iWay Software

An Information Builders Company

iWay

iWay Adapter for FIX for BEA WebLogic User's Guide
Version 5 Release 5

February 11, 2005
DN3501525.0205

Preface

This documentation describes how to use the iWay Adapter for FIX and how to develop application environments with specific focus on message integration. It is intended for system integrators who develop client interfaces between FIX and other applications. It is assumed that readers know Web technologies and have a general understanding of Microsoft Windows and UNIX systems.

How This Manual Is Organized

The following table lists the numbers and titles of the chapters and appendixes for this manual with a brief description of the contents of each chapter and appendix.

Chapter/Appendix		Contents
1	Introducing the iWay Adapter for FIX	Provides an overview of the benefits and processes of the adapter.
2	Generating Schemas for FIX Integration Objects	Explains how metadata for your enterprise information system (EIS) is described, how to name a schema repository and the schema manifest, how to create a schema, and how to store directory and template files for transformations.
3	Creating Services for the iWay Adapter for FIX	Describes how to create, configure, and test a service adapter.
4	Listening for Events for the iWay Adapter for FIX	Describes how to create, configure, and test an event adapter.
5	Using Web Services Policy-Based Security	Describes how to configure Web services policy-based security.
6	Management and Monitoring	Describes the management and monitoring tools provided by iBSE and JCA.
A	Using Application Explorer in BEA WebLogic Workshop to Create XML Schemas and Web Services	Describes how to use Java Swing Application Explorer running in BEA WebLogic Workshop to create XML schemas for FIX.

Chapter/Appendix		Contents
B	Using Application Explorer in BEA WebLogic Workshop for Event Handling	Describes how to use iWay Java Swing Application Explorer running in BEA WebLogic Workshop to create events for FIX. In addition, this section provides information on deploying components in a clustered BEA WebLogic environment.
C	Supported Messages	Describes supported messages.

Documentation Conventions

The following table lists the conventions that apply in this manual and a description of each.

Convention	Description
`THIS TYPEFACE` or `this typeface`	Denotes syntax that you must enter exactly as shown.
`this typeface`	Represents a placeholder (or variable) in syntax for a value that you or the system must supply.
`underscore`	Indicates a default setting.
this typeface	Represents a placeholder (or variable), a cross-reference, or an important term.
this typeface	Highlights a file name or command.
Key + Key	Indicates keys that you must press simultaneously.
`{ }`	Indicates two or three choices; type one of them, not the braces.
`|`	Separates mutually exclusive choices in syntax. Type one of them, not the symbol.
`...`	Indicates that you can enter a parameter multiple times. Type only the parameter, not the ellipsis points (…).
`.` `.` `.`	Indicates that there are (or could be) intervening or additional commands.

Related Publications

To view a current listing of our publications and to place an order, visit our World Wide Web site, http://www.iwaysoftware.com. You can also contact the Publications Order Department at (800) 969-4636.

Customer Support

Do you have questions about the iWay Adapter for FIX?

If you bought the product from a vendor other than iWay Software, contact your distributor.

If you bought the product directly from iWay Software, call Information Builders Customer Support Services (CSS) at (800) 736-6130 or (212) 736-6130.

Customer Support consultants are available Monday through Friday between 8:00 A.M. and 8:00 P.M. EST to address your iWay Adapter for FIX questions. Information Builders consultants also can give you general guidance regarding product capabilities and documentation. Please be prepared to provide your six-digit site code (*xxxx.xx*) when you call.

You also can access support services electronically, 24 hours a day, with InfoResponse Online. InfoResponse Online is accessible through our World Wide Web site, http://www.informationbuilders.com. You can connect to the tracking system and database of known problems at the Information Builders support center. Registered users can open, update, and view the status of cases in the tracking system and read descriptions of reported software issues. New users can register immediately for this service. The technical support section of www.informationbuilders.com also provides usage techniques, diagnostic tips, and answers to frequently asked questions.

To learn about the full range of available support services, ask your Information Builders representative about InfoResponse Online, or call (800) 969-INFO.

Help Us to Serve You Better

To help our consultants answer your questions effectively, please be prepared to provide specifications and sample files and to answer questions about errors and problems.

The following tables list the specifications our consultants require.

Platform	
Operating System	
OS Version	
Product List	
Adapters	
Adapter Deployment	For example, JCA, Business Services Engine, iWay Adapter Manager
Container Version	

The following table lists components. Specify the version in the column provided.

Component	Version
iWay Adapter	
EIS (DBMS/APP)	
HOTFIX / Service Pack	

The following table lists the types of Application Explorer. Specify the version (and platform, if different than listed previously) in the columns provided.

Application Explorer Type	Version	Platform
Swing		
Servlet		
ASP		

In the following table, specify the JVM version and vendor in the columns provided.

Version	**Vendor**

The following table lists additional questions to help us serve you better.

Request/Question	**Error/Problem Details or Information**
Provide usage scenarios or summarize the application that produces the problem.	
Did this happen previously?	
Can you reproduce this problem consistently?	
Any **change in the application environment**: software configuration, EIS/ database configuration, application, and so forth?	
Under what circumstance does the problem *not* occur?	
Describe the **steps** to reproduce the problem.	
Describe the **problem**.	
Specify the **error** message(s).	

The following table lists error/problem files that might be applicable.

XML schema
XML instances
Other input documents (transformation)
Error screen shots
Error output files

XML schema
Trace and log files
Log transaction

User Feedback

In an effort to produce effective documentation, the Documentation Services staff welcomes your opinions regarding this manual. Please use the Reader Comments form at the end of this manual to communicate suggestions for improving this publication or to alert us to corrections. You also can go to our Web site, http://www.iwaysoftware.com and use the Documentation Feedback form.

Thank you, in advance, for your comments.

iWay Software Training and Professional Services

Interested in training? Our Education Department offers a wide variety of training courses for iWay Software and other Information Builders products.

For information on course descriptions, locations, and dates, or to register for classes, visit our World Wide Web site, http://www.iwaysoftware.com or call (800) 969-INFO to speak to an Education Representative.

Interested in technical assistance for your implementation? Our Professional Services department provides expert design, systems architecture, implementation, and project management services for all your business integration projects. For information, visit our World Wide Web site, http://www.iwaysoftware.com.

Contents

1. Introducing the iWay Adapter for FIX 1-1

Introducing the iWay Adapter for FIX 1-2

Benefits of the iWay Adapter for FIX 1-2

FIX Operations, Events, and Services 1-3

Supported FIX Operations for Application Integration 1-3

Supported Events and Services 1-3

iWay Adapter for FIX and Workflows 1-4

Background to the FIX Protocol 1-6

Deployment Information for the iWay Adapter for FIX 1-7

iWay Application Explorer 1-7

Deployment Information Roadmap 1-7

The Integration Business Services Engine (iBSE) 1-8

The iWay Enterprise Connector for J2EE Connector Architecture (JCA) 1-9

2. Generating Schemas for FIX Integration Objects 2-1

Understanding Metadata 2-2

Schemas and Repositories 2-2

Naming a Schema Repository 2-3

Mapping FIX Schemas 2-3

3. Creating Services for the iWay Adapter for FIX 3-1

Overview 3-2

Starting Servlet Application Explorer 3-2

Establishing a Target for FIX 3-4

Creating a New Target 3-4

Connecting to a Target 3-6

Disconnecting From a Target 3-7

Deleting a Target 3-8

Creating an XML Schema for FIX 3-9

Creating a Request and a Response Schema 3-9

Generating a Business Service for FIX 3-11

Testing a Business Service 3-14

4. Listening for Events for the iWay Adapter for FIX 4-1
Understanding Event Functionality 4-2
Adding, Modifying, or Deleting a Port 4-2
Creating an Event Port for the iBSE Disposition 4-4
Creating an Event Port for the MSMQ Disposition 4-6
Creating an Event Port for the JMS Queue Disposition 4-8
Creating an Event Port for the HTTP Disposition 4-12
Creating an Event Port for the MQSeries Disposition 4-14
Editing an Event Port 4-16
Deleting an Event Port 4-17
Adding, Modifying, or Deleting a Channel 4-17
Creating a Channel 4-17
Modifying a Channel 4-25
Deleting a Channel 4-26

5. Using Web Services Policy-Based Security 5-1
iWay Business Services Policy-Based Security 5-2
Configuring iWay Business Services Policy-Based Security 5-3

6. Management and Monitoring 6-1
Managing and Monitoring Services and Events Using iBSE 6-2
Managing and Monitoring Services and Events Using the JCA Test Tool 6-16
Setting Engine Log Levels 6-21
Configuring Connection Pool Sizes 6-22
Migrating Repositories 6-23
File Repositories 6-23
iBSE Repositories 6-23
JCA Repositories 6-28
Migrating Event Handling Configurations 6-28
Exporting or Importing Targets 6-32
Retrieving or Updating Web Service Method Connection Information 6-36
Starting or Stopping a Channel Programmatically 6-40

A. Using Application Explorer in BEA WebLogic Workshop to Create XML Schemas and Web Services A-1
Starting Application Explorer in BEA WebLogic Workshop A-2
Creating a New Configuration A-3
Connecting to FIX A-5
Creating and Connecting to a Target A-5
Managing a Target A-8
Creating an XML Schema A-10
Creating an iWay Business Service A-12
Exporting iWay WSDL for Use in BEA WebLogic Workshop Workflows A-15

Adding a Control for an iWay Resource in BEA WebLogic Workshop A-17
Adding a Web Service Control to a BEA WebLogic Workshop Application A-17
Adding an Extensible CCI Control A-18
Overview A-18
Using the Extensible CCI Control A-24

B. Using Application Explorer in BEA WebLogic Workshop for Event Handling ...B-1

Starting Application Explorer in BEA WebLogic Workshop B-2
Understanding iWay Event Functionality B-3
Creating an Event Port B-3
Modifying an Event Port B-24
Creating a Channel B-25
Modifying a Channel B-34
Deploying iWay Components in a Clustered BEA WebLogic Environment B-37

C. Supported Messages C-1

Message Categories, Types, and Descriptions C-2

CHAPTER 1

Introducing the iWay Adapter for FIX

Topics:

- Introducing the iWay Adapter for FIX
- FIX Operations, Events, and Services
- iWay Adapter for FIX and Workflows
- Background to the FIX Protocol
- Deployment Information for the iWay Adapter for FIX

This section introduces the iWay Adapter for FIX and provides an overview of the adapter's benefits and processes.

Introducing the iWay Adapter for FIX

The iWay Adapter for FIX takes the chore out of integrating securities-related information with enterprise applications such as order management and third-party trading partners. The iWay Adapter for FIX enables developers to read, write, and enrich FIX transactions easily, while shielding developers from the complexities of the computing environment. The iWay Adapter for FIX is well suited for business-process improvement initiatives. It helps replace manual business processes with automatic transaction handling and application-to-application integration, thus dramatically reducing error rates and information lag time. Furthermore, because the iWay Adapter for FIX simplifies transaction handling for the developer, it significantly reduces the time, cost, and skill level required for integration projects.

The Financial Information Exchange (FIX) protocol is a message standard designed to facilitate the electronic exchange of securities-related information between brokerage houses, Electronic Communication Networks (ECNs), custodians, and banks. FIX was originally defined for use in supporting U.S. domestic equity trading with message traffic flowing directly between principals. As the protocol evolved, the FIX specification was expanded to support limited cross-border and fixed income trading. Similarly, the protocol was expanded to enable third parties to participate in the delivery of messages between trading partners. As subsequent versions of FIX are released, it is expected that functionality will continue to expand.

Benefits of the iWay Adapter for FIX

The iWay Adapter for FIX provides these benefits:

- **Error Reduction.** With the introduction of T+3, the opportunity for error correction is significantly reduced. Electronic trade transmission provides a mechanism for reducing the opportunity for human error resulting from audio miscommunication or from erroneous re-keying of trade data.
- **More Information.** Throughout the life cycle of an order, the Buyside can receive interim trade reports without the need for a phone call. This may be particularly helpful in an active market.
- **Productivity.** Electronic order transmission enables traders to handle higher volumes and use their time more effectively by reducing administrative activity, such as data entry and order status reporting. Automated real-time information flow and database integration of FIX messages, reducing market risk.
- **Common Language.** The FIX standard provides a common description of trade characteristics so that all participants are speaking the same language. This paves the way for integrating incoming data into internal systems.

- **Platform Independent.** The FIX protocol is a message format description. It does not require any specific hardware or telecommunication technology. Participants user their own hardware platforms.
- **Access to Buyers.** The FIX protocol provides a format for electronically broadcasting indications of interest to Buyside firms.
- **Access to Markets.** Buyside firms can electronically transmit DOT orders to the Sales trader desk where the order can be routed directly to the exchange floor.

FIX Operations, Events, and Services

The following topics describe FIX operations, events, and services.

Supported FIX Operations for Application Integration

The iWay Adapter for FIX supports synchronous and asynchronous, bidirectional message interactions for FIX.

It provides integration with the following FIX operations:

- Support for FIX messages using XML to handle both services and events.
- Support for FIX protocol levels 4.1, 4.2, and 4.3. The iWay Adapter for FIX fully supports the full 39 message types defined in FIX 4.2 specifications that support pre-trade, trade, post-trade, and clearing/settlement processes in the securities industry.
- Supports multiple versions of the protocol (FIX 4.0, 4.1, 4.2, and 4.3) across multiple sessions on a single instance.
- Support for pre- and post-encryption of messages using DES and PGP/DES/MD5.
- Configuration of events and services in iWay Application Explorer.
- Dynamic formatting and transformation of FIX messages into FIXML for internal processing. This enables organizations to use FIXML for communications with internal systems and FIX messages to communicate across networks with trading counter-parties. Even complex workflows for straight-through processing (STP), a major initiative in the securities industry, are simply managed by teaming the iWay Adapter for FIX with other components from iWay Application Explorer.

Supported Events and Services

The iWay Adapter for FIX supports two event models:

- Buyside events. For this event, the adapter picks up a file and passes it to an event variable within a business process. This event type can also receive a FIX message by listening at a specified host and port number.

- Sellside events. For this event, the adapter picks up a file and passes it to an event variable within a business process.

The iWay Adapter for FIX supports one type of service, a FIX service. Using this service, the adapter writes a file to your system.

Example

FIX Messaging

The following is an example of a FIX message:

```
8=FIX.4.2_9=73_35=D_11=555555555_21=2_55=BEAS_54=2_60=20020712-15:15:11_5
4=2_40=1_38=1000_10=122_
```

The XML representation of this message is:

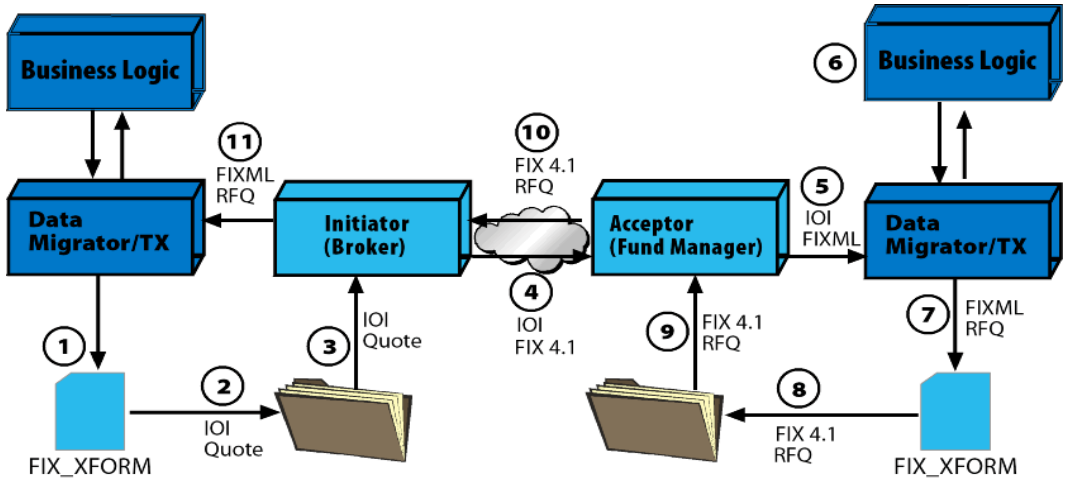
```
<Fix>
<BeginString>FIX.4.2</BeginString>
<BodyLength>73</BodyLength>
<MsgType>D</MsgType>
<ClOrdID>555555555</ClOrdID>
<HandlInst>2</HandlInst>
<Symbol>BEAS</Symbol>
<Side>2</Side>
<TransactTime>20020711-15:15:11</TransactTime>
<Side>2</Side>
<OrdType>1</OrdType>
<OrderQty>1000</OrderQty>
</Fix>
```

The use of XML as an integration “lingua franca” also promotes integration based on future FIXML standards. FIXML was devised in 1998 by FIX Protocol Ltd., the company responsible for the Financial Information Exchange (FIX) electronic communications protocol, as an XML vocabulary based on the FIX protocol. Its aim is to continue FIX's goal of improving the global trading process by facilitating the exchange of real-time securities transactions. In July 2001, the organization announced plans to team up with SWIFT, which had been working on its own swiftML XML initiative. The collaboration centers around plans to converge their messaging protocols to create an XML-based version of the ISO 15022 protocol for securities message types, which is being developed by the International Standards Organization (ISO). The resultant ISO 15022 XML is to leverage FIX Protocol's expertise in the pre-trade/trade execution domain and SWIFT's post-trade domain expertise to bring together different parts of the trade life cycle and work through issues hindering straight-through-processing (STP).

iWay Adapter for FIX and Workflows

This diagram assumes that both the Initiator (Seller) and the Acceptor (buyer) have Process Manager environments with the iWay Adapter for FIX installed.

The diagram illustrates the exchange of FIX messages as follows:



1. An indication of interest (IOI) is spawned on the Broker side by business logic established in the iWay 5.5 environment.
2. The IOI is transformed into FIX protocol and placed in a file repository.
3. The FIX IOI is picked up from the repository
4. The FIX IOI is sent to the Fund Manager
5. The FIX message is converted to FIXML by the adapter and passed to the iWay 5.5 environment.
6. The Fund Manager can apply business logic in its iWay 5.5 environment to decide whether to respond to the Broker.
7. If the decision is made to respond with a request for a quote (RFQ), the FIXML message is transformed to FIX protocol.
8. The FIX RFQ is placed in a file repository.
9. The FIX RFQ is picked up from the file repository.
10. The FIX RFQ is sent to the initiator.
11. The FIX message is transformed to FIXML by the adapter and exposed to business logic in the iWay 5.5 environment.

Background to the FIX Protocol

The Financial Information eXchange (FIX) protocol is a messaging protocol developed specifically for real-time electronic exchange of securities transactions. FIX is a public-domain, vendor-neutral specification owned and maintained by FIX Protocol, Ltd. The FIX Protocol organization strives to improve the global trading process by defining, managing, and promoting an open protocol for real-time, electronic communication between industry participants, while complementing industry standards.

FIX was created to support Equities trading, but has been extended to support trading other types of securities, such as Futures, Options, Derivatives, Fixed Income, and Foreign Exchange. FIX provides a single, extensible messaging protocol used between traders, brokerages, ECNs and exchanges. FIX furthers the industry's goal of Straight Through Processing and T+1 Trade Settlement.

Historically, security trading involved a great deal of voice communication and paperwork. The transfer process was both time consuming and error-prone. Automation of the trading life cycle started with the back office, and has improved the efficiency of the process significantly. However, continual pressures to shorten the trading life cycle, T+3 for example, have caused us to look to the front office for opportunities to improve the trading process. The technology to support electronic trading is now mainstream. However, until recently, the only protocol for formatting securities transactions existed in proprietary form, bundled with vendors' software. The FIX (Financial Information Exchange) Committee was formed to address this specific need and has developed a standardized message format for describing security transactions.

The FIX protocol is the established standard in electronic communications for sending indications, orders, and executions among major securities firms in the equities market. FIX has grown dramatically as major players continue to transfer their existing and new traffic to it. FIX is also a major player in growing international traffic, especially in Europe. The protocol is establishing itself as a de facto industry standard in the pre-trade equity trading process. The protocol is now the closest thing the securities industry has to a full-blown standard, and is expected to grow in usage, especially as it becomes a major factor in the industry's move towards Straight Through Processing.

FIX is flexible, having been used by firms for various functions, from Indications of Interest (IOIs) to administrative messages. FIX is also platform independent, and its benefits have been well reported. In keeping with these benefits, an entire new market inside financial services technology has opened. The Financial Information Exchange (FIX) Protocol is a message standard developed to facilitate the electronic exchange of information related to Equity and Fixed Income transactions. It is intended for use between brokers and institutions wishing to automate communications.

The message protocol, as defined, will support the following electronic conversations:

- Equity order submissions, cancellations and replacements

- Equity execution reporting
- Equity order status
- Equity trade allocation
- Indication of interest communication
- Completed trade advertisements
- Directed email and news messaging

The FIX protocol is defined at two levels: session and application. The session level is concerned with the delivery of data, while the application level defines business-related data content. This protocol is independent of the telecommunications protocol (X.25, asynch, internet, etc.) and medium chosen for electronic data delivery. In succinct terms, the FIX protocol is currently a specification only for the format data (also known as messages) to be exchanged for a given type of transaction.

Deployment Information for the iWay Adapter for FIX

The iWay Adapter for FIX works in conjunction with the following components:

- iWay Application Explorer

and either

- Integration Business Services Engine (iBSE)

or

- iWay Enterprise Connector for J2EE™ Connector Architecture (JCA)

iWay Application Explorer

iWay Application Explorer uses an explorer metaphor to browse the FIX system for metadata. The explorer enables you to create XML schemas and Web services for the associated object. In addition, you can create ports and channels to listen for events in FIX.

Deployment Information Roadmap

The following table lists the location of deployment information for the iWay Adapter for FIX. A description of the Integration Business Services Engine (iBSE) and the iWay Enterprise Connector for J2EE Connector Architecture (JCA) follow the table.

Deployed Component	For more information, see
iWay Application Explorer	• Chapters 3, 4, and 5 of this guide • i*Way Installation and Configuration for BEA WebLogic* • *iWay Servlet Application Explorer for BEA WebLogic User's Guide*
Integration Business Services Engine (iBSE)	• *iWay Installation and Configuration for BEA WebLogic* • *iWay Installation and Configuration*
iWay Enterprise Connector for J2EE Connector Architecture (JCA)	• *iWay Connector for JCA for BEA WebLogic User's Guide* • *iWay Installation and Configuration for BEA WebLogic*

The Integration Business Services Engine (iBSE)

The Integration Business Services Engine (iBSE) exposes—as Web services—enterprise assets that are accessible from adapters regardless of the programming language or the particular operating system.

iBSE simplifies the creation and execution of Web services when running:

- Custom and legacy applications
- Database queries and stored procedures
- Packaged applications
- Terminal emulation and screen-based systems
- Transactional systems

Web services is a distributed programming architecture that solves Enterprise Application Integration (EAI) hurdles that other programming models cannot. It enables programs to communicate with one another using a text-based, platform- and language-independent message format called XML.

Coupled with a platform and language independent messaging protocol called SOAP (Simple Object Access Protocol), XML enables application development and integration by assembling previously built components from multiple Web services.

The iWay Enterprise Connector for J2EE Connector Architecture (JCA)

The iWay Enterprise Connector for J2EE Connector Architecture (JCA) enables developers of JCA-compliant applications to deploy iWay adapters as JCA resources. The connector is supported on J2EE-compliant application servers, such as the BEA WebLogic Server.

The iWay Connector for JCA is distributed as a standard Resource Adapter Archive (RAR) for deployment to the application server. Thus, the connector can be used in systems that are non-compliant, although services such as pooled connections are not available.

CHAPTER 2

Generating Schemas for FIX Integration Objects

Topics:

- Understanding Metadata
- Schemas and Repositories
- Naming a Schema Repository

This section explains how metadata for your enterprise information system (EIS) is described, how to name a schema repository and the schema manifest, how to create a schema, and how to store directory and template files for transformations. After the metadata for your EIS is described, you can create and deploy application views using iWay Application Explorer.

Understanding Metadata

When you define an application view, you are creating an XML-based interface between iWay Application Explorer and an enterprise information system (EIS) or application within your enterprise. The iWay Adapter for FIX is used to define a file-based interface to applications within and outside of the enterprise. Many applications or information systems use file systems to store and share data. These files contain information required by other applications, and this information can be fed through the iWay Adapter for FIX.

For example, Excel is a widely used application that allows all types of professionals (from fund managers to administrative assistants) to collate information pertinent to their working environment. They can share this information with other applications using the adapter's transformation capability, which can convert a worksheet to XML, and to other business partners via an EDI stream.

Schemas and Repositories

You describe all the documents entering and exiting iWay Application Explorer using W3C XML schemas. These schemas describe each event arriving to and propagating out of an event, and each request sent to and each response received from a service. There is one schema for each event and two for each service (one for the request, one for the response). The schemas are usually stored in files with an .xsd extension.

The FIX jar file automatically generates repository directories and components.

Use iWay Application Explorer to access events and services, and to assign a schema to each event, request, and response. Assign each application view to a schema repository; you can assign several to the same repository.

iWay adapters all make use of a schema repository to store their schema information and present it to iAM. The schema repository is a directory containing:

- A manifest file that describes the event and service schemas.
- The corresponding schema descriptions.

To work with schemas, you must know how to:

- Name a schema repository.
- Create a schema.

Naming a Schema Repository

The schema repository has a three-part naming convention:

session_base_directory\adapter\connection_name

where:

session_base_directory

Is the schema's session base path, which represents a folder under which multiple sessions of schemas may be held.

adapter

Is the type of adapter (for example, FIX).

connection_name

Is a name representing a particular instance of the adapter type.

Mapping FIX Schemas

The iWay Adapter for FIX provides schemas that match each version of FIX supported by the adapter. The tag names used in the schemas reflect the naming conventions used in each version of the FIX standard. When choosing a schema to use for creating a FIXML message, be sure to choose the schema that matches the field definitions required for the FIXML message you are constructing.

For FIX field definitions, see the following URLs.

Fix Version	URL
4.0	http://www.fixprotocol.org/specification/xml/fiximate-40/index.html
4.1	http://www.fixprotocol.org/specification/xml/fiximate-41/index.html
4.2	http://www.fixprotocol.org/specification/xml/fiximate-42/index.html
4.3	http://www.fixprotocol.org/specification/xml/fiximate-43_with20020920Errata/index.html

CHAPTER 3

Creating Services for the iWay Adapter for FIX

- Overview
- Starting Servlet Application Explorer
- Establishing a Target for FIX
- Creating an XML Schema for FIX
- Generating a Business Service for FIX

This section describes how to create XML schemas or Web services for the iWay Adapter for FIX using Application Explorer.

Overview

The iWay Adapter for FIX provides interoperability between your application server and FIX services.

External applications that access FIX through the adapter use either XML schemas or Web services to pass data between the external application and the adapter. You can use Application Explorer to create the required XML schemas and Web services.

Application Explorer is a Web application running within a servlet container that is accessible through a Web browser. It is packaged as an archive located in the following directory:

```
drive:\iWay55\etc\setup\iwae.war
```

Application Explorer need not reside on the same system as the application system being accessed, but network access is required.

For more information on installing and configuring Application Explorer, see the *iWay Installation and Configuration for BEA WebLogic* manual.

Starting Servlet Application Explorer

Before you can use Servlet Application Explorer, you must start your application server.

Procedure **How to Start BEA WebLogic Server on Windows or on UNIX**

- To start BEA WebLogic Server on Windows:

  1. Click the Start menu.
  2. Select *Programs*, *BEA WebLogic Platform 8.1*, *User Projects, your domain for iWay,* and then, click *Start Server.*

- To start BEA WebLogic Server on UNIX or from a command line, type the following at the prompt:

  ```
  BEA_HOME/user_projects/domains/DOMAIN_NAME/startWebLogic.cmd
  ```

  where:

  BEA_HOME

  Is the directory where BEA WebLogic is installed.

  DOMAIN_NAME

  Is the domain you are using for iWay.

Procedure How to Open Servlet Application Explorer

To open Application Explorer:

1. Ensure that your application server is running.
2. Enter the following URL in your browser:

   `http://hostname:port/iwae/index.html`

   where:

   hostname

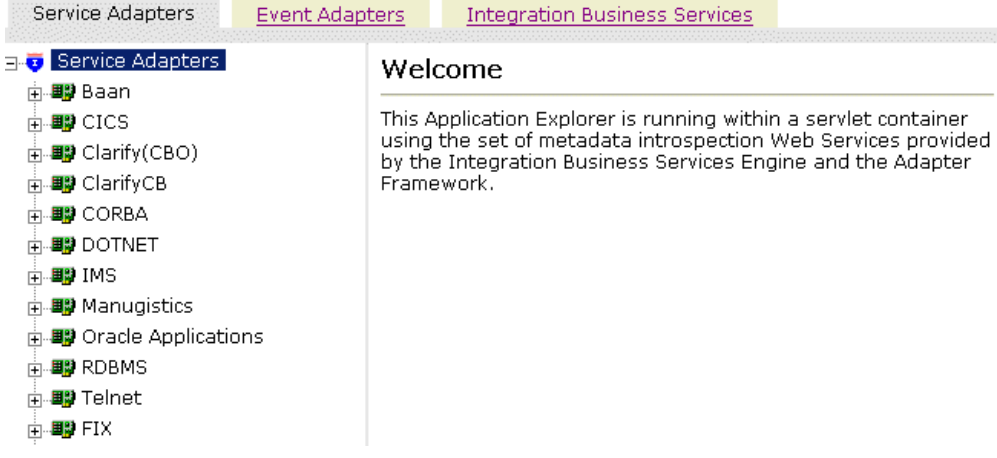
   Is the name of the machine where your application server is running.

   port

   Is the port number where your application server is listening.

   The port for the default domain is 7001.

   After you start Application Explorer, the following window opens.



   On the upper right, the Available Hosts drop-down list displays the Connector for JCA or Servlet iBSE instance you can access.

   For more information on adding instances, see the *iWay Installation and Configuration for BEA WebLogic* manual.

You are ready to create new targets for FIX.

Establishing a Target for FIX

To browse FIX, you must create a target for the system you intend to use. The target serves as your connection point and is automatically saved after you create it. You must establish a connection to this system every time you start Application Explorer or after you disconnect from the system.

When you open Application Explorer, a list of supported application systems appears in the left pane. The list is based on the iWay adapters that you installed and have licenses to use.

Creating a New Target

To connect to FIX for the first time, you must create a new target.

Procedure How to Create a New Target

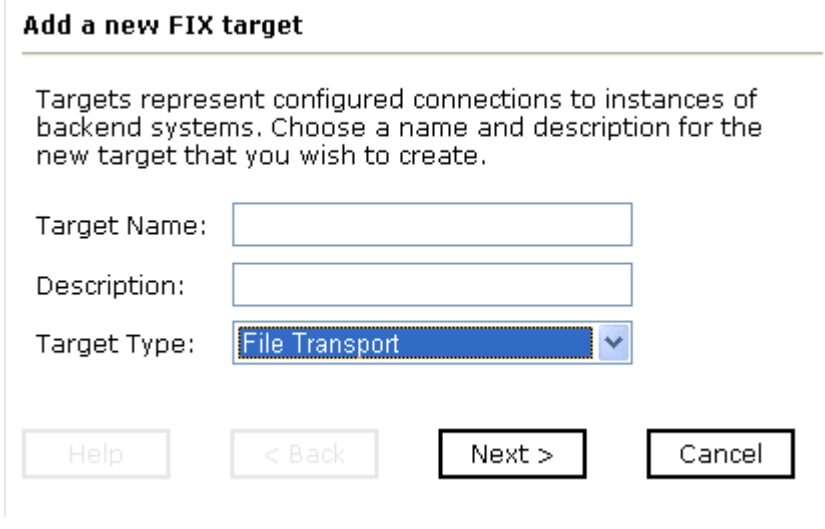
To create a new target using Application Explorer:

1. In the left pane, expand the *Service Adapters* node and click the *FIX* node.

   In the right pane, descriptive information for the adapter appears, for example, title and product version.

2. Move the pointer over *Operations* and select *Define a new target*.

   The Add a new FIX target pane opens on the right.



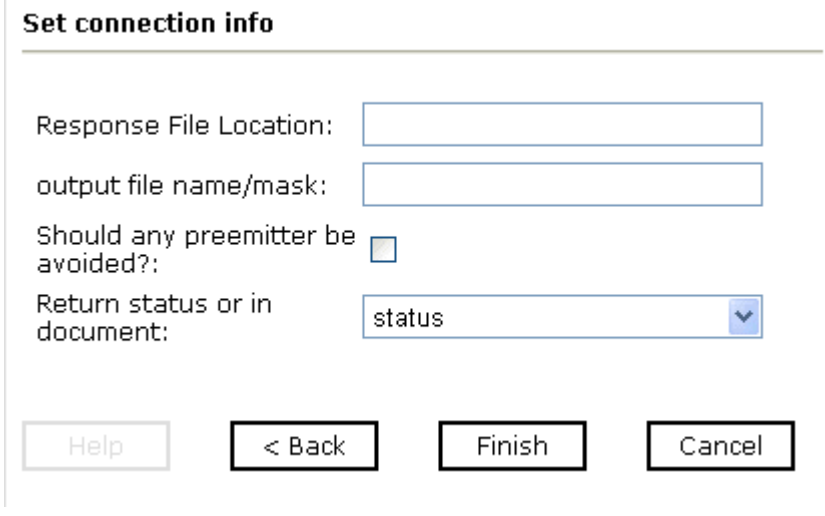
   a. In the Target Name field, type a descriptive name for the target, for example, FIXConnect.

   b. In the Description field, type a brief description for the connection (optional).

c. From the Target Type drop-down list, select *File Transport*.

3. Click *Next*.

The Set connection info pane opens on the right.



a. In the Response File Location field, type the location where the output of the service is placed.

b. In the Output file name/mask field, type a file pattern, which can contain an asterisk which gets expanded to a fine timestamp.

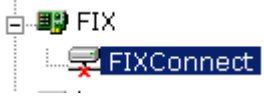
c. Select the Should any preemitter be avoided check box, if required.

d. From the Return status or in document drop-down list, select *Status* or *Input*.

The status document is the out document. The input document becomes the out document.

4. Click *OK*.

In the left pane, the FIX target, FIXConnect, appears below the FIX node.



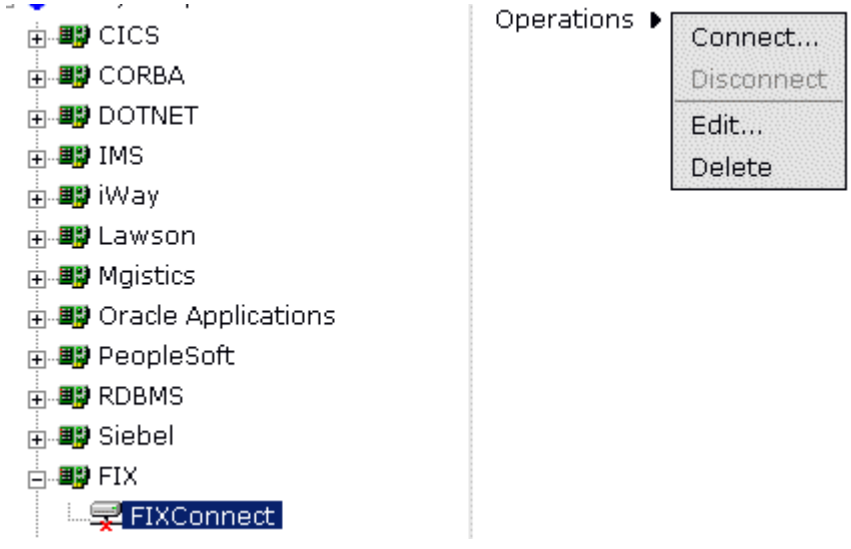
You are ready to connect to your FIX target.

Connecting to a Target

To connect to FIX, you must use the target you defined.

Procedure How to Connect to a Target

To connect to a target using Application Explorer:



1. In the left pane, expand the *Service Adapters* node and then the *FIX* node.
2. Select the target you defined, for example, FIXConnect.
3. In the right pane, move the pointer over *Operations* and select *Connect*.
4. Click *OK*.

   In the left pane, the FIXConnect node changes to reflect that a connection was made.

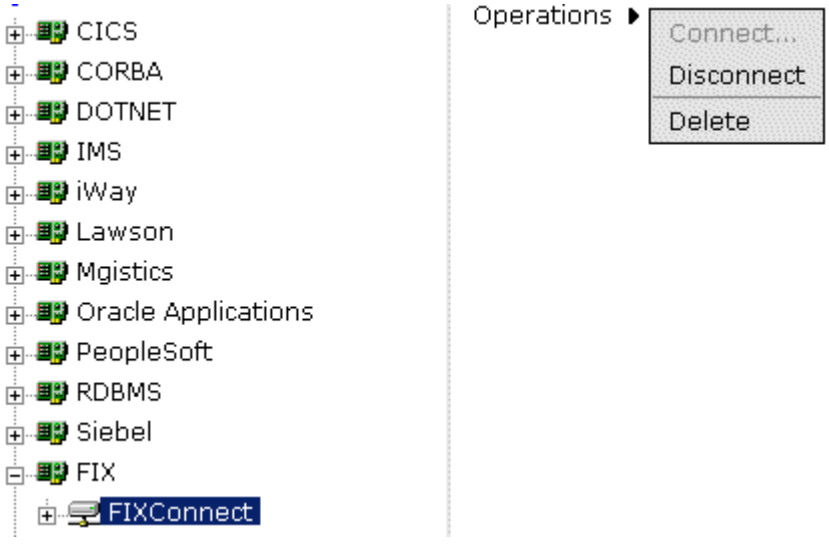
5. Expand the *FIXConnect* node.

Disconnecting From a Target

Although you can maintain multiple open connections to different application systems, it is recommended to close connections when you are not using them.

Procedure How to Disconnect From a Target

To disconnect from a target using Application Explorer:



1. From the left pane, click the target to which you are connected, for example, FIXConnect.
2. In the right pane, move the pointer over *Operations* and select *Disconnect*.

   Disconnecting from the application system drops the connection, but the node remains.

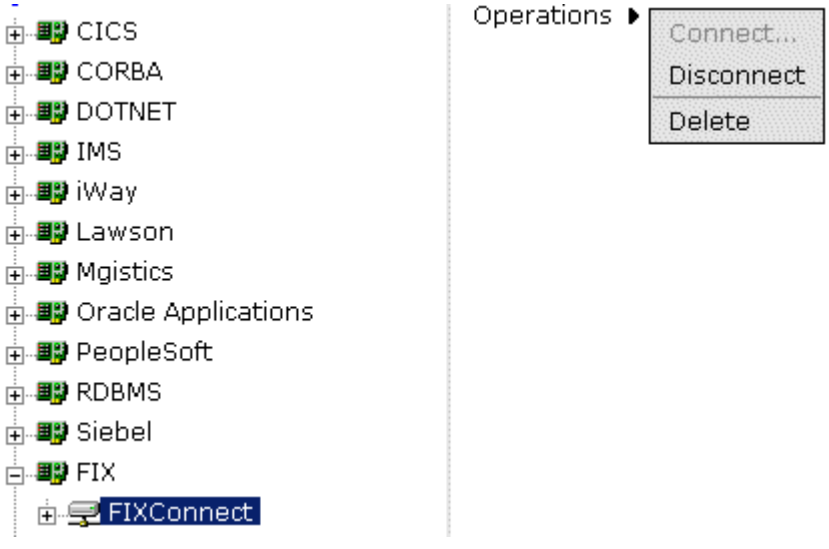
   The FIXConnect node in the left pane changes to reflect that a connection was closed.

Deleting a Target

In addition to closing a target, you can delete a target that is no longer required. You can delete it whether or not it is closed. If open, the target automatically closes before it is deleted.

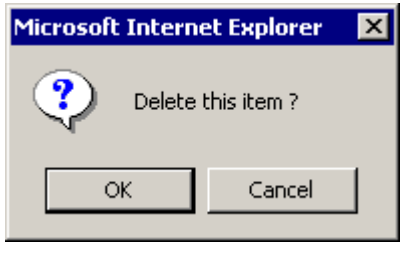
Procedure How to Delete a Target

To delete a target using Application Explorer:



1. In the left pane, click the target, for example, FIXConnect.
2. In the right pane, move the pointer over *Operations* and select *Delete*.

   The following Delete confirmation dialog box opens.



3. To delete the target you selected, click *OK*.

   The FIXConnect node disappears from the left pane.

Creating an XML Schema for FIX

After you are connected to FIX, Application Explorer enables you to explore and browse metadata. Application Explorer creates both the XML request schema and the XML response schema.

Note: In a J2EE Connector Architecture (JCA) implementation of iWay adapters, Web services are not available. When the adapters are deployed to use the iWay Connector for JCA, the Common Client Interface provides integration services using the iWay adapters. For more information, see the *iWay Installation and Configuration for BEA WebLogic* manual and the i*Way Connector for JCA for BEA WebLogic User's Guide*.

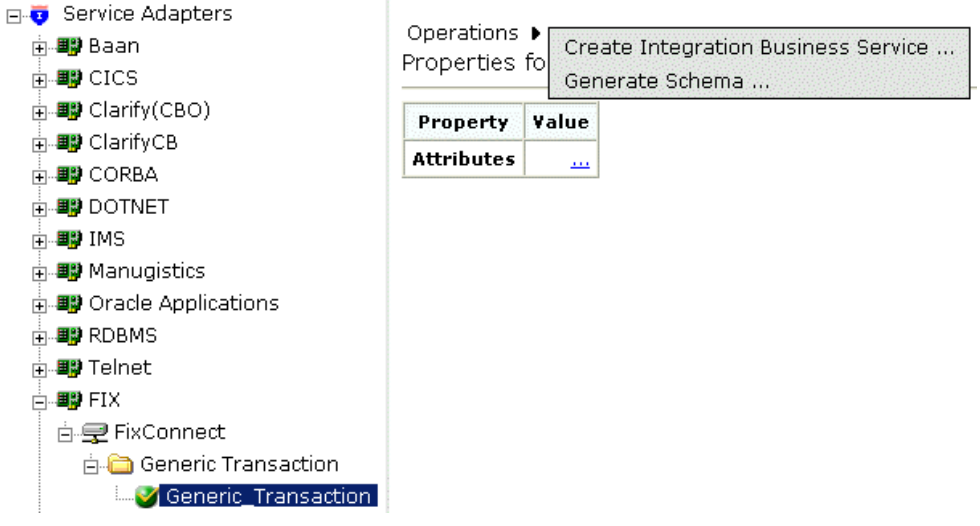
Creating a Request and a Response Schema

The following procedure explains how to create request and response schemas for FIX using Application Explorer.

Procedure How to Create a Request Schema and a Response Schema

To create a request and a response schema:

1. If you are not connected to a FIX target, connect to one, as described in *Establishing a Target for FIX* on page 3-4.
2. Expand the FIX node and select the node for which you want to create the schema.



