iWay

iWay Application Adapter for SAP for BEA WebLogic
User’s Guide
Version 5 Release 5

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Preface

This document is written for system integrators who develop client interfaces between SAP and other applications. It describes how to use the iWay Application Adapter for SAP to integrate SAP IDocs, RFCs, and BAPIs with BEA WebLogic Server. It is assumed that readers understand Web technologies and have a general understanding of Microsoft Windows and UNIX systems.

How This Manual Is Organized

This manual includes the following chapters:

Chapter/Appendix		Contents
1	*Introducing the iWay Application Adapter for SAP*	Provides an overview of the iWay Application Adapter for SAP. Discusses key features and functionality of the adapter.
2	*Configuring SAP Inbound Processing*	Describes how to configure your SAP system for inbound (client) processing
3	*Creating XML Schemas or Web Services for SAP*	Describes how to create XML schemas for SAP business objects using the iWay Servlet Application Explorer (iAE).
4	*Creating XML Schemas or Web Services for SAP*	Describes how to use iWay Servlet Application Explorer (iAE) to connect to SAP and listen for events.
5	*Configuring the Event Adapter for SAP*	Describes how to create and publish an iWay Business Service using the iWay Servlet Application Explorer (iAE).
6	*Understanding SAP Events*	Describes how to configure and test your SAP system for event processing.
A	*Using Application Explorer in WebLogic Workshop*	Describes how to use the iWay Java Swing Application Explorer in BEA WebLogic Workshop to create XML schemas for SAP BAPIs, RFCs, and IDOCs.
B	*Using WebLogic Workshop to Access Web Services*	Describes how to access Web services created for an SAP Business Application Programming Interface (BAPI) and an SAP Remote Function Call (RFC) using WebLogic Workshop.

C	*Sample Files and Coding Techniques*	Provides sample request and response documents sent between SAP and the iWay Application Adapter for SAP as well as a sample RFC module.

Customer Support

Do you have questions about the iWay Application Adapter for SAP?

Call iWay Software Customer Support Service (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 all your iWay Application Adapter for SAP for BEA WebLogic questions. iWay Software consultants can also give you general guidance regarding product capabilities and documentation. Please be ready to provide your six-digit site code number (*xxxx.xx*) when you call.

You can also access support services electronically, 24 hours a day, with InfoResponse Online. InfoResponse Online is accessible through our World Wide Web site, http://www.iwaysoftware.com. It connects you to the tracking system and known-problem database at the iWay Software 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.iwaysoftware.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 iWay Software representative about InfoResponse Online, or call (800) 969-INFO.

Information You Should Have

To help our consultants answer your questions most effectively, be ready to provide the following information when you call:

- Your six-digit site code number (*xxxx.xx*).
- Your iWay Software configuration:
  - The iWay Software version and release.
  - The communications protocol (for example, TCP/IP or LU6.2), including vendor and release.
- The stored procedure (preferably with line numbers) or SQL statements being used in server access.
- The database server release level.
- The database name and release level.

- The Master File and Access File.
- The exact nature of the problem:
  - Are the results or the format incorrect? Are the text or calculations missing or misplaced?
  - The error message and return code, if applicable.
  - Is this related to any other problem?
- Has the procedure or query ever worked in its present form? Has it been changed recently? How often does the problem occur?
- What release of the operating system are you using? Has it, your security system, communications protocol, or front-end software changed?
- Is this problem reproducible? If so, how?
- Have you tried to reproduce your problem in the simplest form possible? For example, if you are having problems joining two data sources, have you tried executing a query containing just the code to access the data source?
- Do you have a trace file?
- How is the problem affecting your business? Is it halting development or production? Do you just have questions about functionality or documentation?

User Feedback

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Thank you, in advance, for your comments.

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Contents

CHAPTER 1

Introducing the iWay Application Adapter for SAP

Topics:

- Features of the iWay Application Adapter for SAP
- SAP Certification
- SAP Business Objects
- Integrating With SAP
- Deployment Information for the iWay Application Adapter for SAP

The following topics provide an overview of the iWay Application Adapter for SAP. This section discusses key features and functionality of the adapter.

Features of the iWay Application Adapter for SAP

The iWay Application Adapter for SAP provides a means to exchange real-time business data between SAP systems and other application, database, or external business partner systems. The adapter enables external applications for inbound and outbound processing with SAP.

The adapter uses XML messages to enable non-SAP applications to communicate and exchange transactions with SAP using one of the following two methods.

- **Event Adapter.** Applications use this capability if they require access to SAP data only when an SAP business event occurs.
- **Request/response.** Applications use this capability when they must initiate an SAP business event.

  If the request is for retrieving data from SAP, then the adapter sends the application a response message in the form of an XML document with the data embedded.

The iWay Application Adapter for SAP provides:

- Support for bidirectional message interactions.
- The iWay Servlet Application Explorer, a GUI tool which uses SAP object repository metadata to build XML schemas and Web services to handle adapter requests or event data.
- Support for Remote Function Calls (RFC), Business Application Programming Interfaces (BAPI), and Intermediate Documents (IDoc) interfaces to SAP.

SAP Certification

SAP has certified the iWay Application Adapter for SAP for use with all versions of SAP, including mySAP.com solutions.

The adapter provides state-of-the-art middleware solutions for SAP Basis and SAP Web application server-based systems. This adapter has achieved three interface certifications that promote cost-effective and low-risk solutions:

- **CA-ALE certification.** Enhances electronic data interchange (EDI) subsystem interface with SAP Basis and SAP Web Application Server. Using direct program-to-program remote communication and transformation from non-SAP systems to SAP solution-based systems, iWay expedites the conversion, import, and export of critical intermediate documents (IDocs).

- **CA-AMS certification.** Rapidly bridges SAP Basis and SAP Web Application Server data exchange with other applications through pure message delivery. As an ALE (Application Link Enabling) Message Handler, the adapter sends IDoc messages without a requirement for conversion from one or more SAP solution-based systems.
- **CA-XML certification.** Eases the communication between external middleware with SAP Basis and SAP Web Application Server over the Internet using XML, HTTP, or HTTPS. The adapter immediately transfers SAP solution specifications into XML for straight transfer into application subsystem repositories. iWay's CA-XML-certified adapter directly receives and converts messages to be pulled or pushed into XML formats to or from SAP solution-based systems over the Internet.

Supported Platforms

The following SAP platforms are supported by the iWay Application Adapter for SAP:

- SAP Web Application Server Version 6.1 and higher.
- SAP R/3 4.0 and higher.

  Note: SAP R/3 3.1 is “off SAP maintenance.” iWay can support this release under special circumstances, but not all functions can be supported.

  If you have questions regarding this release, contact your SAP representative. This version also requires an SAP support pack to support the functions of the Business Object Repository.
- SAP Enterprise R/3 4.7.
- All or portions of: MySAP.com technology solutions (SAP BW, SAP APO, SAP CRM, SAP SRM, SAP EBP, SAP SEM, SAP WP, SAP KW).

Note: Release versions may vary by product component. In addition, SAP functions may vary by SAP product version and support package.

The following operating systems are supported:

- Windows NT/2000/XP
- UNIX

SAP Business Objects

The iWay Application Adapter for SAP is designed to provide standard access to SAP business objects such as Remote Function Call (RFC) modules, BAPIs (Business Application Programming Interfaces), and IDocs (Intermediate Documents), that are used to support existing business processes. These business objects and methods are available to the adapter as requests of SAP and to the event adapter when SAP invokes its remote requests and work in the following ways:

- **Business Application Programming Interfaces (BAPIs)** are interfaces within the business framework that are used to link SAP components to one another or to third-party components. BAPIs are called synchronously and return information.
- **Remote Function Call (RFC) Modules** are SAP application interfaces that enable clients to invoke SAP technologies and receive responses.
- **Intermediate Documents (IDocs)** are the “logical messages” that correspond to different business processes. They allow different application systems to be linked by a message-based interface. The IDoc type indicates the SAP format to use to transfer the data for a business transaction. An IDoc is a real business process in the form of an IDoc type that can transfer several message types. An IDoc type is described by the following components:
    - **Control records.** A control record contains data that identifies the sender, the receiver, and the IDoc structure. An IDoc contains one control record.
    - **Data records.** A data record consists of a fixed administration part and a data part (segment). The number and format of the segments can be different for each IDoc type.
    - **Status records.** A status record describes the processing stages through which an IDoc passes.

    The following scenario is an example of IDoc functionality and its components:

    Purchase order number 4711 was sent to a vendor as IDoc number 0815. IDoc number 0815 is formatted in IDoc type ORDERS01 and has the status records “created” and “sent.” The purchase order corresponds to the “logical” message ORDERS.

Integrating With SAP

You can use the iWay Application Adapter for SAP to invoke an SAP business process, such as add/update account, or you can use the adapter as part of an integration effort to connect SAP and non-SAP systems.

BAPIs and RFCs are called synchronously by the adapter and always return data (either technical error information or a well-formed response document). IDocs are processed asynchronously.

The adapter is bidirectional and can process an event in SAP by receiving RFCs and IDocs directly from SAP. The SAP system can be configured to send an IDoc or RFC out to a logical system when a certain event occurs, in this case to the adapter. The output sent by SAP can be in any of the following forms:

- An RFC request, for example, RFC_CUSTOMER_GET.
- A BAPI request, for example, BAPI_COMPANYCODE_GETLIST.
- An IDoc.

For request processing, the iWay Application Adapter for SAP can send requests to SAP using the BAPI, RFC, or IDoc interfaces.

The adapter quickly and easily integrates your SAP IDocs, RFCs, and BAPIs with mission critical SAP system applications and other enterprise applications. Adapter benefits include:

- Eliminating the requirement for custom coding.
- Consistent data representation—a standard XML representation of event data and request/response documents for SAP. The developer is freed from the specific details of the SAP interface (BAPI, RFC, IDoc,) and the specific configuration details of the target SAP system.
- Adherence to SAP ABAP serialization rules and SAP Interface Repository standards published by SAP AG.

Deployment Information for the iWay Application Adapter for SAP

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

- iWay Application Explorer

and either

- iWay Business Services Engine (iBSE)

or

- iWay Enterprise Connector for J2EE™ Connector Architecture (JCA) iWay Servlet Application Explorer, used to access SAP metadata and create Web services and events, can be configured to work in a Web services environment in conjunction with the iWay Business Services Engine or with the iWay Enterprise Connector for J2EE Connector Architecture (JCA). When working in a JCA environment, the connector uses the Common Client Interface (CCI) to provide fast integration services using an iWay Adapter instead of using Web services.

Both iBSE and the iWay Connector for JCA are deployed to your application server with iWay Servlet Application Explorer and the adapters.

Deployment Information Roadmap

The following table lists the location of deployment information for the iWay Application Adapter for SAP. A description of iWay Application Explorer, the iWay Business Services Engine (iBSE), and the iWay Enterprise Connector for J2EE Connector Architecture (JCA) follows the table.

Deployed Component	**For more information, see**
iWay Application Explorer	• Chapters 3, 4, and 5 of this guide • Appendix A of this guide when using Application Explorer inside WebLogic Workshop • *iWay Installation and Configuration for BEA WebLogic* • *iWay Servlet Application Explorer User's Guide*
iWay Business Services Engine (iBSE)	• *iWay Installation and Configuration for BEA WebLogic*
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*

iWay Application Explorer

iWay Application Explorer (iAE) uses an explorer metaphor to browse the SAP system for BAPIs, RFCs, and IDOCs. 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 SAP. External applications that access SAP through the iWay Application Adapter for SAP use either XML schemas or Web services to pass data between the external application and the adapter.

The following versions of Application Explorer are available when deploying the adapter with WebLogic Server:

- **Servlet**. Deployed as a Web application on BEA WebLogic Server, this version is accessible through a Web browser. In addition, the servlet Application Explorer can be used with iWay Business Services Engine (iBSE) and iWay Enterprise Connector for J2EE Connector Architecture (JCA). For more information, see the following chapters:
  - Chapter 3, *Creating XML Schemas or Web Services for SAP*
  - Chapter 4, *Configuring the Event Adapter for SAP*
  - Chapter 5, *Creating and Publishing iWay Business Services*
- **Integrated Java Swing**. Tightly integrated within the BEA WebLogic toolset, the integrated Java Swing Application Explorer can be accessed directly from WebLogic WorkShop, where WSDL (Web Services Description Language) files generated from iWay Business Services and XML schemas can be shared as resources within a WebLogic WorkShop application. For more information, see Appendix A, *Using Application Explorer in WebLogic Workshop*.

  Note: To use Application Explorer within WebLogic WorkShop, you must deploy the iWay Business Services Engine (iBSE). For more information, see the *iWay 5.5 Installation and Configuration for BEA WebLogic* documentation.

The iWay Business Services Engine (iBSE)

The iWay 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 but 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 iWay 5.5 runtime environment.

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

Configuring SAP Inbound Processing

Topics:

- Overview
- Configuring a Logical System
- Configuring a Distribution Model
- Defining a Partner Profile

The following section describes how to configure your SAP system for inbound (client) processing.

Overview

During inbound processing, IDOCs are transferred to the interface and stored in the R/3 System. The document data is generated in a second step, also in the course of a workflow.

The upstream system transfers an IDOC to the IDOC interface via the R/3 System port. For this reason, you do not have to specify a port in the inbound partner profiles; the IDOC interface only has to "recognize" the upstream system as a port. A port definition, which provides a unique ID for the upstream system, must be available for the port. The technical parameters of this port definition can (and usually are) overwritten by the upstream system.

The IDOC is "accepted", that is, saved in the database, if the upstream system is recognized. If your partner is defined with the corresponding message in your partner profiles, the IDOC is then processed further. This is done independently in a second step. This ensures that the external system can receive the data quickly and reliably (automatically).

You must perform the following steps to configure SAP for inbound IDOC processing:

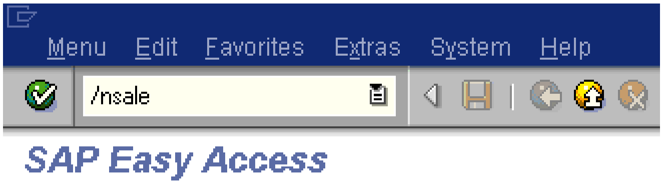
1. Configure a logical system.
2. Configure a distribution model.
3. Define an inbound partner profile.

Configuring a Logical System

In any distributed environment, each participating system must have a unique ID to avoid confusion. In SAP, the name of the logical system is used as the unique ID. This name is assigned explicitly to one client in an SAP system.

Procedure How to Configure a Logical System

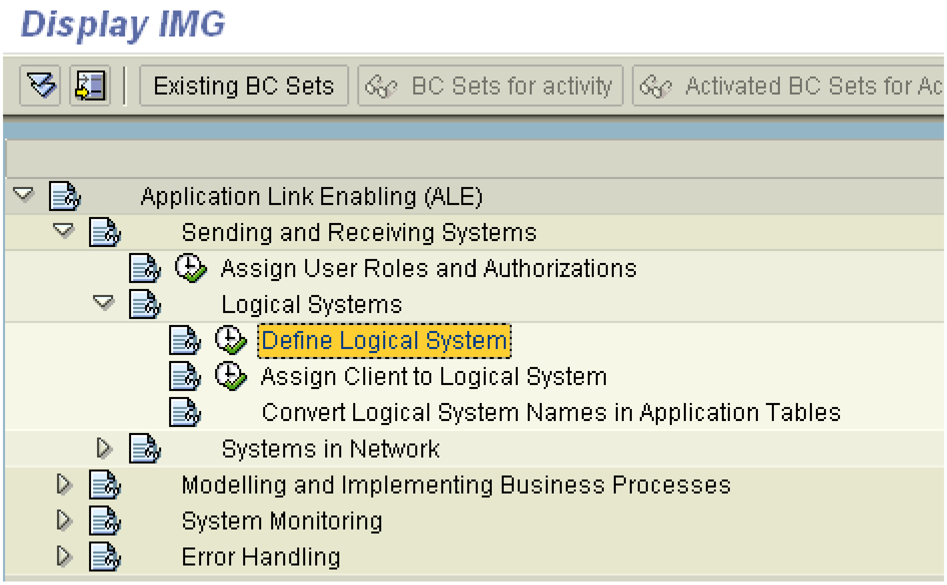
To configure a logical system:



/nsale

1. Execute the *sale* transaction.

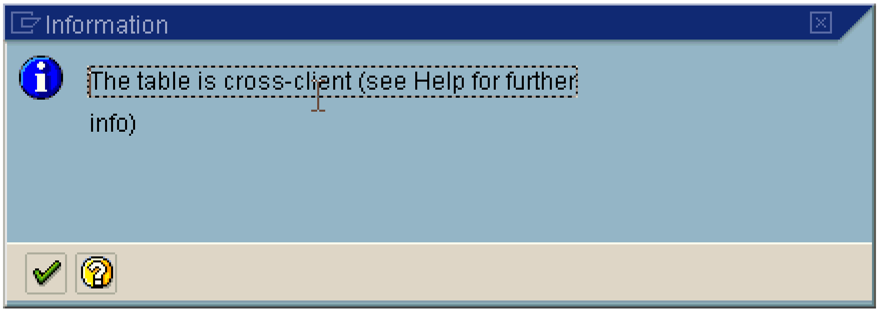
   The Display IMG window opens.


Display IMG
Existing BC Sets
BC Sets for activity
Activated BC Sets for Ac
Application Link Enabling (ALE)
Sending and Receiving Systems
Assign User Roles and Authorizations
Logical Systems
Define Logical System
Assign Client to Logical System
Convert Logical System Names in Application Tables
Systems in Network
Modelling and Implementing Business Processes
System Monitoring
Error Handling

2. Expand *Sending and Receiving Systems*, *Logical Systems*, and select *Define Logical System*.

3. Click the *IMG - Activity* icon.

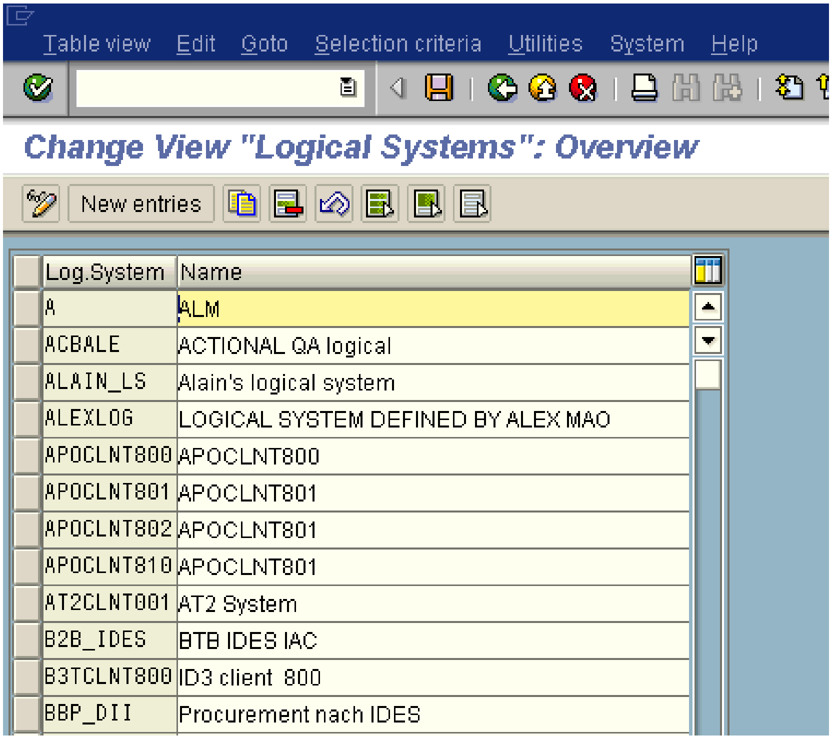
   The following message displays.



The table is cross-client (see Help for further info)

4. Click the green checkmark to continue.

   The Change View “Logical Systems”: Overview page opens.

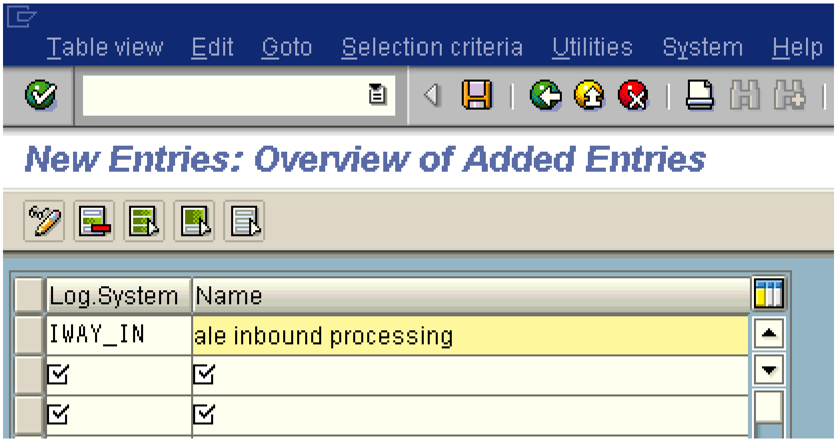


Change View "Logical Systems": Overview

Log.System	Name
A	ALM
ACBALE	ACTIONAL QA logical
ALAIN_LS	Alain's logical system
ALEXLOG	LOGICAL SYSTEM DEFINED BY ALEX MAO
APOCLNT800	APOCLNT800
APOCLNT801	APOCLNT801
APOCLNT802	APOCLNT801
APOCLNT810	APOCLNT801
AT2CLNT001	AT2 System
B2B_IDES	BTB IDES IAC
B3TCLNT800	ID3 client 800
BBP_DII	Procurement nach IDES

5. Click the *New Entries* button.

   The New Entries: Overview of Added Entries page opens.



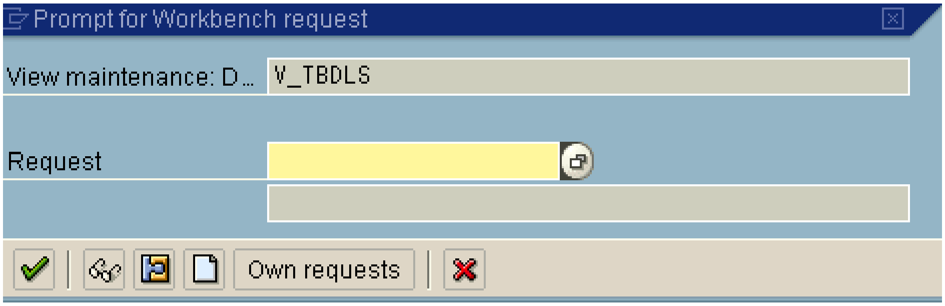
New Entries: Overview of Added Entries

Log.System	Name
IWAY_IN	ale inbound processing
☑	☑
☑	☑

6. Type the Logical System (for example, IWAY_IN) in the Log.System column and type a description in the Name column.

7. Click *Save*.

   The Prompt for Workbench request dialog box opens.

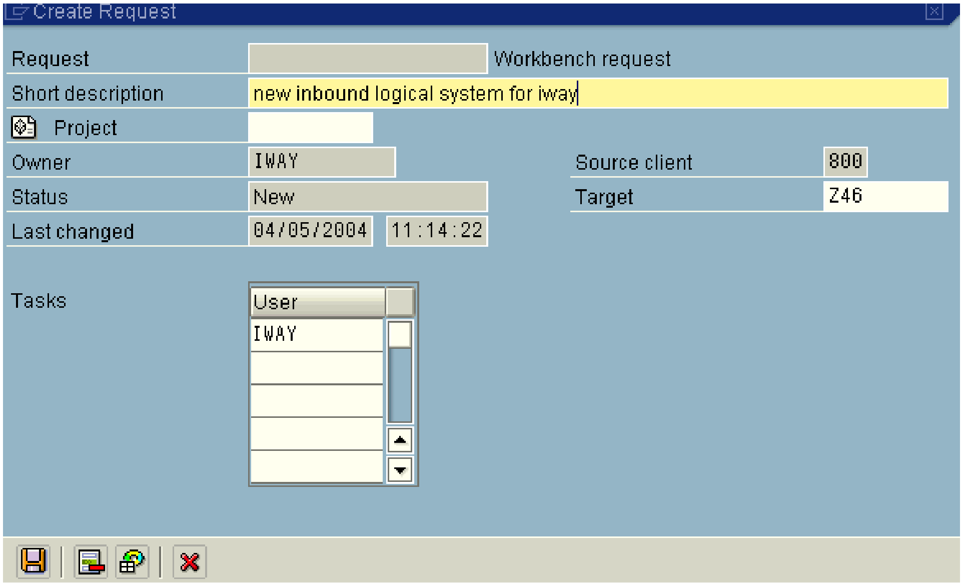


Prompt for Workbench request

View maintenance: D...	V_TBDLS
Request	

8. Click the Create Request □ icon.

   The Create Request dialog box opens.



Create Request

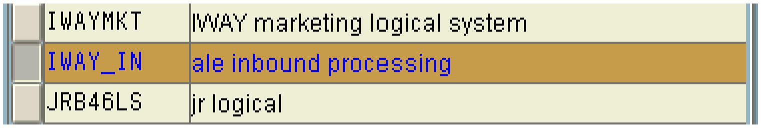
Request	Workbench request		
Short description	new inbound logical system for iway		
Project			
Owner	IWAY	Source client	800
Status	New	Target	Z46
Last changed	04/05/2004 11:14:22		

Tasks

User
IWAY

9. Type a name and description for your request and click *Save*.

   The logical system you configured (IWAY_IN) is now added to the list.



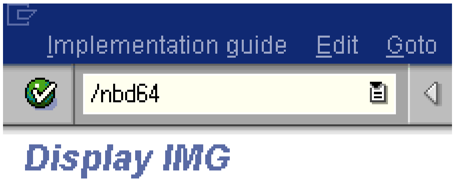
IWAYMKT	IWAY marketing logical system
IWAY_IN	ale inbound processing
JRB46LS	jr logical

Configuring a Distribution Model

A distribution model is used to describe the ALE message flow between logical systems. Business objects are distributed to connected recipients according to a unique distribution model that can contain rules of varying complexity depending on the type of business objects involved.

Procedure How to Configure a Distribution Model

To configure a distribution model.

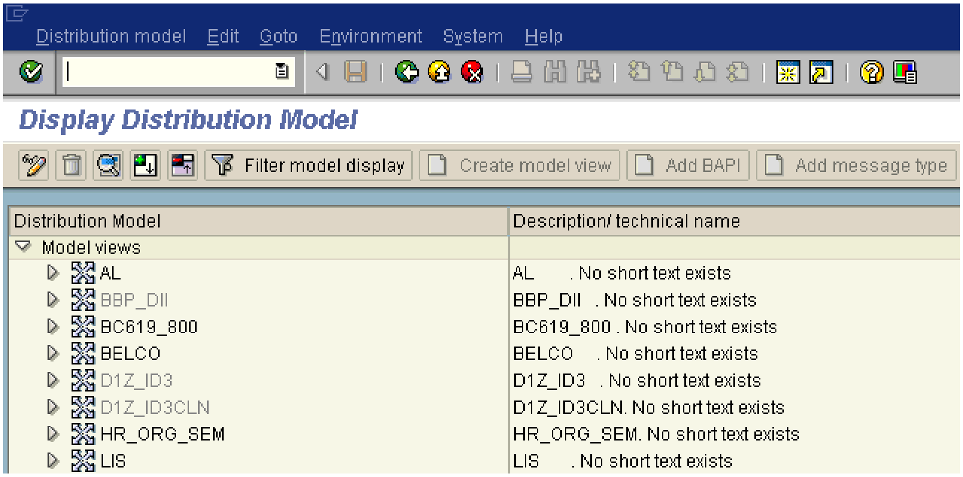


/nbd64

Display IMG

1. Execute the *bd64* transaction.

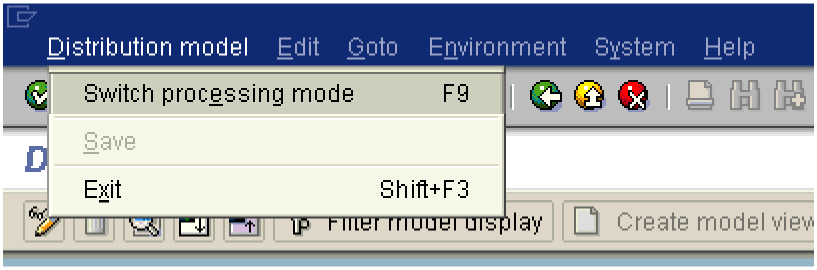
   The Display Distribution Model window opens.



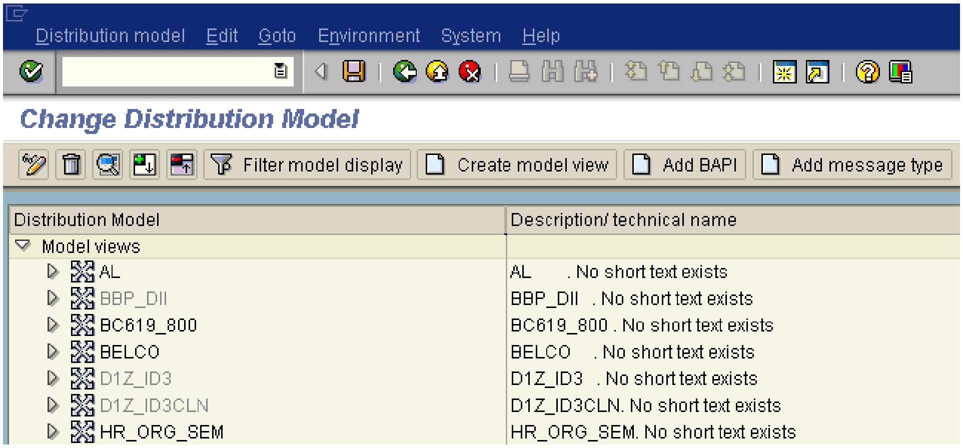
Display Distribution Model

Distribution Model	Description/ technical name
Model views	
AL	AL . No short text exists
BBP_DII	BBP_DII . No short text exists
BC619_800	BC619_800 . No short text exists
BELCO	BELCO . No short text exists
D1Z_ID3	D1Z_ID3 . No short text exists
D1Z_ID3CLN	D1Z_ID3CLN. No short text exists
HR_ORG_SEM	HR_ORG_SEM. No short text exists
LIS	LIS . No short text exists

2. Click *Distribution model* from the menubar and select *Switch processing mode*.



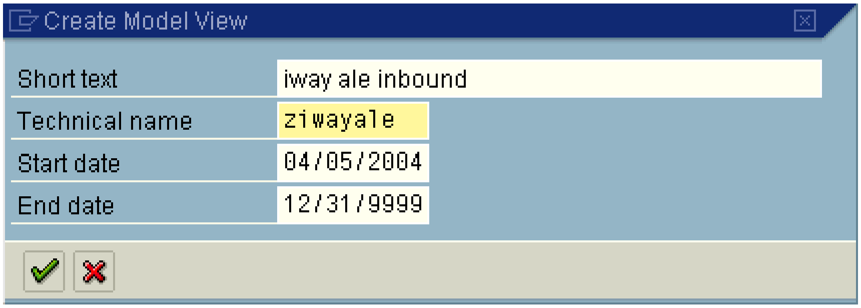
The Display Distribution Model window is switched to Change Distribution Model.



