
SeeBeyond
eGate
eInsight
eWays
eXchange
B2B Protocols
ChannelManager
Download Database Scripts
Message Tracker
Tracker_Application.war
Tracker_Application
Transport Attribute Definitions
SME

The application is entirely self-contained. All you need to do is connect an instance of the application to the B2B host you want to track and to a well-configured eXchange database. Activating this project generates an eXchange service that can be used in any other project contained in the same repository.

For information on creating and activating a connectivity map containing a tracker application, see **"Creating a Map with a B2B Host and a Message Tracker" on page 88**. For information on using the Message Tracker web client to view tracking information that has been written to the database, see **"Message Tracking" on page 118**.

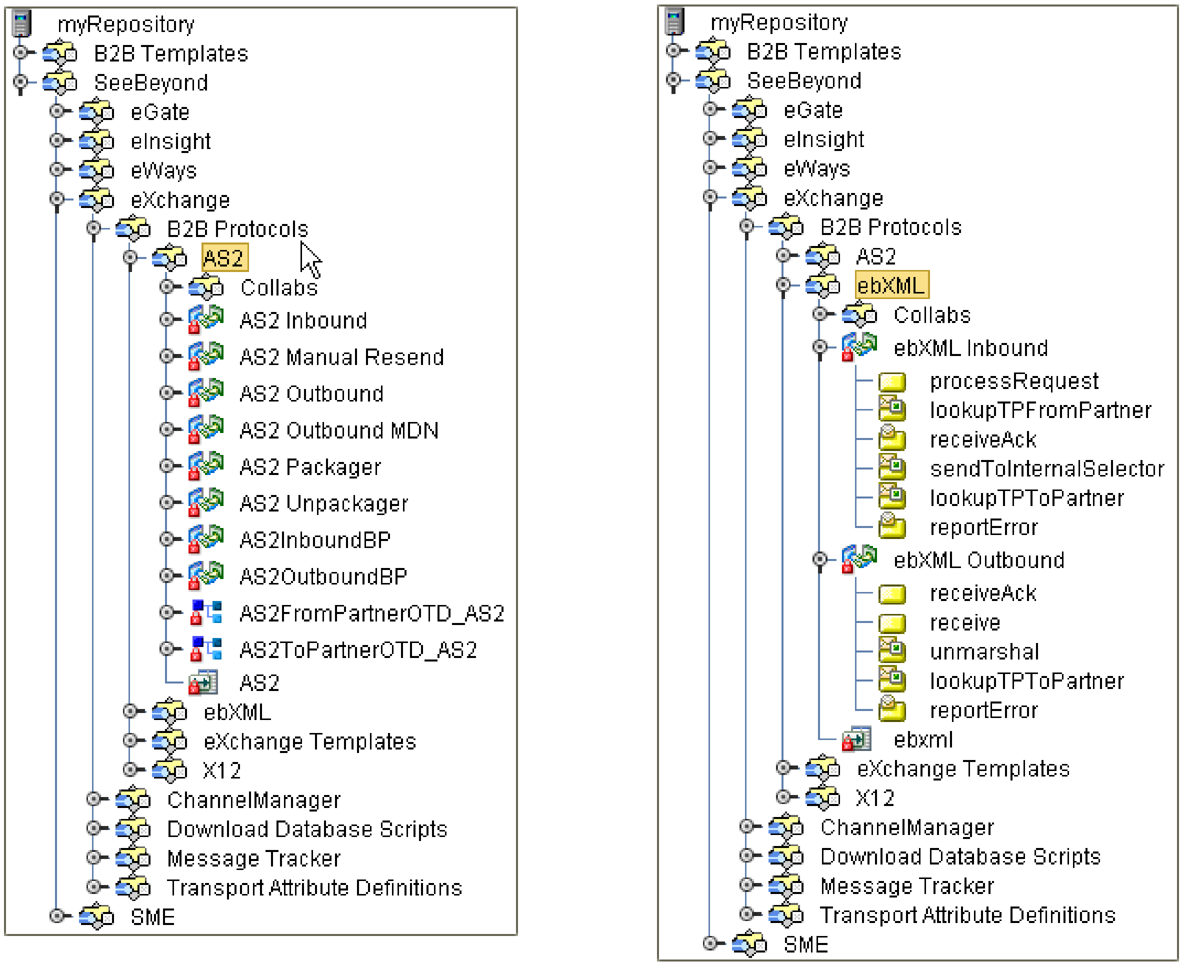
4.4 B2B Protocols for AS2 and ebXML

eXchange includes a library of collaborations, OTDs, and B2B protocols that are custom-tailored for working with AS2 and ebXML messaging. See Figure 14.

Within the SeeBeyond > eXchange > **B2B Protocols > AS2** folder are: Collaborations that provide functionality such as compression/decompression, packaging/ unpackaging, Base64 encryption/decryption, encoding/decoding, signing and verifying signatures, generating/unpackaging MDNs, and more; OTDs that provide request/response functionality for each collaboration, as well as marshal/unmarshal for AS2ToPartner and AS2FromPartner messaging; and eight B2B protocol processes that encapsulate significant processing.

Within the SeeBeyond > eXchange > **B2B Protocols > ebXML** folder are: Collaborations that provide functionality for identifying, tracking, acknowledging, and validating, as well as encrypting/decrypting, signing/verifying, packing and so forth; OTDs that provide request/response functionality for each of the many collaborations; and two B2B protocol processes (one for inbound messages, one for outbound).

Figure 16 eXchange > B2B Protocols > AS2 and ebXML Folders



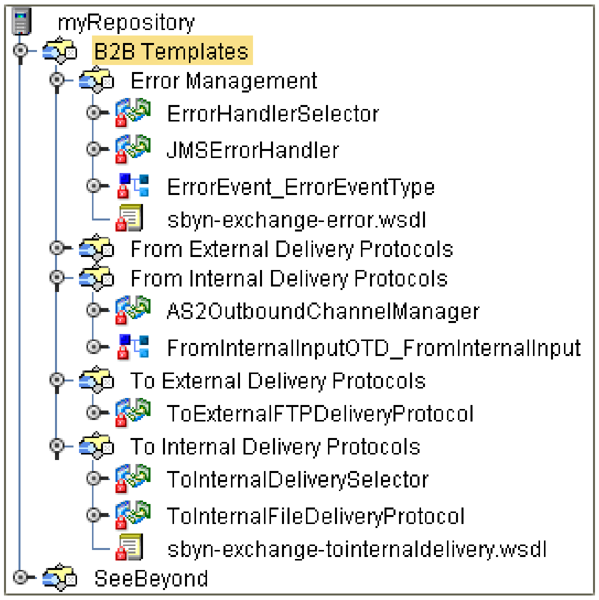
To gain a sense of how the protocol processes and collaborations/OTDs can be used, it is strongly recommended that you download and run the sample implementations. See **Chapter 9 "Implementation Scenario: AS2" on page 123**.

4.5 B2B Templates

The SeeBeyond > **B2B Templates** folder (see Figure 14) provides a set of prepackaged B2B protocols, along with OTDs and **.wsdl** files, that form the start of a library that you can create and configure to your own needs to create a customizable infrastructure.

When you export an eXchange project, the then-current version of the B2B Templates folder is exported along with it, allowing you keep track of the project's dependencies. Therefore, before exporting an eXchange project, you should rename your customized version of B2B Templates folder to something meaningful that associates it with the project(s) being exported. In that way, when you or someone else imports the project(s), there is no name clash between it and the B2B Templates folder in the receiving repository.

Figure 17 B2B Templates Folder



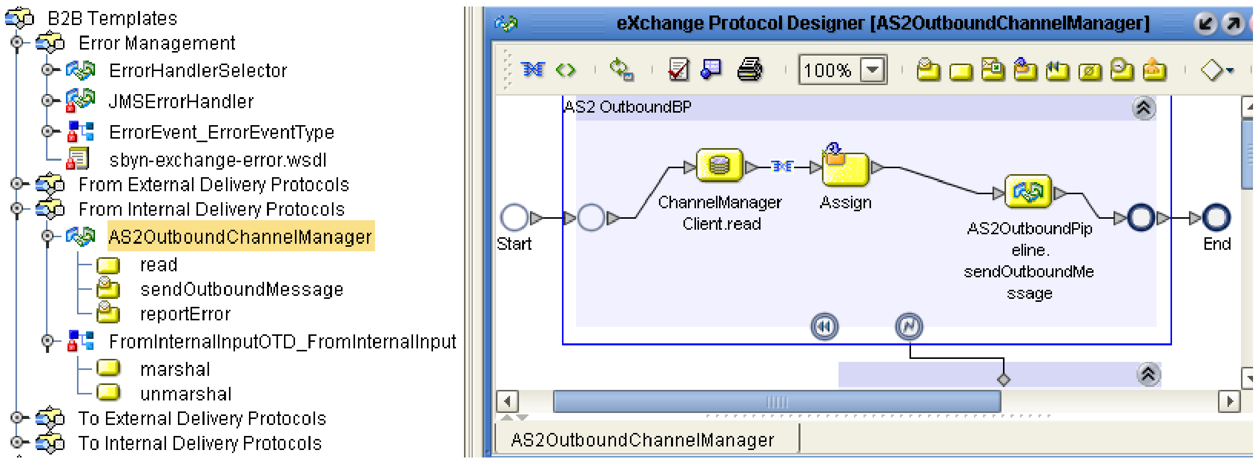
myRepository
- B2B Templates
  - Error Management
    - ErrorHandlerSelector
    - JMSErrorHandler
    - ErrorEvent_ErrorEventType
    - sbyn-exchange-error.wsdl
  - From External Delivery Protocols
  - From Internal Delivery Protocols
    - AS2OutboundChannelManager
    - FromInternalInputOTD_FromInternalInput
  - To External Delivery Protocols
    - ToExternalFTPDeliveryProtocol
  - To Internal Delivery Protocols
    - ToInternalDeliverySelector
    - ToInternalFileDeliveryProtocol
    - sbyn-exchange-tointernaldelivery.wsdl
- SeeBeyond

Items in the B2B Templates folder are interdependent not only with the pre-packaged components in the SeeBeyond > exchange folder, but also between themselves. This is illustrated in the following example.

4.5.1. Example of Interdependencies Within B2B Templates

As shipped, the **From Internal Delivery Protocols** folder contains only two items: an OTD for unmarshaling and marshaling data into and out of the B2B protocol process, and the B2B protocol process itself, **AS2 OutboundChannelManager**. See Figure 18.

Figure 18 Template B2B Protocol Process "AS2 OutboundChannelManager"



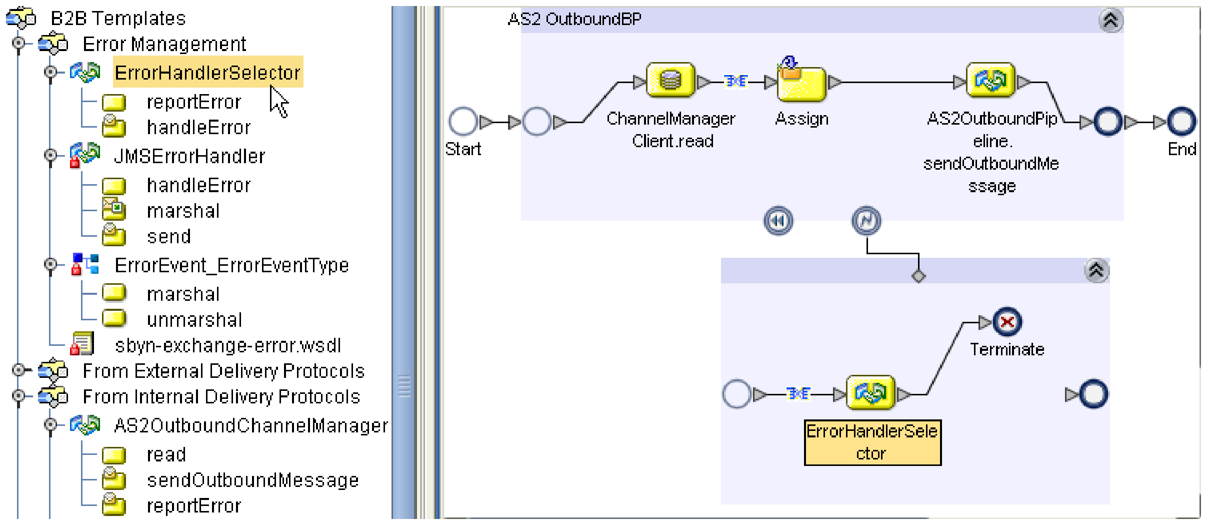
B2B Templates
- Error Management
  - ErrorHandlerSelector
  - JMSErrorHandler
  - ErrorEvent_ErrorEventType
  - sbyn-exchange-error.wsdl
- From External Delivery Protocols
- From Internal Delivery Protocols
  - AS2OutboundChannelManager
    - read
    - sendOutboundMessage
    - reportError
  - FromInternalInputOTD_FromInternalInput
    - marshal
    - unmarshal
- To External Delivery Protocols
- To Internal Delivery Protocols

eXchange Protocol Designer [AS2OutboundChannelManager]
100%
AS2 OutboundBP
Start
ChannelManager Client.read
Assign
AS2OutboundPipeline. sendOutboundMessage
End
AS2OutboundChannelManager

This an unmodified instance of the prepackaged AS2OutBoundBP in the SeeBeyond > eXchange > B2B Protocols AS2 folder.

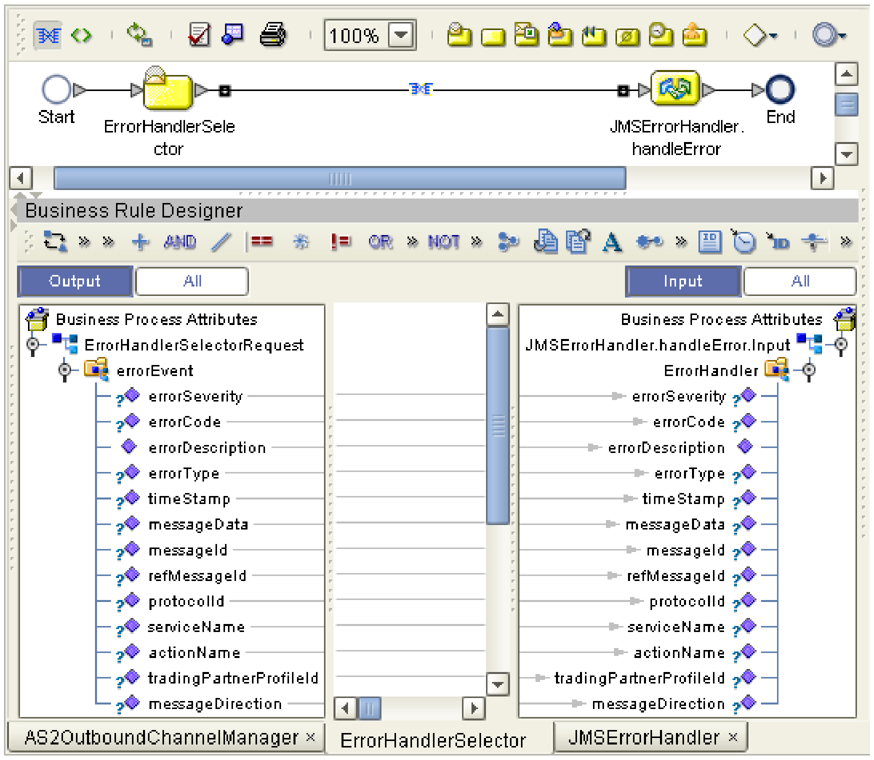
At the lower right margin of the main scope is a Catch Named Exception activity, connecting it to a scope containing an instance of a B2B protocol process from the B2B Templates folder: **ErrorHandlerSelector**. See Figure 19.

Figure 19 Template B2B Protocol Process “ErrorHandlerSelector“



If you open the ErrorHandlerSelector B2B protocol process, you find that by default, it uses JMS for handling errors, mapping fields under the ErrorHandlerSelectorRequest’s **errorEvent** container to the handleError.Input’s **ErrorHandler** container. See Figure 20.

Figure 20 Mapping from ErrorHandlerSelector to ErrorHandler



Creating a Nondefault Error Handler

The purpose of the JMSErrorHandler B2B protocol process is to send error messages to JMS, using the ErrorEvent_ErrorEventType OTD. However, in place of JMS, you could substitute SMTP to e-mail the text of the error message or FTP to write it to a file on a remote server. To create an SMTP-based error handler, for example, you would follow these steps:

1. Export the **sbyn-exchange-error.wsdl** file.
2. In the Error Management folder, create a new B2B protocol process and name it **SMTPErrorHandler** (for example).
3. Open the properties of SMTPErrorHandler and use the **WSDL** tab to load the .wsdl file you exported, the **Partners** tab to add a new partner named ErrorSelector, and the **Business Process Attributes** tab to create a new attribute named ErrorEvent (namespace **urn:sbyn-exchange-err**).
4. Drag activities onto the Protocol Designer canvas for **SMTPErrorHandler**, connect them, and configure business rules in the same way as for JMSErrorHandler.

After you have created a new error handler, you can go back to ErrorHandlerSelector and replace JMSErrorHandler with the new error handler, for example, if you wanted AS2OutboundChannelManager to deliver error messages via SMTP instead of JMS.

In the same way, you can add or modify other components in the B2B Templates folder, making them part of the toolset used by eXchange projects in this repository.

4.6 Overview of SME Processes

Although the Secure Messaging Extension (SME) is not bundled with eXchange, many of the B2B protocol processes presume that it has been installed along with eXchange. This section provides an overview of SME processes; for complete information on using SME, see the *Secure Messaging Extension User's Guide*.

In this section

4.6.1 SME Encryption/Decryption Process

This section describes the internal and external flow of the SME encryption, using the key pair encryption method.

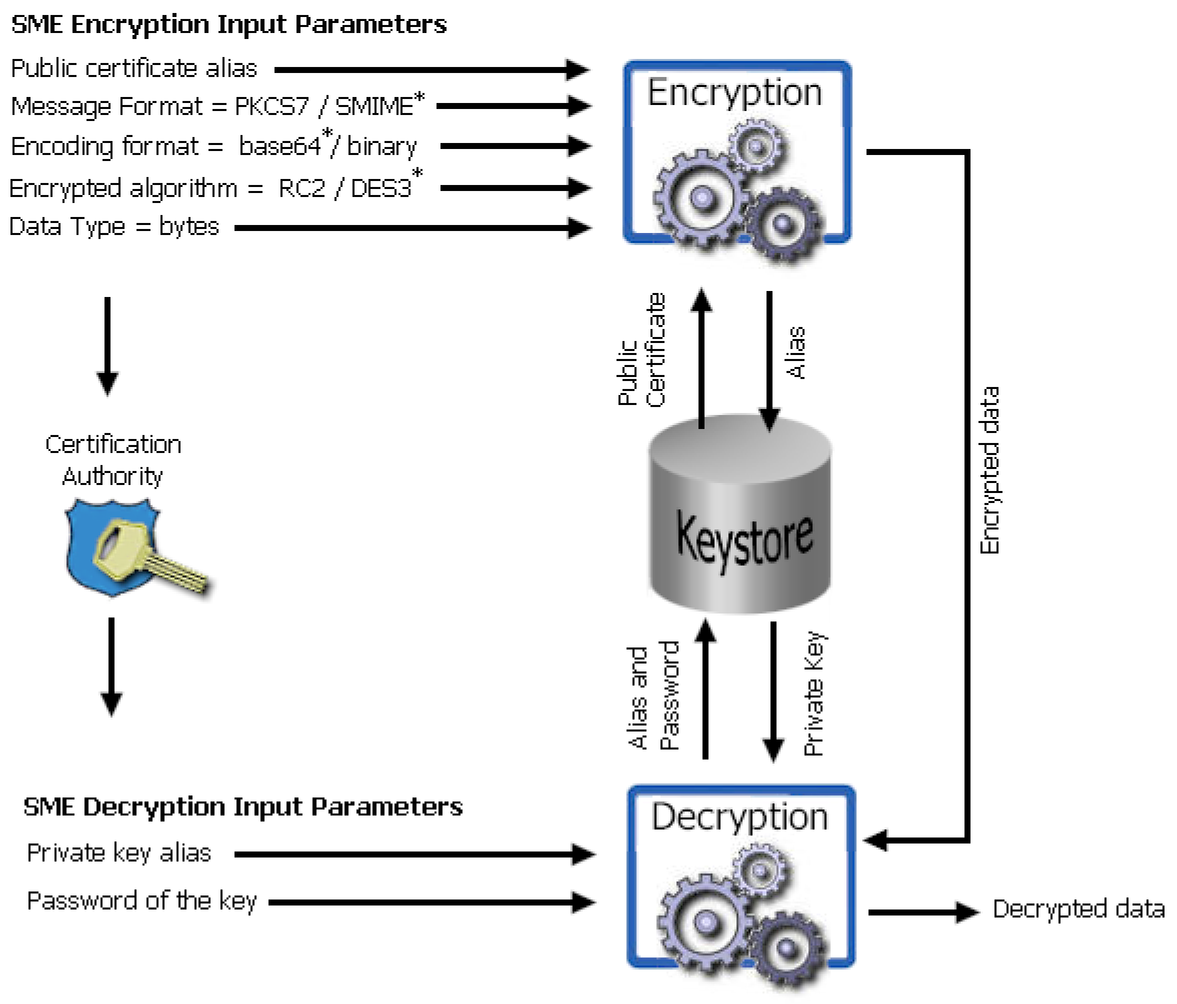
The encryption process begins when the sender's message is encrypted with the public key. The message is also signed by the sender, and the signature itself is encrypted with the sender's private key. When the reader receives the message, the encryption is decoded with the reader's private key. The sender's public certificate, located in the keystore, is used to verify the authenticity of the public key.

In addition to verifying the public key, public certificates also contain the sender's personal information, such as name, institution, and e-mail address, and are signed by a trusted Certificate Authority (CA).

During encryption, a public certificate alias is used to identity the public certificate located in the keystore. During decryption, the reader's private key alias and password is used to access the private key from the keystore and decrypt the message.

The encryption/decryption process, illustrated in Figure 21, details the SME input requirements for encryption and decryption of data.

Figure 21 Encryption/Decryption Process for Secure Messaging Extension (SME)



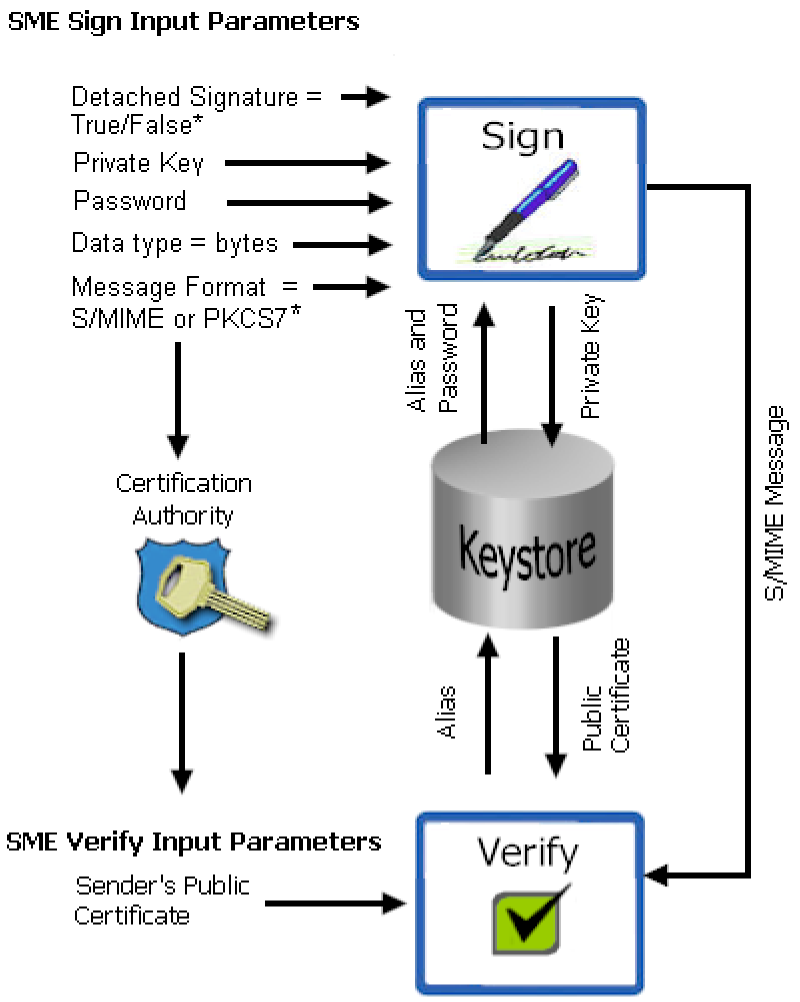
Note: *Input parameters listed with a "*" symbol denote the default used.*

4.6.2 SME Signature/Verification Process

The SME signature/verification process begins when a subscriber publishes a certificate to a Certificate Authority. Published certificates contain the subscriber's identity and public key, and are digitally signed by the Certification Authority. The Certification Authority is also responsible for safeguarding access to the subscriber's private key, which is required during the verification process.

When a subscriber signs and sends a message, the SME **Sign** process converts the message from MIME to S/MIME format. The S/MIME message format also contains the digital footprint of the subscriber's private key, so when the message is received by another user, the public key held by the Certification Authority reads and verifies the digital signature created by the private key. This process is illustrated in Figure 22.

Figure 22 Signature/Verification Process for Secure Messaging Extension (SME)

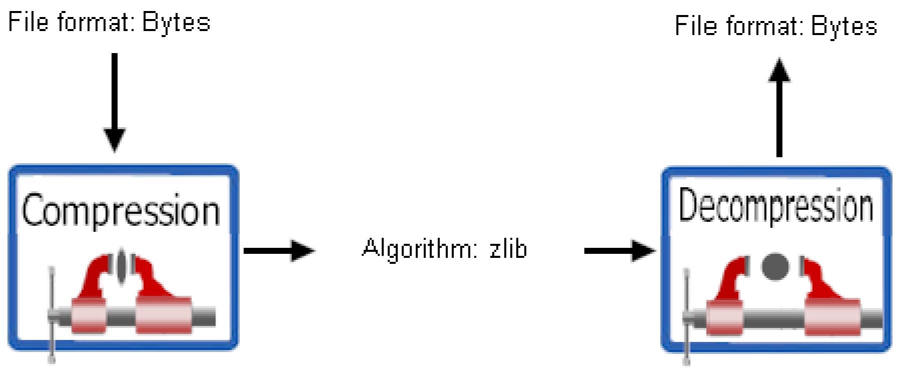

SME Sign Input Parameters
Detached Signature = True/False*
Private Key
Password
Data type = bytes
Message Format = S/MIME or PKCS7*
Sign
Alias and Password
Private Key
S/MIME Message
Certification Authority
Keystore
Alias
Public Certificate
SME Verify Input Parameters
Sender's Public Certificate
Verify

Note: *Input parameters listed with a "*" symbol denote the default used.*

4.6.3 SME Compression/Decompression Process

The SME compression process converts byte type files into PKCS#7 format using the zlib compression library, as illustrated in Figure 23.

Figure 23 Compression/Decompression Process for Secure Messaging Extension (SME)



- For more information on PKCS#7, see the *Secure Messaging Extension User's Guide*.
- For more information on the zlib compression library, visit the gzip home page at: **http://www.gzip.org**

Chapter 5

Using eXchange in Enterprise Designer

This chapter provides step-by-step procedures for using the Enterprise Designer tools, editors, components, and prebuilt protocols and libraries provided by eXchange.

Process Overview

eXchange centers around the concept of a *delivery channel profile* for each trading partner relationship. A delivery channel profile (DCP) consists of:

- A set of *attribute definitions* for transport and messaging, and also, in some cases, for enveloping(=packaging). Attribute definitions define metadata, such as parameter names and types. Later, using ePM, trading parameter values will be supplied.

  Standard B2B protocols that are supplied with eXchange, such as AS2 or ebXML, come equipped with prebuilt messaging attribute definitions, while for custom B2B protocols, you set up your own. Similarly for transport: You can use either the standard transport attribute definitions supplied with eXchange (HTTP, FTP, ...) or create custom ones that you set up yourself.
- A *messaging service*, created using the *eXchange Service Designer*, that choreographs the message-exchange interactions between your enterprise and trading partners. Each messaging service is based on particular messaging attributes definition.

The DCPs—that is, the associations between messaging services and transport attribute definitions—are housed in a *B2B host*. After the B2B host is set up with all its DCPs, a connectivity map is created to connect its output (as well as the output of the Message Tracker application), to an Oracle eWay communicating with the eXchange database. Activation causes the DCPs to be stored in the eXchange database, and also creates an external server, an *eXchange Service*, in the same Environment that contains the Oracle external. If Secure Messaging Extension (SME) is installed, the eXchange Service corresponding to the B2B Host can then be configured with keystores, trust stores, and certificates. The eXchange Service is responsible for *channel management*.

For business logic, prebuilt B2B protocol processes for some standard B2B protocols are supplied with the eXchange product. In addition, the *eXchange Protocol Designer* can be used to design and configure custom B2B protocol processes that you create.

B2B protocol processes for inbound and/or outbound messages are dragged into a connectivity map, where they are represented as services. There, they are connected in usual fashion with externals (including the eXchange Service for channel management) and with other services. Activation of a corresponding Deployment Profile exposes the map’s components for processing by logical hosts. As before, it also stores the DCPs in the eXchange database, making them available to eXchange Partner Manager (ePM).

In this chapter

- Steps for creating a B2B host and populating it with attribute definitions.
- Optional steps for creating and configuring custom attribute definitions.
- Steps for designing messaging services.
- Steps for creating and configuring external delivery channels.
- Optional steps for creating and configuring internal delivery channels.
- Steps for activating a B2B host environment with a Message Tracker application. (Activating a B2B host sets the stage for later activation of projects using the Channel Manager capabilities provided by the eXchange Service corresponding to the B2B host.)
- Optional steps for configuring an eXchange Service with certificates and truststores.

5.1 Setting Up a B2B Host and Its Components

This section explains how to create a B2B host and populate its top window (Attributes Definitions and Services) with attributes definitions.

The editor used for configuring B2B hosts is the **B2B Host Designer**.

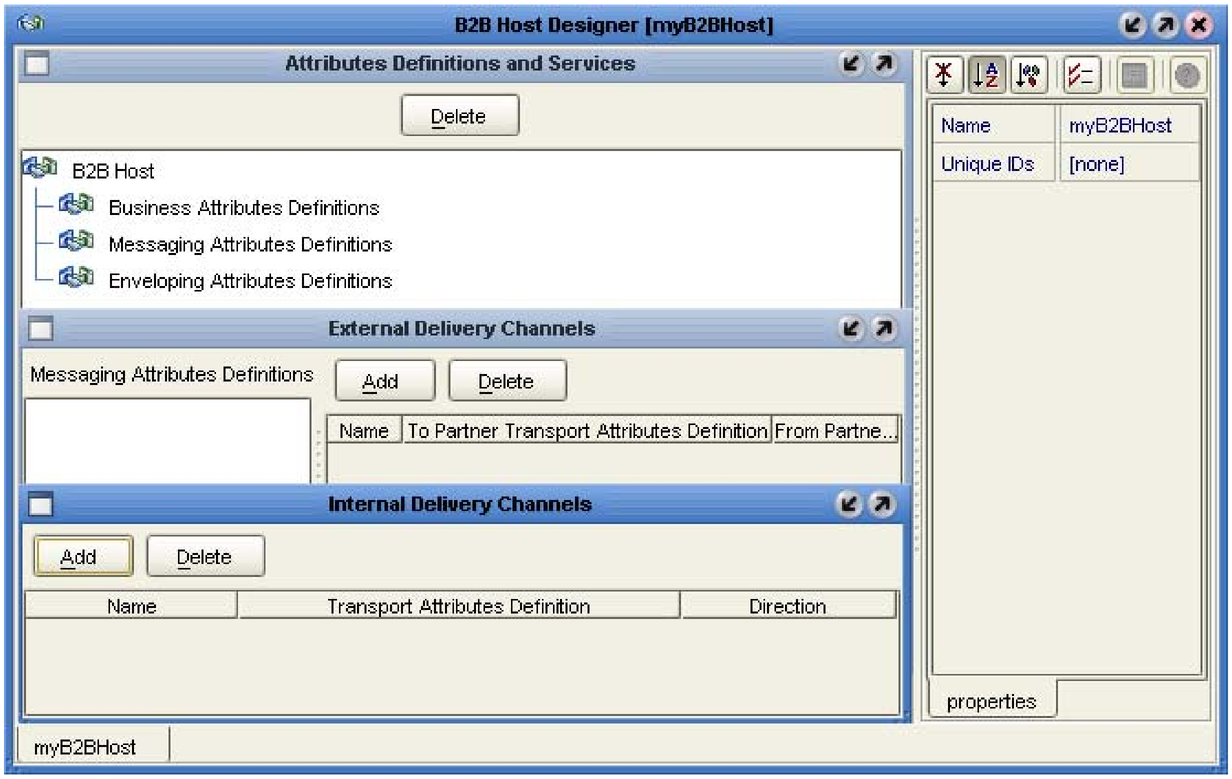
To create a B2B host

1. In Enterprise Designer with the Project Explorer tab active, in the project tree, right-click the project or subproject where the B2B host will reside.
2. On the popup context menu, point at **New**, and then click **B2B Host**.
3. In the **Create B2B Host** dialog, enter a name for the host, and then click **OK**.

   The project tree displays the new component, whose icon suggests two partners shaking hands.

   The B2B Host Designer opens to display three blank windows: Attributes Definitions and Services; Delivery Channels; and Internal Delivery Channels. See Figure 24.

Figure 24 B2B Host Designer

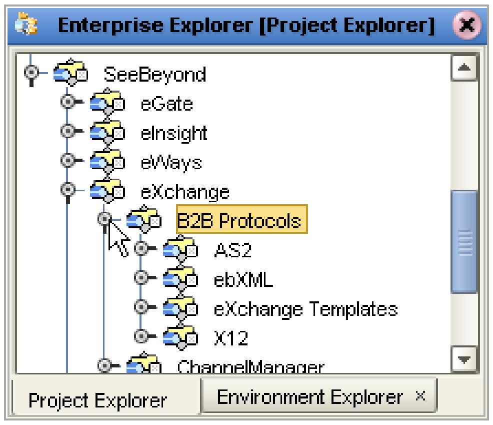

B2B Host Designer [myB2BHost]
Attributes Definitions and Services
Delete
B2B Host
Business Attributes Definitions
Messaging Attributes Definitions
Enveloping Attributes Definitions
External Delivery Channels
Messaging Attributes Definitions
Add
Delete
Name
To Partner Transport Attributes Definition
From Partne...
Internal Delivery Channels
Add
Delete
Name
Transport Attributes Definition
Direction
Name
myB2BHost
Unique IDs
[none]
properties
myB2BHost

- The **Attribute Definitions and Services** window displays a tree of attribute definitions and services that are exposed to the B2B host. Services are not added directly to the tree, but are instead organized by attributes definition. This window allows you drag attribute definitions into the tree, and then to drag messaging services under the corresponding attribute definition folder.
- The **External Delivery Channels** window lists these messaging attributes definitions in its left pane, while its right pane lists delivery channels defined for the item highlighted on the left. It allows you to add, delete, and modify the properties of external delivery channels.
- The **Internal Delivery Channels** window lists names, transport attributes definitions, and direction (Sender = to Internal; Receiver = from Internal). It allows you to add and delete IDCs.

To populate a B2B host with attributes definitions

1 For standard B2B protocol attribute definitions: In the project explorer tree, open the SeeBeyond > eXchange > **B2B Protocols** folder. See Figure 26.

Figure 25 Project Explorer Tree for Standard B2B Protocols



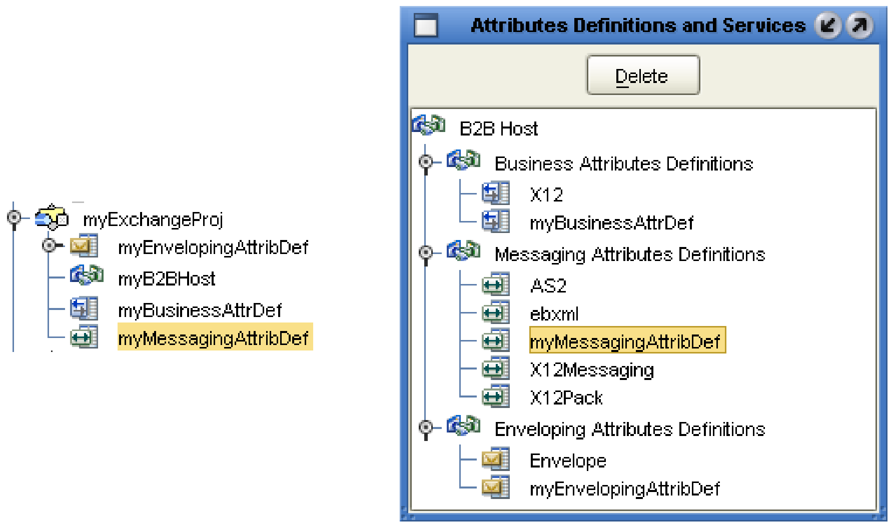
2 *For AS2:* Open the AS2 folder and drag the **AS2** messaging attributes definition (at the end of the list) into the B2B Host Designer canvas, in the Attributes Definitions and Services window, under the Messaging Attributes Definitions node.