3. In the right pane, move the pointer over *Operations* and select *Generate Schema*.

   Application Explorer creates the schemas.

Schemas

Part	Root Tag	Schema
Request	FIX	...
Response	emitStatus	...
Event	N/A	N/A
EventReply	N/A	N/A

Help OK Cancel

   A table defines the root tag for each schema and provides hyperlinks.

4. Click the hyperlink associated with the type of schema you want to view.

   For example, if you click the Request schema, the schema appears in the right pane.

```
<?xml version="1.0" encoding="UTF-8" ?>
<!--  Generated by the iBSE 2004-08-12T21:36:32Z
  -->
- <xs:schema
    xmlns:xs="http://www.w3.org/2001/XMLSchema"
    xmlns:eb="http://www.ebxml.org/namespaces/messa
    elementFormDefault="qualified"
    attributeFormDefault="unqualified">
  - <xs:element name="emitStatus">
    - <xs:complexType>
      - <xs:sequence>
          <xs:any minOccurs="0"
            maxOccurs="unbounded" />
        </xs:sequence>
      </xs:complexType>
    </xs:element>
  </xs:schema>
```

5. Click the *Back* button on your Web browser to return to the previous window.

   After you create schemas, you can generate a business service.

Generating a Business Service for FIX

You can generate a business service (also known as a Web service) for FIX. To generate a business service, you must deploy the adapter in a business services environment using Integration Business Services Engine (iBSE). iBSE exposes functionality as Web services and serves as a gateway to heterogeneous back-end applications and databases.

A Web service is a self-contained, modularized function that can be published and accessed across a network using open standards. It is the implementation of an interface by a component and is an executable entity. For the caller or sender, a Web service can be considered a "black box" that may require input and delivers a result. Web services can be integrated within an enterprise as well as across enterprises on any communication technology stack, whether asynchronous or synchronous, in any format.

You can make a Web service available to other services within a host server by generating WSDL (Web Services Description Language) from the Web service.

Ensure that the servlet iBSE is properly configured. For more information on installing and deploying iWay components, see the *iWay Installation and Configuration for BEA WebLogic* manual.

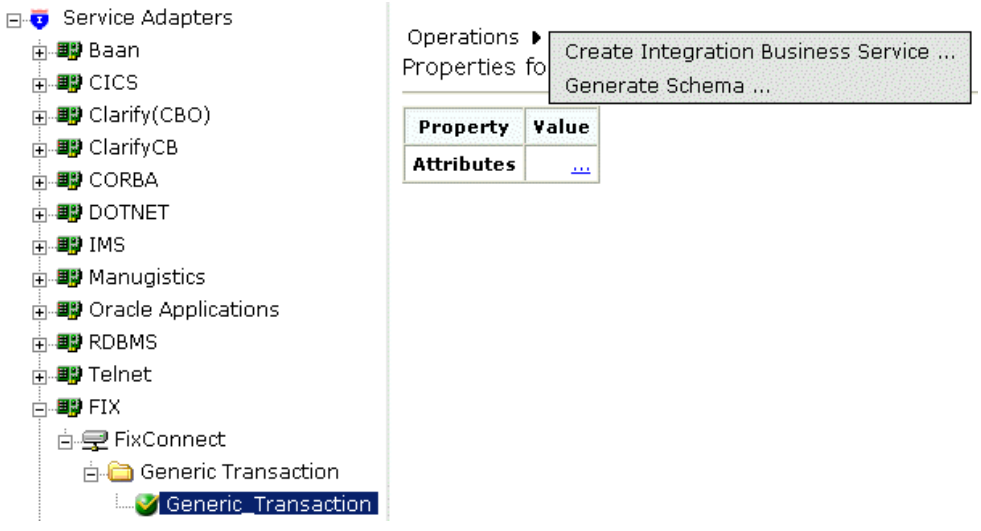
Note: In a J2EE Connector Architecture (JCA) implementation of iWay adapters, Web services are not available. When the adapters are deployed to use the iWay Connector for JCA, the Common Client Interface provides integration services using the iWay adapters. For more information, see the *iWay Installation and Configuration for BEA WebLogic* manual and the *iWay Connector for JCA for BEA WebLogic User's Guide*.

Procedure How to Create an Integration Business Service

To create an Integration Business Service for FIX:

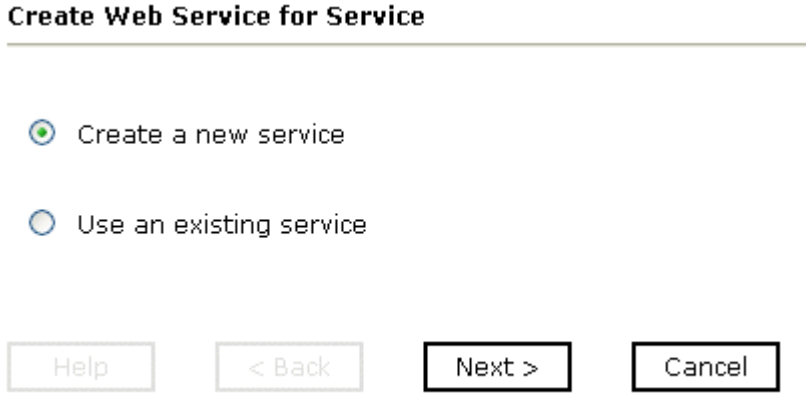
1. If you have not already done so, connect to a FIX target as described in *Establishing a Target for FIX* on page 3-4.

2. Expand the FIX node and select the interface for which you want to create a business service.



3. he right pane, move the pointer over *Operations* and select *Create Integration Business Service*.

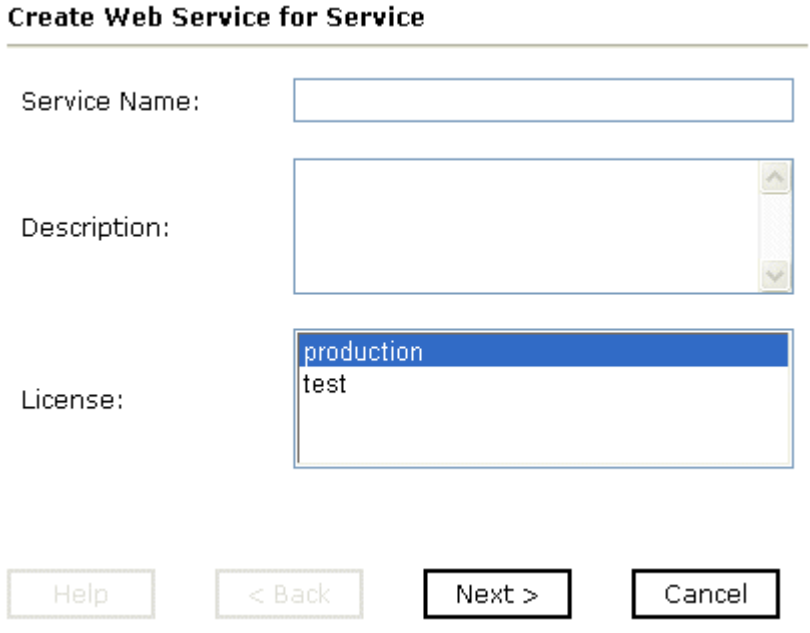
   The Create Web Service pane opens on the right.



4. Select the *Create a new service option* button or the *Use an existing service option button*.

5. Click *Next*.

If you select Create a new service, the following pane opens:

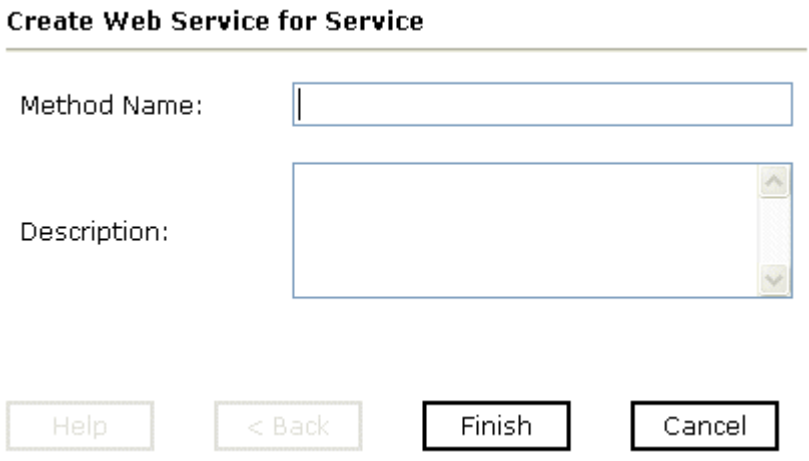


a. In the Service Name field, type a descriptive name for the Integration Business Service.

b. In the Description field, type a brief description of the Integration Business Service.

c. From the License list, select a license definition.

6. Click *Next*.



   a. In the Method Name field, type a descriptive name for the method.

   b. In the Description field, type a brief description of the method.

7. Click *Finish*.

   Application Explorer switches the view to the Integration Business Services tab, and the new business service appears in the left pane.

Testing a Business Service

After a business service is created, test it to ensure that it functions properly. iWay provides a test tool for testing the business service.

Procedure How to Test a Business Service

To test a business service:

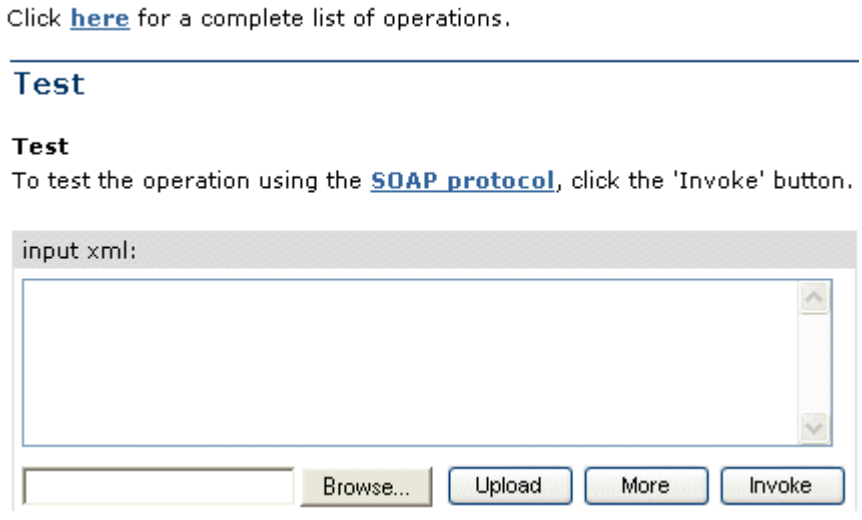
1. If you are not on the Integration Business Services tab of Application Explorer, click the tab to access business services.
2. If it is not expanded, expand the list of business services under Integration Business Services.
3. Expand the *Services* node.
4. Select the name of the business service you want to test.

   The business service name appears as a link in the right pane.

5. In the right pane, click the named business services link.

   The test option appears in the right pane.

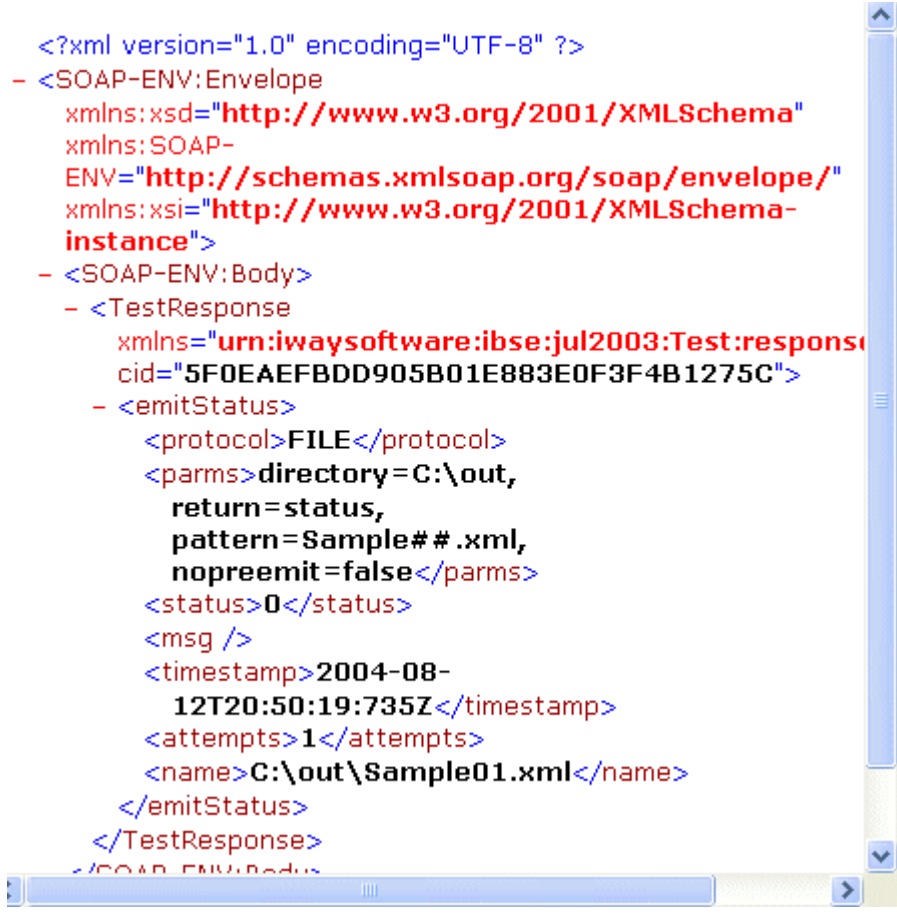
   If you are testing a business service that requires XML input, an input xml field appears.



6. In the input xml field, either type a sample XML document that queries the service, or browse to the location of an XML instance and click *Open*.
7. Click *Invoke*.

Application Explorer displays the results in the right pane.

The following graphic shows sample XML returned by the Integration Business Services Engine:



Example Testing a Business Service

The following is a sample XML document that you can use to test the business service:

```
<?xml version="1.0" encoding="UTF-8"
?><FIXMLMessage><Header><Sender><CompID>
............56
.........</CompID>
      </Sender><Target><CompID>
............B2B
.........</CompID>
      </Target><SendingTime>
.........20031119-22:32:58
......</SendingTime>
   </Header><ApplicationMessage><Order><ClOrdID>
............BUY1069281178615
.........</ClOrdID><HandInst Value="1"/><Instrument><Symbol>
..............C
............</Symbol>
         </Instrument><Side Value="1"/><OrderQuantity><OrderQty>
..............100
............</OrderQty>
         </OrderQuantity><OrderType><MarketOrder Value="1"/>
         </OrderType><OrderDuration><TimeInForce Value="0"/>
         </OrderDuration><Currency
Value="USD"/></Order></ApplicationMessage></FIXMLMessage>
```

CHAPTER 4

Listening for Events for the iWay Adapter for FIX

- Understanding Event Functionality
- Adding, Modifying, or Deleting a Port
- Adding, Modifying, or Deleting a Channel

This section describes how to use Servlet Application Explorer to connect to FIX and listen for events. Several port dispositions are available, and you can choose the technique that best suits your requirements.

Understanding Event Functionality

Events are generated as a result of activity in an application system. You can use events to trigger an action in your application. For example, FIX may generate an event when customer information is updated. If your application performs an action when this happens, your application is a consumer of this event.

After you create a connection to your application system, you can add events using Servlet Application Explorer. To create an event, you must create a port and a channel.

- **Port**

  A port associates a particular business object exposed by an adapter with a particular disposition. A disposition defines the protocol and location of the event data. The port defines the end point of the event consumption. For more information, see *Adding, Modifying, or Deleting a Port*.

- **Channel**

  A channel represents configured connections to particular instances of back-end or other types of systems. A channel binds one or more event ports to a particular listener managed by an adapter. For more information, see *Adding, Modifying, or Deleting a Channel* on page 4-17.

Adding, Modifying, or Deleting a Port

The following procedures describe how to create an event port using Servlet Application Explorer. You can create a port for FIX from the *Service Adapters* tab or from the Event Adapters tab.

When you use Application Explorer with an Integration Business Services Engine (iBSE) implementation, the following port dispositions are available:

- File
- iBSE
- MSMQ
- JMSQ
- SOAP
- HTTP
- MQ Series
- Mail

Note: The MAIL disposition option will be supported in a future release.

With a JCA implementation, the following port dispositions are available:

- File
- JMS
- MQ
- HTTP

Creating an Event Port for the File Disposition

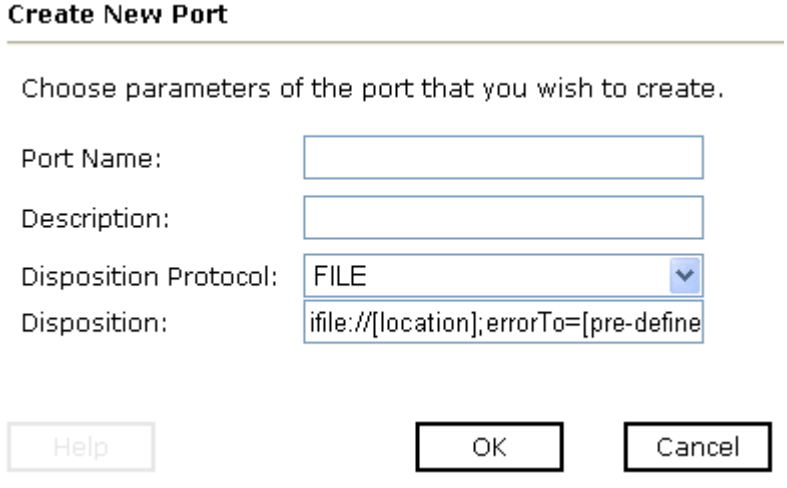
The File disposition uses a file URL to specify the destination file name or directory where the event document will be written. During run time, the destination file name may require indexing to avoid overwriting.

Procedure **How to Create an Event Port for the File Disposition**

To create a specific event port for the File disposition using Application Explorer:

1. Click the *Event Adapters* tab and expand the FIX node.
2. Select the *ports* node.
3. In the right pane, move the pointer over *Operations* and select *Add a new port*.

   The Create New Port pane opens on the right.



   a. In the Port Name field, type a name.
   b. In the Description field, type a brief description.
   c. From the Disposition Protocol drop-down list, select *FILE*.

d. In the Disposition field, type a File destination to which event data is written.

When pointing Application Explorer to an **iBSE** deployment, specify the destination file using the following format:

```
ifile://[location];errorTo=[pre-defined port name or another
disposition url]
```

When pointing Application Explorer to a **JCA** deployment, provide the full path to the directory.

The following table describes the parameters for the disposition.

Parameter	Description
location	The destination and filename of the document where event data will be written, for example, `ifile://D:\in\x.txt;errorTo=ifile://D:\error`.
errorTo	Predefined port name or another disposition URL to which error logs are sent.

4. Click *OK*.

The port appears under the ports node in the left pane. In the right pane, a table appears that summarizes the information associated with the event port you created.

You are ready to associate the event port with a channel. For more information, see *Adding, Modifying, or Deleting a Channel* on page 4-17.

Creating an Event Port for the iBSE Disposition

The iBSE disposition enables an event to launch an Integration Business Service Method.

Procedure How to Create a Port for the iBSE Disposition

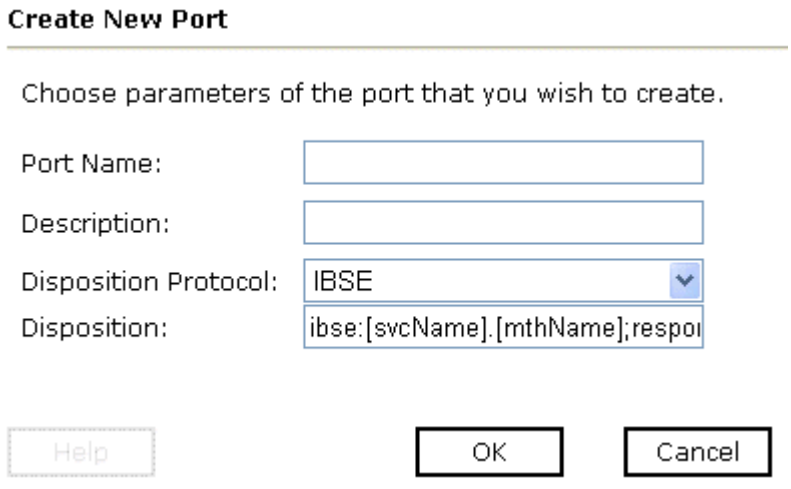
To create a port for an iBSE disposition using Application Explorer:

1. Click the *Event Adapters* tab and expand the FIX node.

2. Select the *ports* node.

3. In the right pane, move the pointer over *Operations* and select *Add a new port*.

The Create New Port pane opens on the right.



a. In the Port Name field, type a name.

b. In the Description field, type a brief description.

c. From the Disposition Protocol drop-down list, select *IBSE*.

d. In the Disposition field, enter an iBSE destination in the form of:

```
ibse:svcName.mthName;responseTo=[pre-defined port name or another
disposition url];errorTo=[pre-defined port name or another
disposition url]
```

The following table defines the parameters for the disposition.

Parameter	Description
svcName	Name of the service created with iBSE.
mthName	Name of the method created for the Web service.
responseTo	Location where responses to the Web service are posted. A predefined port name or another full URL. Optional.
errorTo	Location where error documents are sent. A predefined port name or another full URL. Optional.

4. Click *OK*.

The port appears under the ports node in the left pane. In the right pane, a table appears that summarizes the information associated with the event port you created.

Operations ▸	
Port Name	FixiBSE
Description	
Disposition	ibse:[svcName].[mthName];responseTo=[pre-defined port name or another disposition url];errorTo=[pre-defined port name or another disposition url]
Target	FIX

You are ready to associate the event port with a channel. For more information, see *Adding, Modifying, or Deleting a Channel* on page 4-17.

Creating an Event Port for the MSMQ Disposition

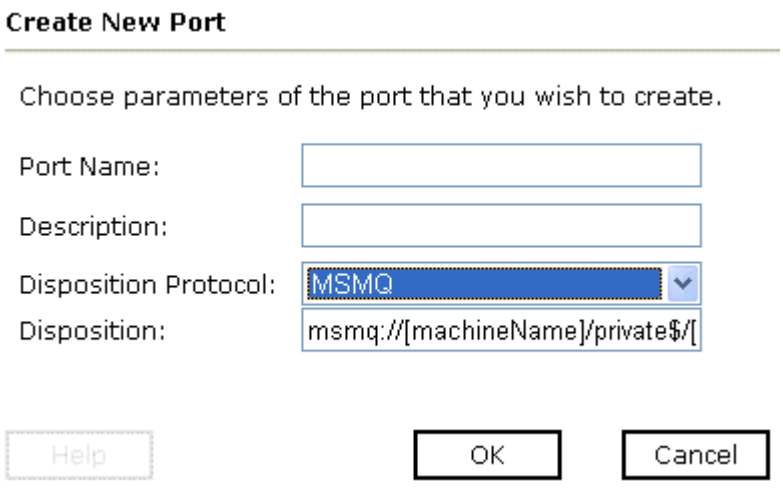
The MSMQ disposition supports public and private queues.

Procedure How to Create a Port for the MSMQ Disposition

To create a port for an MSMQ disposition using Application Explorer:

1. Click the *Event Adapters* tab and expand the FIX node.
2. Select the *ports* node.
3. In the right pane, move the pointer over *Operations* and select *Add a new port*.

The Create New Port pane opens on the right.



a. In the Port Name field, type a name.

b. In the Description field, type a brief description.

c. From the Disposition Protocol drop-down list, select *MSMQ*.

d. In the Disposition field, enter an MSMQ destination in the format:

```
msmq:/host/queueType/queueName[;errorTo=errorDest]
```

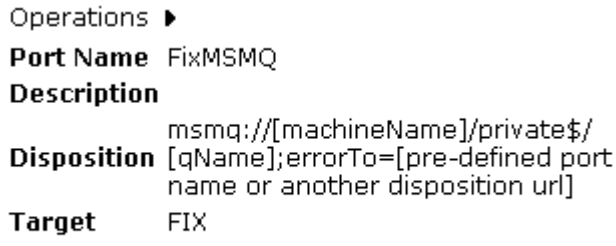
The following table defines the disposition parameters.

Parameter	Description
host	The name of the host on which the Microsoft Queuing system runs.
queueType	The type of queue. For private queues, enter Private$. Private queues are queues that are not published in Active Directory. They appear only on the local computer that contains them. Private queues are accessible only by Message Queuing applications that recognize the full path name or format name of the queue.
queueName	The name of the queue in which messages are placed.

Parameter	Description
errorDest	The location to which error logs are sent. This is optional. This can be a pre-defined port name or another disposition URL. The URL must be complete, including the protocol.

4. Click *OK*.

   The port appears under the ports node in the left pane. In the right pane, a table appears that summarizes the information associated with the event port you created.



   You are ready to associate the event port with a channel. For more information, see *Adding, Modifying, or Deleting a Channel* on page 4-17.

Creating an Event Port for the JMS Queue Disposition

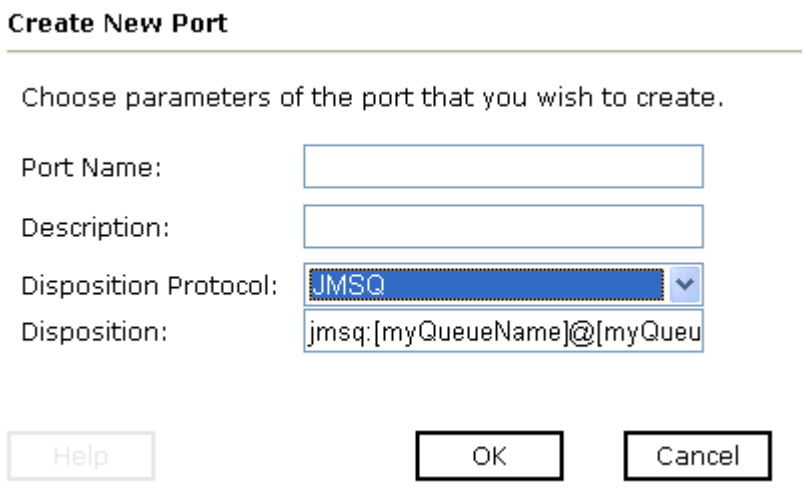
The JMS queue disposition allows an event to be enqueued to a JMS queue.

Procedure How to Create a Port for the JMS Queue Disposition

To create a port for a JMS queue disposition using Application Explorer:

1. Click the *Event Adapters* tab and expand the FIX node.
2. Select the *ports* node.
3. In the right pane, move the pointer over *Operations* and select *Add a new port*.

The Create New Port pane opens on the right.



a. In the Port Name field, type a name.

b. In the Description field, type a brief description.

c. From the Disposition Protocol drop-down list, select *JMSQ*.

d. In the Disposition field, enter a JMS destination.

When pointing Application Explorer to an **iBSE** deployment, use the following format:

```
jmsq:myQueueName@myQueueFac;jndiurl=[myurl];jndifactory=[myfactory
];user=[user];password=[xxx];errorTo=[pre-defined port name or
another disposition url]
```

When pointing Application Explorer to a **JCA** deployment, use the following format:

```
jms:jmsqueue@jmsfactory;jndiurl=;jndifactory=;
```

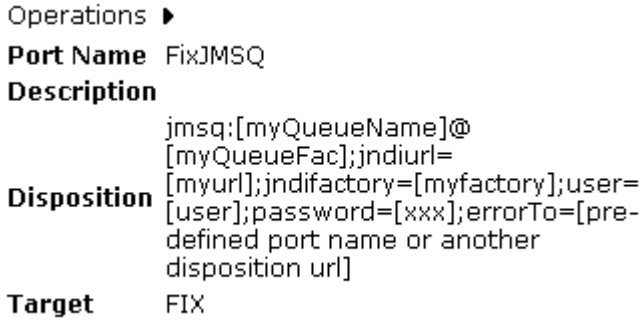
The following table defines the parameters for the disposition.

Parameter	Description
queue	Name of a queue to which events are emitted.
Connection Factory	A resource that contains information about the JMS Server. The WebLogic connection factory is: `javax.jms.QueueConnectionFactory`

Parameter	Description
jndi_url	The URL of the application server. For BEA WebLogic Server, the URL is `t3://host:port` where: *host* Is the machine name where BEA WebLogic Server resides. *port* Is the port on which BEA WebLogic Server is listening. The default port, if not changed at installation, is 7001.
jndi_factory	Is JNDI context.INITIAL_CONTEXT_FACTORY and is provided by the JNDI service provider. For WebLogic Server, the WebLogic factory is weblogic.jndi.WLInitialContextFactory.
user	A user ID associated with this queue.
password	The password for this user ID.
errorTo	The location where error logs are sent. Optional. A predefined port name or another disposition URL. The URL must be complete, including the protocol.

4. Click *OK*.

The port appears under the ports node in the left pane. In the right pane, a table appears that summarizes the information associated with the port you created.



You are ready to associate the event port with a channel. For more information, see *Adding, Modifying, or Deleting a Channel* on page 4-17.

Procedure How to Create a Port for the SOAP Disposition

To create a port for a SOAP disposition:

1. Click the *Event Adapters* tab.

   The iWay Event Adapters window opens.

2. In the left pane, expand the *FIX* node.

3. Select the *ports* node.

4. Move the pointer over *Operations* and select *Add a new port*.

   The Create Event Port window opens in the right pane.

   a. Type a name for the event port and provide a brief description.

   b. From the Disposition Protocol drop-down list, select *SOAP*.

   c. In the Disposition field, enter an SOAP destination, using the following format:

   ```
   soap:[wsdl-url];soapaction=[myaction];responseTo=[pre-defined port name or another disposition URL];errorTo=[pre-defined port name or another disposition url]
   ```

   The following table defines the parameters for the disposition.

Parameter	Description
wsdl-url	The URL to the WSDL file that is required to create the SOAP message. For example: `http://localhost:7001/ibse/IBSEServlet/test/sw2xml2003MQ.ibs?wsdl` This value can be found by navigating to the Integration Business Services tab and opening the *Service Description* link in a new window. The WSDL URL appears in the Address field. You can also open the WSDL file in a third party XML editor (for example, XMLSPY) and view the SOAP request settings to find this value.

Parameter	Description

soapaction	The method that will be called by the disposition. For example:
	`FIXMT200.mt200Request@test@@`
	where
	`FIX`
	Is the name of the Web service you created using Application Explorer.
	`mt200`
	Is the method being used.
	`test`
	Is the license that is being used by the Web service.
	This value can be found by navigating to the Integration Business Services tab and opening the *Service Description* link in a new window. Perform a search for *soapAction*.
	You can also open the WSDL file in a third party XML editor (for example, XMLSPY) and view the SOAP request settings to find this value.

responseTo	The location to which responses are posted. A predefined port name or another full URL. Optional. A predefined port name or another disposition URL. The URL must be complete, including the protocol.
errorTo	The location to which error logs are sent. Optional. A predefined port name or another disposition URL. The URL must be complete, including the protocol.

5. Click *OK*.

The event port appears under the ports node in the left pane. In the right pane, a table appears that summarizes the information associated with the event port you created.

You are ready to associate the event port with a channel. For more information, see *Adding, Modifying, or Deleting a Channel* on page 4-17.

Creating an Event Port for the HTTP Disposition

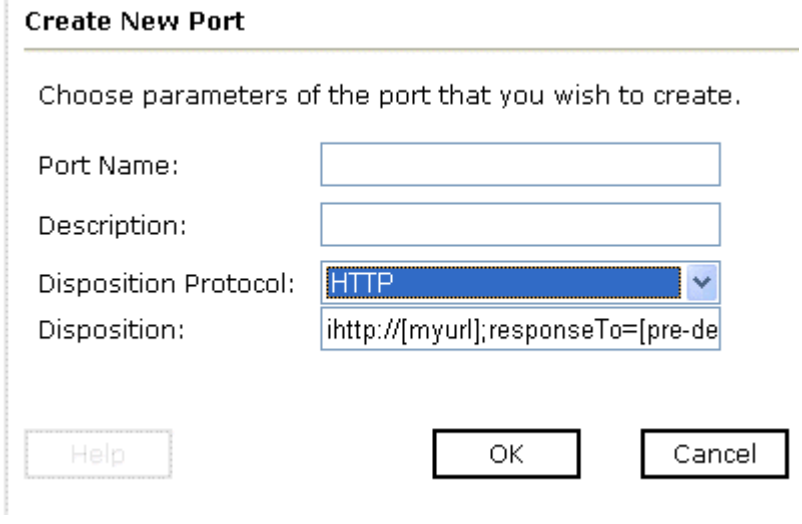
The HTTP disposition uses an HTTP URL to specify an HTTP end point to which the event document is posted.

Procedure How to Create a Port for the HTTP Disposition

To create a port for an HTTP disposition using iWay Application Explorer:

1. Click the *Event Adapters* tab and expand the FIX node.
2. Select the *ports* node.
3. In the right pane, move the pointer over *Operations* and select *Add a new port*.

   The Create New Port pane opens on the right.



   a. In the Port Name field, type a name.
   b. In the Description field, type a brief description.
   c. From the Disposition Protocol drop-down list, select *HTTP*.
   d. In the Disposition field, enter a HTTP destination.

   When pointing Application Explorer to an **iBSE** deployment, use the following format:

```
ihttp://[myurl];responseTo=[pre-defined port name or another
disposition url];
```

   where:

   url

   Is the URL target for the post operation, for example,

```
http://myhost:1234/docroot
```

   responseTo

   Is the location where responses are posted, if desired.

When pointing Application Explorer to a **JCA** deployment, use the following format:

```
http://host:port/uri
```

where:

host:port

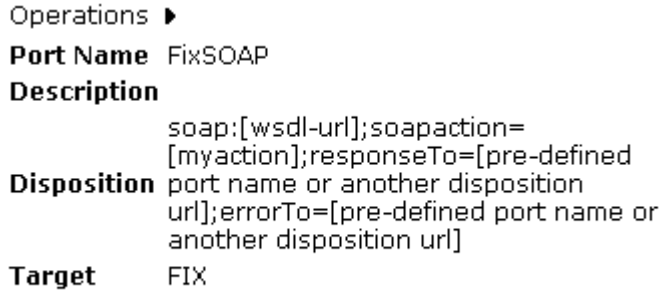
Is the combination of the name of the host on which the Web server resides and the port on which the server is listening for the post operation.

uri

Is the universal resource identifier that completes the url specification.

4. Click *OK*.

The port appears under the ports node in the left pane. In the right pane, a table appears that summarizes the information associated with the event port you created.



You are ready to associate the event port with a channel. For more information, see *Adding, Modifying, or Deleting a Channel* on page 4-17.

Creating an Event Port for the MQSeries Disposition

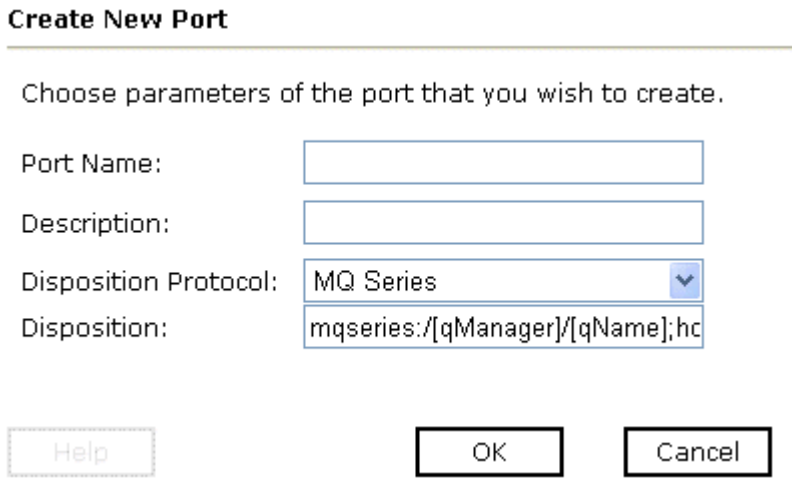
The MQSeries disposition enables an event to be enqueued to an MQSeries queue. Both queue manager and queue name may be specified.

Procedure How to Create a Port for the MQSeries Disposition

To create a port for an MQSeries disposition using iWay Application Explorer:

1. Click the *Event Adapters* tab and expand the FIX node.
2. Select the *ports* node.
3. In the right pane, move the pointer over *Operations* and select *Add a new port*.

The Create New Port pane opens on the right.



a. In the Port Name field, type a name.

b. In the Description field, type a brief description.

c. From the Disposition Protocol drop-down list, select *MQSeries*.

d. In the Disposition field, enter a MQSeries destination.

When pointing Application Explorer to an **iBSE** deployment**,** use the following format:

```
mqseries:/qManager/qName;host=[hostname];port=[port];channel=[channnel
name];errorTo=[pre-defined port name or another disposition url]
```

When pointing Application Explorer to a **JCA** deployment, use the following format:

```
mq:qmanager@respqueue;host=;port=;channel=
```

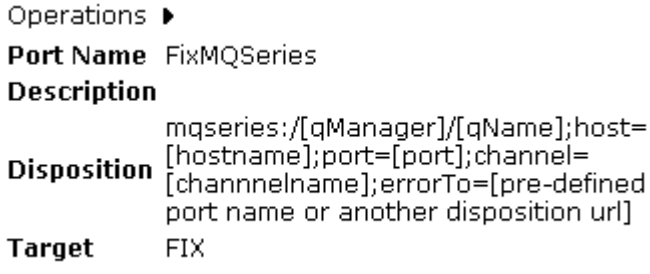
The following table defines the parameters for the disposition.

Parameter	Description
qManager	Name of the queue manager to which the server must connect.
qName or respqueue	Name of the queue where messages are placed.
host	Host on which the MQ server is located (for the MQ Client only).

Parameter	Description
port	Number to connect to an MQ server queue manager (for the MQ client only).
channel	Case-sensitive name of the channel that connects with the remote MQ server queue manager (for the MQ client only). The default channel name for MQSeries is SYSTEM.DEF.SVRCONN.
errorTo	Location where error documents are sent. A predefined port name or another full URL. Optional.

4. Click *Finish*.

   The port appears under the ports node in the left pane. In the right pane, a table appears that summarizes the information associated with the event port you created.



   You are ready to associate the event port with a channel. For more information, see *Adding, Modifying, or Deleting a Channel* on page 4-17.

Editing an Event Port

You can edit an existing event port.

Procedure How to Edit an Event Port

To edit an event port:

1. Select the event port you want to edit.
2. In the right pane, move the pointer over *Operations* and select *Edit*.

   The Edit Port pane opens on the right.
3. Make the required changes to the event port configuration fields.
4. Click *OK*.

Deleting an Event Port

You can delete an existing event port.

Procedure How to Delete an Event Port

To delete an event port:

1. Select the event port you want to delete.
2. In the right pane, move the pointer over *Operations* and select *Delete*.

   The following confirmation dialog box opens.

3. To delete the event port you selected, click *OK*.

   The event port disappears from the list in the left pane.

Adding, Modifying, or Deleting a Channel

The following topics describe how to create, modify, or remove a channel for your event adapter. All defined event ports must be associated with a channel.

Creating a Channel

You can create a channel using iWay Servlet Application Explorer. The following procedure also describes how to start or stop a channel.

You can create the following types of channels using iWay Servlet Application Explorer:

- FIX Buyside
- FIX Sellside

Procedure How to Create a Channel for FIX Buyside

To create a channel for FIX Buyside using Application Explorer:

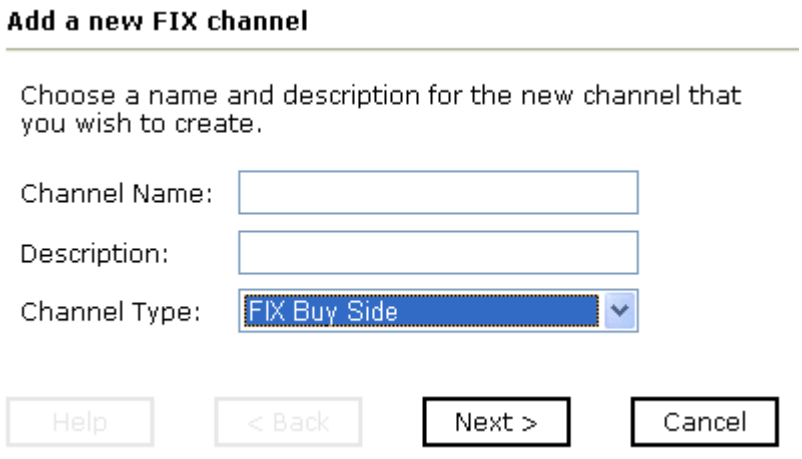
1. Click the *Event Adapters* tab and expand the *FIX* node.

   The ports and channels nodes appear in the left pane.

2. Select the *channels* node.

3. In the right pane, move the pointer over *Operations* and select *Add a new channel*.

The Add a new FIX channel pane opens on the right.



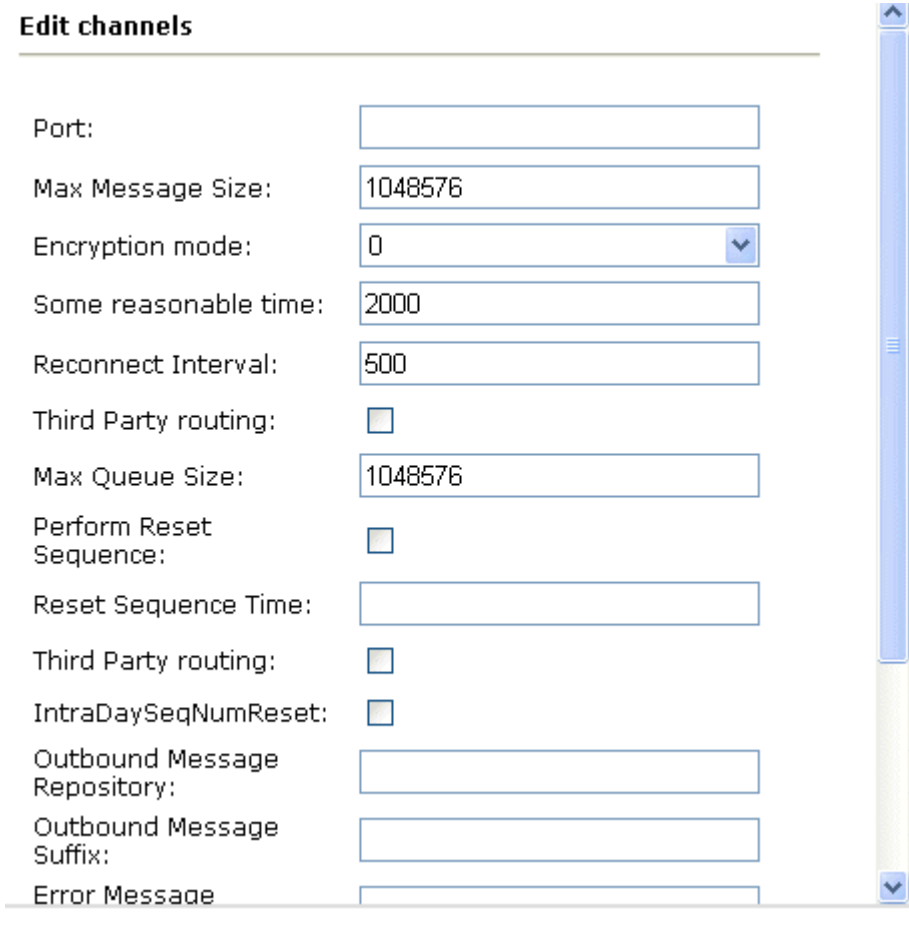
a. In the Channel Name field, type a name, for example, FIX_Buy.

b. In the Description field, type a brief description.

c. From the Channel Type drop-down list, select *FIX Buy Side*.