Distribution Model	Description/ technical name
Model views	
AL	AL . No short text exists
BBP_DII	BBP_DII . No short text exists
BC619_800	BC619_800 . No short text exists
BELCO	BELCO . No short text exists
D1Z_ID3	D1Z_ID3 . No short text exists
D1Z_ID3CLN	D1Z_ID3CLN. No short text exists
HR_ORG_SEM	HR_ORG_SEM. No short text exists

3. Click the *Create model view* button.

The Create Model View dialog box opens.

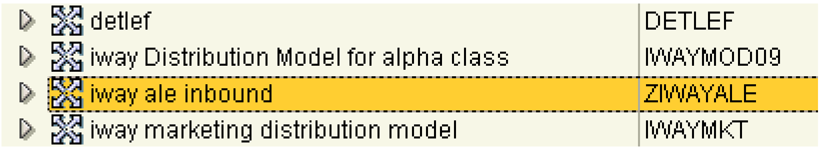


Short text	iway ale inbound
Technical name	ziwayale
Start date	04/05/2004
End date	12/31/9999

4. Type a model view name (for example, iway ale inbound) in the Short text field and a technical name (for example, ziwayale), which also serves as a description.

5. Click the green checkmark to enter the information.

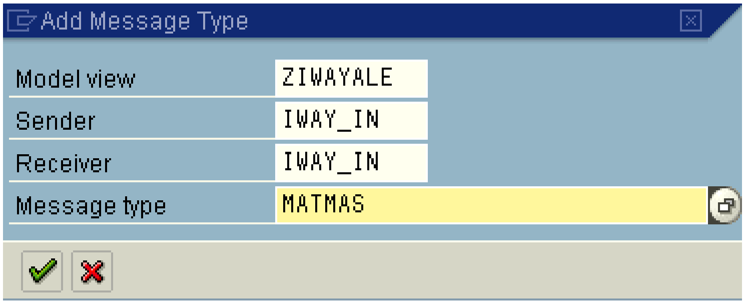
You are returned to the main Change Distribution Model window. The distribution model you configured is now added to the list.



detlef	DETLEF
iway Distribution Model for alpha class	IWAYMOD09
iway ale inbound	ZIWAYALE
iway marketing distribution model	IWAYMKT

6. Click the *Add message type* button.

   The Add Message Type dialog box opens.



Model view	ZIWAYALE
Sender	IWAY_IN
Receiver	IWAY_IN
Message type	MATMAS

7. In the Sender and Receiver fields, enter the logical system you configured (for example, IWAY_IN).

   You can click on the icon to the right of each field to browse from a list of logical systems.

8. In the Message type field, enter the message type you want to use (for example, MATMAS).

   You can click on the icon to the right of the field to browse from a list of available message types.

9. Click the green checkmark to enter the information.

   You are returned to the main Change Distribution Model window.

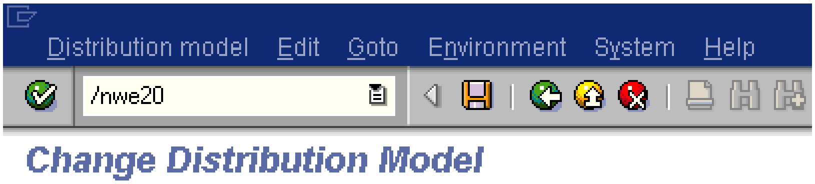
10. Click *Save*.

Defining a Partner Profile

Partner profiles are a prerequisite for data exchange. This involves defining who can exchange messages with the SAP system and using which port.

Procedure How to Define a Partner Profile

To define a partner profile for a specific IDOC you want to use:

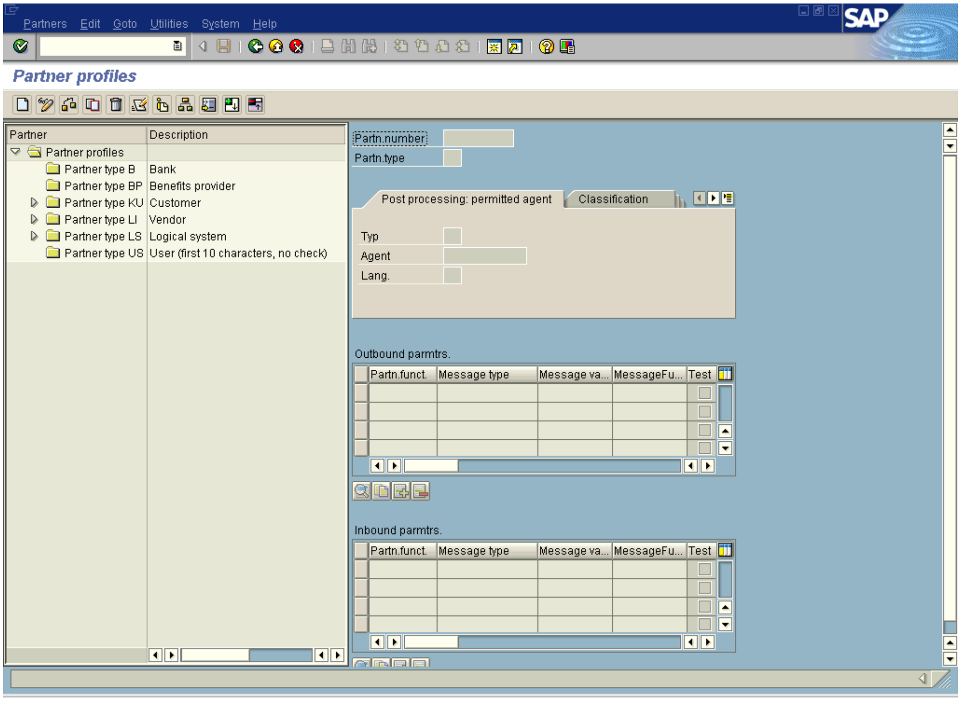


/nwe20

Change Distribution Model

1. Execute the *we20* transaction.

   The Partner profiles window opens.



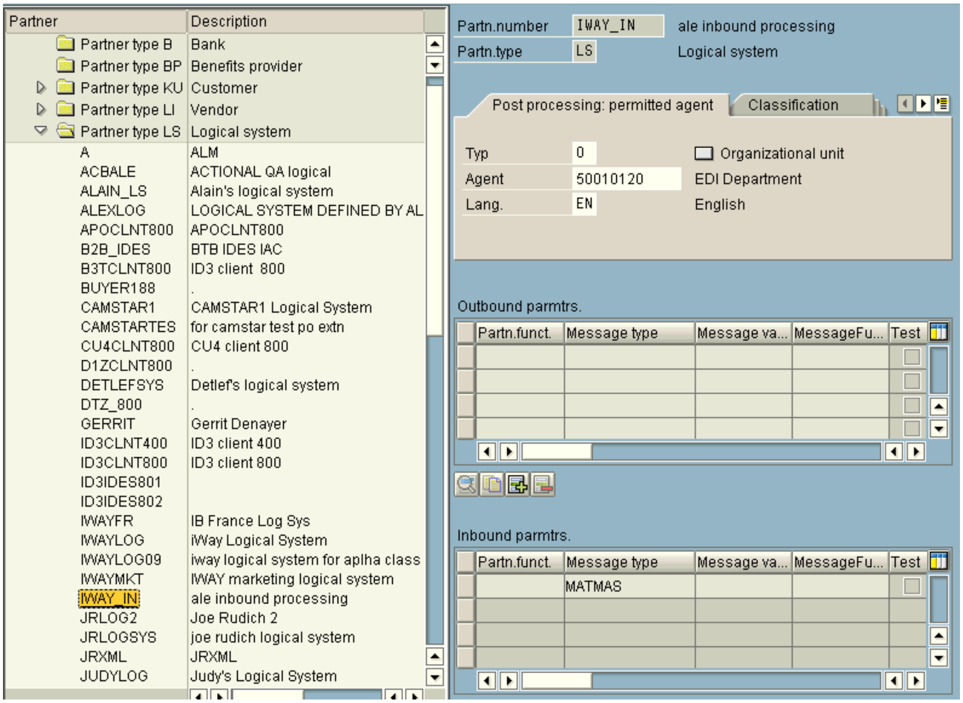
Partner profiles

Partner	Description
Partner profiles	
Partner type B	Bank
Partner type BP	Benefits provider
Partner type KU	Customer
Partner type LI	Vendor
Partner type LS	Logical system
Partner type US	User (first 10 characters, no check)

Partn.number
Partn.type
Typ
Agent
Lang.

2. In the left pane, expand Partner type LS, and select the logical system you configured from the list (for example, IWAY_IN).

   Note: In the right pane, the Partn.number field refers to the name of the logical system.



Partner	Description
Partner type B	Bank
Partner type BP	Benefits provider
Partner type KU	Customer
Partner type LI	Vendor
Partner type LS	Logical system
A	ALM
ACBALE	ACTIONAL QA logical
ALAIN_LS	Alain's logical system
ALEXLOG	LOGICAL SYSTEM DEFINED BY AL
APOCLNT800	APOCLNT800
B2B_IDES	BTB IDES IAC
B3TCLNT800	ID3 client 800
BUYER188	.
CAMSTAR1	CAMSTAR1 Logical System
CAMSTARTES	for camstar test po extn
CU4CLNT800	CU4 client 800
D1ZCLNT800	.
DETLEFSYS	Detlef's logical system
DTZ_800	.
GERRIT	Gerrit Denayer
ID3CLNT400	ID3 client 400
ID3CLNT800	ID3 client 800
ID3IDES801	
ID3IDES802	
IWAYFR	IB France Log Sys
IWAYLOG	iWay Logical System
IWAYLOG09	iway logical system for aplha class
IWAYMKT	IWAY marketing logical system
IWAY_IN	ale inbound processing
JRLOG2	Joe Rudich 2
JRLOGSYS	joe rudich logical system
JRXML	JRXML
JUDYLOG	Judy's Logical System

Partn.number IWAY_IN ale inbound processing
Partn.type LS Logical system

Typ 0 □ Organizational unit
Agent 50010120 EDI Department
Lang. EN English

Outbound parmtrs.

Partn.funct.	Message type	Message va...	MessageFu...	Test
				□
				□
				□
				□

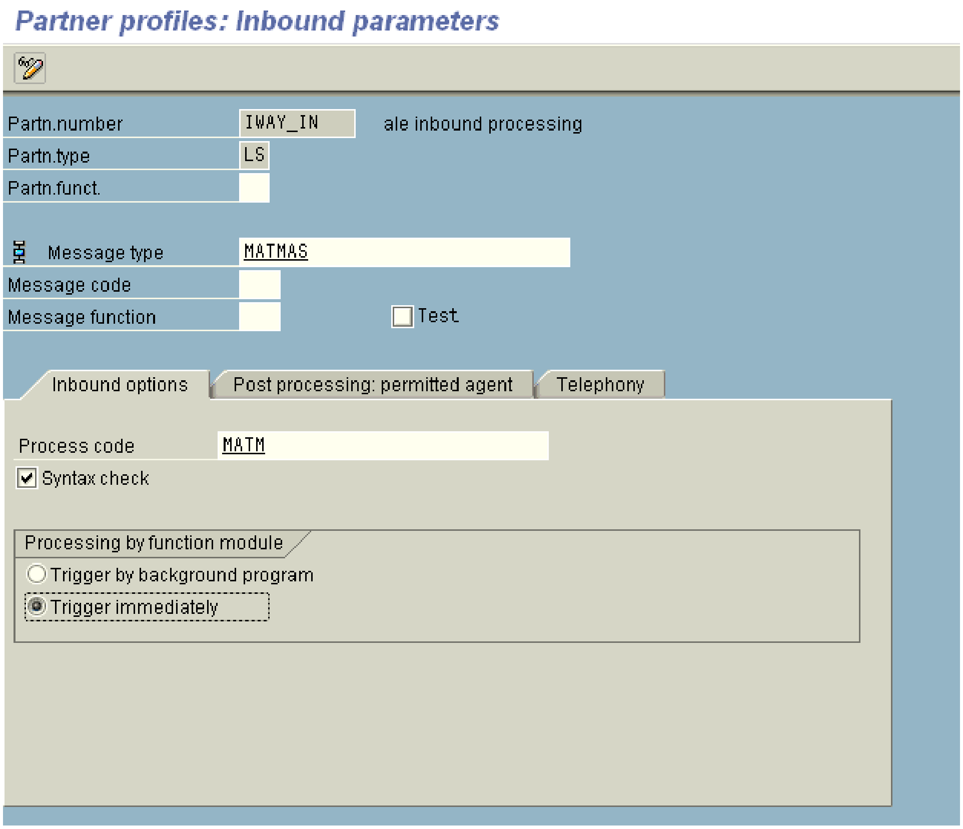
Inbound parmtrs.

Partn.funct.	Message type	Message va...	MessageFu...	Test
	MATMAS			□

3. Click *Save*.

4. From the Inbound parmtrs table, click the *Create inbound parameter* icon.

   The Partner profiles: Inbound parameters window opens.



Partner profiles: Inbound parameters

Partn.number	IWAY_IN	ale inbound processing
Partn.type	LS	
Partn.funct.		
Message type	MATMAS	
Message code		
Message function		□ Test

Process code: MATM

☑ Syntax check

Processing by function module

○ Trigger by background program

● Trigger immediately

5. In the Message type field, enter the message type you want to use (for example, MATMAS).

   You can click on the icon to the right of the field to browse from a list of available message types.

   The Inbound options tab is selected by default.

6. In the Process code field, enter the process code you want to use (for example, MATM).

   You can click on the icon to the right of the field to browse from a list of available process codes.

7. In the Processing by function module area, select one of the following options.

   - **Trigger by background program.** In this case the iWay Application Adapter for SAP writes IDOCs to the SAP database, which is processed immediately.
   - **Trigger immediately.** In this case, the iWay Application Adapter for SAP waits for the SAP system to process IDOCs. This can take anywhere from 1 to 15 minutes.

8. Click *Save*.

CHAPTER 3

Creating XML Schemas or Web Services for SAP

Topics:

- Overview
- Starting iWay Servlet Application Explorer
- Establishing a Target for SAP
- Viewing Application System Objects
- Creating an XML Schema

The following section describes how to create XML schemas for SAP business objects using the iWay Servlet Application Explorer (iAE).

Although this section describes the Java™ servlet implementation of Application Explorer, other implementations provide the same functionality by means of similar graphical user interfaces. For information on running Application Explorer in WebLogic Workshop, see Appendix A, *Using Application Explorer in WebLogic Workshop*.

Overview

The iWay Application Adapter for SAP enables the processing of SAP BAPIs, RFCs, and IDocs.

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

iAE is a Web application running within a servlet container that is accessible through a Web browser. For more information on installing and configuring the iWay Servlet Application Explorer, see the *iWay 5.5 Installation and Configuration for BEA WebLogic* documentation.

SAP must be installed, configured, and available for client access. iAE need not reside on the same system as the application system being accessed, but network access is required.

Starting iWay Servlet Application Explorer

Before you can use iWay Servlet Application Explorer (iAE), you must start BEA WebLogic Server. Then, you can open Application Explorer.

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

1. To start the BEA WebLogic Server on Windows:
   a. Click the *Windows Start menu*.
   b. Select *Programs*, *BEA WebLogic Platform 8.1, User Projects, your domain for iWay,* and then, click *Start Server.*
2. 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 iWay Servlet Application Explorer

To open Application Explorer (AE):

1. Enter the following URL in your browser window:

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

where:

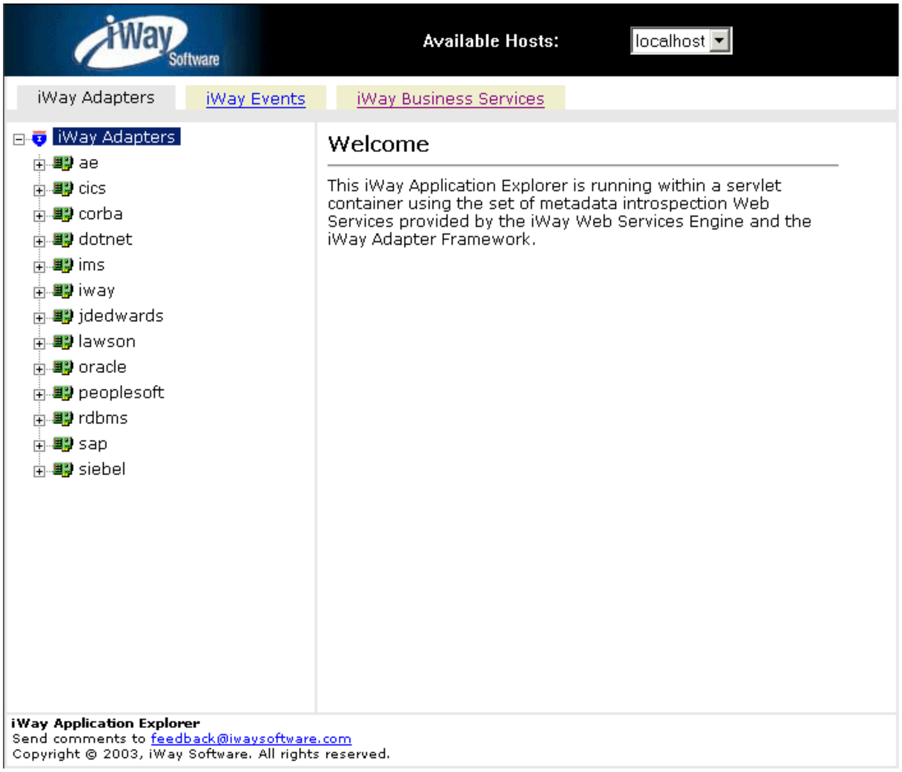
hostname

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

port

Is the port for the domain you are using for iWay. The port for the default domain is 7001.

After you start AE, the following window opens.



Welcome

This iWay Application Explorer is running within a servlet container using the set of metadata introspection Web Services provided by the iWay Web Services Engine and the iWay Adapter Framework.

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The Available Hosts drop-down menu in the upper right lists the iWay Connector for JCA or Servlet iBSE instance you can access.

For more information on adding instances, see the *iWay 5.5 Installation and Configuration for BEA WebLogic* documentation.

You are now ready to create new targets for SAP.

Establishing a Target for SAP

To browse SAP business objects, 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 iWay Application Explorer (iAE) or after you disconnect from the system.

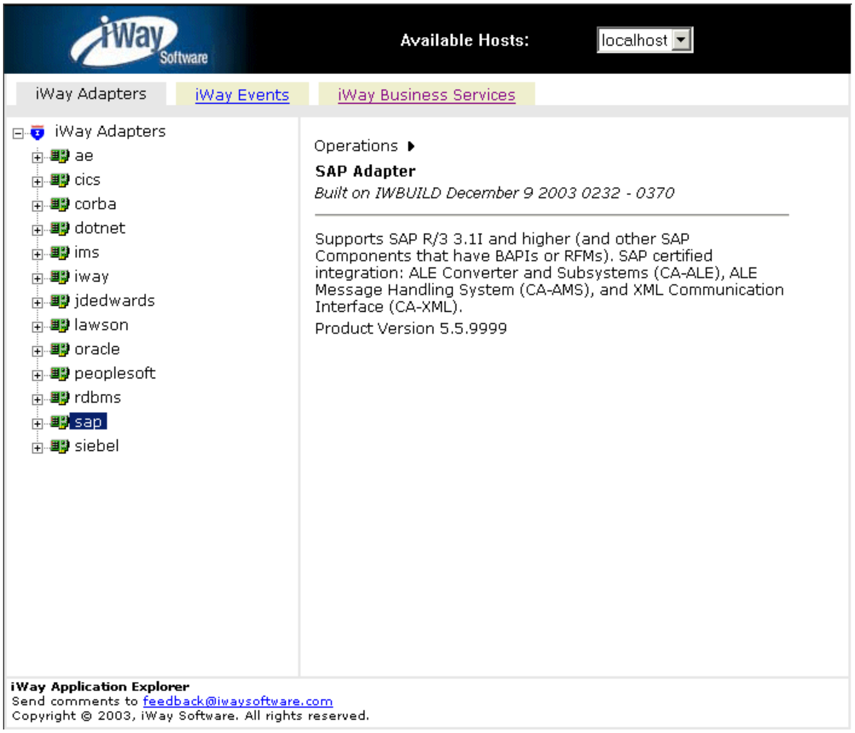
A list of supported application systems appears in the left pane of iAE. The list is based on the iWay Adapters that you installed and have licenses to use.

Creating a New Target

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

Procedure How to Create a New Target

To create a new target:



SAP Adapter

Built on IWBUILD December 9 2003 0232 - 0370

Supports SAP R/3 3.1I and higher (and other SAP Components that have BAPIs or RFMs). SAP certified integration: ALE Converter and Subsystems (CA-ALE), ALE Message Handling System (CA-AMS), and XML Communication Interface (CA-XML).

Product Version 5.5.9999

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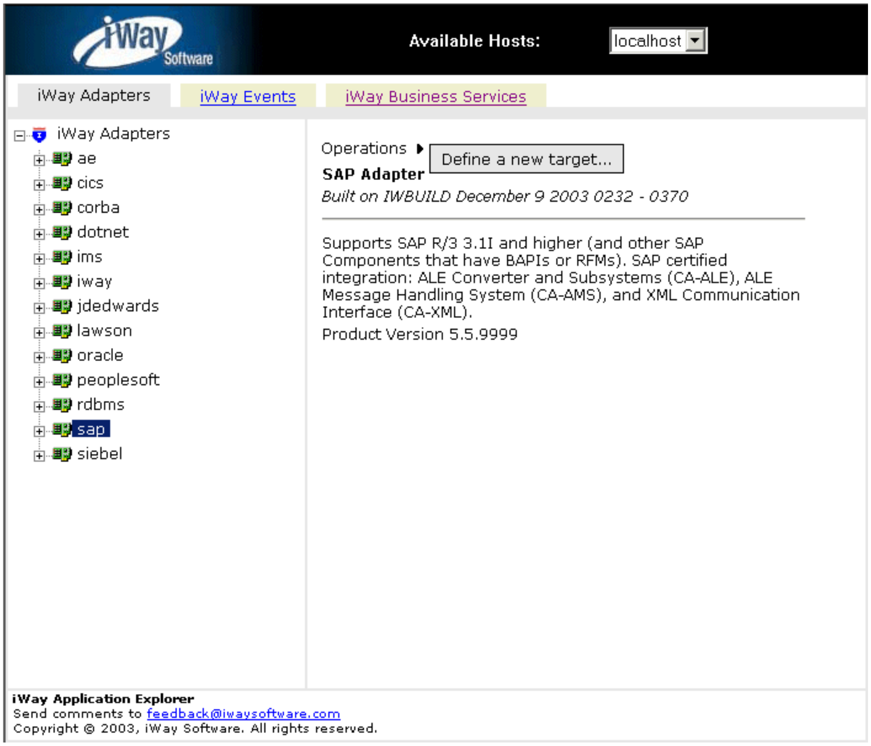
1. In the left pane, click the *SAP* node.

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

2. In the right pane, move the pointer over *Operations* and select *Define a new target*.



SAP Adapter

Built on IWBUILD December 9 2003 0232 - 0370

Supports SAP R/3 3.1I and higher (and other SAP Components that have BAPIs or RFMs). SAP certified integration: ALE Converter and Subsystems (CA-ALE), ALE Message Handling System (CA-AMS), and XML Communication Interface (CA-XML).

Product Version 5.5.9999

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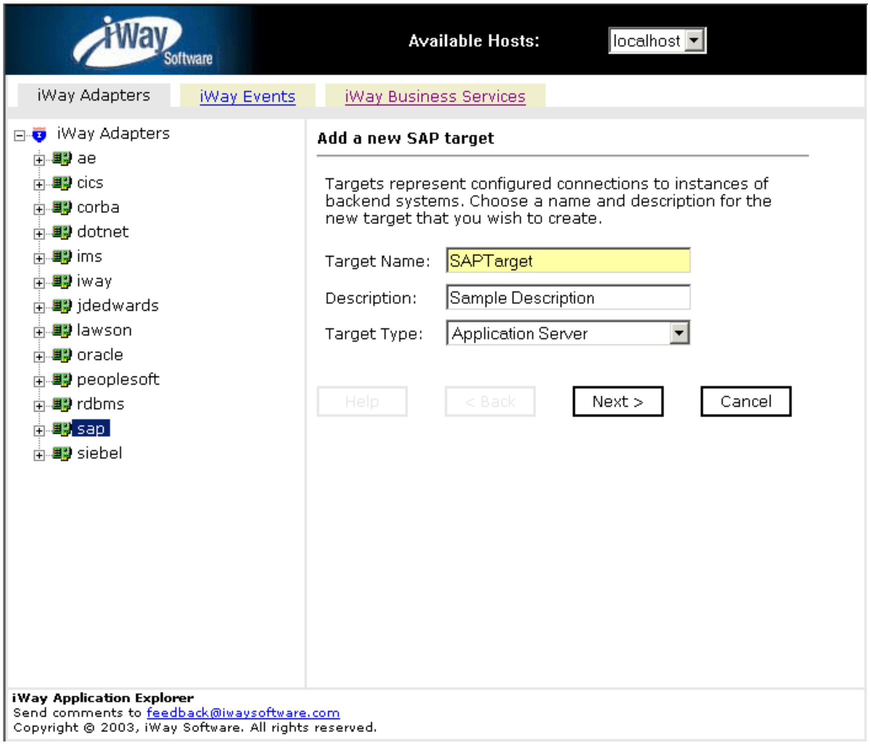
The Add a new SAP target pane opens on the right.



Add a new SAP target

Targets represent configured connections to instances of backend systems. Choose a name and description for the new target that you wish to create.

Target Name: SAPTarget

Description: Sample Description

Target Type: Application Server

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3. Specify information for the SAP target you are defining.

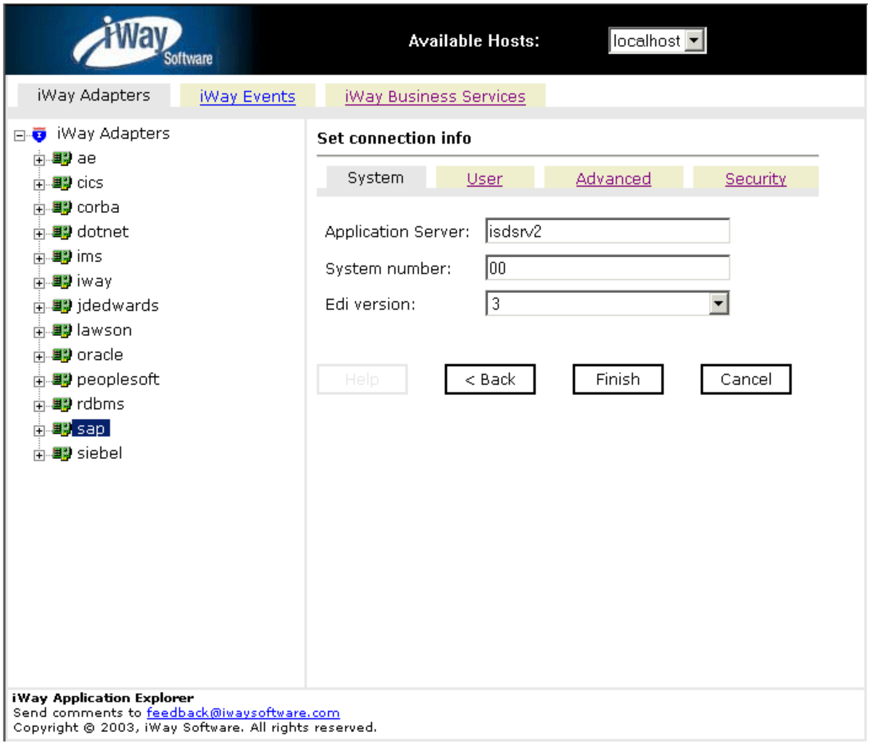
   a. **Target Name.** Enter a descriptive name for the target, for example, SAPTarget.

   b. **Target Description.** Enter a brief description for the connection.

   c. **Target Type.** Select the type of target you are connecting to from the drop-down list. The default value is *Application Server*.

4. Click *Next*.

The Set connection info pane appears on the right.



Set connection info

Application Server: isdsrv2

System number: 00

Edi version: 3

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The following tabs are available:

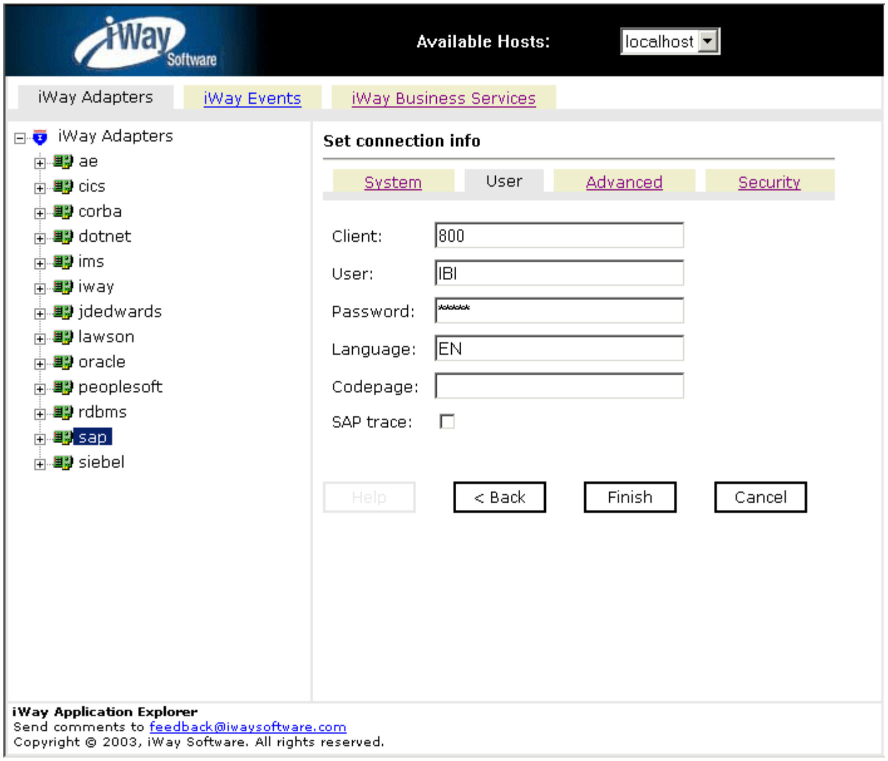
- System (Required)
- User (Required)
- Advanced
- Security

5. Enter the following SAP system information in the *System* tab:

- **Application Server.** The host name or IP address for the computer that is hosting the SAP application.
- **System Number.** The system number defined to SAP for client communications.
- **EDI Version.** The Electronic Data Interchange (EDI) document version that you are using with the iWay Application Adapter for SAP. Version 3 is the default value.