3 *For ebXML:* Open the ebXML folder and drag the **ebxml** messaging attributes definition (at the end of the list) into the B2B Host Designer canvas, in the Attributes Definitions and Services window, under the Messaging Attributes Definitions node.

4 For custom messaging attribute definitions: Open the project or subproject and drag the attributes definition into the Attributes Definitions and Services window (see Figure 26). Repeat as needed for other custom attribute definitions.

Result: Figure 26 shows an Attributes Definitions and Services window with all three kinds of standard and custom attributes definitions:

Figure 26 Attributes Definitions and Services Window



5.2 Setting Up Custom Attribute Definitions

This section explains how to create and configure custom attribute definitions:

- **Creating and Configuring Transport Attribute Definitions** on page 74
- **Creating and Configuring Messaging Attribute Definitions** on page 78

5.2.1. Creating and Configuring Transport Attribute Definitions

In general, a *protocol* is a code of behavior; a framework for interpretation and communication that is agreed upon by all parties. It prescribes rules for interacting with others who are using the same protocol.

A *transport protocol* provides a way of specifying how data is to be delivered from one system to another. For example, FTP (file transfer protocol) requires the client to specify a transfer mode (such as ASCII or binary), a target directory, a target filename or file pattern, and so forth; in eXchange, these parameters are specified by the standard *transport attributions definition* for FTP. eXchange supplies attribute definitions for the following standard transport protocols: FILE, FTP, HTTP, HTTPS, and SMTP.

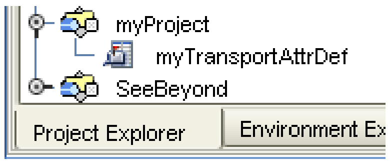
In addition to the attribute definitions for the standard transport protocols noted above, you can use ***custom transport attribute definitions*** that specify custom modifications or extensions of the standard transport protocols.

To create a custom transport attributes definition

1. In Enterprise Designer with the Project Explorer tab active, in the project tree, right-click the project or subproject where the transport attributes definition will reside.
2. On the popup context menu, point at **New**, and then click **B2B Transport Attributes Definition**.

The project tree displays the new component, which has a icon. Its default name is **B2BTransportAttributesDefinition<*n*>**, but you can rename it however you like.

Figure 27 Custom Transport Attributes Definition



This new component is useful only by virtue of its configuration—you will need to add and define attributes that govern the nodes in the OTD that will be generated from it. Once attributes are defined, they can be exposed to eXchange Partner Management for delivery channel configuration.

To configure a custom transport attributes definition

1 In the project tree, right-click the transport attributes definition you want to modify.

Note: *If the component is locked, you must check it out before you can modify it.*

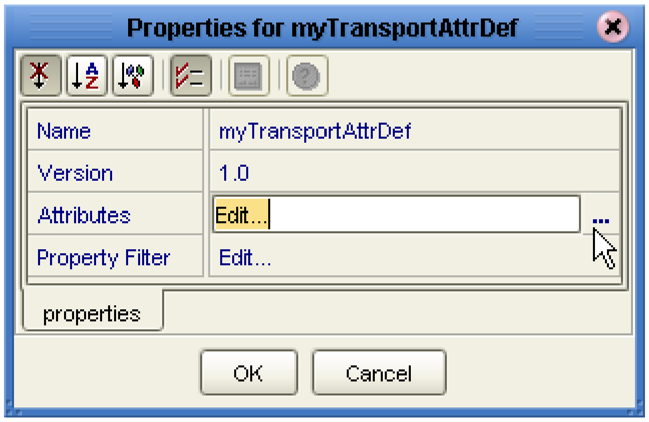
2 On the popup context menu, click **Properties**.

The properties dialog appears. See Table 31 and Figure 28.

Table 31 Properties of a Transport Attributes Definition

Property Name	Initial or Default Value	Description
Attributes	(initially null)	An XML string that holds the values displayed in the **Attributes** dialog. To open the dialog, click the ellipsis **[...]** on the far right.
Name	(component name)	Free text; this is the component name displayed in the project tree.
Property Filter	(initially null)	An XML string that holds the values displayed in the **Property Filter** dialog. To open the dialog, click the ellipsis **[...]** on the far right.
Version	**1.0**	Free text; reflects whatever version naming conventions you use. This is ***independent*** of the Repository-assigned versioning, which tracks check-outs/check-ins.

Figure 28 Properties for Transport Attributes Definition

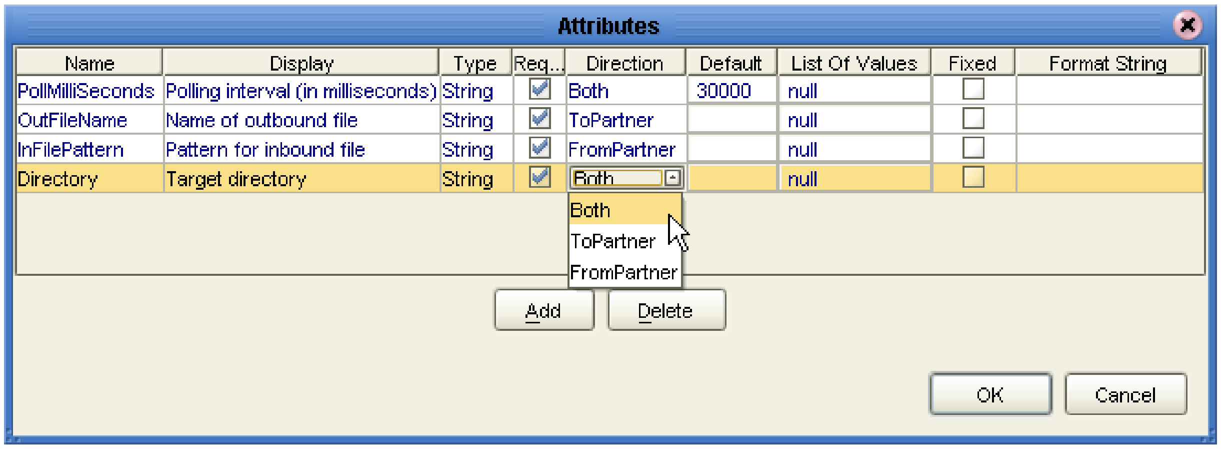


Name	myTransportAttrDef
Version	1.0
Attributes	Edit...
Property Filter	Edit...

3 To the far right of the value for Attributes, click the ellipsis **[...]**.

The **Attributes** dialog appears; Figure 29 shows attributes for a sample bidirectional transport attributes definition that is a modification of the basic File TAD.

Figure 29 Custom Attribute Definitions



Name	Display	Type	Req...	Direction	Default	List Of Values	Fixed	Format String
PollMilliSeconds	Polling interval (in milliseconds)	String	✓	Both	30000	null	☐	
OutFileName	Name of outbound file	String	✓	ToPartner		null	☐	
InFilePattern	Pattern for inbound file	String	✓	FromPartner		null	☐	
Directory	Target directory	String	✓	Both		null	☐	

You use this dialog to create and set attributes. These values govern the appearance and behavior of the parameters displayed in eXchange Partner Management (ePM) when configuring external delivery channels for a trading partner profile, in the ToPartner Transport and FromPartner Transport subtabs.

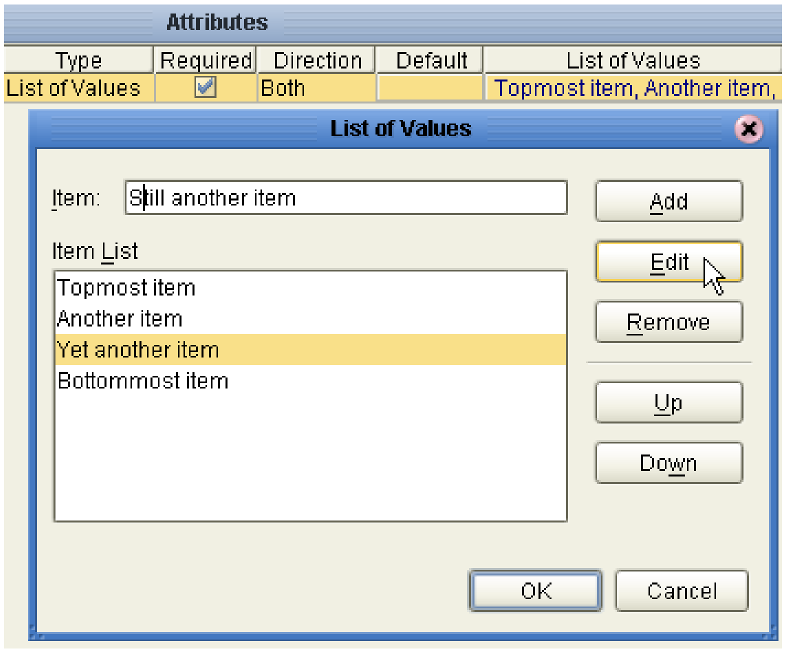
4 Click the **Add** button as many times as needed and then, for each row created:

- Change **Name** to a meaningful node name for the OTD you will generate.
- Change **Display** to the text you want to display as a prompt or label for the parameter in ePM.
- For **Type**, select the data type for this attribute. The default, **String**, allows the ePM user to enter any character data; **Password** also accepts any ePM input, and masks the input; **Integer** accepts positive or negative whole numbers only;

Number extends this to also accept decimal numbers (floating-point numbers); **Boolean** requires the ePM user to make a yes-or-no choice; **List of Values** presents the ePM user with a drop-down list restricted to the items you have set up (see below); and **DateTime** prompts the ePM user to supply a date and/or time value, based on the formatting you provide (see Format String, below).

- For **Required**, select or clear the box according to whether you want the parameter to be a required or optional entry. (In the ePM GUI, parameters that have been designated as required are flagged with a red asterisk.)
- For **Direction**, choose **ToPartner**, **FromPartner**, or **Both** according to whether you want the parameter to appear with the ToPartner parameters, FromPartner parameters, or both.
- For **Default**, you can optionally enter a default value that will appear in ePM before the user enters data or makes a selection. This is the value that will be used if it is not overridden by the ePM user.
- For **List of Values**, which is available only for an attribute whose data type is "List of Values" (see Type, above), double-click on the ellipsis [...] button to the far right and use the **List of Values** dialog box to add entries to the drop-down list that will be seen by the end user. Clicking Add appends a new item to the end of the list; Edit modifies the currently selected item (see Figure 30); Up and Down move it higher or lower in the list.

Figure 30 Adding a List of Values to an Attributes Definition



Attributes

Type	Required	Direction	Default	List of Values
List of Values	✓	Both		Topmost item, Another item,

List of Values

Item: Still another item

Item List
- Topmost item
- Another item
- Yet another item
- Bottommost item

- **Format String** allows you to use special characters as shorthand for certain often-used information; for example, **%f** is the working filename, **%M** is the current month, **%d** the current day, and so forth. For more information, see the *Batch eWay Intelligent Adapter User's Guide*; the chapter on understanding OTDs has a section on using special characters.

5 When you have finished adding and modifying attributes, click **OK**.

6 For **Property Filter**: If you want to change the packaging filters for this custom protocol (by default, both encryption truststore and signing certificates are filtered for both FromPartner bindings and ToPartner bindings), click the ellipsis at the far right and then, in the **Property Filter** dialog, clear the checkboxes for the filters you want disabled. When you have finished, click **OK**.

7 Click **OK** to close the properties dialog.

After you have completed these steps, the transport attributes definition will appear as a choice in the drop-down list when you configure the delivery channels of your B2B host.

5.2.2. Creating and Configuring Messaging Attribute Definitions

A *messaging protocol* provides a way of specifying how data is bundled and unbundled—for example, it is at this level that encryption, acknowledgment, and nonrepudiation are addressed. SeeBeyond provides messaging attribute definitions for three standard B2B protocols: AS2, ebXML, and X12.

In addition to the attribute definitions for the standard B2B protocols noted above, you can use ***messaging attribute definitions*** to create modifications or extensions of the standard messaging attributes definitions. These variants are called *custom* messaging attributes definitions.

To create a messaging attribute definition

1 In Enterprise Designer with the Project Explorer tab active, in the project tree, right-click the project or subproject where the messaging attribute definition will reside.

2 On the popup context menu, point at **New**, and then click **B2B Messaging Attributes Definition**.

3 In **Create B2B Messaging Attributes Definition**, enter a name and click **OK**.

The project tree displays the new component, which has a icon.

This new component is useful only by virtue of its configuration—you will need to add name/value pairs for the parameters you want it to define.

To configure a messaging attribute definition

1 In Enterprise Designer, with the Project Explorer tab active, right-click the messaging attribute definition you want to modify.

Note: *If the component is locked, you must check it out before you can modify it.*

2 On the popup context menu, click **Properties**. See Table 32.

Table 32 Properties for Messaging Attribute Definition

Property Name	Initial or Default Value	Description
Attributes	(initially null)	An XML string that holds the values displayed in the **Attribute** dialog. To open the dialog, click the ellipsis **[...]** on the far right.

Table 32 Properties for Messaging Attribute Definition

Property Name	Initial or Default Value	Description
Name	(component name)	Free text; this is the component name displayed in the project tree.
Version	**1.0**	Free text; reflects whatever version naming conventions you use. This is ***independent*** of the Repository-assigned versioning, which tracks check-outs/check-ins.

3 To the far right of the value for **Attributes**, click the ellipsis **[...]**.

The **Protocol Attribute Definitions** dialog appears. You use this dialog to create and set the attributes. These values govern the appearance and behavior of the parameters displayed in ePM when configuring external delivery channels for a trading partner (the ToPartner Transport and FromPartner Transport subtabs).

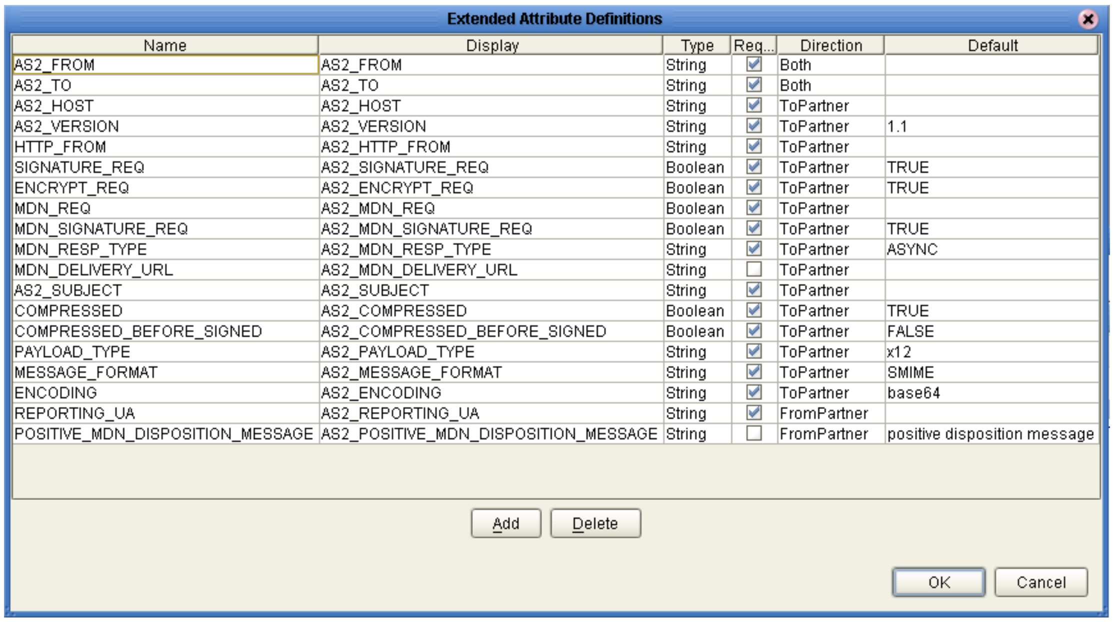
4 Click the **Add** button as many times as needed and then, for each row created:

- Change **Name** to a meaningful node name for the OTD you will generate.
- Change **Display** to the text you want to display as a prompt or label for the parameter in ePM.
- For **Type**, select the data type for this attribute. The default, **String**, allows the ePM user to enter any character data; **Password** also accepts any ePM input, and masks the input; **Integer** accepts positive or negative whole numbers only; **Number** extends this to also accept decimal numbers (floating-point numbers); **Boolean** requires the ePM user to make a yes-or-no choice; **List of Values** presents the ePM user with a drop-down list restricted to the items you have set up (see below); and **DateTime** prompts the ePM user to supply a date and/or time value, based on the formatting you provide (see Format String, below).
- For **Required**, select or clear the box according to whether you want the parameter to be a required or optional entry. (In the ePM GUI, parameters that have been designated as required are flagged with a red asterisk.)
- For **Direction**, choose **ToPartner**, **FromPartner**, or **Both** according to whether you want the parameter to appear with the ToPartner parameters, FromPartner parameters, or both.
- For **Default**, you can optionally enter a default value that will appear in ePM before the user enters data or makes a selection. This is the value that will be used if it is not overridden by the ePM user.
- For **List of Values**, which is available only for an attribute whose data type is "List of Values" (see Type, above), double-click on the ellipsis [...] button to the far right and use the **List of Values** dialog box to add entries to the drop-down list that will be seen by the end user. Clicking Add appends a new item to the end of the list; Edit modifies the currently selected item (see Figure 30); Up and Down move it higher or lower in the list.
- **Format String** allows you to use special characters as shorthand for certain often-used information; for example, **%f** is the working filename, **%M** is the current month, **%d** the current day, and so forth. For more information, see the

Batch eWay Intelligent Adapter User's Guide; the chapter on understanding OTDs has a section on using special characters.

You previously saw an example of a custom transport attributes definition (in **Figure 29 on page 76**); as a different example, the messaging attributes of a standard B2B protocol (in this case, AS2 version 1.1) are shown in Figure 31.

Figure 31 Messaging Attribute Definitions for AS2 Version 1.1



Name	Display	Type	Req...	Direction	Default
AS2_FROM	AS2_FROM	String	✓	Both	
AS2_TO	AS2_TO	String	✓	Both	
AS2_HOST	AS2_HOST	String	✓	ToPartner	
AS2_VERSION	AS2_VERSION	String	✓	ToPartner	1.1
HTTP_FROM	AS2_HTTP_FROM	String	✓	ToPartner	
SIGNATURE_REQ	AS2_SIGNATURE_REQ	Boolean	✓	ToPartner	TRUE
ENCRYPT_REQ	AS2_ENCRYPT_REQ	Boolean	✓	ToPartner	TRUE
MDN_REQ	AS2_MDN_REQ	Boolean	✓	ToPartner	
MDN_SIGNATURE_REQ	AS2_MDN_SIGNATURE_REQ	Boolean	✓	ToPartner	TRUE
MDN_RESP_TYPE	AS2_MDN_RESP_TYPE	String	✓	ToPartner	ASYNC
MDN_DELIVERY_URL	AS2_MDN_DELIVERY_URL	String	☐	ToPartner	
AS2_SUBJECT	AS2_SUBJECT	String	✓	ToPartner	
COMPRESSED	AS2_COMPRESSED	Boolean	✓	ToPartner	TRUE
COMPRESSED_BEFORE_SIGNED	AS2_COMPRESSED_BEFORE_SIGNED	Boolean	✓	ToPartner	FALSE
PAYLOAD_TYPE	AS2_PAYLOAD_TYPE	String	✓	ToPartner	x12
MESSAGE_FORMAT	AS2_MESSAGE_FORMAT	String	✓	ToPartner	SMIME
ENCODING	AS2_ENCODING	String	✓	ToPartner	base64
REPORTING_UA	AS2_REPORTING_UA	String	✓	FromPartner	
POSITIVE_MDN_DISPOSITION_MESSAGE	AS2_POSITIVE_MDN_DISPOSITION_MESSAGE	String	☐	FromPartner	positive disposition message

5 When you have finished adding and modifying attributes, click **OK**.

6 Click **OK** to close the properties dialog.

The messaging attribute definition can now be used to generate an OTD.

After you have completed these steps, the messaging attribute definition will appear as a choice in the drop-down list of messaging attributes definitions when you configure the delivery channels of your B2B host.

5.3 Setting Up Messaging Services

A messaging service is, in brief, a project-level (logical) component that sets forth rules of exchange between an enterprise and its trading partners.

The section explains how to create, populate, configure, and compile a messaging service, using the **eXchange Service Designer** editor. These steps must be followed to allow the B2B protocol to be used by a B2B host.

To create and configure a messaging service

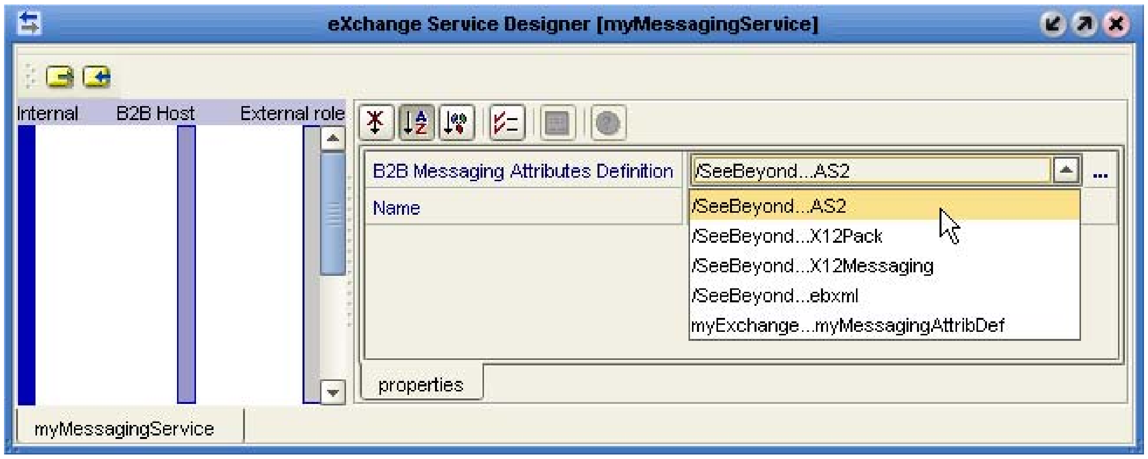
1 In Enterprise Designer with the Project Explorer tab active, in the project tree, right-click the project or subproject where the messaging service will reside.

2 On the popup context menu, point at **New**, and then click **messaging service**.

The project tree displays the new component, whose icon suggests bidirectional passthrough communication. By default, it is named **B2B Messaging Service<*n*>**, but you can rename it as you like.

The eXchange Service Designer opens to display a blank canvas. See Figure 33.

Figure 32 Messaging Service and eXchange Service Designer



B2B Messaging Attributes Definition	/SeeBeyond...AS2
Name	

/SeeBeyond...AS2
/SeeBeyond...X12Pack
/SeeBeyond...X12Messaging
/SeeBeyond...ebxml
myExchange...myMessagingAttribDef

3 For B2B Messaging Attributes Definition, choose an entry in the drop-down list. This list will include all standard enveloping attributes definitions supplied by SeeBeyond (such as for AS2 and ebXML), and will also show you any custom messaging attribute definitions.

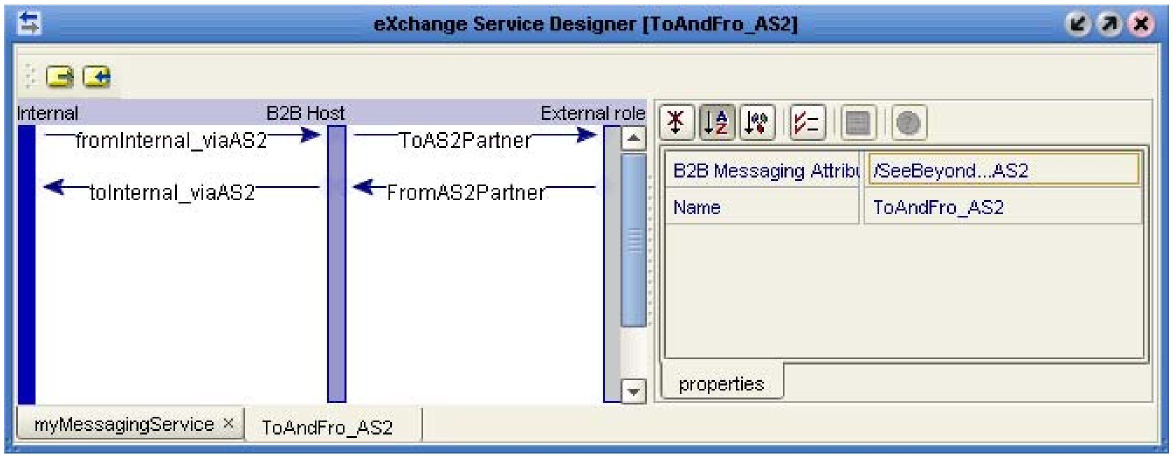
This new component still needs to be populated—you will need to add actions that describe the interchange of messages to and from the trading partner.

4 Do at least one of the following:

- Click **from_internal** (the right-pointing arrow icon) to add an action that originates in the enterprise and passes through the B2B host to the trading partner. Then, double-click, the label on each of the two right-pointing arrows, editing the names to whatever you want.
- Click **message_in** (the left-pointing arrow icon) to add an action that originates in the trading partner and passes through the B2B host to the enterprise. Then, double-click the label on each of the two left-pointing arrows, editing the names to whatever you want.

5 Optionally, add other activities as needed. See Figure 33.

Figure 33 Messaging Service With Outbound and Inbound Activities



B2B Messaging Attribu	/SeeBeyond...AS2
Name	ToAndFro_AS2

Depending on the complexity of interaction between the enterprise and the trading partner, a messaging service might have only one action, or five fromInternal-toPartner actions with only one fromPartner-toInternal reply, or many paired exchanges. The characteristic quality of a messaging service is that each action passes through the B2B host; there is no separate back-and-forth interactive communication between just the B2B host and either side.

Although the actions in a messaging service can be referenced, they are not web service operations, and are therefore ineligible for dragging onto canvases. These are also the actions that appear at the lowest level of the tree in eXchange Partner Manager.

To add messaging services to a B2B host, organized by messaging attributes definition

Before you begin: The B2B Host Designer must be open.

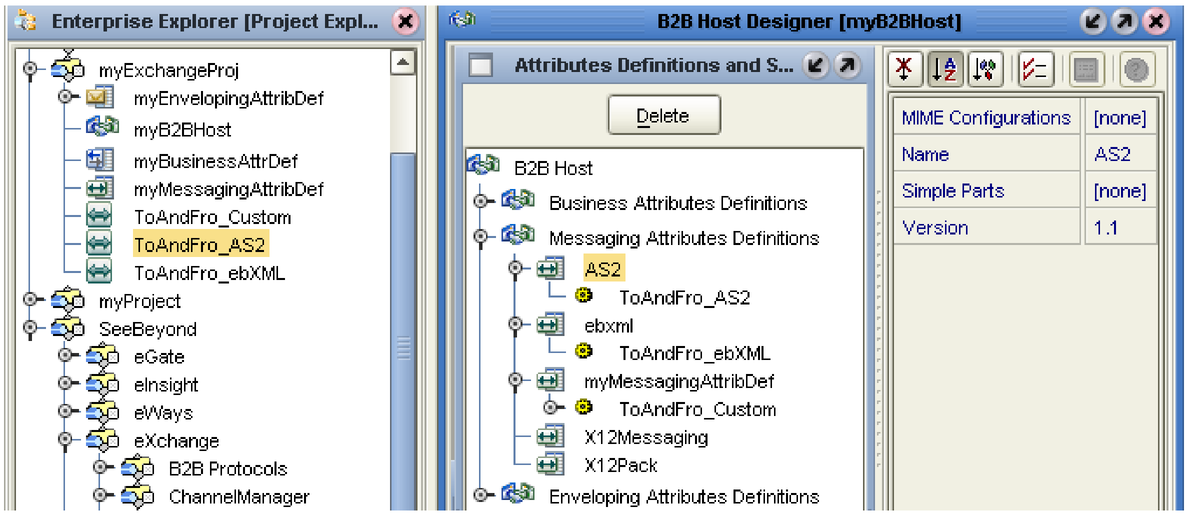
1 Into the **Services and Attribute Definitions** window, under Messaging Attributes Definition branch, drag in a messaging attributes definition from the project tree. (If necessary, see **"To populate a B2B host with attributes definitions" on page 73**).

2 Under this messaging attributes definition, drag in a messaging service whose properties reference it. (The GUI does not allow you to drag in a messaging service that references a different messaging attributes definition, or none.)

The messaging service appears in the Attributes Definitions and Services tree, subordinate to the messaging attributes definition it references.

3 Repeat the previous step as needed, or repeat both previous steps. See Figure 34.

Figure 34 Attributes Definitions and Services Tree, Populated with Message Services



MIME Configurations	[none]
Name	AS2
Simple Parts	[none]
Version	1.1

4 If you need to delete a leaf or a branch from the tree, highlight it and click **Delete**.

5.4 Setting Up Delivery Channels

To add external delivery channels to a B2B host

Before you begin: The Delivery Channels window must already display at least one item in its Messaging Attributes Definitions pane; if it does not, refer to the previous procedure.

1 In the **External Delivery Channels** window, in the Messaging Attributes Definitions pane, click the messaging attributes definition for which you want to add an external delivery channel.

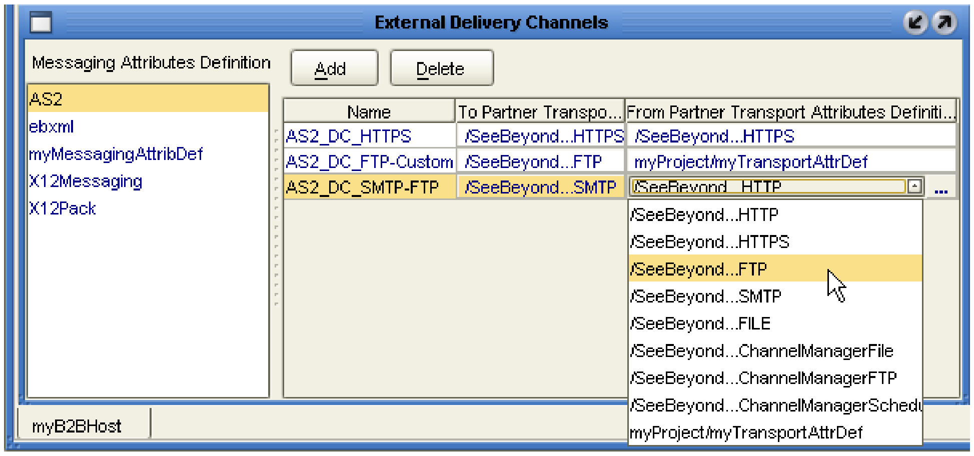
2 Click **Add**. When the new external delivery channel appears on the right, rename it.

3 In the **ToPartner Transport Attributes Definition** list, choose from the list of standard and custom transport attributes definitions displayed. This specifies transport attributes for messages outbound from the B2B host to the trading partner on this channel.

4 In the **FromPartner Transport Attributes Definition** list, choose from the list of standard and custom transport attributes definitions displayed. This specifies transport attributes for messages inbound on this channel from trading partner to B2B host.

5 Repeat the last three steps as needed, or repeat all previous steps. See Figure 35.

Figure 35 External Delivery Channels Populated and Configured



Messaging Attributes Definition:

- AS2
- ebxml
- myMessagingAttribDef
- X12Messaging
- X12Pack

Name	To Partner Transpo...	From Partner Transport Attributes Definiti...
AS2_DC_HTTPS	/SeeBeyond...HTTPS	/SeeBeyond...HTTPS
AS2_DC_FTP-Custom	/SeeBeyond...FTP	myProject/myTransportAttrDef
AS2_DC_SMTP-FTP	/SeeBeyond...SMTP	/SeeBeyond...HTTP

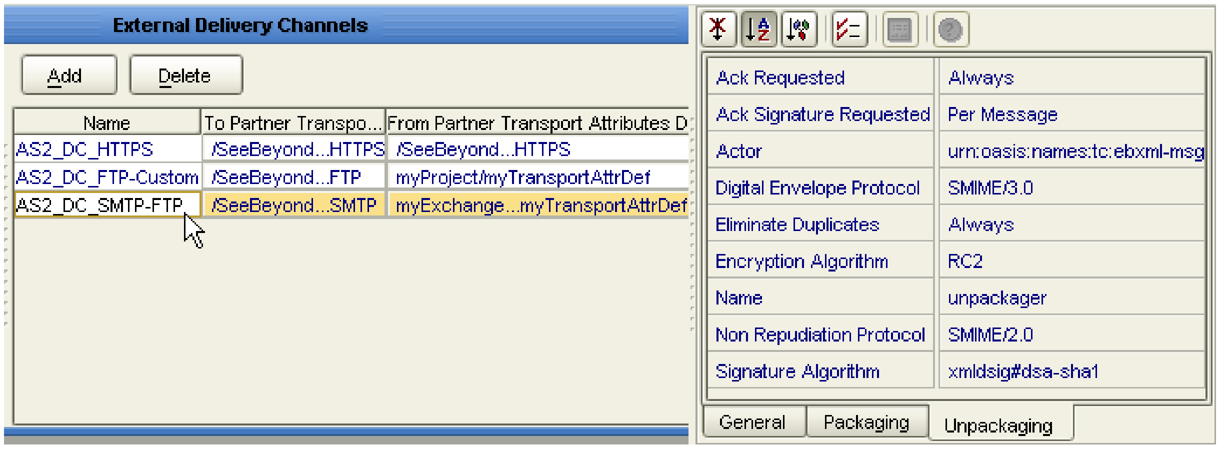
Drop-down list:

- /SeeBeyond...HTTP
- /SeeBeyond...HTTPS
- /SeeBeyond...FTP
- /SeeBeyond...SMTP
- /SeeBeyond...FILE
- /SeeBeyond...ChannelManagerFile
- /SeeBeyond...ChannelManagerFTP
- /SeeBeyond...ChannelManagerSchedu
- myProject/myTransportAttrDef

Note: *From the Delivery Channels dialog box, you can view or edit the MIME and Simple Parts properties of a particular messaging attributes definition, by clicking its name in the far left column to open its Properties sheet on the right.*

6 For any external delivery channel whose default properties you want to override, click the channel name to highlight it, opening its properties sheet on the right. See Figure 35.

Figure 36 Properties Sheet for External Delivery Channel

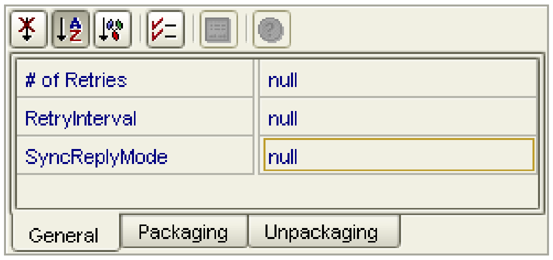


Name	To Partner Transpo...	From Partner Transport Attributes D...
AS2_DC_HTTPS	/SeeBeyond...HTTPS	/SeeBeyond...HTTPS
AS2_DC_FTP-Custom	/SeeBeyond...FTP	myProject/myTransportAttrDef
AS2_DC_SMTP-FTP	/SeeBeyond...SMTP	myExchange...myTransportAttrDef

Ack Requested	Always
Ack Signature Requested	Per Message
Actor	urn:oasis:names:tc:ebxml-msg
Digital Envelope Protocol	SMIME/3.0
Eliminate Duplicates	Always
Encryption Algorithm	RC2
Name	unpackager
Non Repudiation Protocol	SMIME/2.0
Signature Algorithm	xmldsig#dsa-sha1

7 Within the property sheet, and navigate to the properties you want to modify. For general properties, see Figure 37 and Table 33; for packaging(=enveloping) and unpackaging(=de-enveloping) properties, see Figure 38 and **Table 34 on page 86**.