4. Click *Next*.

The Edit channels pane open.



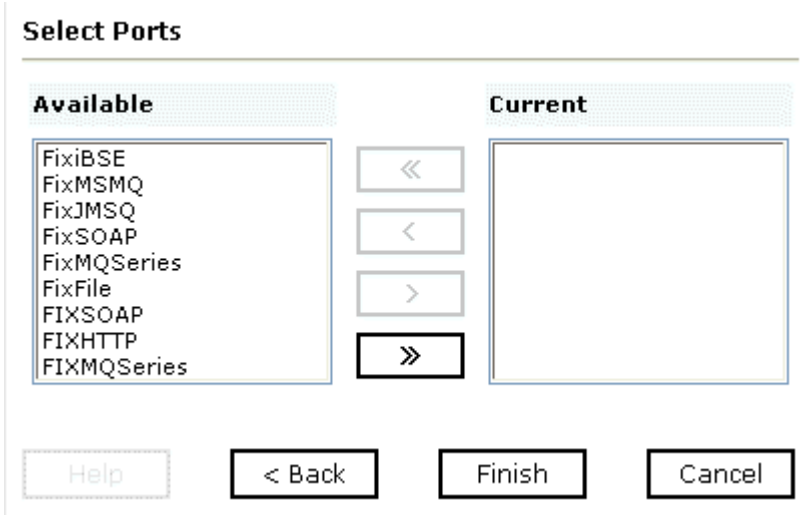
5. Enter values for the parameters listed in the following table.

Parameter	Description
Port	Port number of Sellside (sending counterparty).
Max Message Size	The maximum size of the FIX message.
Encryption mode	Encryption method. The supported values are 0, 2, or 5.
Some Reasonable Time	The time within which the business response is expected to be sent to the counterparty. For example, when in Sellside mode, this is the time waited for a response from Buyside.

Parameter	Description
Reconnect Interval	The frequency in seconds to retry the connection if it fails for external causes.
Max Queue Size	Maximum size of the FIX queue.
Perform Reset Sequence	The sequence reset message is used by the sending application to reset the incoming sequence number on the opposing side.
Reset Sequence Time	Frequency with which the sequence reset message is used.
Third Party Routing	Select the check box if third party routing is required.
IntraDaySeqNumReset	Specifies whether to reset sequence number after logout.
Outbound Message Repository	Repository in which outbound messages are stored.
Outbound Message Suffix	Suffix of outbound messages.
Error Message Repository	Repository in which error messages are stored.
Polling Location	The target file system location for the FIX XML file.
Log File Directory	Directory to which log files are written.

6. Click *Next*.

The Select Ports pane opens on the right, with available and current ports.



a. Select an event port from the list of current ports.

b. Click the single right arrow button to transfer the port to the list of available ports. To associate all the event ports, click the double right arrow button.

7. Click *Finish*.

The summary window opens.

A summary provides the channel description, channel status, and available ports. All the information is associated with the channel you created.

The channel also appears under the channels node in the left pane. An X over the icon indicates that the channel is currently disconnected. You must start the channel to activate your event configuration.

8. In the right pane, move the pointer over *Operations* and select *Start the channel*.

The channel you created becomes active.

The X that was over the icon disappears.

9. To stop the channel, move the pointer over *Operations* and select *Stop the channel*.

Procedure How to Create a Channel for FIX Sellside

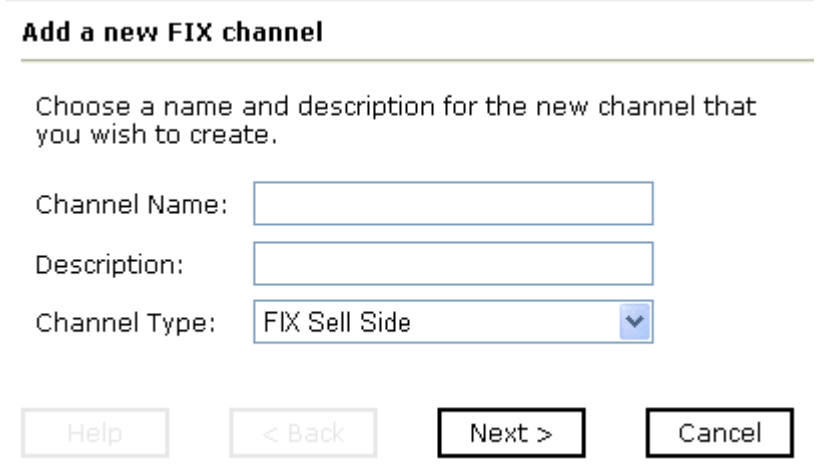
To create a channel using Application Explorer:

1. Click the *Event Adapters* tab and expand the *FIX* node.

The ports and channels nodes appear in the left pane.

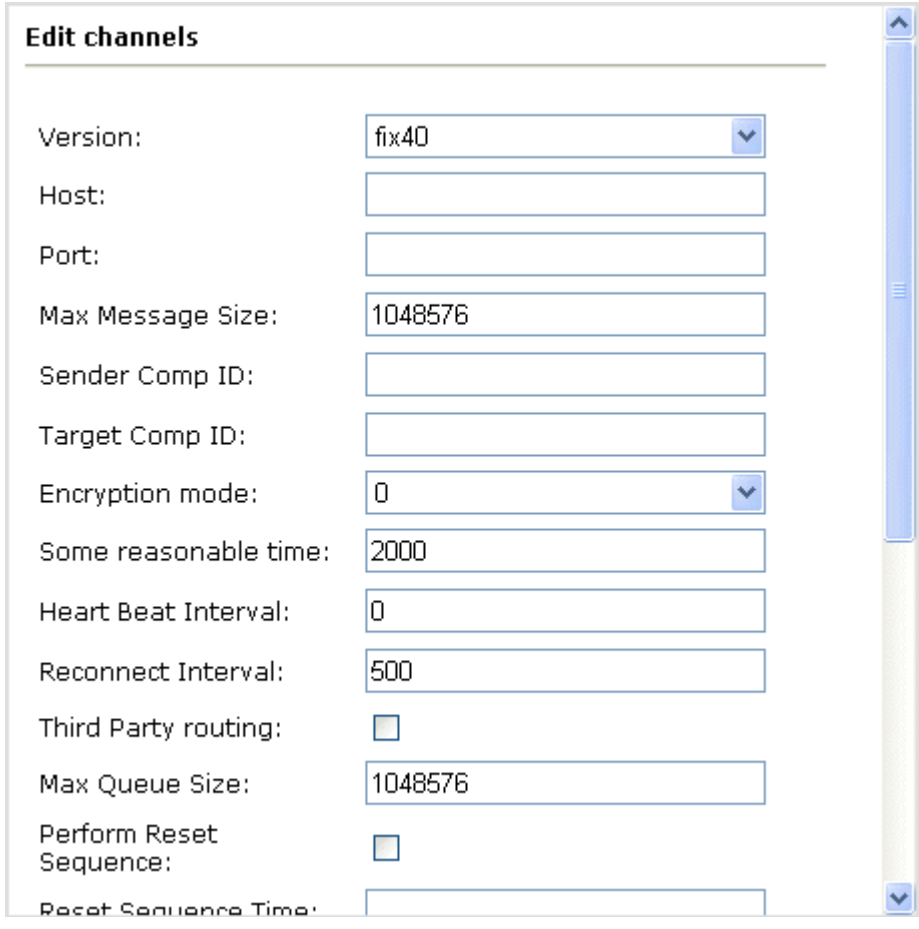
2. Select the *channels* node.
3. In the right pane, move the pointer over *Operations* and select *Add a new channel*.

   The Add a new FIX channel pane opens on the right.



   a. In the Channel Name field, type a name, for example, FIX_Sell.
   b. In the Description field, type a brief description.
   c. From the Channel Type drop-down list, select *FIX Sell Side*.
4. Click *Next*.

The Edit channels pane opens.



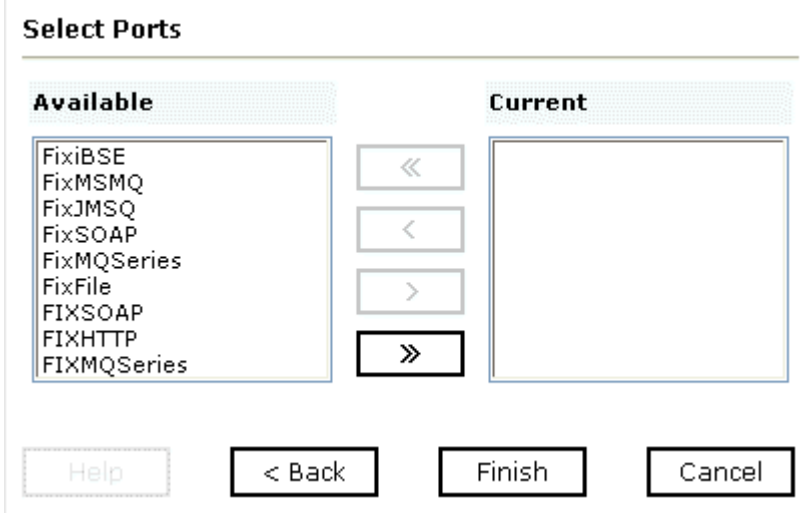
5. Enter values for the parameters listed in the following table.

Parameter	Description
Version	From the drop-down list, select the version of FIX you require. FIX versions 4.0, 4.1, 4.2, and 4.3 are supported.
Host	Host name of receiving counterparty.
Port	Port number of receiving counterparty.
Max Message	Enter the interval, in seconds, at which to check for new input. 2 seconds is the default value.

Parameter	Description
Sender Comp ID	Value used to identify a counterparty sending message.
Target Comp ID	Value used to identify a counterparty receiving message.
Encryption mode	Encryption method. The supported values are 0, 2, or 5.
Some Reasonable Time	The time within which the business response is expected to be sent to the counterparty. For example, when in Sellside mode, this is the time waited for a response from Buyside.
Heart Beat Interval	Monitors the status of the communication link. Set the heart beat interval in seconds.
Reconnect Interval	The frequency in seconds to retry the connection if it fails for external causes.
Third Party Routing	Select the check box if third party routing is required.
Max Queue Size	Maximum size of the FIX queue.
Perform Reset Sequence	Select the check box to set the Reset Sequence number process.
Reset Sequence Time	Time in which the Recess Sequence process is run.
IntraDaySeqNumReset	Specifies whether to reset sequence number after logout.
Application Message Format	Defines the format of the FIX message delivered to the application.
Outbound Message Repository	Directory in which outbound messages are stored.
Outbound Message Suffix	Suffix of outbound messages.
Error Message Repository	Directory in which error messages are stored.
Polling Interval	Interval, in seconds, at which to check for new input.
Log File Directory	Directory in which log files are stored.

6. Click *Next*.

   The Select Ports pane opens on the right, with available and current ports.



   a. Select an event port from the list of current ports.

   b. Click the single right arrow button to transfer the port to the list of available ports. To associate all the event ports, click the double right arrow button.

7. Click *Finish*.

   The summary window opens.

   A summary provides the channel description, channel status, and available ports. All the information is associated with the channel you created.

   The channel also appears under the channels node in the left pane. An X over the icon indicates that the channel is currently disconnected. You must start the channel to activate your event configuration.

8. In the right pane, move the pointer over *Operations* and select *Start the channel*.

   The channel you created becomes active.

   The X that was over the icon disappears.

9. To stop the channel, move the pointer over *Operations* and select *Stop the channel*.

Modifying a Channel

You can edit an existing channel.

Procedure How to Edit a Channel

To edit an existing channel:

1. In the left pane, select the channel you want to edit.
2. In the right pane, move the pointer over *Operations* and select *Edit*.
3. Make the required changes to the channel configuration fields and click *Finish*.

Deleting a Channel

You can remove an existing channel.

Procedure How to Delete a Channel

To delete an existing channel:

1. In the left pane, select the channel you want to delete.
2. In the right pane, move the pointer over *Operations* and select *Delete*.

   The following confirmation dialog box opens.

3. To delete the channel you selected, click *OK*.

   The channel disappears from the list in the left pane.

CHAPTER 5

Using Web Services Policy-Based Security

Topics:

- iWay Business Services Policy-Based Security
- Configuring iWay Business Services Policy-Based Security

Servlet Application Explorer provides a security feature called iWay Business Services policy-based security. The following topics describe how this feature works and how to configure it.

Note: For the iWay 5.5 RG2 Release, it is recommended that policy-based security not be enabled.

iWay Business Services Policy-Based Security

iWay Business Services provide a layer of abstraction between the back-end business logic they invoke and the user or application running the business service. This enables easy application integration but raises the issue of controlling the use and execution of critical and sensitive business logic that is run as a business service.

Servlet Application Explorer controls the use of business services that use adapters with a feature called policy-based security. This feature enables an administrator to apply *policies* to iWay Business Services (iBS) to deny or permit their execution.

A *policy* is a set of privileges associated with the execution of a business service that can be applied to an existing or new iBS. When you assign specific rights or privileges inside a policy, you need not recreate privileges for every iBS that has security issues in common with other iWay Business Services. Instead, you can use one policy for many iWay Business Services.

The goal is to secure requests at both the transport and the SOAP request level that is transmitted on the wire. Some policies do not deal with security issues directly but affect the run-time behavior of the business services to which they are applied.

The iBSE administrator creates an instance of a policy type, names it, associates individual users and/or groups (a collection of users), and then applies the policy to one or more business services.

You can assign a policy to an iBS or to a method within an iBS. If a policy is applied only to a method, other methods in that iBS are not governed by it. However, if a policy is applied to the iBS, all methods are governed by it. At run time, the user ID and password that are sent to iBSE in the SOAP request message are checked against the list of users for all policies applied to the specific iBS. The Resource Execution policy type is supported and dictates who can or cannot execute the iBS.

When a policy is not applied, the default value for an iBS is to “grant all.” For example, anyone can execute the iBS until the Resource Execution policy is associated to the iBS. At that time, only users granted execution permission, or those who do not belong to a group that was denied execution permissions, have access to the iBS.

Configuring iWay Business Services Policy-Based Security

Before you create instances of policies, you must have a minimum of one user or one group to associate to an instance. You can create users and groups using Servlet Application Explorer. For more information, see *How to Create a User to Associate With a Policy* on page 5-3 or *How to Create a Group to Associate With a Policy* on page 5-5.

An execution policy governs who can execute the business service to which the policy is applied. For more information, see *How to Create an Execution Policy* on page 5-7.

You configure the IP and Domain Restriction policy type slightly differently from other policy types. The IP and Domain Restriction policy type controls connection access to iBSE and therefore, need not be applied to an individual business service. You need not create a policy, however, you must enable the Security Policy option in Servlet Application Explorer. For more information, see *How to Configure IP and Domain Restrictions* on page 5-10.

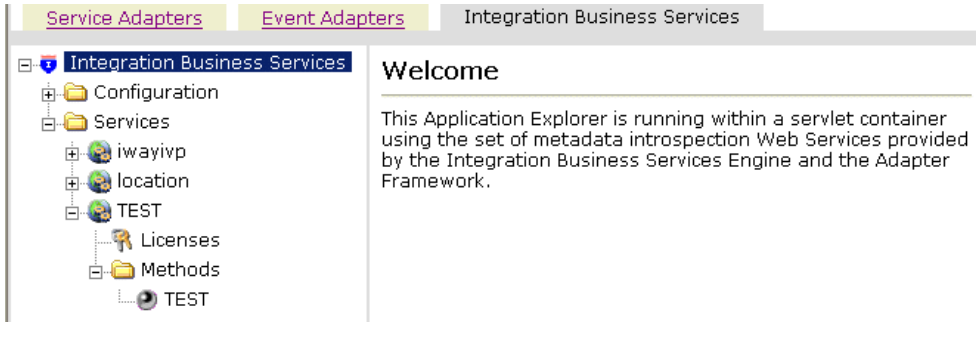
Note: For the iWay 5.5 RG2 Release, it is recommended that policy-based security not be enabled.

Procedure How to Create a User to Associate With a Policy

To create a user to associate with a policy:

1. Open *Servlet Application Explorer*.

   The following image shows the window that opens and includes three tabs corresponding to Service Adapters, Event Adapters, and iWay Business Services. The iWay Business Services tab is active and displays a Welcome screen on the right. The image shows the iWay Business Services node expanded in the left pane.



   a. Click the *iWay Business Services* tab.

   b. Expand the *Configuration* node.

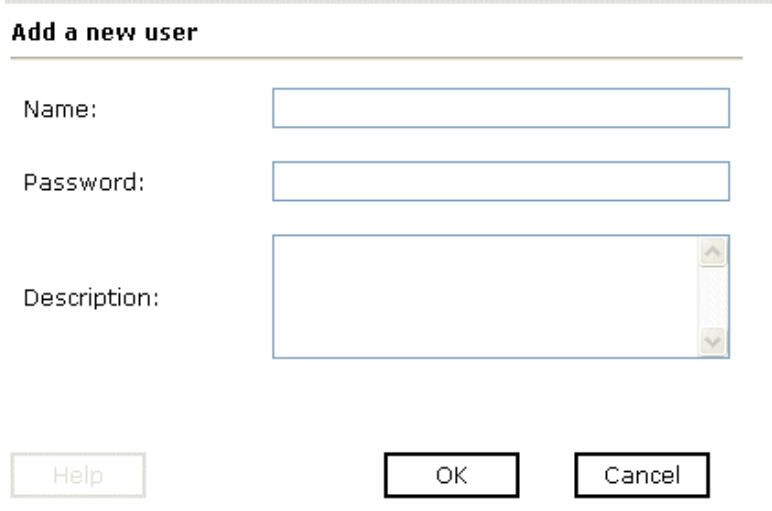
   c. Expand the *Security* node.

   d. Expand the *Users and Groups* node.

e. Select *Users*.

2. In the right pane, move the pointer over *Operations* and select *Add*.

The following image shows the Add a new user pane that opens and includes fields where you enter a user name, a password, and a description of the user. The pane includes a Help button, an OK button to instruct the system to accept inputs, and a Cancel button to escape from the pane.



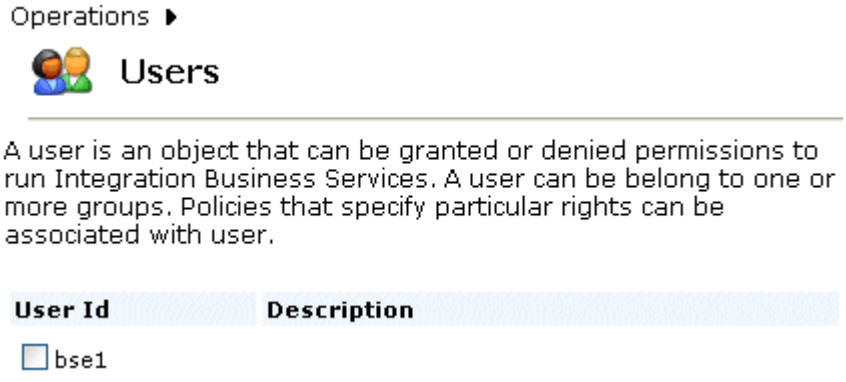
a. In the Name field, type a user ID.

b. In the Password field, type the password associated with the user ID.

c. In the Description field, type a description of the user (optional).

3. Click *OK*.

The following image opens and shows a new user added to the configuration. It includes a definition of a user and a user ID and description.

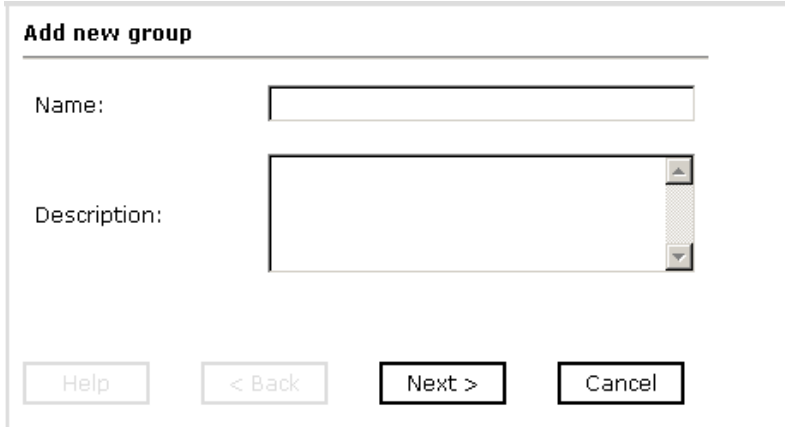


Procedure How to Create a Group to Associate With a Policy

To create a group to associate with a policy:

1. Open *Servlet Application Explorer*.
   a. Click the *iWay Business Services* tab.
   b. Expand the *Configuration* node.
   c. Expand the *Security* node.
   d. Expand the *Users and Groups* node.
   e. Select *Groups*.
2. In the right pane, move the pointer over *Operations* and click *Add*.

The following image shows the Add new group pane that opens with fields where you enter a name and a description for the group. To continue after typing inputs, click the *Next* button. The pane also includes a Help button, a Back button to return to the previous screen, and a Cancel button to escape from the pane.

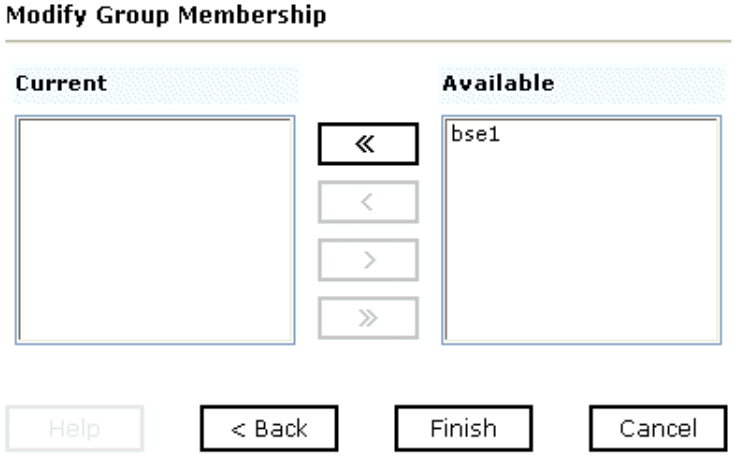


a. In the Name field, type a a name for the group.

b. In the Description field, type a description for the group (optional).

3. Click *Next*.

The following image shows the Modify Group Membership pane where you can move users to or from a group using the arrow keys to move them between the Current and Available lists and then clicking the Finish button. The pane includes a Help button, a Back button to return to the previous screen, and a Cancel button to escape from the pane.

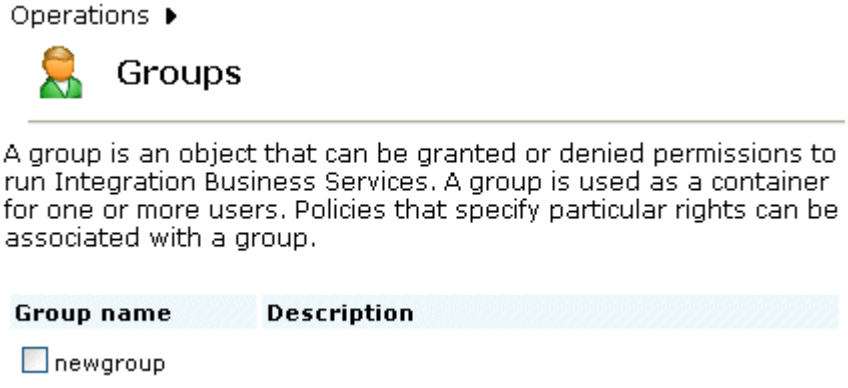


You can either highlight a single user in the list of available users and add it to the current list by clicking the left arrow, or you can click the double left arrow to add all users in the list of available users to the group.

4. After you select a minimum of one user, click *Finish*.

   The new group is added.

   The following image shows a pane with a new group added to the configuration. It includes a definition of a group and the group name and description.



Procedure How to Create an Execution Policy

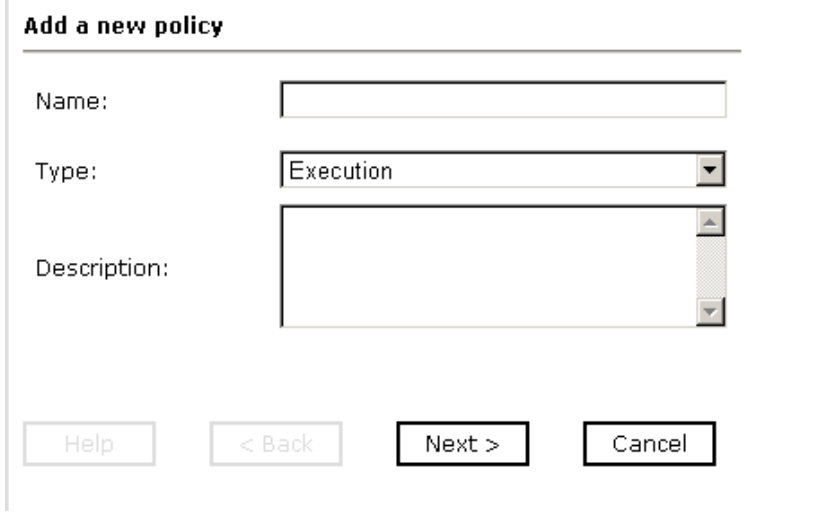
To create an execution policy:

1. Open *Servlet Application Explorer*.
   a. Click the *iWay Business Services* tab.
   b. Expand the *Configuration* node.
   c. Select *Policies*.

The following image shows the Policies pane on the right where you apply a policy. The Operations menu becomes available with three options, Build/Rebuild, Add, and Refresh.

2. Move the pointer over *Operations* and click *Add*.

The following image shows the Add a new policy pane that opens with fields for entering the name, type, and description of the policy. To continue, click the *Next* button. The pane includes a Help button, a Back button to return to the previous screen, and a Cancel button to escape from the pane.



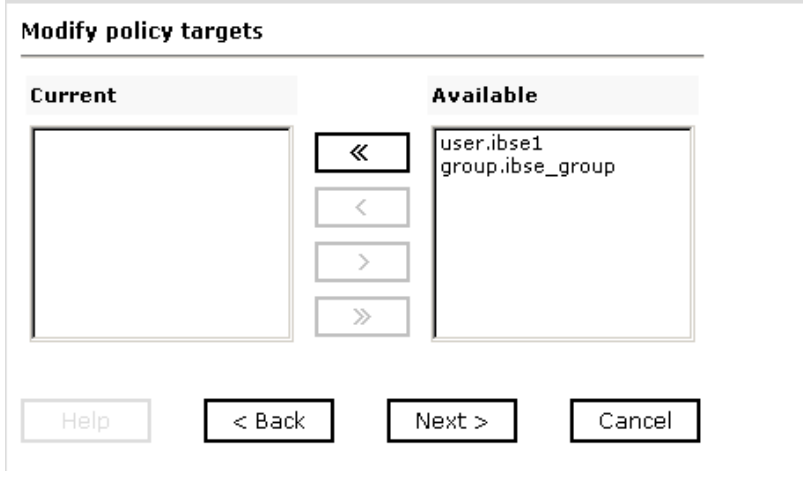
a. In the Name field, type a a name for the policy.

b. From the Type drop-down list, select *Execution*.

c. In the Description field, type a description for the policy (optional).

3. Click *Next*.

The following image shows the Modify policy targets pane that opens and includes a list of current and available targets and arrow buttons to move targets from one list to the other. The pane also includes a Help button, a Back button to return to the previous screen, a Next button to continue to the next screen, and a Cancel button to escape from the pane.

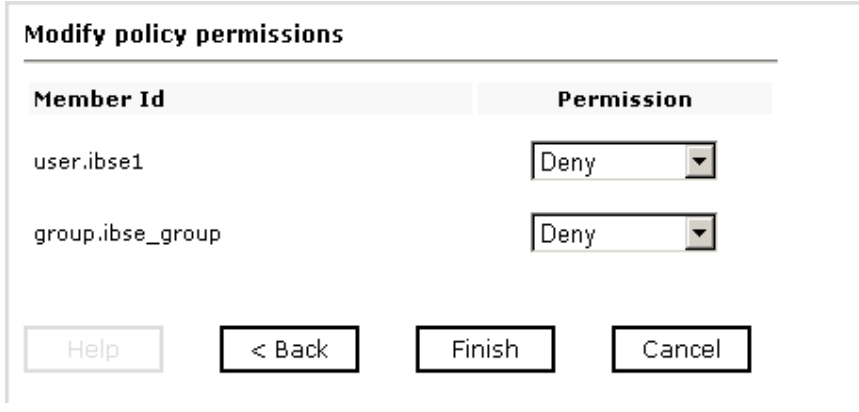


4. Select a minimum of one user or group from the Available pane.

Note: This user ID is checked against the value in the user ID element of the SOAP header sent to iBSE in a SOAP request.

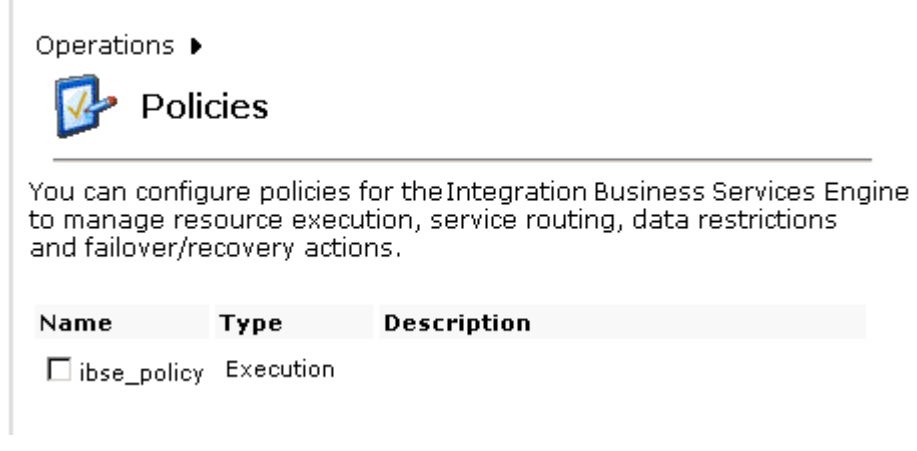
5. Click *Next*.

The following image shows the Modify policy permissions pane that opens and includes drop-down lists where you can select to grant or deny permission to members and then click a button to finish. The pane also includes a Help button, a Back button to return to the previous screen, and a Cancel button to escape from the pane.



6. To assign whether users or groups may execute the iBSE, select *Grant* to permit execution or *Deny* to restrict execution from a Permission drop-down list.
7. Click *Finish*.

   The following image shows the pane that summarizes your configuration. It includes a definition of policies and the name, type, and description of the policies.



Procedure How to Configure IP and Domain Restrictions

To configure IP and domain restrictions:

1. Open *Servlet Application Explorer.*

a. Select the *iWay Business Services* tab.

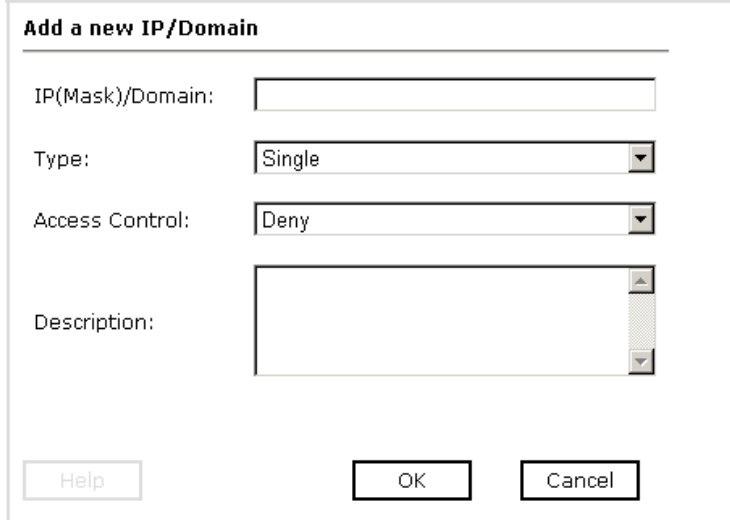
b. Expand the *Configuration* node.

c. Expand the *Security* node.

d. Select *IP and Domain*.

2. In the right pane, move the pointer over *Operations* and click *Add*.

The following image shows the Add a new IP/Domain pane that opens where you enter information for the IP/Domain in four fields. You must select a type of restriction from a drop-down list before you can enter information in the IP(Mask)/Domain field. The pane also includes a Help button, an OK button to instruct the system to accept inputs, and a Cancel button to escape from the pane.



a. From the Type drop-down list, select the type of restriction.

b. In the IP(Mask)/Domain field, type the IP or domain name using the following guidelines.

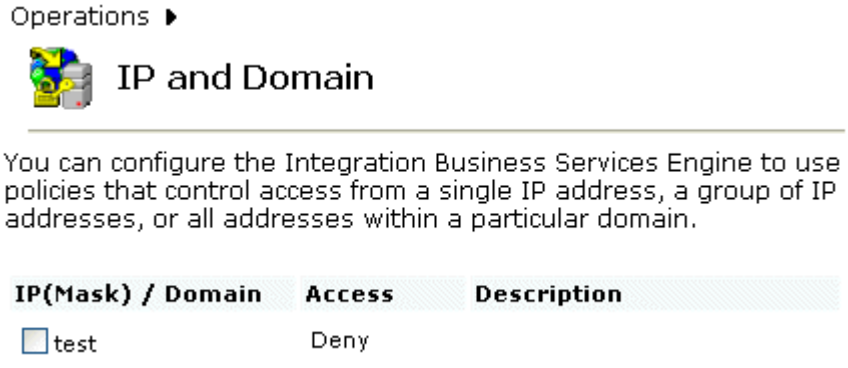
If you select Single (Computer) from the Type drop-down list, you must provide the IP address for that computer. If you only know the DNS name for the computer, click *DNS Lookup* to obtain the IP Address based on the DNS name.

If you select Group (of Computers), you must provide the IP address and subnet mask for the computer group.

If you select Domain, you must provide the domain name, for example, yahoo.com.

3. From the Access Control drop-down list, select *Grant* to permit access or *Deny* to restrict access for the IP addresses and domain names you are adding.
4. Click *OK*.

   The following image shows the pane that opens and summarizes your configuration including the domain name, whether access is granted or denied, and a description (optional).



CHAPTER 6

Management and Monitoring

Topics:

- Managing and Monitoring Services and Events Using iBSE
- Managing and Monitoring Services and Events Using the JCA Test Tool
- Setting Engine Log Levels
- Configuring Connection Pool Sizes
- Migrating Repositories
- Exporting or Importing Targets
- Retrieving or Updating Web Service Method Connection Information
- Starting or Stopping a Channel Programmatically

After you create services and events using Servlet Application Explorer, you can use managing and monitoring tools provided by the Integration Business Services Engine (iBSE) and the iWay Connector for JCA to measure the performance of your run-time environment. This section describes how to configure and use these features.

Managing and Monitoring Services and Events Using iBSE

Integration Business Services Engine (iBSE) provides a console to manage and monitor services and events currently in use and to display resource usage and invocation statistics. These indicators can help you adjust your environment for optimum efficiency.

The following monitoring levels are available for services:

- System
- Service
- Method

The following monitoring levels are available for events:

- System
- Channel
- Port

Procedure: How to Configure Monitoring Settings

To configure monitoring settings:

1. Ensure that your BEA WebLogic Server is started.
2. To access the monitoring console, enter the following URL in your Web browser:

   `http://localhost:port/ibse/IBSEConfig`

   where:

   localhost

   Is the machine where the application server is running.

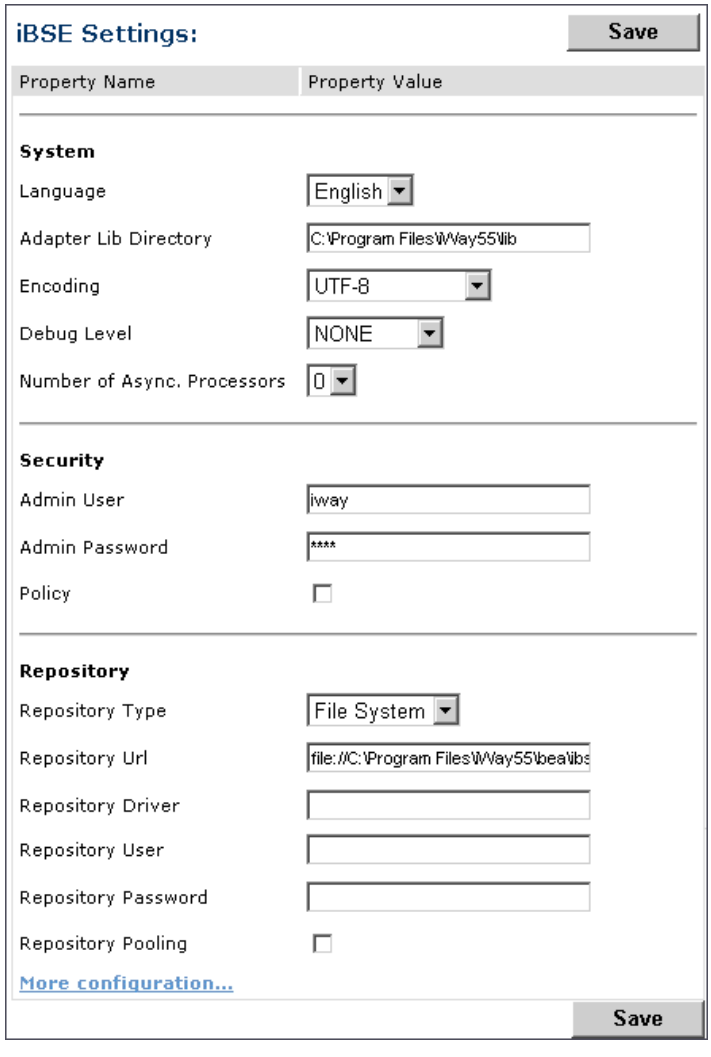
   port

   Is the HTTP port for the application server.

   The following image shows the iBSE Settings window that opens. It lists property names and includes fields where you can enter values for each property. To configure system settings, the System pane contains drop-down lists for selecting language, encoding, the debug level, and the number of asynchronous processors. It also contains a field where you can enter a path to the adapters lib directory.

   To configure security settings, the Security pane contains fields for typing the Admin User name and the associated password and a check box for specifying policy.

To configure repository settings, the Repository pane contains a drop-down list for selecting the repository type, fields to type information for the repository URL, driver, user, and password, and a check box where you can enable repository pooling. In the upper and lower right of the window is a Save button. In the lower left of the window is an option to click to access more configuration settings.



3. Click *More configuration*.

Tip: To access the monitoring console directly, enter the following URL in your Web browser:

`http://localhost:port/ibse/IBSEStatus`

where:

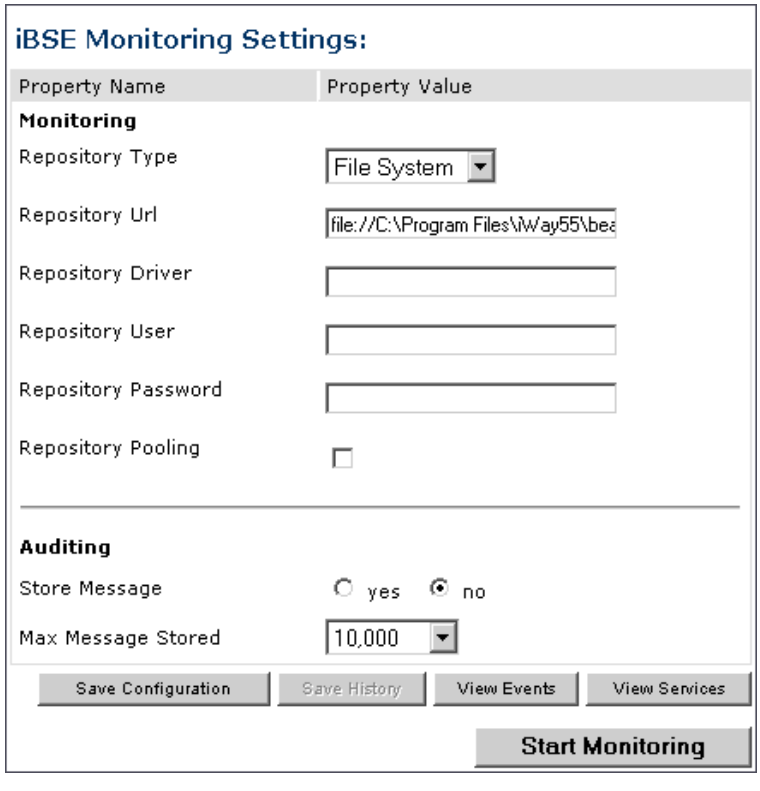
localhost

Is the machine where the application server is running.

port

Is the HTTP port for the application server.

The following image shows the iBSE Monitoring Settings window that opens. It lists property names and includes a corresponding field where you can enter values for each property. The Monitoring pane contains a drop-down list for selecting the repository type, fields to type information for the repository URL, driver, user, and password, and a check box where you can enable repository pooling. The Auditing pane contains an option button to click to specify whether to store a message and a drop-down list where you can select the maximum messages to store. At the bottom of the window is a row of buttons that you can click to save your configuration, view events, or view services. The Save History button is inactive. After you enter properties and choose whether to save or view, you can click the Start Monitoring button.



a. In the Monitoring pane, from the Repository Type drop-down list, select the type of repository you are using.

b. To connect to the database in the Repository Url field, type a JDBC URL.

c. To connect to the database in the Repository Driver field, type a JDBC Class.

d. To access the monitoring repository database, type a user ID and password.

e. To enable pooling, click the *Repository Pooling* check box.

f. In the Auditing pane, select *yes* if you want to store messages.

This option is disabled by default.

Note: You must start and then, stop monitoring to enable this option.

g. Select the maximum number of messages you want to store.

By default, 10,000 is selected.

Note: Depending on your environment and the number of messages that are exchanged, storing a large number of messages may affect system performance. If you need more information about your system resources, consult your system administrator.

h. Click *Save Configuration*.