6. Click the *User* tab.

The following tab appears.



Set connection info

Client: 800

User: IBI

Password: *****

Language: EN

Codepage:

SAP trace: □

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7. Enter the following SAP user information:

- **Client.** The client number defined for the SAP application for client communications.
- **User.** A valid user ID for the SAP application.
- **Password.** A valid password for the SAP application.
- **Language.** A language key. EN (English) is the default.
- **Codepage.** A character code page value.
- **SAP Trace.** Select this option to enable traces.

After you provide information for the System and User tabs, you complete the basic SAP target configuration. However, you can specify additional parameters in the Advanced and Security tabs.

The Advanced tab contains the following fields:

- **Connection pool size.** Enter the number of connections you want to make available to SAP.
- **Connection pool name.** Do not enter any value in this field.
- **BAPI Exception Handling.** Select *Throws Exception* or *Creates Error Document* from the drop-down list in the event of a BAPI exception.
- **Commit with Wait.** This option is disabled by default.

The Security tab contains the following fields:

- **Logon ticket (SSO2).** If you are using a Secure Network Communications (SNC) adapter with SAP, enter the name of the SSO2 logon ticket you are using.
- **Logon ticket (X509).** If you are using an SNC adapter with SAP, enter the name of the X.509 logon ticket you are using.

  Note: Depending on the SAP system release, logins using Single-Sign-On (SSO) or X.509 certificates are being supported.

  For SSO specify the user to be $MYSAPSSO2$ and pass the base64 encoded ticket as the passwd parameter.

  For X509 specify the user to be $X509CERT$ and pass the base64 encoded certificate as the passwd parameter

  For more information regarding SSO or X.509 configuration, see your SAP system documentation or enter the following URL in a Web browser:

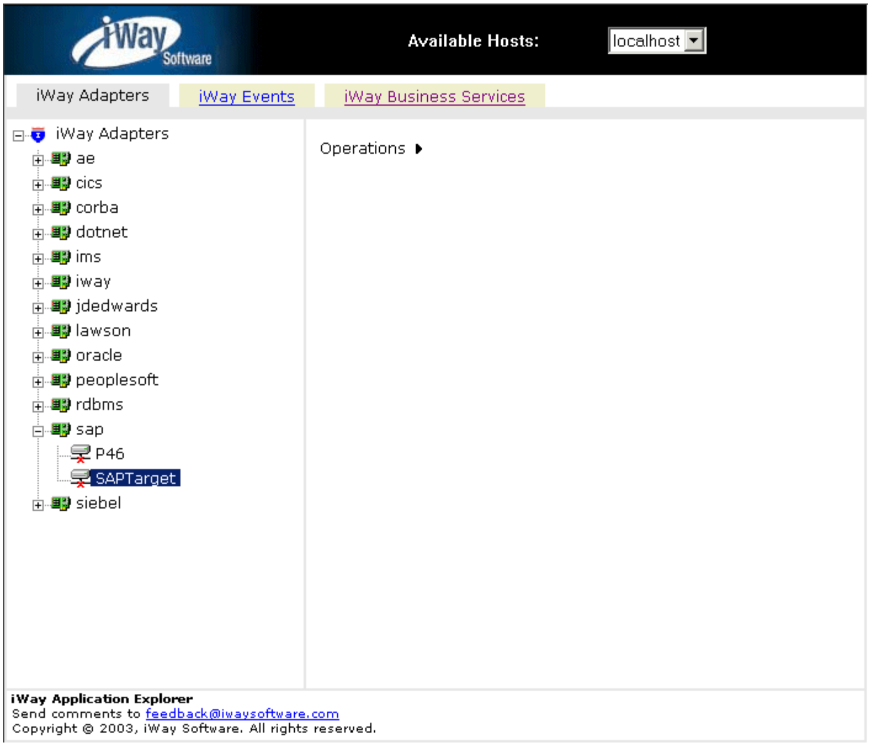
  `http://help.sap.com/saphelp_47x200/helpdata/en/b3/ca0538c2cb0a3be10000009b38f8cf/frameset.htm`

- **SNC mode.** By default, SNC is disabled. To enable SNC, select *1* from the drop-down list.
- **SNC partner.** Enter the name of the RFC server or message server (load balancing) that provides the SNC services.
- **SNC level.** Select the version of the SNC library from the drop-down list.
- **SNC name.** Enter the name of the SNC library you are using.
- **SNC library path.** Enter the path to the SNC library.

SNC provides protection for the communication links between the distributed components of an R/3 System. Using SNC, SAP R/3 can support products which adhere to the GSS-API Version 2 standard. SNC supports application level (end-to-end security), Smartcard authentication, and single sign-on.

8. Click *Finish* when you have supplied all the required information for your target.

The SAP target (SAPTarget) appears below the sap node in the left pane.



Available Hosts: localhost

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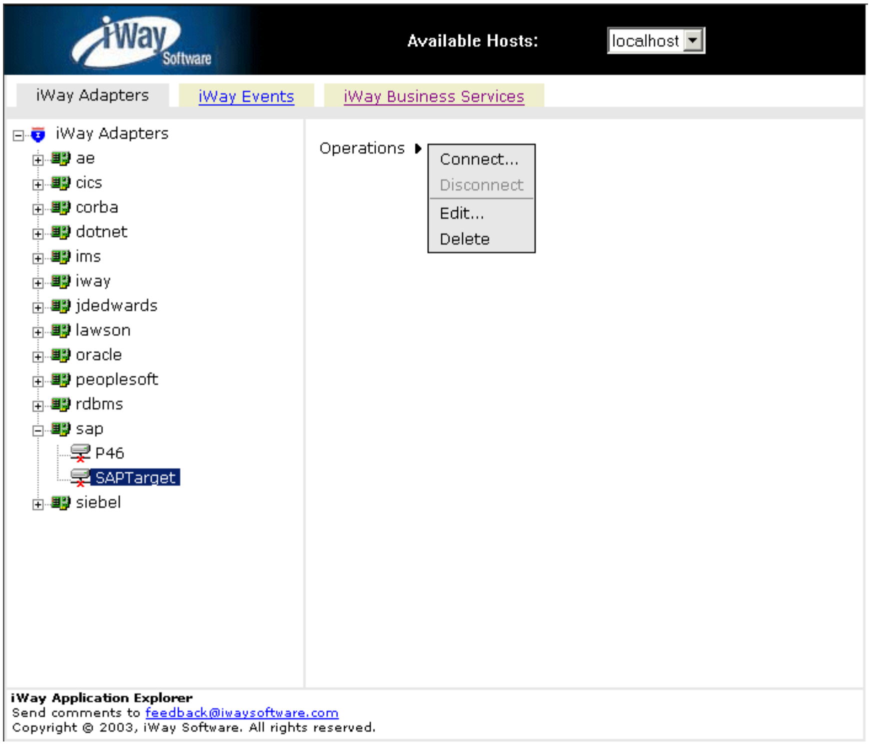
You are now ready to connect to your SAP target.

Connecting to a Target

You must use the target you defined to connect to SAP.

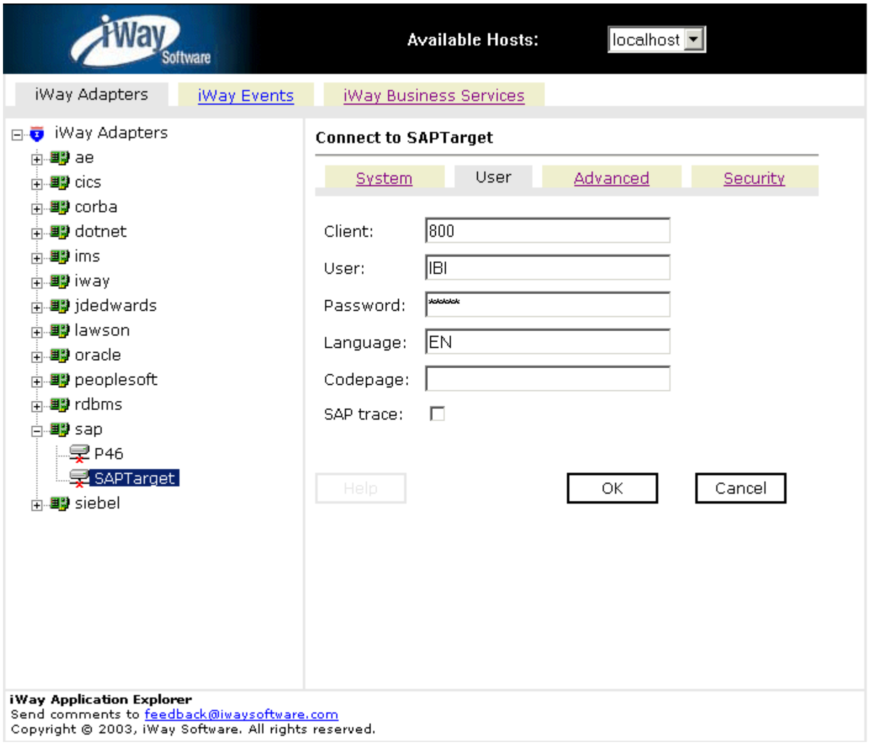
Procedure How to Connect to a Target

To connect to a target:



1. In the left pane, expand the sap node and select the target you defined, for example, SAPTarget.
2. In the right pane, move the pointer over *Operations* and select *Connect*.

The Connect to SAPTarget pane opens on the right.



Connect to SAPTarget

Client: 800

User: IBI

Password: *****

Language: EN

Codepage:

SAP trace: □

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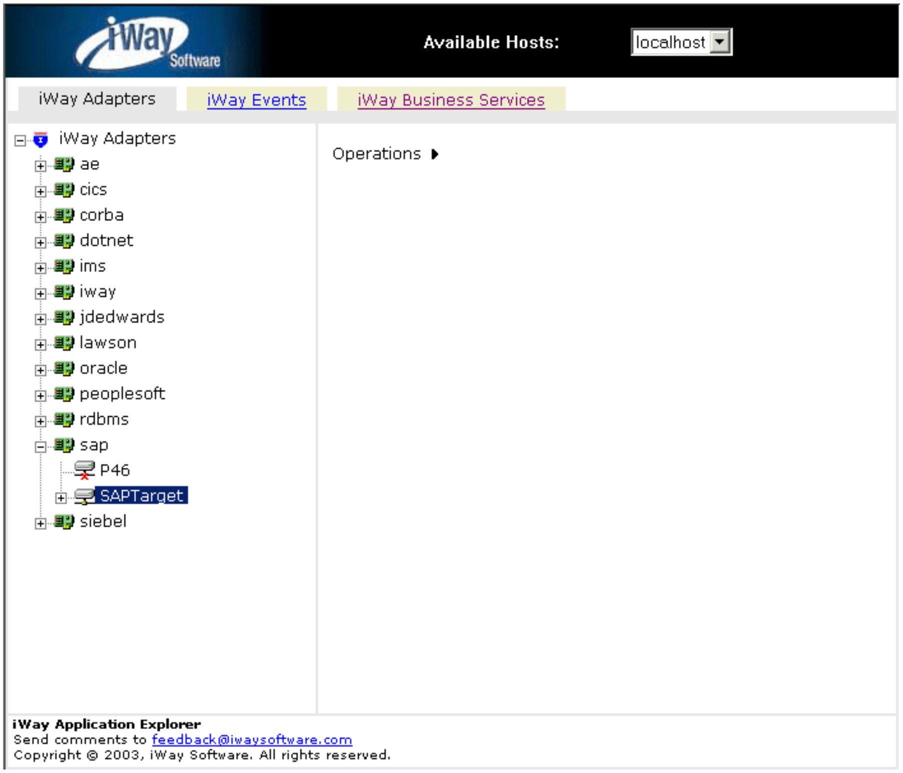
3. Enter a valid password and click *OK*.

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



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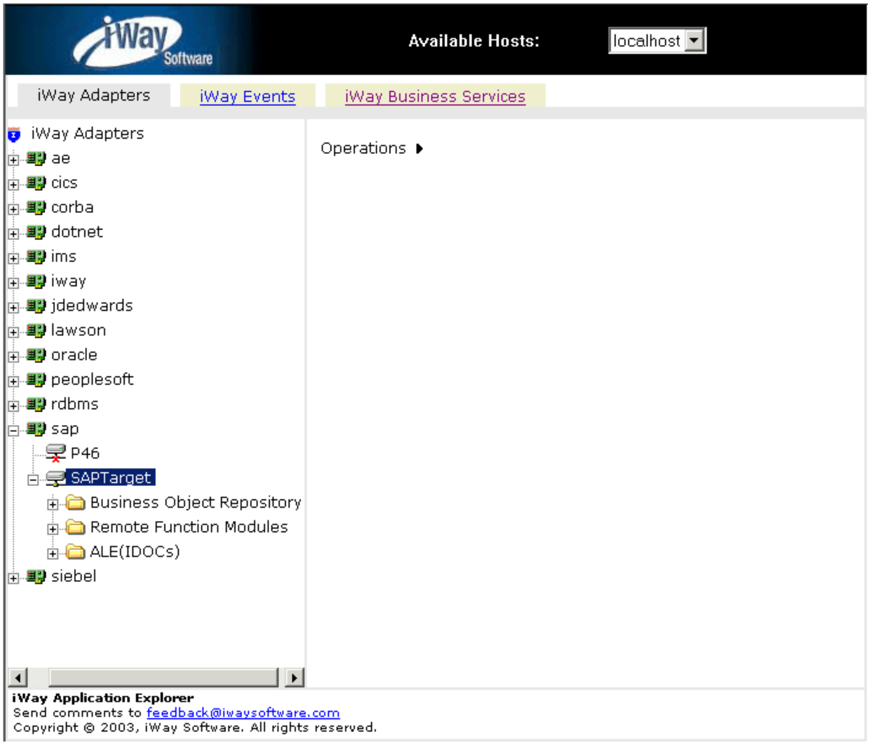
4. Expand the *SAPTarget* node.

The following SAP business objects appear.

- Business Object Repository
- Remote Function Modules
- ALE (IDOCs)



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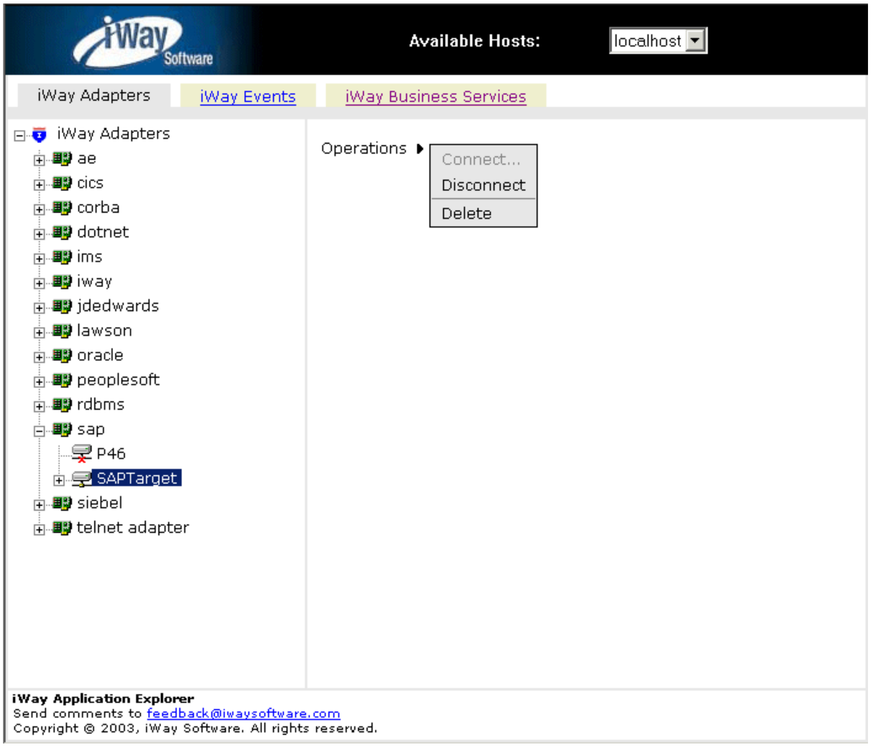
Disconnecting From a Target

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

Procedure How to Disconnect From a Target

To disconnect from a target:



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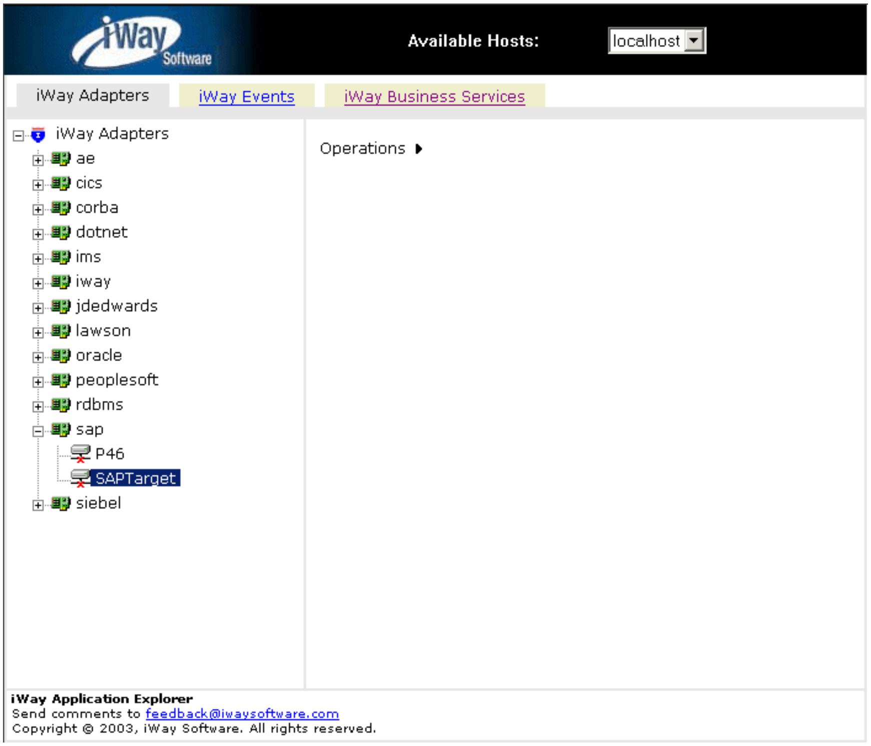
1. From the left pane, click the target, for example, SAPTarget, to which you are connected.
2. In the right pane, move the pointer over *Operation* and select *Disconnect*.

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

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



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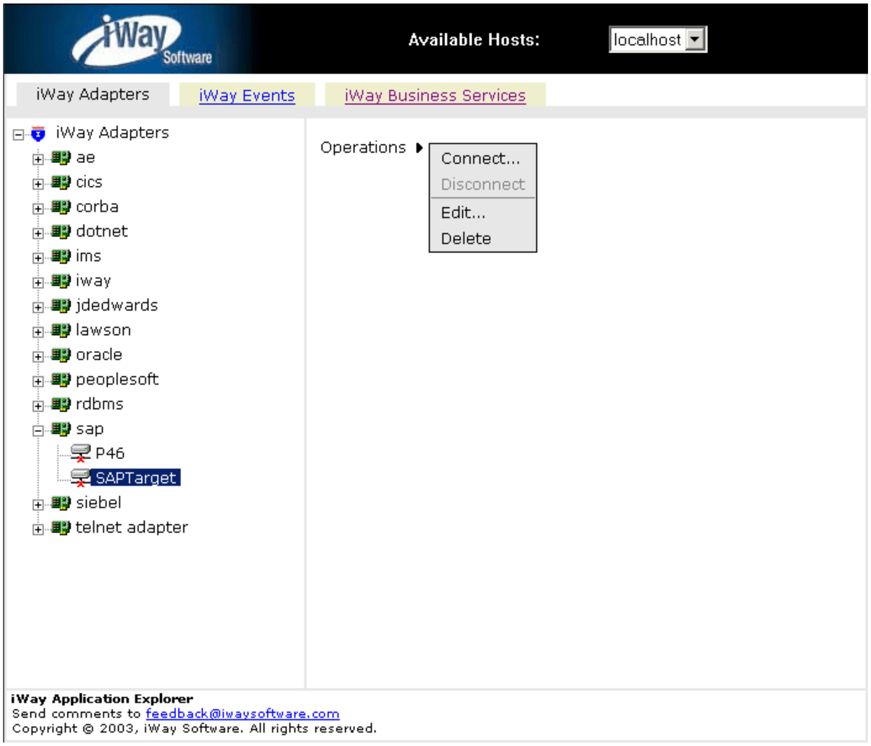
Modifying a Target

After you create a target for SAP using iWay Servlet Application Explorer, you can edit any of the information that you provided previously.

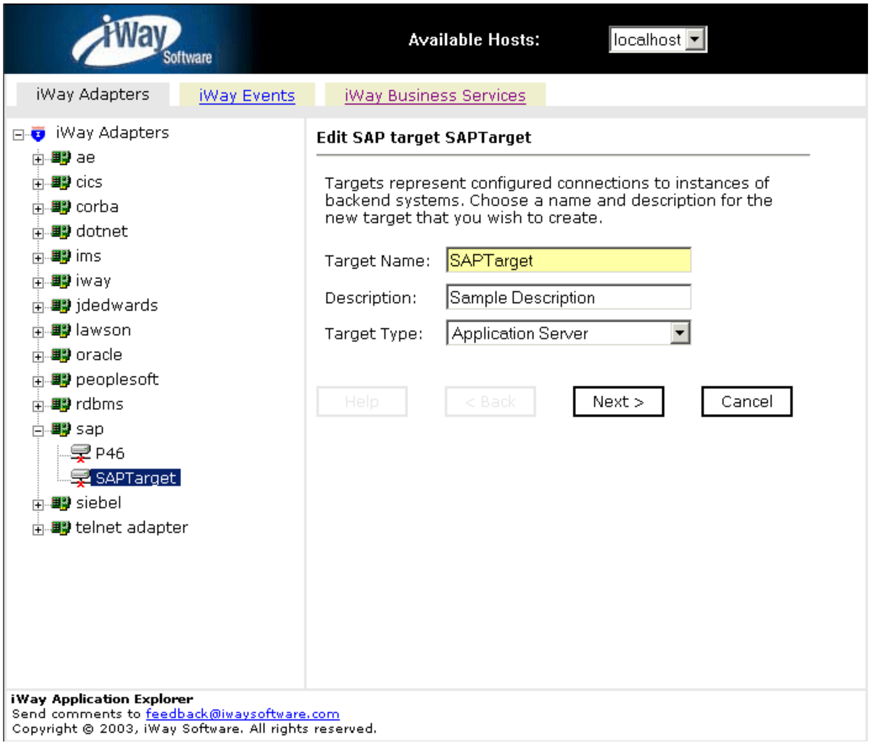
Procedure How to Edit a Target

To edit a target:



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

The Edit pane opens on the right.



Edit SAP target SAPTarget

Targets represent configured connections to instances of backend systems. Choose a name and description for the new target that you wish to create.

Target Name:	SAPTarget
Description:	Sample Description
Target Type:	Application Server

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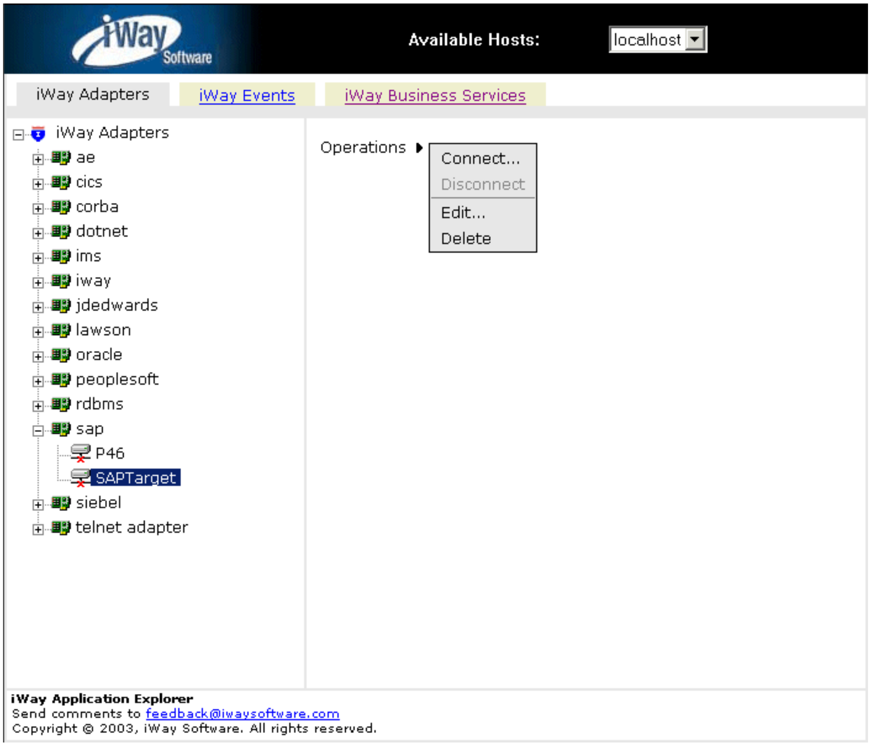
3. Modify the connection information.

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:



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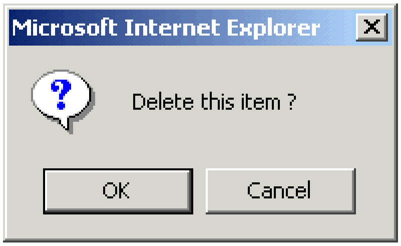
1. In the left pane, click the target, for example, SAPTarget.
2. In the right pane, move the pointer over *Operations* and select *Delete*.

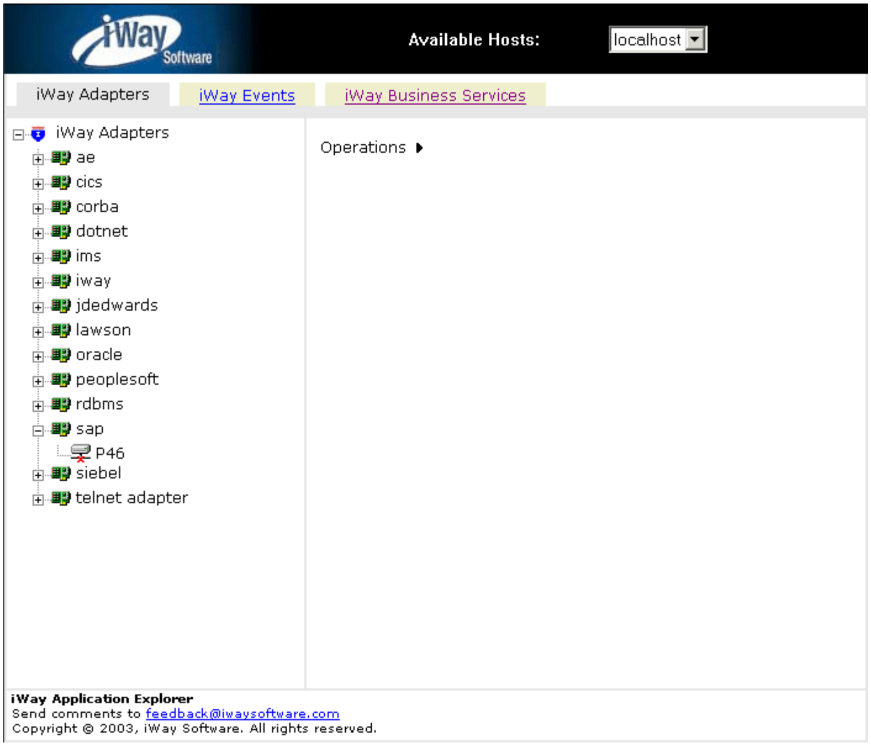
   The following confirmation dialog box opens.



Delete this item ?

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

The SAPTarget node disappears from the left pane.



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Viewing Application System Objects

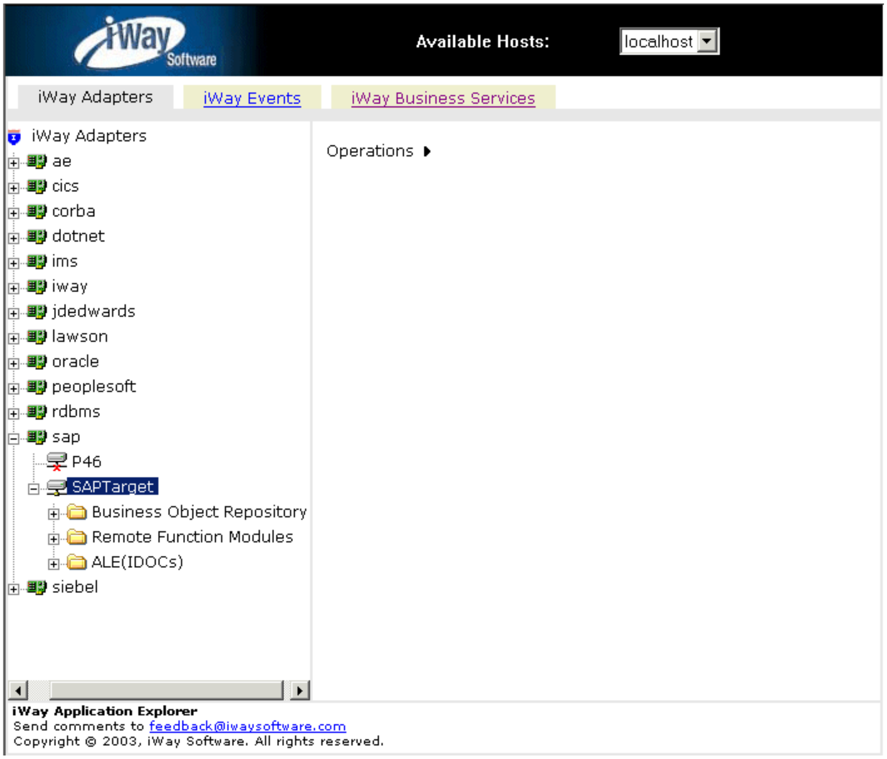
After you are connected to SAP, iWay Servlet Application Explorer enables you to explore and browse business object metadata. For example, iAE enables you to view SAP BAPI, RFC, and iDOC metadata stored in the SAP Business Object repository.

Procedure How to View Application System Objects

To view application system objects:

1. Click the icon to the left of the target name, for example, SAPTarget.

This expands the target to expose the available system objects.