Figure 37 Default Property Settings for External Delivery Channels — General

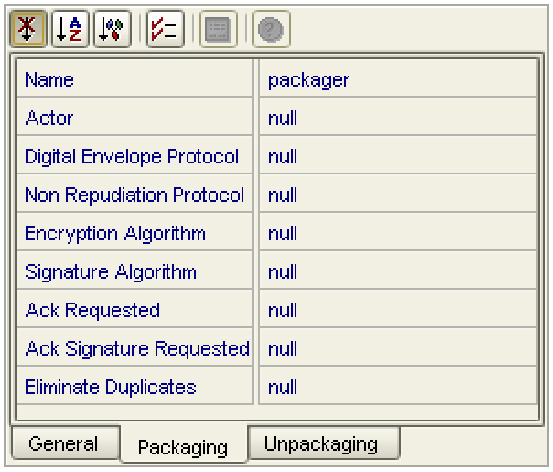


# of Retries	null
RetryInterval	null
SyncReplyMode	null

Table 33 Properties for External Delivery Channels — General

Property Name	Initial or Default Value	Description
# of retries	**null**	Number of times to retry a send of the message.
Retry interval	**null** (initially)	Interval to use for retrying a message send.
SyncReplyMode	**null** (initially)	The mode (synchronous or asynchronous) to be used for messaging.

Figure 38 Default Property Settings for External Delivery Channels — Packaging



Name	packager
Actor	null
Digital Envelope Protocol	null
Non Repudiation Protocol	null
Encryption Algorithm	null
Signature Algorithm	null
Ack Requested	null
Ack Signature Requested	null
Eliminate Duplicates	null

Table 34 Properties for External Delivery Channels — Packaging/Unpackaging

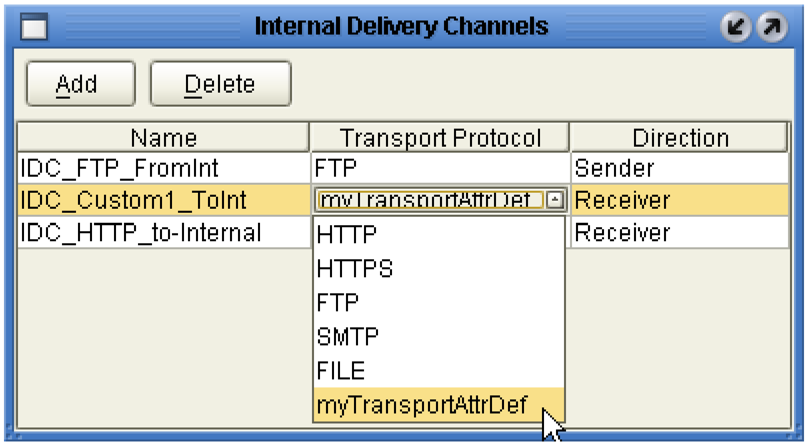
Property Name	Initial or Default Value	Description
Name	(component name)	Free text; this is the component name displayed in the project tree.
Actor	**null** (initially)	Namespace identifying the actor, such as urn:oasis:names:tc:ebxml-msg:actor:nextMSH
Digital Envelope Protocol	**null** (initially)	Digital envelope protocol and version to be used, of: **SMIME/2.0**, **SMIME/3.0**, or **DSIG/1.0**.
Nonrepudiation Protocol	**null** (initially)	Nonrepudiation protocol and version to be used, of: **SMIME/2.0**, **SMIME/3.0**, or **DSIG/1.0**.
Encryption Algorithm	**null** (initially)	Encryption algorithm to be used, of: **RC2** or **DES3**.
Signature Algorithm	**null** (initially)	Encryption algorithm to be used. If set, must be **xmldsig#dsa-sha1**.
Ack Requested	**null** (initially)	Specifies circumstances in which a message acknowledgment is requested (such as TA1), of: **Always**, **Never**, or **Per Message**.
Ack Signature Requested	**null** (initially)	Specifies circumstances in which a signature is required on the message acknowledgment, of: **Always**, **Never**, or **Per Message**.
Eliminate Duplicates?	**null** (initially)	Specifies circumstances in which duplicate messages are to be eliminated, of: **Always**, **Never**, or **Per Message**.

To add internal delivery channels to a B2B host

1. In the B2B Host Designer, in the **Internal Delivery Channels** window, click **Add**.
2. Rename the new internal delivery channel to something meaningful.
3. In the **Transport Attributes Definition** list, choose from the list of standard and custom transport attributes definitions displayed.
4. In the **Direction** list, choose a designation of the role played by the Internal system:
   - **Sender** designates this internal delivery channel as coming from Internal.
   - **Receiver** designates this internal delivery channel as going to Internal.
5. As needed, repeat previous steps to add and configure internal delivery channels.

See Figure 39.

Figure 39 Internal Delivery Channels Populated and Configured



Name	Transport Protocol	Direction
IDC_FTP_FromInt	FTP	Sender
IDC_Custom1_ToInt	myTransportAttrDef	Receiver
IDC_HTTP_to-Internal		Receiver

5.5 Activating a B2B Host

The B2B host plays a dual role: It functions both as an *object*—that is, a project-level (logical) component in the project tree that can be dragged into a Connectivity Map—, and also as a *server*—that is, an environment (physical) component. As a server, it hosts Channel Managers and is exposed to the eXchange Partner Management GUI.

Unlike most other environment components, it is not offered as a template in the environment to be statically configured. Instead, since it has a dynamic dependency on the Oracle database that persists eXchange trading partner information (and message tracking information, if used), it must be activated for a particular environment. This section provides the steps required for activation: creating an environment, creating a map containing a B2B host, and activating a deployment profile that binds the map's components to the environment.

When a B2B host named *myHost123* is activated, the name of the new external added to the environment is *myHost123 eXchange Service*.

5.5.1. Creating an Environment

These steps create the minimal environment required to activate a B2B host.

To create and populate the environment prior to B2B host activation

1. In Enterprise Designer with the **Environment Explorer** tab active, right-click the repository and, on the popup context menu, click **New Environment**.

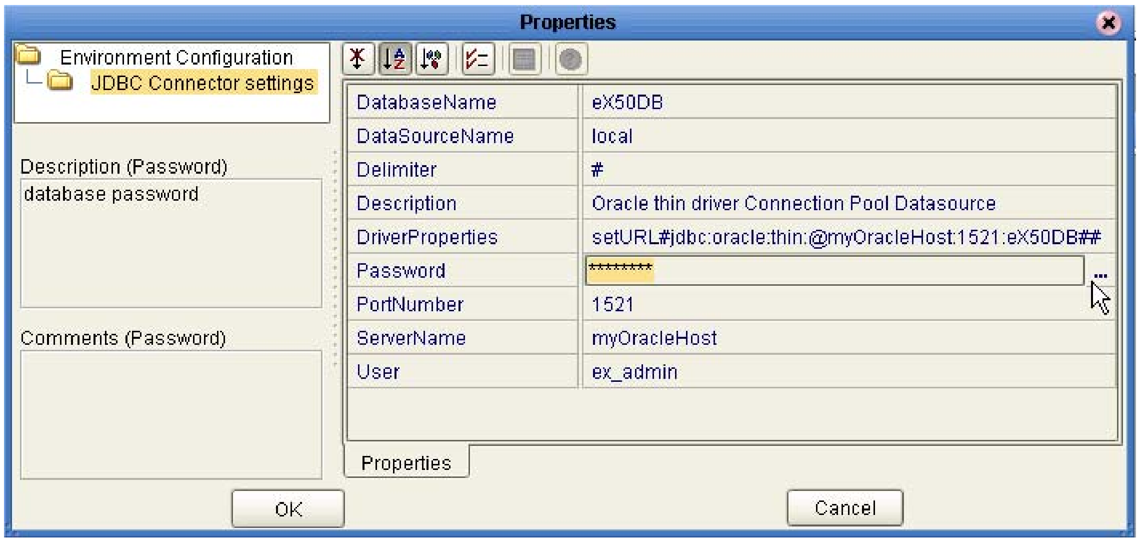
   The explorer tree displays a new environment, and the Environment Editor opens. Optionally, you can rename the environment to something meaningful.

2. In the environment explorer tree, right-click the new environment and, on the popup context menu, click **New Oracle External System**.

3 In the **Create an External System** dialog, enter a meaningful name, set the system type to **Outbound Oracle eWay**, and then click **OK**.

4 Configure the Oracle external with the values for your eXchange database instance. For details on configuring the Oracle external, see the Chapter 3 of the *Oracle eWay User's Guide*. For sample settings typical of an eXchange database, see Figure 40.

Figure 40 Environment Configuration for Oracle External System



Description (Password)
database password

Comments (Password)

DatabaseName	eX50DB
DataSourceName	local
Delimiter	#
Description	Oracle thin driver Connection Pool Datasource
DriverProperties	setURL#jdbc:oracle:thin:@myOracleHost:1521:eX50DB##
Password	********
PortNumber	1521
ServerName	myOracleHost
User	ex_admin

5 In the environment explorer tree, right-click the new environment again and, on the popup context menu, click **New Logical Host**.

The explorer tree and editor canvas display the new logical host. Optionally, you can use the tree to rename the logical host to something meaningful.

6 In the environment explorer tree, right-click the new logical host and, on the popup context menu, click **New SeeBeyond Integration Server**.

The explorer tree displays the new integration server, and the canvas displays it inside the logical host. Optionally, you can rename it to something meaningful.

7 If appropriate, right-click the integration server, click **Properties**, and configure its parameters as needed for use at your site.

Once you finish these last steps, the environment now has all you need to deploy a B2B host: An integration server and an Oracle external system. However, you still need to create a map that links the B2B host to an Oracle eWay.

5.5.2. Creating a Map with a B2B Host and a Message Tracker

These steps create a map that allows you to activate a B2B host with a Message Tracker.

To create and populate the map prior to B2B host deployment

Before you begin: Your project must already contain a B2B host with at least one validly configured external delivery channel; see **To add external delivery channels to a B2B host** on page 83.

1 With the **Project Explorer** tab active, in the project tree, right-click the project and, on the popup context menu, point at click **New** and click **Connectivity Map**.

The project tree displays a new map, and the Connectivity Map Editor opens. Optionally, you can rename the map to something meaningful.

2 In the toolbar along the top of the canvas, click the **External Applications** tool and, from the drop-down list, select the checkbox for **Oracle External Application**.

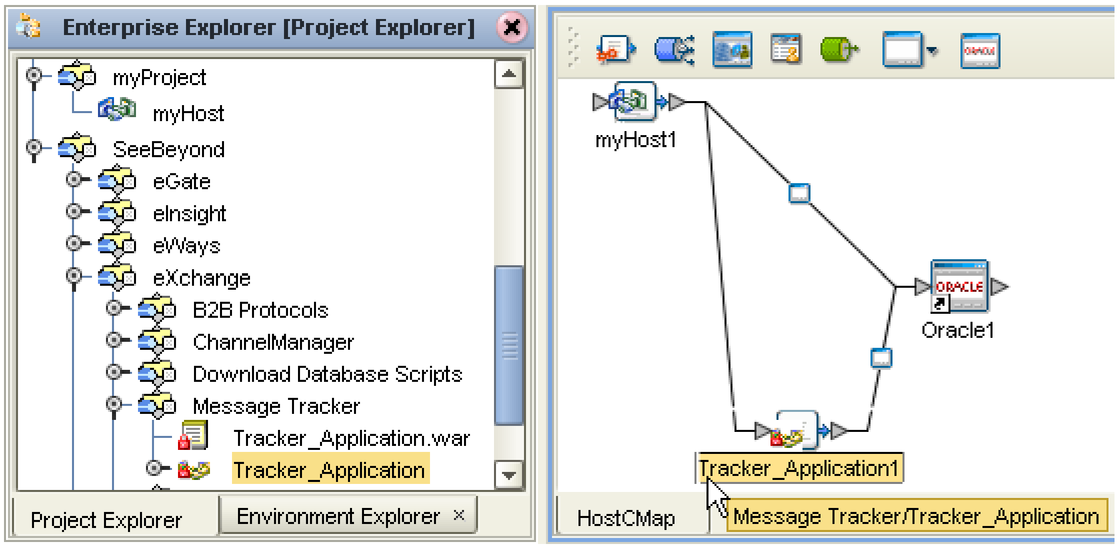
3 Drag an Oracle external onto the canvas, towards the right side.

4 From the project tree, drag your B2B host onto the upper left side of the canvas.

5 In the project tree, open the **SeeBeyond > eXchange >Message Tracker** folder and drag its **Tracker_Application** B2B protocol onto the lower center of the canvas.

6 Rename components to something meaningful, and connect as shown in Figure 41.

Figure 41 Map Showing B2B Host and Message Tracker to be Deployed



7 Configure both eWays, designating them outbound to external Oracle applications.

Now that the map is populated and configured, the B2B host is ready to be activated.

5.5.3. Activating the B2B Host

These steps create a deployment profile—a binding of particular logical components to an environment—and then activates it. Project activation always makes components available to external servers (such as the SeeBeyond integration server and Oracle), but activation of a B2B host makes it available as an external server. Activation also exposes the B2B host and Message Tracker application so they can communicate with the web-based eXchange GUIs, eXchange Partner Management and Message Tracking.

To create, configure, and activate the deployment profile for the B2B host

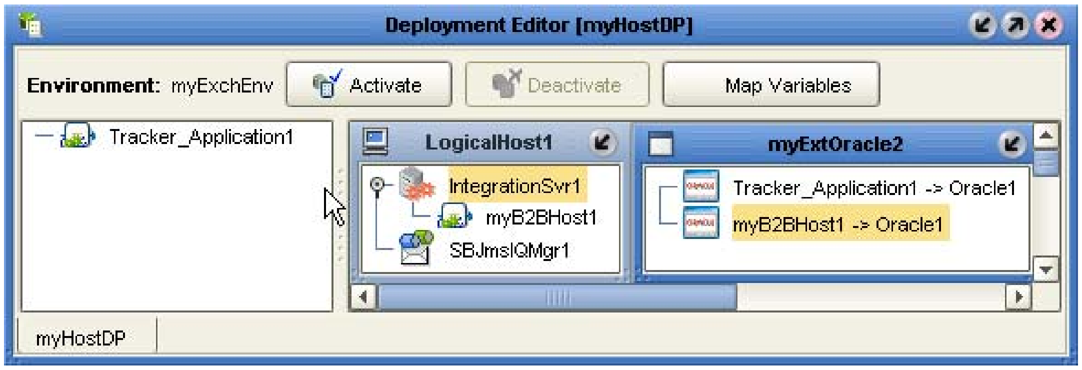
Before you begin: Your project must already contain a validly configured B2B host used in a map that connects it, via an outbound eWay, with a configured Oracle external.

1 With the Project Explorer tab active, in the project tree, right-click the project and, on the popup context menu, point at click **New** and click **Deployment Profile**.

The project tree displays a new deployment, and the Deployment Editor opens, showing a canvas whose left pane shows all components on the map and whose right pane shows all external servers in the environment.

2 One by one, drag both Oracle eWays to the Oracle server. Then, one by one, drag the B2B host and the tracker application to the integration server. See Figure 42.

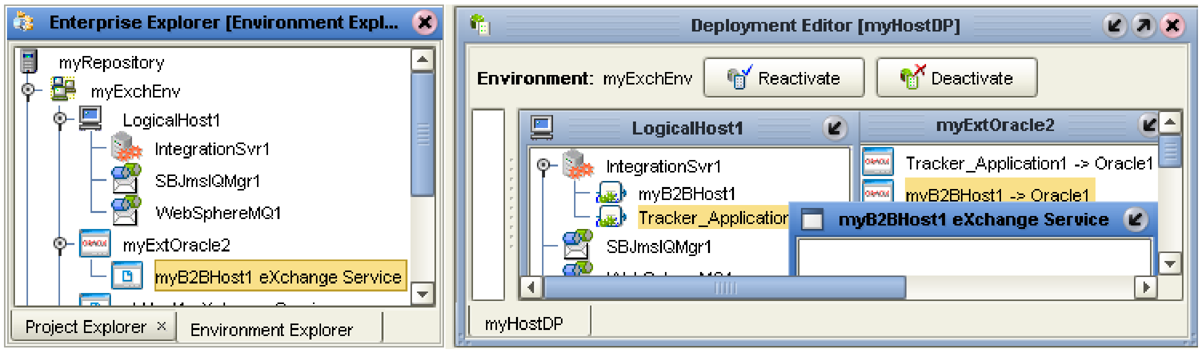
Figure 42 Deployment Profile Showing B2B Host Being Assigned to Integration Server



3 After all components have been assigned to external servers, click **Activate**.

Upon successful activation, the Environment Editor and Deployment Editor are updated to show a new *eXchange service* associated with this B2B host. See Figure 43.

Figure 43 eXchange Service in Environment and Deployment Editor



Once it is activated, the eXchange service is capable of hosting Channel Managers, and its corresponding B2B host is available to Enterprise Manager facilities that perform B2B protocol monitoring, trading partner management, and message tracking.

To associate security information with an eXchange Service's delivery channels

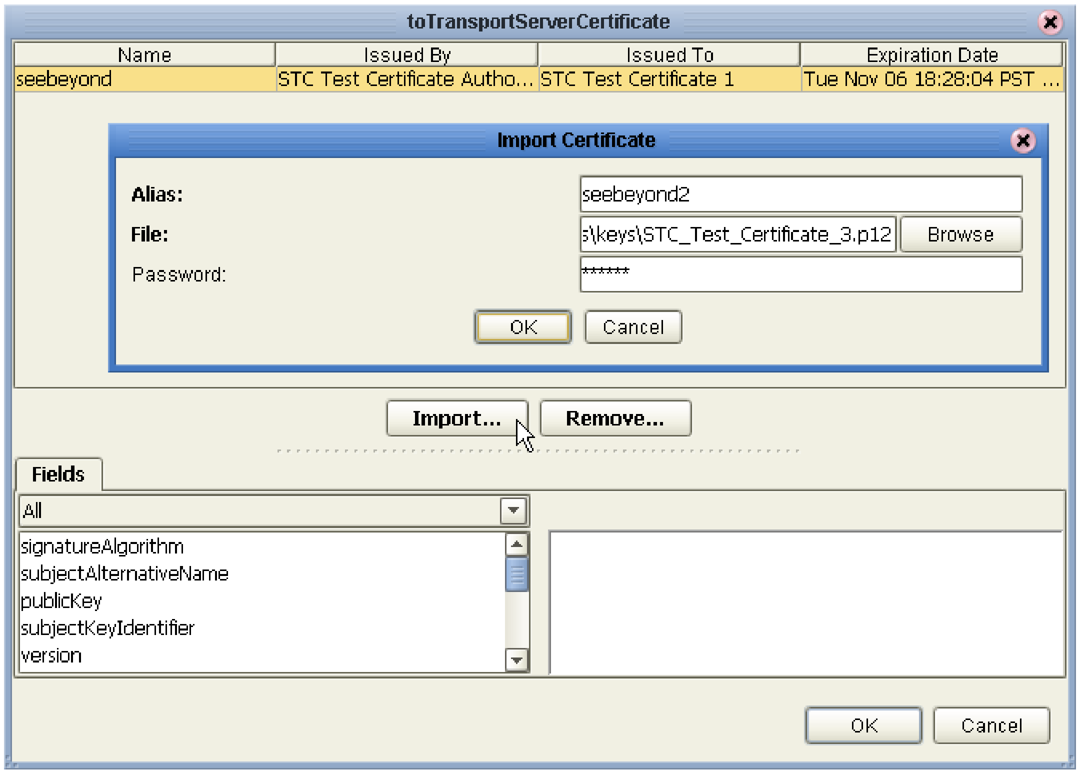
Before you begin: You must have already installed Secure Messaging Extension (see step 9 in the **procedure on page 30**), and you must have access to the locations and names of the necessary certificates and keystores.

1 In Enterprise Designer with the **Environment Explorer** tab active, in the tree, right-click the eXchange Service and, on the popup context menu, click **Properties**.

The properties page opens, showing all external delivery channels for this host.

2 One by one, as needed, click the ellipsis **[...]** for the type of certificate or truststore you want to define for a particular external delivery channel and then either select from the drop-down list or else use Import to import a new certificate or truststore. For certificate import, see Figure 44; for truststore import, see Figure 45.

Figure 44 Importing a Certificate for a Delivery Channel in an eXchange Service



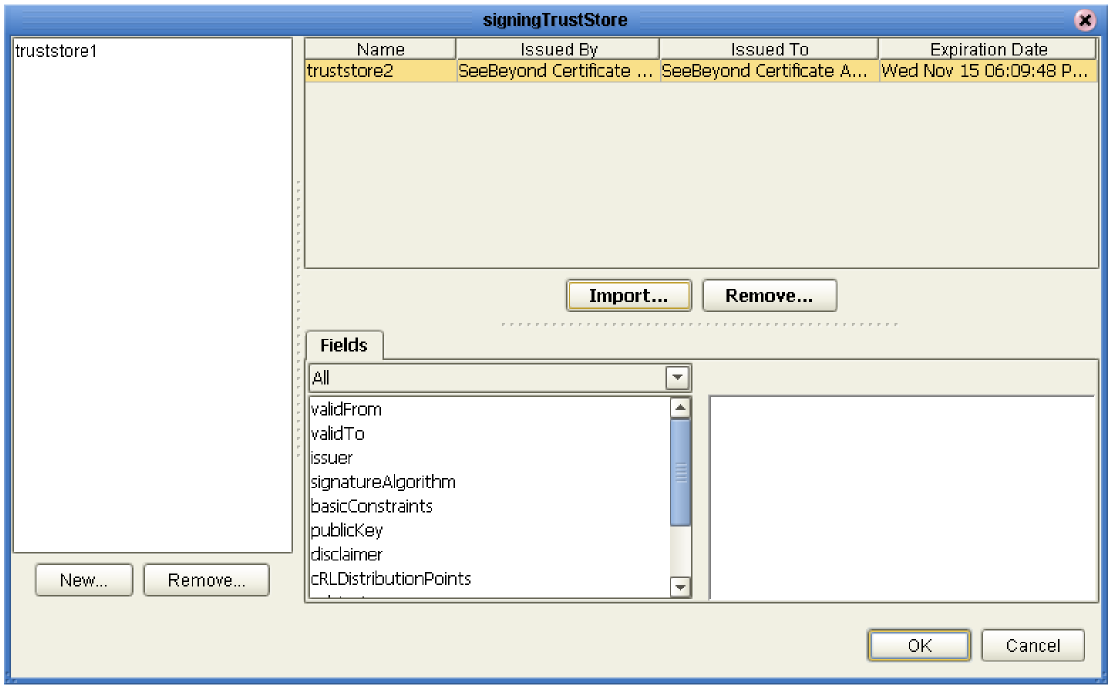
toTransportServerCertificate

Name	Issued By	Issued To	Expiration Date
seebeyond	STC Test Certificate Autho...	STC Test Certificate 1	Tue Nov 06 18:28:04 PST ...

Import Certificate

Alias: seebeyond2
File: :\keys\STC_Test_Certificate_3.p12
Password: ******

Figure 45 Importing a TrustStore for a Delivery Channel in an eXchange Service



Name	Issued By	Issued To	Expiration Date
truststore2	SeeBeyond Certificate ...	SeeBeyond Certificate A...	Wed Nov 15 06:09:48 P...

3 Click OK to close the dialog box.

4 If a logical host were running, you would also need to do the following any time you add or update crypto information associated with the eXchange service: In the environment tree, right-click the logical host and, on the menu, click **Apply**

Result: Cryptographic information is associated with this delivery channel. If your B2B host (and thus its eXchange Service) were associated with multiple delivery channels, each one could be configured with its own crypto information.

5.5.4 Configuring the Environment to Use HTTPS

HTTPS means "HTTP over SSL" (secure sockets layer). If you want to use the HTTPS transport attributes definition, you must take additional steps to enable HTTPS.

- To enable an HTTP external to use SSL, it must have its SSL configuration settings edited appropriately. See the **procedure on page 92**.
- To enable the integration server to communicate using HTTPS, it needs to be associated with appropriate configuration settings. See the **procedure on page 93**.

To configure the HTTP external to use SSL

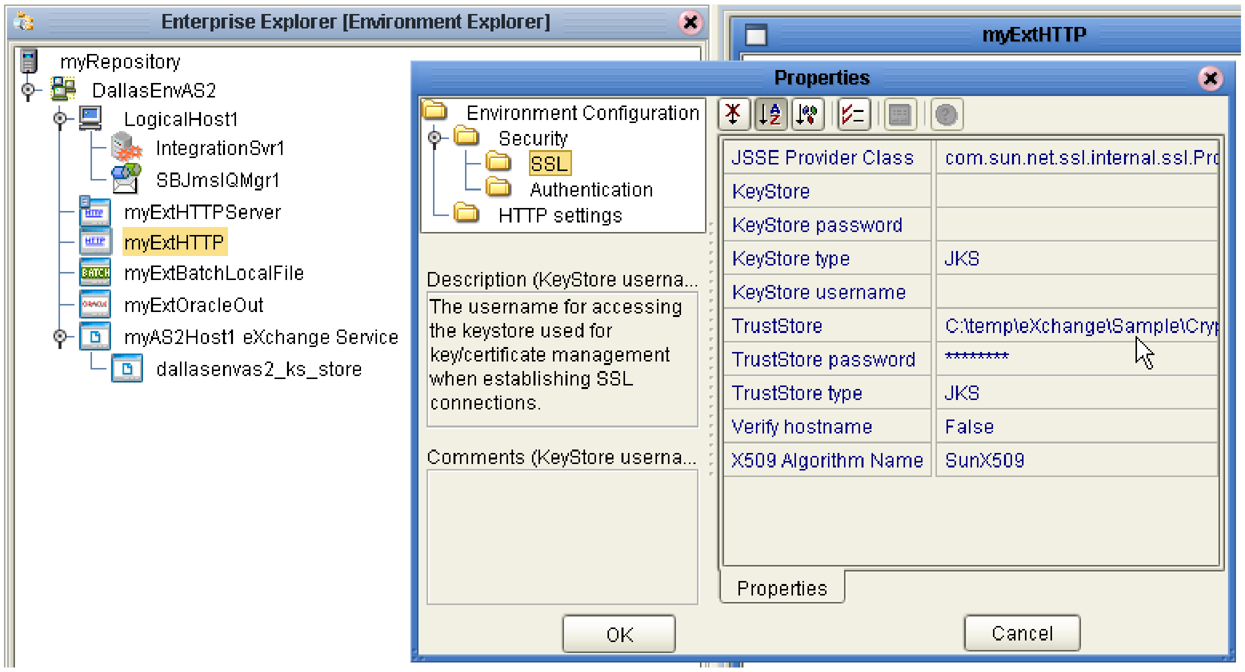
1 In the Environment Explorer tree, right-click the HTTP external and, on the popup context menu, click **Properties**.

2 In the Properties sheet, open Security and click **SSL**.

3 For TrustStore, provide the path and filename of the default truststore to be used when establishing SSL connections. For example:
C:\temp\eXchange\Sample\AS2\Crypto\companyb.ssl.keystore

4 For TrustStore password, provide the correct password for this truststore. For example: **companyb** (see Figure 46).

Figure 46 Configuring the SSL Properties of the HTTP External



The username for accessing the keystore used for key/certificate management when establishing SSL connections.

JSSE Provider Class	com.sun.net.ssl.internal.ssl.Pro
KeyStore	
KeyStore password	
KeyStore type	JKS
KeyStore username	
TrustStore	C:\temp\eXchange\Sample\Cry
TrustStore password	********
TrustStore type	JKS
Verify hostname	False
X509 Algorithm Name	SunX509

5 *AIX only.* Make the following additional changes for logical hosts running on AIX.

- Change JSSE Provider Class from com.sun.net.ssl.internal.ssl.Provider to: **com.ibm.jsse.IBMJSSEProvider**
- Change X509 Algorithm Name from SunX509 to (case-sensitive): **IbmX509**

6 Also make other configuration changes as needed. For more information, consult the *HTTP(S) eWay Intelligent Adapter User's Guide*, especially the “Setting HTTP(S) eWay Properties” chapter.

7 When you are finished, click OK.

To configure the integration server to use SSL

1 In the Environment Explorer tree, right-click **IntegrationSvr1** and, on the popup context menu, click **Properties**

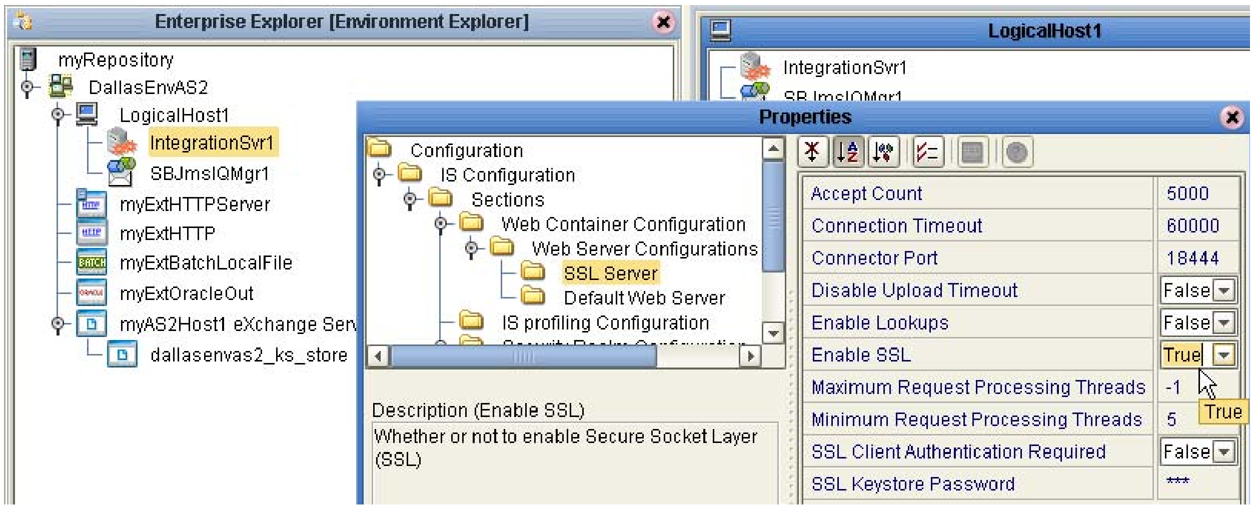
2 In the Properties sheet, open Configuration > IS Configuration > Sections > Web Container Configuration > **Web Server Configurations**

3 Do one of the following:

- (not recommended) To have your integration server always use SSL web service connections by default, change the setting for Enable SSL to True.
- (recommended; see Figure 47) Right-click Web Server Configuration and, on the popup context menu, click **Create New Section**. Name the new section SSL Server. In its properties, change the setting for **Enable SSL** to **True**. Ensure

that its Connector Port setting does not conflict with the default IS port settings (18000-18009) or any other ports.

Figure 47 Configuring the SSL Properties of the Integration Server



Description (Enable SSL)
Whether or not to enable Secure Socket Layer (SSL)

Accept Count	5000
Connection Timeout	60000
Connector Port	18444
Disable Upload Timeout	False
Enable Lookups	False
Enable SSL	True
Maximum Request Processing Threads	-1
Minimum Request Processing Threads	5
SSL Client Authentication Required	False
SSL Keystore Password	***

4 Also make other configuration changes as needed. For more information, consult the *eGate Integrator User's Guide*, especially the “Environments” chapter, “Integration Servers” section.

5 When you are finished, click OK.

Chapter 6

Designing B2B Protocols

You can use eXchange to configure the components depicted by each activity in your B2B protocols. This chapter provides the background information you need to create and understand eXchange B2B protocols.

6.1 Overview

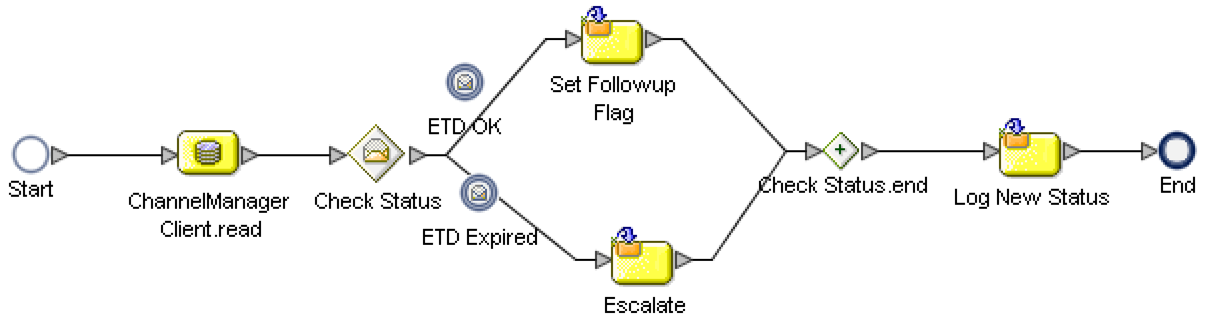
Topics in this chapter are:

6.2 Building a B2B Protocol

A business process is a collection of actions that take place in your company, revolving around a specific business practice. These processes can involve a variety of participants and may include internal and external computer systems or employees. In eXchange, you create a graphical representation of the business process called a *B2B protocol*.

A business process modeled in eXchange may look something like Figure 48.

Figure 48 Sample B2B Protocol



Add a B2B protocol to your Project

Adding a B2B protocol to your project provides an empty modeling canvas where you add and manipulate items on the canvas, called *activities*. Before you can model your business process, you must add a new B2B protocol to your project.

Note: *The eGate User's Guide has detailed information on creating a project.*

1. In Enterprise Designer, in Project Explorer, right-click the project and, on the popup context menu, point at **New** and click **B2B Protocol**.
2. Enter a new name for your B2B protocolB2B protocol.

6.2.1. Modeling a Business Process in eXchange

To model a business process in eXchange, drag and drop modeling elements on the eXchange Protocol Designer, and then link these components to reflect the logical flow of the business process. eXchange provides the tools you need to quickly develop B2B protocol models, including graphical editing tools to help you adjust, size, and align model components.

eXchange Protocol Designer

Once you create a new B2B protocol, you will build your model in the eXchange Protocol Designer (as shown in Figure 49). The eXchange Protocol Designer is the area in the Enterprise Designer where you view, create, and edit your B2B protocol.

To create a B2B protocol

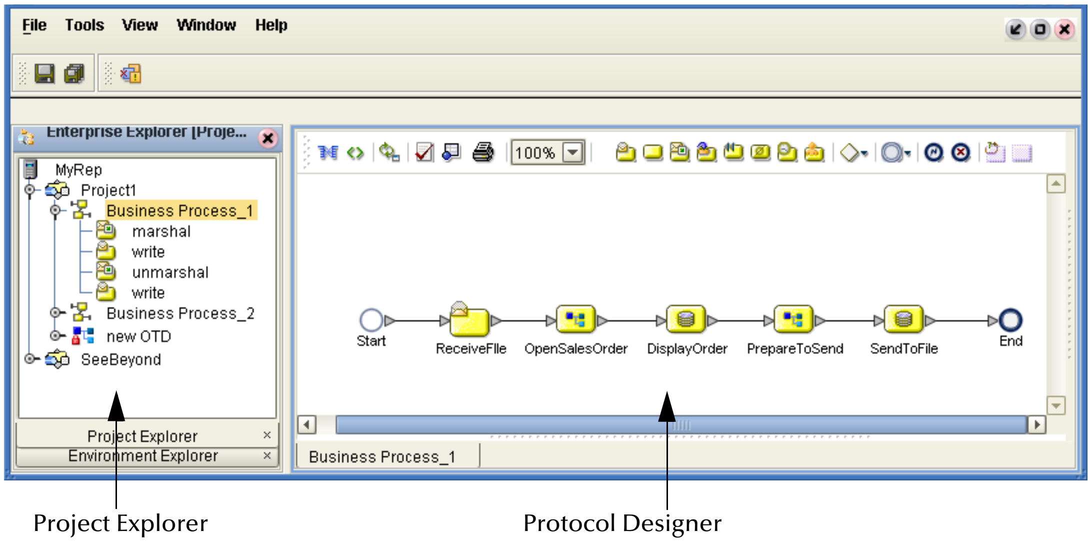
Begin designing your B2B protocol by dragging and dropping modeling elements from the toolbar onto the eXchange Protocol Designer canvas.

The **Start** and **End** activity appear on the blank canvas by default. There is only one starting point for any B2B protocol. (There can be multiple end points.)

1. Drag the appropriate modeling elements to your blank B2B protocol to the eXchange Protocol Designer canvas. See Figure 49.

Note: *See* **Appendix A** *for a complete list of modeling element options.*

Figure 49 B2B Protocol



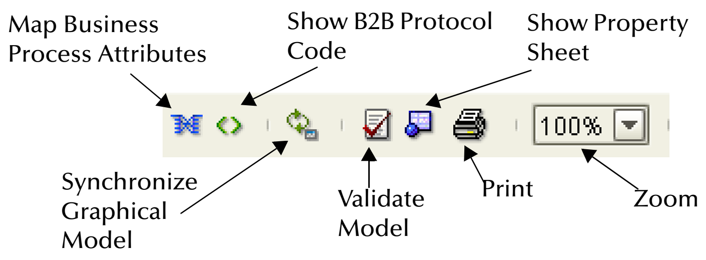
2 Draw links between the modeling elements to show the process flow (Figure 49)

3 On the main toolbar, click **Save** to save your changes to the Repository.

This will validate your B2B protocol, generate the code to run it, and save your changes to the SeeBeyond Repository.