4. Click *Start Monitoring*.

iBSE begins to monitor all services and events currently in use. If you selected the option to store messages, iBSE stores messages.

5. To stop monitoring, click *Stop Monitoring*.

Procedure: How to Monitor Services

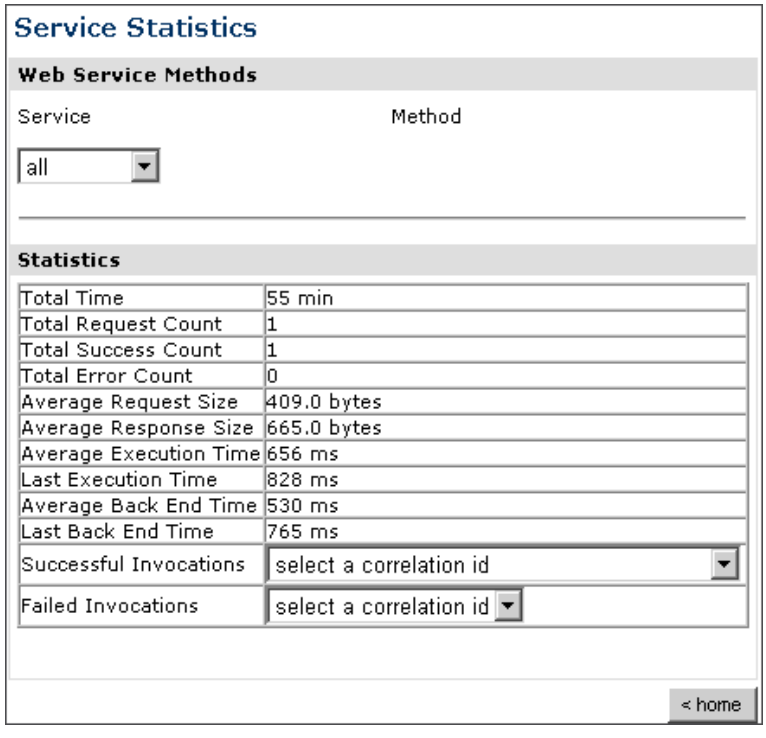
To monitor services:

1. Ensure that your BEA WebLogic Server is started.

2. From the iBSE Monitoring Settings window, click *Start Monitoring*.

3. Click *View Services*.

The following image shows the System Level Summary (Service Statistics) window that opens. The Web Service Methods pane contains a drop-down list where you select a service. On the right, space is reserved for a drop-down list of methods that will appear. The Statistics pane contains a table with a summary of service statistics and two drop-down lists where you can select a successful or failed invocation to view more information about that service. At the bottom of the window is a home button to click to return to the iBSE Monitoring Settings window.



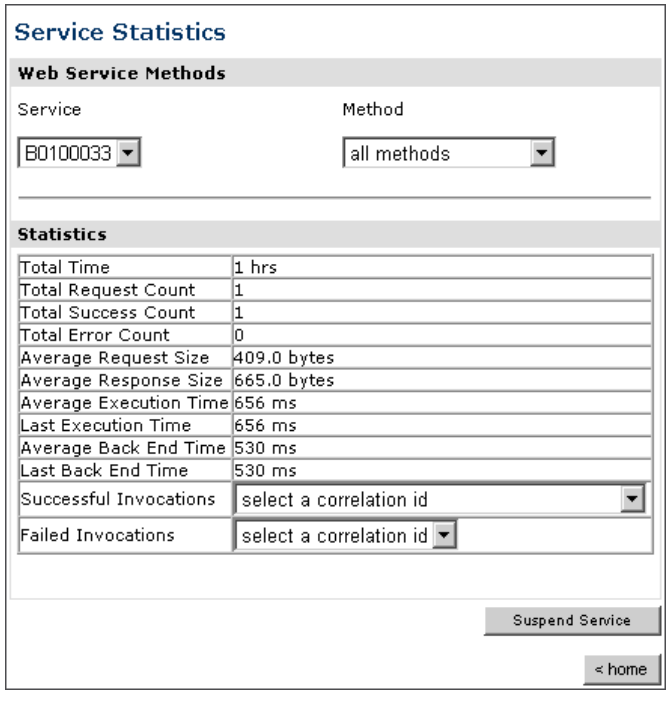
The system level summary provides services statistics at a system level.

The following table consists of two columns, one that lists the name of each statistic and the other that describes the corresponding service statistic.

Statistic	Description
Total Time	Total amount of time iBSE monitors services. The time starts after you click Start Monitoring in the iBSE Monitoring Settings window.
Total Request Count	Total number of services requests that were made during the monitoring session.
Total Success Count	Total number of successful service executions.
Total Error Count	Total number of errors that were encountered.
Average Request Size	Average size of an available service request.
Average Response Size	Average size of an available service response size.
Average Execution Time	Average execution time for a service.
Last Execution Time	Last execution time for a service.
Average Back End Time	Average back end time for a service.
Last Back End Time	Last back end time for a service.
Successful Invocations	A list of successful services arranged by correlation ID. To retrieve more information for a service, you can select the service from the drop-down list.
Failed Invocations	A list of failed services arranged by correlation ID. To retrieve more information for a service, you can select the service from the drop-down list.

4. Select a service from the drop-down list.

The following image shows the System Level Summary (Service Statistics) window that opens. The Web Service Methods pane contains a drop-down list on the left where you select a service and a drop-down list on the right where you select a service method. The Statistics pane contains a table with a summary of service statistics and two drop-down lists. To view more information about that service, you can select it from the Successful Invocations or Failed Invocations drop-down list. To suspend or resume a service, you can click a button in the lower right. To return to the iBSE Monitoring Settings window, you click the home button (also located in the lower right).

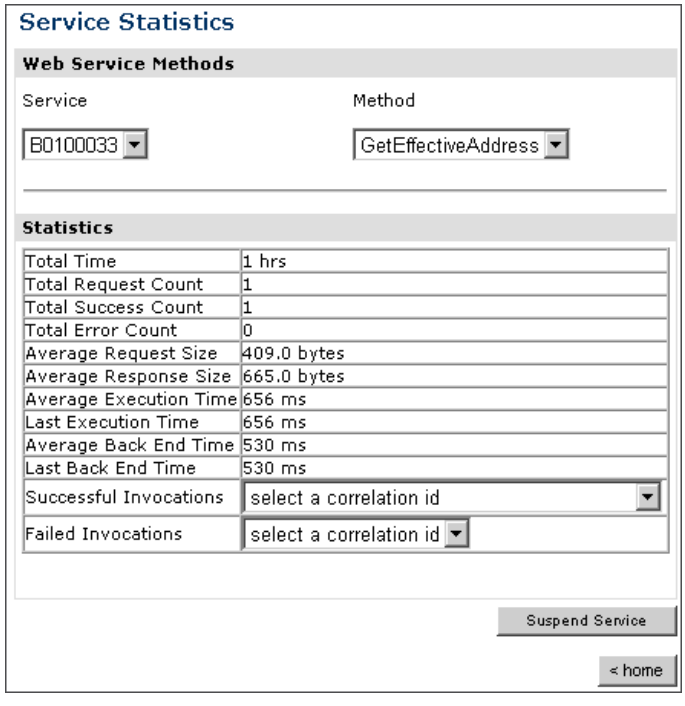


a. To stop a service at any time, click *Suspend Service*.

b. To restart the service, click *Resume Service*.

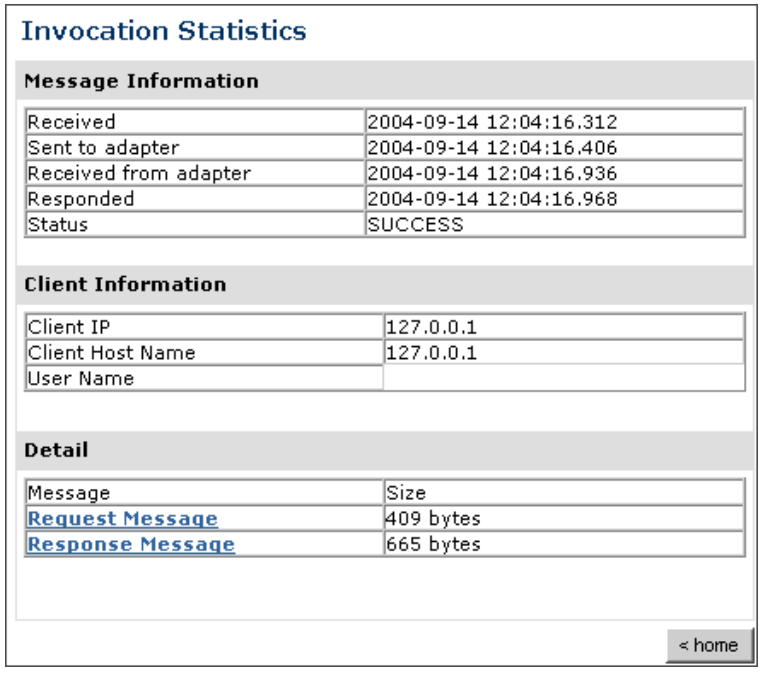
5. Select a method for the service from the Method drop-down list.

The following image shows the Method Level Summary (Service Statistics) window that opens. The Web Service Methods pane contains a drop-down list on the left where you select a service and a drop-down list on the right where you select a service method. The Statistics pane contains a table with a summary of service statistics and two drop-down lists. To view more information about that service, you can select it from the Successful Invocations or Failed Invocations drop-down list. To suspend or resume a service, you can click a button in the lower right. To return to the iBSE Monitoring Settings window, you click the home button (also located in the lower right).



6. For additional information about a successful service and its method, select a service based on its correlation ID from the Successful Invocation drop-down list.

The following image shows the Invocation Level Statistics window that opens. The Message Information pane contains a table of information about the message. The Client Information pane contains a table of information about the client. The Detail pane contains a table that shows the size of the request and response messages, with options to click to view the respective XML documents. In the lower right of the window is a home button to click to return to the iBSE Monitoring Settings window.



7. To view the XML request document in your Web browser, click *Request Message*.

   You can also view the XML response document for the service.

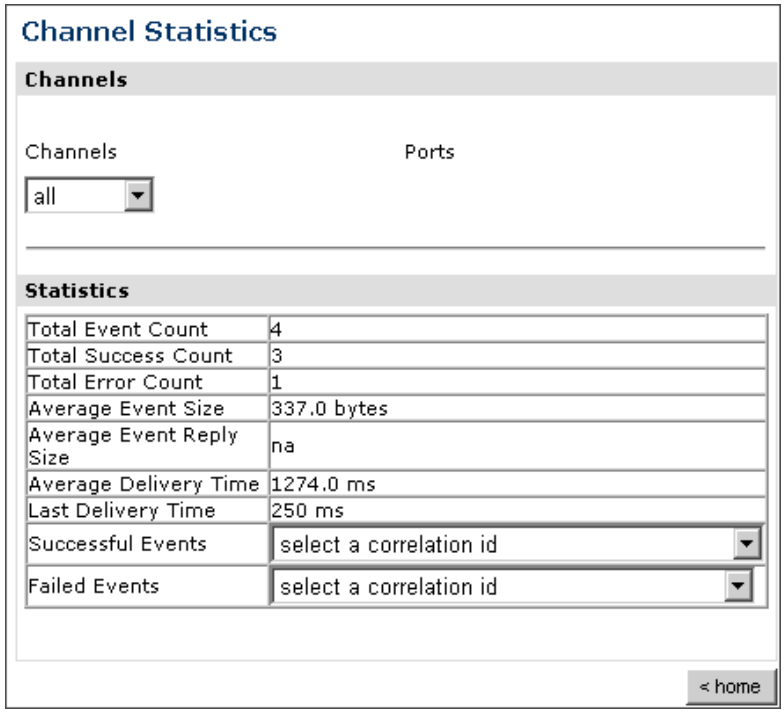
8. To return to the iBSE Monitoring Settings window, click *home*.

Procedure: How to Monitor Events

To monitor events:

1. Ensure that your BEA WebLogic Server is started.
2. In the iBSE Monitoring Settings window, click *Start Monitoring*.
3. Click *View Events*.

The following image shows the System Level Summary (Channel Statistics) window that opens. The Channels pane contains a drop-down list on the left where you select a channel. On the right, space is reserved for a drop-down list of ports that will appear. The Statistics pane contains a table with a summary of event statistics and two drop-down lists where you can select a successful or failed event to view more information about that event. In the lower right of the window is a home button to click to return to the iBSE Monitoring Settings window.



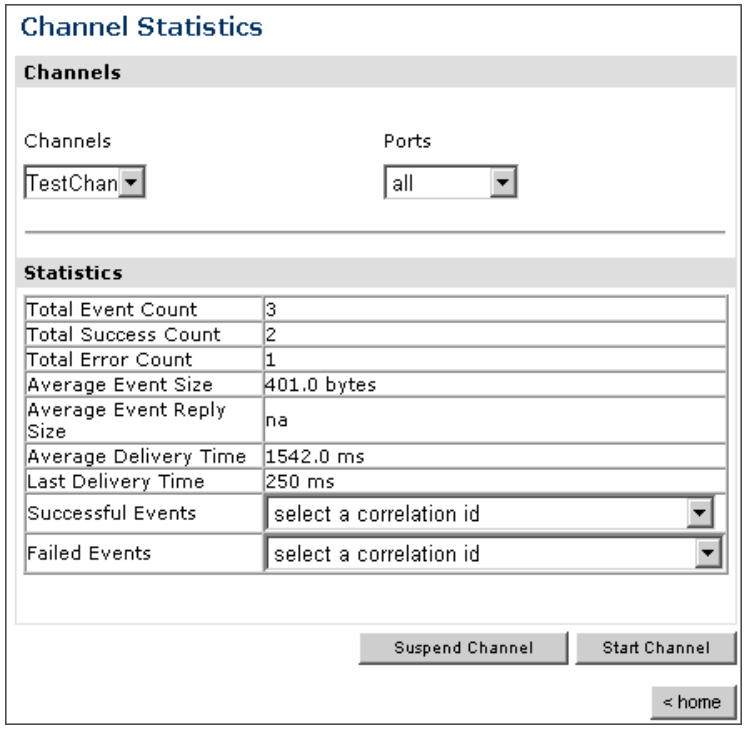
The system level summary provides event statistics at a system level.

The following table consists of two columns, one that lists the name of each statistic and the other that describes the corresponding event statistic.

Statistic	**Description**
Total Event Count	Total number of events.
Total Success Count	Total number of successful event executions.
Total Error Count	Total number of errors that were encountered.
Average Event Size	Average size of an available event request.
Average Event Reply Size	Average size of an available event response.
Average Delivery Time	Average delivery time for an event.
Last Delivery Time	Last delivery time for an event.
Successful Events	List of successful events arranged by correlation ID. To retrieve more information for an event, select the event from the drop-down list.
Failed Events	List of failed events arranged by correlation ID. To retrieve more information for an event, select the event from the drop-down list.

4. Select a channel from the drop-down list.

The following image shows the Channel Level Event Summary (Channel Statistics) window that opens. The Channels pane contains a drop-down list on the left where you select a channel and a drop-down list on the right where you select a port. The Statistics pane contains a table with a summary of event statistics and two drop-down lists where you can select a successful or failed event to view more information about that event. In the lower right of the window is a button to click to suspend or resume a channel and a home button to click to return to the iBSE Monitoring Settings window.

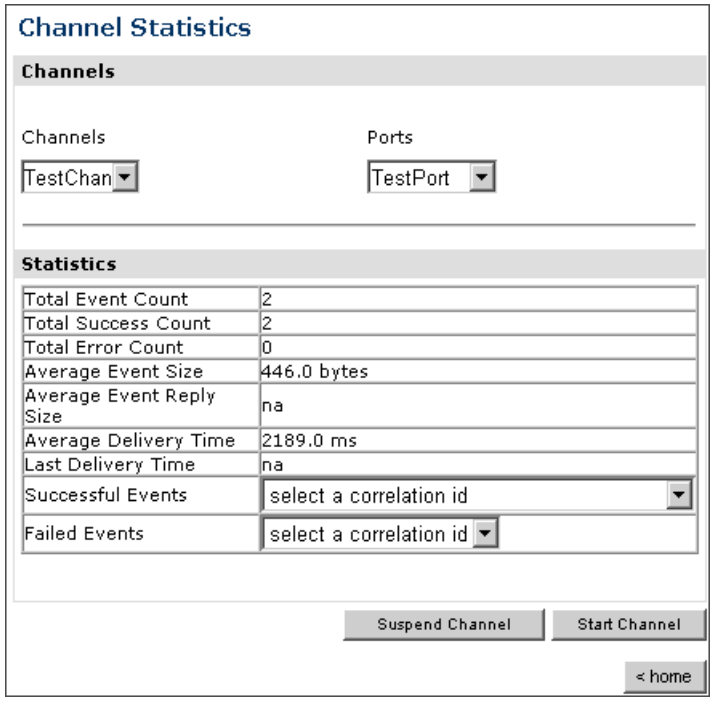


a. To stop a channel at any time, click *Suspend Channel*.

b. To start the channel, click *Start Channel*.

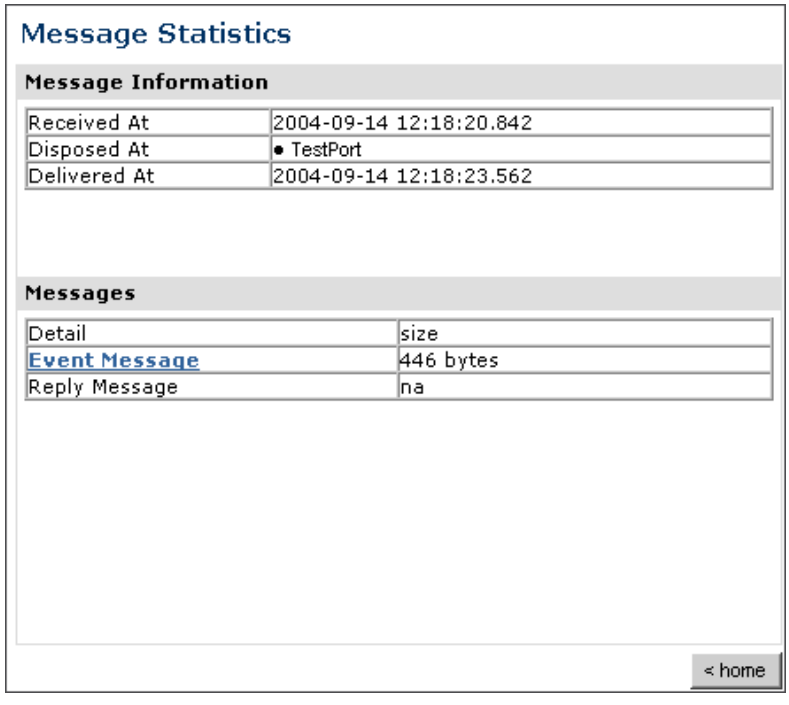
5. From the Ports drop-down list, select a port for the channel.

The following image shows the Port Level Event Summary (Channel Statistics) window that opens. The Channels pane contains a drop-down list on the left where you select a channel and a drop-down list on the right where you select a port. The Statistics pane contains a table with a summary of event statistics and two drop-down lists where you can select a successful or failed event to view more information about that event. In the lower right of the window is a button to click to suspend or resume a channel and a home button to click to return to the iBSE Monitoring Settings window.



6. For more information about a successful event and its port, select an event based on its correlation ID from the Successful Events drop-down list.

The following image shows the Event Level Statistics (Message Statistics) window that opens. The Message Information pane contains a table of information pertaining to the event message. The Messages pane contains a table that shows the size of the event and reply messages, with an option to view an XML document of the event message. In the lower right of the window is a home button to click to return to the iBSE Monitoring Settings window.



a. To view the XML event document in your Web browser, click *Event Message*.

b. To return to the iBSE Monitoring Settings window, click *home*.

Managing and Monitoring Services and Events Using the JCA Test Tool

The JCA Test Tool, which is also known as the JCA Installation Verification Program (IVP), provides a console to manage and monitor services and events currently in use and to display resource usage and invocation statistics. These indicators can help you adjust your environment for optimum efficiency.

Procedure: How to Manage and Monitor Services Using the JCA Test Tool

To manage and monitor services using the JCA Test Tool:

1. Open a Web browser to:

   `http://localhost:port/iwjcaivp`

   where:

   localhost

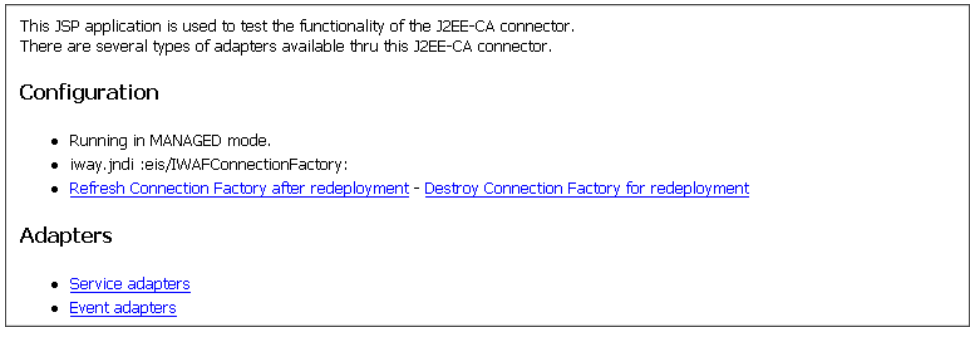
   Is the name of the machine where your application server is running.

   port

   Is the port for the domain you are using. The port for the default domain is 7001.,for example:

   `http://localhost:7001/iwjcaivp`

   The following image shows the JCA Test Tool page that opens. The page contains a description of the function of the tool and configuration information, including options to change your connection settings. It also provides options for viewing service or event adapters.



   The JCA Test Tool runs in managed mode by default.

2. Perform the following steps to monitor the latest service adapter configuration.

   Note: You must perform these steps for every new adapter target that is created using a JCA implementation of Application Explorer. In addition, you also must perform these steps for every new JCA configuration that is created using Application Explorer.

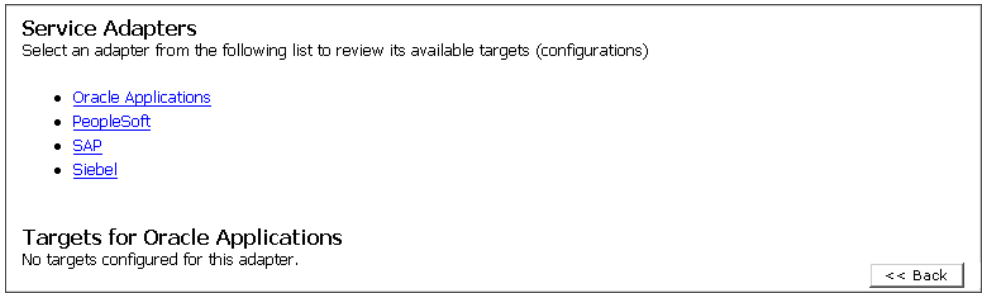
a. Click *Destroy Connection Factory for redeployment*.

b. Redeploy the JCA connector module using the BEA WebLogic Server console.

c. In the JCA Test Tool, click *Refresh Connection Factory after redeployment*.

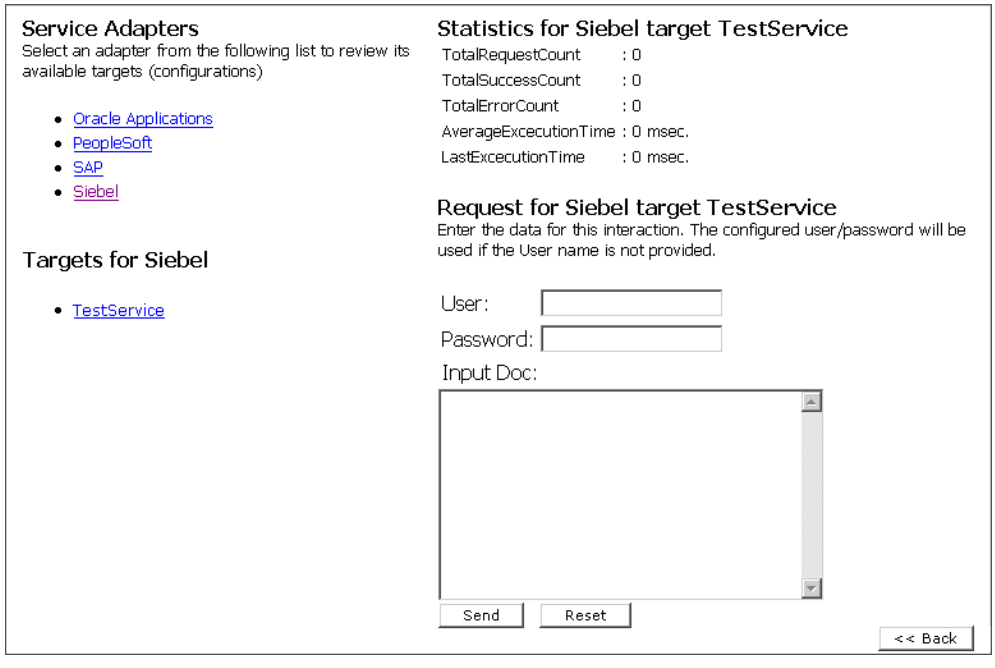
3. Click *Service adapters*.

The following image shows the Service Adapters page that opens. The page provides a live list of available service adapters and a list of targets configured for a specific adapter. In the lower right is a Back button to click to return to the previous page.



4. Select a service adapter to monitor.

The following image shows the page that opens. The left side provides a live list of available service adapters and a list of any targets configured for a specific adapter. The upper right side shows statistics for a selected target. The middle right has a User field and a Password field. The lower right contains a box where you type or paste an input document. Below the input box is a Send button to click to send a request for a test service and a Reset button to click to reset the fields. In the lower right is a Back button to click to return to the previous page.



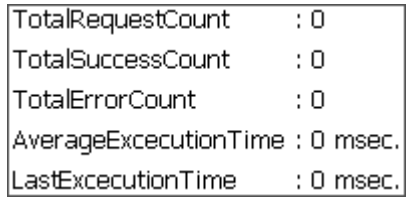
a. Click the desired target for your service adapter.

b. In the Request area, enter a user name and password.

c. In the Input Doc area, enter a request document that was created from the request schema for your service.

5. Click *Send*.

The following image shows the updated statistics that appear for your service if the request is successful. The statistics include the total number of requests, successes, and errors and the average and last execution time in milliseconds.



Procedure: How to Manage and Monitor Events Using the JCA Test Tool

To manage and monitor events using the JCA Test Tool:

1. Open a Web browser to:

   `http://localhost:port/iwjcaivp`

   where:

   localhost

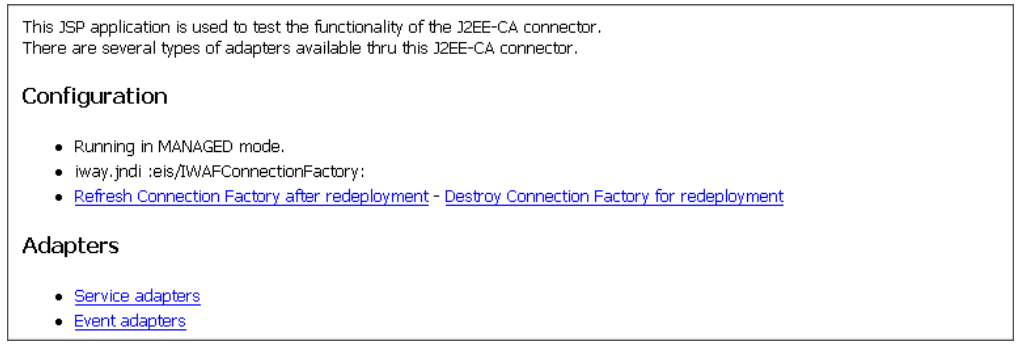
   Is the name of the machine where your application server is running.

   port

   Is the port for the domain you are using. The port for the default domain is 7001, for example:

   ```
   http://localhost:7001/iwjcaivp
   ```

   The following image shows the JCA Test Tool page that opens. The page contains a description of the function of the tool and configuration information, including options to change your connection settings. It also provides options for viewing service or event adapters.



   The JCA Test Tool runs in managed mode by default.

2. Perform the following steps to monitor the latest event adapter configuration.

   Note: You must perform these steps for every new adapter target that is created using a JCA implementation of Application Explorer. In addition, you must also perform these steps for every new JCA configuration that is created using Application Explorer.

   a. Click *Destroy Connection Factory for redeployment*.

   b. Redeploy the JCA connector module using the BEA WebLogic Server console.

   c. In the JCA Test Tool, click *Refresh Connection Factory after redeployment*.

3. Click *Event adapters*.

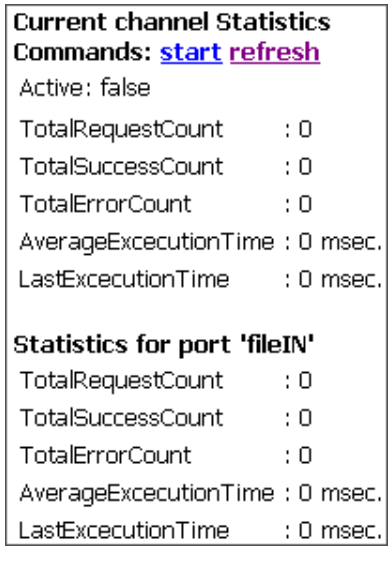
   The Event Adapters page opens.

4. Select the event adapter to monitor.

5. Click the desired channel for your event adapter.

6. Click *start*.

   The following image shows the updated statistics for your channel and the port. The statistics include the total number of requests, successes, and errors and the average and last execution time in milliseconds. There are options to click in the upper right of the page to start or refresh the channel.



Setting Engine Log Levels

The following section describes how to set engine log levels for Servlet iBSE and JCA. For more information, see the *iWay Installation and Configuration for BEA WebLogic* documentation.

Procedure: How to Enable Tracing for Servlet iBSE

To enable tracing for Servlet iBSE:

1. Open the Servlet iBSE configuration page at:

   ```
   http://localhost:port/ibse/IBSEConfig
   ```

   where:

   localhost

   Is the name of the machine where your application server is running.

   port

   Is the port for the domain you are using. The port for the default domain is 7001, for example:

   ```
   http://localhost:7001/ibse/IBSEConfig
   ```

2. In the System pane, from the Debug drop-down list, select the level of tracing.
3. Click *Save*.

The default location for the trace information on Windows is:

```
C:\Program FIles\bea\ibse\ibselogs
```

Procedure: How to Enable Tracing for JCA

To enable tracing for JCA:

1. Open the extracted ra.xml file in a text editor.
2. Locate and change the following setting:

   LogLevel. This setting can be set to DEBUG, INFO, or ERROR.

   ```
   <context-param>
   <config-property>
       <config-property-name>LogLevel</config-property-name>
       <config-property-type>java.lang.String</config-property-type>
       <config-property-value></config-property-value>
   </config-property>
   ```

   For example:

   ```
   <config-property-value>DEBUG</config-property-value>
   ```

A directory in the configuration directory contains the logs.

a. Review the logs generated by your application server.

b. Leave the remainder of the previous file unchanged.

3. Save the file and exit the editor.

4. Redeploy the connector.

Configuring Connection Pool Sizes

The following topic describes how to configure connection pool sizes for the JCA connector.

Procedure: How to Configure Connection Pool Sizes

To configure connection pool sizes:

1. Open the extracted ra.xml file in a text editor.

2. Locate and change the following setting:

pool-params. The JCA Resource Connector has an initial capacity value of 0 by default and cannot be changed. The maximum capacity value is 10 by default and can be changed to a higher value.

```
<?xml version="1.0" encoding="UTF-8" ?>
<!DOCTYPE weblogic-connection-factory-dd (View Source for full
doctype...)>
- <weblogic-connection-factory-dd>
  <connection-factory-name>IWAFJCA</connection-factory-name>
  <jndi-name>eis/IWAFConnectionFactory</jndi-name>
  - <pool-params>
    <initial-capacity>0</initial-capacity>
    <max-capacity>10</max-capacity>
    <capacity-increment>1</capacity-increment>
    <shrinking-enabled>false</shrinking-enabled>
    <shrink-period-minutes>200</shrink-period-minutes>
  </pool-params>
  <security-principal-map />
</weblogic-connection-factory-dd>
```

3. Save the file and exit the editor.

4. Redeploy the connector.

Migrating Repositories

During design time, a repository is used to store metadata created when using Application Explorer to configure adapter connections, browse EIS objects, configure services, and configure listeners to listen for EIS events. For more information on configuring repositories, see the *iWay Installation and Configuration for BEA WebLogic* documentation.

The information in the repository also is referenced at run time. For management purposes, you can migrate iBSE and JCA repositories to new destinations without affecting your existing configuration. For example, you may want to migrate a repository from a development environment to a production environment. The BEA WebLogic Server must be restarted to detect new repository changes.

File Repositories

If you want to migrate a File repository to another destination, copy the ibserepo.xml file from the following path:

```
drive:\Program Files\iWay55\bea\ibse\ibserepo.xml
```

where:

drive

Is the location of your iWay 5.5 installation.

You can place the ibserepo.xml file in a new location that is a root directory of the iBSE Web application, for example:

```
drive:\ProductionConfig\bea\ibse\ibserepo.xml
```

iBSE Repositories

The following topic describes how to migrate an iBSE repository that is configured for Oracle. You can follow the same procedure if you want to migrate an iBSE repository that is configured for Microsoft SQL Server 2000, Sybase, or DB2. However, when you are configuring a new environment, you must execute the script that creates the repository tables for your database. In addition, verify that all required files and drivers for your database are in the class path. For more information on configuring repositories, see the *iWay Installation and Configuration for BEA WebLogic* documentation.

Note: The following procedure allows you to migrate only Web services. If migrating event handling information is one of your requirements, you must migrate at the database level. For more information, see *Migrating Event Handling Configurations* on page 6-28.

Procedure: How to Migrate an iBSE Repository Configured for Oracle

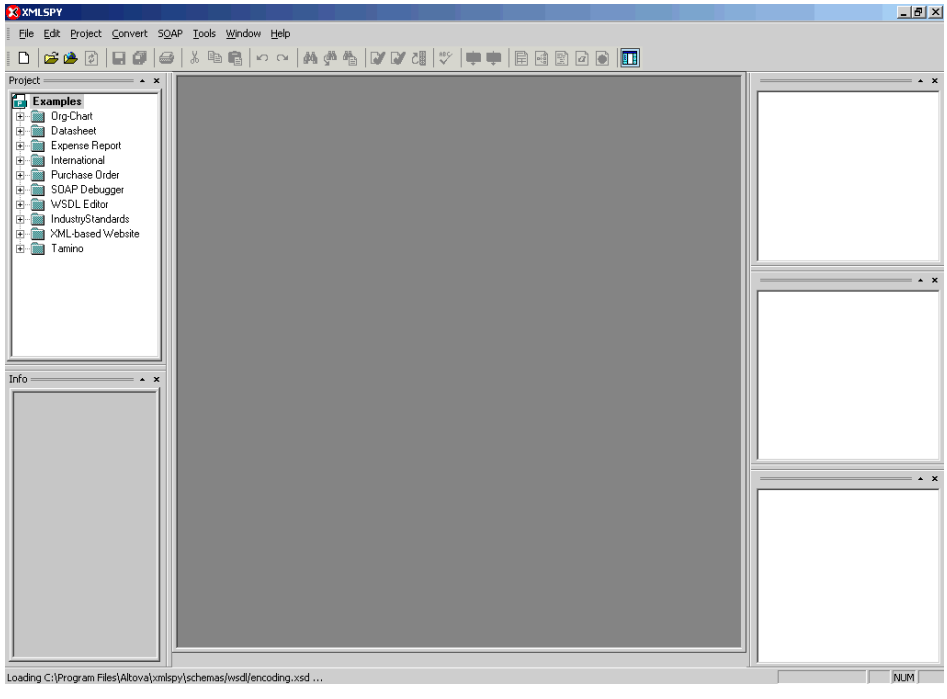
To migrate an iBSE repository that is configured for Oracle:

1. Copy the iBSE configuration service URL, for example:

   `http://localhost:7777/ibse/IBSEServlet/admin/iwconfig.ibs?wsdl`

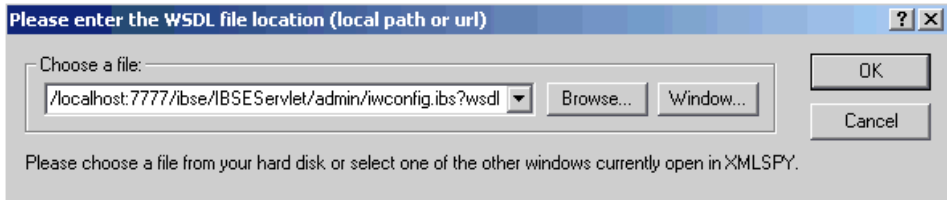
2. Open a third party XML editor, for example, XMLSPY.

   The following image shows the XMLSPY window. The upper left has a Project pane that contains a tree of sample files, and the lower left has a blank Info pane. The middle pane is blank. The right side is divided into three blank panes.



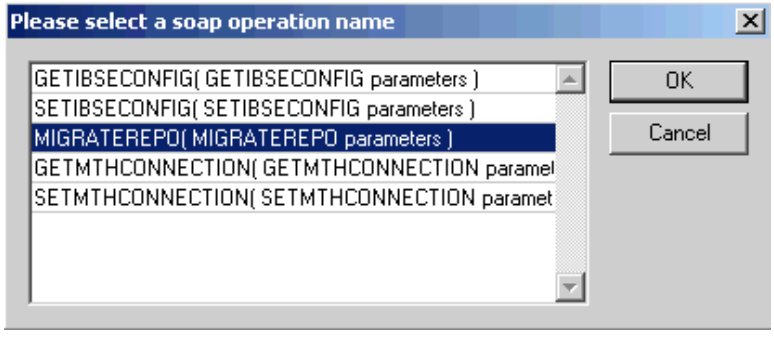
3. From the SOAP menu, select *Create new SOAP request*.

   The following image shows the WSDL file location dialog box that opens, where you enter a local path or URL. The dialog includes Browse, Window, OK, and Cancel buttons.



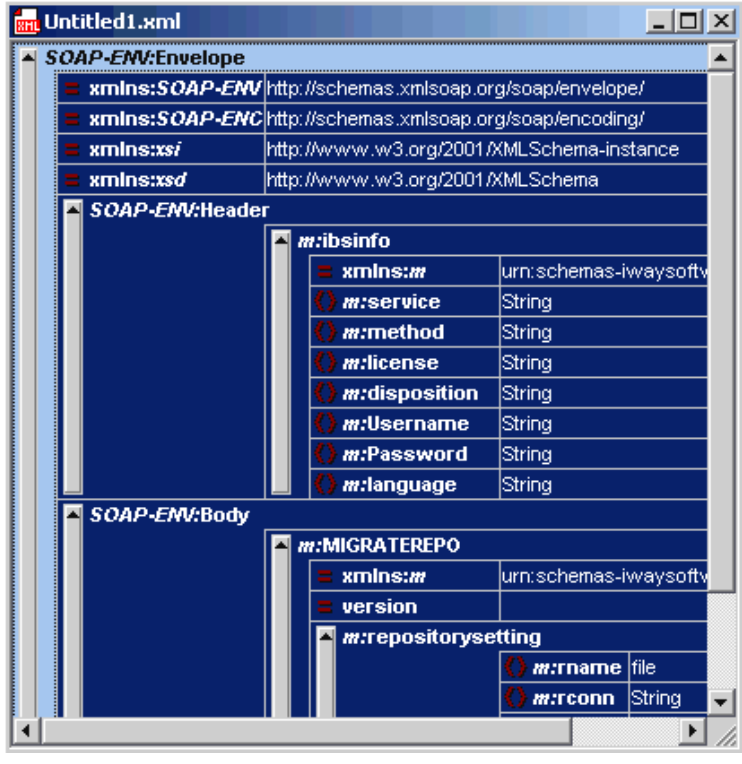
4. In the Choose a file field, paste the iBSE configuration service URL.
5. Click *OK*.

   The following image shows the soap operation name dialog box that opens with a list of available control methods. You can select from the list and click OK or to escape from the dialog box, you can click Cancel.



6. Select the *MIGRATEREPO(MIGRATEREPO parameters)* control method and click *OK*.

The following image shows a portion of the window that opens with the structure of the SOAP envelope. It includes information about location and schemas.



7. Locate the *Text view* icon in the tool bar.

In the following image, the pointer points to the Text view icon.

8. To display the structure of the SOAP envelope as text, click the *Text view* icon.

The <SOAP-ENV:Header> tag is not required and can be deleted from the SOAP envelope.

9. Locate the following section:

```
<m:MIGRATEREPO
xmlns:m="urn:schemas-iwaysoftware-com:jul2003:ibse:config" version="">
<m:repositorysetting>
<m:rname>oracle</m:rname>
<m:rconn>String</m:rconn>
<m:rdriver>String</m:rdriver>
<m:ruser>String</m:ruser>
<m:rpwd>String</m:rpwd>
</m:repositorysetting>
<m:servicename>String</m:servicename>
</m:MIGRATEREPO>
```

a. For the <m:rconn> tag, replace the String placeholder with the repository URL where you want to migrate your existing iBSE repository.

For example, the Oracle repository URL has the following format:

```
jdbc:oracle:thin:@[host]:[port]:[sid]
```

b. For the <m:rdriver> tag, replace the String placeholder with the location of your Oracle driver.

Note: This is an optional tag. If you do not specify a value, the default Oracle JDBC driver is used.

c. For the <m:ruser> tag, replace the String placeholder with a valid user name to access the Oracle repository.

d. For the <m:rpwd> tag, replace the String placeholder with a valid password to access the Oracle repository.

10. Perform one of the following migration options.

If you want to migrate a **single** Web service from the current iBSE repository, enter the Web service name in the <m:servicename> tag, for example:

```
<m:servicename>Service1</m:servicename>
```

If you want to migrate **multiple** Web services from the current iBSE repository, duplicate the <m:servicename> tag for each Web service, for example:

```
<m:servicename>Service1</m:servicename>
<m:servicename>Service2</m:servicename>
```

If you want to migrate **all** Web services from the current iBSE repository, remove the <m:servicename> tag.

11. From the SOAP menu, select *Send request to server*.

Your iBSE repository and the Web services you specified migrate to the new Oracle repository URL that you specified.

JCA Repositories

The following procedure describes how to migrate a JCA repository. For more information on configuring JCA repositories, see the *iWay Installation and Configuration for BEA WebLogic* documentation.