Available Hosts: localhost

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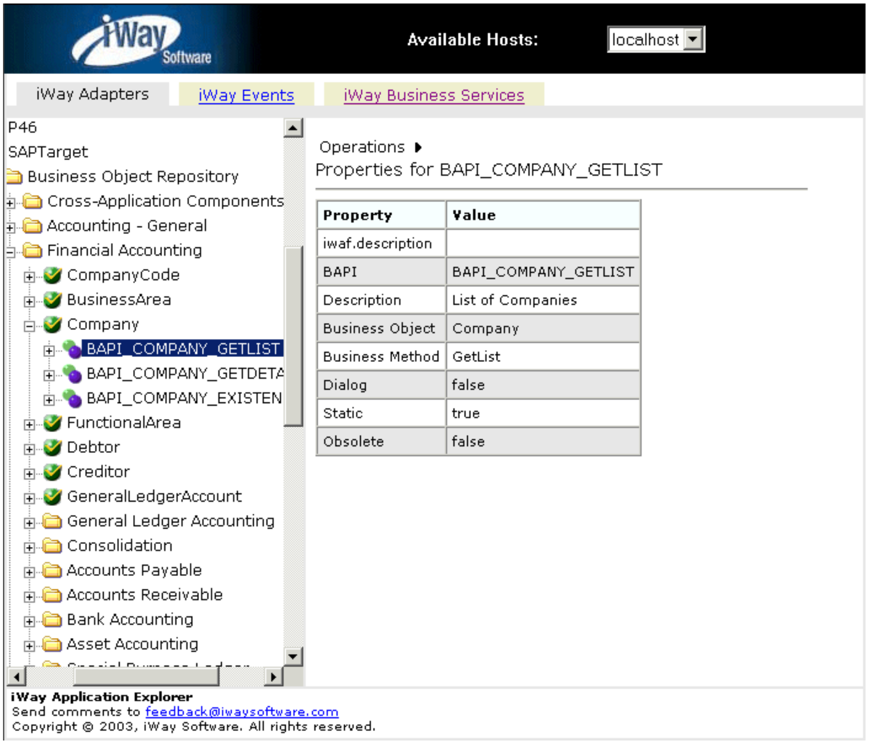
2. Click the icon to the left of the repository name to expand the desired SAP repository node.

   For example, click the icon to the left of the repository node named *Business Object Repository*.

A list of business object groups appears.



Properties for BAPI_COMPANY_GETLIST

Property	Value
iwaf.description	
BAPI	BAPI_COMPANY_GETLIST
Description	List of Companies
Business Object	Company
Business Method	GetList
Dialog	false
Static	true
Obsolete	false

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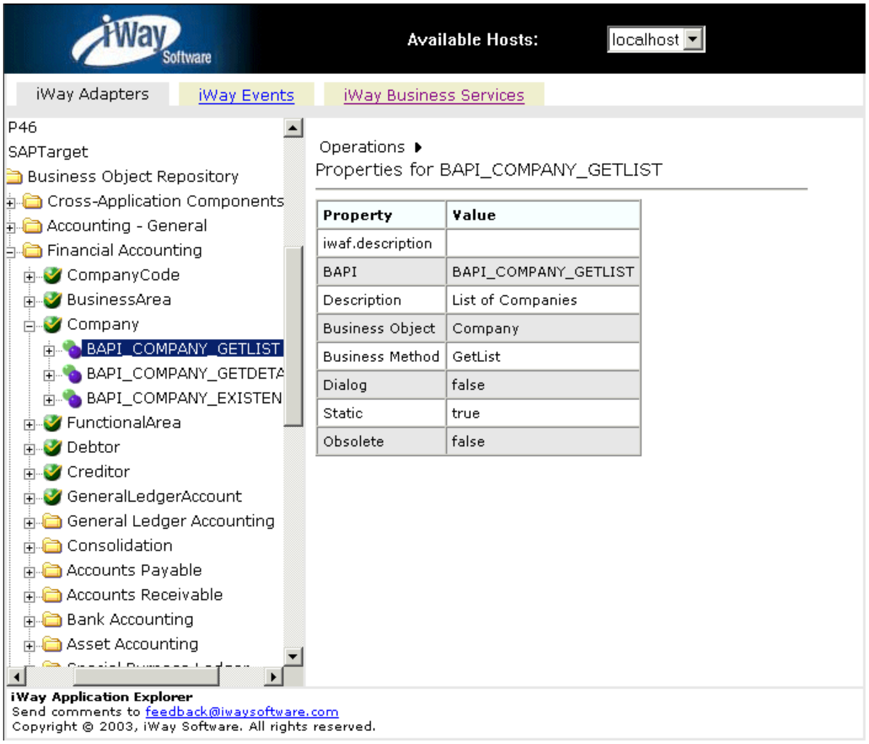
3. Click the icon to the left of the *Financial Accounting* group.

   A list of business objects related to Financial Accounting appears.

4. Scroll down and click on the icon to the left of the *Company* business object.

A list of BAPI methods related to Company appears.



Properties for BAPI_COMPANY_GETLIST

Property	Value
iwaf.description	
BAPI	BAPI_COMPANY_GETLIST
Description	List of Companies
Business Object	Company
Business Method	GetList
Dialog	false
Static	true
Obsolete	false

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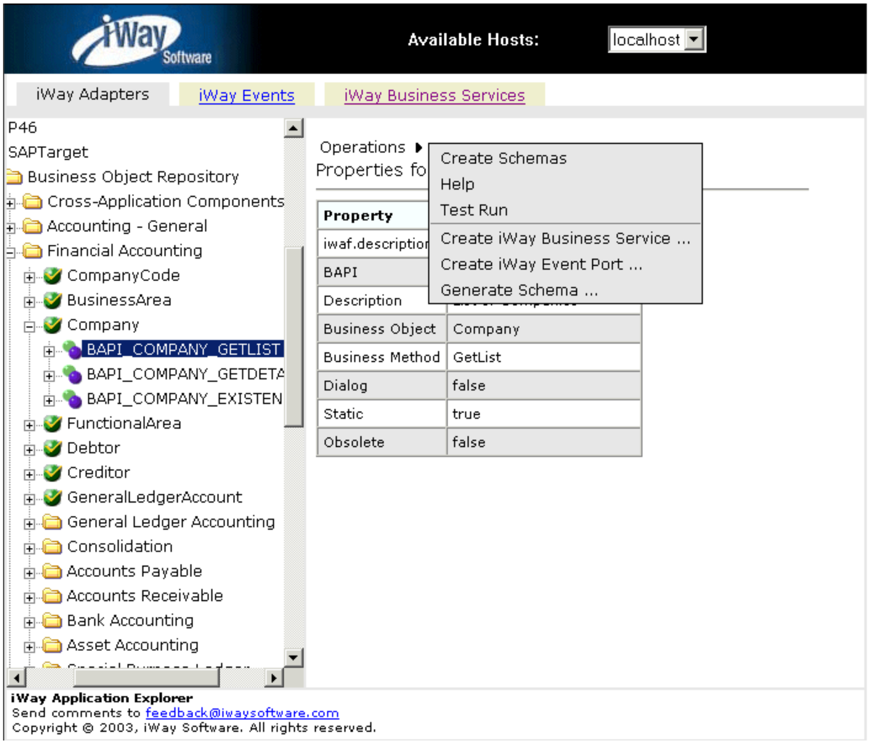
5. Scroll down and click the icon to the left of the BAPI method named *BAPI_COMPANY_GETLIST*.

   Properties for the BAPI method named BAPI_COMPANY_GETLIST appear in a table in the right pane.

6. Move the pointer over *Operations* to view the context menu.

The following options are available from the context menu:

- Create Schemas.
- Help.
- Test Run.
- Create iWay Business Service.
- Create iWay Event Port.
- Generate Schema.



Property	
iwaf.descriptio	
BAPI	
Description	
Business Object	Company
Business Method	GetList
Dialog	false
Static	true
Obsolete	false

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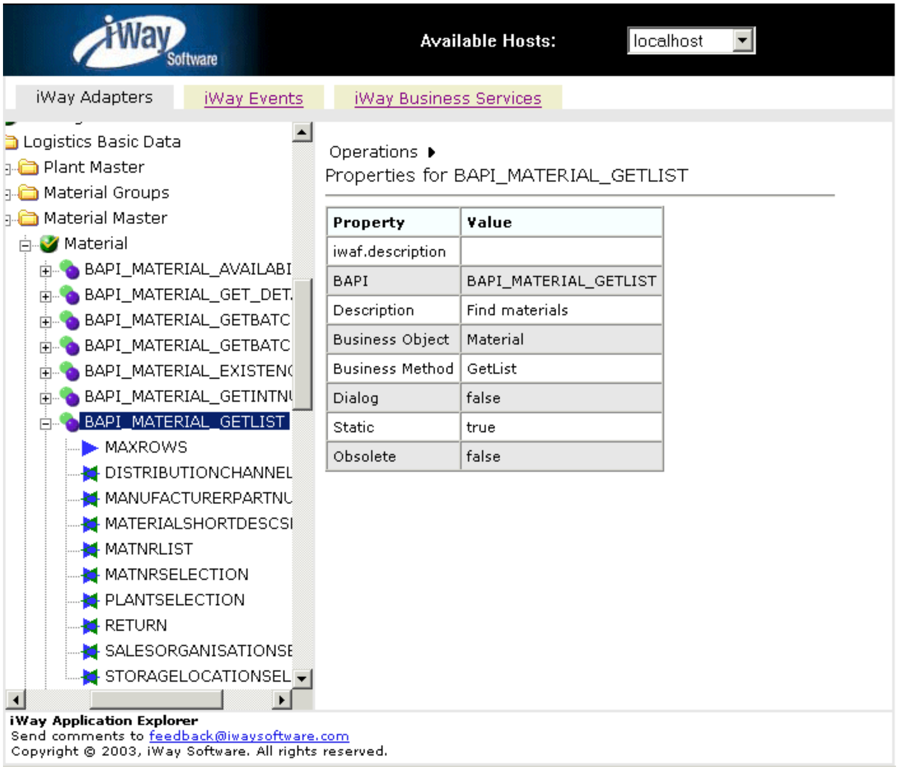
Creating an XML Schema

After you browse the SAP business object repository, you can generate XML request and response schemas for the object you wish to use with your adapter.

Procedure How to Create XML Schemas

To create XML request and response schemas for the SAP BAPI method called BAPI_MATERIAL_GETLIST:



Properties for BAPI_MATERIAL_GETLIST

Property	Value
iwaf.description	
BAPI	BAPI_MATERIAL_GETLIST
Description	Find materials
Business Object	Material
Business Method	GetList
Dialog	false
Static	true
Obsolete	false

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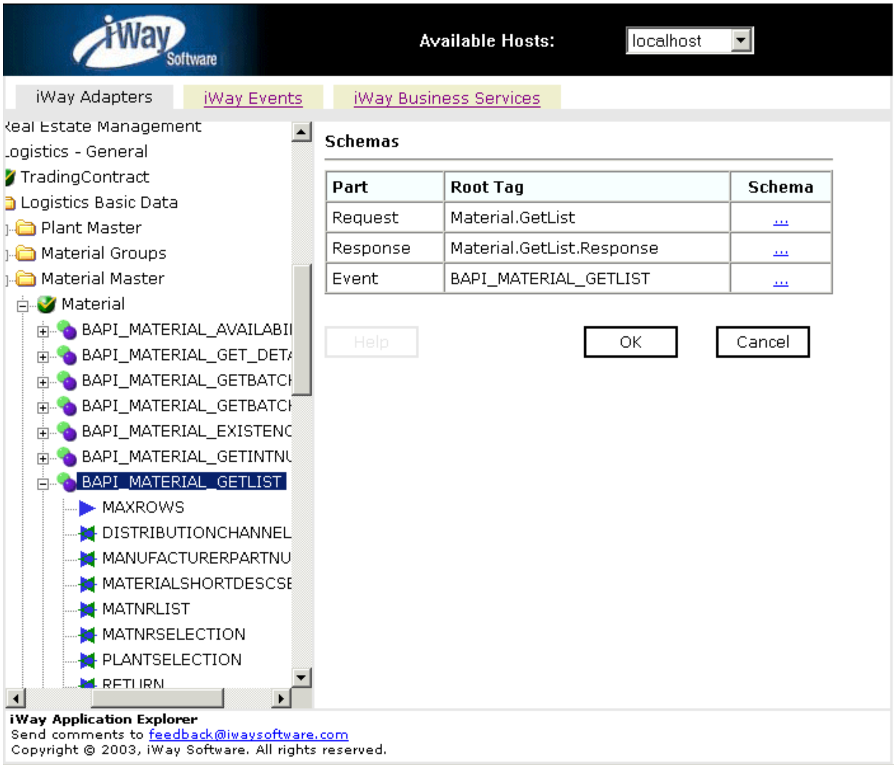
1. Select the *BAPI_MATERIAL_GETLIST* method in the Business Object Repository.
2. In the right pane, move the pointer over *Operations* and select *Generate Schema*.

The Schemas pane opens on the right. Request, response, and event schemas are created for your business object.



Schemas

Part	Root Tag	Schema
Request	Material.GetList	...
Response	Material.GetList.Response	...
Event	BAPI_MATERIAL_GETLIST	...

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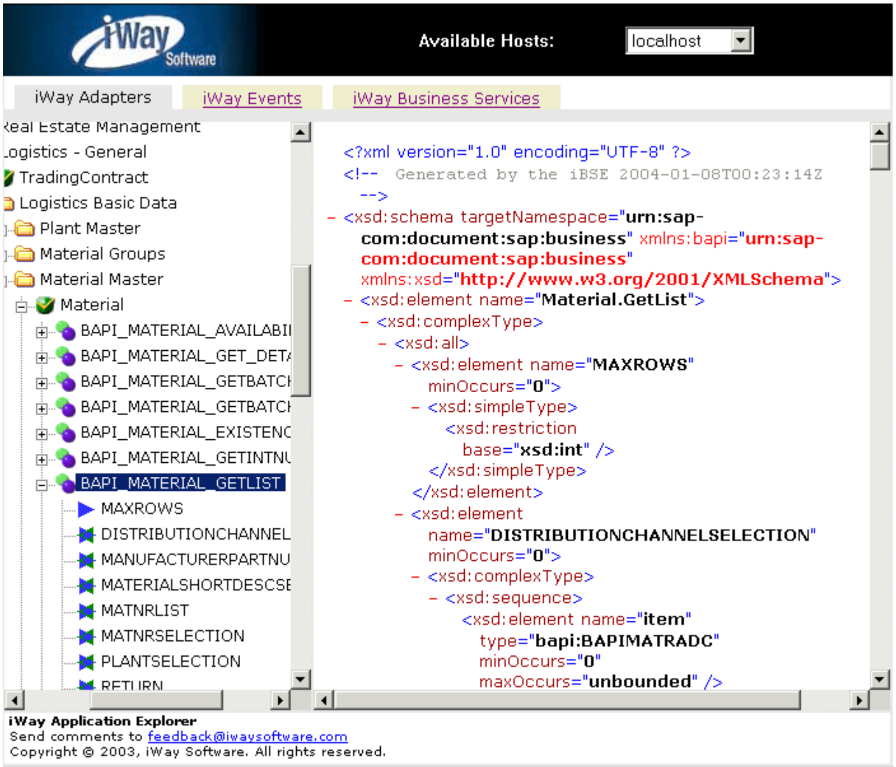
A table defines the root tag for each schema and provides hyperlinks.

3. 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 2004-01-08T00:23:14Z
  -->
- <xsd:schema targetNamespace="urn:sap-
    com:document:sap:business" xmlns:bapi="urn:sap-
    com:document:sap:business"
    xmlns:xsd="http://www.w3.org/2001/XMLSchema">
  - <xsd:element name="Material.GetList">
    - <xsd:complexType>
      - <xsd:all>
        - <xsd:element name="MAXROWS"
            minOccurs="0">
          - <xsd:simpleType>
              <xsd:restriction
                base="xsd:int" />
            </xsd:simpleType>
          </xsd:element>
        - <xsd:element
            name="DISTRIBUTIONCHANNELSELECTION"
            minOccurs="0">
          - <xsd:complexType>
            - <xsd:sequence>
                <xsd:element name="item"
                  type="bapi:BAPIMATRADC"
                  minOccurs="0"
                  maxOccurs="unbounded" />
```

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

   After the schemas are created, you can create iWay Business Services. For more information, see Chapter 4, *Configuring the Event Adapter for SAP*.

   You also can create events after the schemas are created. For more information, see Chapter 3, *Creating XML Schemas or Web Services for SAP*.

CHAPTER 4

Configuring the Event Adapter for SAP

Topics:

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

This section describes how to use iWay Servlet Application Explorer (iAE) to connect to SAP and listen for events.

Although this section describes the Java™ servlet implementation of Application Explorer, other implementations provide the same functionality by means of similar graphical user interfaces. For information on running Application Explorer in WebLogic Workshop, see Appendix A, *Using Application Explorer in WebLogic Workshop*.

Understanding iWay Event Functionality

Events are generated as a result of activity on an application system. You can use events to trigger an action in your application. For example, SAP 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 iWay Servlet Application Explorer. To create an iWay 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 4-18.

Adding, Modifying, or Deleting a Port

The following procedures describe how to create an event port using iWay Servlet Application Explorer. You can create a port for for an SAP business function from the iWay Adapters tab or from the iWay Events tab.

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

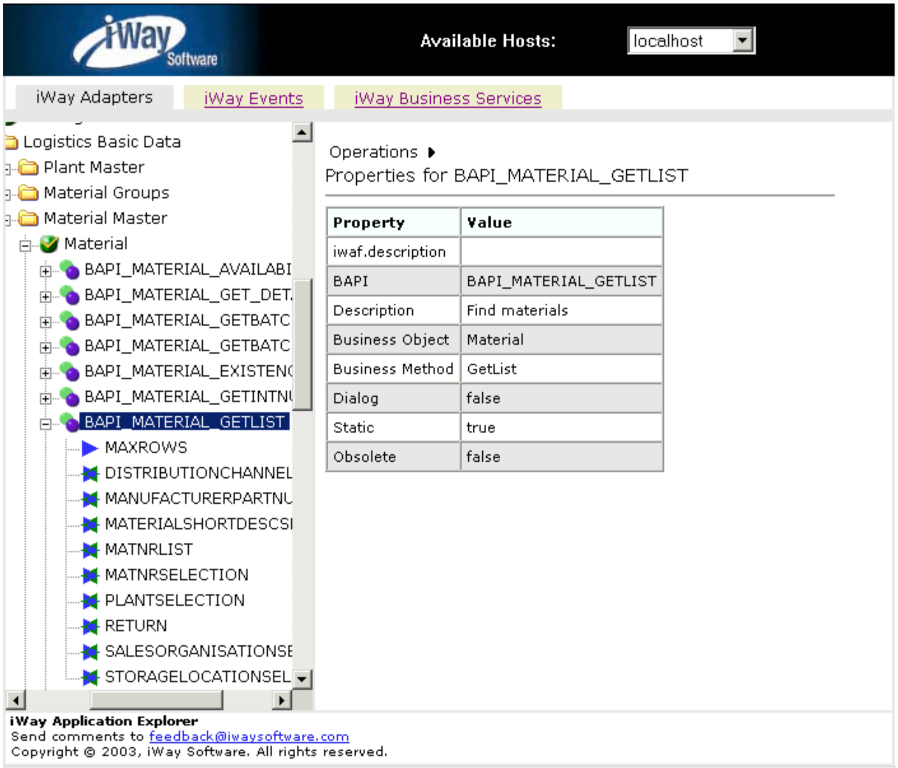
- File
- HTTP
- iBSE
- JMS
- MQ Series
- MSMQ
- SOAP

When you use the Application Explorer with a JCA implementation, the following port dispositions are available:

- File
- HTTP
- JMS
- MQ Series

Procedure How to Create an Event Port for the File Disposition

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



Properties for BAPI_MATERIAL_GETLIST

Property	Value
iwaf.description	
BAPI	BAPI_MATERIAL_GETLIST
Description	Find materials
Business Object	Material
Business Method	GetList
Dialog	false
Static	true
Obsolete	false

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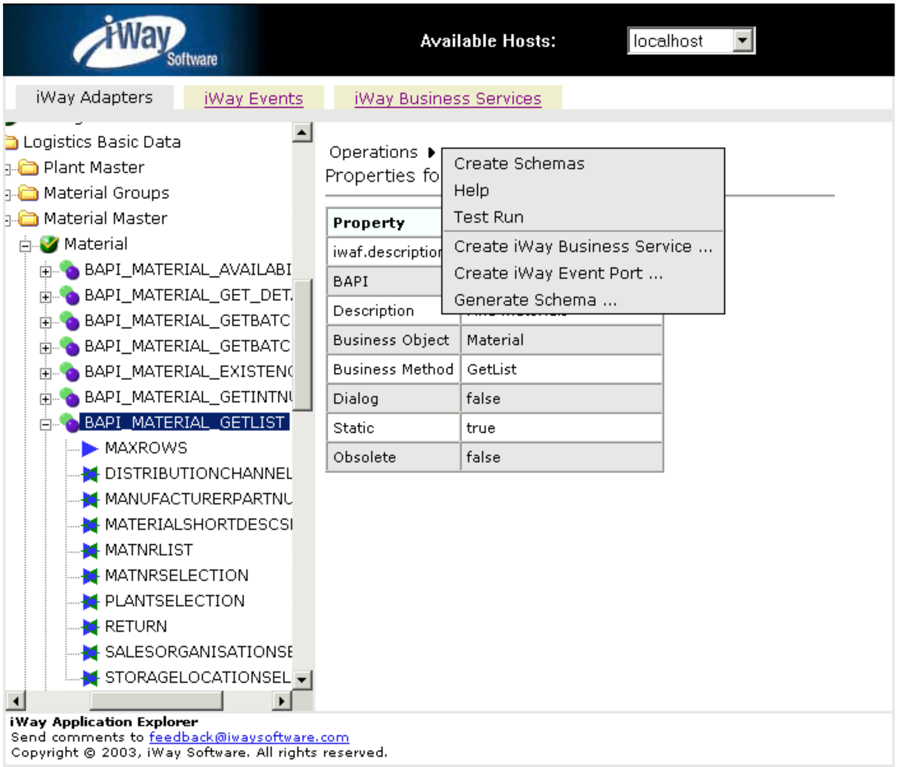
1. Click the *iWay Adapters* tab.
2. Select the *BAPI_MATERIAL_GETLIST* method from the Business Object Repository.

The following opens.



Property	
iwaf.descriptior	
BAPI	
Description	
Business Object	Material
Business Method	GetList
Dialog	false
Static	true
Obsolete	false

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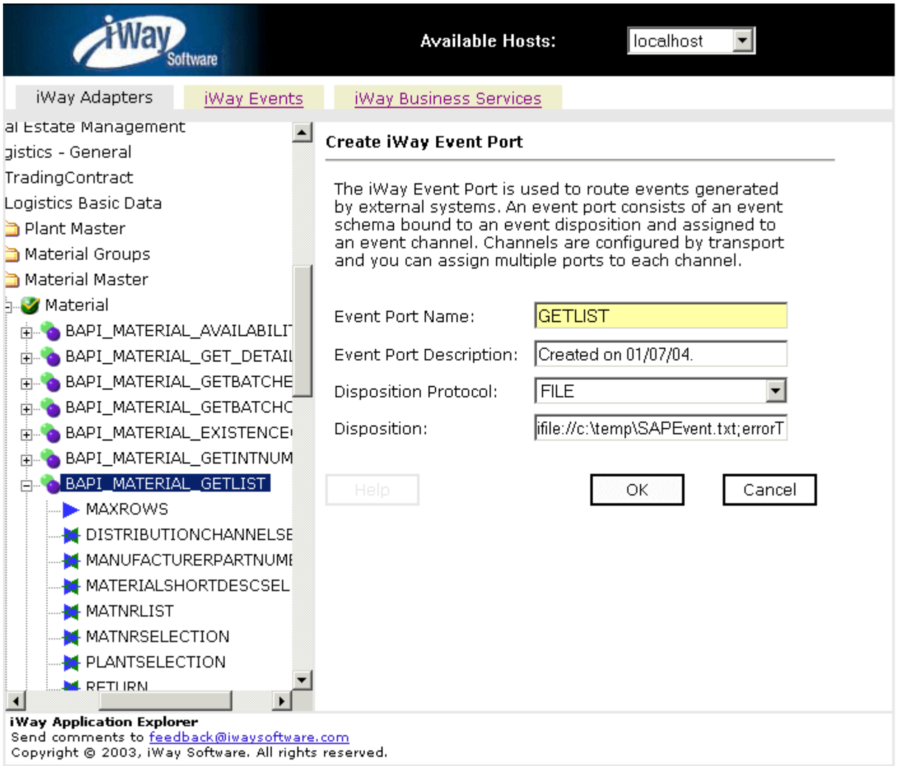
3. In the right pane, move the pointer over *Operations* and select *Create iWay Event Port*.

The Create iWay Event Port pane opens on the right.



Create iWay Event Port

The iWay Event Port is used to route events generated by external systems. An event port consists of an event schema bound to an event disposition and assigned to an event channel. Channels are configured by transport and you can assign multiple ports to each channel.

Event Port Name: GETLIST

Event Port Description: Created on 01/07/04.

Disposition Protocol: FILE

Disposition: ifile://c:\temp\SAPEvent.txt;errorT

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a. Type a name in the Event Port Name field.

b. Type a brief description in the Event Port Description field.

c. Select *FILE* from the Disposition Protocol drop-down list.

d. In the Disposition field, type a destination where the event data is written.

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

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

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

```
location
```

The following table describes the disposition parameters.

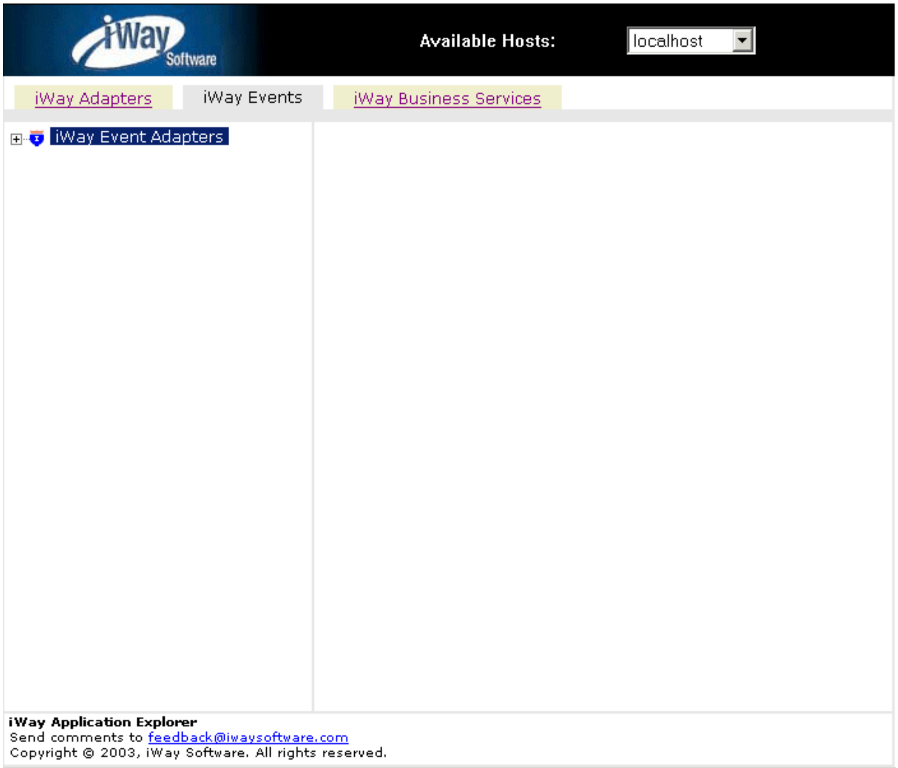
Parameter	Description
location	Full directory path and file name to which the data is written.
errorDest	Location to which error logs are sent. Optional. A predefined port name or another disposition URL. The URL must be complete, including the protocol.

For example:

```
ifile://c:\temp\SAPEvent.txt;errorTo=ifile://c:\temp\error
```

4. Click *OK*.

The iWay Events tab opens.



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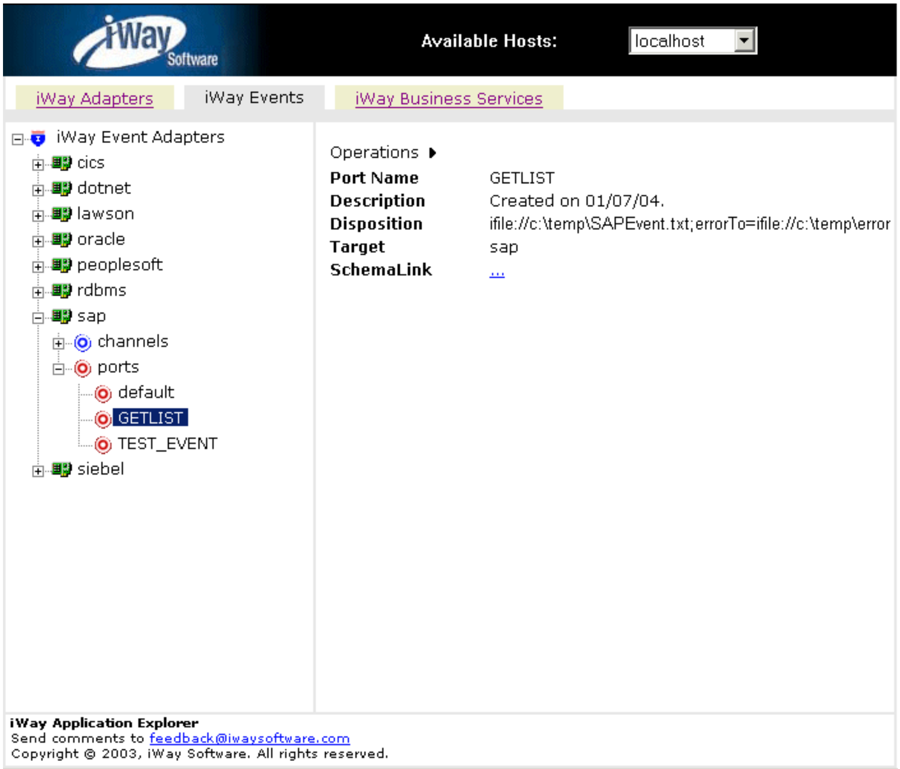
5. Expand the *iWay Event Adapters* node.

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



Port Name	GETLIST
Description	Created on 01/07/04.
Disposition	ifile://c:\temp\SAPEvent.txt;errorTo=ifile://c:\temp\error
Target	sap
SchemaLink	...

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6. To view the event schema that was created for the event port, click *SchemaLink*.

   You are now ready to associate the event port for File with a channel.

Procedure How to Create a Port for the iBSE Disposition

The iBSE disposition allows an event to launch an iWay Business Service Method.

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

1. Click the *iWay Events* tab.

   The iWay Event Adapters window opens.

2. In the left pane, expand the *SAP* 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 *iBSE*.

c. In the Disposition 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	The name of the service created with iBSE.
methName	The name of the method created for the Web service.
respDest	The location to which responses to the Web service are posted. Optional. A predefined port name or another another disposition URL. The URL must be complete, including the protocol.
errorDest	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 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.

Procedure How to Create a Port for the MSMQ Disposition

The MSMQ disposition supports public and private queues. To create a port for an MSMQ disposition using iWay Application Explorer:

1. Click the *iWay Events* tab.

The iWay Event Adapters window opens.

2. In the left pane, expand the *SAP* 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 *MSMQ*.

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

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

The following table defines the dispostion 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.
errorDest	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 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.

Procedure How to Create a Port for the JMS Queue Disposition

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

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

1. Click the *iWay Events* tab.

The iWay Event Adapters window opens.

2. In the left pane, expand the *SAP* 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 *JMSQ*.

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

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