6.3 Using the eXchange Protocol Designer GUI

Figure 50 Toolbar Options



- **Map Business Process Attributes**—Opens the **Business Rule Designer**.
- **Show B2B Protocol Code**—Toggles display of underlying BPEL code.
- **Synchronize Graphical Model and B2B Protocol Code**—Causes the graphic model, the Business Rules, and the underlying BPEL code to match.
- **Validate B2B Protocol Model**—Runs application to check syntactic validity.
- **Show Property Sheet**—Toggles display of property list and graphical overview.
- **Print**—Prints the B2B protocol graphic. Options allow you to control the scale.
- **Zoom**—Enlarges or shrinks the displayed graphic in the canvas.

6.4 Modeling Elements

The eXchange Protocol Designer is where the user creates the B2B protocol flow. It provides a palette of modeling elements for designing your B2B protocol. Like other logical components in a project, B2B protocols appear in the Project Explorer tree.

Elements from the Enterprise Explorer can either be dropped onto empty canvas or onto an Activity. Many elements provide custom settings so that you can model every detail of your process. Each B2B protocol you create consists of basic elements as described in the following sections:

- **Activity Elements** on page 98
- **Branching Activities** on page 100
- **Intermediate Events** on page 101
- **Scope** on page 102
- **While** on page 102

Activity Elements

You can include several different kinds of activities and subprocesses in a B2B protocol. For examples of each of the different kinds of activities, see Table 35.

To add an activity

1. Either drag a modeling element from the toolbar or drag a web service operation from the Project Explorer, and then drop it where you want it on the canvas.
2. Click the activity name and begin typing to rename it from the default.

Note: *Every activity name must contain at least one character (A-Z, a-z, or 0-9); it must start with a letter or an underscore (_), and it may contain spaces.*

The activity appears on the modeling canvas.

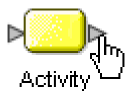
Link modeling elements

eXchange supports orthogonal and diagonal link styles – this setting applies to all links in a model and is an automated application of the style.

To link modeling elements, do the following:

1. Move your cursor over the connector portion of your modeling element.
2. Hold the cursor over the outside edge of the modeling element until it changes from the arrow pointer to a hand (see Figure 51).

Figure 51 Selected Activity



3 Click down, and drag a line from the first activity to the connector of the second activity. When the link attaches, release the mouse button.

Table 35 Activity Elements

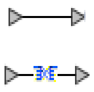
Button	Command	Function
	Start Node	The Start Node is a modeling element indicating the start of the process. This element appears in the eXchange Protocol Designer by default, when you create a new B2B protocol. A Start Node can only link to an activity that has a **receive** or **read** capability, signaled by a subicon in the upper left resembling an opened envelope (see **Receive Activity** just below).
	Link Link with Business Rule	Links indicate the flow of the B2B protocol by connecting elements together. When you select a link, a context menu allows you to configure how data is going to be passed to and from the underlying component or web service operation using B2B protocol attributes. eXchange ensures the model is being properly linked because it does not allow invalid links to connect. Links can also accept mapped values. A link with mapped values is highlighted in blue.
	End Node	The End modeling element indicates the completed state of a B2B protocol. This element appears in the B2B Protocol Designer by default, when you create a new B2B protocol.
	Receive Activity	The Receive activity indicates the invocation of a B2B protocol or a wait state pending the arrival of an inbound message. The Receive activity represents the actual method by which a B2B protocol is initiated. For example: ▪ An eWay polls a file system or database and retrieves data that is passed to the engine, along with the indication that a B2B protocol instance has started. ▪ A user types a URL into a browser and a servlet initiates a B2B protocol by sending a message to eGate or eInsight.
	Activity	An activity is a step in the B2B protocol in which the engine will invoke a web service operation or an eGate component. Depending upon the configuration of the component, a response may or may not be required. One example would be a synchronous extraction process from a database to return the credit status of a trading partner.

Table 35 Activity Elements

Button	Command	Function
	Reply Activity	The Reply activity allows a B2B protocol to respond to the external system or user that originally invoked the B2B protocol. The original receive at the beginning of the B2B protocol is paired with the Reply at the end of the process. In cases where a message must be sent back to the caller of the B2B protocol, the Reply uses information that correlates the message in the calling system. A Reply acts as the last step in a B2B protocol in which the B2B protocol is acting as a web service operation or subprocess. A Reply correlates the outbound message back to the calling process; for example, it can reply to an external system as a web service operation.
	Business Rule Activity	The Business Rule activity sets data values, including task assignments. It is used when imported models have multiple data mappings between the invocation of human tasks or automated systems.
	Compensate	The Compensate element invokes compensation on an inner scope that has already completed normally. This construct can be invoked only from within a fault handler or another compensation handler.
	Empty Activity	The Empty activity allows data to pass through without any changes.
	Wait Activity	The Wait activity acts as a timer. The user will build a model in which there are two simultaneous paths within a set scope, one for the B2B protocol and one for the timer. If the timer condition takes place first, an exception will be thrown and handled, and the B2B protocol path will then be abandoned.
	User Activity	The User activity is used only by eInsight, and should not be placed on a canvas unless your site is licensed for eInsight was well as eXchange. It is used when assigning, escalating, or otherwise using human intervention to complete eInsight business process tasks.

Branching Activities

Branching activities are objects you add to your B2B protocols to specify the logical flow of information. eXchange provides three different kinds of branching activities: Decisions, Event Based Decisions, and Flow.

Add a Branching activity

To add a Branching activity to the modeling canvas:

1. On the toolbar, click the **Branching Activities** drop-down icon, and then release the mouse button.
2. Point at the type of Branching activity you want to add, click, and then drag the activity from the toolbar to the eXchange Protocol Designer canvas.

   The selected Branching activity appears on the modeling canvas.

Table 36 Branching Activities

◇	Decision	A Decision allows one of several possible paths to execute, based on expression logic. This element is used to create complex expressions that determine the path of the B2B protocol. It also contains the expression and connection names. Decisions allow you to define expressions that are evaluated to determine the proper B2B protocol flow. Expressions are built using the mapping interface and B2B protocol attributes.
◇	Event Based Decision	Multiple possible messages can be juxtaposed against a timeout condition to allow the type of message received to determine the appropriate B2B protocol path.
◇	Flow	Allows you to specify one or more activities to be performed concurrently.

Intermediate Events

Intermediate events are those activities that can interrupt the flow of a B2B protocol. Some intermediate events handle exceptions that may occur during your B2B protocol or compensate for exceptions that occur.

Add an Intermediate event

To add an **Intermediate event** to the modeling canvas:

1. On the toolbar, click the **Intermediate Events** drop-down icon, and then release the mouse button.
2. Point at the type of Intermediate event you want to add, click, and then drag the activity from the toolbar to the eXchange Protocol Designer canvas.

   The selected Intermediate event appears on the modeling canvas.

Table 37 Intermediate Events

◎	Compensation Handler	Used when something in a B2B protocol fails and requires a rollback or upstream activities (like money has to be returned to the customer). On an automatic basis in the B2B protocol, upstream steps in the B2B protocol are notified that the failure has occurred and certain transactions need to be reversed, sometimes in a sequential order. The compensation handler allows you to design the process and circumstances in which the compensation takes place.
◎	Catch Named Exception	Each automated system (back-end system) or web service operation can publish their possible error codes (for instance, fault 15 is "bad data"). Those codes can be mapped to exception handlers. Each exception handler is connected to the scope that surrounds one or more steps in a B2B protocol. The components within that scope will throw the exceptions when things go wrong and the exception handler will automatically initiate the appropriate process to handle the problem.
◎	Catch All Exceptions	This exception handler is configured to handle all exceptions that occur in a scope.

Table 37 Intermediate Events

	Message Event	This is similar to a Receive Activity, but it occurs only in the middle of a B2B protocol. Each of these elements can be a different message.
	Timer Event	A timeout condition is set upon Activities, sets of Activities, or a B2B protocol as a whole, to ensure that processes complete within given amount of time. Timeout conditions also allow you to design the B2B protocol branch to take after a timeout condition takes place.

Scope

The behavior for one or more activities can be defined by a scope. A scope can provide exception handlers, event handlers, a compensation handler, and data variables. The exception handlers for the scope can be used to catch the faults caused by the possible exception responses.

	Scope	The Scope element allows you to apply exception handlers, compensation, and transactionality to a set of sequential or simultaneous steps in a B2B protocol.

While

	While	This allows you to create a looping process within a B2B protocol (for instance, a negotiation process may take several weeks, but the manager wants to review the daily status). The loop continues until the negotiation is complete, and then the B2B protocol continues.

6.4.1. Validating a B2B Protocol

After creating a B2B protocol, you can check to see if there are any problems such as activities that are not connected or an incorrect number of output links from an activity.

To check the B2B protocol for errors

- On the toolbar, click **Validate B2B Protocol Model**.

  If an error is encountered, a message box displays information about the error. If there are no errors, a message appears stating that there were no errors.

Note: *If an error message displays, see **"Saving an Unfinished B2B Protocol"** for information on repairing errors. Repairing the error may entail such items as adding logic to Decisions or adding attributes to activities.*

6.4.2. Saving an Unfinished B2B Protocol

Even if a B2B protocol is not complete and/or contains errors, you can save it as a work in progress and return to it later by doing any of the following:

- On the **File** menu, choose **Save**
- On the main toolbar, click **Save**
- On the keyboard, press **Ctrl+S**

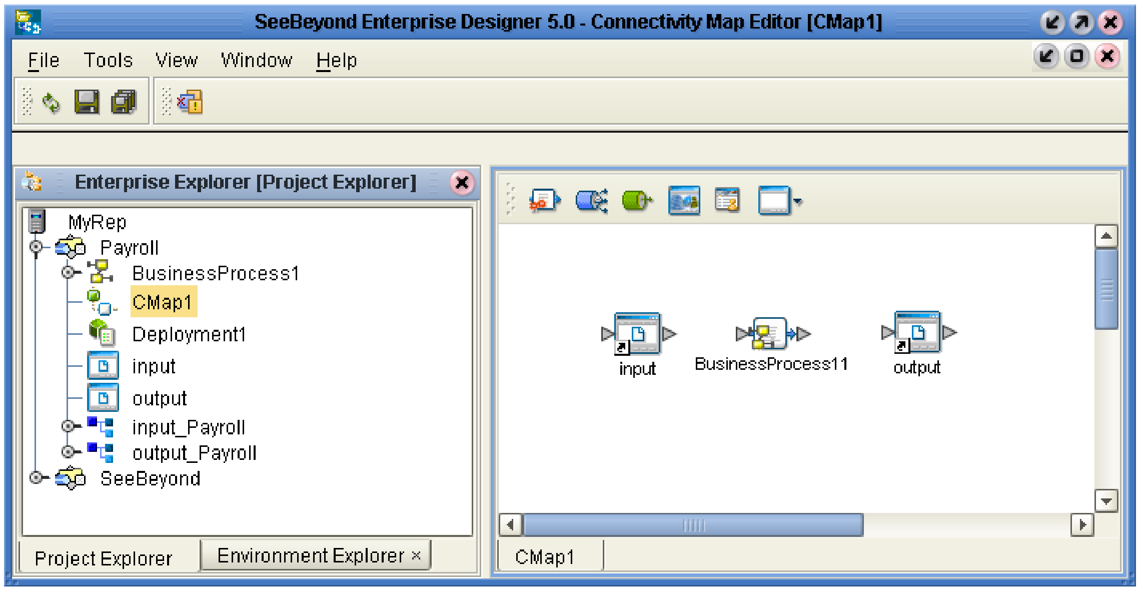
6.5 Using B2B Protocols in a Connectivity Map

The connectivity map represents connection information in the ICAN Suite. The flow is represented at a higher level than in the B2B protocol. eXchange also uses the information in the connectivity map to establish and maintain connections to systems for the correct step in a B2B protocol.

To include a B2B protocol as a service on a connectivity map

1. In the Connectivity Map Editor, drag a B2B protocol onto the canvas.
2. Add and connect other components and external systems as needed. See Figure 52.

Figure 52 Connectivity Map with B2B Protocol

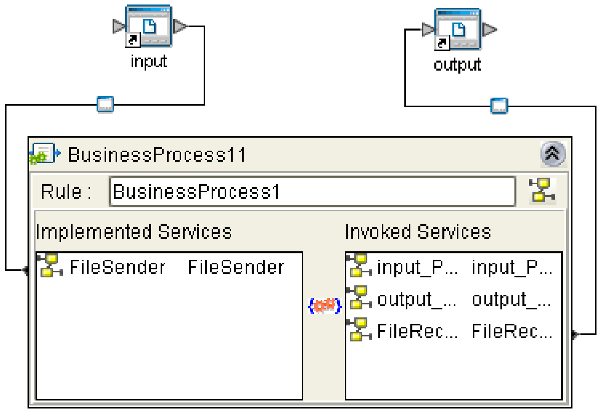


To connect the B2B protocol activities to the externals

1. In the map, double-click the B2B protocol to open the Binding Dialog.
2. Connect the appropriate activities to the corresponding external.

   Note that **Receive** activities appear in the left pane, and **Invoke** and **Reply** activities appear in the right pane. See Figure 53.

Figure 53 Connectivity Map: B2B Protocol Binding



6.6 Deploying a Project With a B2B Protocol

6.6.1. Deployment Profiles Containing B2B Protocols

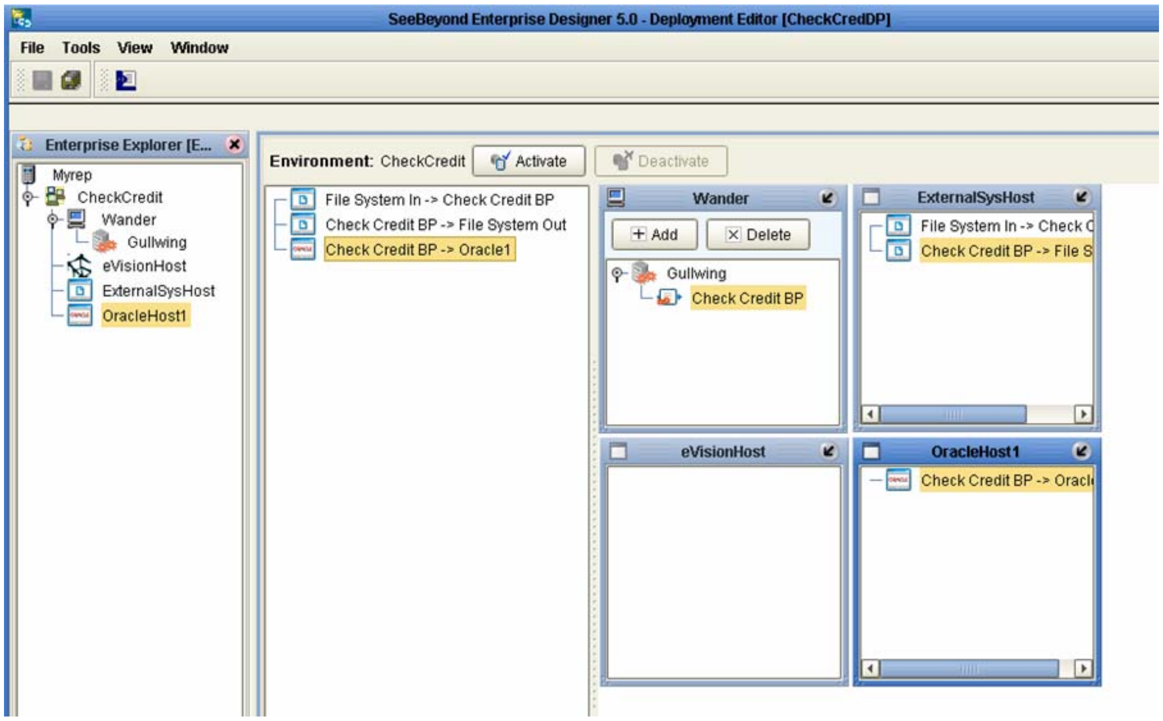
An environment becomes useful only after it has been populated with:

- One or more logical hosts, each containing one or more integration servers. Configuration steps may be required for integration servers, depending on the nature of the project and run-time environment.
- All necessary external servers, properly configured.

Note: *If a B2B host is present in a B2B protocol or connectivity map, it requires special activation steps. See* **Activating a B2B Host** *on page 87.*

When these conditions are met, a deployment profile referencing the environment assigns each logical component, eWay, and Channel Manager to a corresponding integration server and external. See Figure 54.

Figure 54 Deployment Profile with Some Components Assigned


SeeBeyond Enterprise Designer 5.0 - Deployment Editor [CheckCredDP]
File
Tools
View
Window
Enterprise Explorer [E...
Myrep
CheckCredit
Wander
Gullwing
eVisionHost
ExternalSysHost
OracleHost1
Environment: CheckCredit
Activate
Deactivate
File System In -> Check Credit BP
Check Credit BP -> File System Out
Check Credit BP -> Oracle1
Wander
Add
Delete
Gullwing
Check Credit BP
ExternalSysHost
File System In -> Check C
Check Credit BP -> File S
eVisionHost
OracleHost1
Check Credit BP -> Oracl

- Each service and B2B protocol should be dragged under the correct integration server of the appropriate logical host.
- If there are any topics or queues, each should be dragged into the correct message server of the appropriate logical host.
- Each eWay should be dragged into the correct external host system.
- Each Channel Manager, if present, should be dragged into an eXchange service for its B2B host.

After all logical components have been assigned, click **Activate** to generate the code that will be run by the integration server within the logical host engine.

Chapter 7
Exception Handling

This chapter explains the concept of exception handling and how to configure various methods of handling errors.

- **"Scope" on page 107**
- **"Compensation" on page 108**

7.1 Overview

Exception handling is the identification of failed components or systems. In eXchange, exception handling allows one or more components to throw an exception that is caught by eXchange within a *scope*. Using the **scope** element, you can configure eXchange to catch all exceptions or certain exceptions that you specify. The elements that you use to configure exception handling in your model are:

- **Catch Named Exceptions**
- **Catch All Exceptions**

Exception handling in B2B protocols relies heavily on the concept of *compensation*. Compensation is an application-specific activity that reverse the effects of a previous activity that was carried out as part of a larger unit of work that is being abandoned.

B2B protocols are often of long duration and use asynchronous messages for communication. They also manipulate sensitive business data in back-end databases and line-of-business applications. As a result, the overall business transaction may fail or be cancelled after many transactions have been committed during its progress. In these cases, the partial work may need to be reversed.

7.1.1. Exception Handling Configuration

Exception handlers are configured to catch errors that are thrown by eGate components and/or Web Services. These systems can be configured to publish one or more exceptions.

- **Manual Exception Handling**: The model can contain B2B protocol logic designed to handle the exception.
- **Automatic Exception Handling**: Pre-packaged functionality guides the user to create multiple types of catches for thrown exceptions.

Each exception can be handled differently. This is one example:

1. Build the exception handling logic as a B2B protocol.
2. Select the exception handler to configure which exception triggers the exception handling process.
3. Drag the Scope element onto the eXchange Protocol Designer canvas.
4. Drag the Exception modeling element into the scope for which it should take effect.
5. Define a B2B protocol that appropriately handles each exception.
6. Model manual exceptions in a B2B protocol.
7. Configure the exception handler to take place when one of the components within the Scope throws the appropriate exception.

Identifying Component or System Failures

Exception management allows users to quickly identify and correct problems with components or systems.

Users can filter the list of displayed instances to quickly identify exceptions.

Users can easily navigate to particular versions of a B2B protocol to monitor the progress of instances.

A Web-based interface allows users to securely access the monitoring environment over the Internet.

Identification of troubled instances (i.e. time-outs or bad messages).

Failed components/systems create visual alerts via the B2B protocol monitoring interface. The integrated monitoring environment allows you to identify the problem, assign a resource to fix the problem, and if necessary, restart the affected instances.

Users can quickly identify troubled instances from a large number of instances, repair and restart that instance for continued processing.

7.2 Scope

Scope allows you to define a range

- For handling of exceptions
- For creating compensation logic

The range of the scope can span one or more activities in the B2B protocol or even the entire B2B protocol.

Scope or Process level exceptions

Either the **Named** or **Catch All exceptions** can be used at the B2B protocol level.

Named exception

1 Drag the **Catch Named Exception** element into the scope for which the exception handler applies.

2 In the Exception Handler properties, configure the following:

- Fault Container—The output Attribute that will be containing the run-time name of the thrown fault.
- Fault Name—The run-time value for the exception that will be passed from the component to the engine at run time.

Note: *The fault name is auto-populated with values based on the components dragged to the editor.*

3 Select the configuration control for the Exception Handler – the properties pane will appear to select the Fault name and container.

4 Drag the **Catch Named Exception** into the associated scope.

Catch All Exceptions

No configuration of the Catch All Exceptions element is required – any thrown exception not previously caught is caught with the Catch All Exception element.

7.3 Compensation

Compensation allows the modeler to create the process flow for executing complex compensations. Exception Handlers for parent scopes invoke the correct Compensation Handlers in the appropriate order.

Using Scope and Exceptions to Trigger Compensation

- Compensation Activity—In an exception handler, initiates the compensation process. It models the compensation as a B2B protocol, and indicates the Compensation for “DB Insert” should be initiated.
- Compensation Handler— This is dropped within a scope to create the compensation logic for a given scope.

7.4 Validate the B2B Protocol

After generating the business process code (BPEL), you can click the **Validation** button on the toolbar to identify any issues with the model. The validation results now appear in a wizard, listing any issues one by one with clear and understandable descriptions for the issues. You can fix each issue, regenerate the business process code, and again view the validation results until each of the issues has been fixed, and the model validates as correct.

Chapter 8

Using eXchange Web Facilities

This chapter provides step-by-step procedures for using the Web-based facilities to configure and monitor eXchange components and processes.

In this chapter

Each of these three facilities requires that you have already created a valid project and activated it.

8.1 eXchange Partner Manager (ePM)

Before you begin: You must have already set up a B2B host with one or more delivery channels (see **"Setting Up Delivery Channels" on page 83**) and you must have already activated it to create an eXchange Service (see **"Activating a B2B Host" on page 87**). If you want to use encryption in the trading partner, you must have already configured the proper certificates and truststores in the environment properties of the eXchange Service (see **procedure on page 91**, **"To associate security information with an eXchange Service's delivery channels"**).

Overview

In this procedure, you will add a trading partner, bind it to at least one external delivery channel, add a profile beneath it, configure the profile, assign a messaging service to it, and configure all of the actions within the messaging service.

Accessing eXchange Partner Manager (ePM)

To access eXchange Partner Manager and locate a B2B host in the explorer tree

Before you begin: Your repository server must already be running.

1. Open a browser window and point it at the hostname and port where your Repository server is running. For example:

   ```
   http://localhost:16271
   ```

2. Log in to Enterprise Manager.

3 When you have logged in, point your browser at a new URL that is the same as the previous one but with the string **/epm** appended. For example:

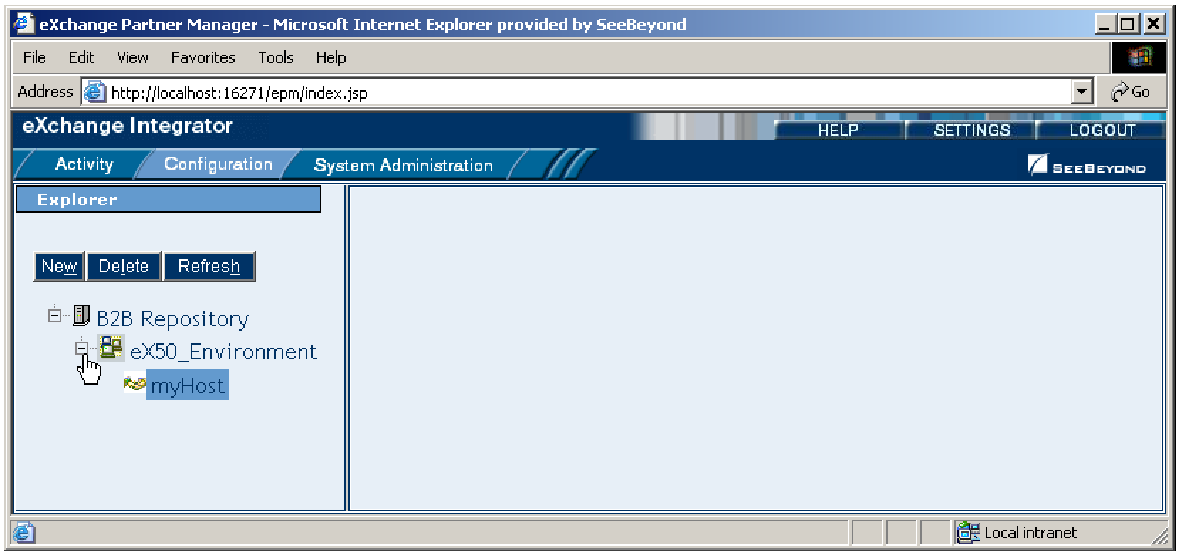
```
http://localhost:16271/epm
```

Note: *This URL is case-sensitive. If your browser warns you, "Requested resource not available," double-check that you entered the suffice* ***/epm*** *in all-lowercase.*

After a pause, the window displays the eXchange Partner Manager GUI, a two-pane window with an explorer tree on the left and a canvas on the right.

4 In the tree, open the root (named **B2B Repository**) and then open the environment where you deployed your B2B host. So far, the canvas remains blank. See Figure 55.

Figure 55 eXchange Partner Management (ePM) — No Configuration


eXchange Partner Manager - Microsoft Internet Explorer provided by SeeBeyond
File Edit View Favorites Tools Help
Address http://localhost:16271/epm/index.jsp
Go
eXchange Integrator
HELP SETTINGS LOGOUT
Activity Configuration System Administration
SeeBeyond
Explorer
New Delete Refresh
B2B Repository
eX50_Environment
myHost
Local intranet

Creating Trading Partners

To create and name a trading partner

1 With the B2B host highlighted, click **New** (top left button in Explorer pane).

2 Enter a name for the trading partner, and then click **Save**.

In the explorer tree, the new trading partner appears under the B2B host.

3 Click the trading partner and then click **New** (upper left).

The **Trading Partner Configuration** canvas displays two tabs: **Properties** and Components.

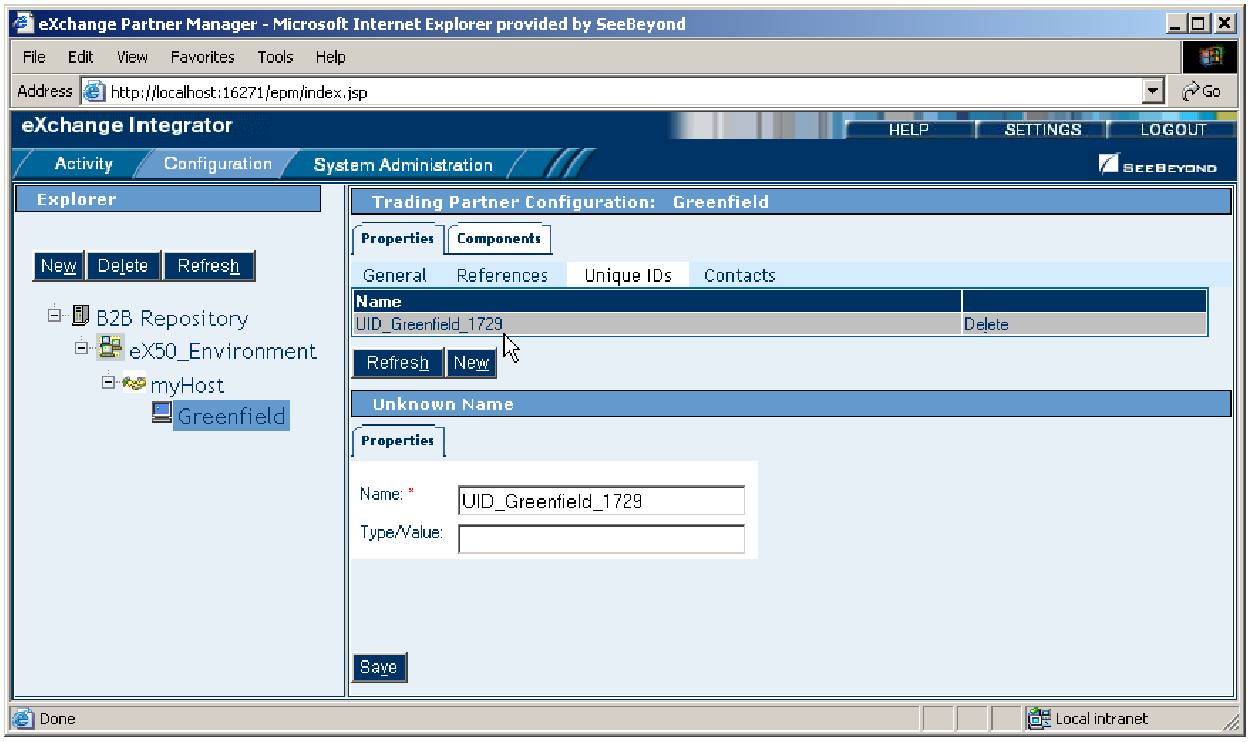
4 In the Properties tab with the **General** subtab active, click **Save**.

5 Click **Unique IDs** (the third subtab), and then click **New** (button in lower center).

6 Enter a unique ID for this trading partner, and then click Save.

The new unique ID appears under the Name column. See Figure 56.

Figure 56 New Trading Partner with Unique ID


eXchange Partner Manager - Microsoft Internet Explorer provided by SeeBeyond
File Edit View Favorites Tools Help
Address http://localhost:16271/epm/index.jsp
Go
eXchange Integrator
HELP SETTINGS LOGOUT
Activity Configuration System Administration
SeeBeyond
Explorer
New Delete Refresh
B2B Repository
eX50_Environment
myHost
Greenfield
Trading Partner Configuration: Greenfield
Properties Components
General References Unique IDs Contacts
Refresh New
Unknown Name
Properties
Save
Done
Local intranet

Name	
UID_Greenfield_1729	Delete

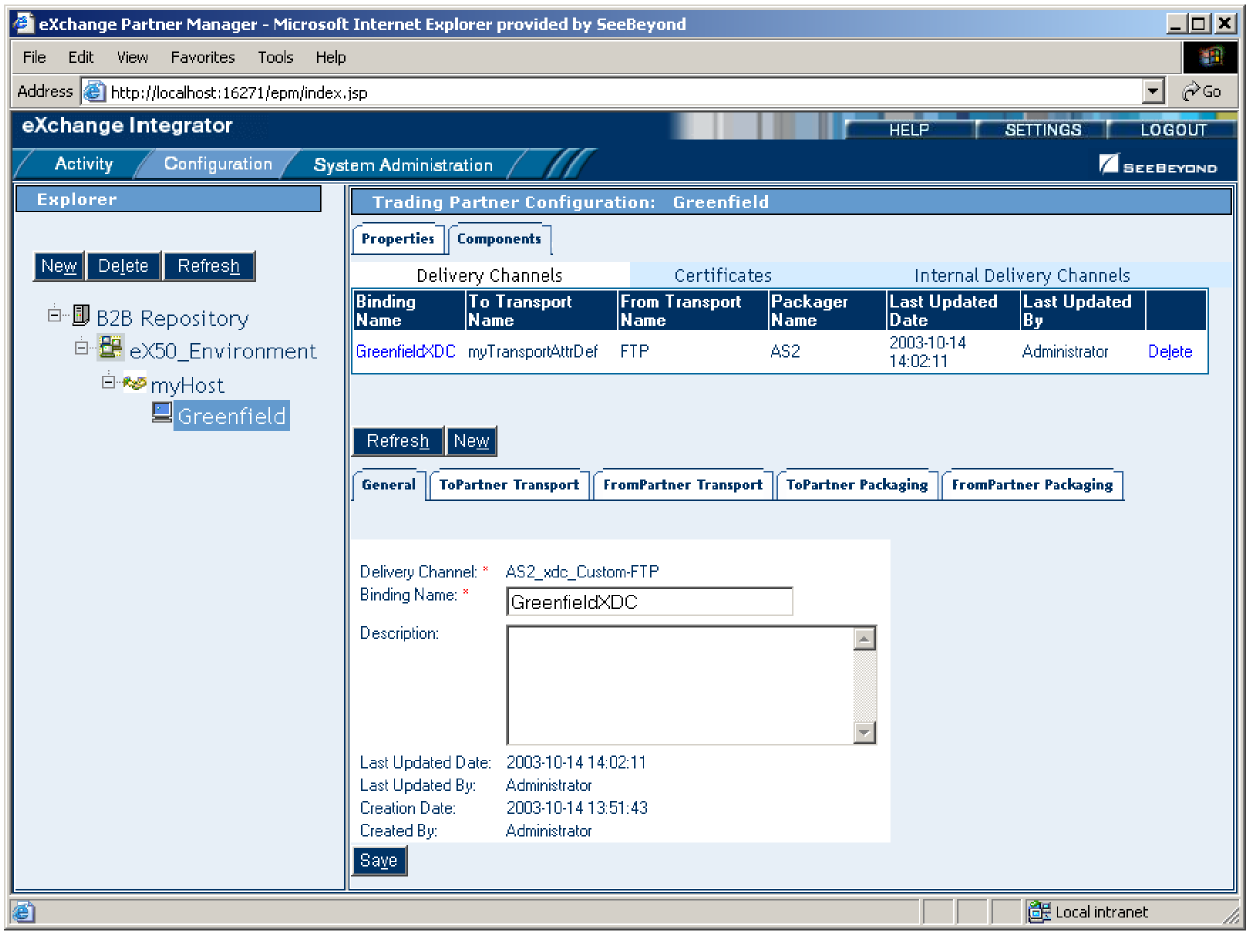
Name: * UID_Greenfield_1729
Type/Value:

Creating Bindings to External Delivery Channels

To access an external delivery channel and create a binding to it

1. With a trading partner highlighted, in the configuration canvas, click **Components**.
   When the Components tab becomes active, it displays three subtabs.
2. With **Delivery Channels** active (the first subtab), click **New** (lower center button).
3. Select a delivery channel from the list, enter a binding name, and click **Continue**.
   Five new subtabs are displayed.

Figure 57 Trading Partner Newly Associated with an External Delivery Channel


eXchange Partner Manager - Microsoft Internet Explorer provided by SeeBeyond
File Edit View Favorites Tools Help
Address http://localhost:16271/epm/index.jsp
Go
eXchange Integrator
HELP SETTINGS LOGOUT
Activity Configuration System Administration
SEEBEYOND
Explorer
New Delete Refresh
B2B Repository
eX50_Environment
myHost
Greenfield
Trading Partner Configuration: Greenfield
Properties Components
Delivery Channels Certificates Internal Delivery Channels
Refresh New
General ToPartner Transport FromPartner Transport ToPartner Packaging FromPartner Packaging
Save
Local intranet

Binding Name	To Transport Name	From Transport Name	Packager Name	Last Updated Date	Last Updated By	
GreenfieldXDC	myTransportAttrDef	FTP	AS2	2003-10-14 14:02:11	Administrator	Delete

Delivery Channel: *	AS2_xdc_Custom-FTP
Binding Name: *	GreenfieldXDC
Description:	
Last Updated Date:	2003-10-14 14:02:11
Last Updated By:	Administrator
Creation Date:	2003-10-14 13:51:43
Created By:	Administrator

You will need to provide specific parameter values to be used by the transport and enveloping(=packaging) protocols.

4 Click the **ToPartner** Transport tab and enter appropriate transport attributes definition values.

The number and type of parameters depends on the particular transport attributes definition you are using. For example, a File transport attributes definition might require only three values, an FTP transport attributes definition might require six and permit twelve, and a custom transport attributes definition might require hundreds of values, or none.

5 When you have entered all values, click **Save**.

6 Repeat the previous two steps for the other three tabs (FromPartner Transport, ToPartner Packaging, and FromPartner Packaging). Be sure to click **Save** each time.

Result: The binding for this external delivery channel has been configured.

Optionally, if you are using Secure Messaging Exchange (SME), you can import an Encryption Key in the ToPartner Packaging tab and import a Signature certificate in the FromPartner Packaging tab.

To import a signature certificate or encryption key

1. Do one of the following:
   - In a Components Delivery Channels > **[ ]Partner Packaging** tab, click **Import**.
   - In the Components >**Certificates** tab, click **New**.
2. Enter a value for **Certificate Name**, click **Browse**, locate and select the correct certificate, and then click **Open** to choose the file and return.
3. Click **Save**.