Procedure: How to Migrate a JCA Repository

To migrate a JCA repository:

1. Navigate to the location of your JCA configuration directory where the repository schemas and other information is stored, for example:

   ```
   C:\Program Files\iway55\config\base
   ```

2. Locate and copy the *repository.xml* file.

3. Place this file in a new JCA configuration directory to migrate the existing repository.

   Your JCA repository migrates to the new JCA configuration directory.

Migrating Event Handling Configurations

This topic describes how to migrate your iBSE repositories at a database level for Microsoft SQL Server 2000, Oracle, Sybase, or DB2. You can use this information to migrate event handling information, for example, port or channel configurations.

Procedure How to Migrate a Microsoft SQL Server 2000 Repository

To migrate a Microsoft SQL Server 2000 repository:

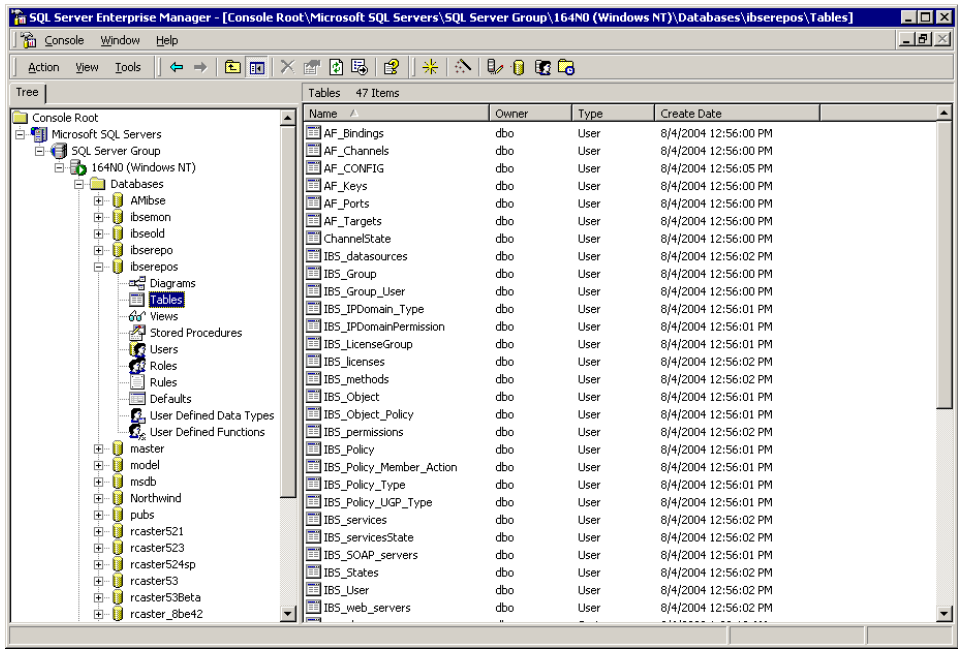
1. Open a command prompt and navigate to the iWay setup directory. The default location on Windows is:

   ```
   C:\Program Files\iWay55\etc\setup
   ```

   This directory contains SQL to create the repository tables in the following file:

   ```
   iwse.sql
   ```

You can use iwse.sql to create the database tables that are used by iBSE. For example, the following image shows the tree in the left pane and tables in the right pane. The tables are listed by name in one column with corresponding columns for information about owner, type, and the date the table was created.



For more information on configuring the Microsoft SQL Server 2000 repository, see the *iWay Installation and Configuration for BEA WebLogic* documentation.

2. To migrate the tables that were created by the iwse.sql script for iBSE, use your Microsoft SQL Server 2000 database tool set. For more information, consult your database administrator.

Procedure How to Migrate an Oracle Repository

To migrate an Oracle repository:

1. Open a command prompt and navigate to the iWay setup directory. The default location on Windows is:

   ```
   C:\Program Files\iWay55\etc\setup
   ```

   This directory contains SQL to create the repository tables in the following files:

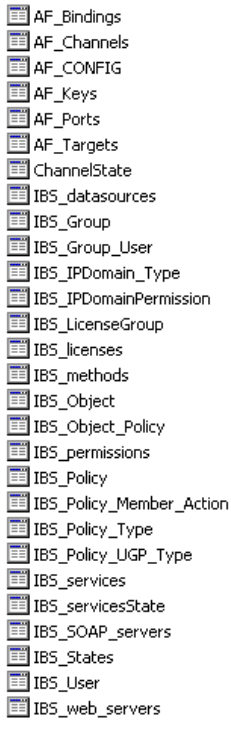
   For Oracle 8:

   ```
   iwse.ora
   ```

For Oracle 9:

```
iwse.ora9
```

2. To create the Oracle database tables that are used by iBSE, use the SQL script as shown in the example in the following image that shows a list of tables.



For more information on configuring the Oracle repository, see the *iWay Installation and Configuration for BEA WebLogic* documentation.

3. To migrate the tables that were created by the SQL script for iBSE, use your Oracle database tool set. For more information, consult your database administrator.

Procedure How to Migrate a Sybase Repository

To migrate a Sybase repository:

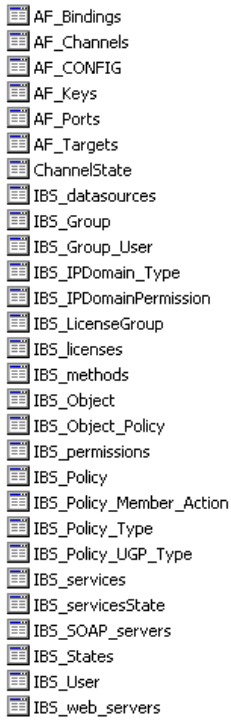
1. Open a command prompt and navigate to the iWay setup directory. The default location on Windows is:

```
C:\Program Files\iWay55\etc\setup
```

This directory contains SQL to create the repository tables in the following file:

```
sybase-iwse.sql
```

2. To create the Sybase database tables that are used by iBSE, use the SQL script as shown in the example in the following image that shows a list of tables.



   For more information on configuring the Sybase repository, see the *iWay Installation and Configuration for BEA WebLogic* documentation.

3. To migrate the tables that were created by the SQL script for iBSE, use your Sybase database tool set. For more information, consult your database administrator.

Procedure How to Migrate a DB2 Repository

To migrate a DB2 repository:

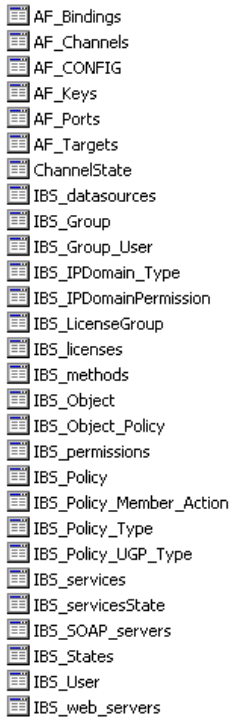
1. Open a command prompt and navigate to the iWay setup directory. The default location on Windows is:

   ```
   C:\Program Files\iWay55\etc\setup
   ```

   This directory contains SQL to create the repository tables in the following file:

   ```
   db2-iwse.sql
   ```

2. To create the DB2 database tables that are used by iBSE, use the SQL script as shown in the example in the following image that shows a list of tables.



For more information on configuring the DB2 repository, see the *iWay Installation and Configuration for BEA WebLogic* documentation.

You can migrate the tables that were created by the SQL script for iBSE using your DB2 database toolset. For more information, consult your database administrator.

Exporting or Importing Targets

After you migrate your repository, you can export or import targets with their connection information and persistent data between repositories.

Procedure: How to Export a Target

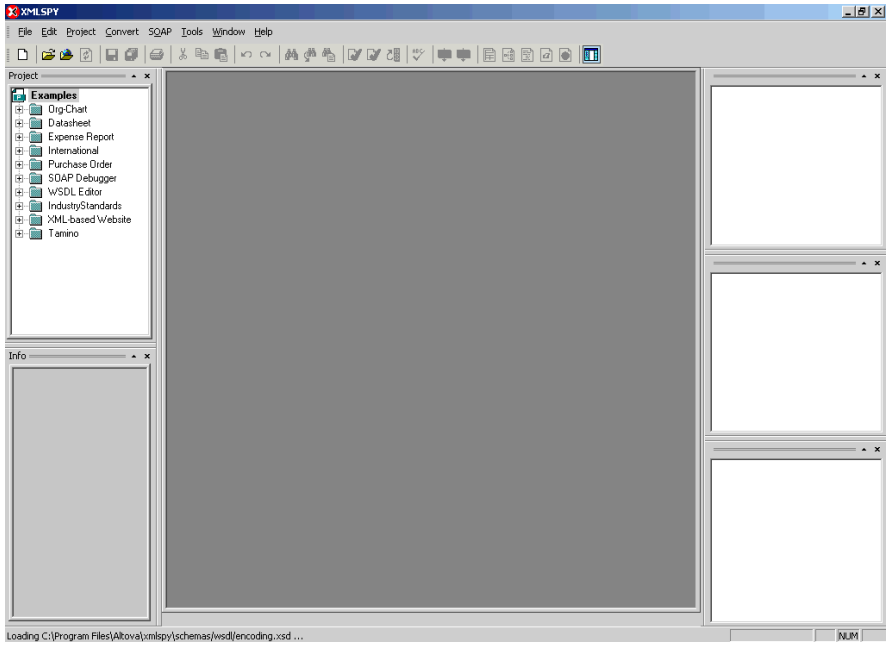
To export a target:

1. Copy the iBSE administrative services for Application Explorer URL, for example:

   `http://localhost:7777/ibse/IBSEServlet/admin/iwae.ibs?wsdl`

2. Open a third party XML editor, for example, XMLSPY.

The following image shows the XMLSPY window. The upper left has a Project pane that contains a tree of sample files, and the lower left has a blank Info pane. The middle pane is blank. The right side is divided into three blank panes.



3. From the SOAP menu, select *Create new SOAP request*.

The WSDL file location dialog box opens.

4. In the Choose a file field, paste the iBSE administrative services for Application Explorer URL.

5. Click *OK*.

The soap operation name dialog box opens and lists the available control methods.

6. Select the *EXPORTTARGET(EXPORTTARGET parameters)* control method and click *OK*.

A window opens that shows the structure of the SOAP envelope.

7. Locate the *Text view* icon in the tool bar.

In the following image, the pointer points to the Text view icon.

8. To display the structure of the SOAP envelope as text, click the *Text view* icon.

   The <SOAP-ENV:Header> tag is not required and can be deleted from the SOAP envelope.

9. Locate the following section:

```
<m:EXPORTTARGET
xmlns:m="urn:schemas-iwaysoftware-com:dec2002:iwse:af">
<m:target>String</m:target>
<m:name>String</m:name>
</m:EXPORTTARGET>
```

   a. For the <m:target> tag, replace the String placeholder with the EIS target system name as it appears in Application Explorer and verify whether this value is case sensitive.

   b. For the <m:name> tag, replace the String placeholder with the name of the target you want to export.

10. From the SOAP menu, select *Send request to server.*

    A response is returned that contains the <m: exporttime> and <m: contents> elements. You must use these elements when importing your target.

Procedure: How to Import a Target

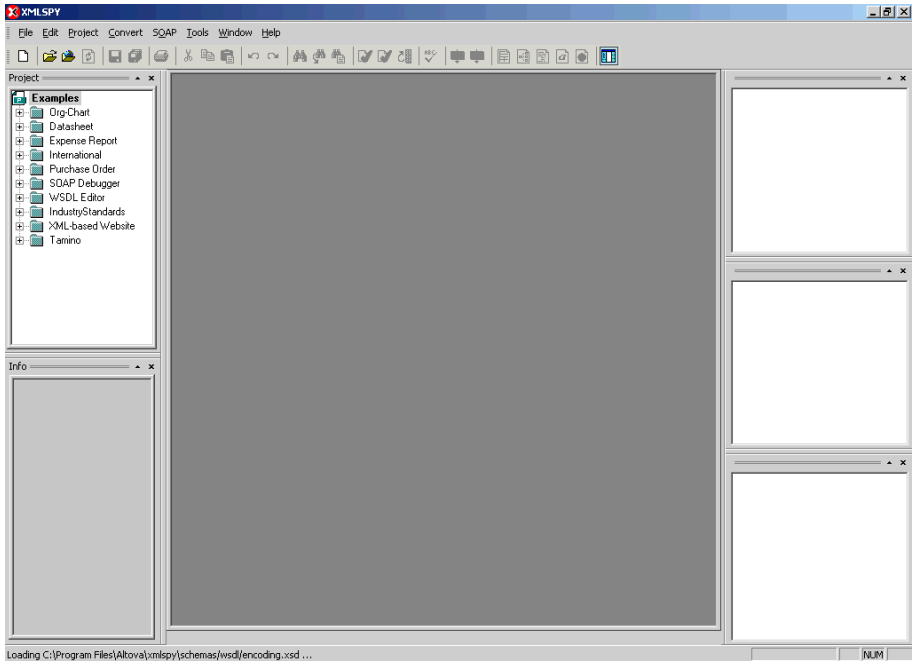
To import a target:

1. Copy the iBSE administrative services for Application Explorer URL, for example:

```
http://localhost:7777/ibse/IBSEServlet/admin/iwae.ibs?wsdl
```

2. Open a third party XML editor, for example, XMLSPY.

The following image shows the XMLSPY window. The upper left has a Project pane that contains a tree of sample files, and the lower left has a blank Info pane. The middle pane is blank. The right side is divided into three blank panes.



3. From the SOAP menu, select *Create new SOAP request*.

The WSDL file location dialog box opens.

4. In the Choose a file field, paste the iBSE administrative services for Application Explorer URL and click *OK*.

The soap operation name dialog box opens and lists the available control methods.

5. Select the *IMPORTTARGET(IMPORTTARGET parameters)* control method and click *OK*.

A window opens, which shows the structure of the SOAP envelope.

6. Locate the *Text view* icon in the toolbar.

In the following image, the pointer points to the Text view icon.

7. To display the structure of the SOAP envelope as text, click the *Text view* icon.

The <SOAP-ENV:Header> tag is not required and can be deleted from the SOAP envelope.

8. Locate the following section:

```
<m:IMPORTTARGET
xmlns:m="urn:schemas-iwaysoftware-com:dec2002:iwse:af">
<m:targetinstance>
<m:target>String</m:target>
<m:name>String</m:name>
<m:description>String</m:description>
<m:repositoryid>String</m:repositoryid>
<m:exporttime>2001-12-17T09:30:47-05:00</m:exporttime>
<m:contents>R0lGODlhcgGSALMAAAQCAEMmCZtuMFQxDS8b</m:contents>
</m:targetinstance>
</m:IMPORTTARGET>
```

   a. For the <m:target> tag, replace the String placeholder with the EIS target system name.

   b. For the <m:name> tag, replace the String placeholder with the new name of the target you want to import.

   c. For the <m:description> tag, replace the String placeholder with a description of the target.

   d. For the <m:repositoryid> tag, copy and paste the contents of the <m:repositoryid> tag that was returned when you exported your target.

   e. For the <m: exporttime> tag, copy and paste the contents of the <m: exporttime> tag that was returned when you exported your target.

   f. For the <m: contents> tag, copy and paste the contents of the <m: contents> tag that was returned when you exported your target.

9. From the SOAP menu, select *Send request to server*.

Retrieving or Updating Web Service Method Connection Information

After you migrate your repository, you can retrieve or update connection information for your Web service methods.

Procedure: How to Retrieve Web Service Method Connection Information

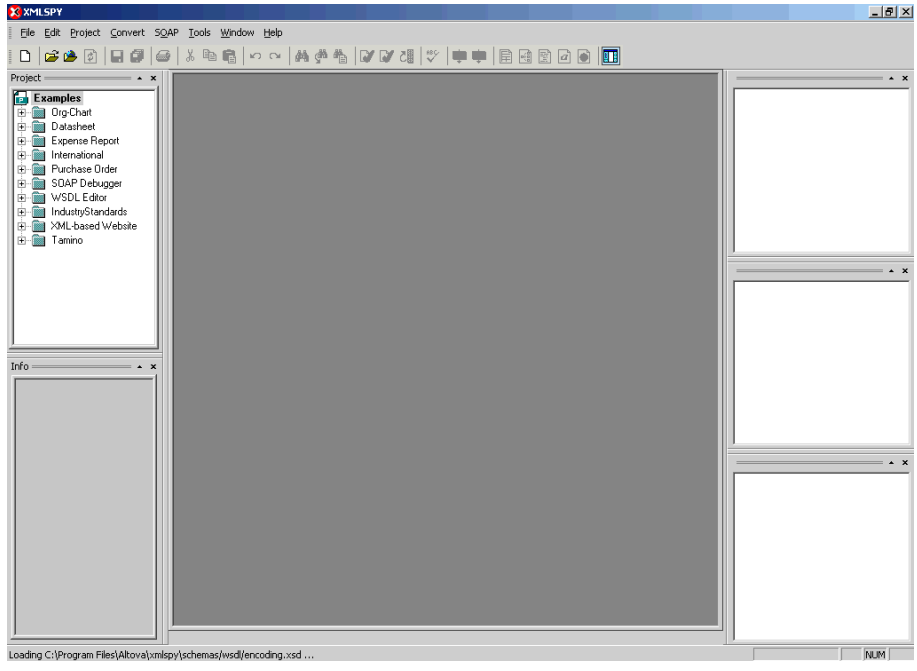
To retrieve Web service method connection information:

1. Copy the iBSE configuration service URL, for example:

   ```
   http://localhost:7777/ibse/IBSEServlet/admin/iwconfig.ibs?wsdl
   ```

2. Open a third party XML editor, for example, XMLSPY.

The following image shows the XMLSPY window. The upper left has a Project pane that contains a tree of sample files, and the lower left has a blank Info pane. The middle pane is blank. The right side is divided into three blank panes.



3. From the SOAP menu, select *Create new SOAP request*.

The WSDL file location dialog box opens.

4. In the Choose a file field, paste the iBSE configuration service URL, and click *OK*.

The soap operation name dialog box opens and lists the available control methods.

5. Select the *GETMTHCONNECTION(GETMTHCONNECTION parameters)* control method and click *OK*.

A window opens, which shows the structure of the SOAP envelope.

6. Locate the *Text view* icon in the toolbar.

In the following image, the pointer points to the Text view icon.

7. To display the structure of the SOAP envelope as text, click the *Text view* icon.

The <SOAP-ENV:Header> tag is not required and can be deleted from the SOAP envelope.

8. Locate the following section:

```
<m:GETMTHCONNECTION
xmlns:m="urn:schemas-iwaysoftware-com:jul2003:ibse:config">
<m:servicename>String</m:servicename>
<m:methodname>String</m:methodname>
</m:GETMTHCONNECTION>
```

   a. For the <m:servicename> tag, replace the String placeholder with the name of the Web service.

   b. For the <m:methodname> tag, replace the String placeholder with name of the Web service method.

9. From the SOAP menu, select *Send request to server.*

   A response is returned that contains the <m: descriptor> element. You must use this element when updating your Web service method.

Procedure: How to Update Web Service Method Connection Information

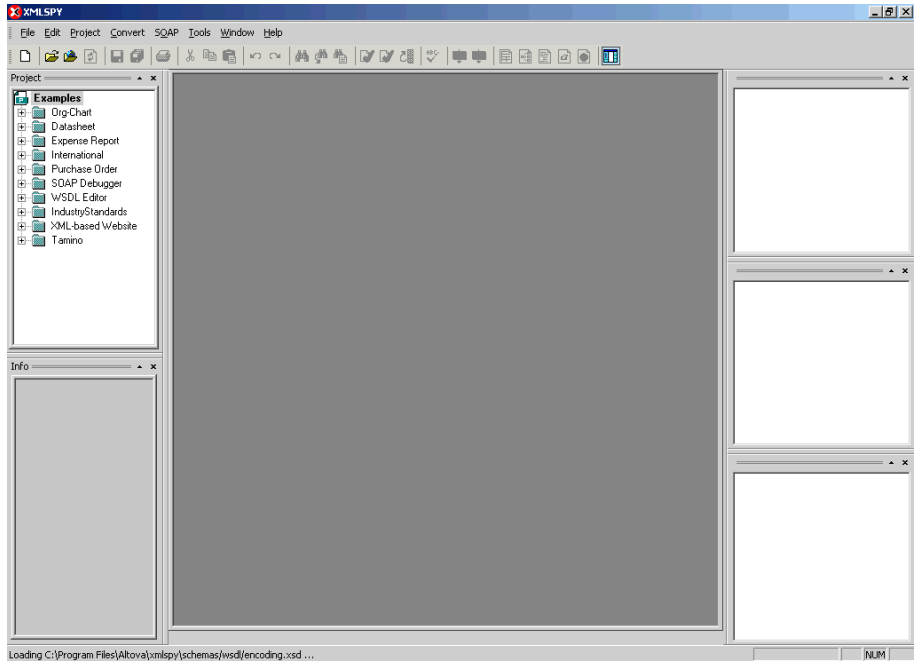
To update Web service method connection information:

1. Copy the iBSE configuration service URL, for example:

   ```
   http://localhost:7777/ibse/IBSEServlet/admin/iwconfig.ibs?wsdl
   ```

2. Open a third party XML editor, for example, XMLSPY.

The following image shows the XMLSPY window. The upper left has a Project pane that contains a tree of sample files, and the lower left has a blank Info pane. The middle pane is blank. The right side is divided into three blank panes.



3. From the SOAP menu, select *Create new SOAP request*.

The WSDL file location dialog box opens.

4. In the Choose a file field, paste the iBSE configuration service URL, and click *OK*.

The soap operation name dialog box opens and lists the available control methods.

5. Select the *SETMTHCONNECTION(SETMTHCONNECTION parameters)* control method and click *OK*.

A window opens that shows the structure of the SOAP envelope.

6. Locate the *Text view* icon in the toolbar.

In the following image, the pointer points to the Text view icon.

7. To display the structure of the SOAP envelope as text, click the *Text view* icon.

The <SOAP-ENV:Header> tag is not required and can be deleted from the SOAP envelope.

8. Locate the following section:

```
<m:SETMTHCONNECTION
xmlns:m="urn:schemas-iwaysoftware-com:jul2003:ibse:config">
<m:servicename>String</m:servicename>
<m:methodname>String</m:methodname>
<m:descriptor format="" channel="">
     <m:option title="">
       <m:group title="">
          <m:param/>
       </m:group>
     </m:option>
</m:descriptor>
</m:SETMTHCONNECTION>
```

   a. For the <m:servicename> tag, replace the String placeholder with the name of the Web service.

   b. For the <m:methodname> tag, replace the String placeholder with the name of the Web service method.

   c. For the <m: descriptor> tag, copy and paste the contents of the <m: descriptor> tag that was returned when you retrieved Web Service method connection information.

9. Modify the contents of the <m: descriptor> tag to change the existing Web Service method connection information.

10. From the SOAP menu, select *Send request to server.*

Starting or Stopping a Channel Programmatically

The following topic describes how to start or stop a channel programmatically.

Procedure: How to Start a Channel Programmatically

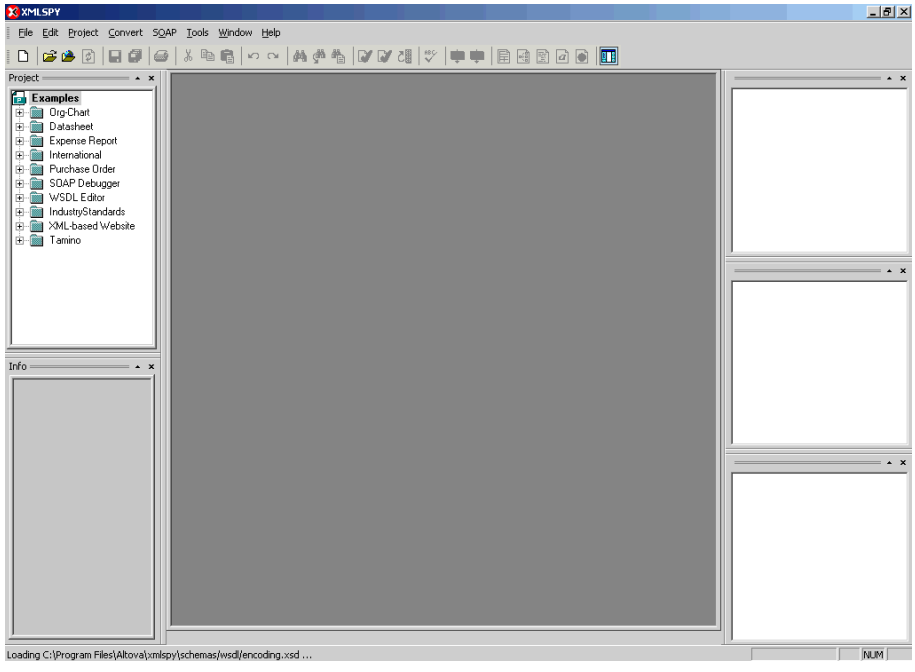
To start a channel programmatically:

1. Copy the iBSE control event URL, for example:

   ```
   http://localhost:7777/ibse/IBSEServlet/admin/iwevent.ibs?wsdl
   ```

2. Open a third party XML editor, for example, XMLSPY.

The following image shows the XMLSPY window. The upper left has a Project pane that contains a tree of sample files, and the lower left has a blank Info pane. The middle pane is blank. The right side is divided into three blank panes.

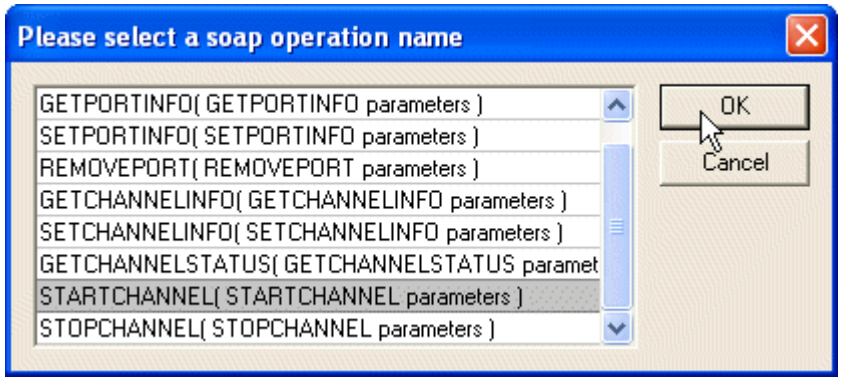


3. From the SOAP menu, select *Create new SOAP request*.

The WSDL file location dialog box opens.

4. In the Choose a file field, paste the iBSE control event URL, and click *OK*.

The following image shows the soap operation name dialog box that opens with a list of available control methods. You can select one and click OK or to escape from the dialog box, you can click Cancel.



5. Select the *STARTCHANNEL(STARTCHANNEL parameters)* control method and click *OK*.

   A window opens, which shows the structure of the SOAP envelope.

6. Locate the *Text view* icon in the toolbar.

   In the following image, the pointer points to the Text view icon.

7. To display the structure of the SOAP envelope as text, click the *Text view* icon.

   The <SOAP-ENV:Header> tag is not required and can be deleted from the SOAP envelope.

8. Locate the following section:

```
<SOAP-ENV:Body>
  <m:STARTCHANNEL
     xmlns:m="urn:schemas-iwaysoftware-com:dec2002:iwse:event">
           <m:channel>String</m:channel>
  </m:STARTCHANNEL>
</SOAP-ENV:Body>
```

9. For the <m:channel> tag, replace the String placeholder with the name of the Channel you want to start.

10. From the SOAP menu, select *Send request to server.*

Procedure: How to Stop a Channel Programmatically

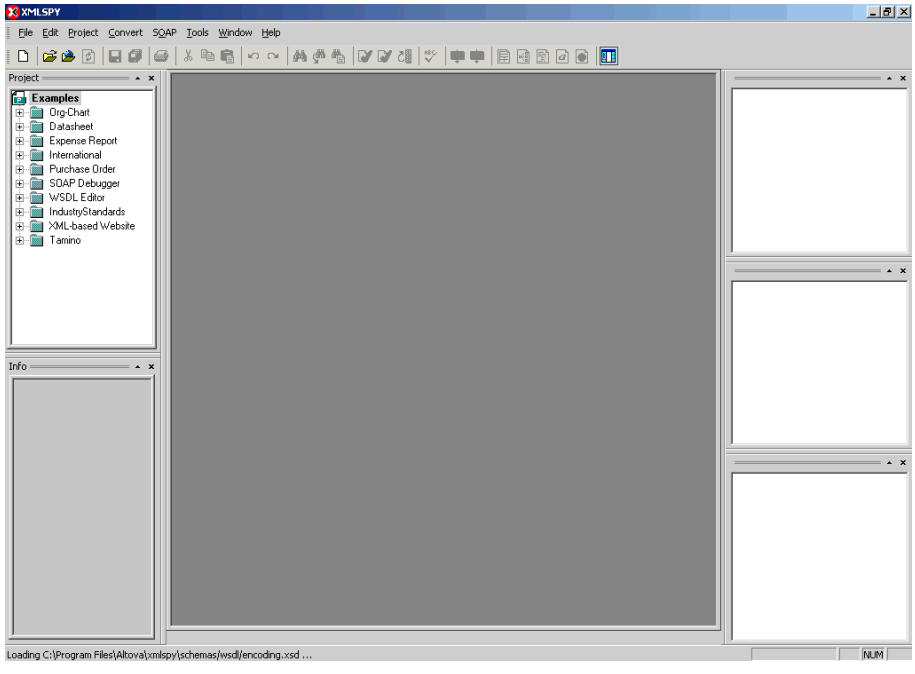
To stop a channel programmatically:

1. Copy the iBSE control event URL, for example:

   `http://localhost:7777/ibse/IBSEServlet/admin/iwevent.ibs?wsdl`

2. Open a third party XML editor, for example, XMLSPY.

   The following image shows the XMLSPY window. The upper left has a Project pane that contains a tree of sample files, and the lower left has a blank Info pane. The middle pane is blank. The right side is divided into three blank panes.

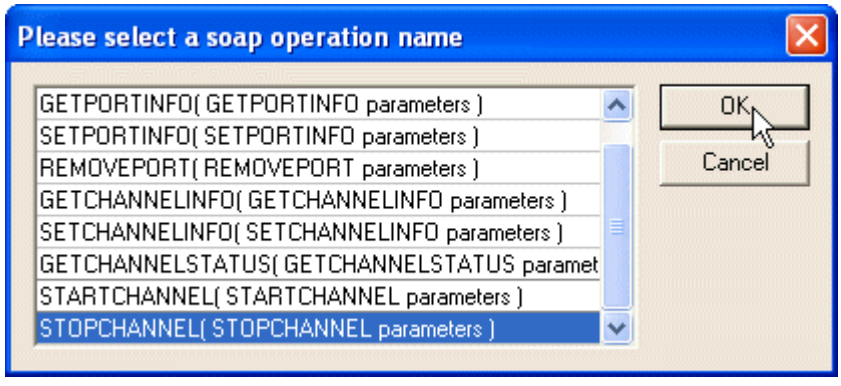


3. From the SOAP menu, select *Create new SOAP request*.

   The WSDL file location dialog box opens.

4. In the Choose a file field, paste the iBSE control event URL, and click *OK*.

The following image shows the soap operation name dialog box that opens with a list of available control methods. You can select one and click OK or to escape from the dialog box, you can click Cancel.



5. Select the *STOPCHANNEL(STOPCHANNEL parameters)* control method and click *OK*.

   A window opens, which shows the structure of the SOAP envelope.

6. Locate the *Text view* icon in the toolbar.

   In the following image, the pointer points to the Text view icon.

7. To display the structure of the SOAP envelope as text, click the *Text view* icon.

   The <SOAP-ENV:Header> tag is not required and can be deleted from the SOAP envelope.

8. Locate the following section:

```
<SOAP-ENV:Body>
  <m:STOPCHANNEL
     xmlns:m="urn:schemas-iwaysoftware-com:dec2002:iwse:event">
           <m:channel>String</m:channel>
  </m:STOPCHANNEL>
</SOAP-ENV:Body>
```

9. For the <m:channel> tag, replace the String placeholder with the name of the Channel you want to stop.

10. From the SOAP menu, select *Send request to server.*

APPENDIX A

Using Application Explorer in BEA WebLogic Workshop to Create XML Schemas and Web Services

Topics:

- Starting Application Explorer in BEA WebLogic Workshop
- Creating a New Configuration
- Connecting to FIX
- Creating an XML Schema
- Creating an iWay Business Service
- Adding a Control for an iWay Resource in BEA WebLogic Workshop
- Adding an Extensible CCI Control

This section describes how to use iWay Java Swing Application Explorer running in BEA WebLogic Workshop to create XML schemas and business services for FIX.

Starting Application Explorer in BEA WebLogic Workshop

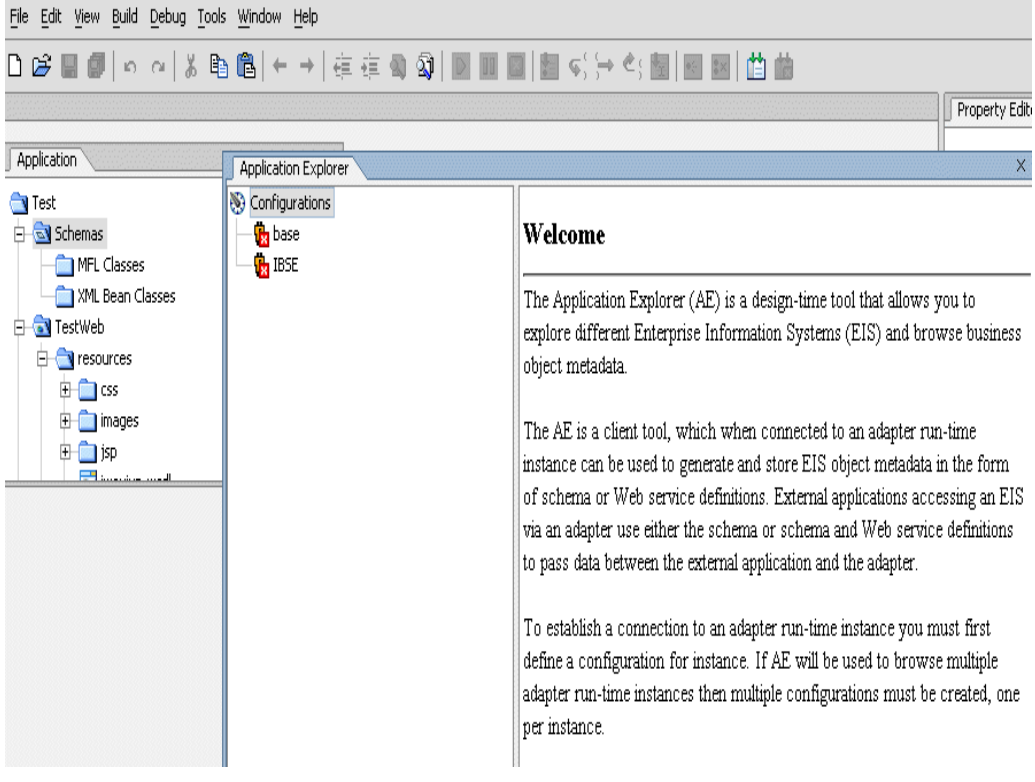
The server must be started where iWay Application Explorer is running. Before you can use Application Explorer, you must start BEA WebLogic server.

Procedure How to Start Application Explorer in BEA WebLogic Workshop

To start Application Explorer running in BEA WebLogic Workshop:

1. Before starting Application Explorer, ensure that BEA WebLogic Server is running.
2. Start BEA WebLogic Workshop.
3. From the BEA WebLogic Workshop View menu, select *Windows* and then, *iWay Application Explorer.*

   Application Explorer opens in BEA WebLogic Workshop.



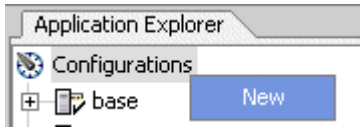
You can resize and drag-and-drop the Application Explorer window within BEA WebLogic Workshop. For example, you can drag it to the upper part of BEA WebLogic Workshop.

Creating a New Configuration

Before you can start using Application Explorer, you must define a new configuration for iBSE or JCA.

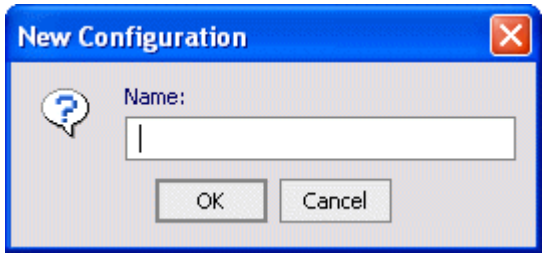
Procedure How to Create a New Configuration for iBSE or JCA

To create a new configuration:



1. Right-click *iWay Configurations* and select *New*.

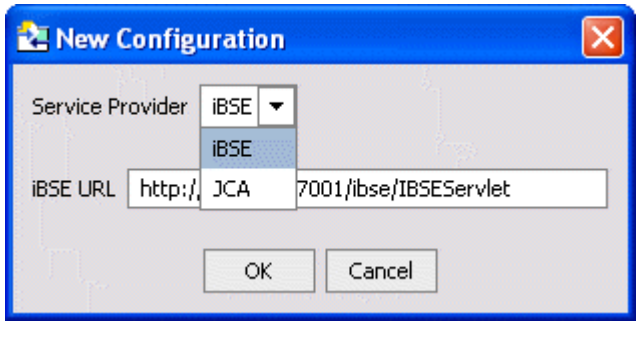
   The New Configuration dialog box opens.



2. Type the name of the new configuration and click *OK*.

   Note: If you are creating a new JCA configuration, type *base* in the name field. You must use this value if you are pointing to the default iWay configuration.

   The following dialog box opens.



3. From the Service Provider drop-down list, select *iBSE* or *JCA*.

If you select **iBSE**, type the URL for iBSE, for example,

```
http://localhost:7001/ibse/IBSEServlet
```

where:

localhost

Is where your application server is running.

If you select **JCA**, enter the full path to the directory where iWay 5.5 is installed, for example,

```
C:\Program Files\iWay55
```

where:

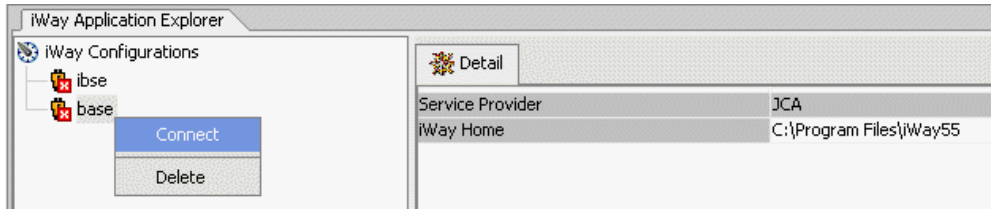
iWay55

Is the full path to your iWay installation.

A node representing the new configuration appears under the iWay Configurations node. The right pane provides details of the configuration you created.

4. Click *OK*.

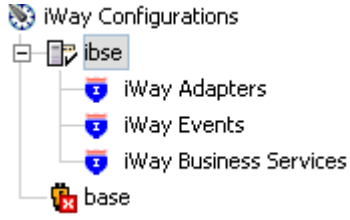
After you add your configuration, you must connect to it.



5. Right-click the configuration to which you want to connect, and select *Connect*.

When you connect to base, the iWay Adapters and iWay Events nodes appear.

When you connect to iBSE, the iWay Adapters, iWay Events, and iWay Business Services nodes appear.



6. To display the service and event adapters that are installed, expand each node.

   The iWay Adapters list includes a FIX node that enables you to connect to FIX metadata and create XML request and response schemas to use to listen for events or create Web Services. For more information, see *Creating an iWay Business Service* on page A-12.

   The iWay Events list includes a FIX node that enables you to create ports and channels for FIX event handling. For more information, see *Understanding iWay Event Functionality* on page B-3.

Connecting to FIX

To browse FIX, you must create a FIX target and connect to it. The target serves as your connection point. You must establish a connection to FIX every time you start iWay Application Explorer or after you disconnect from FIX.

The left pane displays the application systems supported by Application Explorer. These are based on the iWay adapters you installed and are licensed to use.

Creating and Connecting to a Target

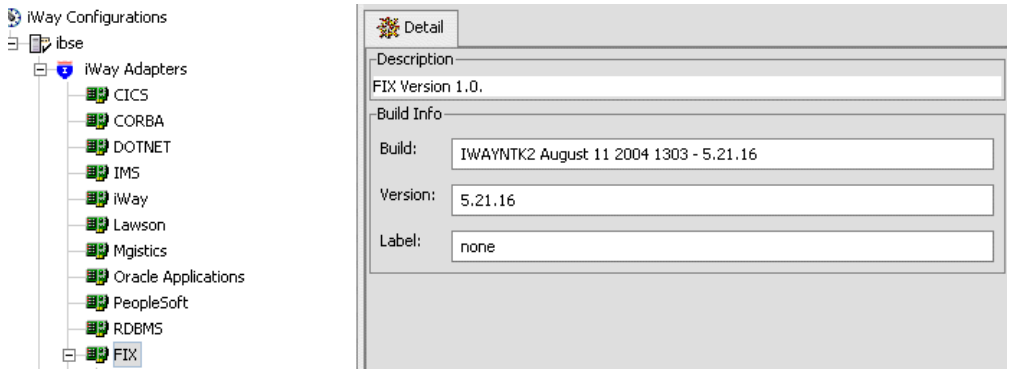
To connect to FIX for the first time, you must create a new target. The target is automatically saved after it is created.

Procedure How to Create a New Target

To create a new target:

1. In the left pane, expand *iWay Adapters* and click the *FIX* node.

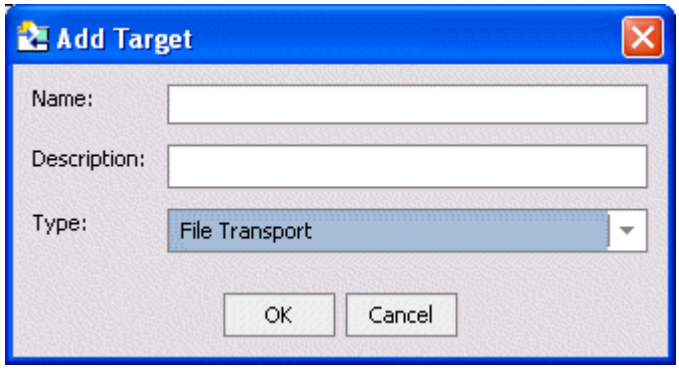
   Descriptive information (for example, title and product version) for the iWay Adapter for FIX appears in the right pane.



2. To view the options, right-click the *FIX* node.

3. Select *Add Target*.

   The Add target dialog box opens.