```
jmsq:queue@conn_factory;jndiurl=jndi_url;jndifactory=jndi_factory;
   user=userID;password=pass[;errorTo=errorDest]
```

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

```
jms:queue@conn_factory;jndiurl=jndi_url;jndifactory=jndi_factory
```

The following table describes the disposition parameters.

Parameter	**Description**
queue	Name of a queue to which events are emitted.
conn_factory	The connection factory, a resource which contains information about the JMS Server. The WebLogic connection factory is: `javax.jms.QueueConnectionFactory`
jndi_url	The URL of the application server. For BEA WebLogic Server this is `t3://host:port` where: *`host`* Is the machine name where WebLogic Server is installed. *`port`* Is the port on which 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.
userID	A user ID associated with this queue.
pass	The password for this user ID.
errorDest	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 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.

Procedure How to Create a Port for the SOAP Disposition

The SOAP disposition allows an event to launch a Web service specified by a WSDL file. A soapaction is optional, the default is "". To create a port for a SOAP disposition using iWay Application Explorer:

1. Click the *iWay Events* tab.

   The iWay Event Adapters window opens.

2. In the left pane, expand the *SAP* 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 a SOAP destination using the following format:

   ```
   soap:wsdl-url;soapaction=action[;responseTo=respDest]
      [;errorTo=errorDest]
   ```

   The following table describes the disposition parameters.

Parameter	Description
wsdl-url	The URL to the WSDL file that is needed to create the SOAP message.
action	The method that will be called by the disposition.
respDest	The location to which responses are posted. A predefined port name or another full URL. Optional. A predefined port name or another another disposition URL. The URL must be complete, including the protocol.
errorDest	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 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.

Procedure How to Create a Port for the HTTP Disposition

The HTTP disposition uses an HTTP URL to specify a HTTP end point to which the event document is posted. To create a port for an HTTP disposition using iWay Application Explorer:

1. Click the *iWay Events* tab.

   The iWay Event Adapters window opens.

2. In the left pane, expand the *SAP* 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 *HTTP.*

   c. In the Disposition field, enter an HTTP destination.

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

      ```
      ihttp://url;responseTo=respDest
      ```

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

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

      The following table describes the disposition parameters.

Parameter	Description
url	The URL target for the post operation.
respDest	The location to which responses are posted. A predefined port name or another full URL. Optional. A predefined port name or another another disposition URL. The URL must be complete, including the protocol.
host	The name of the host on which the Web server resides.

Parameter	Description
port	The port number on which the Web server is listening.
uri	The universal resource identifier that completes the url specification.

5. Click *OK*.

   The newly created port appears under the port section of the event adapter in the left pane.

Procedure How to Create a Port for the MQ Series Disposition

The MQ Series disposition allows an event to be enqueued to an MQ Series queue. Both queue manager and queue name may be specified. To create a port for an MQ Series disposition using iWay Application Explorer:

1. Click the *iWay Events* tab.

   The iWay Event Adapters window opens.

2. In the left pane, expand the *SAP* 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 *MQ Series*.

   c. In the Disposition field, enter an MQ Series destination.

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

      ```
      mqseries:/qManager/qName;host=hostName;port=portNum;
         channel=chanName[;errorTo=errorDest]
      ```

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

      ```
      mq:/qManager/qName;host=hostName;port=portNum;
         channel=chanName
      ```

The following table describes the disposition parameters.

Parameter	**Description**
qManager	The name of the queue manager to which the server must connect.
qName	The name of the queue in which messages are to be paced.
hostName	The name of the host on which MQ Series resides (for the MQ client only).
portNum	The port number for connecting to an MQ Server queue manager (for the MQ client only).
chanName	The case-sensitive name of the channel that connects with the remote MQ Server queue manager (for the MQ client only). The default MQ Series channel name is SYSTEM.DEF.SVRCONN.
errorDest	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*.

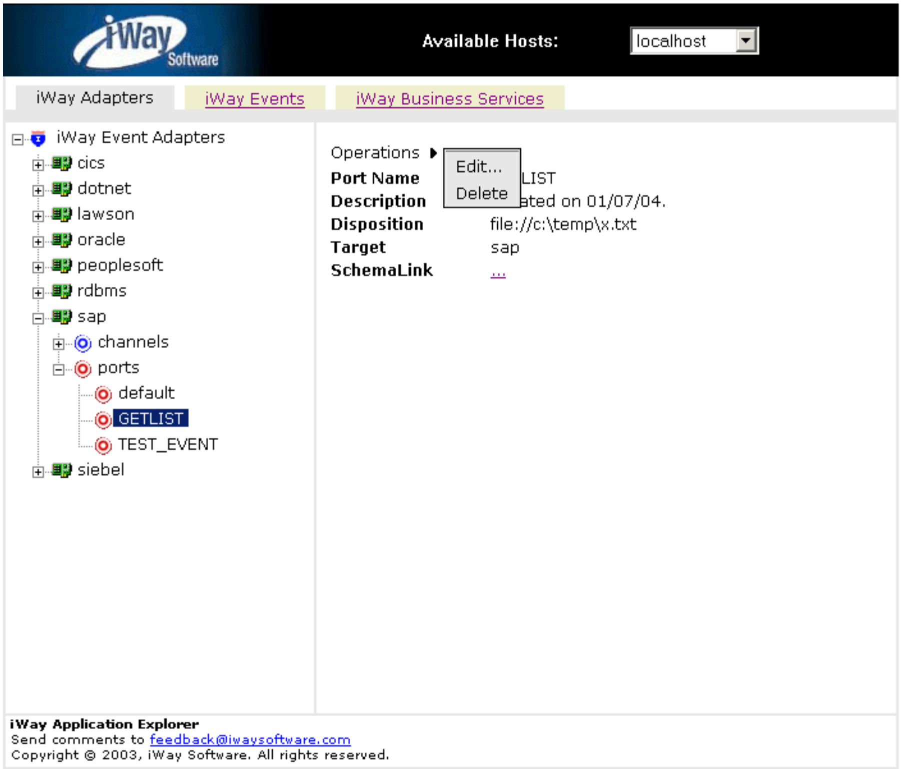
   The port appears under the ports node in the left pane. In the right pane, a table appears that summarizes the information associated with the port you created.

Editing a Port

You can edit an existing event port.

Procedure How to Edit a Port

To edit a port:



Port Name LIST
Description ated on 01/07/04.
Disposition file://c:\temp\x.txt
Target sap
SchemaLink ...

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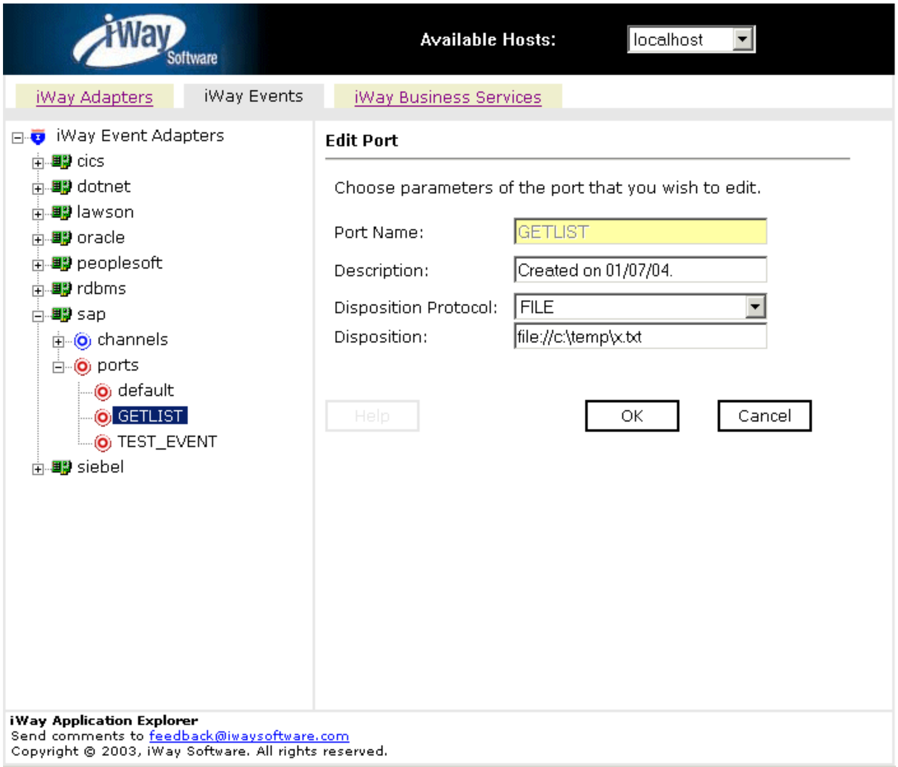
1. Select the event port you want to edit.
2. In the right pane, move the pointer over *Operations* and select *Edit*.

The Edit Port pane opens on the right.



Edit Port

Choose parameters of the port that you wish to edit.

Port Name: GETLIST

Description: Created on 01/07/04.

Disposition Protocol: FILE

Disposition: file://c:\temp\x.txt

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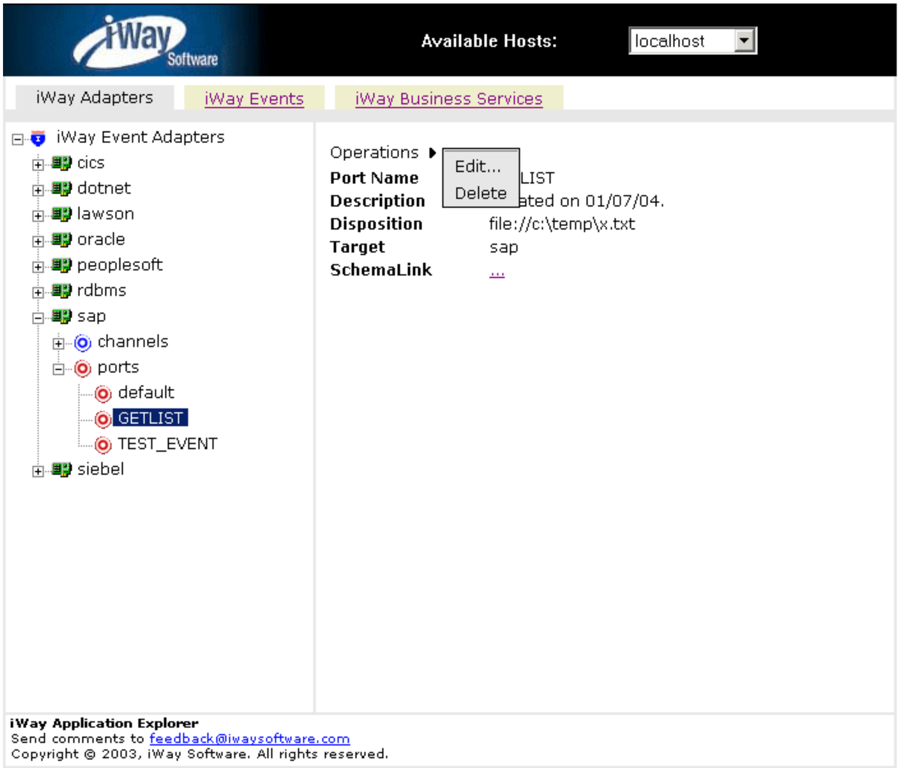
3. Make any required changes to the port configuration fields and click *OK*.

Deleting a Port

You can delete an existing port.

Procedure How to Delete a Port

To delete a port:



Port Name LIST
Description ated on 01/07/04.
Disposition file://c:\temp\x.txt
Target sap
SchemaLink ...

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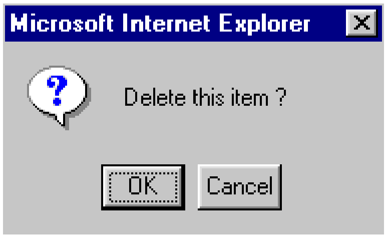
1. Select the port you want to delete.
2. In the right pane, move the pointer over *Operations* and select *Delete*.

   The following confirmation dialog box opens.



Delete this item ?

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

   The 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.

Creating a Channel

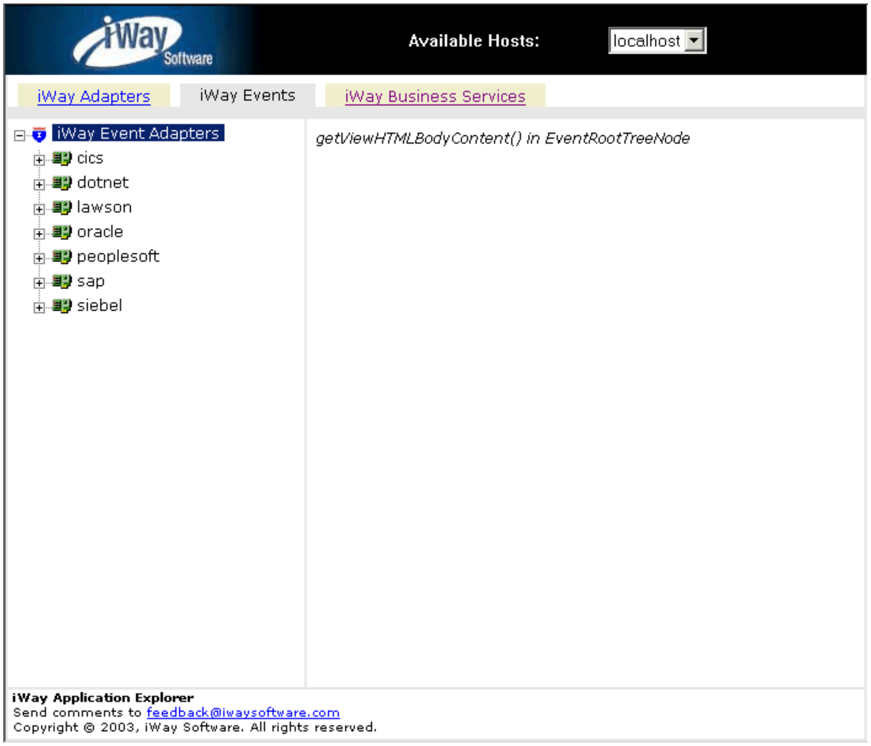
All defined ports must be associated with a channel. You can create a channel using iWay Servlet Application Explorer. The following procedure also describes how to start or stop a channel.

Procedure How to Create a Channel

To create a channel using Application Explorer:

1. Click the *iWay Events* tab.

   The iWay Event Adapters pane opens.



getViewHTMLBodyContent() in EventRootTreeNode

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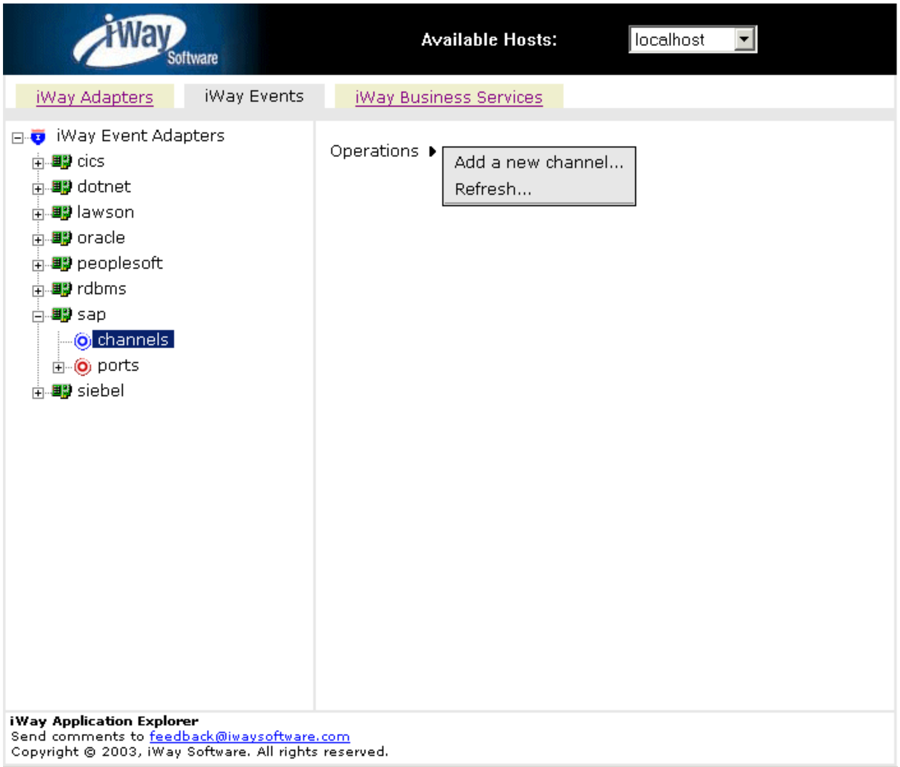
The list of iWay adapters that support events appears in the left pane.

2. Expand the iWay Adapter node, for example, SAP.

   The ports and channels nodes appear in the left pane.



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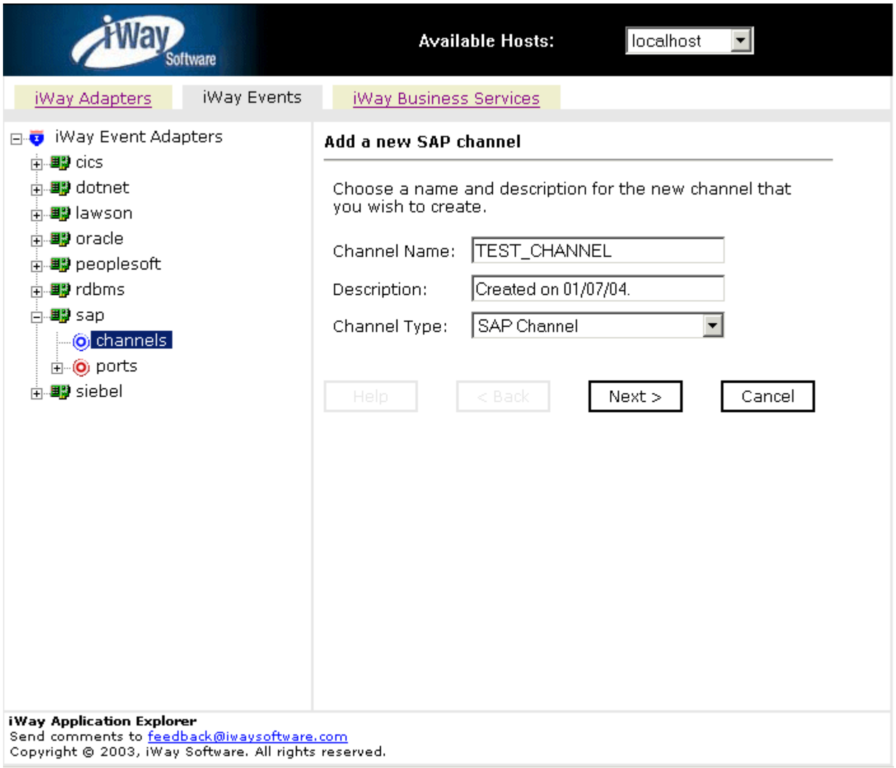
3. Click the *channels* node.

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

The Add a new channel pane opens on the right.



Add a new SAP channel

Choose a name and description for the new channel that you wish to create.

Channel Name: TEST_CHANNEL

Description: Created on 01/07/04.

Channel Type: SAP Channel

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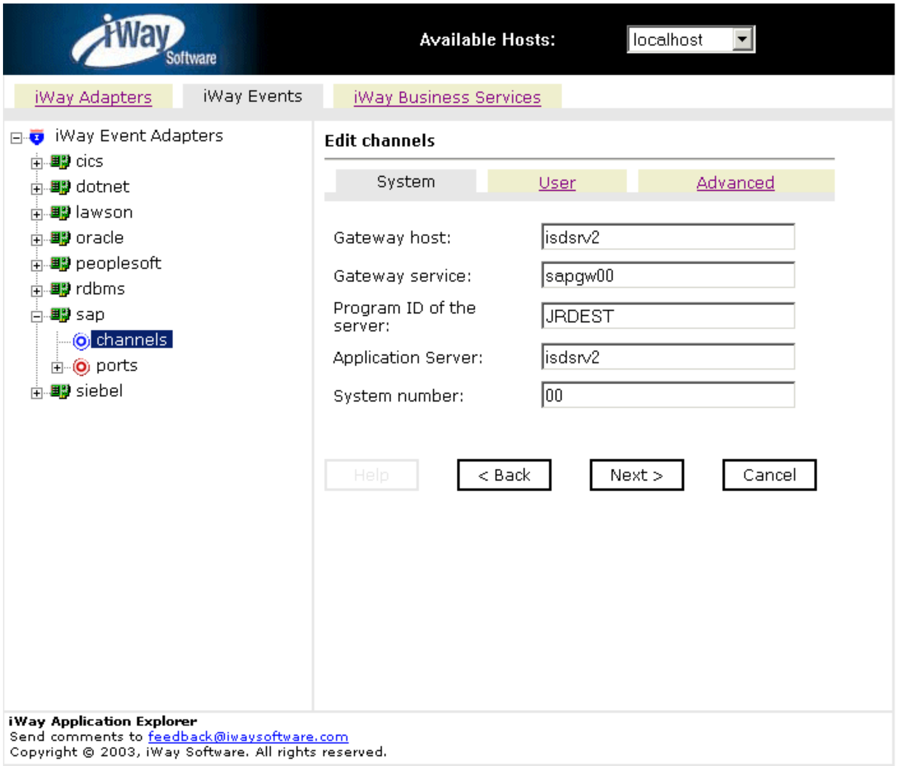
a. In the Channel Name field, type a name, for example, TEST_CHANNEL.

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