Result: The imported certificate is saved. It is now displayed both under the **Certificates** tab and in the drop-down list.

Creating Bindings to Internal Delivery Channels

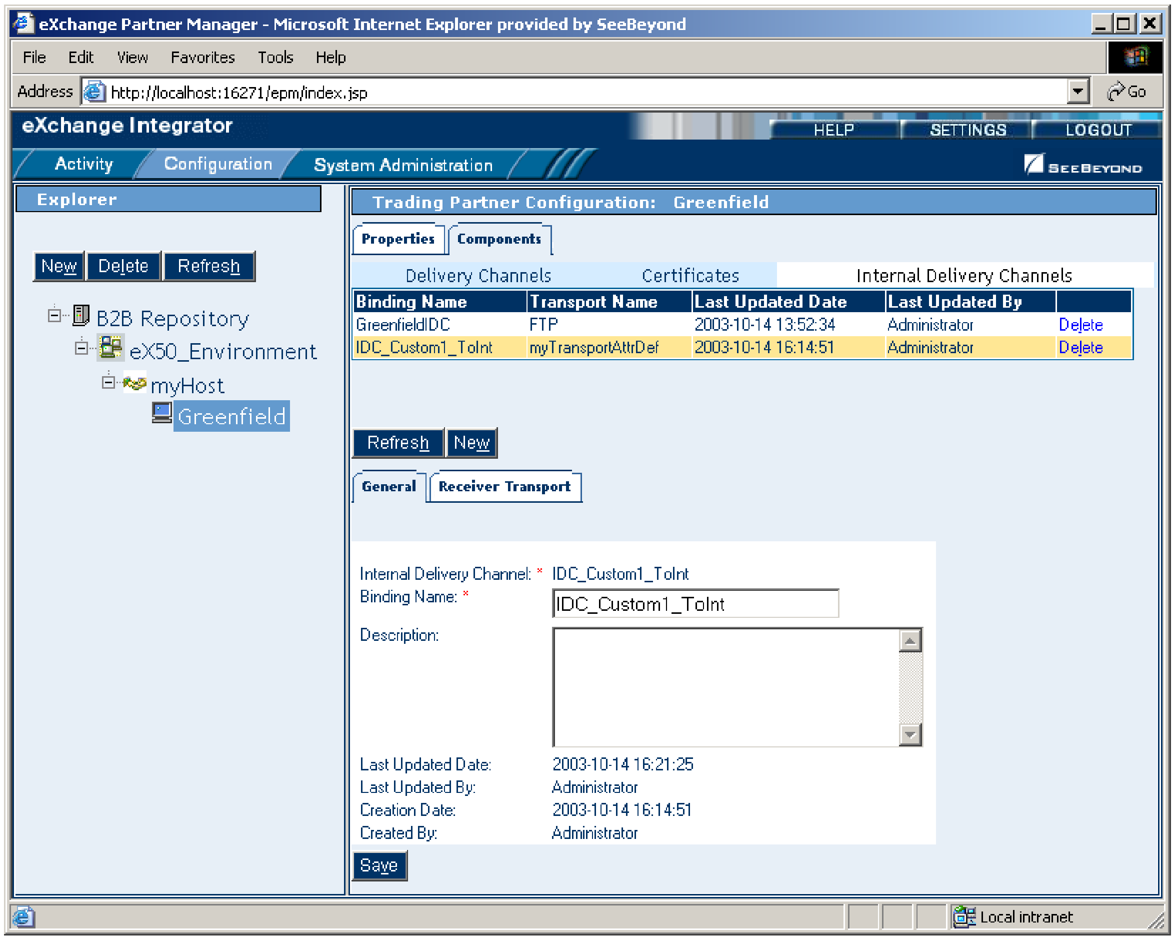
To access an internal delivery channel and create a binding to it

1. With a trading partner highlighted, in the configuration canvas, click **Components**.

   When the Components tab becomes active, it displays three subtabs.
2. With **Internal Delivery Channels** active (rightmost tab), click **New** (lower center).
3. Select an IDC from the list, accept or enter a binding name, and click **Continue**.

   Two new subtabs are displayed—in addition to **General**, one or the other of:
   - **Sender Transport** (for IDCs that the B2B host designated as From Internal)
   - **Receiver Transport** (for IDCs that the B2B host designated as To Internal)
4. Click the Sender or Receiver tab and supply values for that transport attributes definition.
5. Click **Save**. See Figure 58.

Figure 58 Trading Partner Newly Associated with an Internal Delivery Channel


eXchange Partner Manager - Microsoft Internet Explorer provided by SeeBeyond
File Edit View Favorites Tools Help
Address http://localhost:16271/epm/index.jsp
Go
eXchange Integrator
HELP SETTINGS LOGOUT
Activity Configuration System Administration
SeeBeyond
Explorer
New Delete Refresh
B2B Repository
eX50_Environment
myHost
Greenfield
Trading Partner Configuration: Greenfield
Properties Components
Delivery Channels Certificates Internal Delivery Channels
Refresh New
General Receiver Transport
Save
Local intranet

Binding Name	Transport Name	Last Updated Date	Last Updated By	
GreenfieldIDC	FTP	2003-10-14 13:52:34	Administrator	Delete
IDC_Custom1_ToInt	myTransportAttrDef	2003-10-14 16:14:51	Administrator	Delete

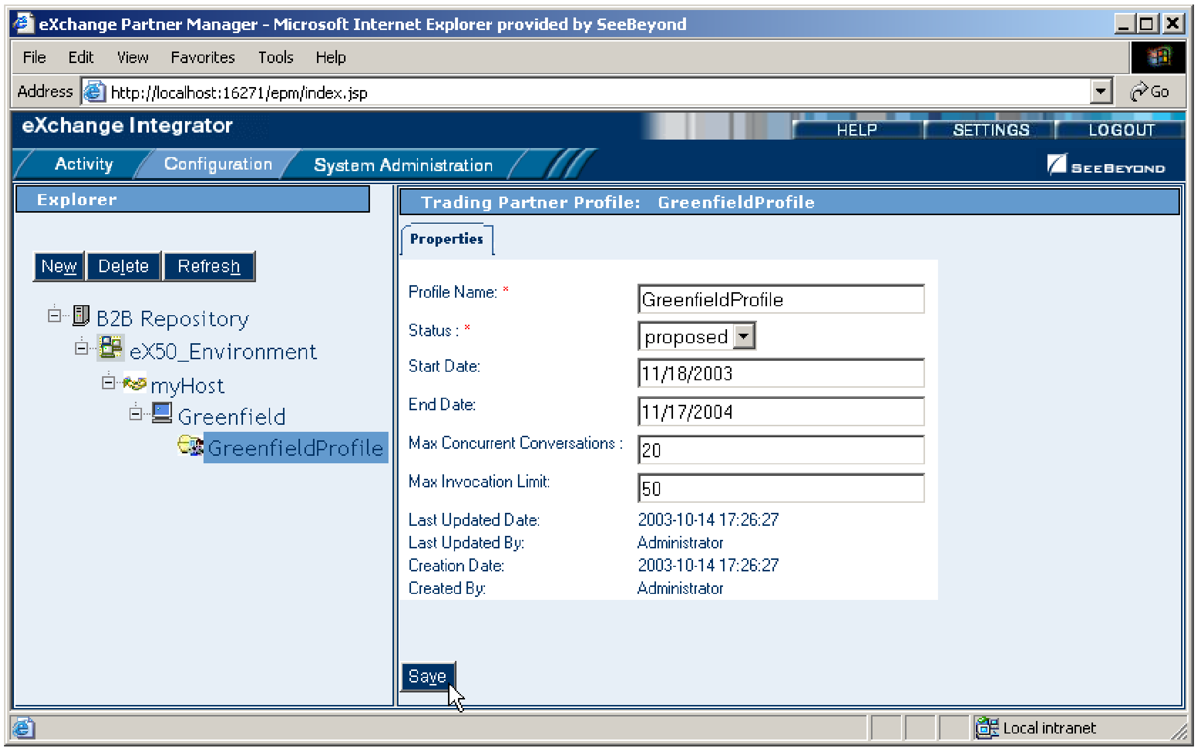
Internal Delivery Channel: *	IDC_Custom1_ToInt
Binding Name: *	IDC_Custom1_ToInt
Description:	
Last Updated Date:	2003-10-14 16:21:25
Last Updated By:	Administrator
Creation Date:	2003-10-14 16:14:51
Created By:	Administrator

Creating Profiles and Activating Trading Partners

To create a trading partner profile and activate the trading partner

1. With a trading partner highlighted, click **New** (upper left).
2. Enter a profile name, select a status (if not **proposed**), and optionally enter a start date, end date, and maximum values concurrent conversations and invocations.
3. Click **Save**. See Figure 59.

Figure 59 Newly Created Trading Partner Profile


eXchange Partner Manager - Microsoft Internet Explorer provided by SeeBeyond
File Edit View Favorites Tools Help
Address http://localhost:16271/epm/index.jsp
Go
eXchange Integrator
HELP SETTINGS LOGOUT
Activity Configuration System Administration
SeeBeyond
Explorer
New Delete Refresh
B2B Repository
eX50_Environment
myHost
Greenfield
GreenfieldProfile
Trading Partner Profile: GreenfieldProfile
Properties
Save
Local intranet

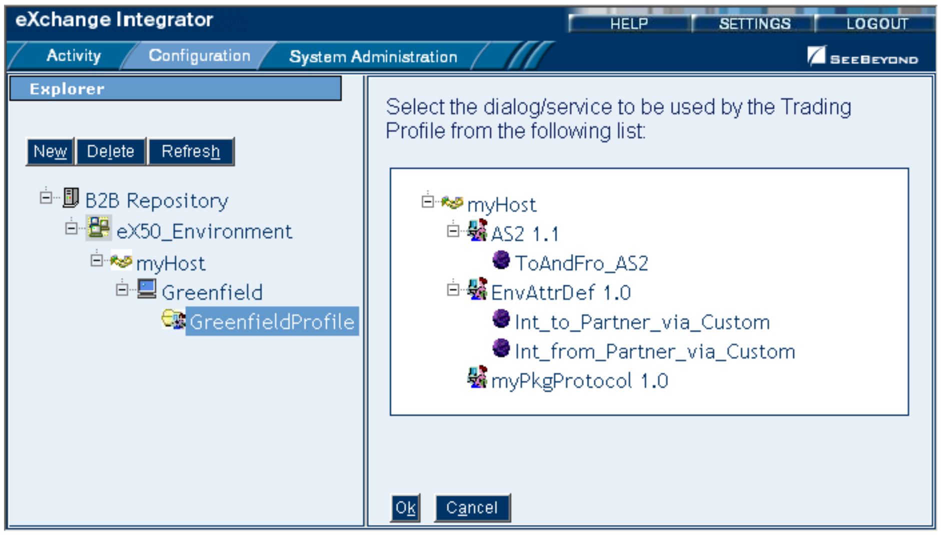
Profile Name: *	GreenfieldProfile
Status : *	proposed
Start Date:	11/18/2003
End Date:	11/17/2004
Max Concurrent Conversations :	20
Max Invocation Limit:	50
Last Updated Date:	2003-10-14 17:26:27
Last Updated By:	Administrator
Creation Date:	2003-10-14 17:26:27
Created By:	Administrator

The explorer tree displays a new trading partner ***profile***.

4 In the explorer tree, click the newly created profile, and then click **New** (upper left).

You are creating a new messaging service binding based on one of the messaging services that are the leaves of the tree now displayed on the canvas. See Figure 60.

Figure 60 Messaging Services Organized Under Enveloping Attributes Definitions



Select the dialog/service to be used by the Trading Profile from the following list:

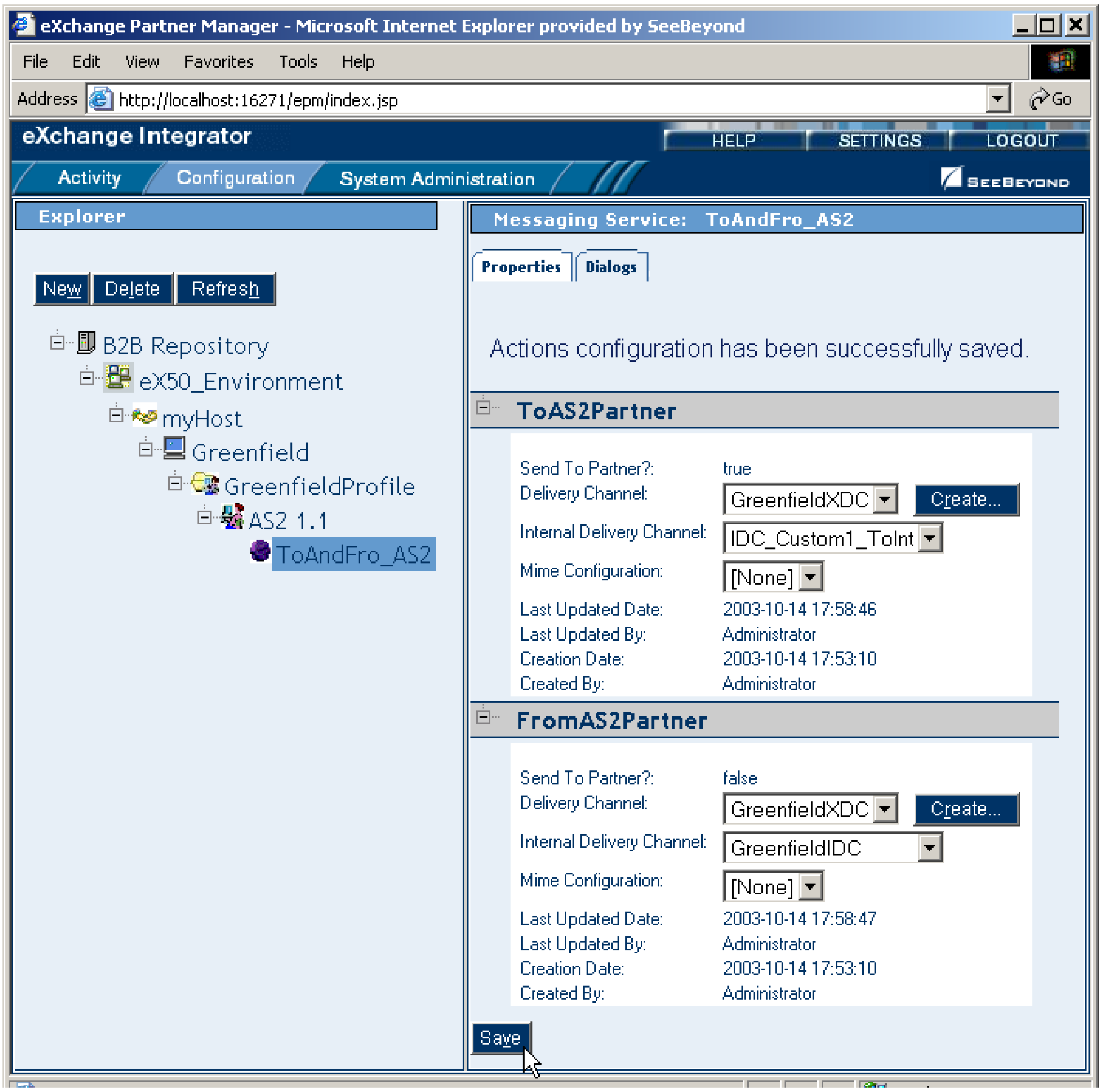
5 Click one of the messaging services and then click **OK**.

The messaging service appears as the bottommost leaf of the explorer tree, under the enveloping attributes definition (standard or custom) with which it is associated.

6 Click **Save**, and then click the **Dialogs**. tab to display the actions that you defined for that messaging service.

7 For the actions, assign appropriate parameter values and click **Save**. See Figure 61.

Figure 61 Messaging Service in Explorer Tree with Actions Shown on Canvas


eXchange Partner Manager - Microsoft Internet Explorer provided by SeeBeyond
File Edit View Favorites Tools Help
Address http://localhost:16271/epm/index.jsp
Go
eXchange Integrator
HELP SETTINGS LOGOUT
Activity Configuration System Administration
SeeBeyond
Explorer
New Delete Refresh
B2B Repository
eX50_Environment
myHost
Greenfield
GreenfieldProfile
AS2 1.1
ToAndFro_AS2
Messaging Service: ToAndFro_AS2
Properties Dialogs
Create...
Save

Actions configuration has been successfully saved.

ToAS2Partner

Send To Partner?:	true
Delivery Channel:	GreenfieldXDC
Internal Delivery Channel:	IDC_Custom1_ToInt
Mime Configuration:	[None]
Last Updated Date:	2003-10-14 17:58:46
Last Updated By:	Administrator
Creation Date:	2003-10-14 17:53:10
Created By:	Administrator

FromAS2Partner

Send To Partner?:	false
Delivery Channel:	GreenfieldXDC
Internal Delivery Channel:	GreenfieldIDC
Mime Configuration:	[None]
Last Updated Date:	2003-10-14 17:58:47
Last Updated By:	Administrator
Creation Date:	2003-10-14 17:53:10
Created By:	Administrator

8 In the explorer tree, click the trading partner to display the Trading Partner Configuration canvas.

9 Click **Activate**. In response to the prompt, click **Activate**.

A success message confirms that the trading partner configuration is now in the database, and accessible to Channel Manager and other partner lookup facilities.

8.2 Monitoring B2B Protocols

You use standard eGate tools within Enterprise Manager to monitor your B2B protocols.

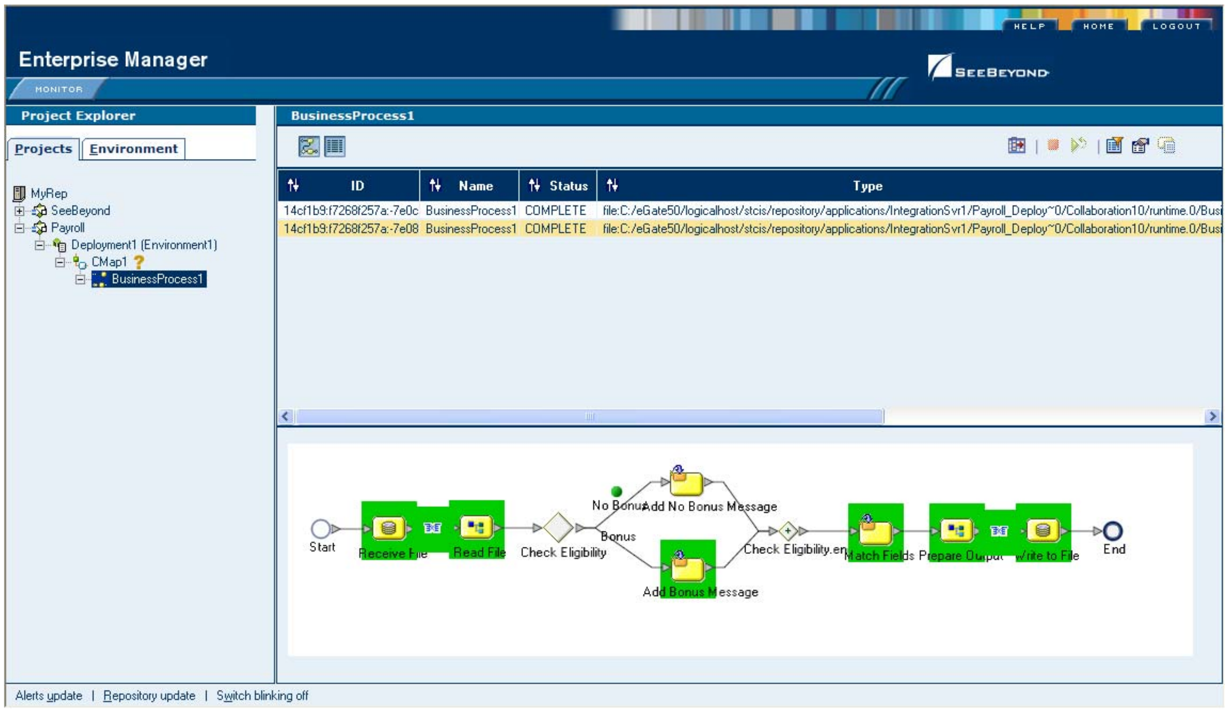
Before you begin

- You must already have activated a project whose connectivity map contains one or more services for B2B protocols.
- You must already have bootstrapped a logical host to run this project.

To monitor a B2B protocol

1. Start **Enterprise Manager**. and click the **Home** tab.
2. Select the **Monitor** icon to bring up the tree structure which allows you to navigate through projects or environments.
3. Select the **Projects** tab.
4. Navigate to the correct **Project/Deployment Profile/Connectivity Map**, and select the B2B protocol name.

Figure 62 Monitor View



ID	Name	Status	Type
14cf1b9:f7268f257a:-7e0c	BusinessProcess1	COMPLETE	file:C:/eGate50/logicalhost/stcis/repository/applications/IntegrationSvr1/Payroll_Deploy~0/Collaboration10/runtime.0/Busi
14cf1b9:f7268f257a:-7e08	BusinessProcess1	COMPLETE	file:C:/eGate50/logicalhost/stcis/repository/applications/IntegrationSvr1/Payroll_Deploy~0/Collaboration10/runtime.0/Busi

Monitor options

In the right pane of Enterprise Manager, you can see the model and/or the instance list (the toggle at the top of the pane controls the view).

The options are:

- show the model
- show the instance list
- show the instance list and model

8.3 Message Tracking

eXchange provides a special application, named Message Tracker, that allows you to monitor the status of messages as they are received and processed by eXchange.

Before you begin

- You must already have activated a project whose connectivity map contains one or more instances of the eXchange Tracker_Application.
- Your database for eXchange 5.0.3 must already be running, and you must already have bootstrapped a logical host to run this project, and
- For the facility to be useful, there must be one or more messages that have already been picked up by this logical host's integration server.

Accessing eXchange Message Tracking

To access Message Tracking

1. Start a *new* browser session (that is, do ***not*** clone a window of an existing session).
2. Point your browser at the following URL

   `http://`*`<loghostname>`***`:`***`<port>`***`/`***`<appname>`***`/msgTrack/EnterPkgTrack.do`**

   where:

   - *<loghostname>* is the hostname or IP address of a logical host running your project.
   - *<port>* is the Web server connector port configured in your integration server. To learn this, use Environment Explorer to open the logical host; right-click the integration server and select Properties; open IS Configuration > Sections > Web Container > Web Server > Default Web Server; *<port>* is the value set for Connector Port. If you have several web server configurations, check them also.

     If you have made no changes to the defaults, the value will be **18004** (for the first integration server in the first-created logical host; 19004 for the first integration server in the second-created logical host, and so forth).
   - *<appname>* is the hostname or IP address of a logical host running your project.

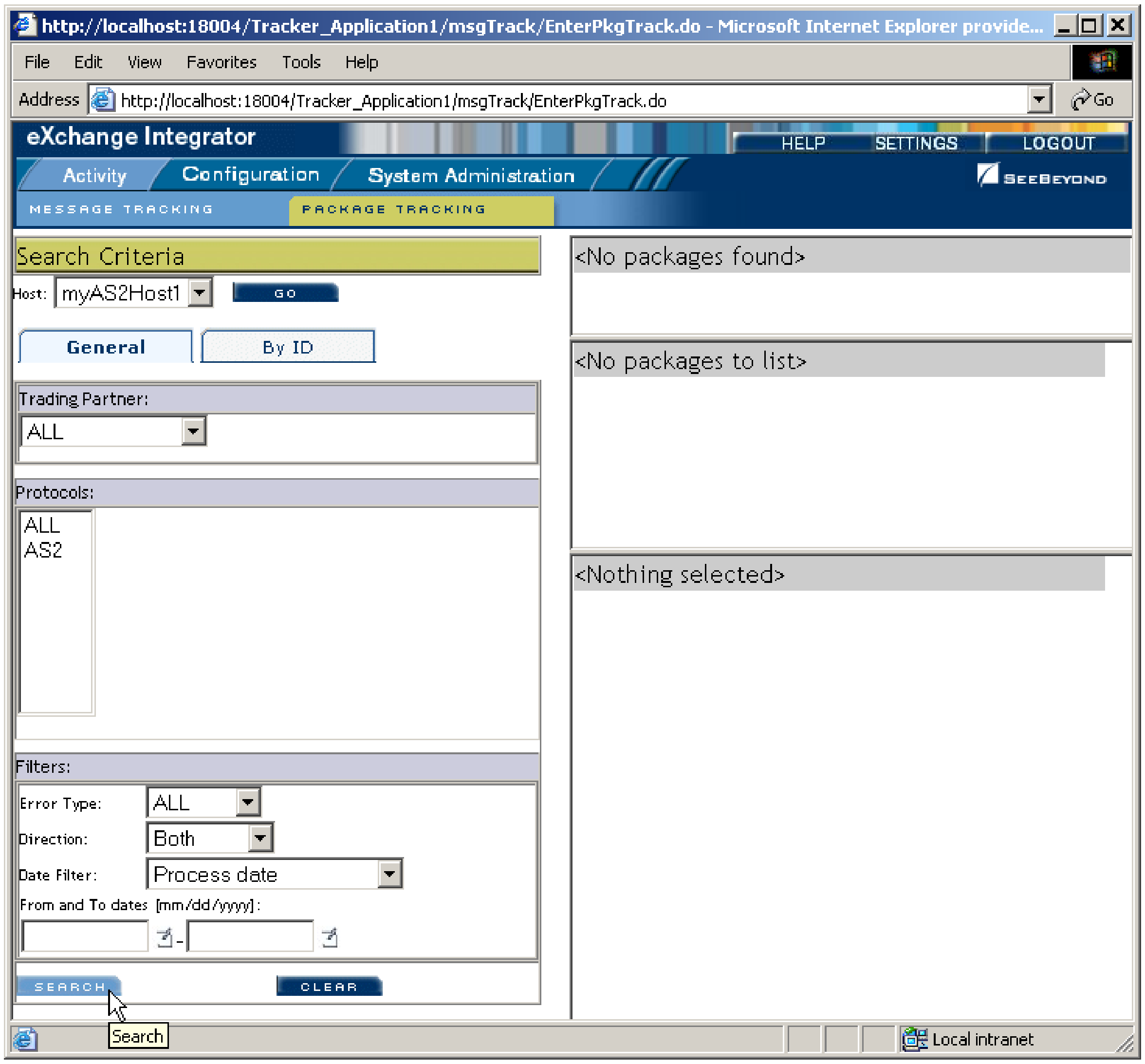
Examples:

- To access message tracking for "LH1" (IS ports 18000–18009, web port=18004):
  `http://LH1:`**`18004`**`/Tracker_Application1/msgTrack/EnterPkgTrack.do`
- To access message tracking for "LH2" (IS ports 19000–19009, web port=19004):
  `http://LH2:`**`19004`**`/Tracker_Application1/msgTrack/EnterPkgTrack.do`

- Or if, instead, you had named your tracking application “myTracker” (on LH1):
  `http://LH1:18004/myTracker/msgTrack/EnterPkgTrack.do`

Result: See Figure 63.

Figure 63 Message Tracking, on Startup


http://localhost:18004/Tracker_Application1/msgTrack/EnterPkgTrack.do - Microsoft Internet Explorer provide...
File Edit View Favorites Tools Help
Address http://localhost:18004/Tracker_Application1/msgTrack/EnterPkgTrack.do
Go
eXchange Integrator
HELP SETTINGS LOGOUT
Activity Configuration System Administration
SEEBEYOND
MESSAGE TRACKING PACKAGE TRACKING
Search Criteria
GO
General By ID
SEARCH CLEAR
Search
Local intranet

Host: myAS2Host1

Trading Partner: ALL

Protocols:
ALL
AS2

Filters:
Error Type: ALL
Direction: Both
Date Filter: Process date
From and To dates [mm/dd/yyyy]:

<No packages found>

<No packages to list>

<Nothing selected>

8.3.1. Using Message Tracking

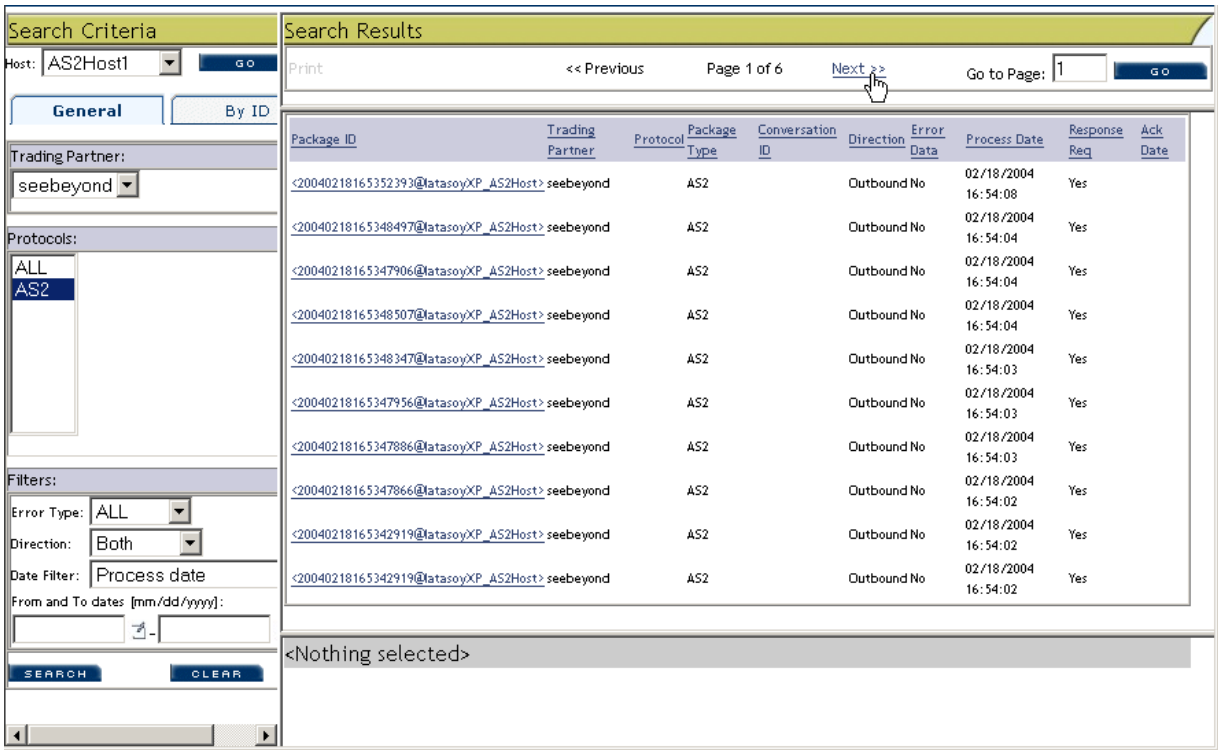
To search by B2B host, trading partner, and protocol

1. Under Search Criteria, use the Host drop-down list to choose the B2B host whose messages you want to examine, and click **GO**.
2. Under Trading Partner, either click ALL or choose a particular trading partner from the drop-down list.
3. Under Protocols, either click ALL or choose a protocol from the drop-down list.

4 At the lower left of the window, click **SEARCH**.

Result: The canvas (right side), under Search Results, displays a page containing the Package IDs of the latest ten tracked messages fitting the criteria you specified. Navigation links (Previous, Next, and Go to Page) allow you to see other pages of ten results each. See Figure 64.

Figure 64 Message Tracking, Showing Initial Search Results



Host: AS2Host1
Trading Partner: seebeyond
Protocols: ALL, AS2
Filters:
Error Type: ALL
Direction: Both
Date Filter: Process date
From and To dates [mm/dd/yyyy]:

Go to Page: 1

Package ID	Trading Partner	Protocol	Package Type	Conversation ID	Direction	Error Data	Process Date	Response Req	Ack Date
<20040218165352393@latasoyXP_AS2Host>	seebeyond		AS2		Outbound	No	02/18/2004 16:54:08	Yes	
<20040218165348497@latasoyXP_AS2Host>	seebeyond		AS2		Outbound	No	02/18/2004 16:54:04	Yes	
<20040218165347906@latasoyXP_AS2Host>	seebeyond		AS2		Outbound	No	02/18/2004 16:54:04	Yes	
<20040218165348507@latasoyXP_AS2Host>	seebeyond		AS2		Outbound	No	02/18/2004 16:54:04	Yes	
<20040218165348347@latasoyXP_AS2Host>	seebeyond		AS2		Outbound	No	02/18/2004 16:54:03	Yes	
<20040218165347956@latasoyXP_AS2Host>	seebeyond		AS2		Outbound	No	02/18/2004 16:54:03	Yes	
<20040218165347886@latasoyXP_AS2Host>	seebeyond		AS2		Outbound	No	02/18/2004 16:54:03	Yes	
<20040218165347866@latasoyXP_AS2Host>	seebeyond		AS2		Outbound	No	02/18/2004 16:54:02	Yes	
<20040218165342919@latasoyXP_AS2Host>	seebeyond		AS2		Outbound	No	02/18/2004 16:54:02	Yes	
<20040218165342919@latasoyXP_AS2Host>	seebeyond		AS2		Outbound	No	02/18/2004 16:54:02	Yes	

<Nothing selected>

To search by B2B host, trading partner, and protocol

1 Under Search Criteria, use the Host drop-down list to choose the B2B host whose messages you want to examine, and click **GO**.

2 For Protocols, either click ALL or choose a particular protocol from the list.

3 For Package Type, either click ALL or choose a particular packaging protocol from the drop-down list.

4 For ID, enter a string for matching the message ID.

5 At the lower left of the window, click **SEARCH**.

Result: The canvas displays a page containing the Package IDs of the latest ten tracked messages fitting the criteria you specified.

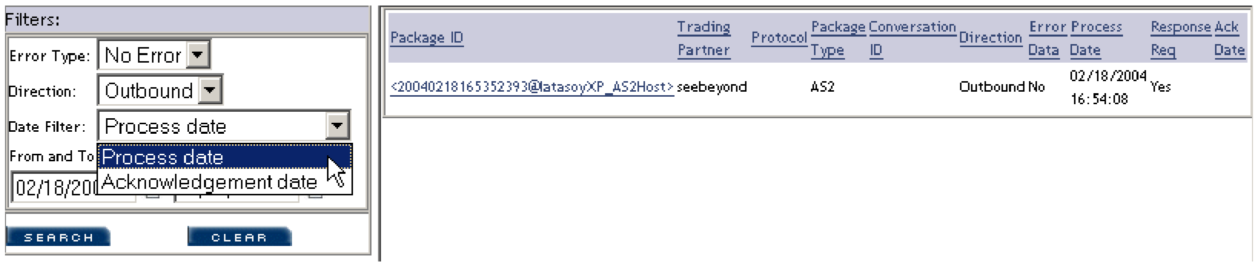
To filter results by error type, direction, and/or date

Purpose: After performing a search, or after setting up a search using either of the two previous procedures, you can specify one or more further criteria.

1 Near the bottom of the left pane, under **Filters**, specify one or more of the following:

- For **Error Type**: If you do not choose ALL, you can restrict your search either to display error messages only, or to display non-error messages only.
- For **Direction**: If you do not choose ALL, you can restrict your search either to display inbound messages only, or to display outbound messages only.
- For **Date**: You can choose to include only those messages whose *processing* date lies within a range you specify, or only those messages whose *acknowledgment* date lies within the range. See Figure 65.

Figure 65 Message Tracking, Showing Filters



Filters:

Error Type:	No Error
Direction:	Outbound
Date Filter:	Process date
From and To	02/18/20

Package ID	Trading Partner	Protocol	Package Type	Conversation ID	Direction	Error Data	Process Date	Response Req	Ack Date
<20040218165352393@latasoyXP_AS2Host>	seebeyond		AS2		Outbound	No	02/18/2004 16:54:08	Yes	

2 At the lower left of the window, click **SEARCH**.

Result: The canvas displays a page containing the Package IDs of the latest ten tracked messages fitting the criteria you specified.