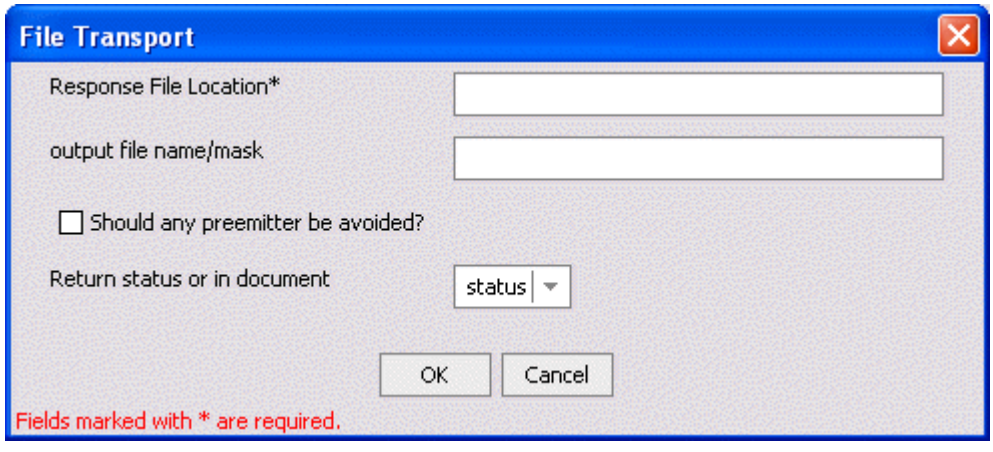
   a. In the Name field, type a descriptive name for the target, for example, FIXTarget.

   b. In the Description field, type a brief description of the target.

c. From the Type drop-down list, select the *File Transport*.

4. Click *OK*.

The Application Server dialog box opens where you must specify connection information for FIX and the application server that is hosting FIX.



a. In the Response File Location field, type the location where the output of the service is placed.

b. In the Output file name/mask field, type a file pattern, which can contain an asterisk which gets expanded to a fine timestamp.

c. Select the Should any preemitter be avoided check box, if required.

d. From the Return status or in document drop-down list, select *Status* or *Input*.

The status document is the out document. The input document becomes the out document.

5. Click *OK*.

In the left pane, the new target (FIXTarget) appears below the FIX node.

You can now connect to the target you defined.

Procedure How to Connect to a Target

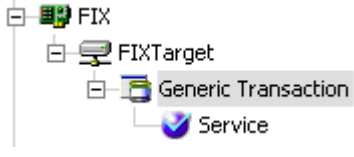
To connect to a FIX target:

1. In the left pane, expand the *FIX* node and select the target to which you want to connect, for example, FIXTarget.

2. In the left pane, right-click the target and select *Connect*.

   The FIXTarget node in the left pane changes to reflect that a connection was made.

3. Expand the target node to reveal the list of FIX interfaces.



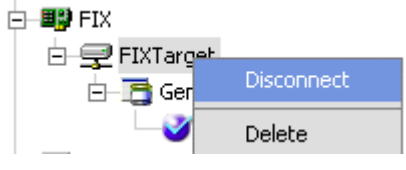
Managing a Target

Although you can maintain multiple open connections to different application systems, iWay Software recommends that you close connections when they are not in use. After you disconnect, you can modify an existing target.

You can modify the connection parameters when your system properties change. You also can delete a target. The following procedures describe how to disconnect from a target, edit a target, and delete a target.

Procedure How to Disconnect From a Target

To disconnect from a target:



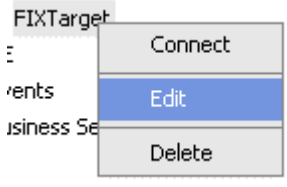
1. Right-click the target from which you want to disconnect.
2. Select *Disconnect*.

Disconnecting from the application system drops the connection, but the node remains. The target node in the left pane changes to reflect that you disconnected from the target.

Procedure How to Edit a Target

To edit a target:

1. Ensure that the target you want to edit is disconnected.



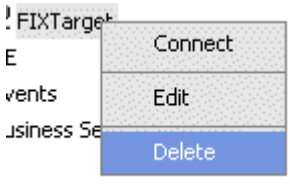
2. In the left pane, right-click the target and select *Edit*.

   The following dialog box opens.

3. Change the properties in the dialog box as required and click *OK*.

Procedure How to Delete a Target

To delete a target:



1. In the left pane, right-click the target.
2. Select *Delete*.

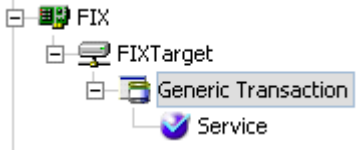
   The target node disappears from the left pane.

Creating an XML Schema

After you create a new configuration and connect to FIX, iWay Application Explorer enables you to create a request or response schema.

Procedure How to Create a Request and Response Schema

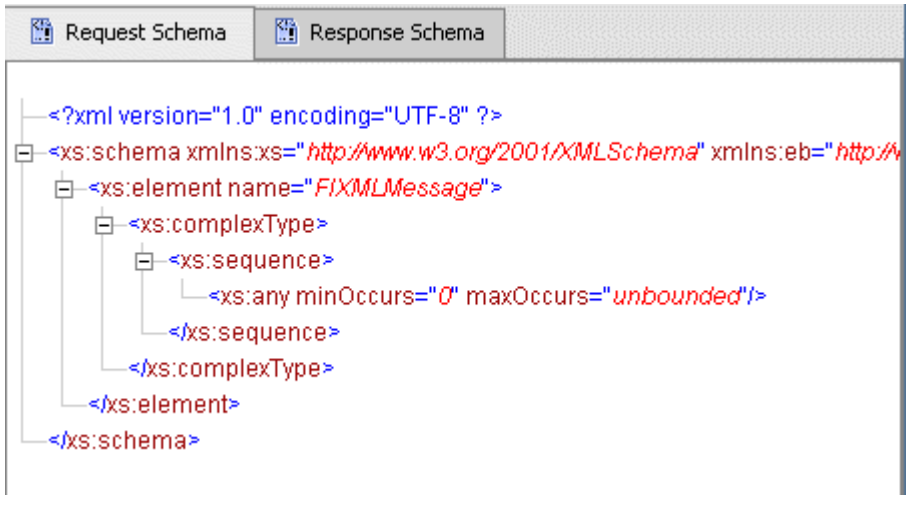
To create a request and response schema:



1. Expand the FIX node and select the node for which you want to create the schema.

The following XML schemas appear for the interface:

- Request
- Response



2. To view the appropriate schema in the right pane, click the *Request Schema* or the *Response Schema* tab.

The schema you select appears in the pane.

Reference Schema Location

After you browse the Component Interfaces and make a selection, the request and response XML schemas are automatically created for that Component Interface and stored in the repository you created, for example:

```
drive:\Program Files\iWay55\bea\ibse\wsdl\schemas\service\FIX
\FIXTarget\SA45280C
```

where:

FIXTarget

Is the name of the FIX target.

SA45280C

Is a randomly generated folder name indicating where the schemas are stored.

Creating an iWay Business Service

You can create an iWay business service (also known as a Web service) for objects you want to use with your adapter. To generate a business service, you must deploy the iWay Adapter for FIX using the iWay Business Services Engine (iBSE). iBSE exposes functionality as Web services and serves as a gateway to heterogeneous back-end applications and databases.

A Web service is a self-contained, modularized function that can be published and accessed across a network using open standards. It is the implementation of an interface by a component and is an executable entity. For the caller or sender, a Web service can be considered as a "black box" that may require input and delivers a result. Web services integrate within an enterprise as well as across enterprises on any communication technology stack, whether asynchronous or synchronous, in any format.

You can make a Web service available to other services within a host server by generating WSDL (Web Services Description Language) from the Web service.

Because Application Explorer runs within BEA WebLogic Workshop, you can easily incorporate iWay Web services into BEA WebLogic Workflows. To enable BEA WebLogic Workshop to use iWay Web services, you export the WSDL to a directory accessible to BEA WebLogic Workshop.

Note: In a J2EE Connector Architecture (JCA) implementation of iWay adapters, Web services are not available. When the adapters are deployed to use the iWay Connector for JCA, the Common Client Interface provides integration services using the iWay adapters. For more information, see the *iWay Installation and Configuration for BEA WebLogic* manual and the i*Way Connector for JCA for BEA WebLogic Server User's Guide*.

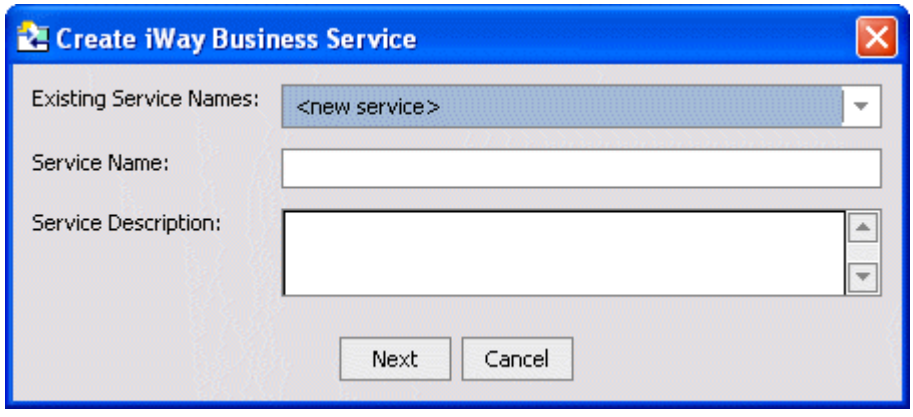
Procedure How to Create an iWay Business Service

To create an iWay Business service:

1. Expand the FIX node and select the interface for which you want to create a business service.

2. Right-click and select *Create iWay Business Service*.

The Create iWay Business Service dialog box opens.



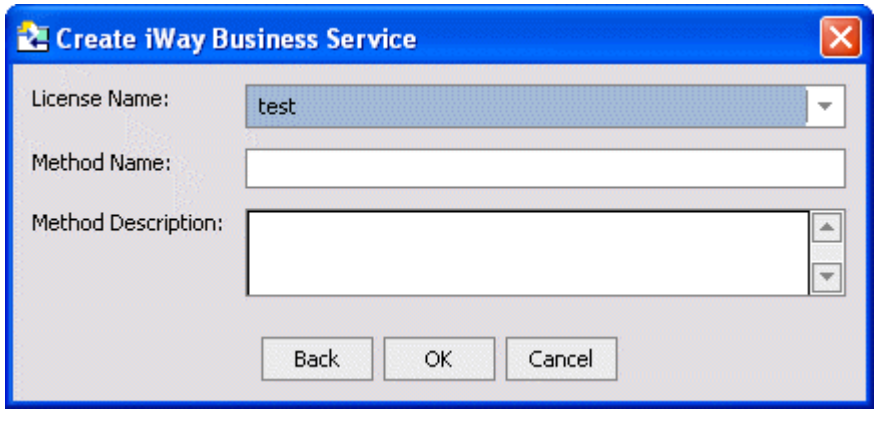
a. From the Existing Service Names drop-down list, select whether you want to create a new service name or use an existing service name.

b. In the Service Name field, type a name for the business service, for example, FIXService.

c. In the Service Description field, type a brief description of the business service.

3. Click *Next*.

The Create iWay Business Service dialog box displays additional fields.



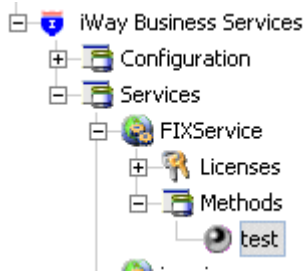
a. From the License Name drop-down list, select a license.

b. In the Method Name field, type a name for the method.

c. In the Method Description field, type a brief description for the method.

4. Click *OK*.

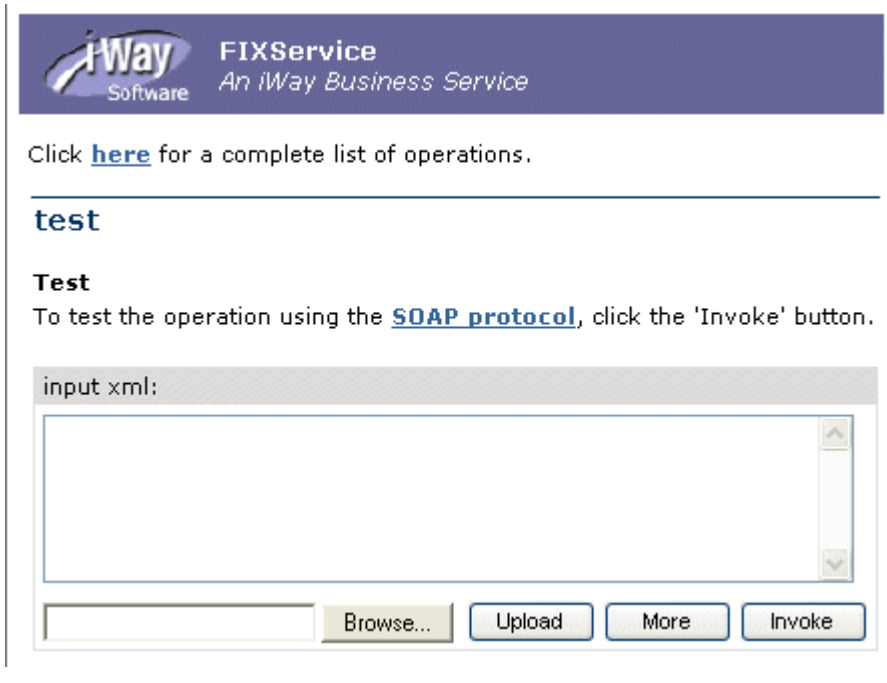
The business service and method appear below the iWay Business Services node.



In the left pane, all the available business services that were created appear.

5. Click the node for which you created the business service in the right pane.

On the right, the test pane opens.



6. To invoke the service, enter a sample XML document in the input xml field.

   For sample input XML, see *Testing a Business Service on page A-15*.

7. Click *Invoke*.

   The result appears in the right pane.

Example Testing a Business Service

The following is a sample XML document that you can use to test the business service:

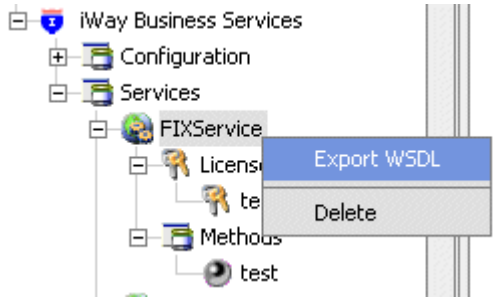
```
<?xml version="1.0" encoding="UTF-8"
?><FIXMLMessage><Header><Sender><CompID>
............56
.........</CompID>
      </Sender><Target><CompID>
............B2B
.........</CompID>
      </Target><SendingTime>
.........20031119-22:32:58
......</SendingTime>
   </Header><ApplicationMessage><Order><ClOrdID>
............BUY1069281178615
.........</ClOrdID><HandInst Value="1"/><Instrument><Symbol>
..............C
............</Symbol>
         </Instrument><Side Value="1"/><OrderQuantity><OrderQty>
..............100
............</OrderQty>
         </OrderQuantity><OrderType><MarketOrder Value="1"/>
         </OrderType><OrderDuration><TimeInForce Value="0"/>
         </OrderDuration><Currency
Value="USD"/></Order></ApplicationMessage></FIXMLMessage>
```

Exporting iWay WSDL for Use in BEA WebLogic Workshop Workflows

Because iWay Application Explorer runs within BEA WebLogic Workshop, you can easily incorporate iWay Web services into BEA WebLogic Workflows. To enable BEA WebLogic Workshop to use iWay Web services, you simply export the WSDL to a directory accessible to BEA WebLogic Workshop.

Procedure How to Export iWay WSDL for Use in BEA WebLogic Workshop Workflows

To export WSDL to a directory accessible to BEA WebLogic Workshop:

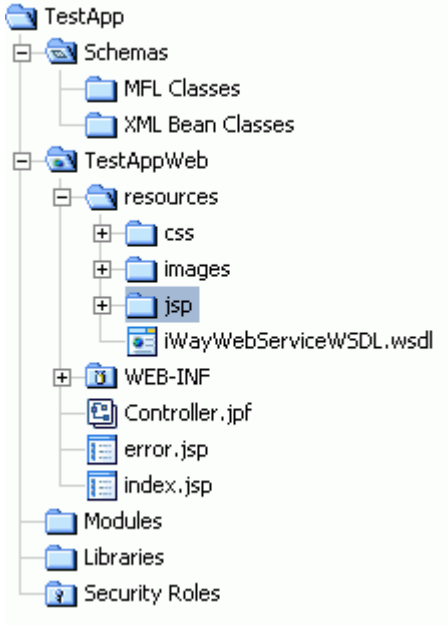


1. After you create a Web service, right-click the Web service name and select *Export WSDL*.

   The Save dialog box appears.

2. Save the WSDL to a directory accessible to BEA WebLogic Workshop, for example, the \resources directory in your BEA WebLogic Workshop Web application directory structure.

   The WSDL file appears under the resources folder of your Web application:



Adding a Control for an iWay Resource in BEA WebLogic Workshop

Java controls provide a convenient way to incorporate access to iWay resources. You can add controls in BEA WebLogic Workshop to use Web services created by Application Explorer, or you can add controls that enable you to take advantage of the JCA resources of Application Explorer.

Adding a Web Service Control to a BEA WebLogic Workshop Application

After you create an iWay Web service using Application Explorer and export the WSDL file, you can create a control for the Web service.

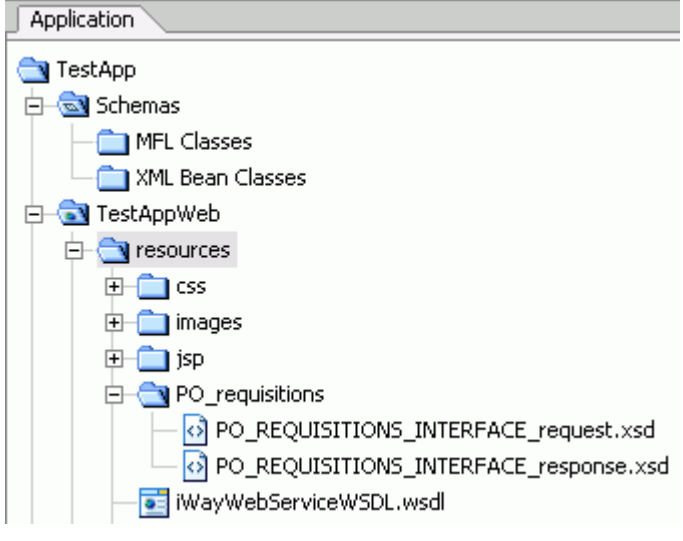
For more information on exporting a WSDL file, see *How to Export iWay WSDL for Use in BEA WebLogic Workshop Workflows* on page A-16.

Procedure How to Add a Web Service Control

To add a Web service control:

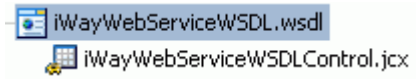
1. After exporting the WSDL file from Application Explorer, locate the file in the Application tab of your BEA WebLogic Workshop application.

   For example, a WSDL file saved to the \resources directory in your BEA WebLogic Workshop Web application directory structure appears as follows:



2. Right-click the *WSDL* file and select *Generate Service Control*.

The control for the WSDL appears below the WSDL file in the resources tree.



Adding an Extensible CCI Control

An iWay control enables access to resources provided by Application Explorer when it is used in conjunction with a JCA deployment. You must add an iWay control before using it in a BEA WebLogic Workshop application workflow.

The following topic describes the enhanced CCI control, which is extensible and provides JCX with typed inputs and outputs for JCA in BEA WebLogic Workshop.

Overview

The extensible iWay CCI control provides:

- **Method and tag validation**. BEA WebLogic Workshop provides warnings regarding invalid methods and tags.
- **Improved error handling**.

You can define new methods that rely on the generic *service* and *authService* methods. For example, you can define a JCX with a new method without writing casting code or explicit transformations such as the following:

```
public ResponseDataType MethodName(RequestDataType VariableName) throws
Exception;
```

where:

ResponseDataType

Is the XML Bean Class value that is generated from the response schema.

MethodName

Is the method name used by the extensible CCI control.

RequestDataType

Is the XML Bean Class value that is generated from the request schema.

VariableName

Is the request variable that stores the request document, which is used as input by the extensible CCI control.

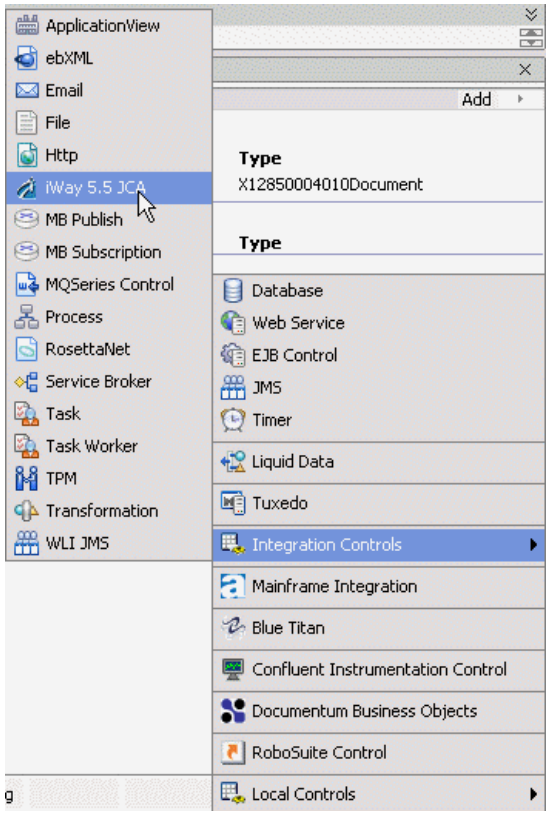
In addition, the extensible CCI control now generates a JCX file to which you can add your own methods. For more information, see *Defining a Control Using the Extensible CCI Control* on page A-19.

You can also use dynamic class casting to specify schema-based input or output XmlObjects to be cast into a pure XmlObject as a service method, which is expected by the CCI control. For more information, see *Using Dynamic Class Casting* on page A-25.

Example Defining a Control Using the Extensible CCI Control

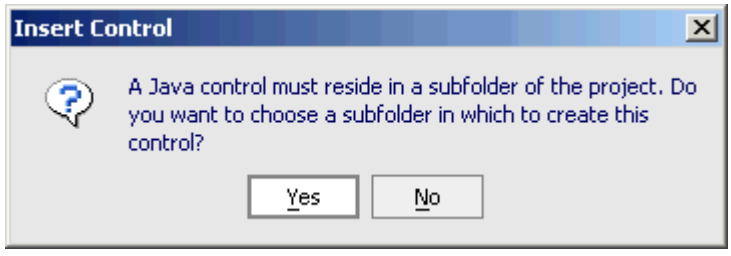
The following sample JCX demonstrates how to define a control for FIX using the extensible CCI control in BEA WebLogic Workshop.

1. Start BEA WebLogic Workshop and create a new project.



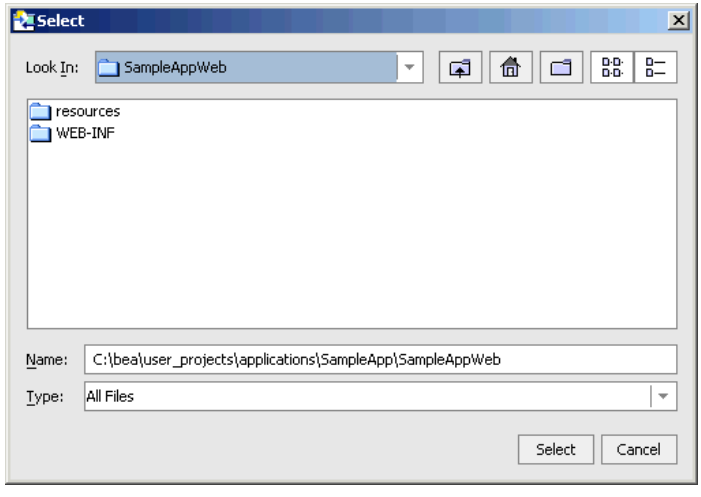
2. Click *Add* from the Controls section in the Data Palette tab, select *Integration Controls*, and click *iWay 5.5 JCA*.

The Insert Control message box opens.



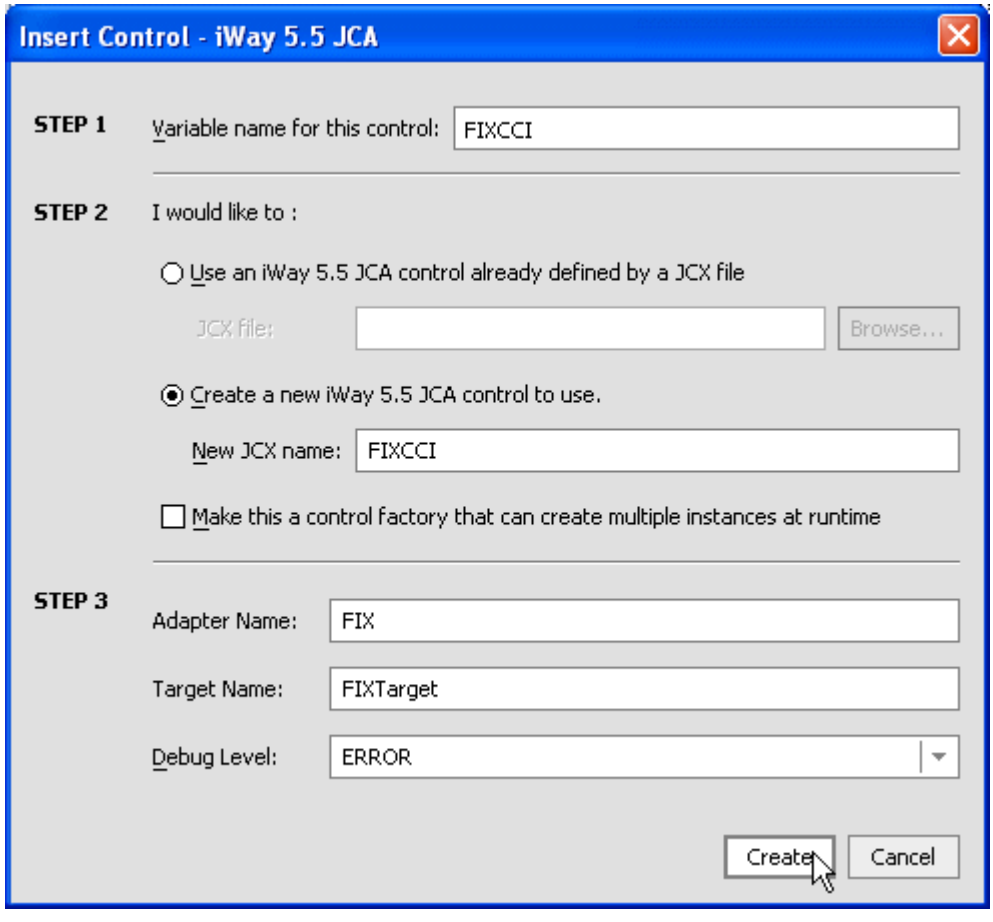
3. Click *Yes*.

The Select dialog box opens.



4. Choose a subfolder for the CCI control and click *Select*.

The Insert Control - iWay 5.5 JCA dialog box opens.



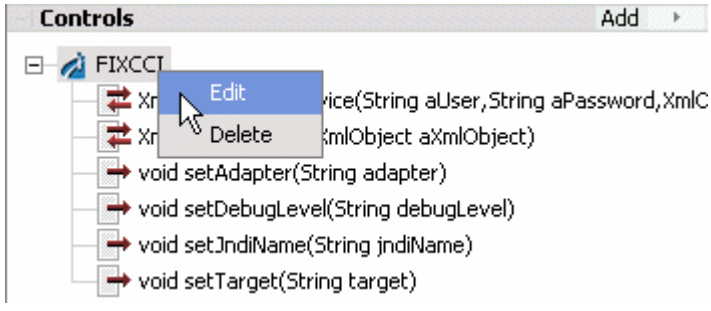
a. Provide a variable name for the control.

b. Click *Create a new iWay 5.5 JCA control to use* and provide a new JCX name.

c. Enter the adapter name, target name, and select a debug level from the drop-down list.

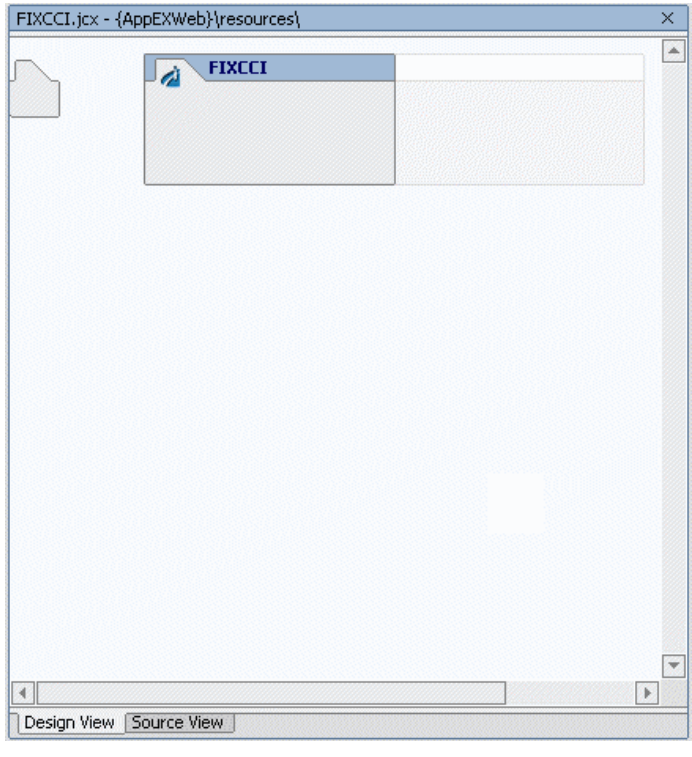
5. Click *Create*.

A new JCX file is created.



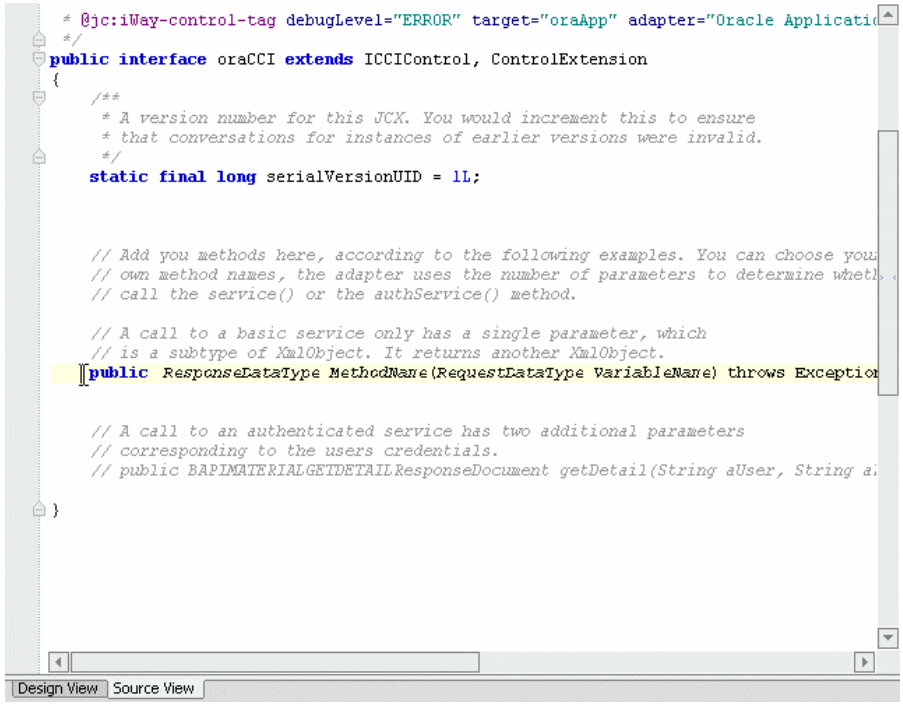
6. Right-click the control, for example, FIXCCI, and select *Edit*.

The Design View for the control opens.



7. Click the *Source View* tab.

The Source View for the control opens.



Perform the following steps:

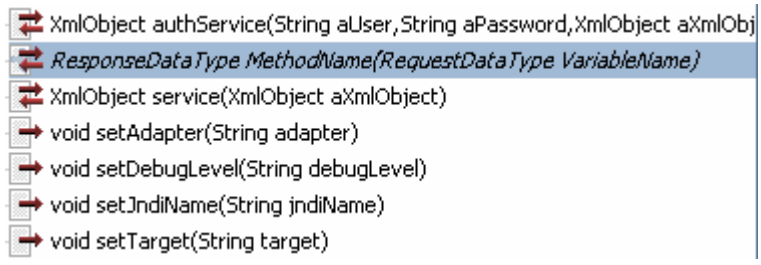
a. Uncomment the public class definition.

b. Change the existing response data type to match your response data type that is generated from your FIX response schema.

c. Change the existing method name to match your method.

d. Change the existing request data type to match your request data type that is generated from your FIX request schema.

The following control is now available in BEA WebLogic Workshop and can be added to a workflow:



Note: You can view available data types under the *XML Bean Classes* folder in the *Application* tab, which are added once you import your XML request or response schemas from Application Explorer.

These data types are case sensitive and must be entered exactly as shown.

Using the Extensible CCI Control

The extensible CCI control functions much like a database control since it generates JCX files to which you can add your own methods.

Your own methods can use the correct input and output types rather than the generic XmlObject types that the JCA control uses. Since the control is just a proxy that uses a reflection to call the relevant method, it handles the casting for you. You are no longer required to write custom code that does the cast or transformations that are cast between an XmlObject.

For example, instead of the generic XmlObject:

```
XmlObject service(XmlObject input) throws java.lang.Exception;
```

you call:

```
public ResponseDataType MethodName(RequestDataType VariableName) throws
Exception;
```

where:

ResponseDataType

Is the XML Bean Class value that is generated from the response schema.

MethodName

Is the method name used by the extensible CCI control.

RequestDataType

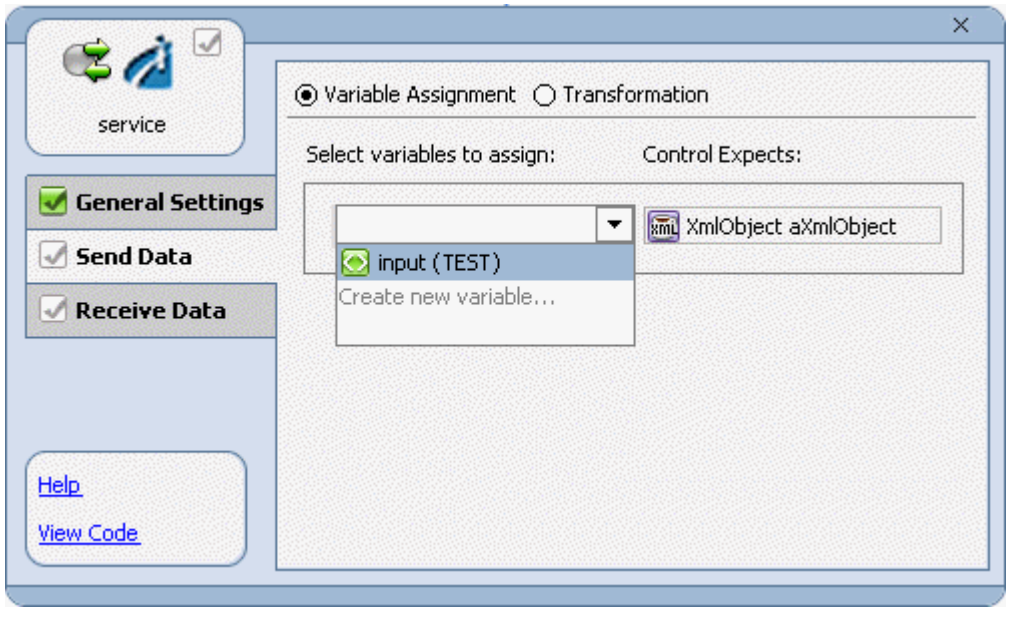
Is the XML Bean Class value that is generated from the request schema.

VariableName

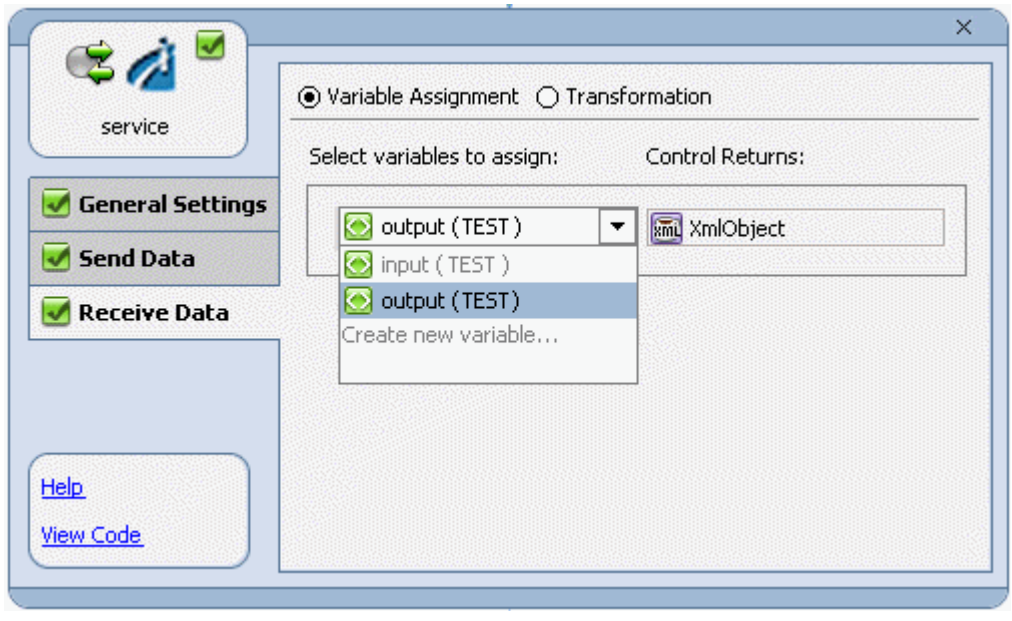
Is the request variable that stores the request document, which is used as input by the extensible CCI control.

Example Using Dynamic Class Casting

The following example uses dynamic class casting to specify a schema-based input XmlObject to be casted into a pure XmlObject as a service method, which is expected by the CCI control.



The following example uses dynamic class casting where the CCI control returns a pure XmlObject, which is casted dynamically into a schema-based output XmlObject.



APPENDIX B

Using Application Explorer in BEA WebLogic Workshop for Event Handling

Topics:

- Starting Application Explorer in BEA WebLogic Workshop
- Understanding iWay Event Functionality
- Creating an Event Port
- Modifying an Event Port
- Creating a Channel
- Modifying a Channel
- Deploying iWay Components in a Clustered BEA WebLogic Environment

This section describes how to use iWay Java Swing Application Explorer running in BEA WebLogic Workshop to create events for FIX. In addition, this section provides information on deploying components in a clustered BEA WebLogic environment.

Starting Application Explorer in BEA WebLogic Workshop

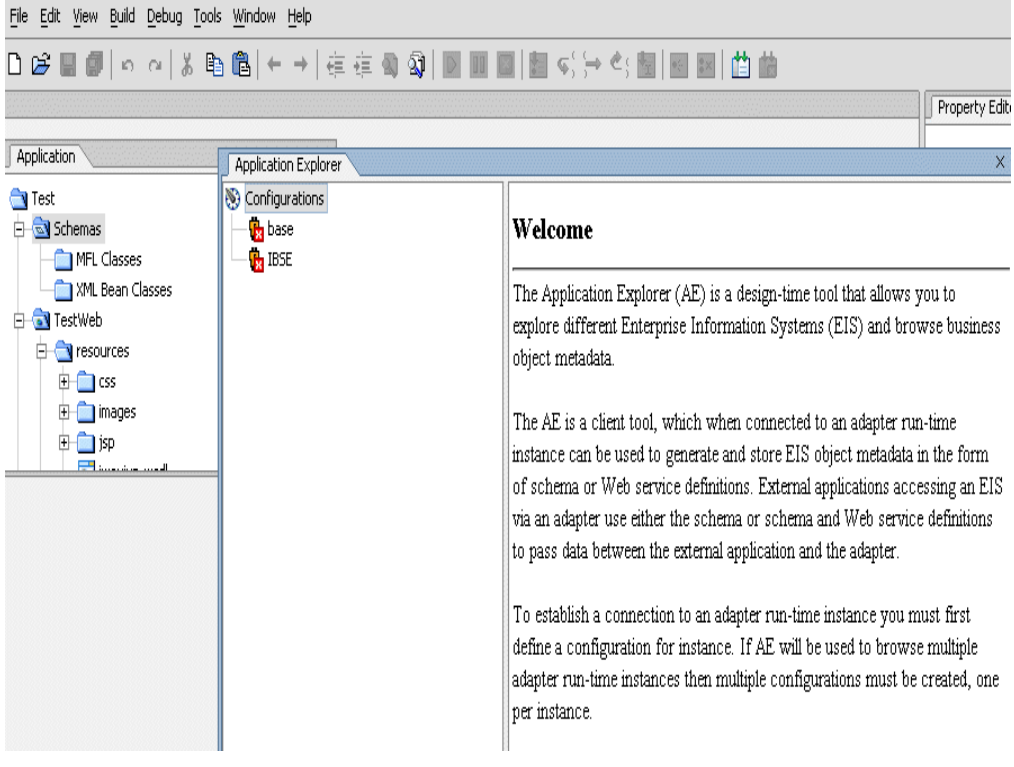
The server must be started where iWay Application Explorer is running. Before you can use Application Explorer, you must start BEA WebLogic server.

Procedure How to Start Application Explorer in BEA WebLogic Workshop

To start Application Explorer running in BEA WebLogic Workshop:

1. Before starting Application Explorer, ensure that BEA WebLogic Server is running.
2. Start BEA WebLogic Workshop.
3. From the BEA WebLogic Workshop View menu, select *Windows* and then, *iWay Application Explorer.*

   Application Explorer opens in BEA WebLogic Workshop.



You can resize and drag-and-drop the Application Explorer window within BEA WebLogic Workshop. For example, you can drag it to the upper part of BEA WebLogic Workshop.

Understanding iWay Event Functionality

Events are generated as a result of activity in an application system. You can use events to trigger an action in your application. For example, FIX may generate an event when customer information is updated. If your application must perform in response to activity, your application is a consumer of this event.

After you create a connection to your application system, you can add events using Application Explorer. To define an iWay event, you must create a port and a channel.

- Port

  A port associates a particular business object exposed by the adapter with a particular disposition. A disposition defines the protocol and location of the event data. The port defines the end point of the event consumption. For more information, see *Creating an Event Port* on page B-3.

- Channel

  A channel represents configured connections to particular instances of back-end systems. A channel binds one or more event ports to a particular listener managed by the adapter. For more information, see *Creating a Channel* on page B-25.