c. From the drop-down list, select a channel type.

5. Click *Next*.

The Edit channels pane opens on the right.



Gateway host: isdsrv2

Gateway service: sapgw00

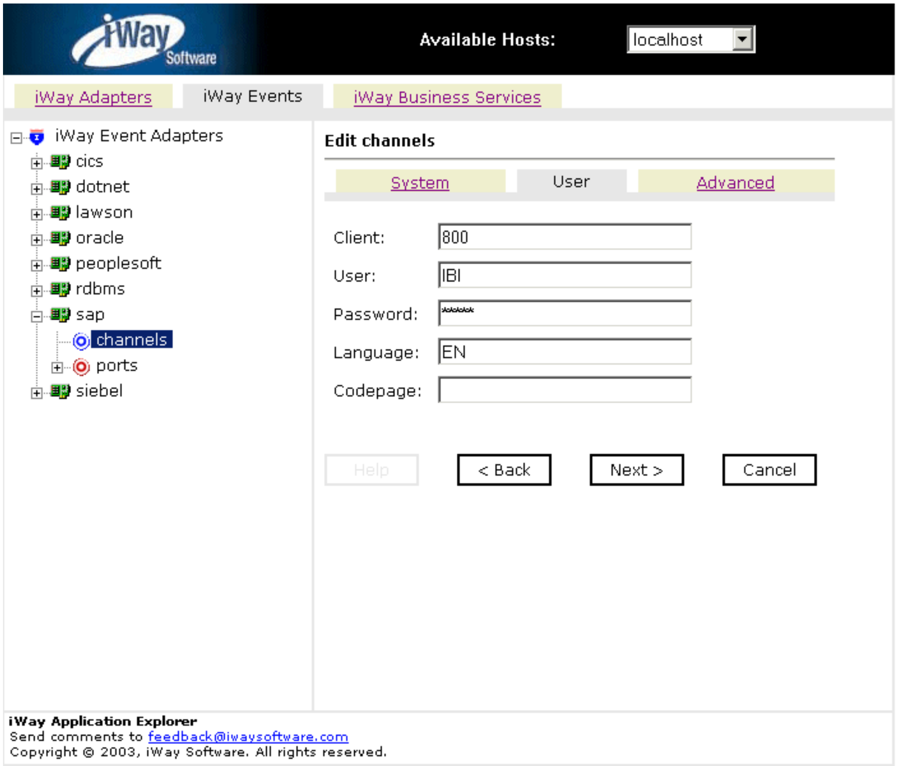
Program ID of the server: JRDEST

Application Server: isdsrv2

System number: 00

6. On the System tab, enter the information that is specific to your SAP system.
7. Click the *User* tab.

The following opens.



Edit channels

Client: 800

User: IBI

Password: *****

Language: EN

Codepage:

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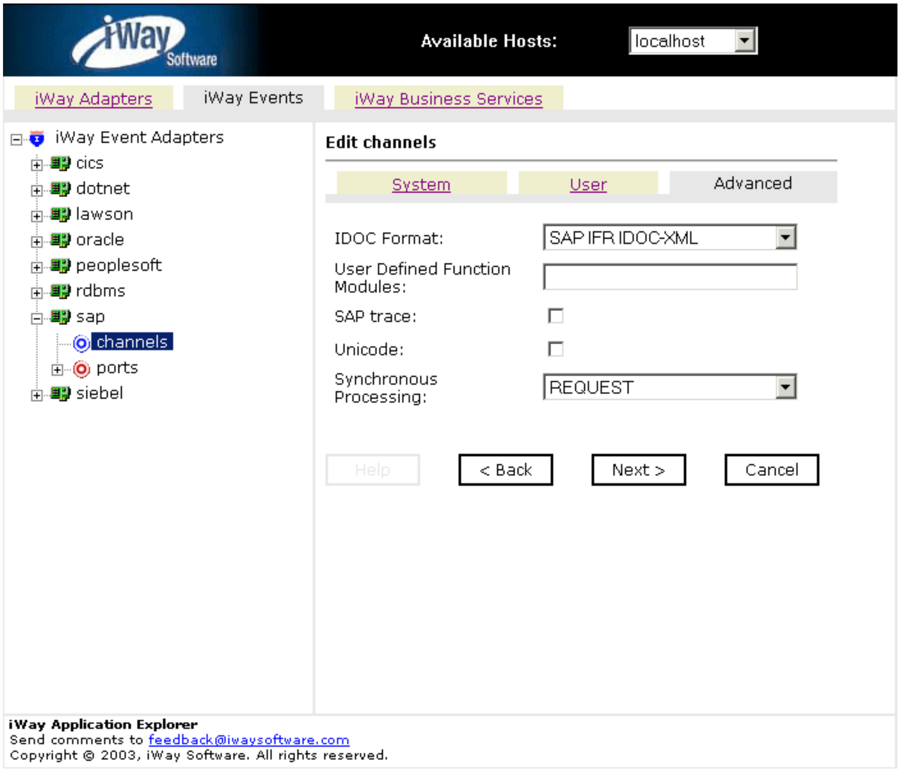
8. Enter the user information that is specific to your SAP system.

9. Click the *Advanced* tab.

The following opens.



Edit channels

IDOC Format: SAP IFR IDOC-XML

User Defined Function Modules:

SAP trace: □

Unicode: □

Synchronous Processing: REQUEST

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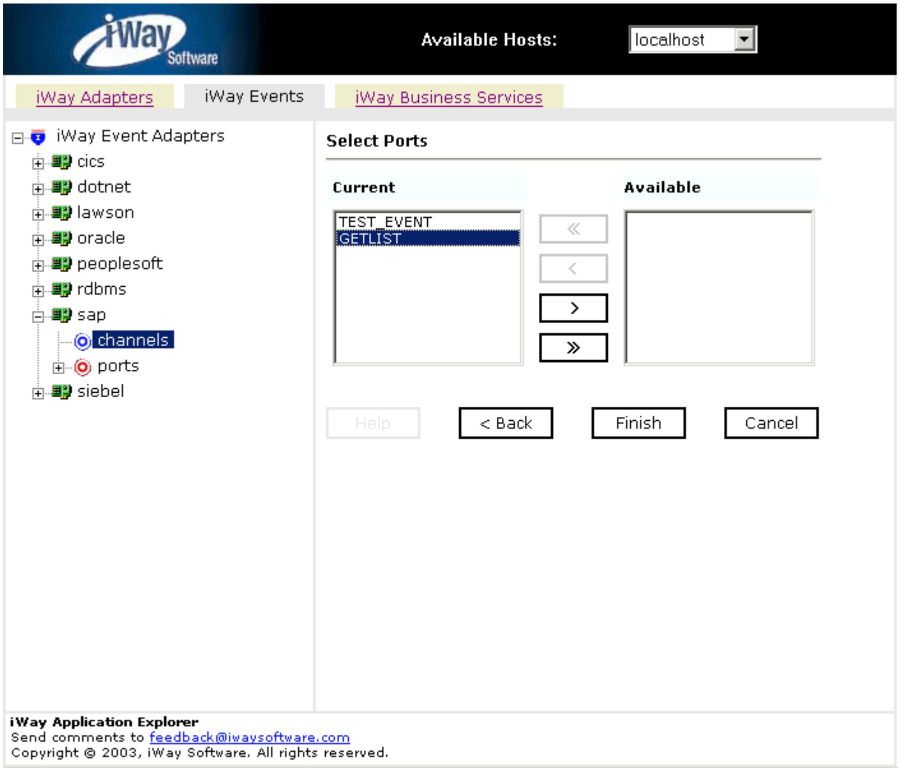
10. Specify any additional information or criteria for the channel you are creating.

11. Click *Next*.

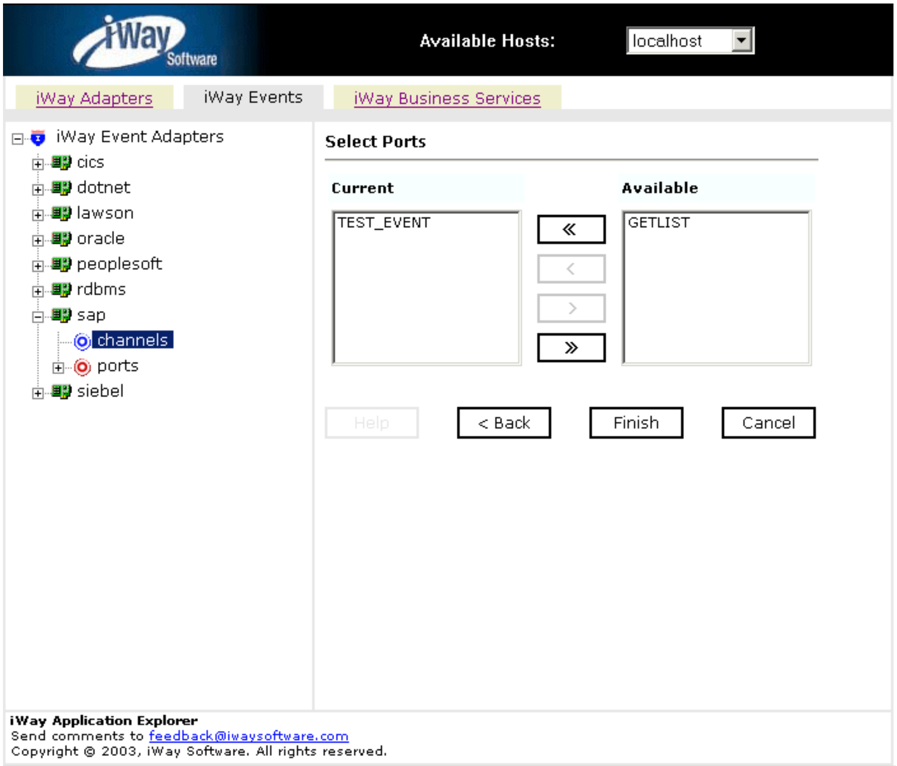
The Select Ports pane opens on the right.



a. Select a port from the list of current ports

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

The port appears in the list of available ports.



Current: TEST_EVENT

Available: GETLIST

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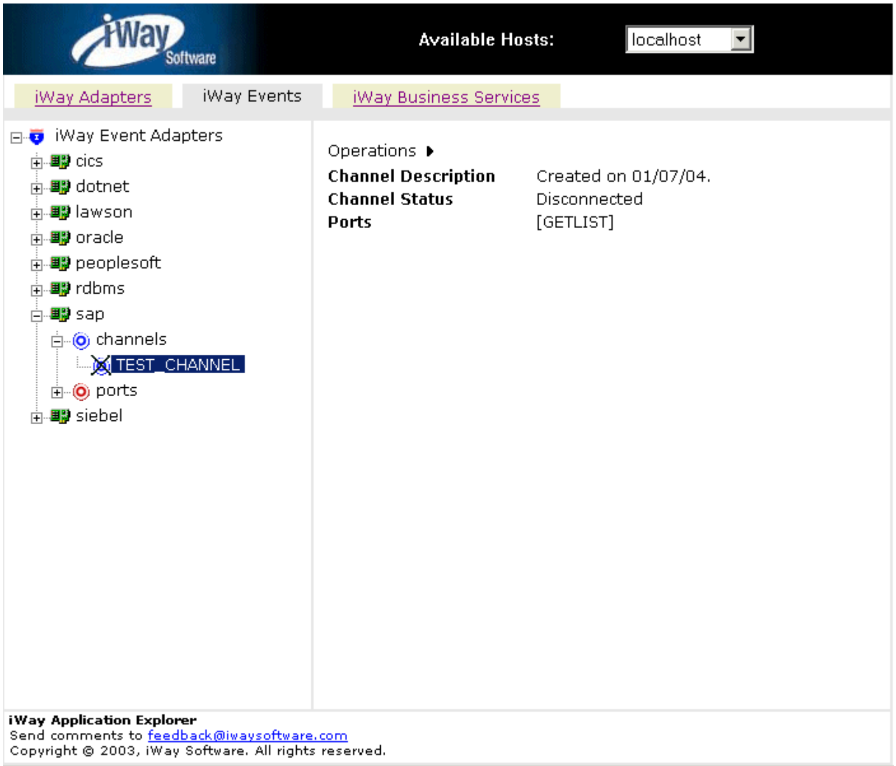
12. Click *Finish*.

The summary pane opens on the right.



Channel Description	Created on 01/07/04.
Channel Status	Disconnected
Ports	[GETLIST]

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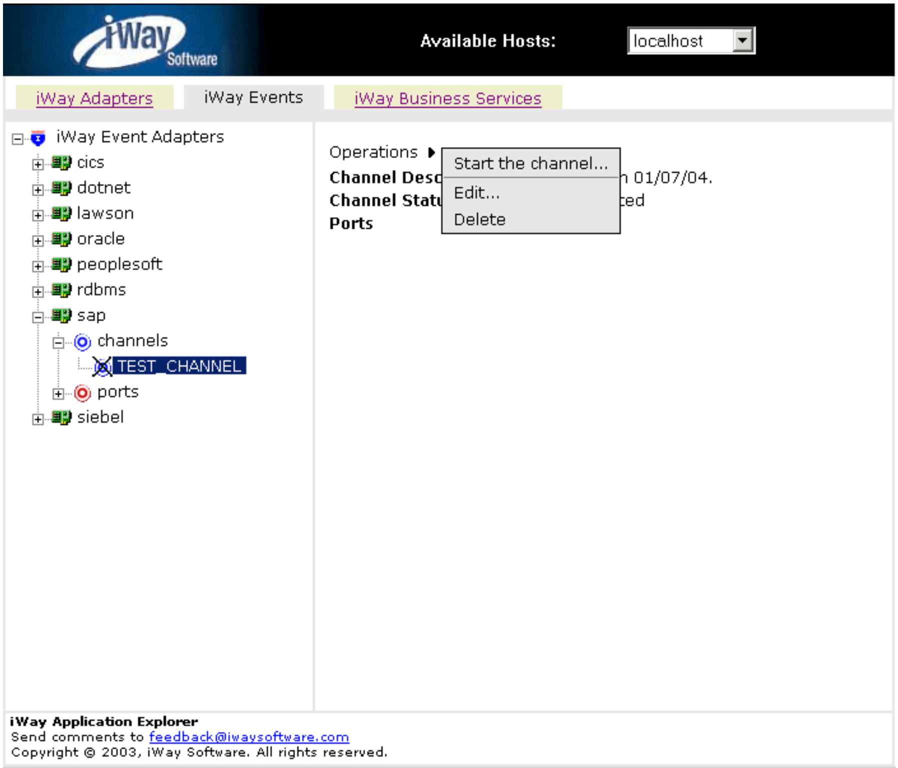
A summary provides the channel description, channel status, and available ports. All the information is associated with the channel you created.

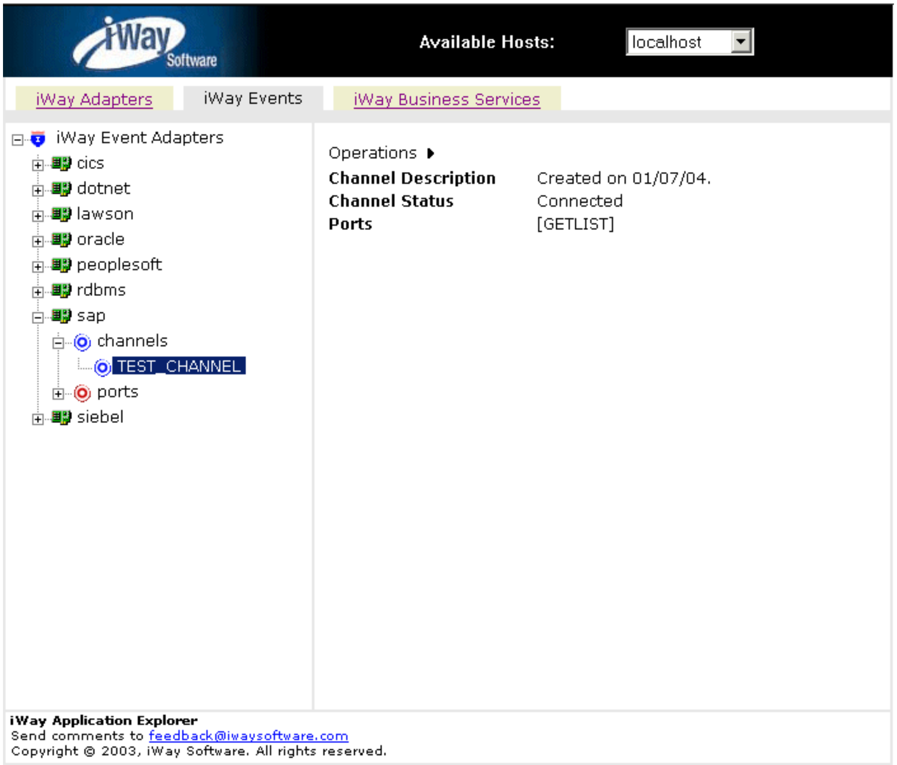
The channel also appears under the channels node in the left pane. An X through the icon indicates that the channel is currently disconnected.

You must start the channel to activate your event configuration.



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

The channel you created is now active, and the X through the icon in the left pane disappears.



Channel Description	Created on 01/07/04.
Channel Status	Connected
Ports	[GETLIST]

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14. To stop the channel at any time, move the pointer over *Operations* and select *Stop the channel*.

Modifying a Channel

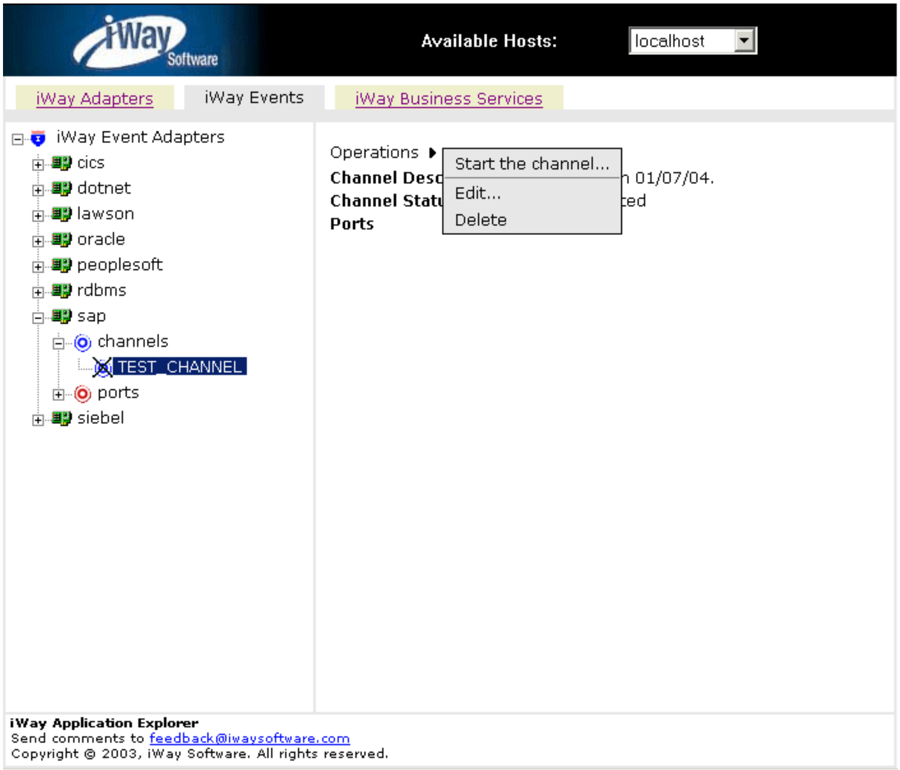
You can edit an existing channel.

Procedure How to Edit a Channel

To edit an existing channel:

1. In the left pane, select the channel you want to edit.

The following opens.



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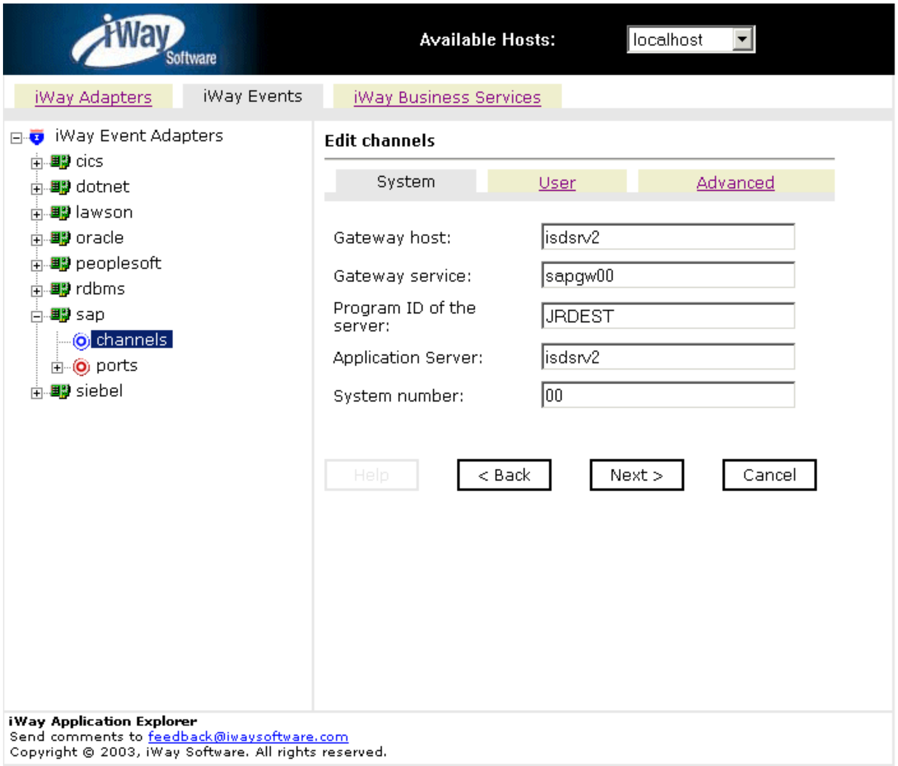
2. In the right pane, move the pointer over *Operations* and select *Edit*.

The Edit channels pane opens on the right.



Gateway host: isdsrv2

Gateway service: sapgw00

Program ID of the server: JRDEST

Application Server: isdsrv2

System number: 00

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3. Make any required changes to the channel configuration fields and click *Finish*.

Deleting a Channel

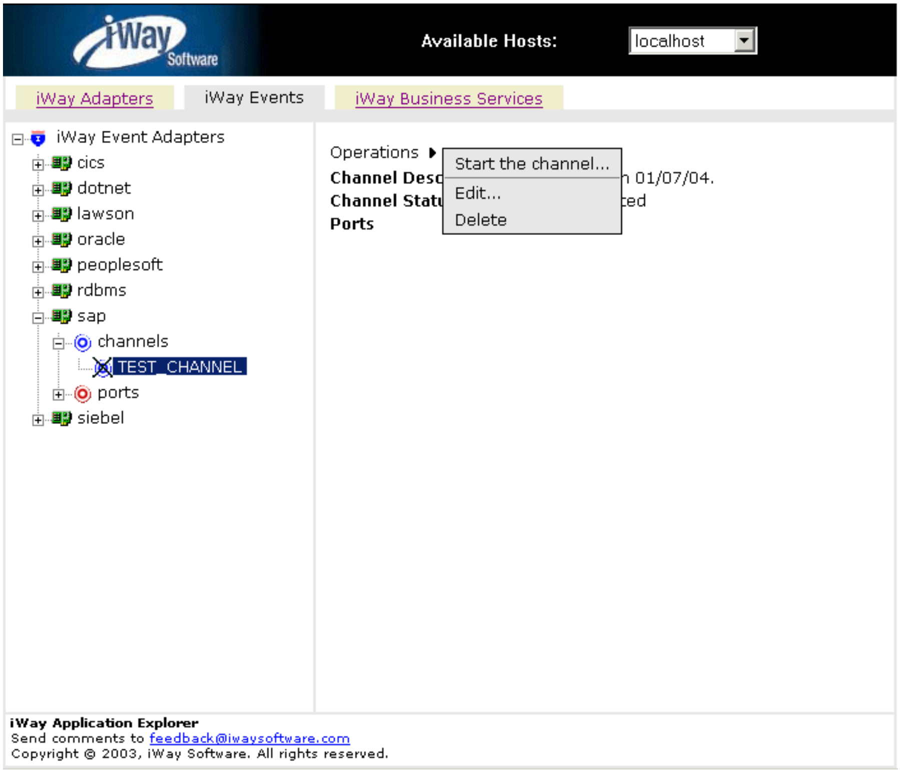
You can remove an existing channel.

Procedure How to Delete a Channel

To delete an existing channel:

1. In the left pane, select the channel you want to delete.

The following opens.



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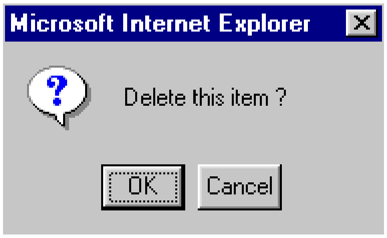
2. In the right pane, move the pointer over *Operations* and select *Delete*.

   The following confirmation dialog box opens.



Delete this item ?

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

   The channel disappears from the list in the left pane.

CHAPTER 5

Creating and Publishing iWay Business Services

Topics:

- Understanding iWay Business Services
- Creating iWay Business Services

This section describes how to create and publish an iWay Business Service using the iWay Servlet Application Explorer.

Although this section describes the Java™ servlet implementation of Application Explorer, other implementations provide the same functionality by means of similar graphical user interfaces. For information on running Application Explorer in WebLogic Workshop, see Appendix A, *Using Application Explorer in WebLogic Workshop*.

Understanding iWay Business Services

The iWay Servlet Application Explorer provides Web developers with a simple, consistent mechanism for extending the capabilities of the iWay Application Adapter for SAP. The iWay Business Services Engine exposes functionality as Web services. It serves as a gateway to heterogeneous back-end applications and databases.

A Web service is a self-contained, modularized function that you can publish and access 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.

After you browse the SAP business object repository and create an XML schema for the object, you can generate an iWay Business Service for the object you wish to use with your adapter.

Creating iWay Business Services

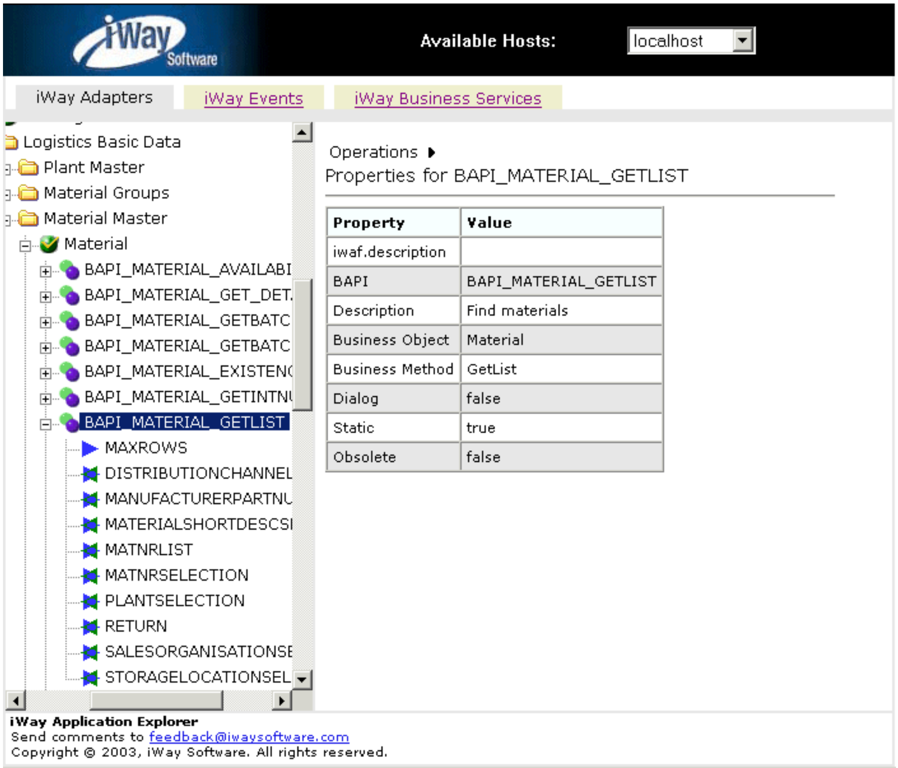
The following topics describe how to create iWay Business Services, including how to generate WSDL (Web Services Description Language) from a Web service.

Creating Business Services With Application Explorer

The following procedure describes how to create iWay Business Services using the iWay Servlet Application Explorer. The procedure uses the SAP BAPI method called BAPI_MATERIAL_GETLIST as an example and returns a list of materials.

Procedure How to Create an iWay Business Service

To create an iWay Business Service:



Properties for BAPI_MATERIAL_GETLIST

Property	Value
iwaf.description	
BAPI	BAPI_MATERIAL_GETLIST
Description	Find materials
Business Object	Material
Business Method	GetList
Dialog	false
Static	true
Obsolete	false

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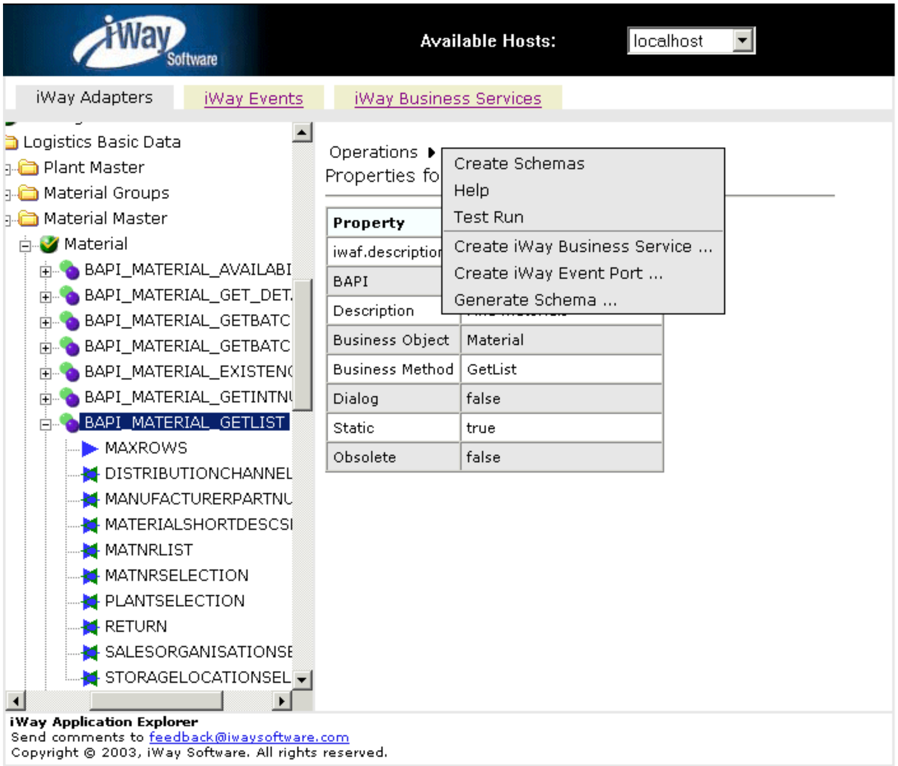
1. Select the *BAPI_MATERIAL_GETLIST* method from the Business Object Repository.



Property	
iwaf.descriptior	
BAPI	
Description	
Business Object	Material
Business Method	GetList
Dialog	false
Static	true
Obsolete	false

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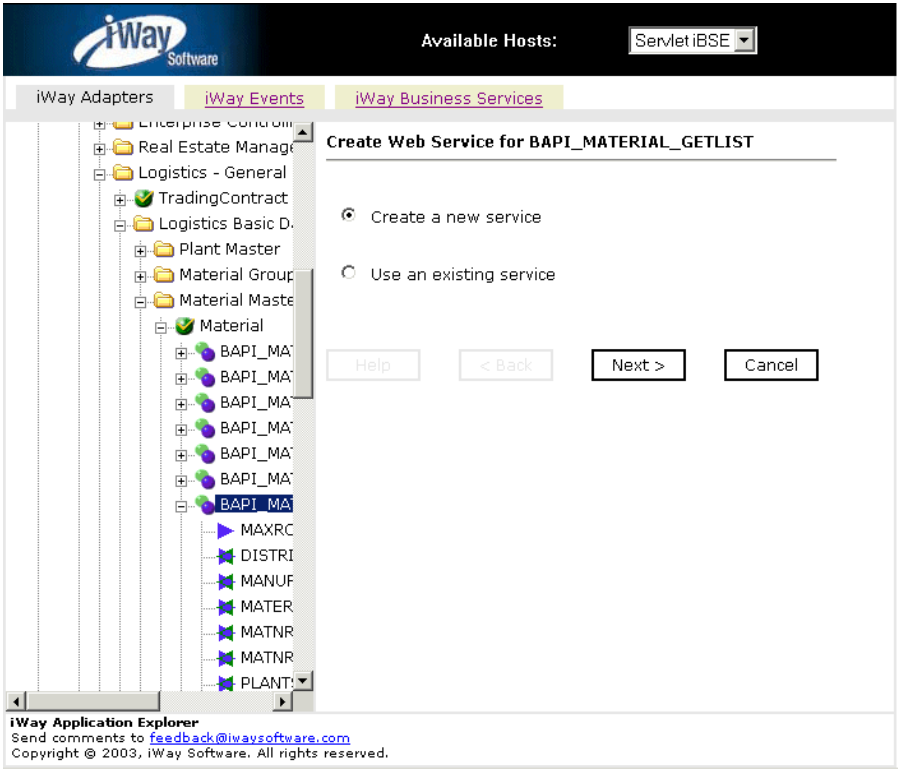
2. In the right pane, move the pointer over *Operations* and select *Create iWay Business Service.*

The Create Web Service for BAPI_MATERIAL_GETLIST pane opens on the right.



Create Web Service for BAPI_MATERIAL_GETLIST

● Create a new service

○ Use an existing service

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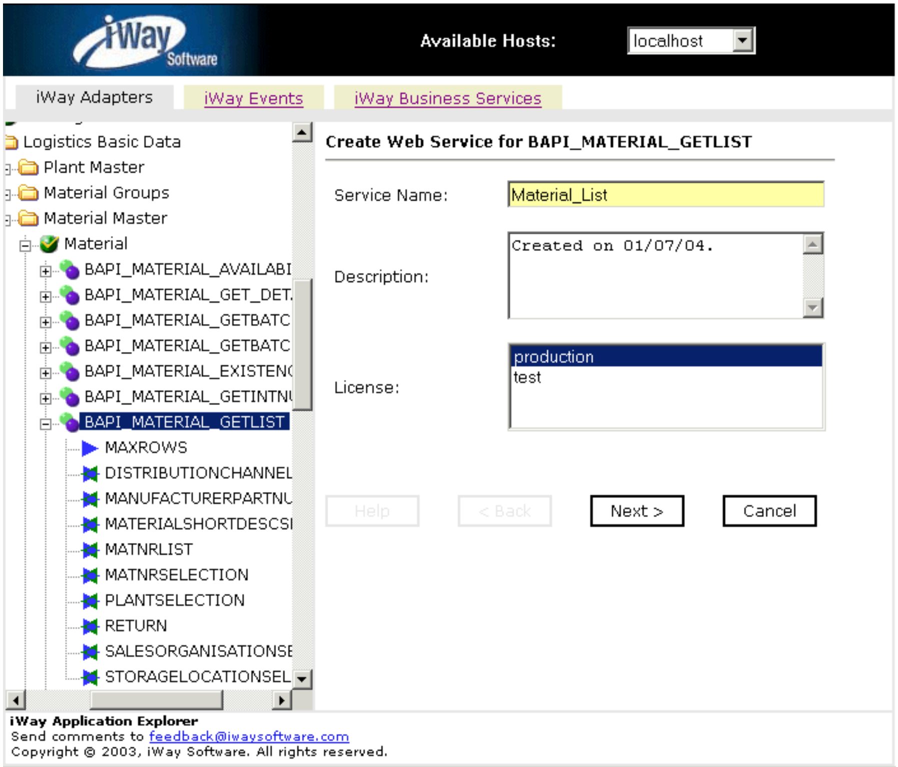
3. Select *Create a new service* and click *Next*.

The following fields become available where you provide the specific information for the iWay Business Service you are defining.



Create Web Service for BAPI_MATERIAL_GETLIST

Service Name: Material_List

Description: Created on 01/07/04.

License: production (selected)
test

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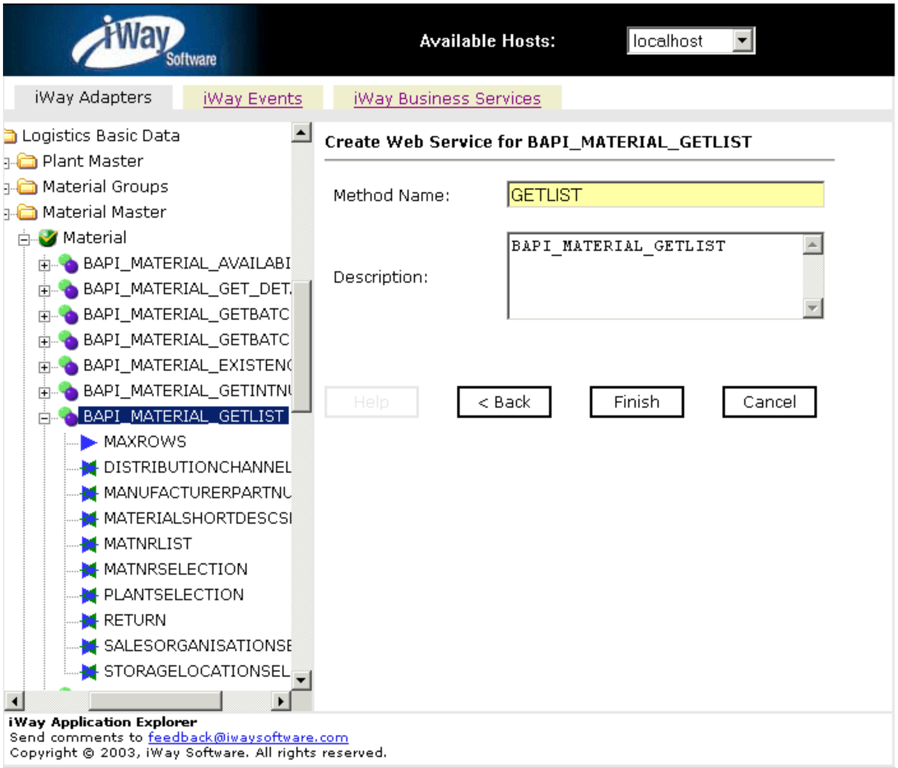
a. In the Service Name field, type a descriptive name for the iWay Business Service.

b. In the Description field, type a brief description for the iWay Business Service.

c. In the License field, select the license definition you want to use.

4. Click *Next*.

The following pane opens on the right.



Available Hosts: localhost

Create Web Service for BAPI_MATERIAL_GETLIST

Method Name: GETLIST

Description: BAPI_MATERIAL_GETLIST

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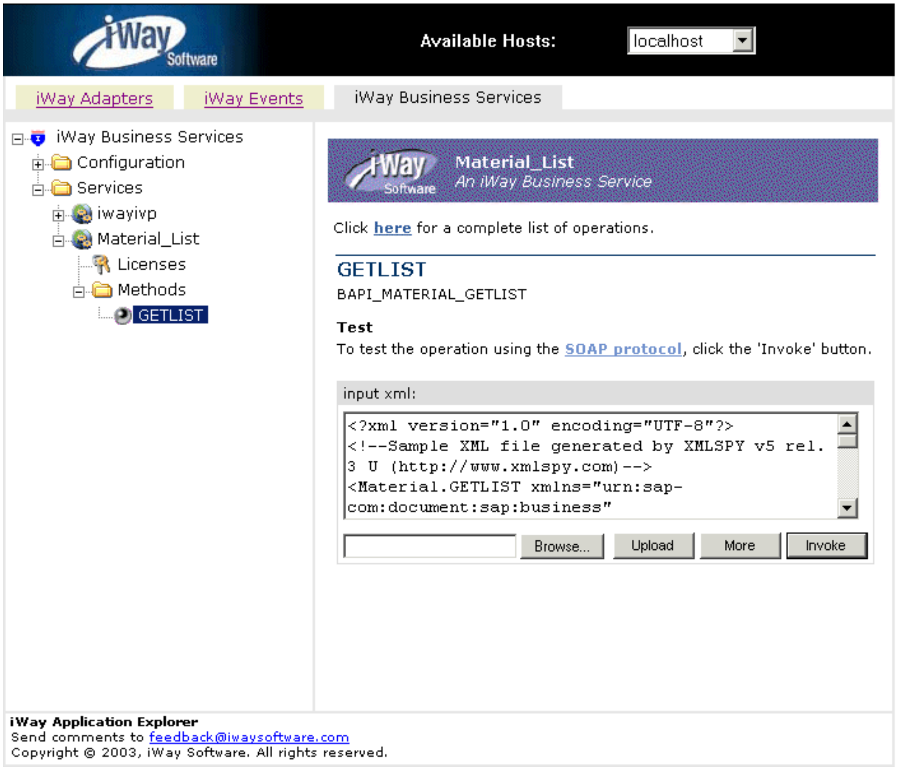
a. In the Method Name field, type a descriptive name for the method.

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

5. Click *Finish*.

The iWay Business Services Engine tab opens.



Available Hosts: localhost

Material_List
An iWay Business Service

Click here for a complete list of operations.

GETLIST

BAPI_MATERIAL_GETLIST

Test

To test the operation using the SOAP protocol, click the 'Invoke' button.

input xml:

```
<?xml version="1.0" encoding="UTF-8"?>
<!--Sample XML file generated by XMLSPY v5 rel.
3 U (http://www.xmlspy.com)-->
<Material.GETLIST xmlns="urn:sap-
com:document:sap:business"
```

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All of the available services that were created appear in the left pane. The Material_List service node is expanded, and the GETLIST method is automatically selected.

The test window for the GETLIST method opens in the right pane.

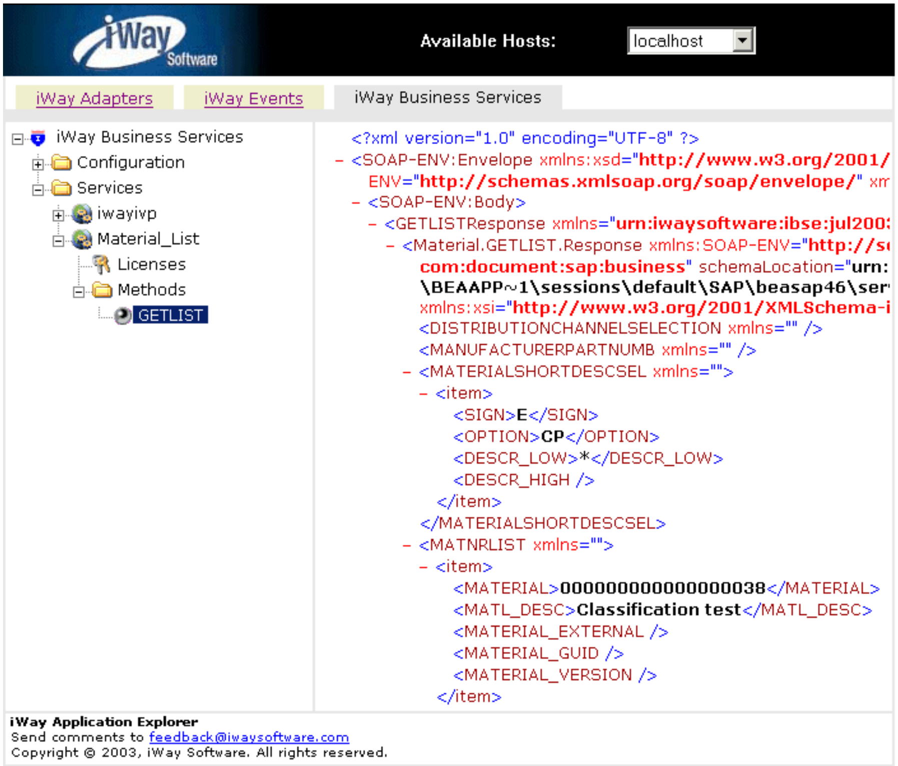
6. Enter a sample XML document.

   The document will query the service in the input xml field.

   To use the identical sample input XML illustrated in this example, see *Sample iWay Business Service Input XML* on page 5-17.

7. Click *Invoke*.

The result appears in the right pane.



```
  <?xml version="1.0" encoding="UTF-8" ?>
- <SOAP-ENV:Envelope xmlns:xsd="http://www.w3.org/2001/
    ENV="http://schemas.xmlsoap.org/soap/envelope/" xm
  - <SOAP-ENV:Body>
    - <GETLISTResponse xmlns="urn:iwaysoftware:ibse:jul200:
      - <Material.GETLIST.Response xmlns:SOAP-ENV="http://s
          com:document:sap:business" schemaLocation="urn:
          \BEAAPP~1\sessions\default\SAP\beasap46\ser
          xmlns:xsi="http://www.w3.org/2001/XMLSchema-i
          <DISTRIBUTIONCHANNELSELECTION xmlns="" />
          <MANUFACTURERPARTNUMB xmlns="" />
        - <MATERIALSHORTDESCSEL xmlns="">
          - <item>
              <SIGN>E</SIGN>
              <OPTION>CP</OPTION>
              <DESCR_LOW>*</DESCR_LOW>
              <DESCR_HIGH />
            </item>
          </MATERIALSHORTDESCSEL>
        - <MATNRLIST xmlns="">
          - <item>
              <MATERIAL>000000000000000038</MATERIAL>
              <MATL_DESC>Classification test</MATL_DESC>
              <MATERIAL_EXTERNAL />
              <MATERIAL_GUID />
              <MATERIAL_VERSION />
            </item>
```

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Generating WSDL From a Web Service

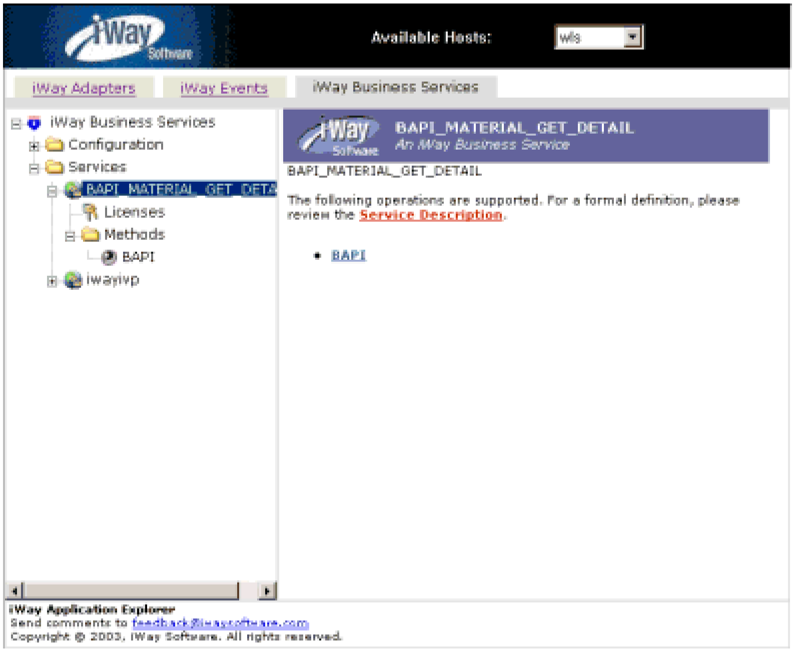
Generating WSDL (Web Services Description Language) from a Web service enables you to make the Web service available to other services within a host server such as the BEA WebLogic Server.

Procedure How to Generate WSDL From a Web Service

To generate WSDL from a Web service:

1. If you are not already in the iWay Business Services tab, click the tab to access it.
2. In the left pane, expand the list of services.

This enables you to view the service for which you want to generate WSDL.



BAPI_MATERIAL_GET_DETAIL

The following operations are supported. For a formal definition, please review the Service Description.

- BAPI

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3. Select the service, for example, BAPI_MATERIAL_GET_DETAIL.

   The link for the service appears in the right pane.

4. Right-click the *Service Description* link and select *Save Target As* from the pop-up menu.

5. Choose a location for the file and add a .wsdl file extension.

6. Click *Save*.

   For example, saving a Web service called BAPI_MATERIAL_GET_DETAIL for an SAP R/3 creates a file named BAPI_MATERIAL_GET_DETAIL.wsdl.

   Note: The file extension must be .wsdl.

The following is an example of a WSDL file for a Web service called BAPI_MATERIAL_GET_DETAIL.

```
<definitions xmlns:rfc="urn:iwaysoftware:ibse:jul2003:BAPI:response"
xmlns:tns="urn:schemas-iwaysoftware-com:iwse"
targetNamespace="urn:schemas-iwaysoftware-com:iwse"
xmlns:soapenc="http://schemas.xmlsoap.org/soap/encoding/"
xmlns:mime="http://schemas.xmlsoap.org/wsdl/mime/"
xmlns:m11="urn:iwaysoftware:ibse:jul2003:BAPI:response"
xmlns:tm="http://microsoft.com/wsdl/mime/textMatching/"
xmlns="http://schemas.xmlsoap.org/wsdl/"
xmlns:xs="http://www.w3.org/2001/XMLSchema"
xmlns:m1="urn:iwaysoftware:ibse:jul2003:BAPI"
xmlns:soap="http://schemas.xmlsoap.org/wsdl/soap/"><types><xs:schema
targetNamespace="urn:schemas-iwaysoftware-com:iwse"
elementFormDefault="qualified"><xs:element
name="ibsinfo"><xs:complexType><xs:sequence><xs:element type="xs:string"
name="service"/><xs:element type="xs:string" name="method"/><xs:element
type="xs:string" name="license"/><xs:element type="xs:string"
minOccurs="0" name="disposition"/><xs:element type="xs:string"
minOccurs="0" name="Username"/><xs:element type="xs:string" minOccurs="0"
name="Password"/><xs:element type="xs:string" minOccurs="0"
name="language"/></xs:sequence></xs:complexType></xs:element>
      </xs:schema><xs:schema
targetNamespace="urn:schemas-iwaysoftware-com:iwse"
elementFormDefault="qualified"><xs:element
name="adapterexception"><xs:complexType><xs:sequence><xs:element
type="xs:string"
name="error"/></xs:sequence></xs:complexType></xs:element>
      </xs:schema><xs:schema
xmlns:rfc="urn:iwaysoftware:ibse:jul2003:BAPI"
targetNamespace="urn:iwaysoftware:ibse:jul2003:BAPI"
xmlns:m1="urn:iwaysoftware:ibse:jul2003:BAPI"
elementFormDefault="qualified"><xs:element
name="BAPI"><xs:complexType><xs:sequence><xs:element
name="BAPI_MATERIAL_GET_DETAIL"><xs:complexType><xs:all><xs:element
minOccurs="1" name="MATERIAL"><xs:simpleType><xs:restriction
base="xs:string"><xs:maxLength
value="18"/></xs:restriction></xs:simpleType>
                           </xs:element><xs:element minOccurs="0"
name="PLANT"><xs:simpleType><xs:restriction
base="xs:string"><xs:maxLength
value="4"/></xs:restriction></xs:simpleType>
                           </xs:element><xs:element minOccurs="0"
name="VALUATIONAREA"><xs:simpleType><xs:restriction
base="xs:string"><xs:maxLength
value="4"/></xs:restriction></xs:simpleType>
                           </xs:element><xs:element minOccurs="0"
name="VALUATIONTYPE"><xs:simpleType><xs:restriction
```

```
base="xs:string"><xs:maxLength
value="10"/></xs:restriction></xs:simpleType></xs:element></xs:all></xs:c
omplexType></xs:element></xs:sequence></xs:complexType></xs:element>
      </xs:schema><xs:schema
xmlns:rfc="urn:iwaysoftware:ibse:jul2003:BAPI:response"
targetNamespace="urn:iwaysoftware:ibse:jul2003:BAPI:response"
xmlns:m11="urn:iwaysoftware:ibse:jul2003:BAPI:response"
elementFormDefault="qualified"><xs:element
name="BAPIResponse"><xs:complexType><xs:sequence><xs:element
name="BAPI_MATERIAL_GET_DETAIL.Response"><xs:complexType><xs:all><xs:elem
ent type="rfc:BAPIMATDOC" minOccurs="0"
name="MATERIALPLANTDATA"/><xs:element type="rfc:BAPIMATDOBEW"
minOccurs="0" name="MATERIALVALUATIONDATA"/><xs:element
type="rfc:BAPIMATDOA" minOccurs="0"
name="MATERIAL_GENERAL_DATA"/><xs:element type="rfc:BAPIRETURN"
minOccurs="0" name="RETURN"/></xs:all></xs:complexType></xs:element>
              </xs:sequence><xs:attribute type="xs:string" use="required"
name="cid"/></xs:complexType>
         </xs:element><xs:complexType
name="BAPIMATDOC"><xs:sequence><xs:element
name="PUR_GROUP"><xs:simpleType><xs:restriction
base="xs:string"><xs:maxLength
value="3"/></xs:restriction></xs:simpleType>
               </xs:element><xs:element
name="ISSUE_UNIT"><xs:simpleType><xs:restriction
base="xs:string"><xs:maxLength
value="3"/></xs:restriction></xs:simpleType></xs:element></xs:sequence>
         </xs:complexType><xs:complexType
name="BAPIMATDOBEW"><xs:sequence><xs:element
name="PRICE_CTRL"><xs:simpleType><xs:restriction
base="xs:string"><xs:maxLength
value="1"/></xs:restriction></xs:simpleType>
               </xs:element><xs:element
name="MOVING_PR"><xs:simpleType><xs:restriction
base="xs:string"><xs:maxLength
value="23"/></xs:restriction></xs:simpleType>
               </xs:element><xs:element
name="STD_PRICE"><xs:simpleType><xs:restriction
base="xs:string"><xs:maxLength
value="23"/></xs:restriction></xs:simpleType>
               </xs:element><xs:element
name="PRICE_UNIT"><xs:simpleType><xs:restriction
base="xs:string"><xs:maxLength
value="5"/></xs:restriction></xs:simpleType>
               </xs:element><xs:element
name="CURRENCY"><xs:simpleType><xs:restriction
base="xs:string"><xs:maxLength
value="5"/></xs:restriction></xs:simpleType>
```

```
               </xs:element><xs:element
name="CURRENCY_ISO"><xs:simpleType><xs:restriction
base="xs:string"><xs:maxLength
value="3"/></xs:restriction></xs:simpleType></xs:element></xs:sequence>
         </xs:complexType><xs:complexType
name="BAPIMATDOA"><xs:sequence><xs:element
name="MATL_DESC"><xs:simpleType><xs:restriction
base="xs:string"><xs:maxLength
value="40"/></xs:restriction></xs:simpleType>
               </xs:element><xs:element
name="OLD_MAT_NO"><xs:simpleType><xs:restriction
base="xs:string"><xs:maxLength
value="18"/></xs:restriction></xs:simpleType>
               </xs:element><xs:element
name="MATL_TYPE"><xs:simpleType><xs:restriction
base="xs:string"><xs:maxLength
value="4"/></xs:restriction></xs:simpleType>
               </xs:element><xs:element
name="IND_SECTOR"><xs:simpleType><xs:restriction
base="xs:string"><xs:maxLength
value="1"/></xs:restriction></xs:simpleType>
               </xs:element><xs:element
name="DIVISION"><xs:simpleType><xs:restriction
base="xs:string"><xs:maxLength
value="2"/></xs:restriction></xs:simpleType>
               </xs:element><xs:element
name="MATL_GROUP"><xs:simpleType><xs:restriction
base="xs:string"><xs:maxLength
value="9"/></xs:restriction></xs:simpleType>
               </xs:element><xs:element
name="PROD_HIER"><xs:simpleType><xs:restriction
base="xs:string"><xs:maxLength
value="18"/></xs:restriction></xs:simpleType>
               </xs:element><xs:element
name="BASIC_MATL"><xs:simpleType><xs:restriction
base="xs:string"><xs:maxLength
value="14"/></xs:restriction></xs:simpleType>
               </xs:element><xs:element
name="STD_DESCR"><xs:simpleType><xs:restriction
base="xs:string"><xs:maxLength
value="18"/></xs:restriction></xs:simpleType>
               </xs:element><xs:element
name="LAB_DESIGN"><xs:simpleType><xs:restriction
base="xs:string"><xs:maxLength
value="3"/></xs:restriction></xs:simpleType>
               </xs:element><xs:element
name="PROD_MEMO"><xs:simpleType><xs:restriction
base="xs:string"><xs:maxLength
```

```
value="18"/></xs:restriction></xs:simpleType>
               </xs:element><xs:element
name="PAGEFORMAT"><xs:simpleType><xs:restriction
base="xs:string"><xs:maxLength
value="4"/></xs:restriction></xs:simpleType>
               </xs:element><xs:element
name="CONTAINER"><xs:simpleType><xs:restriction
base="xs:string"><xs:maxLength
value="2"/></xs:restriction></xs:simpleType>
               </xs:element><xs:element
name="STOR_CONDS"><xs:simpleType><xs:restriction
base="xs:string"><xs:maxLength
value="2"/></xs:restriction></xs:simpleType>
               </xs:element><xs:element
name="TEMP_CONDS"><xs:simpleType><xs:restriction
base="xs:string"><xs:maxLength
value="2"/></xs:restriction></xs:simpleType>
               </xs:element><xs:element
name="BASE_UOM"><xs:simpleType><xs:restriction
base="xs:string"><xs:maxLength
value="3"/></xs:restriction></xs:simpleType>
               </xs:element><xs:element
name="EAN_UPC"><xs:simpleType><xs:restriction
base="xs:string"><xs:maxLength
value="18"/></xs:restriction></xs:simpleType>
               </xs:element><xs:element
name="EAN_CAT"><xs:simpleType><xs:restriction
base="xs:string"><xs:maxLength
value="2"/></xs:restriction></xs:simpleType>
               </xs:element><xs:element
name="SIZE_DIM"><xs:simpleType><xs:restriction
base="xs:string"><xs:maxLength
value="32"/></xs:restriction></xs:simpleType>
               </xs:element><xs:element
name="GROSS_WT"><xs:simpleType><xs:restriction
base="xs:string"><xs:maxLength
value="13"/></xs:restriction></xs:simpleType>
               </xs:element><xs:element
name="NET_WEIGHT"><xs:simpleType><xs:restriction
base="xs:string"><xs:maxLength
value="13"/></xs:restriction></xs:simpleType>
               </xs:element><xs:element
name="UNIT_OF_WT"><xs:simpleType><xs:restriction
base="xs:string"><xs:maxLength
value="3"/></xs:restriction></xs:simpleType>
               </xs:element><xs:element
name="VOLUME"><xs:simpleType><xs:restriction
base="xs:string"><xs:maxLength
```

```
value="13"/></xs:restriction></xs:simpleType>
               </xs:element><xs:element
name="VOLUMEUNIT"><xs:simpleType><xs:restriction
base="xs:string"><xs:maxLength
value="3"/></xs:restriction></xs:simpleType>
               </xs:element><xs:element
name="LENGTH"><xs:simpleType><xs:restriction
base="xs:string"><xs:maxLength
value="13"/></xs:restriction></xs:simpleType>
               </xs:element><xs:element
name="WIDTH"><xs:simpleType><xs:restriction
base="xs:string"><xs:maxLength
value="13"/></xs:restriction></xs:simpleType>
               </xs:element><xs:element
name="HEIGHT"><xs:simpleType><xs:restriction
base="xs:string"><xs:maxLength
value="13"/></xs:restriction></xs:simpleType>
               </xs:element><xs:element
name="UNIT_DIM"><xs:simpleType><xs:restriction
base="xs:string"><xs:maxLength
value="3"/></xs:restriction></xs:simpleType>
               </xs:element><xs:element
name="MANU_MAT"><xs:simpleType><xs:restriction
base="xs:string"><xs:maxLength
value="40"/></xs:restriction></xs:simpleType>
               </xs:element><xs:element
name="MFR_NO"><xs:simpleType><xs:restriction
base="xs:string"><xs:maxLength
value="10"/></xs:restriction></xs:simpleType>
               </xs:element><xs:element
name="BASE_UOM_ISO"><xs:simpleType><xs:restriction
base="xs:string"><xs:maxLength
value="3"/></xs:restriction></xs:simpleType>
               </xs:element><xs:element
name="UNIT_OF_WT_ISO"><xs:simpleType><xs:restriction
base="xs:string"><xs:maxLength
value="3"/></xs:restriction></xs:simpleType>
               </xs:element><xs:element
name="VOLUMEUNIT_ISO"><xs:simpleType><xs:restriction
base="xs:string"><xs:maxLength
value="3"/></xs:restriction></xs:simpleType>
               </xs:element><xs:element
name="UNIT_DIM_ISO"><xs:simpleType><xs:restriction
base="xs:string"><xs:maxLength
value="3"/></xs:restriction></xs:simpleType>
               </xs:element><xs:element
name="CREATED_ON"><xs:simpleType><xs:restriction
base="xs:string"><xs:maxLength
```

```
value="8"/></xs:restriction></xs:simpleType>
               </xs:element><xs:element
name="CREATED_BY"><xs:simpleType><xs:restriction
base="xs:string"><xs:maxLength
value="12"/></xs:restriction></xs:simpleType>
               </xs:element><xs:element
name="LAST_CHNGE"><xs:simpleType><xs:restriction
base="xs:string"><xs:maxLength
value="8"/></xs:restriction></xs:simpleType>
               </xs:element><xs:element
name="CHANGED_BY"><xs:simpleType><xs:restriction
base="xs:string"><xs:maxLength
value="12"/></xs:restriction></xs:simpleType>
               </xs:element><xs:element
name="MATL_CAT"><xs:simpleType><xs:restriction
base="xs:string"><xs:maxLength
value="2"/></xs:restriction></xs:simpleType>
               </xs:element><xs:element
name="EMPTIESBOM"><xs:simpleType><xs:restriction
base="xs:string"><xs:maxLength
value="1"/></xs:restriction></xs:simpleType>
               </xs:element><xs:element
name="BASIC_MATL_NEW"><xs:simpleType><xs:restriction
base="xs:string"><xs:maxLength
value="48"/></xs:restriction></xs:simpleType></xs:element></xs:sequence>
         </xs:complexType><xs:complexType
name="BAPIRETURN"><xs:sequence><xs:element
name="TYPE"><xs:simpleType><xs:restriction base="xs:string"><xs:maxLength
value="1"/></xs:restriction></xs:simpleType>
               </xs:element><xs:element
name="CODE"><xs:simpleType><xs:restriction base="xs:string"><xs:maxLength
value="5"/></xs:restriction></xs:simpleType>
               </xs:element><xs:element
name="MESSAGE"><xs:simpleType><xs:restriction
base="xs:string"><xs:maxLength
value="220"/></xs:restriction></xs:simpleType>
               </xs:element><xs:element
name="LOG_NO"><xs:simpleType><xs:restriction
base="xs:string"><xs:maxLength
value="20"/></xs:restriction></xs:simpleType>
               </xs:element><xs:element
name="LOG_MSG_NO"><xs:simpleType><xs:restriction
base="xs:string"><xs:maxLength
value="6"/></xs:restriction></xs:simpleType>
               </xs:element><xs:element
name="MESSAGE_V1"><xs:simpleType><xs:restriction
base="xs:string"><xs:maxLength
value="50"/></xs:restriction></xs:simpleType>
```

```
               </xs:element><xs:element
name="MESSAGE_V2"><xs:simpleType><xs:restriction
base="xs:string"><xs:maxLength
value="50"/></xs:restriction></xs:simpleType>
               </xs:element><xs:element
name="MESSAGE_V3"><xs:simpleType><xs:restriction
base="xs:string"><xs:maxLength
value="50"/></xs:restriction></xs:simpleType>
               </xs:element><xs:element
name="MESSAGE_V4"><xs:simpleType><xs:restriction
base="xs:string"><xs:maxLength
value="50"/></xs:restriction></xs:simpleType></xs:element></xs:sequence><
/xs:complexType></xs:schema>
   </types><message name="BAPIIn"><part element="m1:BAPI"
name="parameters"/>
   </message><message name="BAPIOut"><part element="m11:BAPIResponse"
name="parameters"/>
   </message><message name="BAPI_MATERIAL_GET_DETAILHeader"><part
element="tns:ibsinfo" name="header"/>
   </message><message name="AdapterException"><part
element="tns:adapterexception" name="fault"/>
   </message><portType name="BAPI_MATERIAL_GET_DETAILSoap"><operation
name="BAPI"><documentation/><input message="tns:BAPIIn"/><output
message="tns:BAPIOut"/><fault message="tns:AdapterException"
name="AdapterExceptionFault"/></operation>
   </portType><binding type="tns:BAPI_MATERIAL_GET_DETAILSoap"
name="BAPI_MATERIAL_GET_DETAILSoap"><soap:binding style="document"
transport="http://schemas.xmlsoap.org/soap/http"/><operation
name="BAPI"><soap:operation style="document"
soapAction="BAPI_MATERIAL_GET_DETAIL.BAPIRequest@test@@"/><input><soap:bo
dy use="literal"/><soap:header part="header"
message="tns:BAPI_MATERIAL_GET_DETAILHeader" use="literal"/>
         </input><output><soap:body use="literal"/>
         </output><fault name="AdapterExceptionFault"><soap:fault
use="literal" name="AdapterExceptionFault"/></fault></operation>
   </binding><service
name="BAPI_MATERIAL_GET_DETAIL"><documentation>BAPI_MATERIAL_GET_DETAIL</
documentation><port binding="tns:BAPI_MATERIAL_GET_DETAILSoap"
name="BAPI_MATERIAL_GET_DETAILSoap1"><soap:address
location="http://GERBER-2K.ibi.com:7001/ibse/IBSEServlet/XDSOAPRouter"/><
/port></service></definitions>
```

For more information on using WSDL in the BEA WebLogic Workshop, including an example, see Appendix B, *Using WebLogic Workshop to Access Web Services*.

Reference Sample iWay Business Service Input XML

The following input XML retrieves a list of materials using the SAP BAPI_MATERIAL_GETLIST method.