To obtain details of a specified package

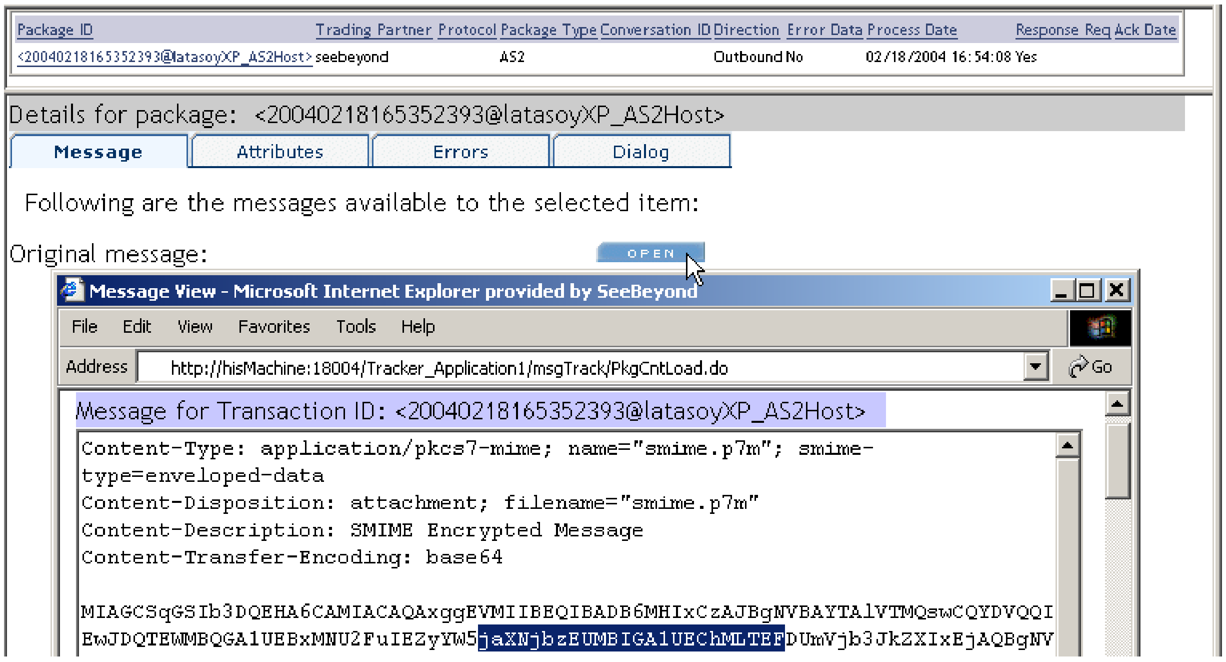
Purpose: On a package-by-package basis, you can examine the message text.

1 After obtaining results from a search using any of the procedures mentioned earlier, click the package ID for any of the returned results.

2 In the “Details for package <*package-ID*>” pane, click **Open** to see the contents (possibly encrypted) of the original message.

Result: See Figure 66. You can use cut, copy, and paste on any text in the window.

Figure 66 Message Tracking, Showing Package Details and Message Content



Package ID	Trading Partner	Protocol	Package Type	Conversation ID	Direction	Error Data	Process Date	Response Req	Ack Date
<20040218165352393@latasoyXP_AS2Host>	seebeyond		AS2		Outbound	No	02/18/2004 16:54:08	Yes	

Details for package: <20040218165352393@latasoyXP_AS2Host>

Message
Attributes
Errors
Dialog

Following are the messages available to the selected item:

Original message:

OPEN
Message View - Microsoft Internet Explorer provided by SeeBeyond
File Edit View Favorites Tools Help
Address
Go

http://hisMachine:18004/Tracker_Application1/msgTrack/PkgCntLoad.do

Message for Transaction ID: <20040218165352393@latasoyXP_AS2Host>

```
Content-Type: application/pkcs7-mime; name="smime.p7m"; smime-
type=enveloped-data
Content-Disposition: attachment; filename="smime.p7m"
Content-Description: SMIME Encrypted Message
Content-Transfer-Encoding: base64

MIAGCSqGSIb3DQEHA6CAMIACAQAxggEVMIIBEQIBADB6MHIxCzAJBgNVBAYTAlVTMQswCQYDVQQI
EwJDQTEWMBQGA1UEBxMNU2FuIEZyYW5jaXNjbzEUMBIGA1UEChMLTEFDUmVjb3JkZXIxEjAQBgNV
```

Chapter 9

Implementation Scenario: AS2

eXchange Integrator includes two complete sample implementations, included in the **eXchangeDocs.sar** file, that allow you to see the end results without having to go through all the design-time steps. This chapter provides a sample scenario showing how eXchange can be used to achieve B2B solutions using the AS2 protocol.

The steps for the sample implementation occur in four phases:

Initial Setup Steps	In these steps, you ensure that prerequisites are met, obtain the necessary sample materials, extract sample files, and import the sample projects. See section 9.1 **on page 124**.
Design Steps in Enterprise Designer	In these steps, you use Enterprise Designer to add and configure externals, view components in the B2B host project, and it, creating an eXchange Service for the B2B host. Then you view the components in the main project and activate it. See section 9.2 **on page 126**.
Design Steps in ePM	In these steps, you use the eXchange Partner Management (ePM) facility to create a trading partner, view and specify parameter values for it, and activate it. See section 9.3 **on page 133**.
Runtime Steps	In these steps, you bootstrap two logical hosts, apply the activated deployments, stage sample input data, and use the Message Tracking facility to follow the progress of messages, as well as acknowledgments and errors, tracking messages as they are transported from one end point, received and handled by inbound B2B protocol processes (de-enveloping, decryption, decompression, signature verification), and outbound B2B protocol processes (enveloping, encryption, compression, digital signing), sent out, and transported to another end point. See section 9.4 **on page 144**.

Overview of the Sample AS2 Implementation

The AS2 sample implementation combines inbound and outbound message processing. It makes use of the following B2B protocol processes supplied by SeeBeyond:

Table 38 B2B Protocol Processes Used in the AS2 Sample Implementation

For Inbound Messages	For Outbound Messages	Other
AS2InboundBP	AS2OutboundBP	
AS2 Inbound	AS2 Outbound	OutboundHTTPClient
ToInternalDeliverySelector		ErrorHandlerSelector
ToInternalFileDeliveryProtocol		JMSErrorHandler
AS2 Unpackager	AS2 Packager	

Table 38 B2B Protocol Processes Used in the AS2 Sample Implementation (Continued)

For Inbound Messages	For Outbound Messages	Other
Base64Decode		
Base64Encode		
AS2HTTPHeader	AS2HTTPHeaderPackager	
DecryptMessage*	EncryptMessage*	
VerifyMessageSignature*	SignMessage*	
DecompressMessage*	CompressMessage*	
UnpackagePayload	PackagePayload	
AS2 Outbound MDN		
UnpackageMDN		
CalculateMICDigest		
GenerateMDN		

*—B2B protocol processes marked with an asterisk (*) assume you have installed Secure Messaging Extension (SME). If necessary, see **"Installation Steps" on page 29**.

9.1 Initial Setup Steps

In this section

- **Installing the Sample Files for AS2 on page 124**
- **Setting Up the Sample Environment on page 126**
- **Importing the Sample Projects on page 125**

9.1.1 Installing the Sample Files for AS2

These steps assume the existence of a temporary eXchange directory for sample files, such as **C:\temp\eXchange\**. You will extract the sample files to this directory so that you can conveniently access the files in later procedures.

To install the sample files

Before you begin: Your repository must already be running, and you must be logged in to Enterprise Manager. If you have already uploaded the documentation for eXchange, you can skip steps 1 and 2 and start with step 3.

1 In the ADMIN tab, if you have not already done so, browse to the [...]\Documentation**ProductsManifest.xml** file and submit it.

2 In the ADMIN tab, if you have not previously done so, browse to the **eXchangeDocs.sar** file, select it, and click the **upload now** button.

3 In the DOCUMENTATION tab, under Products, click **eXchange Integrator**

4 In the window that appears on the right side, click **Download Sample**

5 Preserving file paths, extract the contents to your **C:\temp\eXchange\** directory.

Result: The following directories and files are created under **C:\temp\eXchange\**:

```
Sample\AS2\Projects\SampleDallasAS2.zip
Sample\AS2\Projects\SampleManhattanAS2.zip
Sample\AS2\Projects\SampleEnvAS2.zip
Sample\AS2\TradingPartners\TP_forDallasEnvAS2.xml
Sample\AS2\TradingPartners\TP_forManhattanEnvAS2.xml
Sample\AS2\Crypto\CompanyA-Cert.der
Sample\AS2\Crypto\CompanyA-Key.p12
Sample\AS2\Crypto\CompanyB-Cert.der
Sample\AS2\Crypto\CompanyB-Key.p12
Sample\AS2\Data\AS2\Dallas\RecvFromInternal\AS2_SampleData.~in
Sample\AS2\Data\AS2\Dallas\SendToInternal\
Sample\AS2\Data\AS2\Dallas\ErrorTopic\
Sample\AS2\Data\AS2\Manhattan\RecvFromInternal\AS2_SampleData.~in
Sample\AS2\Data\AS2\Manhattan\SendToInternal\
Sample\AS2\Data\AS2\Manhattan\ErrorTopic\
Sample\ebXML\*
```

9.1.2 Importing the Sample Projects

To import the sample projects and their template folders

Before you begin: Your repository must already be running, and you must be logged in to Enterprise Designer. If your repository already has a project at the root level named <*>AS2Host, <*>AS2, or <*>AS2ErrorTopic (with <*> either **Dallas** or **Manhattan**), delete or rename it. Similarly, if you will be importing the sample environments and you have an environment named SampleEnvAS2, delete or rename it.

1 In Project Explorer, after saving any work in progress, right-click the repository and, on the popup menu, click: **Import**

2 In the **Import Manager** dialog, browse to the folder where you installed the sample AS2 projects (for example, C:\temp\eXchange\Sample\AS2\Projects), select **SampleDallasAS2Projects.zip**, and then click Open.

3 Click the **Import** button to import all four items (three projects and a template).

4 When the import finishes, click OK to clear the confirmation, and then use the Import Manager dialog again to import all four items (three more projects and another template) in **SampleManhattanAS2Projects.zip**

5 When the import finishes, click OK to clear the confirmation, and then click Close.

6 Optionally, if you want to import rather than create the sample environments, use the **Import Manager** dialog again to import **SampleAS2Env.zip**. In Environment Explorer, rename this environment from SampleEnvAS2 to **DallasEnvAS2**. Next, use Import Manager a fourth time to reimport SampleEnvAS2, and then rename this reimported instance to **ManhattanEnvAS2**. Lastly, in Environment Explorer, set the base port for the ManhattanEnvAS2 logical host to **19000** (see the **Tip on page 126** regarding second and subsequent logical hosts).

Result: Six new project folders (**DallasAS2*** and **ManhattanAS2***) and two new template folders (**DallasB2B Templates** and **ManhattanB2B Templates**) are added to the repository.

9.2 Design Steps in Enterprise Designer

For the AS2 sample implementation, design-time steps in Enterprise Designer consist of the following:

- **Setting Up the Sample Environment on page 126**
- **Viewing and Activating the B2B Host Project on page 128**
- **Configuring the eXchange Service with Crypto Information on page 129**
- **Creating and Activating the Project Deployment Profiles on page 130**

9.2.1 Setting Up the Sample Environment

The sample assumes you will use default configurations for all servers where possible, and that you will make any changes where needed. For example:

- You must create a new outbound Oracle external and configure it, even if you imported the sample environment.
- If you use anything other than a SeeBeyond Integration Server on ports 18000–18009, make adjustments in step 3 (ports) and/or step 4 (type of Integration Server).
- If you want your HTTP client to use SSL, see the *HTTP(S) eWay Intelligent Adapter User's Guide* for eWay settings and Integration Server Web Server configuration.

If you imported the sample environment: After you have renamed the environments (see optional step ,6 in the previous procedure), and made sure their ports do not clash skip ahead to the **procedure on page 127** for creating and configuring the Oracle external.

The following steps are needed only if you did not import any sample environments.

To create the sample environments

1. In Enterprise Designer, near the lower left of the window, click the **Environment Explorer** tab.
2. In the Environment Explorer tree, right-click the repository and, on the popup context menu, click **New Environment**
   - Rename the newly created environment to **DallasEnvAS2**
3. Right-click DallasEnvAS2 and, on the menu, click: **New Logical Host**
   - Retain the default name: LogicalHost1

Tip: *For a second or subsequent logical host: Check it out if necessary; then, right-click it and open its properties; click **Logical Host Configuration** and change the value **Logical Host Base Port** to a larger multiple of 1000 (19000 if ports 19000-19009 are unused; otherwise 20000, or 21000); finally, close the properties sheet.*

4. Right-click LogicalHost1 and click: **New SeeBeyond Integration Server**
   - Retain the default name: IntegrationSvr1
5. Right-click LogicalHost1 and click: **New SeeBeyond JMS IQ Manager**
   - Retain the default name: SBJmsIQMgr1

6 Right-click DallasEnvAS2 > **New BatchLocalFile External System**
- Name it **myExtBatchLocalFile** and click OK.

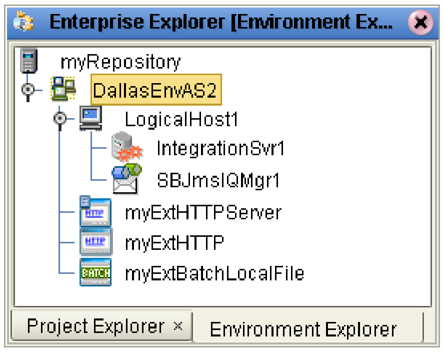
7 Right-click DallasEnvAS2 > **New HTTP Server External System**
- Name it **myExtHTTPServer** and click OK.

8 Right-click DallasEnvAS2 > **New HTTP External System**
- Name it **myExtHTTP** and click OK.

9 On the main toolbar, click Save All.

Result: The environment, named DallasEnvAS2, now has all but two of the externals needed by the projects. Steps for the outbound Oracle external are provided in the following procedure, and the final external will be created by activating the project containing the B2B host.

Figure 67 Sample Environment, Before Configuration



The following steps are needed for all sample environments, created or imported.

To create and configure the Oracle external

Before you begin: Your eXchange 5.0.3 Oracle database must be accessible, and you must you know its SID, username, and password.

1 In the Environment Explorer tree, right-click DallasEnvAS2 and, on the popup context menu, click **New Oracle External System**
- Name it **myExtOracleOut**, designate it **Outbound**, and click OK.

2 Right-click myExtOracleOut and configure properties appropriately. For example:
- **DatabaseName:** *exch50 (change this to the SID for your eXchange Oracle database)*
- DataSourceName: **local**
- **Password:** *(replace this with the password for your eXchange 5.0.3 database user)*
- **PortNumber: 1521** *(change this only if your Oracle administrator changed the default)*
- **ServerName:** *myMachine (change this to the hostname of the Oracle server machine)*
- **User:** *ex503Adm (change this to the username for your eXchange database user)*

3 When all properties have been configured correctly for your site, click OK.

4 Collapse the DallasEnvAS2 tree, click Save All, and close all canvases.

Result: DallasEnvAS2 now has all but one of the externals needed by the projects.

The final external needed for this environment, an eXchange service, will be created by activating the project that contains the B2B host.

9.2.2 Viewing and Activating the B2B Host Project

In the Project Explorer tree, open the B2B host project (named **DallasAS2Host**) to display its four components. This is a quick guide to the B2B host’s contents. Activating this project will create an eXchange service that acts as a channel manager and provides a connection to the message tracking application and the eXchange database.

Components of the B2B host project

- **myHost_MsgingService**: is the only message service used by the B2B host:
  - It contains two messaging actions: One originates from the internal system, passes through the B2B host, and arrives at the external trading partner; the other originates from the external, and pass through to the internal.
  - Its outbound internal messaging action is named “FromInternalToHost”; its inbound internal messaging action is “ToInternalFromHost”.
  - Its messaging attributes definition (MAD) is standard SeeBeyond-supplied AS2.
- **DallasHost** is the B2B host itself:
  - It references only one service (under the AS2 MAD): myHost_MsgingService
  - For AS2 MAD, it defines one external delivery channel: **AS2_DelivCh1_http**. For transport to and from trading partners, this channel references the standard SeeBeyond-supplied HTTP transport attributes definitions (TADs).
  - It defines two internal delivery channels (IDCs):
    - **idc_SendToInternal**, for sending messages from the B2B host to the internal system, uses the standard SeeBeyond-supplied File TAD.
    - **idc_RecvFromInternal**, for receiving messages from the internal system into, uses the standard SeeBeyond-supplied ChannelManagerFile TAD.
- **Host_CMap** is the map whose activation will create the eXchange service:
  - Its input is an instance of DallasHost, with two outbound connections.
  - Its only output is an instance of Oracle, with two inbound connections.
  - Connecting to both is an instance of a SeeBeyond-supplied tracking application.

To activate the B2B host, creating the eXchange service

Before you begin: Your environment must contain a well-configured Oracle external (see the preceding procedure), and the environment must be named DallasEnvAS2—that is, it must correspond to the name of your host project.

1. Right-click DallasAS2Host and, on the popup context menu, point at New and click **Deployment Profile**
2. Keep the default name (Deployment1), point it at DallasEnvAS2, and click OK.

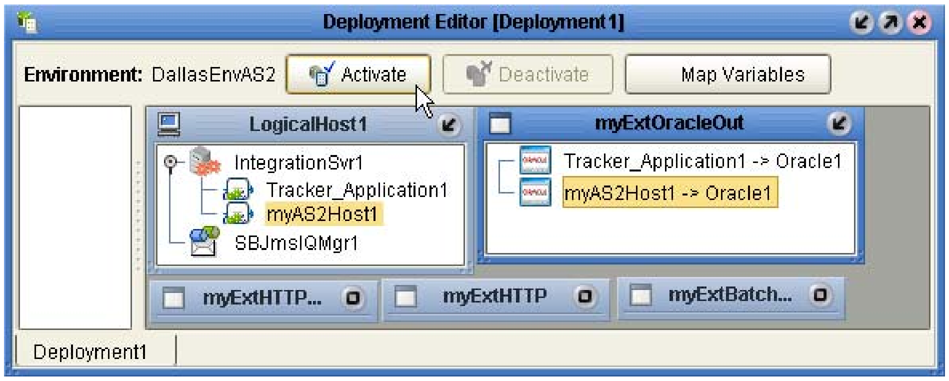
   The Deployment Editor opens. Its left pane has two services and two Oracle eWays.
3. On the right side, minimize all windows except LogicalHost1 and myExtOracleOut.
4. One by one, drag the two services into LogicalHost1 and under IntegrationSvr1.

5 One by one, drag the two Oracle eWays into myExtOracleOut. See Figure 68.

Tip: *If myExtOracleOut refuses to accept eWays, it may be an indication of:*

- *The Oracle database instance it references is inaccessible. Ensure it is running and that the myExtOracleOut properties match its hostname, SID, username, and password. If necessary, see* **"To create and configure the Oracle external" on page 127**.
- *It was misdefined as inbound. Delete myExtOracleOut and re-create it as outbound. Then: Click* ***Save All****, followed by* ***Refresh All from Repository****.*

Figure 68 Deployment Profile for B2B Host, Before Activation



6 Click **Activate**.

7 In response to the dialog box, click **No**; that is, do *not* apply to Logical Host(s).

Result: A new external is created, named **DallasHost1 eXchange Service**. The projects now have all the externals they need. Save all of your work, close all canvases, and click **Refresh All from Repository**.

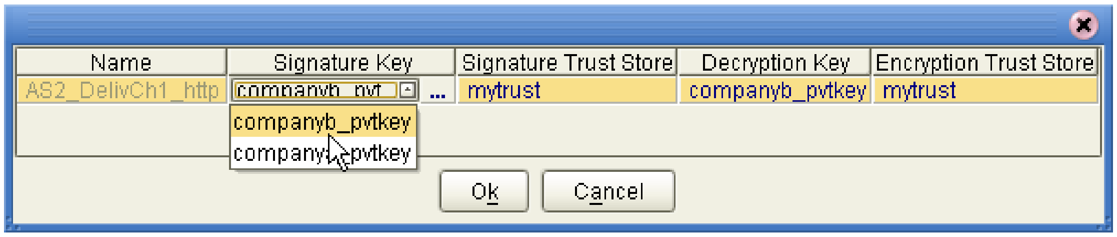
9.2.3 Configuring the eXchange Service with Crypto Information

Since the sample assumes you will be using cryptographic features (encryption, decryption, signatures and verifications), additional steps are required for configuring the eXchange service.

To associate the eXchange service with a private key

1 In Environment Explorer, right-click **DallasHost1 eXchange Service** and, on the popup context menu, click **Properties** to configure the public and private keys for the B2B host's delivery channel (**AS2_DelivCh1_http**). See Figure 69.

Figure 69 Configuring Private Keys and Trust Stores



Name	Signature Key	Signature Trust Store	Decryption Key	Encryption Trust Store
AS2_DelivCh1_http	companyb_pvt	mytrust	companyb_pvtkey	mytrust

2 For Signature Key, click **companyb_pvtkey**

Tip: *If companyb_pvtkey does not appear in the drop-down list, click the ellipsis [...] and, in the Signature Key dialog, click Import. Using alias* ***companyb_pvtkey****, import C:\temp\eXchange\Sample\AS2\Crypto\****CompanyB-Key.p12*** *(password:* ***companyb****).*

3 *Optional:* For Signature Trust Store, click **mytrust**

Tip: *If mytrust does not appear in the drop-down list, click the ellipsis [...] and, in the Signature Trust Store dialog, click* ***New*** *to create a new trust store named mytrust.*

4 For Decryption Key, click **companyb_pvtkey**

5 *Optional:* For Encryption Trust Store, click **mytrust**

6 Click OK to close the dialog box.

Note: *If a logical host engine were bootstrapped, you would also need to do the following: In the environment tree, right-click* ***LogicalHost1*** *and, on the menu, click* ***Apply***

7 Click Save All, and then close all canvases.

Result: Cryptographic information is now associated with the AS2_DelivCh1_http delivery channel for this eXchange service.

9.2.4. Creating and Activating the Project Deployment Profiles

To activate the main AS2 project

Before you begin: Your environment must be named DallasEnvAS2 (that is, it must correspond to the name of your host project), and it must contain an eXchange service; if necessary, see the **procedure on page 128**.

1 In the Project Explorer tree, right-click **DallasAS2** and, on the popup context menu, point at New and click **Deployment Profile**

2 Keep the default name (Deployment1), point it at DallasEnvAS2, and click OK.

The Deployment Editor's left pane displays: A long list of services; a topic (JMS ErrorHandler1); an inbound eWay for HTTPServer; outbound eWays for HTTP and BatchLocalFile; and eWays for one inbound and four outbound eXchange services.

3 One by one, drag all services into LogicalHost1 and under IntegrationSvr1.

4 Drag the topic into LogicalHost1 and under SBJmsIQMgr1.

5 Drag the inbound HTTPServer eWay into myExtHTTPServer.

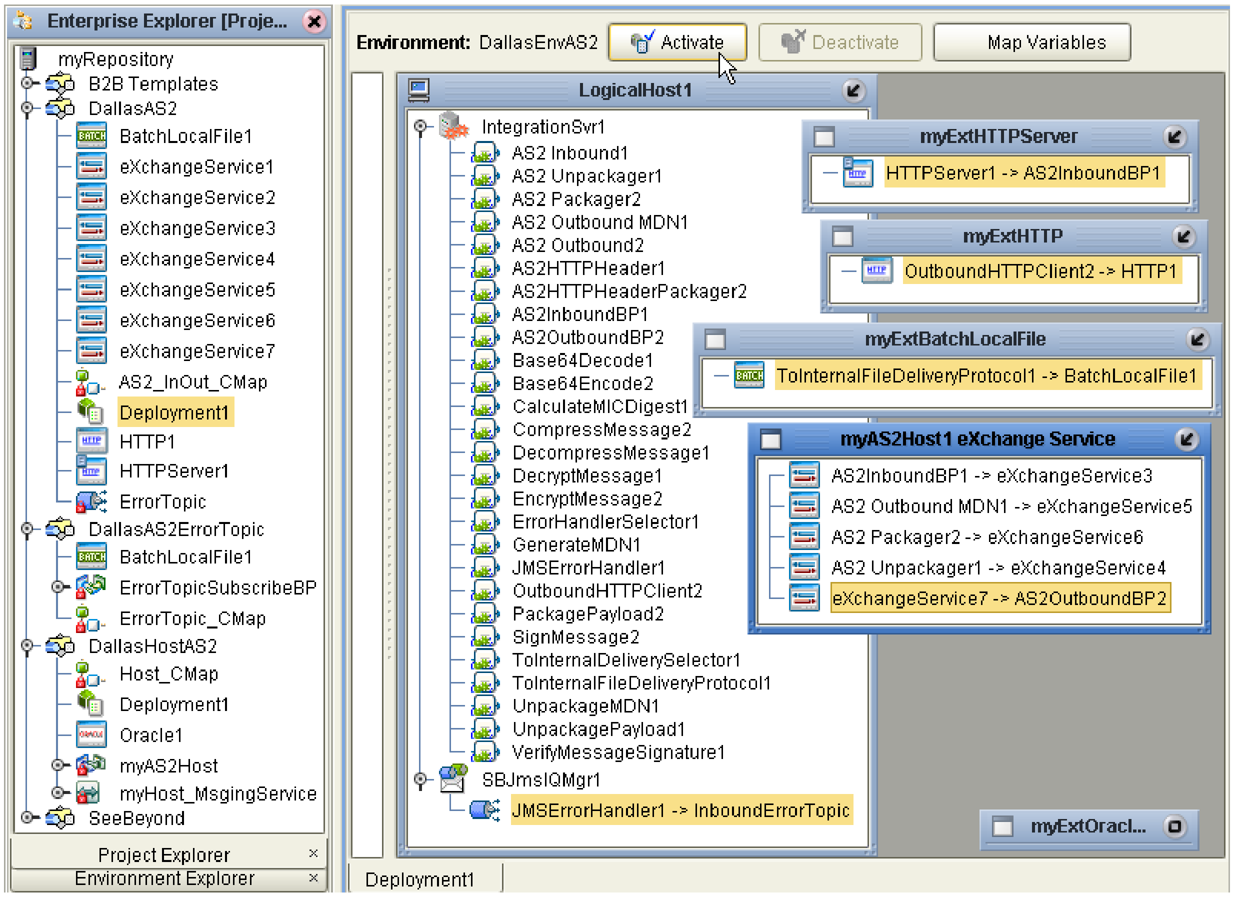
6 Drag the outbound BatchLocalFile eWay into myExtBatchLocalFile.

7 Drag the eXchange Service eWays into DallasHost1 Exchange Service. When you drag and drop the inbound service, specify **AS2** as the protocol.

8 Drag the outbound HTTP eWay into myExtHTTP.

9 When Deployment1 is complete—that is, when all components in the DallasAS2 project are associated with corresponding servers—click Activate. See Figure 70.

Figure 70 Deployment Profile for AS2



Environment: DallasEnvAS2

```
myRepository
  B2B Templates
  DallasAS2
    BatchLocalFile1
    eXchangeService1
    eXchangeService2
    eXchangeService3
    eXchangeService4
    eXchangeService5
    eXchangeService6
    eXchangeService7
    AS2_InOut_CMap
    Deployment1
    HTTP1
    HTTPServer1
    ErrorTopic
  DallasAS2ErrorTopic
    BatchLocalFile1
    ErrorTopicSubscribeBP
    ErrorTopic_CMap
  DallasHostAS2
    Host_CMap
    Deployment1
    Oracle1
    myAS2Host
    myHost_MsgingService
  SeeBeyond
```

```
LogicalHost1
  IntegrationSvr1
    AS2 Inbound1
    AS2 Unpackager1
    AS2 Packager2
    AS2 Outbound MDN1
    AS2 Outbound2
    AS2HTTPHeader1
    AS2HTTPHeaderPackager2
    AS2InboundBP1
    AS2OutboundBP2
    Base64Decode1
    Base64Encode2
    CalculateMICDigest1
    CompressMessage2
    DecompressMessage1
    DecryptMessage1
    EncryptMessage2
    ErrorHandlerSelector1
    GenerateMDN1
    JMSErrorHandler1
    OutboundHTTPClient2
    PackagePayload2
    SignMessage2
    ToInternalDeliverySelector1
    ToInternalFileDeliveryProtocol1
    UnpackageMDN1
    UnpackagePayload1
    VerifyMessageSignature1
  SBJmsIQMgr1
    JMSErrorHandler1 -> InboundErrorTopic
```

```
myExtHTTPServer
  HTTPServer1 -> AS2InboundBP1
myExtHTTP
  OutboundHTTPClient2 -> HTTP1
myExtBatchLocalFile
  ToInternalFileDeliveryProtocol1 -> BatchLocalFile1
myAS2Host1 eXchange Service
  AS2InboundBP1 -> eXchangeService3
  AS2 Outbound MDN1 -> eXchangeService5
  AS2 Packager2 -> eXchangeService6
  AS2 Unpackager1 -> eXchangeService4
  eXchangeService7 -> AS2OutboundBP2
myExtOracl...
```

Tip: *Successful activation will take some time. If activation fails because of an improper configuration of myExtHTTP, return to the environment, open the properties for HTTP > SSL, and provide it with dummy values for truststore and password, save changes, and click Activate. If this fails to correct the problem, then: Drag HTTP1 from myExtHTTP into the left pane, open AS2_InOut_CMap, delete HTTP1, place and connect a new instance of HTTP external, open and close its eWay connection, save your work and refresh from the repository, and then repeat from step 8.*

10 In response to the dialog box, click **No**; that is, do *not* apply to Logical Host(s).

To activate the AS2 error-handler project

Purpose: The purpose of the DallasAS2ErrorTopic project is to provide a durable subscriber for ErrorTopic in the DallasAS2 project, allowing Enterprise Manager to monitor messages in it. A simple B2B protocol, ErrorTopicSubscribeBP, receives its output and writes to C:\temp\eXchange\Sample\AS2\Data\Dallas\ErrorTopic\.

Before you begin: Your environment must be named DallasEnvAS2 (that is, it must correspond to the name of your host project), and it must contain an eXchange service; if necessary, see the **procedure on page 128**.

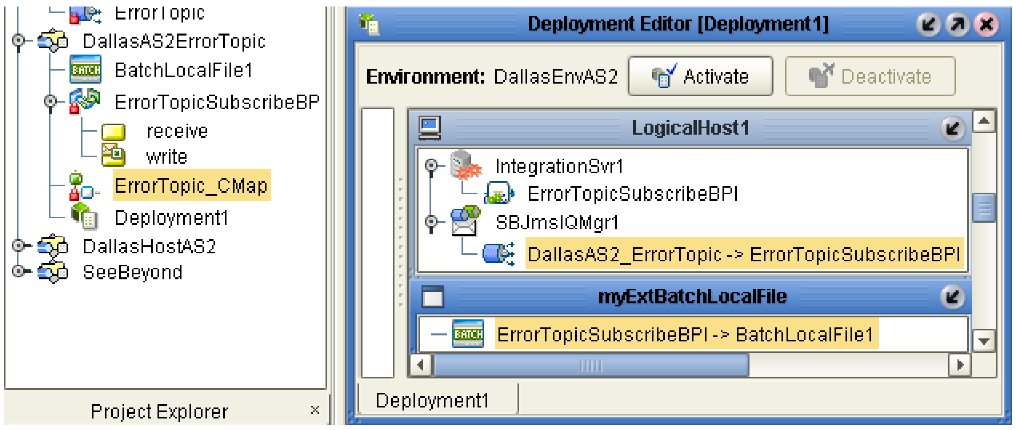
1 In the Project Explorer tree, right-click **DallasAS2ErrorTopic** and, on the popup context menu, point at New and click **Deployment Profile**

2 Keep the default name (Deployment1), point it at DallasEnvAS2, and click OK.

3 Drag the BP service into LogicalHost1 and under IntegrationSvr1, and then drag the topic and under SbJmsIQMgr1.

4 Drag the BatchLocalFile eWay into myExtBatchLocalFile. See Figure 71.

Figure 71 Activating the AS2 Error-Handler Project



5 Click Activate. Save all, close canvases, and click **Refresh All from Repository**.

Result: All Dallas projects are activated, and will run when the logical host is started.

9.2.5. Setting Up the Manhattan (Company A) Projects

Purpose: Because this implementation demonstrates messages between two different B2B hosts, it requires a second complete setup. On the same machine or another, repeat all the preceding steps, starting from section 9.2.1, with the following differences:

- In the Oracle properties, the username you specify for Manhattan must be different from the one you specified for Dallas.
- Wherever a reference to company B appears, replace it with company A. For example, in section 9.2.3 **"Configuring the eXchange Service with Crypto Information" on page 129**, use **companya_pvtkey** instead of companyb_pvtkey.
- If the same physical machine will be running both logical hosts, ensure that the logical hosts use different base ports. See the **Tip on page 126**.

9.3 Design Steps in ePM

For the AS2 sample implementation, design-time steps in eXchange Partner Manager (ePM) consist of the following:

- **Importing Trading Partners on page 133**
- **Configuring Trading Partner Parameters for Manhattan on page 134**
- **Activating the Manhattan Trading Partner on page 139**

9.3.1 Importing Trading Partners

Before you begin: Your repository and your eXchange 5.0.3 Oracle database must be running and accessible. Enterprise Designer does ***not*** need to be running, and you do ***not*** need to have any logical hosts running.

To start eXchange Partner Manager (ePM)

1. Start a *new* browser session (that is, do ***not*** clone a new window of an existing session) pointing it at a repository URL, with **epm** appended. For example:

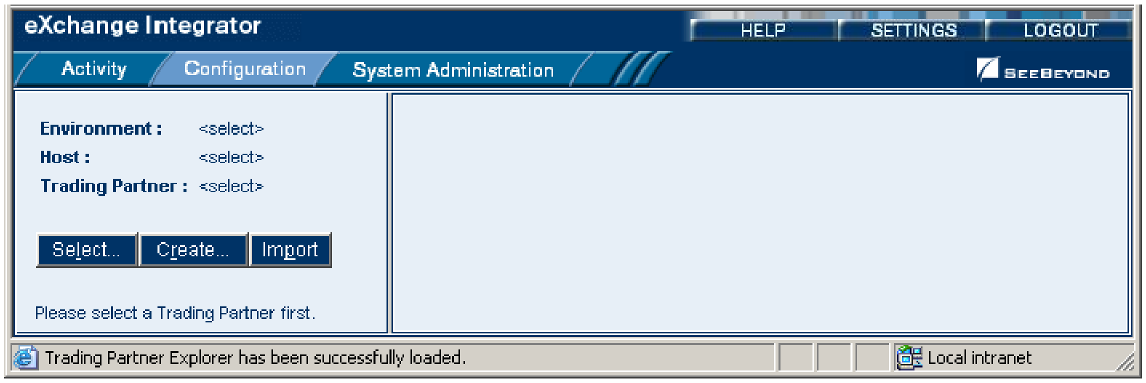
   - If your repository were running local on port 12000, the URL would be:
     ```
     http://localhost:12000/epm
     ```
   - For a repository running on machine herMachine on port 33000, it would be:
     ```
     http://herMachine:33000/epm
     ```
   - As usual, IP addresses are also permissible:
     ```
     http://10.18.75.85:36271/epm
     ```

   The string **epm** is case sensitive. In other words, ePM, Epm, and EPM are all errors.

2. When the sign-in screen appears, enter the Enterprise Manager username and password and click **Sign In**.

Result: The status bar (along the lower margin of the window) confirms that Trading Partner Explorer has loaded successfully, and the initial ePM screen appears, with no environment, host, or trading partner. See Figure 72.

Figure 72 Initial ePM Screen



Environment : <select>
Host : <select>
Trading Partner : <select>

Please select a Trading Partner first.

Trading Partner Explorer has been successfully loaded.

To import the "Manhattan" trading partner into DallasEnvAS2

1. From the initial ePM screen, in the upper left side, click **Import**.

   A new window opens, prompting you to select a B2B host and trading partner.
2. Open the B2B Repository and **DallasEnvAS2** and click DallasHost1.
3. Enter **Manhattan**, browse to C:\temp\eXchange\Sample\AS2\TradingPartners, and open **TP_for_DallasEnvAS2.xml**, and then click **Import**.

Result: In the explorer tree, under DallasEnvAS2, new trading partner **Manhattan** appears.

To import the "Dallas" trading partner into ManhattanEnvAS2

1. In the upper left side of the ePM screen, click **Import**.

   A new window opens, prompting you to select a B2B host and trading partner.
2. Open the B2B Repository and **ManhattanEnvAS2** and click ManhattanHost1.
3. Enter **Dallas**, browse to C:\temp\eXchange\Sample\AS2\TradingPartners, and open **TP_for_ManhattanEnvAS2.xml**, and then click **Import**.

Result: In the explorer tree, under ManhattanEnvAS2, new trading partner **Dallas** appears.

To find the Manhattan trading partner

1. In the upper left side of the ePM screen, click **Select**.

   A new window opens, prompting you to select a B2B host and trading partner.
2. Open the B2B Repository and **DallasEnvAS2** and click DallasHost1.
3. Click Search, and then click OK.

Result: In the explorer tree, under DallasEnvAS2, trading partner **Manhattan** reappears.