Creating an Event Port

The following procedures describe how to create an event port using iWay Application Explorer. The following port dispositions are available when using iBSE:

- File
- iBSE
- MSMQ
- JMSQ
- SOAP
- HTTP
- MQSeries
- Mail

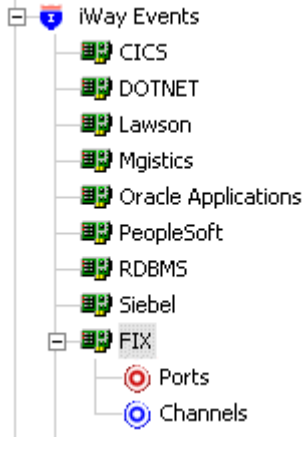
Note: The MAIL disposition option will be supported in a future release.

With a JCA implementation, the following port dispositions are available:

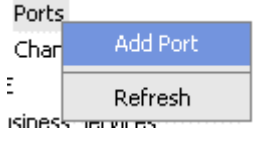
- File
- JMSQ
- MQSeries
- HTTP

Procedure How to Create an Event Port for File

To create an event port for File:

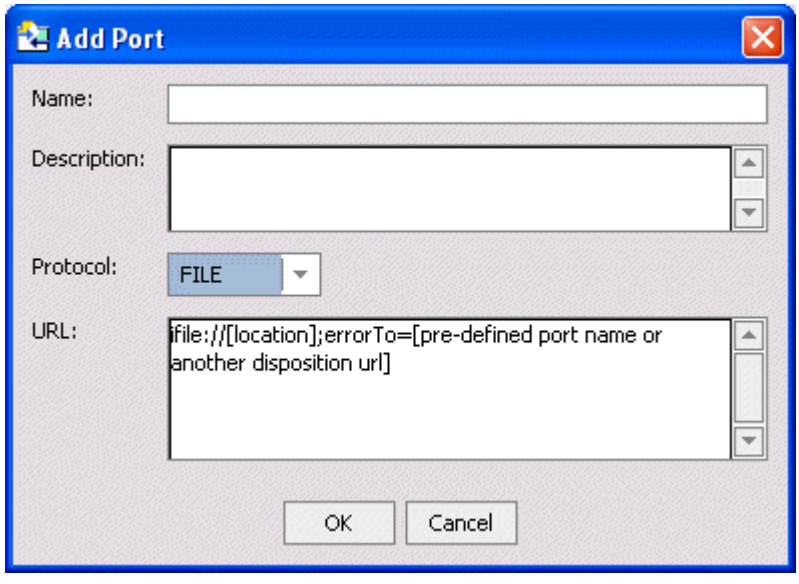


1. In the left pane of Application Explorer, expand the FIX node under iWay Events, and then select *Ports*.



2. Right-click and select *Add Port*.

The Create Event Port dialog box opens.



a. In the Name field, type a name for the event port, for example, FixFile.

b. In the Description field, type a brief description.

c. From the Protocol drop-down list, select *FILE*.

d. In the URL field, type a destination file to which the event data is written, using the following format:

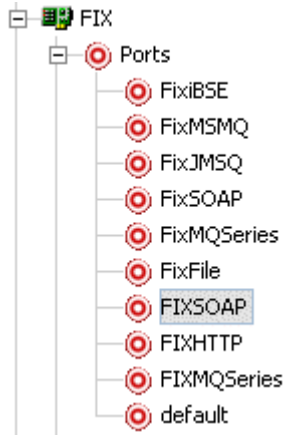
```
file://location[;errorTo=errorDest]
```

The following table describes the URL parameters.

Parameter	Description
location	The full directory path and file name to which the data is written.
errorTo	Location where error logs are sent. Optional. A predefined port name or another disposition URL. The URL must be complete, including the protocol.

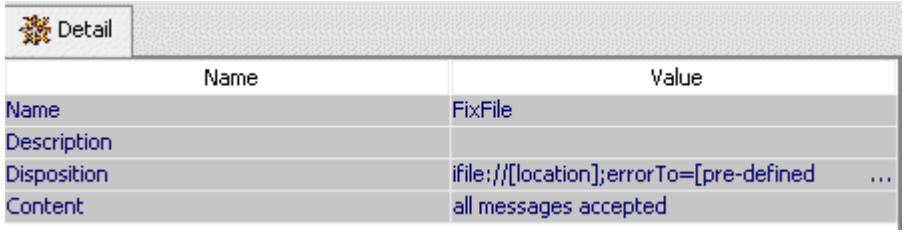
3. Click *OK*.

In the left pane, the event port appears below the Ports node.



4. To review the port settings, select the port name.

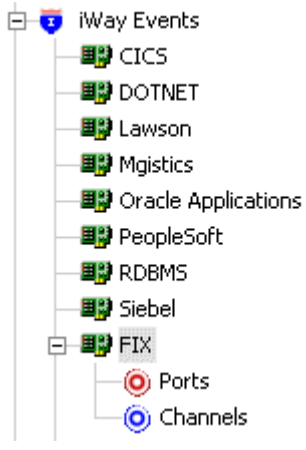
In the right pane, a table appears that summarizes the information associated with the event port you created.



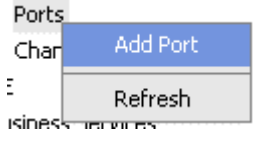
You are ready to associate the event port with a channel. For more information, see *Creating a Channel* on page B-25.

Procedure How to Create an Event Port for iBSE

To create an event port for iBSE:

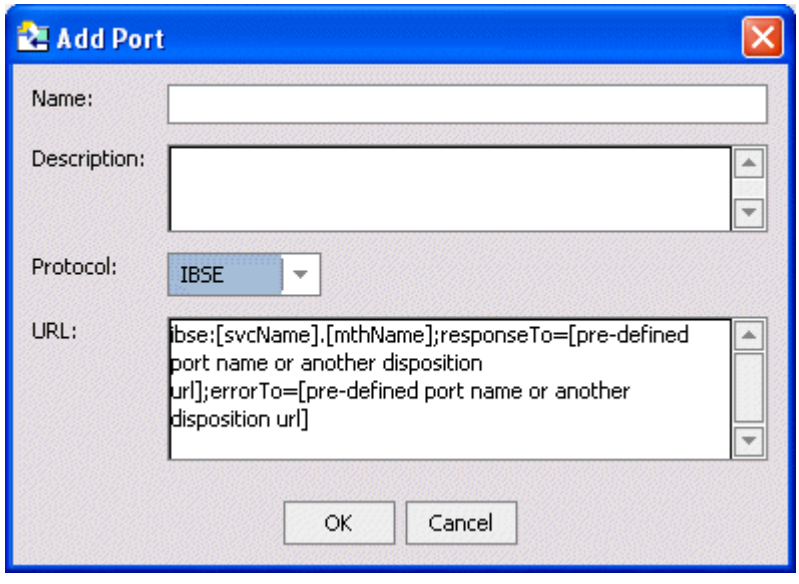


1. In the left pane of Application Explorer, expand the FIX node under iWay Events, and then select *Ports*.



2. Right-click and select *Add Port*.

The Create Event Port dialog box opens.



a. In the Name field, type a name for the event port, for example, FixiBSE.

b. In the Description field, type a brief description.

c. From the Protocol drop-down list, select *IBSE*.

d. In the URL field, enter an iBSE destination using the following format:

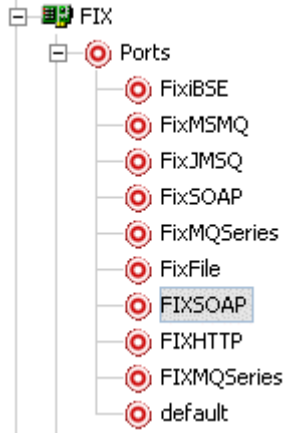
```
ibse:/svcName.methName[;responseTo=respDest][;errorTo=errorDest]
```

The following table describes the disposition parameters.

Parameter	Description
svcName	Name of the service created with iBSE.
methName	Name of the method created for the Web service.
respDest	Location where responses to the Web service are posted. Optional. A predefined port name or another disposition URL. The URL must be complete, including the protocol.
errorDest	Location where error logs are sent. Optional. A predefined port name or another disposition URL. The URL must be complete, including the protocol.

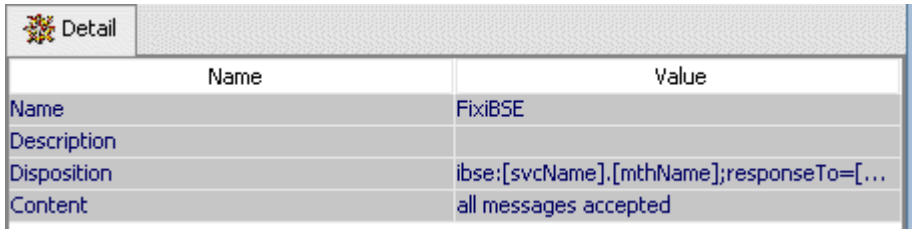
3. Click *OK*.

In the left pane, the event port appears below the Ports node.



4. To review the port settings, select the port name.

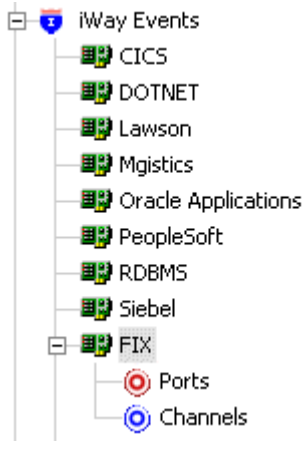
In the right pane, a table appears that summarizes the information associated with the event port you created.



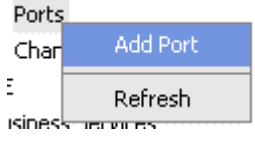
You are ready to associate the event port with a channel. For more information, see *Creating a Channel* on page B-25.

Procedure How to Create an Event Port for MSMQ

To create an event port for a Microsoft Message Queuing (MSMQ) queue:

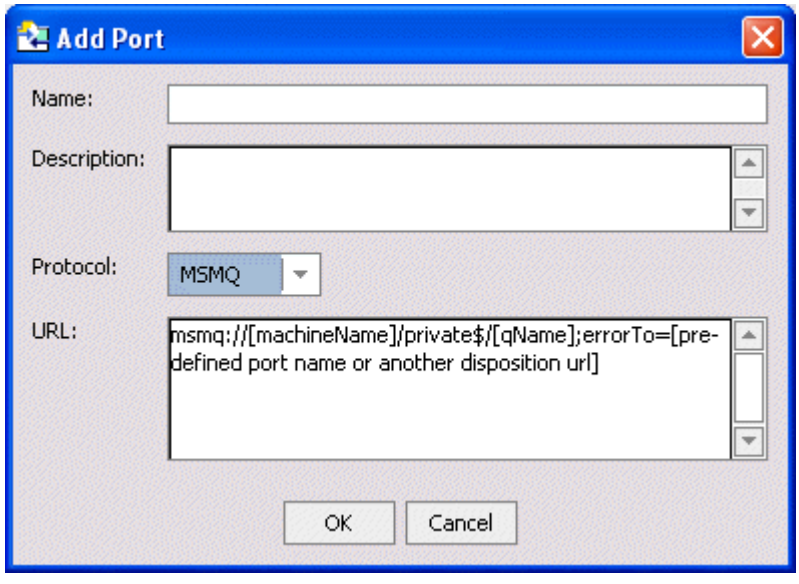


1. In the left pane of Application Explorer, expand the FIX node under iWay Events, and then select *Ports*.



2. Right-click and select *Add Port*.

The Create Event Port dialog box opens.



a. In the Name field, type a name for the connection, for example, FixMSMQ.

b. In the Description field, type a description for the target name you just created.

c. From the Protocol drop-down list, select *MSMQ*.

d. In the URL field, enter an MSMQ destination in the following format:

```
msmq:/host/queueType/queueName[;errorTo=errorDest]
```

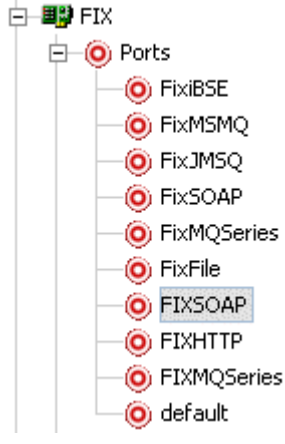
The following table defines the disposition parameters.

Parameter	Description
host	Name of the host on which the Microsoft Queuing system runs.
queueType	The type of queue. For private queues, enter *Private$*. Private queues are queues that are not published in Active Directory. They appear only on the local computer that contains them. Private queues are accessible only by Message Queuing applications that recognize the full path name or format name of the queue.
queueName	Name of the queue where messages are placed.

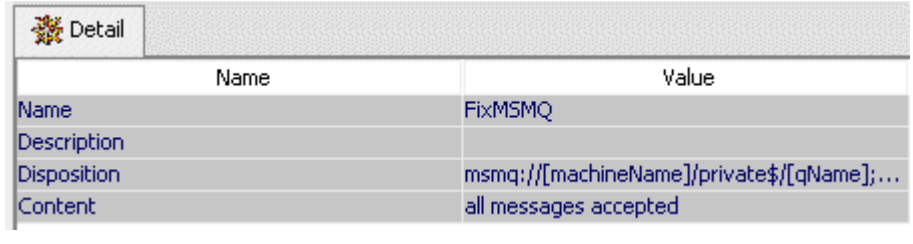
Parameter	Description
errorDest	Location where error logs are sent. Optional. A predefined port name or another disposition URL. The URL must be complete, including the protocol.

3. Click *OK*.

In the left pane, the event port appears below the Ports node.



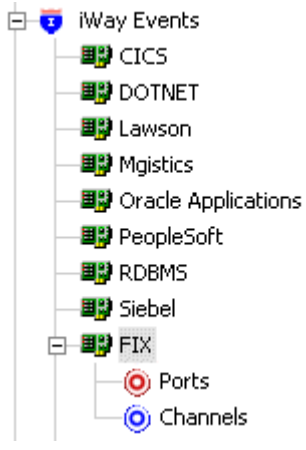
4. To review the port settings, select the port name.



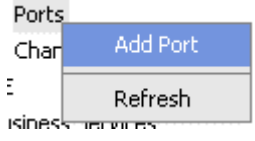
In the right pane, a table appears that summarizes the information associated with the port you created. You are ready to associate the event port with a channel. For more information, see *Creating a Channel* on page B-25.

Procedure How to Create a Port for JMS

To create a port for a JMS queue:

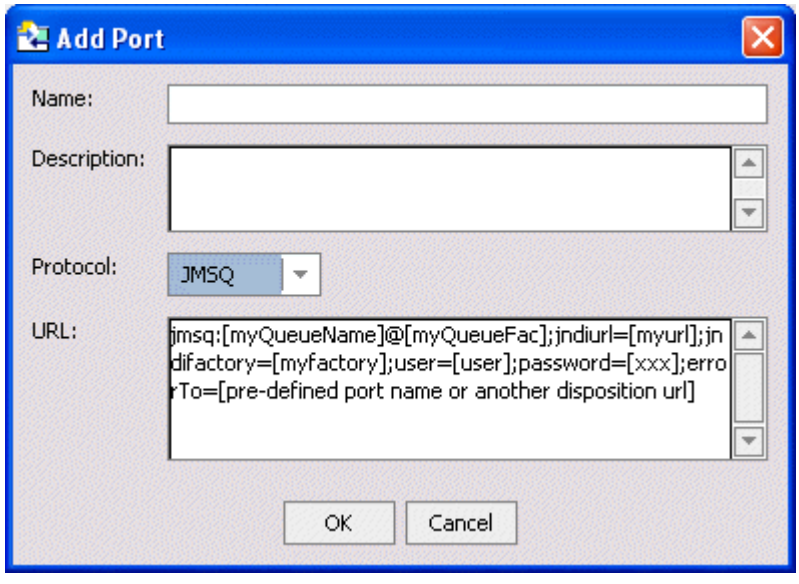


1. In the left pane of Application Explorer, expand the FIX node under iWay Events, and then select *Ports*.



2. Right-click and select *Add Port*.

The Create Event Port dialog box opens.



a. In the Name field, type a name for the event port, for example, FixJMSQ.

b. In the Description field, type a brief description.

c. From the Protocol drop-down list, select *JMSQ*.

d. In the URL field, enter a JMSQ destination using the following format:

```
jmsq:queue@conn_factory;jndiurl=jndi_url;jndifactory=jndi_factory;
user=userID;password=pass[;errorTo=errorDest]
```

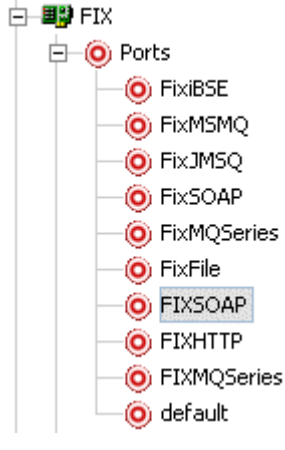
The following table describes the URL parameters.

Parameter	Description
queue	Name of a queue to which events are emitted.
conn_factory	The connection factory, a resource that contains information about the JMS Server. The WebLogic connection factory is: `javax.jms.QueueConnectionFactory`

Parameter	Description
jndi_url	The URL of the application server. For BEA WebLogic Server, the URL is `t3://host:port` where: *host* Is the machine name where BEA WebLogic Server resides. *port* Is the port on which BEA WebLogic Server is listening. The default port, if not changed at installation, is 7001.
jndi_factory	Is JNDI context.INITIAL_CONTEXT_FACTORY and is provided by the JNDI service provider. For BEA WebLogic Server, the WebLogic factory is weblogic.jndi.WLInitialContextFactory.
userID	User ID associated with this queue.
pass	Password associated with this user ID.
errorDest	Location where error logs are sent. Optional. A predefined port name or another disposition URL. The URL must be complete, including the protocol.

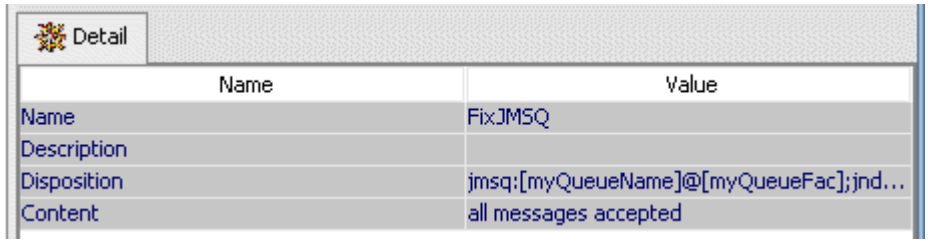
3. Click *OK*.

The event port appears below the Ports node in the left pane.



4. To review the port settings, select the port name.

   In the right pane, a table appears that summarizes the information associated with the event port you created.



   You are ready to associate the event port with a channel. For more information, see *Creating a Channel* on page B-25.

Procedure How to Create a Port for the SOAP Disposition

To create a port for a SOAP disposition:

1. Click the *iWay Events* tab.

   The iWay Event Adapters window opens.

2. In the left pane, expand the *FIX* node.

3. Select the *ports* node.

4. Move the pointer over *Operations* and select *Add a new port*.

   The Create Event Port window opens in the right pane.

   a. Type a name for the event port and provide a brief description.

   b. From the Disposition Protocol drop-down list, select *SOAP*.

   c. In the Disposition field, enter an SOAP destination, using the following format:

```
soap:[wsdl-url];soapaction=[myaction];responseTo=[pre-defined port
name or another disposition URL];errorTo=[pre-defined port name or
another disposition url]
```

The following table defines the parameters for the disposition.

Parameter	Description
wsdl-url	The URL to the WSDL file that is required to create the SOAP message. For example: `http://localhost:7001/ibse/IBSEServlet/test/sw2xml2003MQ.ibs?wsdl` This value can be found by navigating to the iWay Business Services tab and opening the *Service Description* link in a new window. The WSDL URL appears in the Address field. You can also open the WSDL file in a third party XML editor (for example, XMLSPY) and view the SOAP request settings to find this value.

soapaction	The method that will be called by the disposition. For example:
	`FIXMT200.mt200Request@test@@`
	where
	`FIX`
	Is the name of the Web service you created using Application Explorer.
	`mt200`
	Is the method being used.
	`test`
	Is the license that is being used by the Web service.
	This value can be found by navigating to the iWay Business Services tab and opening the *Service Description* link in a new window. Perform a search for *soapAction*.
	You can also open the WSDL file in a third party XML editor (for example, XMLSPY) and view the SOAP request settings to find this value.

responseTo	The location to which responses are posted. A predefined port name or another full URL. Optional. A predefined port name or another disposition URL. The URL must be complete, including the protocol.

Parameter	Description
errorTo	The location to which error logs are sent. Optional. A predefined port name or another disposition URL. The URL must be complete, including the protocol.

5. Click *OK*.

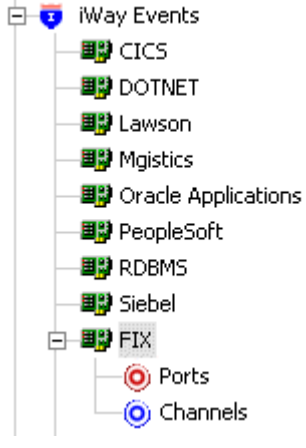
   The event port appears under the ports node in the left pane. In the right pane, a table appears that summarizes the information associated with the event port you created.

   You are ready to associate the event port with a channel. For more information, see *Creating a Channel* on page B-25.

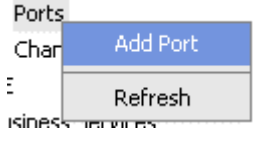
Procedure How to Create an Event Port for HTTP

The HTTP disposition uses an HTTP URL to specify an HTTP end point to which the event document is posted.

To create an event port for HTTP disposition:

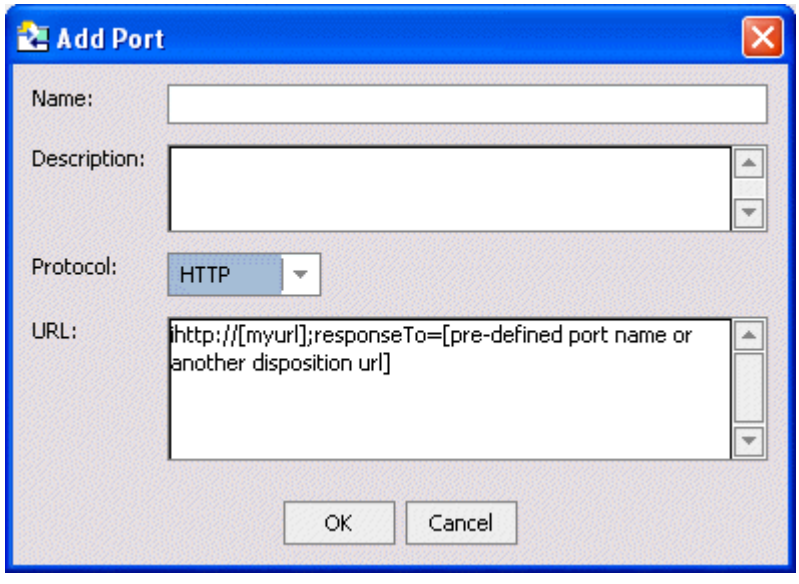


1. In the left pane of Application Explorer, expand the FIX node under iWay Events, and then select *Ports*.



2. Right-click and select *Add Port*.

The Create Event Port dialog box opens.



a. In the Name field, type a name for the event port, for example, FixHTTP.

b. In the Description field, type a brief description.

c. From the Protocol drop-down list, select *HTTP*.

d. In the URL field, enter an HTTP destination using the following format:

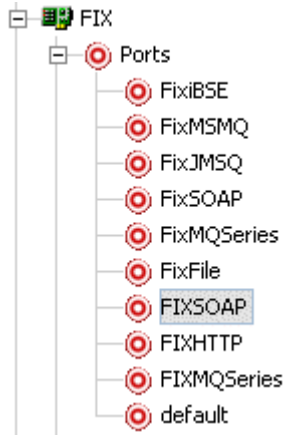
```
ihttp://url;responseTo=respDest
```

The following table describes the URL parameters.

Parameter	Description
url	The URL target for the post operation.
respDest	Location where responses are posted. Optional. A predefined port name or another disposition URL. The URL must be complete, including the protocol.
host	Name of the host on which the Web server resides.
port	Port number on which the Web server is listening.

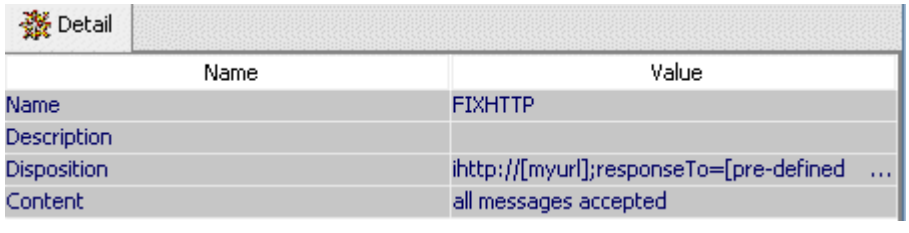
3. Click *OK*.

The event port appears below the Ports node in the left pane.



4. To review the port settings, select the port name.

   In the right pane, a table appears that summarizes the information associated with the event port you created.

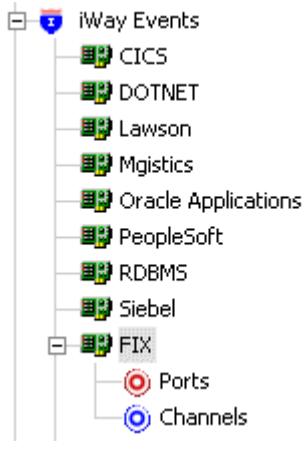


   You are ready to associate the event port with a channel. For more information, see *Creating a Channel* on page B-25.

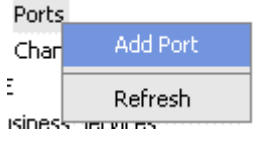
Procedure How to Create an Event Port for MQSeries

The MQSeries disposition allows an event to be enqueued to an MQSeries queue. You can specify both queue manager and queue name.

To create a port for an MQSeries queue:

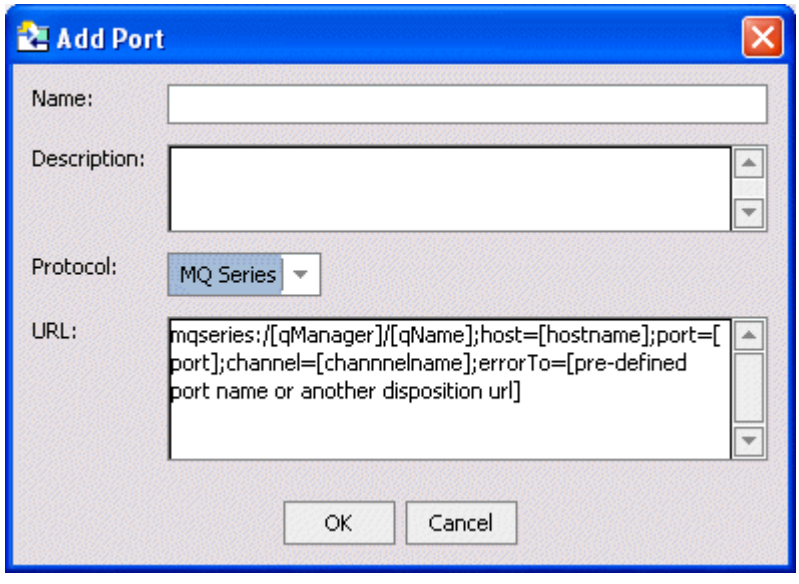


1. In the left pane of Application Explorer, expand the FIX node under iWay Events, and then select *Ports*.



2. Right-click and select *Add Port*.

The Create Event Port dialog box opens.



a. In the Name field, type a name for the event port, for example, FixMQSeries.

b. In the Description field, type a brief description.

c. From the Protocol drop-down list, select *MQSeries*.

d. In the URL field, enter an MQSeries destination using the following format:

```
mqseries:/qManager/qName;host=hostName;port=portNum;
channel=chanName[;errorTo=errorDest]
```

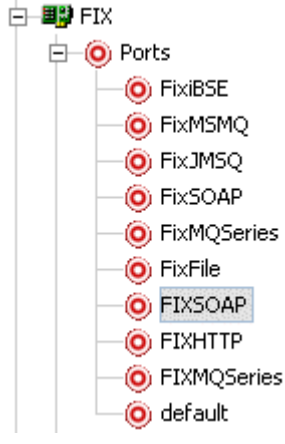
The following table describes the URL parameters.

Parameter	Description
qManager	Name of queue manager to which the server must connect.
qName	Name of the queue where messages are placed.
hostName	Name of the host on which MQSeries resides (MQ client only).
portNum	Port number for connecting to an MQ Server queue manager (MQ client only).
chanName	Case-sensitive name of the channel that connects with the remote MQ Server queue manager (MQ client only). The default MQSeries channel name is SYSTEM.DEF.SVRCONN.

Parameter	Description
errorDest	Location where error logs are sent. Optional. A predefined port name or another disposition URL. The URL must be complete, including the protocol.

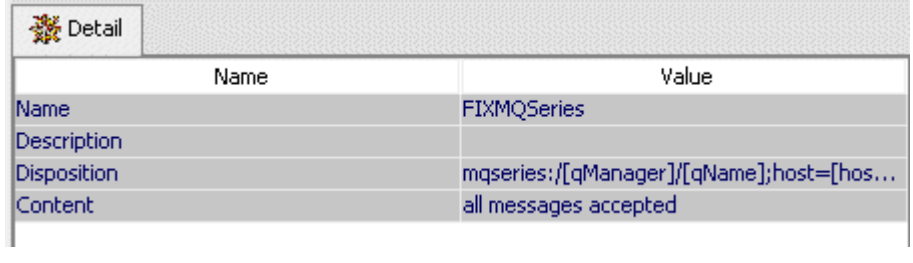
3. Click *OK*.

The event port appears below the Ports node in the left pane.



4. To review the port settings, select the port name.

In the right pane, a table appears that summarizes the information associated with the event port you created.



You are ready to associate the event port with a channel. For more information, see *Creating a Channel* on page B-25.

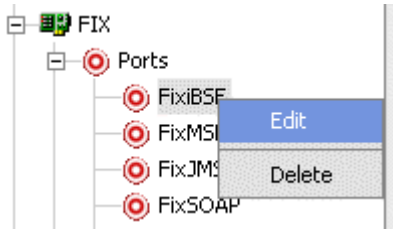
Modifying an Event Port

The following procedures describe how to edit and delete an event port using iWay Application Explorer. To review the port settings, select the port name. In the right pane, a table appears that summarizes the information associated with the event port you created.

Procedure How to Edit an Event Port

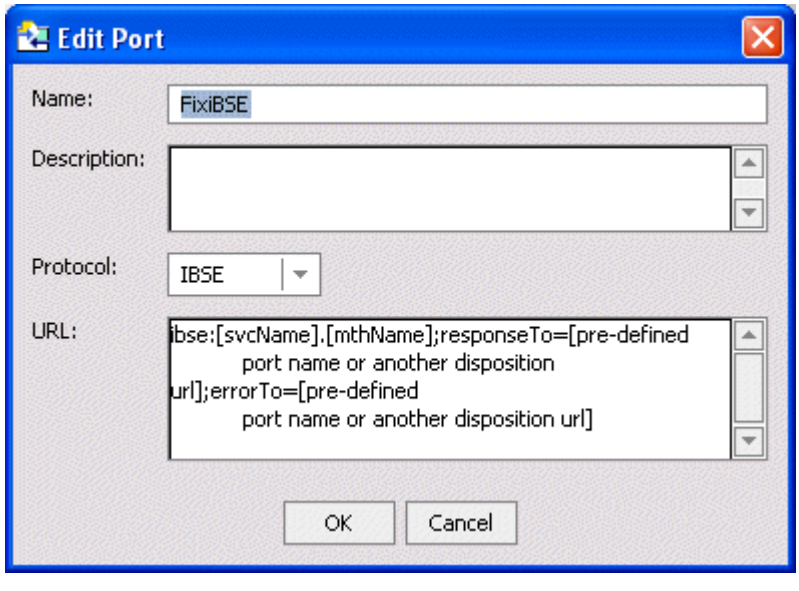
To edit an event port:

1. To view the available ports, click the *Ports* node in the left pane.



2. Right-click the port you want to edit, and select *Edit*.

   The Edit Port dialog box opens.

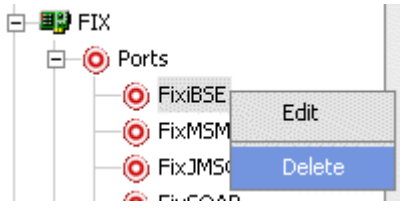


3. Make the required changes and click *OK*.

Procedure How to Delete an Event Port

To delete an existing event port:

1. To view the available ports, click the *Ports* node in the left pane.



2. Right-click the port you want to remove, and select *Delete*.

   The event port node disappears from the ports list in the left pane.

Creating a Channel

The following procedure describes how to create a channel for a FIX event. All defined event ports must be associated with a channel.

You can create the following types of channels using Application Explorer:

- FIX Buyside
- FIX Sellside

Procedure How to Create a Channel Using FIX Buyside

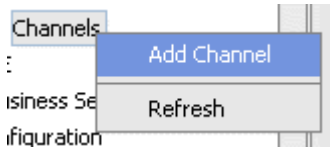
To create a channel using FIX Buyside:

1. In the left pane, below the configuration you created, expand the *iWay Events* node.

   The list of adapters appears.

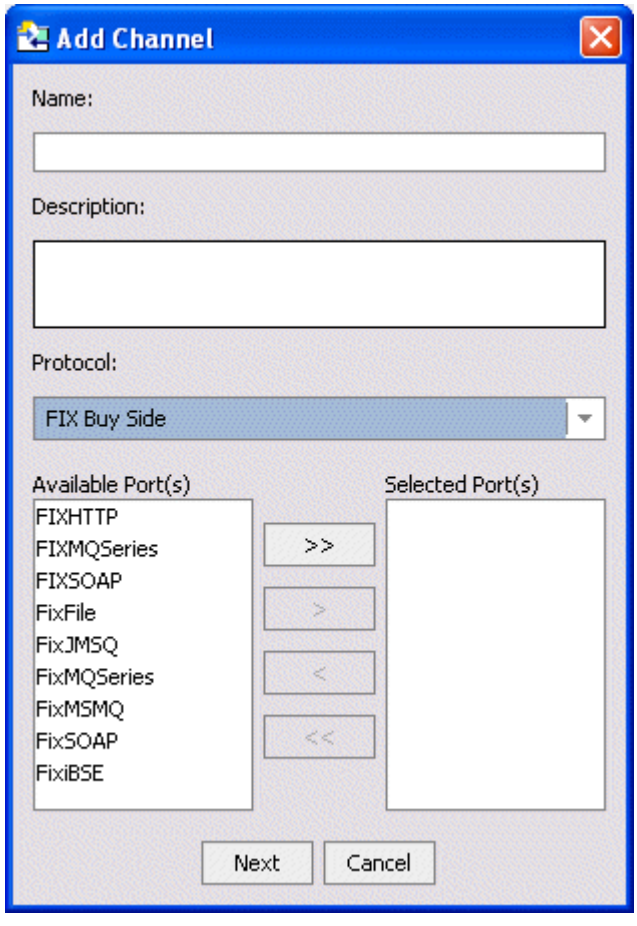
2. Click the adapter node, for example, FIX.

   The node expands and displays the Ports and Channels nodes.



3. Right-click the *Channels* node and select *Add Channel*.

The Add Channel dialog box opens.



a. In the Name field, type a name for the channel, for example, FixBuy.

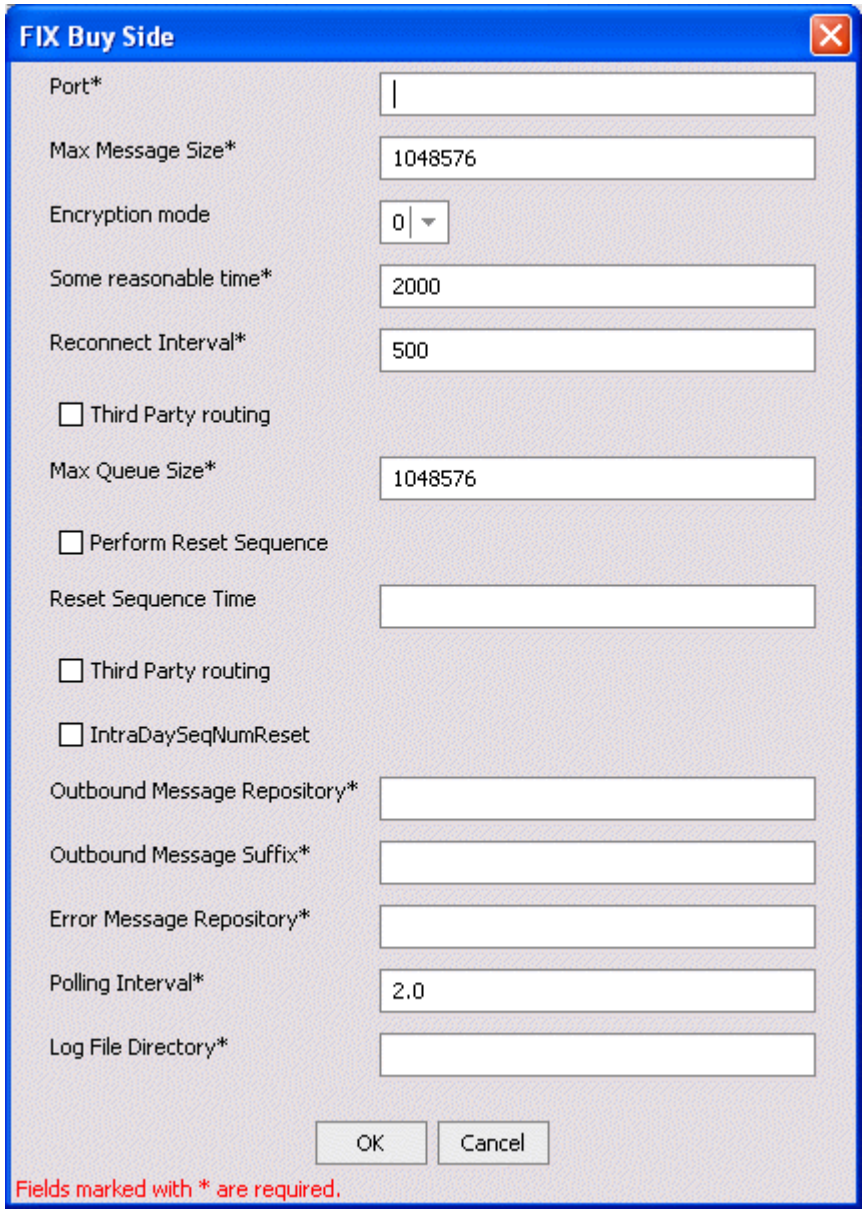
b. In the Description field, type a brief description.

c. From the Protocol drop-down list, select *FIX Buy Side*.

d. To associate one or more available ports with this channel, select the port in the Available box and click the double right arrow button to move it to the Selected box.

4. Click *Next*.

The FIX Buy Side dialog box opens.

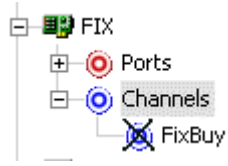


5. Enter values for the parameters listed in the following table.

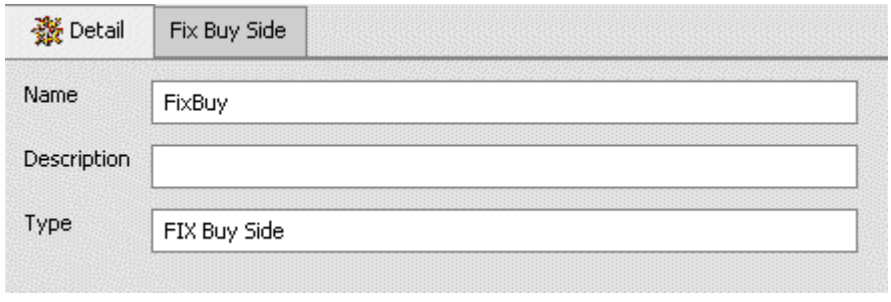
Parameter	Description
Port	Port number of Sellside (sending counterparty).
Max Message Size	The maximum size of the FIX message.
Encryption mode	Encryption method. The supported values are 0, 2, or 5.
Some Reasonable Time	The time within which the business response is expected to be sent to the counterparty. For example, when in Sellside mode, this is the time waited for a response from Buyside.
Reconnect Interval	The frequency in seconds to retry the connection if it fails for external causes.
Max Queue Size	Maximum size of the FIX queue.
Perform Reset Sequence	The sequence reset message is used by the sending application to reset the incoming sequence number on the opposing side.
Reset Sequence Time	Frequency with which the sequence reset message is used.
Third Party Routing	Select the check box if third party routing is required.
IntraDaySeqNumReset	Specifies whether to reset sequence number after logout.
Outbound Message Repository	Repository in which outbound messages are stored.
Outbound Message Suffix	Suffix of outbound messages.
Error Message Repository	Repository in which error messages are stored.
Polling Location	The target file system location for the FIX XML file.
Log File Directory	Directory to which log files are written.

6. Click *OK*.

The channel appears below the Channels node in the left pane.

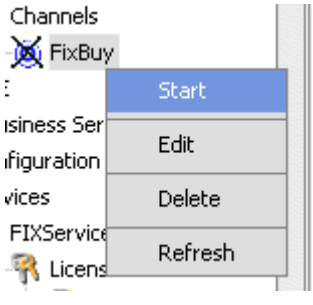


When you select the event port, the channel information appears in the right pane.



A Ports area appears on the Details tab that displays the name of the event port you assigned to this channel.

You are ready to start your channel to listen for events.



7. To activate your event configuration, right-click the channel node, for example, FixBuy.
   a. Select *Start*.
   b. To stop the channel at any time, right-click the channel and select *Stop*.

Procedure How to Create a Channel Using FIX Sellside

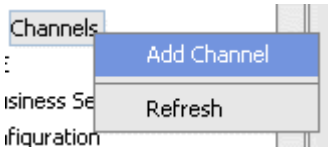
To create a channel using FIX Sellside:

1. In the left pane, below the configuration you created, expand the *iWay Events* node.

   The list of adapters appears.

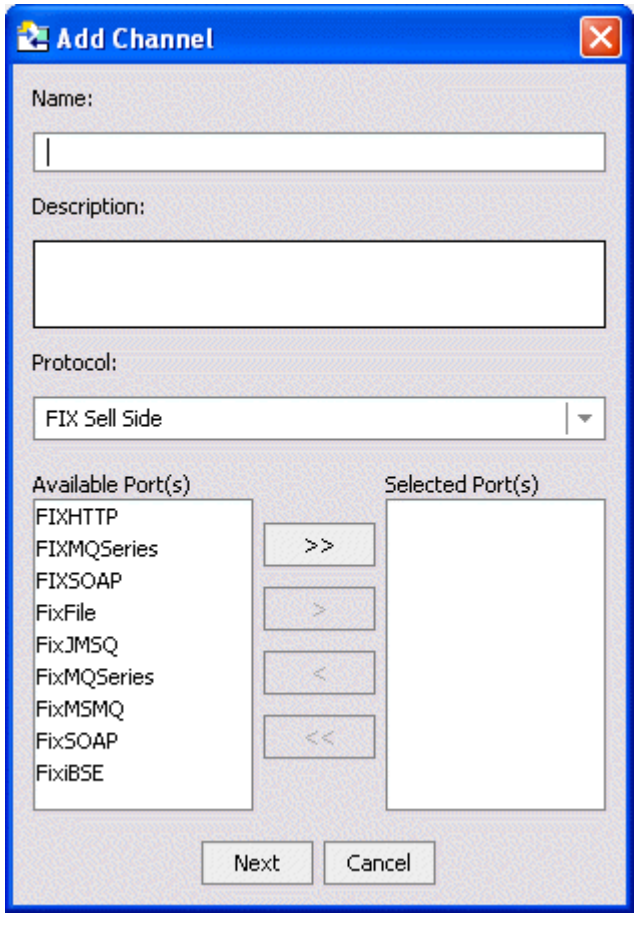
2. Click the adapter node, for example, FIX.

   The node expands and displays the Ports and Channels nodes.



3. Right-click the *Channels* node and select *Add Channel*.

   The Add Channel dialog box opens.



   a. In the Name field, type a name for the channel, for example, FixSell.

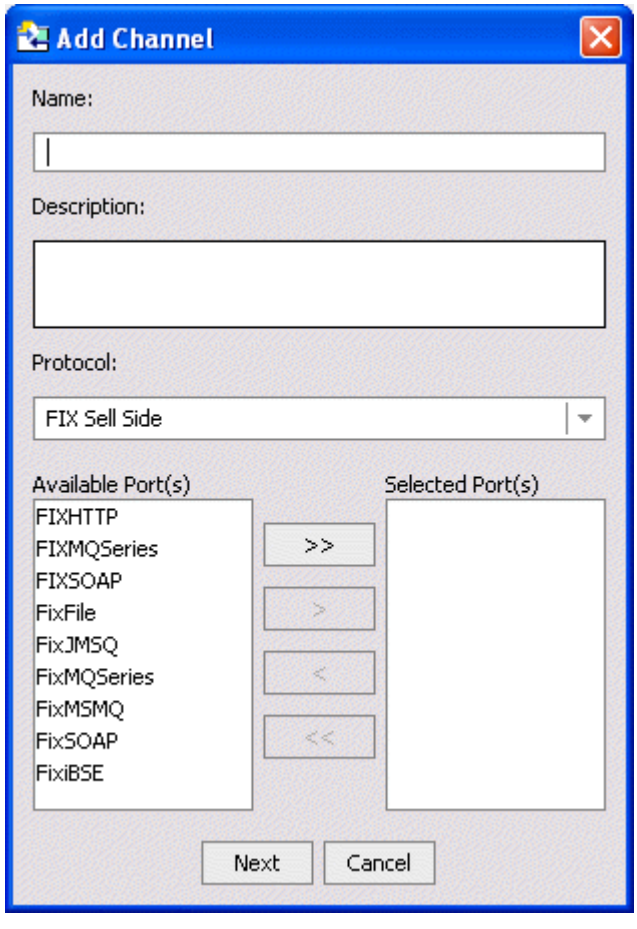
   b. In the Description field, type a brief description.

c. From the Protocol drop-down list, select *FIX Sell Side*.

d. To associate one or more available ports with this channel, select the port in the Available box and click the double right arrow button to move it to the Selected box.

4. Click *Next*.

The FIX Sell Side dialog box opens.



5. Enter values for the parameters listed in the following table.

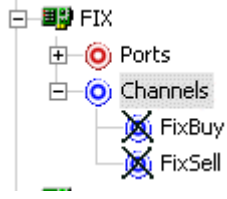
Parameter	Description
Version	From the drop-down list, select the version of FIX you require. FIX versions 4.0, 4.1, 4.2, and 4.3 are supported.

Parameter	Description
Host	Host name of receiving counterparty.
Port	Port number of receiving counterparty.
Max Message	Enter the interval, in seconds, at which to check for new input. 2 seconds is the default value.
Sender Comp ID	Value used to identify a counterparty sending message.
Target Comp ID	Value used to identify a counterparty receiving message.
Encryption mode	Encryption method. The supported values are 0, 2, or 5.
Some Reasonable Time	The time within which the business response is expected to be sent to the counterparty. For example, when in Sellside mode, this is the time waited for a response from Buyside.
Heart Beat Interval	Monitors the status of the communication link. Set the heart beat interval in seconds.
Reconnect Interval	The frequency in seconds to retry the connection if it fails for external causes.
Third Party Routing	Select the check box if third party routing is required.
Max Queue Size	Maximum size of the FIX queue.
Perform Reset Sequence	Select the check box to set the Reset Sequence number process.
Reset Sequence Time	Time in which the Recess Sequence process is run.
IntraDaySeqNumReset	Specifies whether to reset sequence number after logout.
Application Message Format	Defines the format of the FIX message delivered to the application.
Outbound Message Repository	Directory in which outbound messages are stored.
Outbound Message Suffix	Suffix of outbound messages.

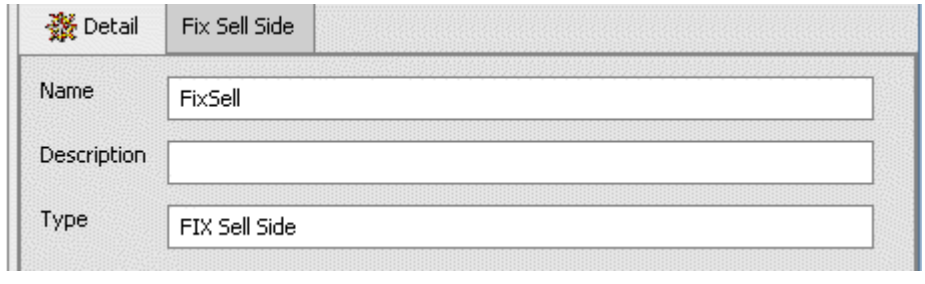
Parameter	Description
Error Message Repository	Directory in which error messages are stored.
Polling Interval	Interval, in seconds, at which to check for new input.
Log File Directory	Directory in which log files are stored.

6. Click *OK*.

   The channel appears below the Channels node in the left pane.



   When you select the event port, the channel information appears in the right pane.



   You are ready to start your channel to listen for events.

7. To activate your event configuration, right-click the channel node, for example, FixSell.

   a. Select *Start*.

   b. To stop the channel at any time, right-click the channel and select *Stop*.

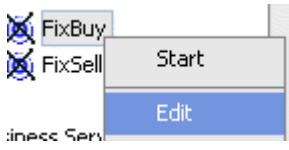
Modifying a Channel

The following procedures describe how to edit and delete a channel using Application Explorer. To review the channel settings, you select the channel name. In the right pane, a table appears that summarizes the information associated with the channel you created.

Procedure How to Edit a Channel

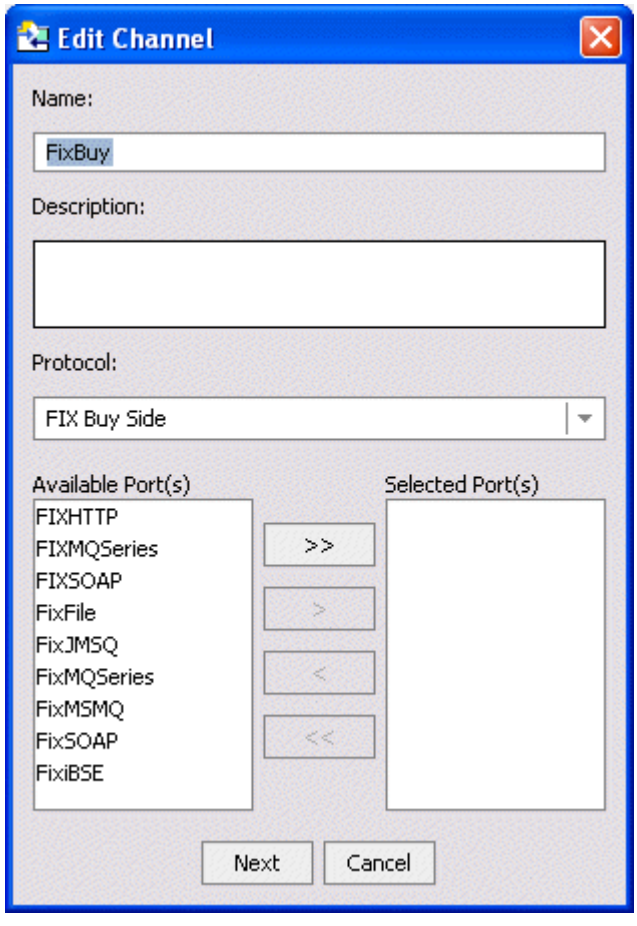
To edit a channel:

1. To view the available channels, click the *Channels* node in the left pane.



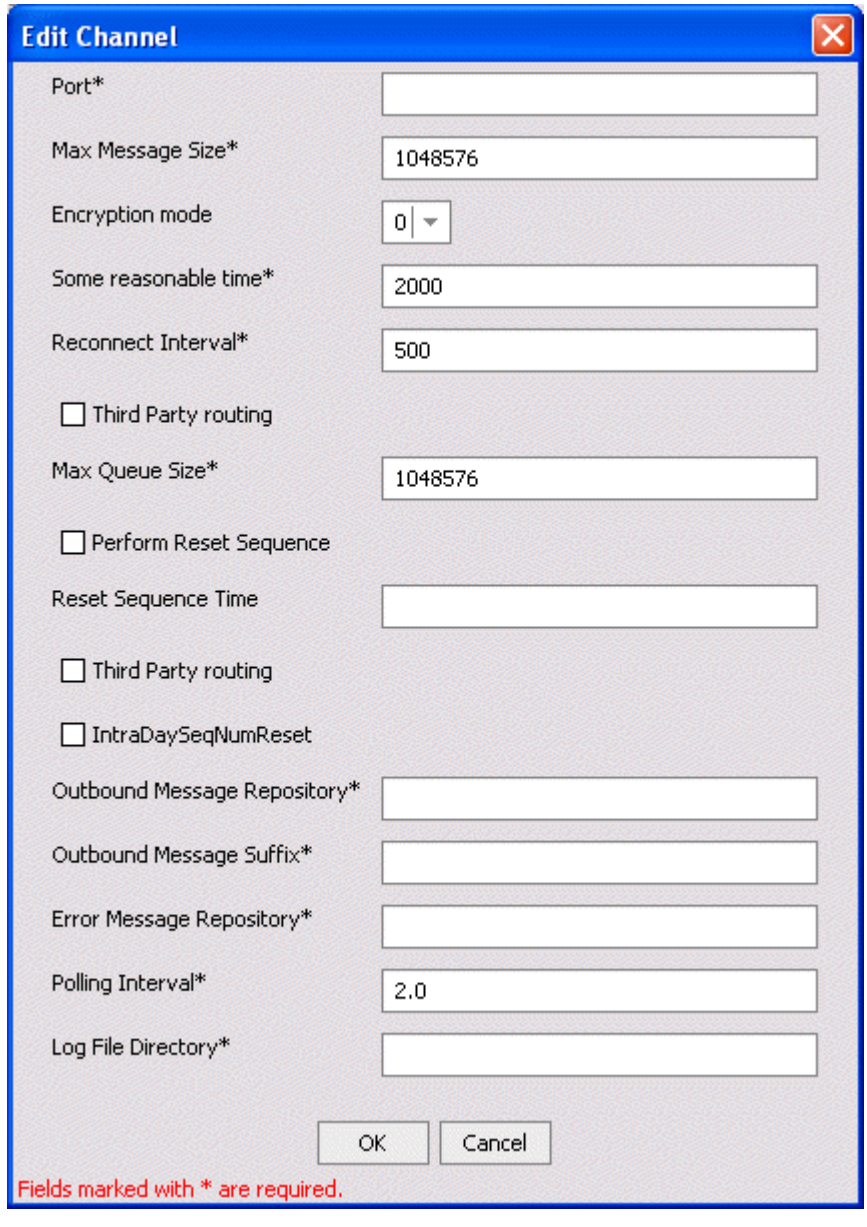
2. Right-click the channel you want to edit, for example, FixBuy, and select *Edit*.

The Edit Channel dialog box opens.



3. Make the required changes to the channel configuration.
4. Click *Next*.

The following dialog box opens.

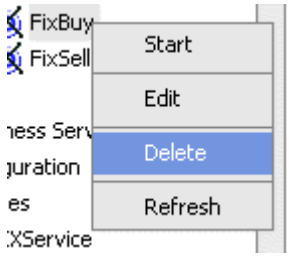


5. Make the required changes and click *OK*.

Procedure How to Delete a Channel

To delete an existing channel:

1. In the left pane, right-click the channel, for example, FixBuy.



2. Select *Delete*.

   The channel disappears from the Channels list.

Deploying iWay Components in a Clustered BEA WebLogic Environment

Events can be configured in a clustered BEA WebLogic environment. You can deploy iBSE or JCA to this environment. This topic uses iBSE as an example, but you can follow the same procedures when deploying JCA. The only difference is that you need to deploy the JCA connector .RAR file to the clustered environment.

A cluster consists of multiple server instances running simultaneously, yet appears to clients to be a single server instance. The server instances that contain a cluster can be run on one machine, but are usually run on multiple machines.

Clustering provides the following benefits:

- Load balancing
- High availability

Service requests are processed through the HTTP router and routed to an available managed server.

Events are server-specific and are not processed through the HTTP router. You must configure each server separately.

Procedure How to Deploy iWay Components in a Clustered Environment

To deploy iWay components in a clustered environment:

1. Using the BEA Configuration Wizard:

   a. Configure an administrative server to manage the managed servers.

b. Add and configure as many managed servers as required.

c. Add and configure an HTTP router. This does not have to be a part of WebLogic and can be an outside component.

d. If you configure the HTTP router within WebLogic, start it by entering the following command:

```
StartManagedWebLogic HTTPROUTER http://localhost:7001
```

where:

HTTPROUTER

Is the name of the server on which the HTTP router is running.

http://localhost:7001

Is the location of the admin console.

e. Add the managed servers to your cluster/clusters.

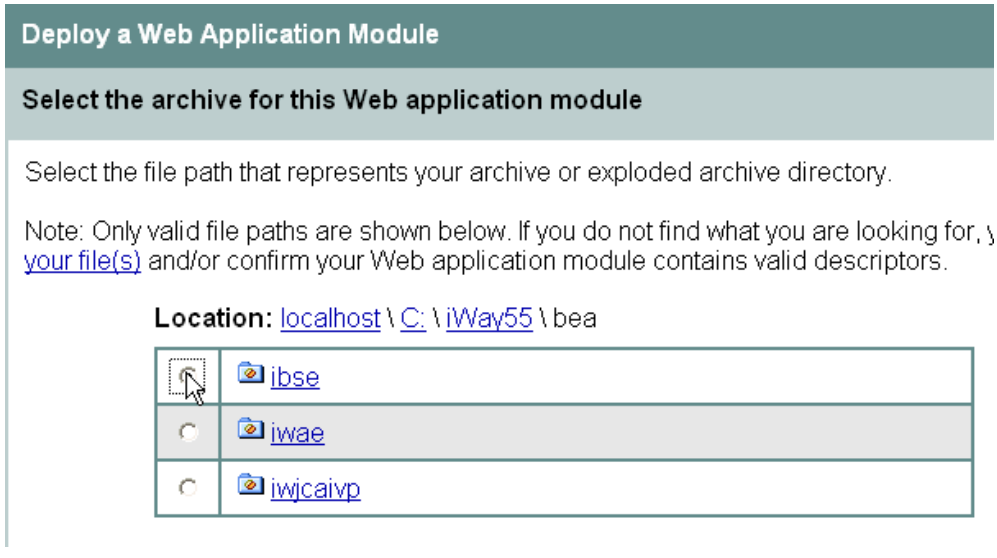
For more information on configuring WebLogic Integration for deployment in a clustered environment, see *Deploying WebLogic Integration Solutions*.

2. Start the WebLogic Server and open WebLogic Server Console.

3. Deploy iBSE to the cluster by selecting *Web Application Modules* from the Domain Configurations section, and clicking *Deploy a new Web Application Module*.

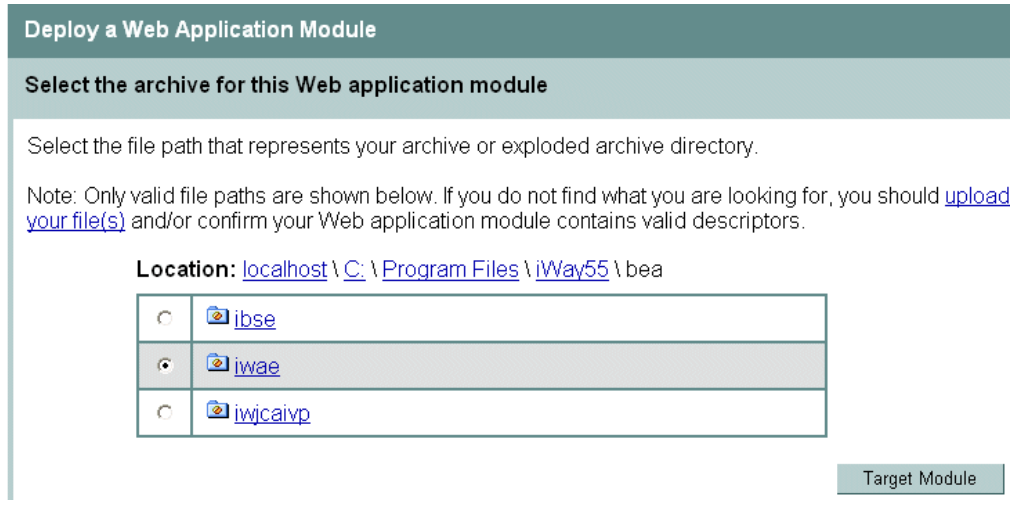
A page appears for you to specify where the Web application is located.

4. To deploy iBSE, select the option button next to the ibse directory and then click *Target Module*.

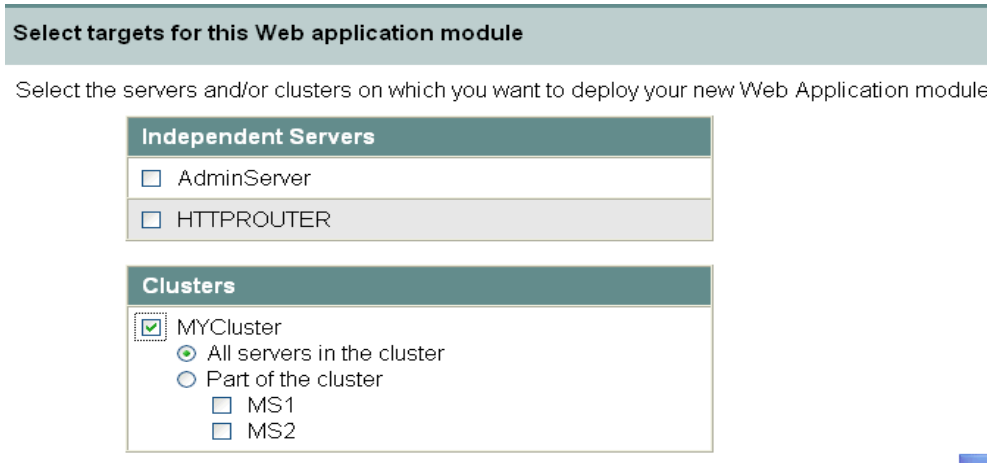


5. To deploy servlet Application Explorer, select the option button next to the iwae directory and then click *Target Module*.

   If you are using servlet Application Explorer, deploy it only on the admin server or one of the managed servers.

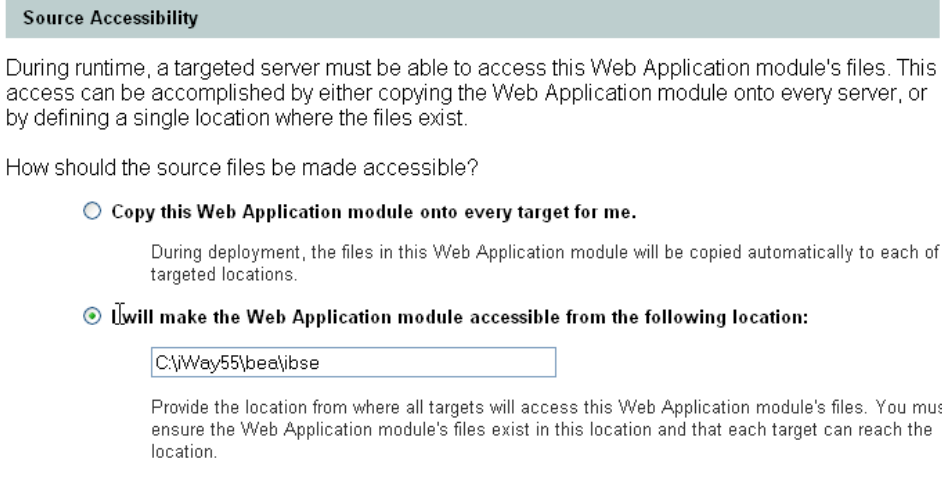


The following window opens.



6. Select the servers and/or clusters on which you want to deploy the application and click *Continue*.

   The following window opens.



7. Select the *I will make the Web Application module accessible from the following location* option button and provide the location from which all targets will access iBSE.

   iWay Software recommends that you use a single instance of iBSE, rather than copying iBSE onto every target.

Note: iBSE must use a database repository (SQL or Oracle). Do not use a file repository. You can select this in the Repository Type drop-down list in the iBSE monitoring page. After configuring a database repository, you must restart all of the managed servers.

```
http://hostname:port/ibse/IBSEConfig/
```

where:

hostname

Is where your application server is running. Use the IP address or machine name in the URL; do not use localhost.

port

Is the port specific to each server, since you deploy iBSE to an entire cluster. For example, 8001, 8002, or any other port that is specified for each managed node.

8. Click *Deploy*.

Procedure How to Configure Ports and Channels in a Clustered Environment

You can use Swing Application Explorer deployed in BEA WebLogic Workshop or Servlet Application Explorer to configure ports and channels in a clustered environment.

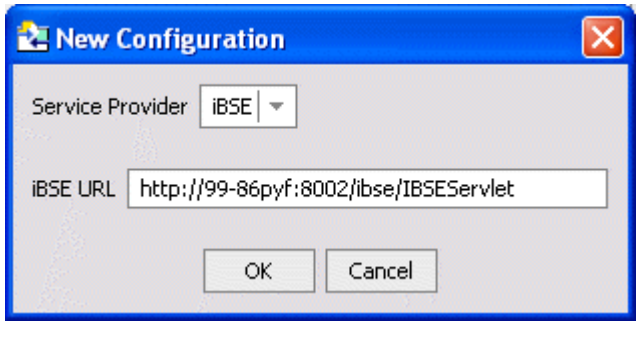
Note: Before using Servlet Application Explorer in a clustered environment, you must edit the web.xml file and specify the correct URL to your iBSE deployment. The default location on Windows is:

```
C:\Program Files\iWay55\bea\iwae\WEB-INF\web.xml
```

For more information on configuring the web.xml file for the Servlet Application Explorer, see *iWay Installation and Configuration for BEA WebLogic*.

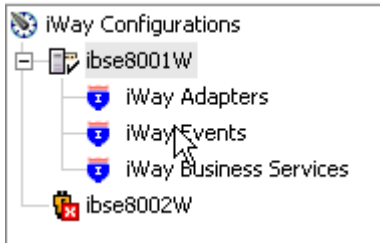
To configure ports and channels in a clustered environment:

1. Open Swing Application Explorer in BEA WebLogic Workshop.
2. Create a new connection to the iBSE instance. For information on creating a new configuration, see *Creating a New Configuration* on page A-3.



Note: Use the IP address or machine name in the URL; do not use localhost.

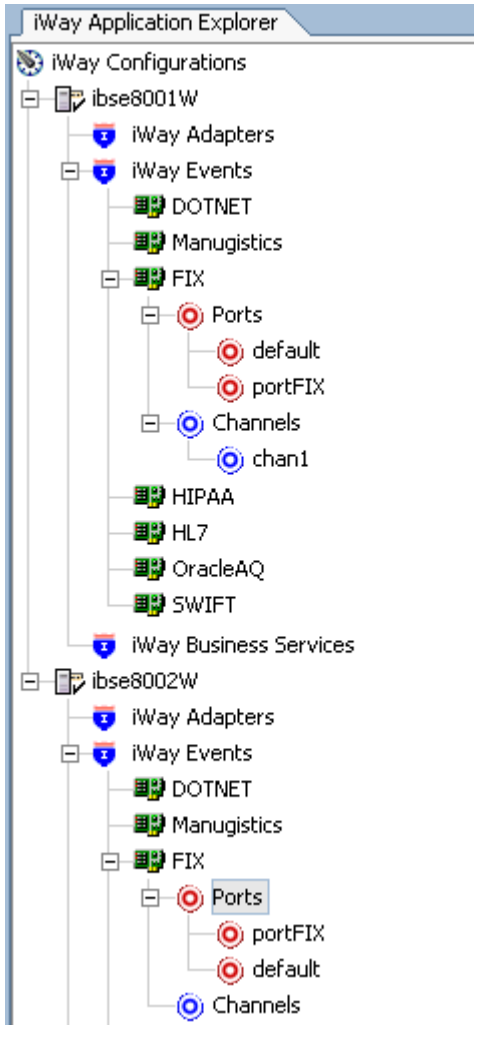
3. Connect to the new configuration and select the iWay Events node in the left pane of Application Explorer.



4. Add a new port for the Fix adapter. For more information, see *Creating an Event Port* on page B-3
5. Create a channel and add the port you created. For more information, see *Creating a Channel* on page B-25.
6. Click *Next* and enter the application server parameters.
7. Start the channel.
8. Create a new configuration and connect to the second iBSE instance.

   The connection to iBSE must be configured to each instance of the managed server.

The following graphic shows two configurations.



The following operations performed on one managed server will be replicated on all other managed servers:

- Create port and channel: Creates the channel and port under all available servers.
- Delete port and channel. Deletes the port and channel under all available servers.

The following operations must be performed on each server:

- Start channel. Starts the channel for the specific server.
- Stop channel. Stops the channel for the specific server.

APPENDIX C

Supported Messages

Topics:

- Message Categories, Types, and Descriptions

This section describes supported messages.

Message Categories, Types, and Descriptions

The packaging of FIX application messages in the manifest.xml are according the following categories:

Category	Message Type	Message Descriptions
Indication	Advertisements	Advertisement messages are used to announce completed transactions. The advertisement message can be transmitted in various transaction types; NEW, CANCEL and REPLACE.
Indication	Indication of Interest (IOI)	Indication of interest messages are used to market merchandise, which the broker is buying or selling in either a proprietary or agency capacity. The indications can be time bound with a specific expiration value. Indications are distributed with the understanding that other firms may react to the message first and that the merchandise may no longer be available due to prior trade. Indication messages can be transmitted in various transaction types; NEW, CANCEL, and REPLACE.
Event Communication	News	The news message is a general free format message between the broker and institution. The message contains flags to identify the news item's urgency and to allow sorting by subject company (symbol). The News message can be originated at either the broker or institution side.
Event Communication	Email	The email message is similar to the format and purpose of the News message, however, it is intended for private use between two parties.

Category	Message Type	Message Descriptions
Quotation	Quote Request	In some markets it is the practice to request quotes from brokers prior to placement of an order. The quote request message is used for this purpose. This message is commonly referred to as a Request For Quote (RFQ). Quotes can be requested on specific securities or forex rates. The quote request message can be used to request quotes on single products or multiple products. Securities quotes can be requested as either market quotes or for a specific quantity and side. If OrderQty and Side are absent, a market-style quote (bid x offer, size x size) will be returned.
Quotation	Quote Request Reject	The Quote Request Reject message is used to reject Quote Request messages for all quoting models.
Quotation	RFQ Request	In tradable and restricted tradable quoting markets, Quote Requests are issued by counterparties interested in ascertaining the market for an instrument. Quote Requests are then distributed by the market to liquidity providers who make markets in the instrument. The RFQ Request is used by liquidity providers to indicate to the market for which instruments they are interested in receiving Quote Requests. It can be used to register interest in receiving quote requests for a single instrument or for multiple instruments.
Quotation	Quote	The quote message is used as the response to a Quote Request message in both indicative, tradable, and restricted tradable quoting markets. In tradable and restricted tradable quoting models, the market maker sends quotes into a market as opposed to sending quotes directly to a counterparty. The quote message can be used to send unsolicited quotes in both indicative, tradable, and restricted tradable quoting markets. The quote message contains a quote for a single product.

Category	Message Type	Message Descriptions
Quotation	Quote Cancel	The Quote Cancel message is used by an originator of quotes to cancel quotes. The Quote Cancel message supports cancellation of: • All quotes • Quotes for a specific symbol or security ID • All quotes for a security type • All quotes for an underlying Canceling a Quote is accomplished by indicating the type of cancellation in the QuoteCancelType field.
Quotation	Quote Status Request	The quote status request message is used for the following purposes in markets that employ tradable or restricted tradable quotes: • For the issuer of a quote in a market to query the status of that quote (using the QuoteID to specify the target quote) • To subscribe and unsubscribe for Quote Status Report messages for one or more securities
Quotation	Quote Status Report	The quote status report message is used as: • the response to a Quote Status Request message • the response to a Quote Cancel message
Quotation	Mass Quote	The Mass Quote message can contain quotes for multiple securities to support applications that allow for the mass quoting of an option series. Two levels of repeating groups have been provided to minimize the amount of data required to submit a set of quotes for a class of options (for example, all option series for WCOM).
Quotation	Mass Quote Acknowledgement	Mass Quote Acknowledgement is used as the application level response to a Mass Quote message.

Category	Message Type	Message Descriptions
Market Data	Market Data Request	Some systems allow the transmission of real-time quote, order, trade and/or other price information on a subscription basis. A Market Data Request is a general request for market data on specific securities or forex quotes. A successful Market Data Request returns one or more Market Data messages containing one or more Market Data Entries. Each Market Data Entry is a Bid, an Offer, a Trade associated with a security, the opening, closing, or settlement price of a security, the buyer or seller imbalance for a security, the value of an index, or the trading session high price, low price, or volume weighted average price (VWAP).
Market Data	Market Data Snapshot/Full Refresh	Market Data messages can take two forms. The first Market Data message format used for a Snapshot, or a Snapshot + Updates.
Market Data	Market Data Incremental Refresh	The Market Data message for incremental updates may contain any combination of new, changed, or deleted Market Data Entries, for any combination of instruments, with any combination of trades, imbalances, quotes, index values, open, close, settlement, high, low, and VWAP prices, so long as the maximum FIX message size is not exceeded. All of these types of Market Data Entries can be changed and deleted.
Market Data	Market Data Request Reject	The Market Data Request Reject is used when the broker cannot honor the Market Data Request, due to business or technical reasons. Brokers may choose to limit various parameters, such as the size of requests, whether just the top of book or the entire book may be displayed, and whether Full or Incremental updates must be used.
Security and Trading Definition/Status	Security Definition Request	The Security Definition Request message is used to request a specific Security to be traded with the second party. The request security can be defined as a multileg security made up of one or more instrument legs.

Category	Message Type	Message Descriptions
Security and Trading Definition/Status	Security Definition	The Security Definition message is used for the following: • Accept the security defined in a *Security Definition* message • Accept the security defined in a *Security Definition* message with changes to the definition and/or identity of the security • Reject the security requested in a *Security Definition* message
Security and Trading Definition/Status	Security Type Request	The Security Type Request message is used to return a list of security types available from a counterparty or market.
Security and Trading Definition/Status	Security Types	The Security Type message is used to return a list of security types available from a counterparty or market.
Security and Trading Definition/Status	Security List Request	The Security List Request message is used to return a list of securities from the counterparty that match criteria provided on the request.
Security and Trading Definition/Status	Security List	The Security List message is used to return a list of securities that matches the criteria specified in a Security List Request.
Security and Trading Definition/Status	Derivative Security List Request	The Derivative Security List Request message is used to return a list of securities from the counterparty that match criteria provided on the request.
Security and Trading Definition/Status	Derivative Security List	The Derivative Security List message is used to return a list of securities that matches the criteria specified in a Derivative Security List Request.
Security and Trading Definition/Status	Status Security Request	The Security Status Request message provides for the ability to request the status of a security. One or more Security Status messages are returned as a result of a Security Status Request message.

Category	Message Type	Message Descriptions
Security and Trading Definition/Status	Security Status	The Security Status message provides for the ability to report changes in status to a security. The Security Status message contains fields to indicate trading status, corporate actions, financial status of the company. The Security Status message is used by one trading entity (for instance an exchange) to report changes in the state of a security.
Security and Trading Definition/Status	Trading Session Status Request	The Trading Session Status Request is used to request information on the status of a market. With the move to multiple sessions occurring for a given trading party (morning and evening sessions for instance) there is a need to be able to provide information on what product is trading on what market.
Security and Trading Definition/Status	Trading Session Status	The Trading Session Status provides information on the status of a market. With the move to multiple sessions occurring for a given trading party (morning and evening sessions for instance) there is a need to be able to provide information on what product is trading on what market.
Single/General Order Handling	New Order	The new order message type is used by institutions wishing to electronically submit securities and forex orders to a broker for execution. The New Order message type may also be used by institutions or retail intermediaries wishing to electronically submit Collective Investment Vehicle (CIV) orders to a broker or fund manager for execution.

Category	Message Type	Message Descriptions
Single/General Order Handling	Execution Report	The execution report message is used to: • Confirm the receipt of an order • Confirm changes to an existing order (that is, accept cancel and replace requests) • Relay order status information • Relay fill information on working orders • Relay fill information on tradable or restricted tradable quotes • Reject orders • Report post-trade fees calculations associated with a trade
Single/General Order Handling	Don't Know Trade (DKT)	The Don't Know Trade (DK) message notifies a trading partner that an electronically received execution has been rejected. This message can be thought of as an execution reject message.
Single/General Order Handling	Order/Cancel/Replace Request	The order cancel/replace request is used to change the parameters of an existing order.
Single/General Order Handling	Order Cancel Request	The order cancel request message requests the cancellation of all of the remaining quantity of an existing order.
Single/General Order Handling	Order Cancel Reject	The order cancel reject message is issued by the broker upon receipt of a cancel request or cancel/replace request message, which cannot be honored. Requests to change price or decrease quantity are executed only when an outstanding quantity exists. Filled orders cannot be changed (for example, quantity reduced or price change. However, the broker/sellside may support increasing the order quantity on a currently filled order).
Single/General Order Handling	Order Status Request	The order status request message is used by the institution to generate an order status message back from the broker.

Category	Message Type	Message Descriptions
Single/General Order Handling	Order Mass Cancel Request	The order mass cancel request message requests the cancellation of all of the remaining quantity of a group of orders matching criteria specified within the request. NOTE: This message can only be used to cancel messages (reduce the full quantity).
Single/General Order Handling	Order Mass Cancel Report	The Order Mass Cancel Report is used to acknowledge an Order Mass Cancel Request. Note that each affected order that is canceled is acknowledged with a separate Execution Report or Order Cancel Reject message.
Single/General Order Handling	Order Mass Status Request	The order mass status request message requests the status for orders matching criteria specified within the request.
Cross Orders	New Order - Cross	Used to submit a cross order into a market. The cross order contains two order sides (a buy and a sell).
Cross Orders	Cross Order Cancel/Replace Request	Used to modify a cross order previously submitted using the New Order - Cross message. See Order Cancel Replace Request for details concerning message usage. Refer to the Order Cancel Replace Request (a.k.a. Order Modification Request) message for restrictions on what fields can be changed during a cancel replace.
Cross Orders	Cross Order Cancel Request	Used to fully cancel the remaining open quantity of a cross order.

Category	Message Type	Message Descriptions
Multi Leg Orders	New Order - Multileg	The New Order - Multileg is provided to submit orders for securities that are made up of multiple securities, known as legs. Swaps, option strategies, futures spreads, are a few examples of multileg securities. A multileg security is made up of multiple securities that are traded atomically. This requirement that all legs be traded in the quantities that they make up the multlileg security is the important distinction between a multileg order and a list order. Two generalized approaches to trading multileg securities are supported by FIX. The first approach involves a market maintaining multileg securities as separate products for which markets can be created. This "product approach" is often used in electronic trading systems. The second approach is to trade the multileg security as a group of separate securities – as is commonly done today in open outcry markets.
Multi Leg Orders	Multi-leg Order Cancel/Replace Request	Used to modify a multileg order previously submitted using the New Order - Multileg message. See Order Cancel Replace Request for details concerning message usage.
List Program Basket Trading	Bid Request	The BidRequest Message can be used in one of two ways depending on which market conventions are being followed. In the "Non disclosed" convention (for example, US/European model) the BidRequest message can be used to request a bid based on the sector, country, index and liquidity information contained within the message itself. In the "Non disclosed" convention the entry repeating group is used to define liquidity of the program. In the "Disclosed" convention (for example, Japanese model) the BidRequest message can be used to request bids based on the ListOrderDetail messages sent in advance of BidRequest message. In the "Disclosed" convention the list repeating group is used to define which ListOrderDetail messages a bid is being sort for and the directions of the required bids.

Category	Message Type	Message Descriptions
List Program Basket Trading	Bid Response	The Bid Response message can be used in one of two ways depending on which market conventions are being followed: • In the "Non disclosed" convention the Bid Response message can be used to supply a bid based on the sector, country, index and liquidity information contained within the corresponding bid request message • In the "Disclosed" convention the Bid Response message can be used to supply bids based on the List Order Detail messages sent in advance of the corresponding Bid Request message.
List Program Basket Trading	New Order - List	The NewOrderList Message can be used in one of two ways depending on which market conventions are being followed: • In the "Non disclosed" convention the New Order - List message is sent after the bidding process has been completed, by telephone or electronically. The New Order - List message enumerates the stocks, quantities, direction for the trade and may contain pre-allocation information. This message may also be used as the first message for the transmission of a program trade where the bidding process has been done by means other than FIX. In this scenario the messages may either be used as a staging process, in which case the broker will start execution once either a ListExecute is received or for immediate execution, in which case the orders will be executed on receipt. • In the "Disclosed" convention the New Order - List message is sent before the bidding process is started, by telephone or electronically. The New Order - List message enumerates the stocks and quantities from the bidding process, and may contain pre-allocation information. The direction of the trade is disclosed after the bidding process is completed.

Category	Message Type	Message Descriptions
List Program Basket Trading	List Strike Price	The strike price message is used to exchange strike price information for principal trades. It can also be used to exchange reference prices for agency trades.
List Program Basket Trading	List Status	The list status message is issued as the response to a List Status Request message sent in an unsolicited fashion by the sell-side. It indicates the current state of the orders within the list as they exist at the broker's site. Orders within the list are statused at the summary level. Individual executions are not reported, rather, the current state of the order is reported.
List Program Basket Trading	List Execute	The list execute message type is used by institutions to instruct the broker to begin execution of a previously submitted list. This message may or may not be used, as it may be mirroring a phone conversation.
List Program Basket Trading	List Cancel Request	The list cancel request message type is used by institutions wishing to cancel previously submitted lists either before or during execution.
List Program Basket Trading	List Status Request	The list status request message type is used by institutions to instruct the broker to generate status messages for a list.

Category	Message Type	Message Descriptions
Allocation and Ready To Book	Allocation	The Allocation message provides the ability to specify how an order or set of orders should be subdivided amongst one or more accounts. It can also be used as a confirmation message through which third parties can communicate execution and settlement details between trading partners. In addition, the allocation message can be sent by the broker to communicate fees and other details that can only be computed once the sub-account breakdowns are known. Note the response to the Allocation message is the AllocationACK message. The Allocation message can also be sent by the buyside firm after execution to indicate to the sellside firm that one or a combined (aggregated) set of orders are "Ready-To-Book" without specifying individual account breakdowns. This can be used to trigger post-trade allocation, matching, and settlement processing via other channels (for example, post-trade industry utilities).
Allocation and Ready To Book	Allocation ACK	The Allocation ACK message is used to acknowledge the receipt and status of an Allocation message. It is possible that multiple Allocation ACK messages can be generated for a single allocation to detail the receipt and then the acceptance or rejection of the Allocation message.
Settlement Instructions	Settlement Instructions	The Settlement Instructions message provides the broker's, the institution's, or the intermediary's instructions for trade settlement. The SettlInstSource field indicates if the settlement instructions are the broker's, the institution's, or the intermediary's. This message has been designed so that it can be sent from the broker to the institution, from the institution to the broker, or from either to an independent "standing instructions" database or matching system or, for CIV, from an intermediary to a fund manager.

Category	Message Type	Message Descriptions
Trade Capture Reporting	Trade Capture Report Request	The Trade Capture Report can be used to: • Request one or more trade capture reports based upon selection criteria provided on the trade capture report request • Subscribe for trade capture reports based upon selection criteria provided on the trade capture report request
Trade Capture Reporting	Trade Capture Report	The Trade Capture Report message can be: • Used to report trades between counterparties • Can be sent unsolicited between counterparties • Sent as a reply to a Trade Capture Report Request • Can be used to report unmatched and matched trades
Registration Instructions	Registration Instructions	The Registration Instructions message type may be used by institutions or retail intermediaries wishing to electronically submit registration information to a broker or fund manager (for CIV) for an order or for an allocation. A Registration Instructions message can be submitted as new, cancel or replace. The RegistTransType field indicates the purpose of the message.
Registration Instructions	Registration Instructions Response	The Registration Instructions Response message type may be used by broker or fund manager (for CIV) in response to a Registration Instructions message submitted by an institution or retail intermediary for an order or for an allocation.

Reader Comments

In an ongoing effort to produce effective documentation, the Documentation Services staff at Information Builders welcomes any opinion you can offer regarding this manual.

Please use this form to relay suggestions for improving this publication or to alert us to corrections. Identify specific pages where applicable. You can contact us through the following methods:

Mail: Documentation Services - Customer Support
Information Builders, Inc.
Two Penn Plaza
New York, NY 10121-2898

Fax: (212) 967-0460

E-mail: books_info@ibi.com

Web form: http://www.informationbuilders.com/bookstore/derf.html

Name:_____

Company:_____

Address:_____

Telephone:_____Date:_____

E-mail:_____

Comments:

Reader Comments

Information Builders, Two Penn Plaza, New York, NY 10121-2898 **(212) 736-4433**