9.3.2 Configuring Trading Partner Parameters for Manhattan

When you imported the trading partner, parameter settings were valuated in part based on parameters stored in the export file, and in part based on the name of the trading partner. In this section, you will set or update the following:

- **Parameters for the Delivery Channel on page 134**
- **Parameters for the Internal Delivery Channels on page 137**

Parameters for the Delivery Channel

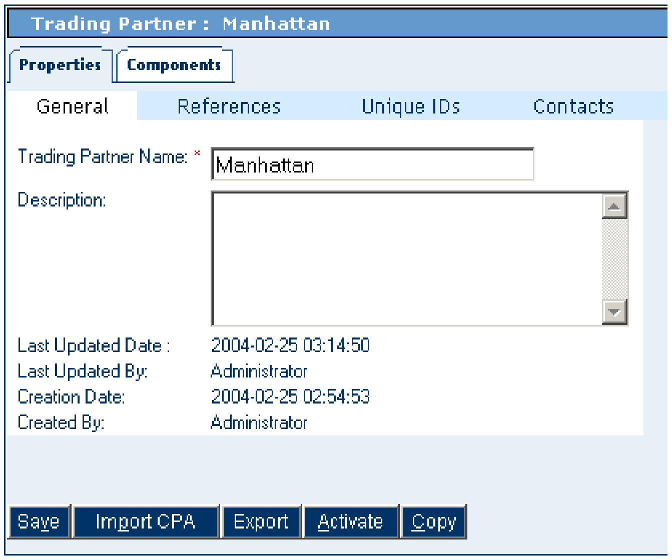
Purpose: To set the parameters governing Dallas's message exchange with Manhattan. You are configuring a trading partner for the Dallas environment, and so take the viewpoint of the Dallas B2B host: "ToPartner" means "to Manhattan"; "FromPartner" means "from Manhattan".

To configure the delivery channel parameters for trading partner Manhattan

1. In the explorer (lower left) side of the ePM screen, click **Manhattan**.

The canvas displays the trading partner's general properties. See Figure 73.

Figure 73 Trading Partner Manhattan: General Properties



Trading Partner Name: * Manhattan
Description:
Last Updated Date : 2004-02-25 03:14:50
Last Updated By: Administrator
Creation Date: 2004-02-25 02:54:53
Created By: Administrator

2 Click the **Components** tab.

The trading partner's delivery channel parameters are displayed. See Table 39.

Table 39 Delivery Channel Parameters for Manhattan

Binding Name	xdc_Manhattan_AS2_http
ToPartner Transport Name	HTTP
FromPartner Transport Name	HTTP
Packager Name	AS2

3 Click the binding name, **xdc_Manhattan_AS2_http**.

The delivery channel's general properties are displayed.

4 Click the **ToPartnerTransport** tab and edit the All Purpose End Point so that it contains the correct URL for Dallas's trading partner, Manhattan. For example:

```
http://Manhattan:19004/Deployment1_servlet/Inbound
```

If the logical host running the Manhattan B2B host is not named Manhattan, or if its integration server uses a port other than 19004 for its web server, or if the name of the deployment profile is not Deployment1, make the appropriate changes. When you are done, click **Save**.

5 Click the **FromPartnerTransport** tab and edit the All Purpose End Point so it has the correct URL for Dallas. For example, if the logical host running the Dallas B2B host is your own machine, your integration server uses port 18004 for its web server, and the name of the deployment profile is Deployment1, you would enter:

```
http://localhost:18004/Deployment1_servlet/Inbound
```

6 When you are done, click **Save**.

7 Click the **ToPartnerPackaging** tab and verify the values shown in Table 40; or, if you used names other than "Manhattan" for company A and "Dallas" for company B, make the corresponding adjustments.

Table 40 ToPartner Packaging Parameters for Dallas (to Manhattan)

Encryption Key	Click Import, enter a certificate name of companyb_pubcert, browse to C:\temp\eXchange\Sample\AS2\Crypto and open CompanyB-Cert.der, and then click OK.
AS2_FROM	**Dallas**
AS2_TO	**Manhattan**
AS2_HOST	**Manhattan_AS2_HTTP**
AS2_VERSION	**1.1**
AS2_HTTP_FROM	**DallasHost1**
AS2_SIGNATURE_REQ	**TRUE**
AS2_ENCRYPT_REQ	**TRUE**
AS2_MDN_REQ	**TRUE**
AS2_MDN_SIGNATURE_REQ	**TRUE**
AS2_MDN_RESP_TYPE	**SYNC**
AS2_MDN_DELIVERY_URL	Change to Manhattan's URL for inbound messages, such as: http://localhost:**19004**/Deployment1_servlet/Inbound
AS2_SUBJECT	**EDI Message from Dallas**
AS2_COMPRESSED	**TRUE**
AS2_COMPRESSED	**FALSE**
AS2_PAYLOAD_TYPE	**x12**
AS2_MESSAGE_FORMAT	**SMIME**
AS2_ENCODING	**binary**

8 When finished, click **Save**.

9 Click the **FromPartnerPackaging** tab and verify (or adjust) the values as shown in Table 41.

Table 41 FromPartner Packaging Parameters for Manhattan

Signature Certificate	**companyb_pubcert**
AS2_FROM	**Manhattan**
AS2_TO	**Dallas**
AS2_REPORTING_UA	**Manhattan_CA**
AS2_POSITIVE_MDN_DISPOSITION_MESSAGE	**positive disposition message from Manhattan**

10 When finished, click **Save**.

Result: For trading partner Manhattan, the parameters for external delivery channel xdc_Manhattan_AS2_http are now set correctly.

Parameters for the Internal Delivery Channels

Purpose: To set the parameters governing Dallas's internal message processing when handling messages received from Manhattan or preparing messages to be sent to Manhattan. You are configuring a trading partner for the Dallas environment, and so take the viewpoint of the Dallas B2B host: "SendToInternal" means "send to the Dallas internal (having been received from Manhattan)"; "RecvFromInternal" means "receive from the Dallas internal (and destined for sending to Manhattan)".

To configure the internal delivery channel parameters for trading partner Manhattan

1 With trading partner Manhattan active in the tree (left pane) and the Components tab active in the canvas (right pane) of the ePM window, click the **Internal Delivery Channels** subtab.

The canvas displays the trading partner's internal delivery channels. See Table 42.

Table 42 Internal Delivery Channel Parameters for Trading Partner Manhattan

Binding Name	idc_SendToInternal
Direction	Sender
Transport Name	FILE
Binding Name	idc_RecvFromInternal
Direction	Receiver
Transport Name	ChannelManagerFile

2 Click the first binding name, **idc_SendToInternal**.

The internal delivery channel's general properties are displayed.

Click the **Sender Transport** tab and edit its parameters as shown in Table 43.

Table 43 Sender Transport Parameters for Trading Partner Manhattan

FilePattern	from-ManhattanAS2_%d_%H%h%s.dat
Directory	C:\temp\eXchange\Sample\AS2\Data\Manhattan\SendToInternal

3 Click **Save**.

4 Click the second binding name, **idc_RecvFromInternal**.

The internal delivery channel's general properties are displayed.

Click the **Receiver Transport** tab and edit its parameters as shown in Table 44.

Table 44 Receiver Transport Parameters for Trading Partner Manhattan

ChannelManagerMode	FILE
FilePattern	*.in
Directory	C:\temp\eXchange\Sample\AS2\Data\Manhattan\RecvFromInternal
PollMilliSeconds	5000

5 Click **Save**.

Result: For trading partner Manhattan, the parameters for both internal delivery channels are now set correctly.

Parameters for the Messaging Actions

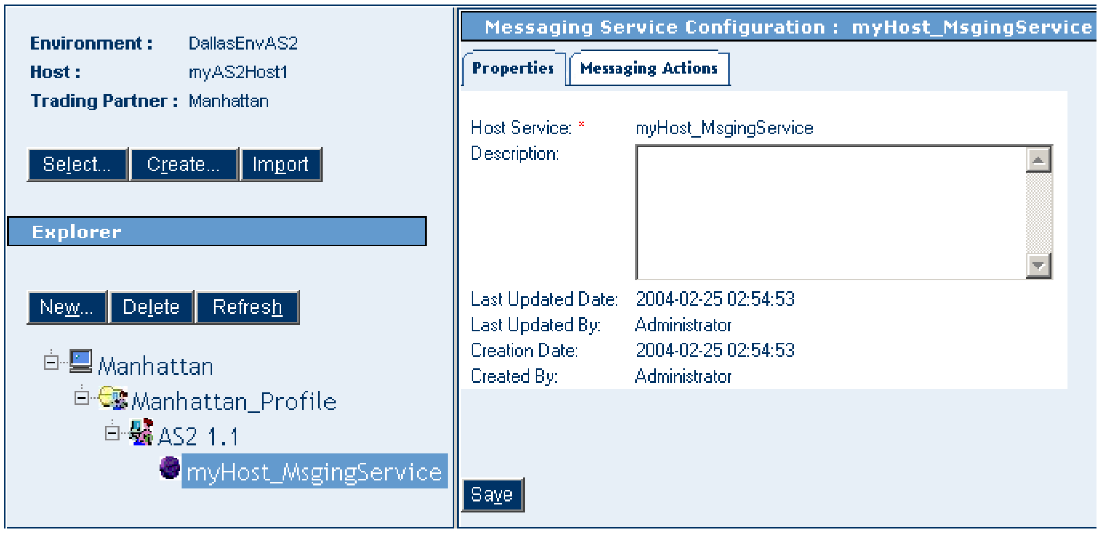
Purpose: To associate each messaging action with the correct external and internal delivery channel and set other parameters if necessary. The messaging actions are defined by the B2B host's messaging service.

To configure the messaging actions for trading partner Manhattan

1. In the explorer (lower left) side of the ePM screen, click **Manhattan**, open its profile (Manhattan_Profile) and messaging protocol (AS2 1.1), and click its associated messaging service: **myHost_MsgingService**

   The canvas displays the messaging service's general properties. See Figure 74.

Figure 74 Messaging Service myHost_MsgingService: General Properties


Environment : DallasEnvAS2
Host : myAS2Host1
Trading Partner : Manhattan

Messaging Service Configuration : myHost_MsgingService

Host Service: * myHost_MsgingService
Description:
Last Updated Date: 2004-02-25 02:54:53
Last Updated By: Administrator
Creation Date: 2004-02-25 02:54:53
Created By: Administrator

2. Click the **Messaging Actions** tab.

   The canvas displays the messaging actions of this service: ToExternalTP and FromExternalTP.

3. Open the messaging actions and edit parameters as shown in Table 45 and Table 46.

Table 45 Messaging Action Parameters for ToExternalTP

Send To Partner?	true
Delivery Channel	xdc_Manhattan_AS2_http
Internal Delivery Channel	idc_RecvFromInternal
Mime Configuration	[None]

Table 46 Messaging Action Parameters for FromExternalTP

Send To Partner?	false

Table 46 Messaging Action Parameters for FromExternalTP (Continued)

Delivery Channel	xdc_Manhattan_AS2_http
Internal Delivery Channel	idc_SendToInternal
Mime Configuration	[None]

Note: *Internal Delivery Channel bindings are always required for a project to run. Although it is possible to activate a trading partner whose messaging actions lack IDCs, the Channel Manager would have no instructions to read any input.*

4 Click **Save**.

Result: For trading partner Manhattan, all parameters are now set correctly.

9.3.3 Activating the Manhattan Trading Partner

To activate the Manhattan trading partner

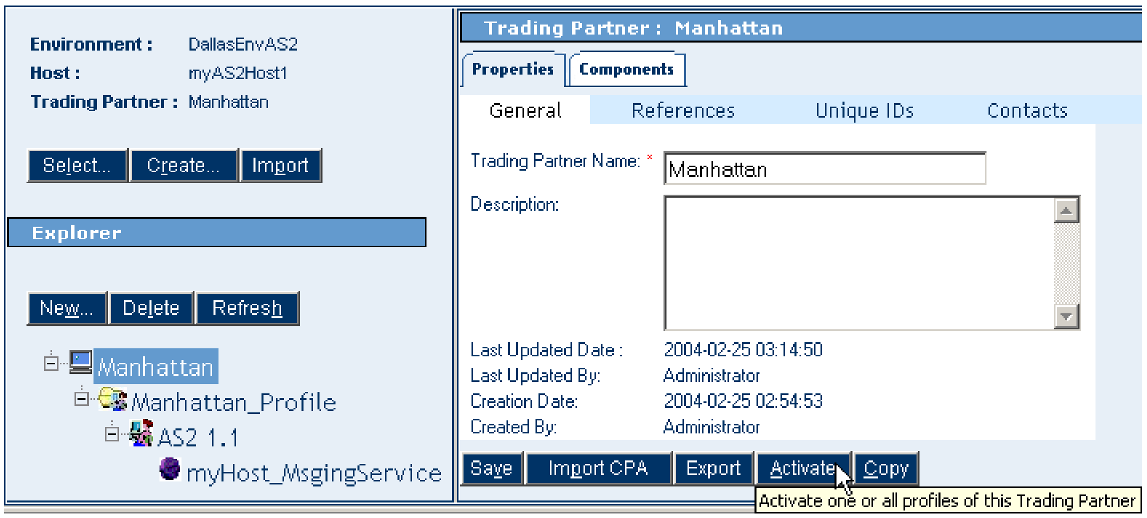
Purpose: To save all the configuration information to the Oracle database to make it available at run time.

Before you begin: Your eXchange 5.0.3 Oracle database for the corresponding B2B host must be running.

1 In the explorer (lower left) side of the ePM screen, click **Manhattan**.

2 In the bottom lower left of the canvas, click the **Activate** button. See Figure 75.

Figure 75 Activating Trading Partner Manhattan



Environment : DallasEnvAS2
Host : myAS2Host1
Trading Partner : Manhattan

Trading Partner : Manhattan

Trading Partner Name: * Manhattan
Description:
Last Updated Date : 2004-02-25 03:14:50
Last Updated By: Administrator
Creation Date: 2004-02-25 02:54:53
Created By: Administrator

Activate one or all profiles of this Trading Partner

3 In response to the confirmation prompt, click **Activate**.

The canvas displays a confirmation: **Trading Partner is successfully activated.**

Result: The **Manhattan** trading partner is entirely complete and ready to be run. (However: If a logical host is already running, these changes are not made to it until you either reactivate the project or right-click the logical host and click **Apply**.)

9.3.4 Importing the Dallas Trading Partner

Before you begin: Your repository and eXchange 5.0.3 Oracle database must be running and accessible, and you must be signed in to eXchange Partner Manager (ePM).

To import the Dallas trading partner

1. From the initial ePM screen, in the upper left side, click **Import**.

   A new window opens, prompting you to select a B2B host and trading partner.

2. Open B2B Repository and **ManhattanEnvAS2** and click ManhattanHost1.
3. Enter **Dallas**, browse to C:\temp\eXchange\Sample\AS2\TradingPartners and open **DallasTP_B.xml**, and then click **Import**.

Result: In the explorer tree, under ManhattanEnvAS2, new trading partner **Dallas** appears.

9.3.5 Configuring Trading Partner Parameters for Dallas

When you imported the trading partner, parameter settings were valuated in part based on parameters stored in the export file, and in part based on the name of the trading partner. In this section, you will set or update the following:

- **Parameters for the Delivery Channel on page 134**
- **Parameters for the Internal Delivery Channels on page 137**

Parameters for the Delivery Channel

Purpose: To set the parameters governing Manhattan's message exchange with Dallas. You are configuring a trading partner for the Manhattan environment, and so take the viewpoint of the Manhattan B2B host: "ToPartner" means "to Dallas"; "FromPartner" means "from Dallas".

To configure the delivery channel parameters for trading partner Dallas

1. In the explorer (lower left) side of the ePM screen, click **Dallas**.

   The canvas displays the trading partner's general properties.

2. Click the **Components** tab.

   The trading partner's delivery channel parameters are displayed. See Table 47.

Table 47 Delivery Channel Parameters for Dallas

Binding Name	xdc_Dallas_AS2_http
ToPartner Transport Name	HTTP
FromPartner Transport Name	HTTP
Packager Name	AS2

3. Click the binding name, **xdc_Dallas_AS2_http**.

   The delivery channel's general properties are displayed.

4 Click the **ToPartnerTransport** tab and edit the All Purpose End Point so that it contains the correct URL for Manhattan's trading partner, Dallas. For example:

```
http://localhost:18004/Deployment1_servlet/Inbound
```

If the logical host running the Dallas B2B host is not named localhost, or if its integration server uses a port other than 18004 for its web server, or if the name of the deployment profile is not Deployment1, make the appropriate changes. When you are done, click **Save**.

5 Click the **FromPartnerTransport** tab and edit the All Purpose End Point so that it contains the correct URL for Manhattan. For example:

```
http://localhost:19004/Deployment1_servlet/Inbound
```

If the logical host running the Manhattan B2B host is not named localhost, or if its integration server uses a port other than 18004 for its web server, or if the name of the deployment profile is not Deployment1, make the appropriate changes. When you are done, click **Save**.

6 Click the **ToPartnerPackaging** tab and make changes as shown in Table 48.

Table 48 ToPartner Packaging Parameters for Manhattan (to Dallas)

Encryption Key	Click Import, enter a certificate name of companya_pubcert, browse to C:\temp\eXchange\Sample\AS2\Crypto and open CompanyA-Cert.der, and then click OK.
AS2_FROM	**Manhattan**
AS2_TO	**Dallas**
AS2_HOST	**DallasHost1**
AS2_VERSION	**1.1**
AS2_HTTP_FROM	**Manhattan_AS2_http**
AS2_SIGNATURE_REQ	**TRUE**
AS2_ENCRYPT_REQ	**TRUE**
AS2_MDN_REQ	**TRUE**
AS2_MDN_SIGNATURE_REQ	**TRUE**
AS2_MDN_RESP_TYPE	**SYNC**
AS2_MDN_DELIVERY_URL	Change to Dallas's URL for inbound messages, such as: http://localhost:**18004**/Deployment1_servlet/Inbound
AS2_SUBJECT	**EDI Message from Manhattan**
AS2_COMPRESSED	**TRUE**
AS2_COMPRESSED	**FALSE**
AS2_PAYLOAD_TYPE	**x12**
AS2_MESSAGE_FORMAT	**SMIME**
AS2_ENCODING	**binary**

7 When finished, click **Save**.

8 Click the **FromPartnerPackaging** tab and make changes as shown in Table 49.

Table 49 FromPartner Packaging Parameters for Manhattan (from Dallas)

Signature Certificate	**companya_pubcert**
AS2_FROM	**Dallas**
AS2_TO	**Manhattan**
AS2_REPORTING_UA	**Dallas_CA**
AS2_POSITIVE_MDN_DISPOSITION_MESSAGE	**positive disposition message from Dallas**

9 When finished, click **Save**.

Result: For trading partner Dallas, the parameters for external delivery channel xdc_Dallas_AS2_http are now set correctly.

Parameters for the Internal Delivery Channels

Purpose: To set the parameters governing Manhattan's internal message processing when handling messages received from Dallas or preparing messages to be sent to Dallas. You are configuring a trading partner for the Manhattan environment, and so take the viewpoint of the Manhattan B2B host: "ToInternal" means "to the Manhattan internal (having been received from Dallas)"; "FromInternal" means "from the Manhattan internal (and destined for sending to Dallas)".

To configure the internal delivery channel parameters for trading partner Dallas

1 With trading partner Dallas active in the tree (left pane) and the Components tab active in the canvas (right pane) of the ePM window, click the **Internal Delivery Channels** subtab.

The canvas displays the trading partner's internal delivery channels. See Table 50.

Table 50 Internal Delivery Channel Parameters for Trading Partner Dallas

Binding Name	idc_SendToInternal
Direction	Sender
Transport Name	FILE
Binding Name	idc_RecvFromInternal
Direction	Receiver
Transport Name	ChannelManagerFile

2 Click the first binding name, **idc_SendToInternal**.

The internal delivery channel's general properties are displayed.

Click the **Sender Transport** tab and edit its parameters as shown in Table 51.

Table 51 Sender Transport Parameters for Trading Partner Dallas

FilePattern	from-DallasAS2_%d_%H%h%s.dat
Directory	C:\temp\eXchange\Sample\AS2\Data\Dallas\SendToInternal

3 Click **Save**.

4 Click the second binding name, **idc_RecvFromInternal**.

The internal delivery channel's general properties are displayed.

Click the **Receiver Transport** tab and edit its parameters as shown in Table 52.

Table 52 Receiver Transport Parameters for Trading Partner Dallas

ChannelManagerMode	FILE
FilePattern	*.in
Directory	C:\temp\eXchange\Sample\AS2\Data\Dallas\RecvFromInternal
PollMilliSeconds	5000

5 Click **Save**.

Result: For trading partner Dallas, the parameters for both internal delivery channels are now set correctly.

Parameters for the Messaging Actions

Purpose: To associate each messaging action with the correct external and internal delivery channel and set other parameters if necessary. The messaging actions are defined by the B2B host's messaging service.

To configure the messaging actions for trading partner Dallas

1 In the explorer (lower left) side of the ePM screen, click **Dallas**, open its profile (Dallas_Profile) and messaging protocol (AS2 1.1), and click its associated messaging service: **myHost_MsgingService**

The canvas displays the messaging service's general properties.

2 Click the **Messaging Actions** tab.

The canvas displays the messaging actions of this service: ToExternalTP and FromExternalTP.

3 Open the messaging actions and edit parameters as shown in Table 53 and Table 54.

Table 53 Messaging Action Parameters for ToExternalTP

Send To Partner?	true
Delivery Channel	xdc_Dallas_AS2_http
Internal Delivery Channel	idc_RecvFromInternal
Mime Configuration	[None]

Table 54 Messaging Action Parameters for FromExternalTP

Send To Partner?	false
Delivery Channel	xdc_Dallas_AS2_http
Internal Delivery Channel	idc_SendToInternal
Mime Configuration	[None]

Note: *Internal Delivery Channel bindings are always required for a project to run. Although it is possible to activate a trading partner whose messaging actions lack IDCs, the Channel Manager would have no instructions to read any input.*

4 Click **Save**.

Result: For trading partner Dallas, all parameters are now set correctly.

9.3.6 Activating the Dallas Trading Partner

To activate the Dallas trading partner

Purpose: To save all the configuration information to the Oracle database to make it available at run time.

Before you begin: Your eXchange 5.0.3 Oracle database for the corresponding B2B host must be running.

1 In the explorer (lower left) side of the ePM screen, click **Dallas**.

2 In the bottom lower left of the canvas, click the **Activate** button. In response to the confirmation prompt, click **Activate**.

The canvas displays a confirmation: **Trading Partner is successfully activated.**

Result: The **Dallas** trading partner is entirely complete and ready to be run. (However: If a logical host is already running, these changes are not made to it until you either reactivate the project or right-click the logical host and click **Apply**.)

9.4 Runtime Steps

For the AS2 sample implementation, runtime steps consist of the following:

- **Starting the Logical Hosts on page 144**
- **Supplying the Input Data on page 145**
- **Using Message Tracker on page 146**

9.4.1 Starting the Logical Hosts

These steps assume you have already installed two or more logical hosts.

To bootstrap the logical host

1 Open a command prompt and change directories to the location of your logical host's bootstrap executables. For example:

```
cd Dallas_logicalhost\bootstrap\bin
```

2 Start the bootstrap script using appropriate parameters. For example:

```
bootstrap -r http://myBox:12345/myRepository -i myId -p myPassword
-e DallasEnvAS2 -l LogicalHost1
```

- For the **-r** (repository) parameter), supply the correct URL with repository name.

- For the **-i** and **-p** (ID and password) parameters, supply the appropriate values.
- For **-e** (environment) parameter, use: **DallasEnvAS2**
- For **-l** (logical host name) parameters, use: **LogicalHost1**

Result: After a time, the logical host starts running, and all activated projects that reference DallasEnvAS2 are automatically applied to it.

3 Repeat steps 1 and 2 on a different logical host, referencing the same repository but pointing it at the ManhattanEnvAS2 environment. For example:

```
cd Manhattan_logicalhost\bootstrap\bin
bootstrap -r [...] -e ManhattanEnvAS2 -l LogicalHost1
```

To apply environment changes when a logical host is running

Purpose: If changes are made to parameters in an environment component (such as keystores for an eXchange service) while a logical host is running, use these steps to apply the changes without having to shutdown and re-bootstrap the logical host.

1 In Enterprise Designer, in Environment Explorer, open the environment where the changes have occurred.

2 Right-click the logical host that is running and, on the popup menu, click **Apply**

3 Repeat the previous step as needed for other logical hosts in the same environment.

Result: In the back end, a “mini-shutdown/mini-rebootstrap” occurs, and the changes are applied to the running logical host.

9.4.2. Supplying the Input Data

The scenarios are set up so that:

- The Dallas project reads files of the form ***.in** from directory C:\temp\eXchange\Sample\AS2\Data\Manhattan\RecvFromInternal\.

  Errors are written to ...\Sample\AS2\Data\Manhattan\ErrorTopic\

  Output messages go to ...\Sample\AS2\Data\Manhattan\SendToInternal\*.dat
- The Manhattan project reads files of the form ***.in** from directory C:\temp\eXchange\Sample\AS2\Data\Dallas\RecvFromInternal\.

  Errors are written to ...\Sample\AS2\Data\Dallas\ErrorTopic\.

  Output messages go to ...\Sample\AS2\Data\Dallas\SendToInternal\*.dat

To feed input data to the Dallas project

1 In C:\temp\eXchange\Sample\AS2\Data\Manhattan\RecvFromInternal\, copy files AS2*.txt to **AS2*.in**

2 Watch the file extension change from **.in** to **.~in** as the file is picked up.

To feed input data to the Manhattan project

1 In C:\temp\eXchange\Sample\AS2\Data\Dallas\RecvFromInternal\, copy files AS2*.txt to **AS2*.in**

2 Watch the file extension change from **.in** to **.~in** as the file is picked up.

9.4.3. Using Message Tracker

Before you begin: Your logical host and eXchange 5.0.3 Oracle database must both be running.

To access Message Tracking

1. Open a *new* browser session. (In other words, do ***not*** clone a new window from an existing session).
2. Point your browser at the URL for message and package tracking. This takes the following form:

   `http://``<loghostname>`**`:<`**`port>`**`/`**`<AppName>`**`/msgTrack/EnterPkgTrack.do`**

   where:

   - *<loghostname>* is the hostname of the physical machine where you ran bootstrap.exe and pointed it at a particular environment and logical host.
   - *<port>* is the port number assigned in that environment and logical host (in the configuration for Integration Server .> ... > Web server).
   - *<TrackerAppName>* is the name of the Message Tracking application as it appears in the connectivity map. If there is only one such instance, the default name is **Tracker_Application1**

Examples:

- To access message tracking for Dallas (IS ports 18000–18009, web port=18004), if the logical host was bootstrapped on a physical machine whose hostname is "Dallas":

`http://Dallas:`**`18004`**`/Tracker_Application1/msgTrack/EnterPkgTrack.do`

- To access message tracking for Manhattan (IS ports 19000–19009, web port=19004), if the logical host was bootstrapped locally:

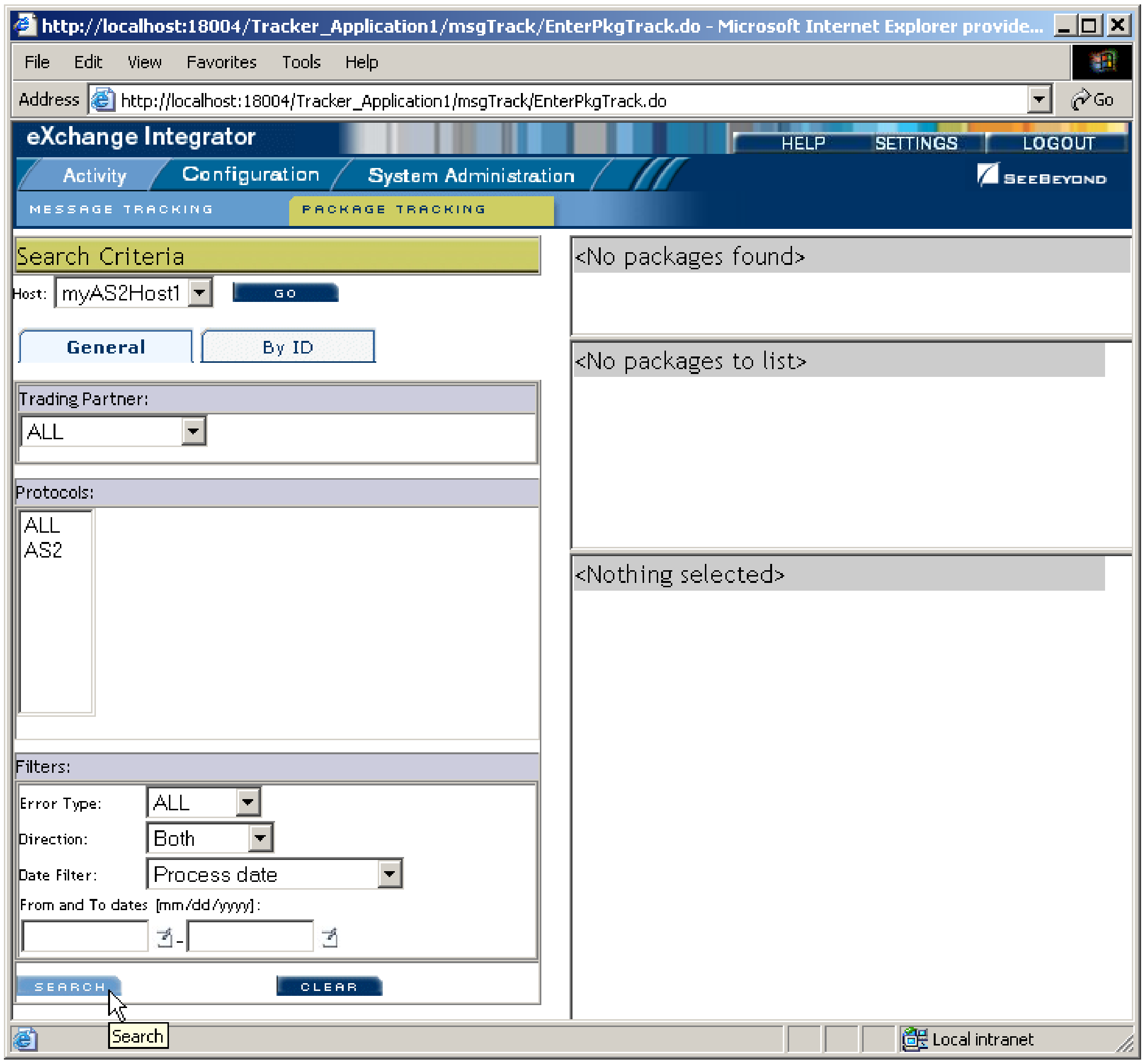
`http://localhost:`**`19004`**`/Tracker_Application1/msgTrack/EnterPkgTrack.do`

- To access message tracking for an Integration Server that was customized to use a special SSL-only web port=21444, if the logical host was bootstrapped on a physical machine whose IP address is 10.18.5.5:

`http://10.18.5.5:`**`21444`**`/Tracker_Application1/msgTrack/EnterPkgTrack.do`

Result: See Figure 76.

Figure 76 Message Tracking, on Startup


http://localhost:18004/Tracker_Application1/msgTrack/EnterPkgTrack.do - Microsoft Internet Explorer provide...
File Edit View Favorites Tools Help
Address http://localhost:18004/Tracker_Application1/msgTrack/EnterPkgTrack.do
Go
eXchange Integrator
HELP SETTINGS LOGOUT
Activity Configuration System Administration
SEEBEYOND
MESSAGE TRACKING PACKAGE TRACKING
Search Criteria
GO
General By ID
SEARCH CLEAR
Search
Local intranet

Host: myAS2Host1

Trading Partner: ALL

Protocols: ALL AS2

Filters:
Error Type: ALL
Direction: Both
Date Filter: Process date
From and To dates [mm/dd/yyyy]:

<No packages found>

<No packages to list>

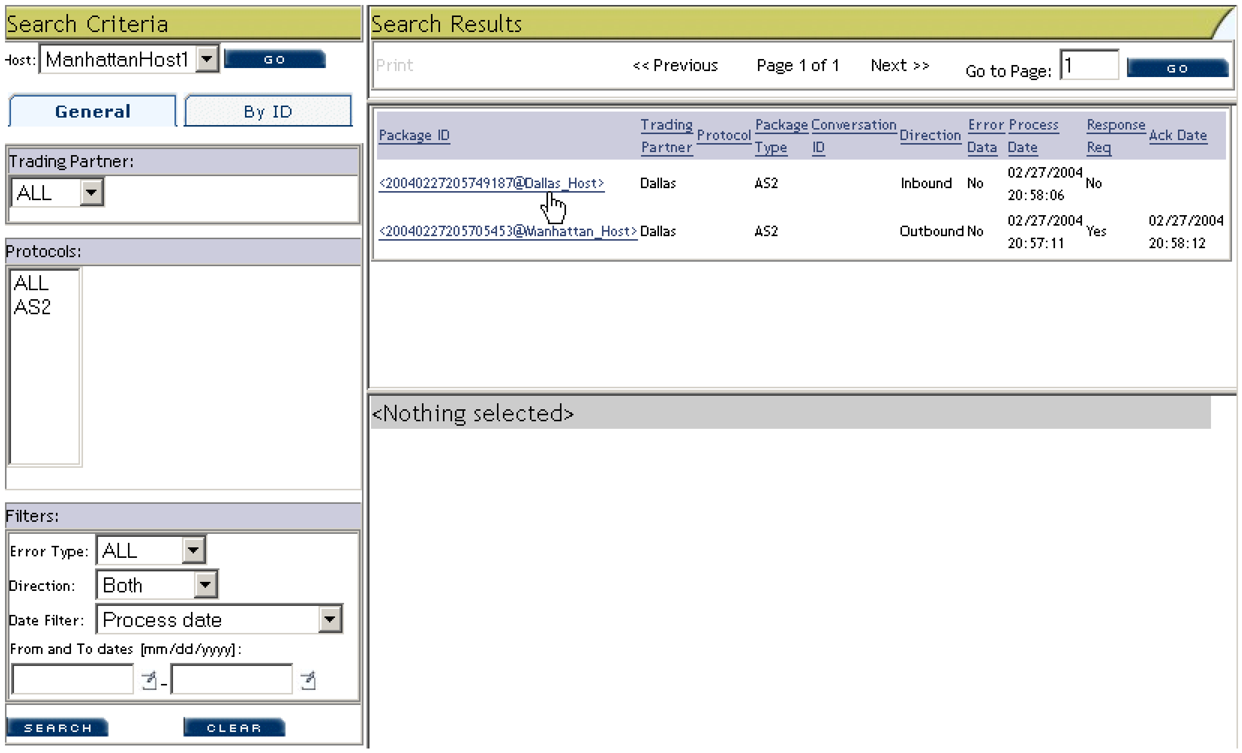
<Nothing selected>

To search by B2B host, trading partner, and protocol

1. Under Search Criteria, use the Host drop-down list to choose the B2B host whose messages you want to examine, and click **GO**.
2. Under Trading Partner, either click ALL or choose a particular trading partner from the drop-down list.
3. Under Protocols, either click ALL or choose a protocol from the drop-down list.
4. At the lower left of the window, click **SEARCH**.

Result: The canvas (right side), under Search Results, displays a page containing the Package IDs of the latest ten tracked messages fitting the criteria you specified. Navigation links (Previous, Next, and Go to Page) allow you to see other pages of ten results each. See Figure 77.

Figure 77 Message Tracking, Showing Initial Search Results


Search Criteria

Host: ManhattanHost1

Trading Partner: ALL

Protocols: ALL, AS2

Filters:

Error Type: ALL

Direction: Both

Date Filter: Process date

From and To dates [mm/dd/yyyy]:

Search Results

Page 1 of 1

Go to Page: 1

Package ID	Trading Partner	Protocol	Package Type	Conversation ID	Direction	Error Data	Process Date	Response Req	Ack Date
<20040227205749187@Dallas_Host>	Dallas		AS2		Inbound	No	02/27/2004 20:58:06	No	
<20040227205705453@Manhattan_Host>	Dallas		AS2		Outbound	No	02/27/2004 20:57:11	Yes	02/27/2004 20:58:12

<Nothing selected>

To search by B2B host, trading partner, and protocol

1. Under Search Criteria, use the Host drop-down list to choose the B2B host whose messages you want to examine, and click **GO**.
2. For Protocols, either click ALL or choose a particular protocol from the list.
3. For Package Type, either click ALL or choose a particular packaging protocol from the drop-down list.
4. For ID, enter a string for matching the message ID.
5. At the lower left of the window, click **SEARCH**.

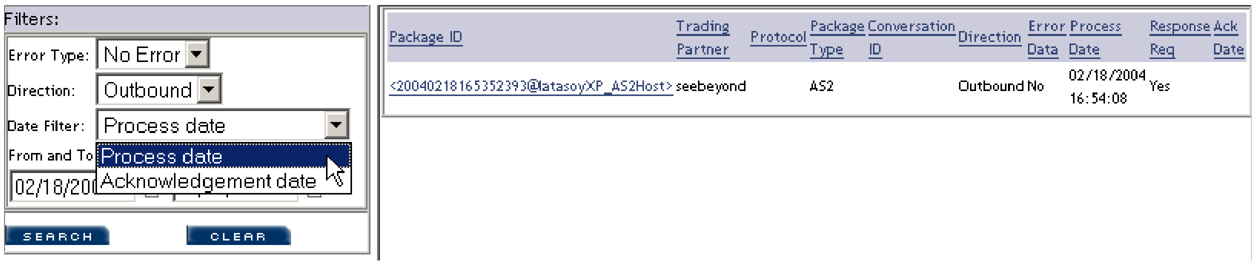
Result: The canvas displays a page containing the Package IDs of the latest ten tracked messages fitting the criteria you specified.

To filter results by error type, direction, and/or date

Purpose: After performing a search, or after setting up a search using either of the two previous procedures, you can specify one or more further criteria.

1. Near the bottom of the left pane, under **Filters**, specify one or more of the following:
   - For **Error Type**: If you do not choose ALL, you can restrict your search either to display error messages only, or to display non-error messages only.
   - For **Direction**: If you do not choose ALL, you can restrict your search either to display inbound messages only, or to display outbound messages only.
   - For **Date**: You can choose to include only those messages whose *processing* date lies within a range you specify, or only those messages whose *acknowledgment* date lies within the range. See Figure 78.

Figure 78 Message Tracking, Showing Filters



Filters:

Error Type:	No Error
Direction:	Outbound
Date Filter:	Process date
From and To	02/18/20

Package ID	Trading Partner	Protocol	Package Type	Conversation ID	Direction	Error Data	Process Date	Response Req	Ack Date
<20040218165352393@latasoyXP_AS2Host>	seebeyond		AS2		Outbound	No	02/18/2004 16:54:08	Yes	

2 At the lower left of the window, click **SEARCH**.

Result: The canvas displays a page containing the Package IDs of the latest ten tracked messages fitting the criteria you specified.

To obtain details of a specified package

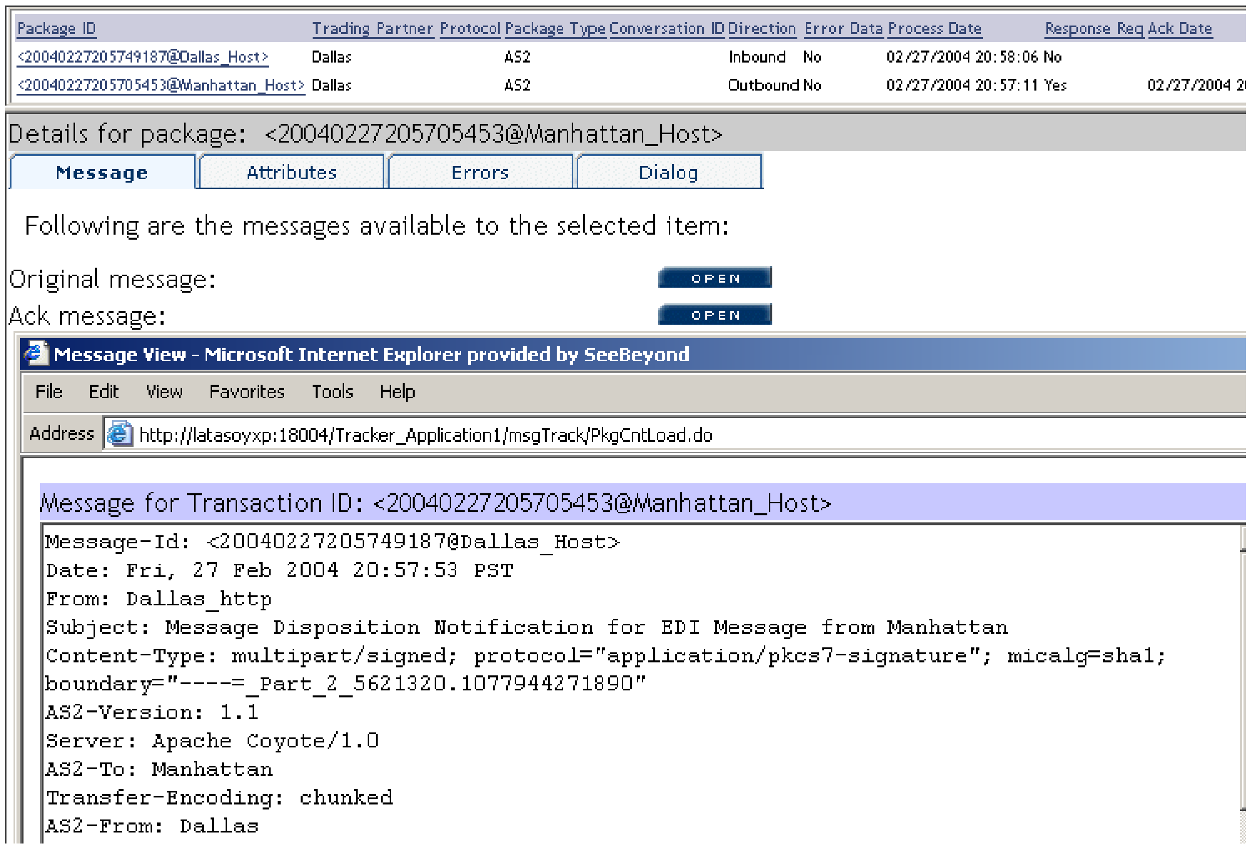
Purpose: On a package-by-package basis, you can examine the message text.

1 After obtaining results from a search using any of the procedures mentioned earlier, click the package ID for any of the returned results.

2 In the “Details for package <*package-ID*>” pane, click **Open** to see the contents (possibly encrypted) of the original message.

Result: See Figure 79. You can use cut, copy, and paste on any text in the window.

Figure 79 Message Tracking, Showing Package Details and Message Content



Package ID	Trading Partner	Protocol	Package Type	Conversation ID	Direction	Error Data	Process Date	Response Req	Ack Date
<20040227205749187@Dallas_Host>	Dallas		AS2		Inbound	No	02/27/2004 20:58:06	No	
<20040227205705453@Manhattan_Host>	Dallas		AS2		Outbound	No	02/27/2004 20:57:11	Yes	02/27/2004 2

Details for package: <20040227205705453@Manhattan_Host>

Following are the messages available to the selected item:

Original message: OPEN

Ack message: OPEN

Message View - Microsoft Internet Explorer provided by SeeBeyond
File Edit View Favorites Tools Help

Address http://latasoyxp:18004/Tracker_Application1/msgTrack/PkgCntLoad.do

Message for Transaction ID: <20040227205705453@Manhattan_Host>

```
Message-Id: <20040227205749187@Dallas_Host>
Date: Fri, 27 Feb 2004 20:57:53 PST
From: Dallas_http
Subject: Message Disposition Notification for EDI Message from Manhattan
Content-Type: multipart/signed; protocol="application/pkcs7-signature"; micalg=sha1;
boundary="----=_Part_2_5621320.1077944271890"
AS2-Version: 1.1
Server: Apache Coyote/1.0
AS2-To: Manhattan
Transfer-Encoding: chunked
AS2-From: Dallas
```

Appendix A

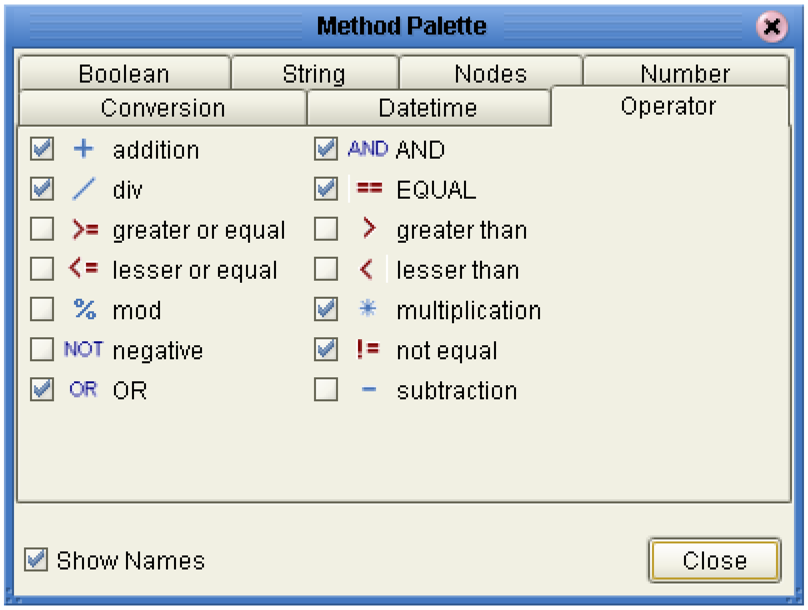
Method Palette

This appendix describes each method that appears in the method palette of the eXchange Protocol Designer.

A.1 Operators

Operators are the methods that allow you to manipulate data with standard mathematical operators.

Figure 80 Method Palette: Operator tab



✓ + addition	✓ AND AND
✓ / div	✓ == EQUAL
☐ >= greater or equal	☐ > greater than
☐ <= lesser or equal	☐ < lesser than
☐ % mod	✓ * multiplication
☐ NOT negative	✓ != not equal
✓ OR OR	☐ - subtraction

✓ Show Names

Table 55 Operator Methods

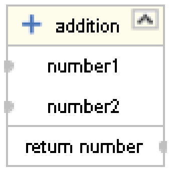
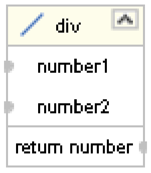
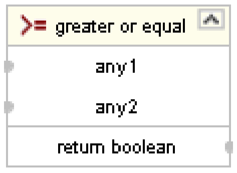
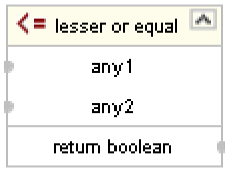
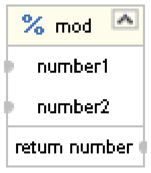
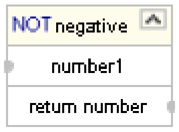
Method Box	Name	Description/Usage
	addition	Adds the value of *number1* to the value of *number2*, returns the sum.
	division	Divides the value of *number1* by the value of *number2*, returns the quotient.
	greater or equal	Returns Boolean true if *number1* is greater than or equal to *number2*; otherwise, returns Boolean false.
	lesser or equal	Returns Boolean true if *number1* is less than or equal to *number2*; otherwise, returns Boolean false.
	mod	Used to divide two numbers and return only the remainder.
	negative	Converts the input number to negative. Result is a negative number having the same absolute value as the input number.

Table 55 Operator Methods (Continued)

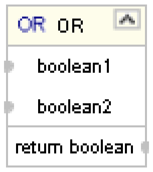
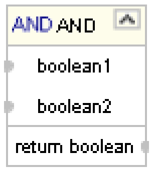
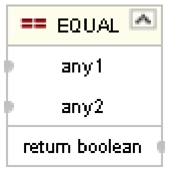
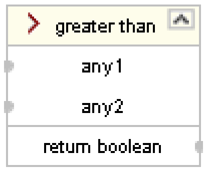
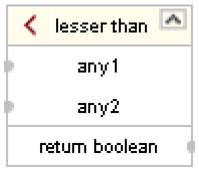
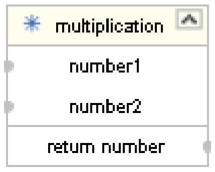
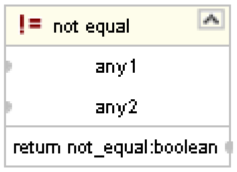
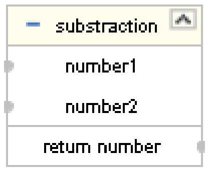
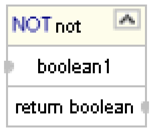
Method Box	Name	Description/Usage
 OR OR boolean1 boolean2 return boolean	OR	Returns Boolean false if both *boolean1* and *boolean2* are false; otherwise, returns Boolean true.
 AND AND boolean1 boolean2 return boolean	AND	Returns Boolean true if both *boolean1* and *boolean2* are true; otherwise, returns Boolean false.
 == EQUAL any1 any2 return boolean	EQUAL	Returns Boolean true if *number1* is equal to *number2*; otherwise, returns Boolean false.
 > greater than any1 any2 return boolean	greater than	Returns Boolean true if *number1* is greater than *number2*; otherwise, returns Boolean false.
 < lesser than any1 any2 return boolean	less than	Returns Boolean true if *number1* is less than *number2*; otherwise, returns Boolean false.
 multiplication number1 number2 return number	multiplication	Multiplies the value of *number1* by the value of *number2*, returns the product.

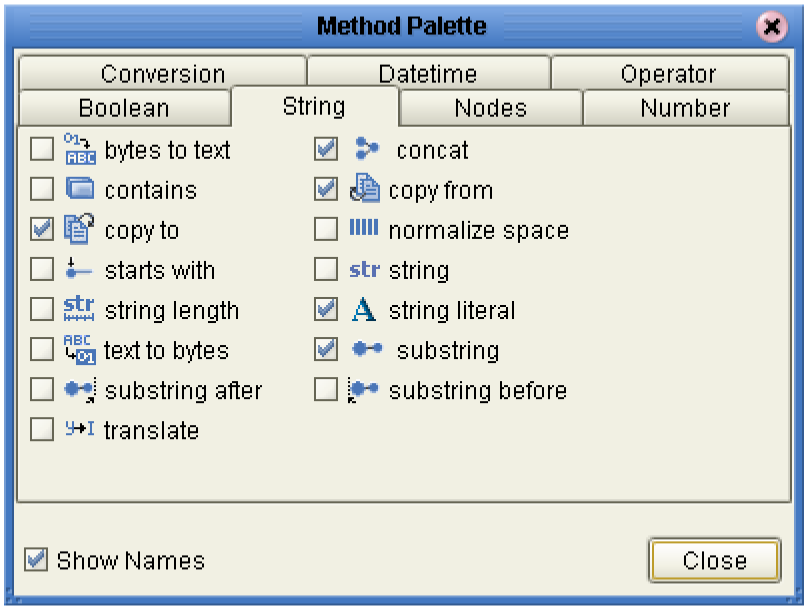
Table 55 Operator Methods (Continued)

Method Box	Name	Description/Usage
 != not equal any1 any2 return not_equal:boolean	not equal	Returns Boolean true if *number1* is not equal to *number2*; otherwise, returns Boolean false.
 − substraction number1 number2 return number	subtraction	Subtracts the numerical value of *number2* from the numerical value of *number1*, returns the difference.
 NOT not boolean1 return boolean	not	Returns the inverse of *boolean1*.

A.2 String

The String methods allow you to manipulate string data.

Figure 81 Method Palette: String tab



- [ ] bytes to text
- [ ] contains
- [✓] copy to
- [ ] starts with
- [ ] string length
- [ ] text to bytes
- [ ] substring after
- [ ] translate
- [✓] concat
- [✓] copy from
- [ ] normalize space
- [ ] string
- [✓] string literal
- [✓] substring
- [ ] substring before

[✓] Show Names

Table 56 String Methods

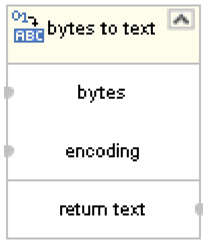
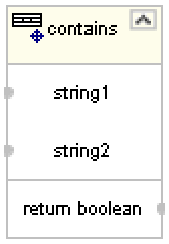
Symbol	Name	Description
	bytes to text	Decodes bytes into text using the specified encoding. If no encoding is specified, the platform's default encoding is used.
	contains	Returns true if the second string is contained within the first string, otherwise it returns false

Table 56 String Methods (Continued)

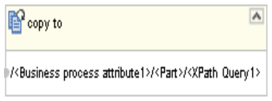
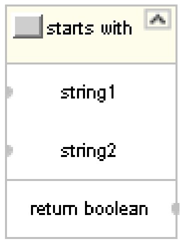
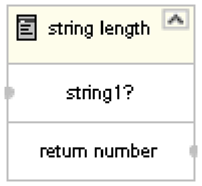
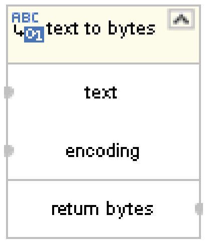
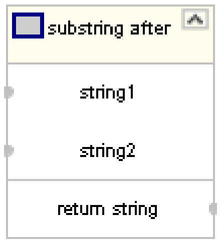
Symbol	Name	Description
	copy to	Allows you to type in the xpath expression for the destination of a copy operation. This is useful for entering xpath predicates. Note: This is for advanced users who are familiar with xpath and BPEL syntax.
	starts with	Returns true if the first string starts with the second string, otherwise it returns false
	string length	Returns the number of characters in a string
	text to bytes	Encodes the input text into a sequence of bytes using the specified encoding. If no encoding is specified, the platform's default encoding is used
	substring after	Returns the part of the string in the string argument that occurs after the substring in the substring argument

Table 56 String Methods (Continued)

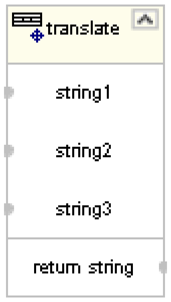
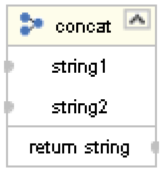
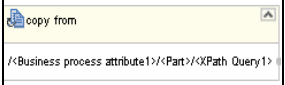
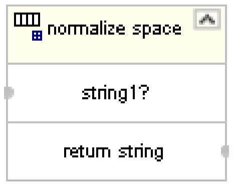
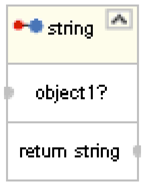
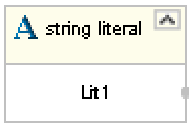
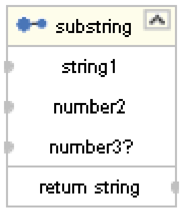
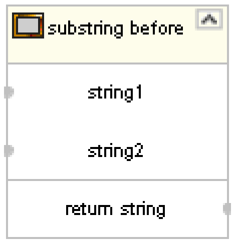
Symbol	Name	Description
	translate	Performs a character by character replacement. It looks in the value argument for characters contained in string1, and replaces each character for the one in the same position in the string2
	concat	Returns the concatenation of all its arguments
	copy from	Allows you to type in xpath expression for the source of a copy operation. This is useful for entering xpath predicates. Note: This is for advanced users who are familiar with xpath and BPEL syntax
	normalize space	Removes leading and trailing spaces from a string
	string	Converts the value argument to a string
	string literal	A sequence of characters of fixed length and content

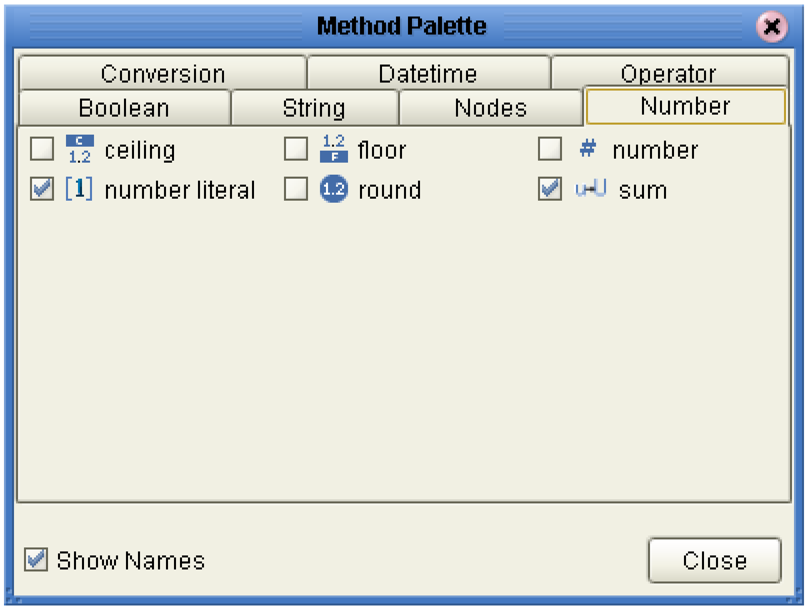
Table 56 String Methods (Continued)

Symbol	Name	Description
 substring string1 number2 number3? return string	substring	Returns a part of the string in the string argument
	substring before	Returns the part of the string in the string argument that occurs before the substring in the substring argument.

A.3 Number

The Number methods allow you to work with number data.

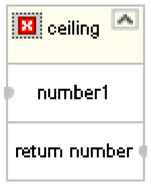
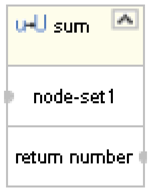
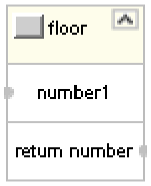
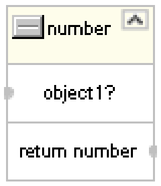
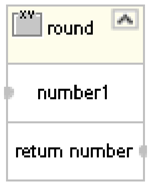
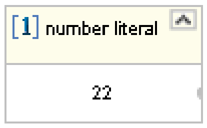
Figure 82 Method Palette: Number tab



☐ ceiling ☐ floor ☐ number
☑ number literal ☐ round ☑ sum

☑ Show Names

Table 57   Number Methods

Symbol	Name	Function
 ceiling number1 return number	ceiling	Returns the smallest integer that is not less than the number argument
 sum node-set1 return number	sum	Returns the total value of a set of numeric values in a node-set
 floor number1 return number	floor	Returns the largest integer that is not greater than the number argument
 number object1? return number	number	Converts the value argument to a number
 round number1 return number	round	Rounds the number argument to the nearest integer
 [1] number literal 22	number literal	A literal number string of fixed length and content

A.4 Boolean

Boolean methods allow you to apply boolean logic to your data.

Figure 83 Method Palette: Boolean tab

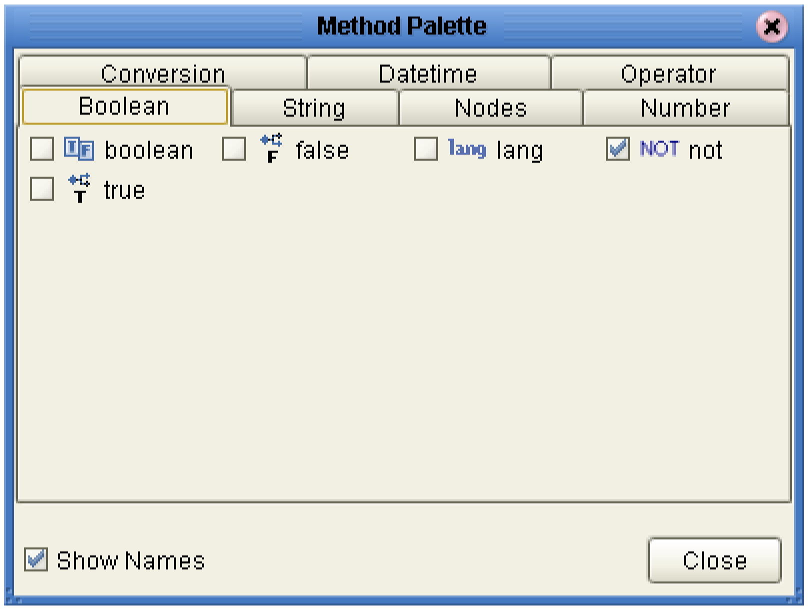


Table 58 Boolean Methods

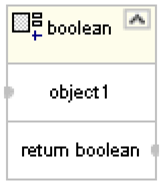
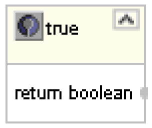
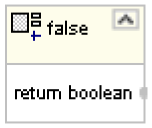
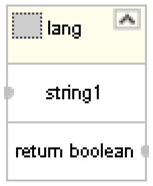
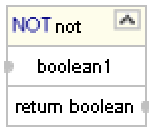
Symbol	Name	Function
	boolean	Converts the value argument to Boolean and returns true or false.
	true	Returns true
	false	Returns false

Table 58 Boolean Methods (Continued)

Symbol	Name	Function
 lang, string1, return boolean	lang	Returns true if the language argument matches the language of the xsl:lang element, otherwise it returns false
 NOT not, boolean1, return boolean	not	Returns true if the condition argument is false, and false if the condition argument is true

A.5 Nodes

Node methods allow you manipulate your data.

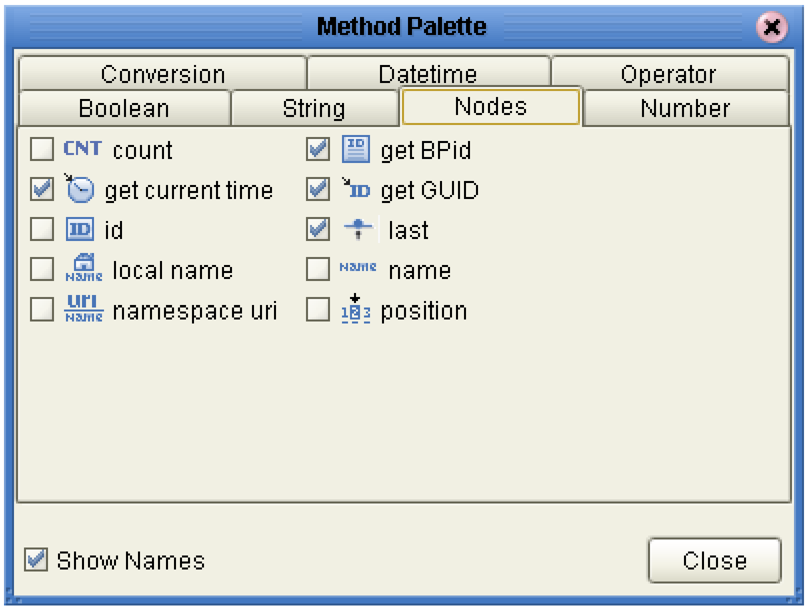


Figure 84 Method Palette: Nodes tab

☐ count	☑ get BPid
☑ get current time	☑ get GUID
☐ id	☑ last
☐ local name	☐ name
☐ namespace uri	☐ position

☑ Show Names

Table 59 Node Methods

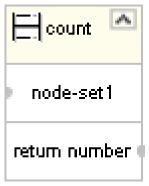
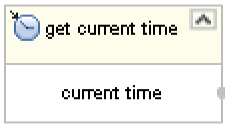
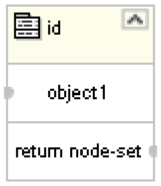
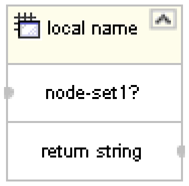
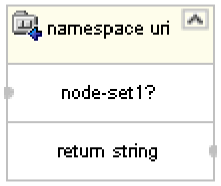
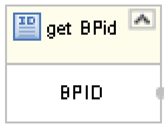
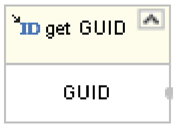
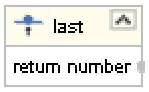
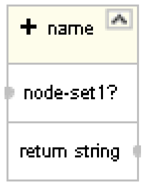
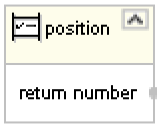
Symbol	Name	Function
	count	Returns the number of nodes in a node-set
	getCurrentTime	Gets the current time in ISO 8601 format (e.g. 2003-08-15T02:03:49.92Z).
	id	Selects elements by their unique ID
	local name	Returns the local part of a node. A node usually consists of a prefix, a colon, followed by the local name
	namespace uri	Returns the namespace URI of a specified node
	getBPId	Gets the business process instance ID.

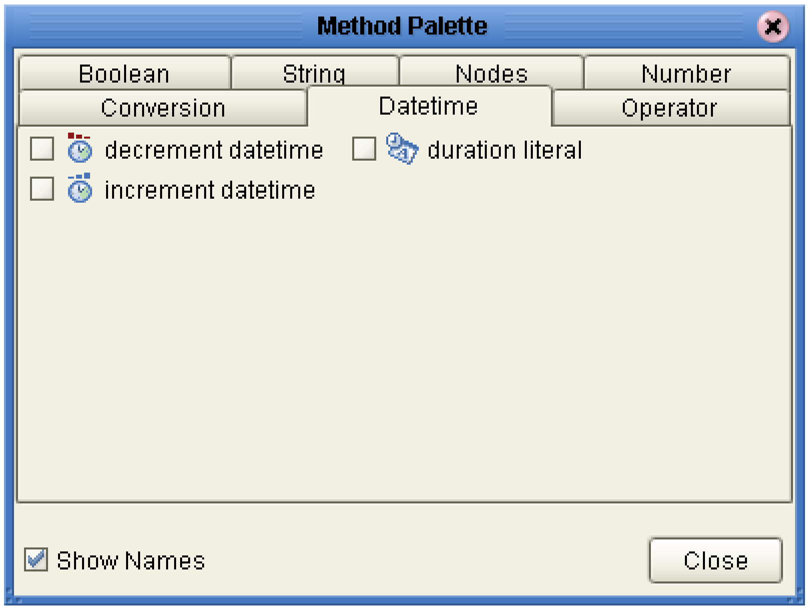
Table 59 Node Methods (Continued)

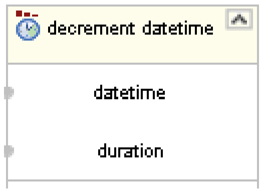
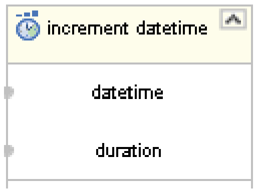
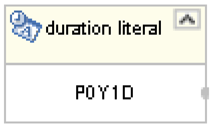
Symbol	Name	Function
	getGUId	Gets a randomly generated globally unique ID.
	last	Returns the position number of the last node in the processed node list
	name	Returns the name of a node
	position	Returns the position in the node list of the node that is currently being processed

A.5.1 Datetime

Datetime methods allow you to manipulate date, time and duration of data.

Figure 85 Method Palette: Datetime tab

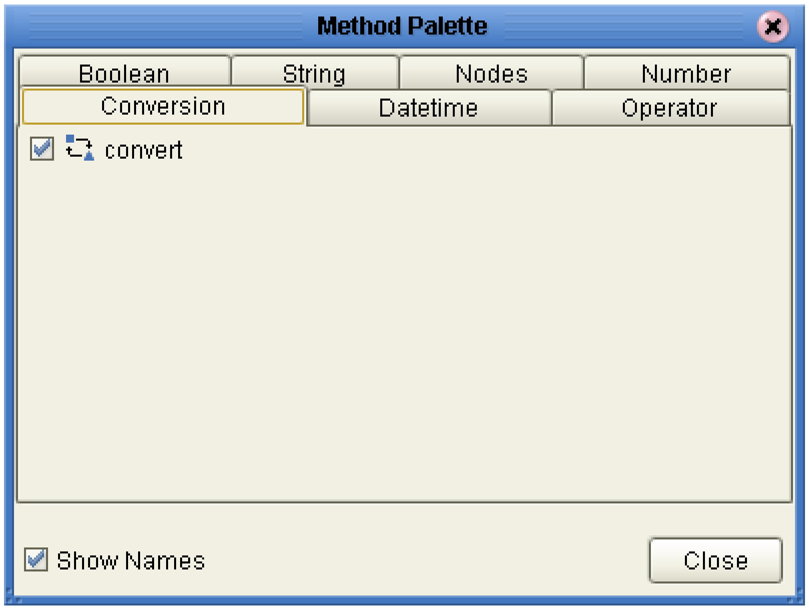


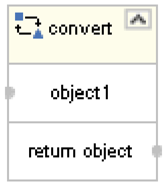
	decrement datetime	Dynamically decreases the date or time by a certain duration, such as days or hours.
	increment datetime	Dynamically increases the date or time by a certain duration, such as days or hours.
	duration literal	Allows you to set an actual date or time.

A.5.2 Conversion

The Convert method allows you to make conversions from various data types.

Figure 86 Method Palette: Conversion



	convert	The convert function that takes in one input link and one output link. The data type conversions are described in **"Data Type Conversions" on page 165**.

A.6 Data Type Conversions

The eXchange Protocol Designer supports a Convert function that takes in one input link and one output link. The Convert function is implemented from tree-to-tree mapping only. The Convert function is valid for conversions between leaf nodes. The Conversion function checks if the mapping is valid. The valid conversions are based off the following conversions.

A.6.1 String

Table 60 String

To	From
Boolean	custom
Float	parse
Double	parse
Decimal	parse
Byte	parse
Short	parse
Int	parse
Long	parse
Duration	parse
dateTime	parse
time	parse
date	parse
gYearMonth	parse
gYear	parse
gMonthDay	parse
gDay	parse
gMonth	parse
hexBinary	textToByte
base64Binary	textToByte
anyURI	parse
QName	parse
NOTATION	parse

A.6.2 Boolean

Table 61 Boolean

To	From
String	toString

A.6.3 Float

Table 62 Float

To	From
String	toString
Boolean	boolean
Double	floatToDouble
Decimal	floatToDecimal
Byte	floatToByte
Short	floatToShort
Int	floatToInt
Long	floatToLong

A.6.4 Double

Table 63 Double

To	From
String	toString
Boolean	boolean
Float	doubleToFloat
Decimal	doubleToDecimal
Byte	doubleToByte
Short	doubleToShort
Int	doubleToInt
Long	doubleToLong

A.6.5 Decimal

Table 64 Decimal

To	From
String	toString

Table 64 Decimal (Continued)

To	From
Boolean	boolean
Float	decimalToFloat
Double	decimalToDouble
Byte	decimalToByte
Short	decimalToShort
Int	decimalToInt
Long	decimalToLong

A.6.6 Byte

Table 65 Byte

To	From
String	toString
Boolean	boolean()
Float	byteToFloat
Double	byteToDouble
Decimal	byteToDecimal
Short	byteToShort
Int	byteToInt
Long	byteToLong

A.6.7 Short

Table 66 Short

To	From
String	toString
Boolean	boolean()
Float	shortToFloat
Double	shortToDouble
Decimal	shortToDecimal
Byte	shortToByte
Int	shortToInt
Long	shortToLong

A.6.8 Int

Table 67 Int

To	From
String	toString
Boolean	boolean()
Float	intToFloat
Double	intToDouble
Decimal	intToDecimal
Byte	intToByte
Short	intToShort
Long	intToLong

A.6.9 Long

Table 68 Long

To	From
String	toString
Boolean	boolean()
Float	longToFloat
Double	longToDouble
Decimal	longToDecimal
Byte	longToByte
Short	longToShort
Int	longToInt

A.6.10 Duration

Table 69 Duration

To	From
String	toString
Boolean	boolean

A.6.11 dateTime

Table 70 dateTime

To	From
String	toString

Table 70 dateTime (Continued)

To	From
Boolean	boolean
time	dateTimeToTime
date	dateTimeToDate
gYearMonth	dateTimeToGYearMonth
gYear	dateTimeToGYear
gMonthDay	dateTimeToGMonthDay
gDay	dateTimeToGDay
gMonth	dateTimeToGMonth

A.6.12 time

Table 71 time

To	From
String	toString
Boolean	boolean

A.6.13 date

Table 72 date

To	From
String	toString
Boolean	boolean
gYearMonth	dateToGYearMonth
gYear	dateToGYear
gMonthDay	dateToGMonthDay
gDay	dateToGDay
gMonth	dateToGMonth

A.6.14 gYearMonth

Table 73 gYearMonth

To	From
String	toString
Boolean	boolean
gYear	gYearMonthToGYear
gMonth	gYearMonthToGMonth

A.6.15 gYear

Table 74 gYear

To	From
String	toString
Boolean	boolean

A.6.16 gMonthDay

Table 75 gMonthDay

To	From
String	toString
Boolean	boolean
gDay	gMonthDayToGDay
gMonth	gMonthDayToGMonth

A.6.17 gDay

Table 76 gDay

To	From
String	toString
Boolean	boolean

A.6.18 gMonth

Table 77 gMonth

To	From
String	toString
Boolean	boolean

A.6.19 hexBinary

Table 78 hexBinary

To	From
String	byteToText
Boolean	boolean
base64Binary	hexBinaryToBase64Binary

A.6.20 base64Binary

Table 79 base64Binary

To	From
String	byteToText
Boolean	boolean
hexBinary	base64BinaryToHexBinary

A.6.21 anyURI

Table 80 anyURI

To	From
String	toString
Boolean	boolean

A.6.22 QName

Table 81 QName

To	From
String	toString
Boolean	boolean

A.6.23 NOTATION

Table 82 NOTATION

To	From
String	toString
Boolean	boolean

Index