```
  <?xml version="1.0" encoding="UTF-8" ?>
- <!-- Sample XML file generated by XMLSPY v5 rel. 3 U
(http://www.xmlspy.com)
  -->
- <Material.GETLIST xmlns="urn:sap-com:document:sap:business"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xsi:schemaLocation="urn:sap-com:document:sap:business
C:\PROGRA~1\BEASYS~1\BEAAPP~1\sessions\default\SAP\beasap46\service_BAPI_
MATERIAL_GETLIST.xsd">
  <MAXROWS>1000</MAXROWS>
- <DISTRIBUTIONCHANNELSELECTION>
- <item>
  <SIGN />
  <OPTION />
  <DISTR_CHAN_LOW />
  <DISTR_CHAN_HIGH />
  </item>
  </DISTRIBUTIONCHANNELSELECTION>
- <MANUFACTURERPARTNUMB>
- <item>
  <MANU_MAT />
  <MFR_NO />
  </item>
  </MANUFACTURERPARTNUMB>
- <MATERIALSHORTDESCSEL>
- <item>
  <SIGN />
  <OPTION />
  <DESCR_LOW />
  <DESCR_HIGH />
  </item>
  </MATERIALSHORTDESCSEL>
- <MATNRLIST>
- <item>
  <MATERIAL />
  <MATL_DESC />
  <MATERIAL_EXTERNAL />
  <MATERIAL_GUID />
  <MATERIAL_VERSION />
  </item>
  </MATNRLIST>
- <MATNRSELECTION>
- <item>
  <SIGN>E</SIGN>
  <OPTION>BT</OPTION>
  <MATNR_LOW>1000</MATNR_LOW>
  <MATNR_HIGH>1010</MATNR_HIGH>
  </item>
  </MATNRSELECTION>
- <PLANTSELECTION>
- <item>
  <SIGN />
  <OPTION />
  <PLANT_LOW />
  <PLANT_HIGH />
  </item>
  </PLANTSELECTION>
- <RETURN>
- <item>
  <TYPE />
  <ID />
  <NUMBER />
  <MESSAGE />
  <LOG_NO />
  <LOG_MSG_NO />
  <MESSAGE_V1 />
  <MESSAGE_V2 />
  <MESSAGE_V3 />
  <MESSAGE_V4 />
  <PARAMETER />
  <ROW>0</ROW>
  <FIELD />
  <SYSTEM />
  </item>
  </RETURN>
- <SALESORGANISATIONSELECTION>
- <item>
  <SIGN />
  <OPTION />
  <SALESORG_LOW />
  <SALESORG_HIGH />
  </item>
  </SALESORGANISATIONSELECTION>
- <STORAGELOCATIONSELECT>
- <item>
  <SIGN />
  <OPTION />
  <STLOC_LOW />
  <STLOC_HIGH />
  </item>
  </STORAGELOCATIONSELECT>
  </Material.GETLIST>
```

CHAPTER 6

Understanding SAP Events

Topics:

- Overview
- Related Concepts and Terminology
- Registering Your Program ID in SAPGUI
- Testing the SAP Event Adapter
- Application Link Embedding Configuration for the Event Adapter
- Testing the SAP ALE Configuration
- Usage Considerations

The following section provides an overview of event functionality in SAP and describes how to configure and test your SAP system for event processing.

Overview

An event in SAP is defined as an occurrence of a status change in an object. Events are created when the relevant status change occurs. The event creation must be implemented by SAP or yourself. An event is created from specific application programs (the event creator) and then “published” system-wide. Any number of receivers can respond to the event with their own “response mechanisms”. An event is usually defined as a component of an object type.

SAP “pseudo events” are events that are not processed by the SAP Event manager, but are called from an ABAP program or Remote Function call (using the “Destination” parameter).

Related Concepts and Terminology

The following section lists and defines specific terminology related to SAP and SAP event handling.

Client and Server Programs

RFC programs for non-SAP systems can function as either the caller or the called program in an RFC communication. There are two types of RFC programs:

- RFC Client
- RFC Server

The RFC client is the instance that calls the RFC to execute the function that is provided by an RFC server. The functions that can be executed remotely are called RFC functions, and the functions provided by the RFC API are called RFC calls.

SAP Gateway

The SAP Gateway is a secure Application Server. No connections are accepted unless they have been pre-registered previously from the SAP presentation Client. A server connection presents itself to the Gateway and exposes a Program Identifier. If the Program Identifier is found in the list of registered Program Id's, the Gateway server then offers a connection to the server, which "Accepts" a connection. This Program id then is linked with an "RFC Destination" within SAP, which allows SAP Function Modules and ALE documents (IDOCS or BAPI IDOCS) to be routed to the destination. The RFC Destination functions as a tag to mask the Program Id to SAP users.

An RFC server program can be registered with the SAP gateway and wait for incoming RFC call requests. An RFC server program registers itself under a Program ID at an SAP gateway and not for a specific SAP system.

In SAPGUI, the destination must be defined with transaction SM59, using connection type T and Register Mode. Moreover, this entry must contain information on the SAP gateway at which the RFC server program is registered.

Program IDs and Load Balancing

If the Gateway Server has a connection to a particular server instance and another server instance presents itself to the gateway, the gateway offers the connection and then begins functioning in "Load Balancing" mode. Using a proprietary algorithm, the Gateway will send different messages to each server depending on demand and total processing time. This may cause unpredictable results in the WLI 8.1 scenario where messages are validated by schema and application.

When configuring multiple events in WLI using a single SAP program ID, SAP will load balance the event data . For example, if multiple remote function calls or BAPIs use the same program ID (for example, IWAYID) and multiple SAP listeners are configured with this progam ID, then SAP will send one request to one listener and the next to another listener, and so on.

There is a load balancing algorithm present in the SAP Gateway Server. This mechanism is proprietary to SAP application development, and may work by comparing total throughtput of the connection, the number of times in wait state, and so on. This means connection one may receive 9 messages and connection two 1. If 5 of 9 messages are rejected for schema validation, and the 1 on the other id for schema validation, the customer can very easily make a case of missing messages.

Registering Your Program ID in SAPGUI

To enable your SAP system to issue the following calls or interfaces to the SAP event adapter, you must register your program ID under an RFC destination.

- Remote Function Calls (RFC)
- Business Application Programming Interfaces (BAPI)
- Intermediate Documents (IDoc)

The RFC destination is a symbolic name (for example, IWAYDEST) that is used to direct events to a target system, masking the program ID. The Program ID is configured in both SAPGUI and the event adapter.

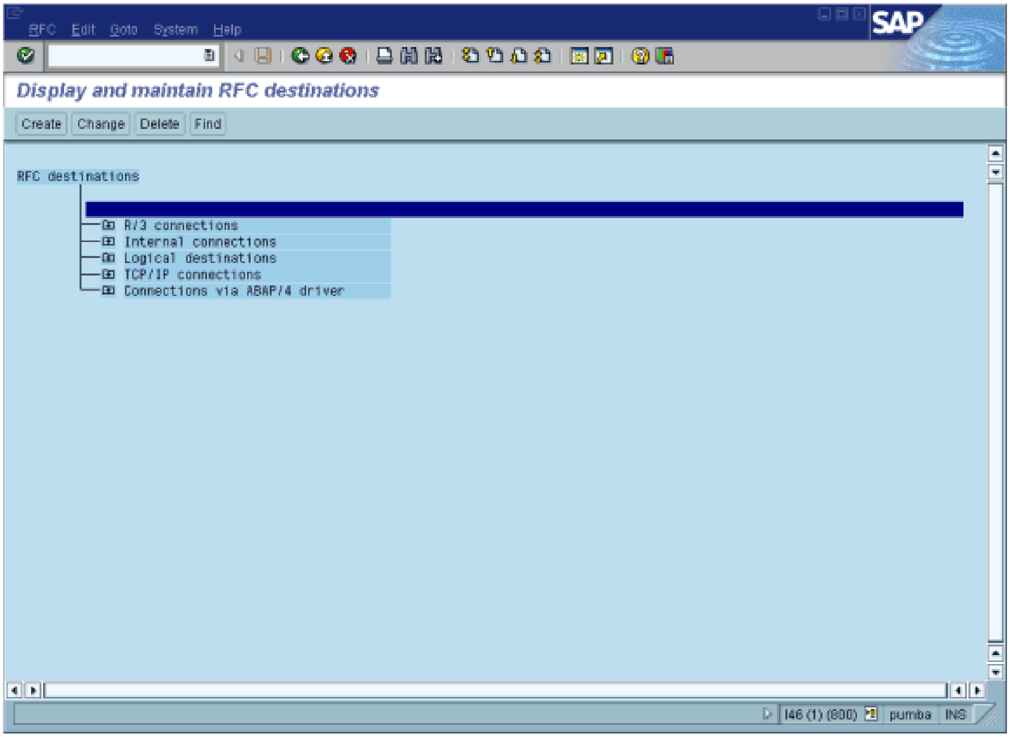
Procedure How to Register Your Program ID

To register your program ID:

1. Launch the *SAP Workbench* and logon to the SAP system.
2. Select *Tools*, *Administration*, *Network*, and then, *RFC destination*.

3. Execute the *SM59* transaction.

The following window opens.



Display and maintain RFC destinations

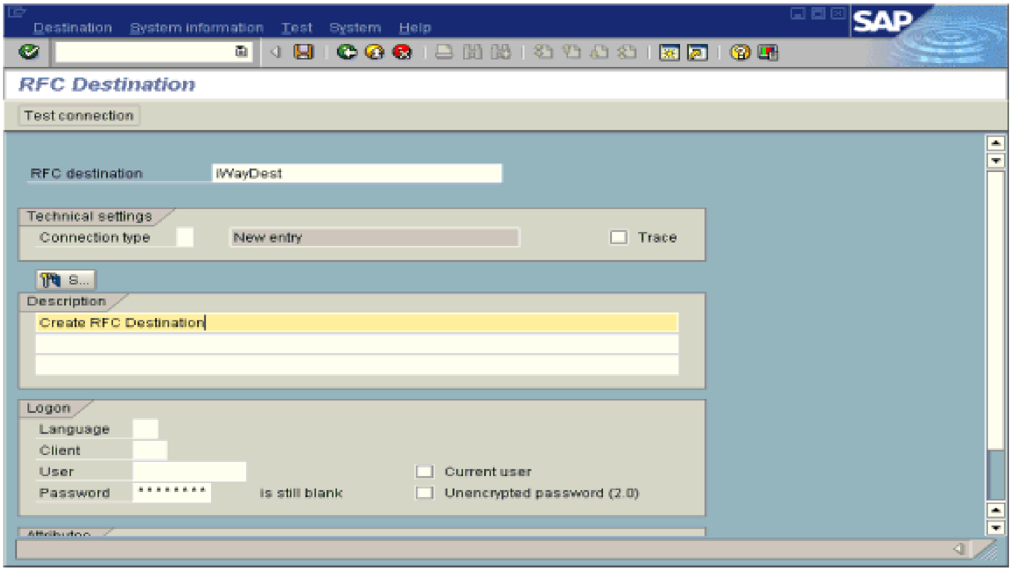
RFC destinations

- R/3 connections
- Internal connections
- Logical destinations
- TCP/IP connections
- Connections via ABAP/4 driver

4. Select *TCP/IP connections.*

5. Click *Create.*

The RFC Destination window opens.



RFC Destination

RFC destination: IWayDest

Technical settings

Connection type: New entry □ Trace

Description

Create RFC Destination

Logon

Language

Client

User □ Current user

Password ******** is still blank □ Unencrypted password (2.0)

Attributes

a. In the RFC destination field, type a name, for example, IWAYDEST.

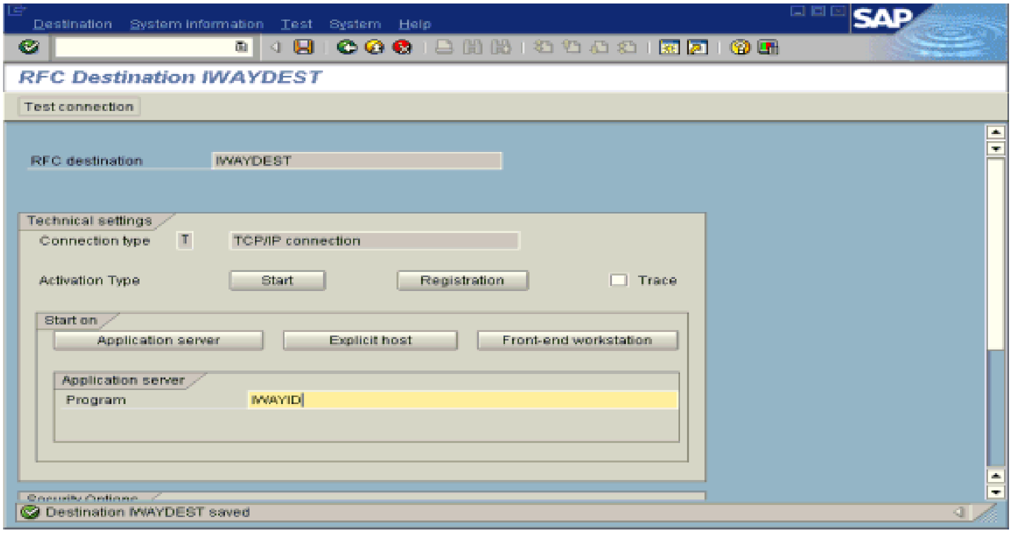
   The value you enter in this field is case-sensitive.

b. In the Connection type field, enter *T* for destination type TCP/IP.

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

6. Click *Save* from the toolbar or select *Save* from the Destination menu.

The RFC Destination IWAYDEST window opens.



RFC Destination IWAYDEST

RFC destination IWAYDEST

Connection type T TCP/IP connection

Program IWAYID

Destination IWAYDEST saved

a. For the Activation Type, click the *Registration* button.

b. In the Program field, type *IWAYID*.

7. Click *Save* from the toolbar or select *Save* from the Destination menu.

8. Make sure your event adapter is running.

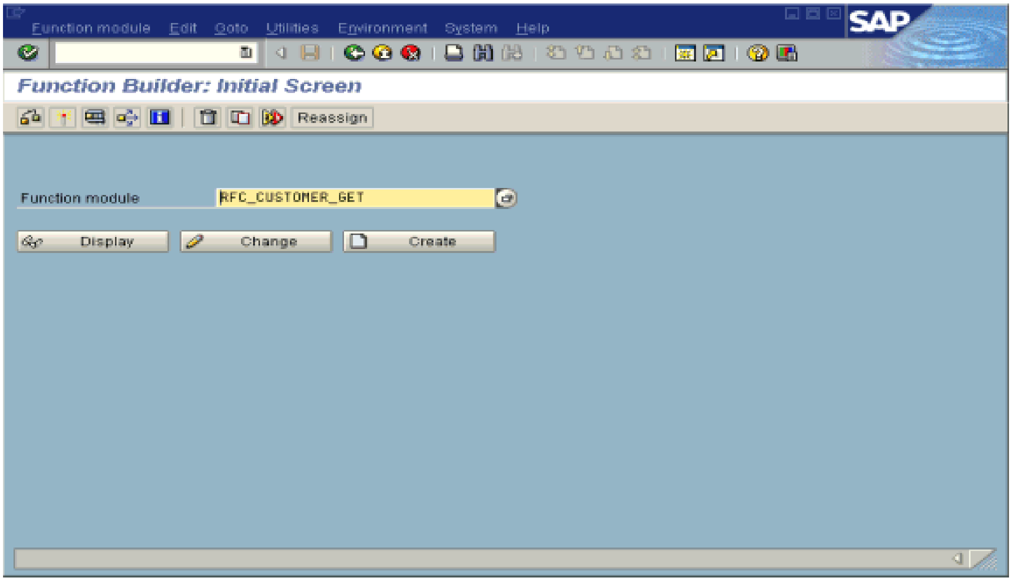
9. Verify that the SAP system and the iWay Application Adapter for SAP are communicating, click *Test connection*.

Testing the SAP Event Adapter

In the SAP Server, the SE37 transaction enables you to send RFCs (Remote Function Calls) or BAPIs (Business Application Programming Interface) to any RFC destination, in this case, to BEA WebLogic Server with an SAP event adapter. For more information on RFC destinations, see *Registering Your Program ID in SAPGUI* on page 6-3.

Procedure How to Test the SAP Event Adapter by Sending RFCs or BAPIs Manually

To test the SAP event adapter:

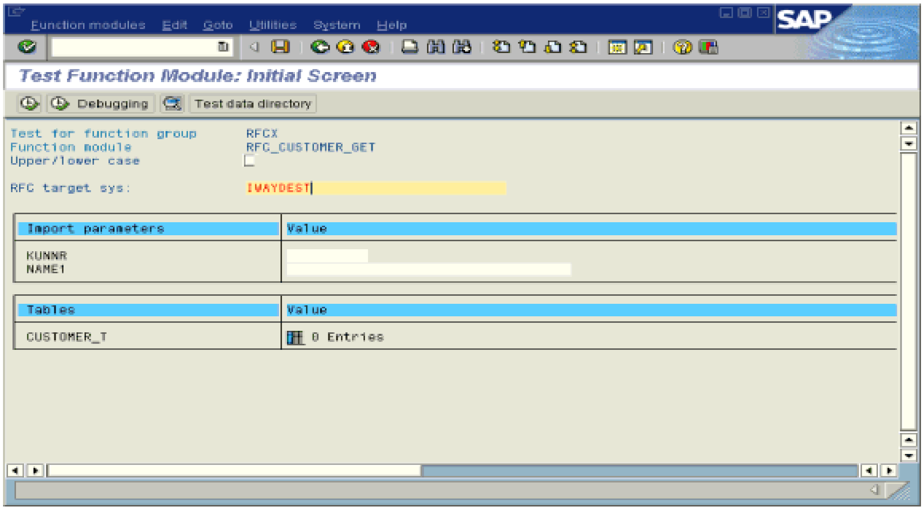


Function module Edit Goto Utilities Environment System Help
SAP
Function Builder: Initial Screen
Reassign
Display
Change
Create

Function module RFC_CUSTOMER_GET

1. In the Function Builder, select a function module, for example, RFC_CUSTOMER_GET.
2. To choose single test, press *F8* and click the *Single Test* icon or choose *Function module*, select *Test* and then, *Single Test*.
3. Enter an RFC target system, for example, IWAYDEST.
4. Enter input data for the particular RFC module, for example, AB*.
5. To execute, press *F8*.

The Test Function module opens.



```
Test for function group      RFCX
Function module              RFC_CUSTOMER_GET
Upper/lower case             □

RFC target sys:              IWAYDEST
```

Import parameters	Value
KUNNR	
NAME1	

Tables	Value
CUSTOMER_T	0 Entries

6. Enter data into the SAP GUI and click the *Execute* button.

   The function name and input data are transferred via RFC to create an XML document on BEA WebLogic Server with the parameters input in SAPGUI.

Application Link Embedding Configuration for the Event Adapter

The SAP event adapter receives IDocs (Intermediate Documents) from SAP. To configure an SAP system to send IDocs to the SAP event adapter, use the ALE (Application Link Embedding) configuration to:

1. Register your program ID in SAPGUI. For more information, see *Registering Your Program ID in SAPGUI* on page 6-3.
2. Define a port. For more information, see *Defining a Port* on page 6-9.
3. Create a logical system. For more information, see *Creating a Logical System* on page 6-10.
4. Create a partner profile. For more information, see *Creating a Partner Profile* on page 6-11.
5. Create a distribution model for the partner and message type. For more information, see *Creating a Distribution Model for the Partner and Message Type* on page 6-13.
6. Test the SAP event adapter. For more information, see *Testing the SAP ALE Configuration* on page 6-15.

Defining a Port

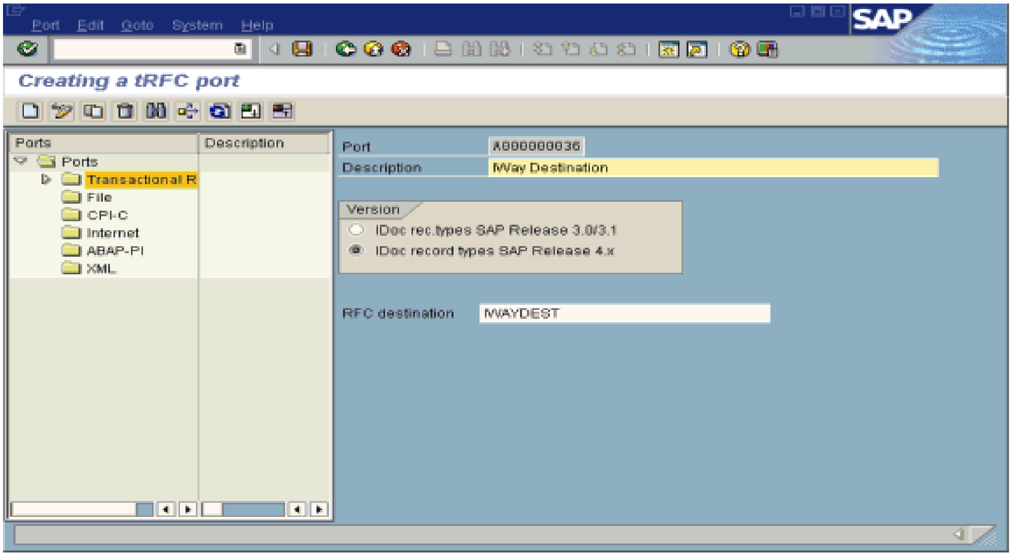
A port identifies where to send messages. This port can be used only if an RFC destination was previously created. For more information on creating an RFC destination, see *Overview* on page 6-2.

Procedure How to Define a Port

To define a port:

1. In the ALE configuration, choose *Tools, Business Communications, IDocs Basis, IDoc,* and then, *Port Definition* or execute the *WE21* transaction.

   The following window opens.



Port A000000036

Description IWay Destination

Version

○ IDoc rec.types SAP Release 3.0/3.1

● IDoc record types SAP Release 4.x

RFC destination IWAYDEST

2. In the left pane under ports, select *Transactional RFC* and click *Create*.
3. Select *Generate port name.*

   The system generates the port name.
4. Enter the IDoc version you want to send through this port.
5. Click the destination you created, for example, IWAYDEST.
6. Save the session, making note of the system-generated RFC port.

Creating a Logical System

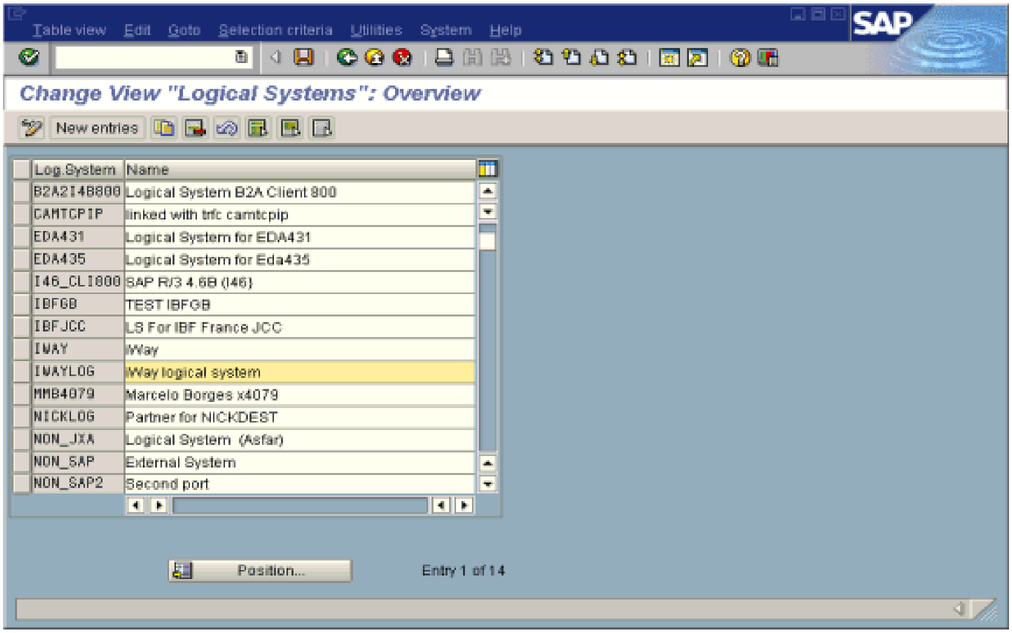
One type of partner is a logical system. A logical system manages one or more RFC destinations.

Procedure How to Create a Logical System

To create a logical system called IWAYLOG:

1. In the ALE Configuration, enter the area menu selection *SALE* transaction.
2. Select *SAP Reference IMG*.
3. Expand the following nodes: *Basis Components, Application Link Enabling (ALE), Sending and Receiving Systems, Logical Systems*, and *Define Logical System*.
4. Click the green check beside *Define Logical System*.

   The following window opens.



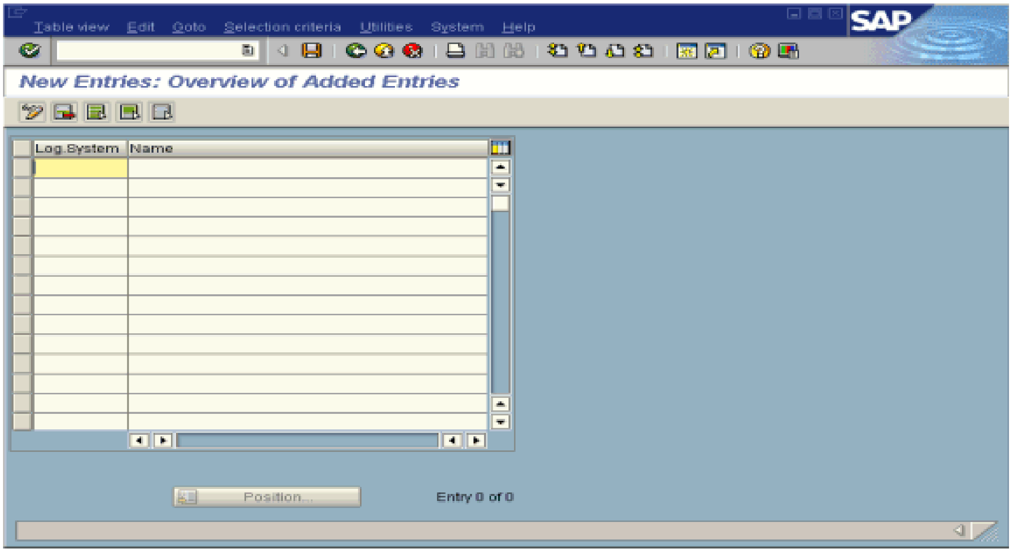
Change View "Logical Systems": Overview

Log.System	Name
B2A214B800	Logical System B2A Client 800
CAMTCPIP	linked with trfc camtcpip
EDA431	Logical System for EDA431
EDA435	Logical System for Eda435
I46_CLI800	SAP R/3 4.6B (I46)
IBFGB	TEST IBFGB
IBFJCC	LS For IBF France JCC
IWAY	iWay
IWAYLOG	iWay logical system
MMB4079	Marcelo Borges x4079
NICKLOG	Partner for NICKDEST
NON_JXA	Logical System (Asfar)
NON_SAP	External System
NON_SAP2	Second port

Entry 1 of 14

5. Click *New entries*.

The following window opens.



a. Type an entry for Log System, for example, IWAYLOG.

b. In the Name column, type a name (description) for the partner profile.

6. Save the session.

Creating a Partner Profile

A partner profile is a definition of parameters for the electronic interchange of data with a trading partner using the IDoc interface.

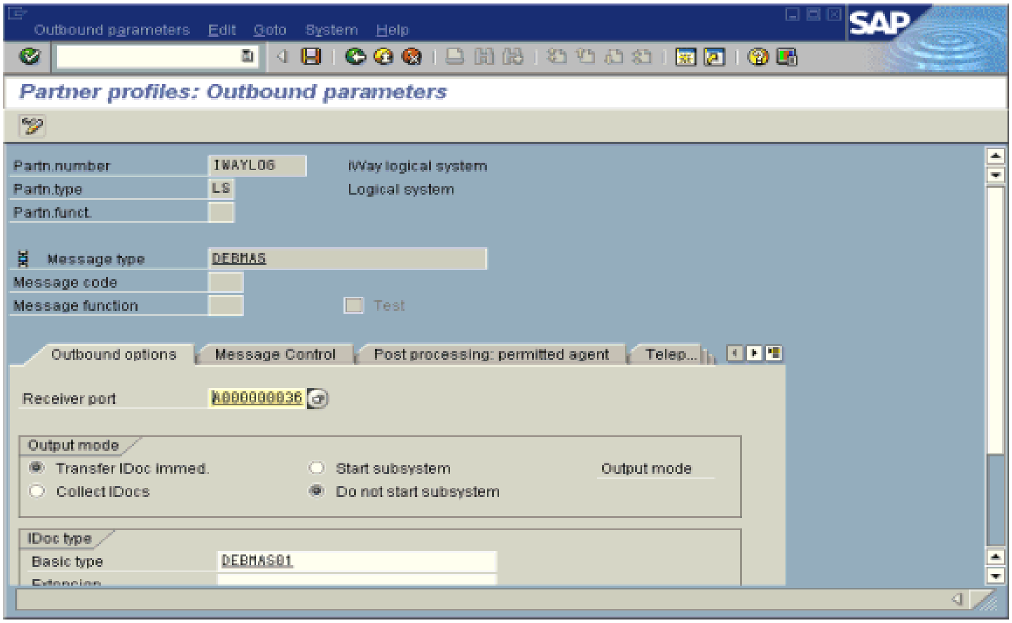
To communicate with a partner using the IDoc interface, you must create a partner profile.

Procedure How to Create a Partner Profile

To create a partner profile:

1. In the SAP Workbench, choose *Tools, Business Communication, IDoc Basis, IDoc,* and then, *Partner profile* or execute the *WE20* transaction.

The following window opens.



Partner profiles: Outbound parameters

Partn.number IWAYLOG iWay logical system

Partn.type LS Logical system

Partn.funct.

Message type DEBMAS

Message code

Message function □ Test

Outbound options | Message Control | Post processing: permitted agent | Telep...

Receiver port A000000036

Output mode

● Transfer IDoc immed. ○ Start subsystem Output mode

○ Collect IDocs ● Do not start subsystem

IDoc type

Basic type DEBMAS01

Extension

a. Select Partner type *LS* (Logical system).

b. Press *F5* (Create).

2. For Type, enter *USER*.
3. For Agent, enter the current user ID, or you may select another agent type.
4. Under the outbound parameter table control, select *Create outbound parameter.*

   Partn.type is LS.

   Message type is DEBMAS (the IDoc document type).

5. Leave *Partn.funct* blank.
6. Click the *Outbound options* tab.

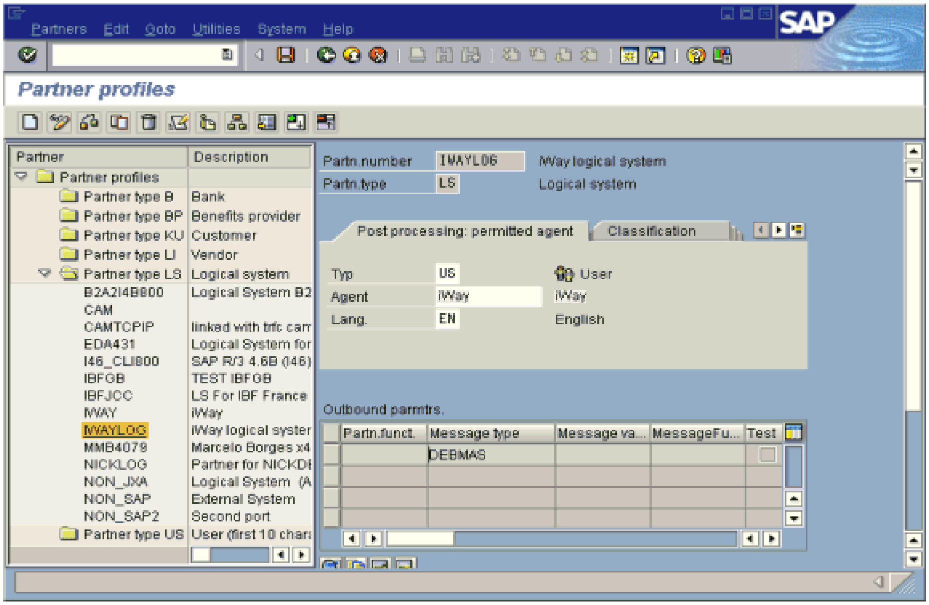
   a. Depending on your performance requirements, click *Transfer IDoc Immed* or *Collect IDocs*.

   b. For the IDoc, type a message type, for example, DEBMAS.

   c. Type a receiver port, for example, A000000036.

7. Save the session and exit.

The Partner profiles summary window opens and displays information for the logical system that you created.



Partner profiles

Partner	Description
Partner profiles	
Partner type B	Bank
Partner type BP	Benefits provider
Partner type KU	Customer
Partner type LI	Vendor
Partner type LS	Logical system
B2A2I4B800	Logical System B2
CAM	
CAMTCPIP	linked with trfc carr
EDA431	Logical System for
I46_CLI800	SAP R/3 4.6B (I46)
IBFGB	TEST IBFGB
IBFJCC	LS For IBF France
IWAY	iWay
IWAYLOG	iWay logical syster
MMB4079	Marcelo Borges x4
NICKLOG	Partner for NICKDI
NON_JXA	Logical System (A
NON_SAP	External System
NON_SAP2	Second port
Partner type US	User (first 10 chara

Partn.number IWAYLOG iWay logical system
Partn.type LS Logical system

Post processing: permitted agent | Classification

Typ US User
Agent iWay iWay
Lang. EN English

Outbound parmtrs.

Partn.funct.	Message type	Message va...	MessageFu...	Test
	DEBMAS			□

Collected IDocs

When using collected IDocs on any platform during inbound processing (service mode), if the DOCNUM field does not have a unique document number for each IDoc, the system creates an IDoc for each header record in the collected IDoc file and duplicates the data for each IDoc.

Make sure the DOCNUM field is included in the EDI_DC40 structure and that each IDoc has a unique sequence number within the collected IDoc file.

Creating a Distribution Model for the Partner and Message Type

You create a distribution model for the partner and message type you designated.

Procedure How to Create a Distribution Model for the Partner and Message Type

To create a distribution model called IWAYMOD:

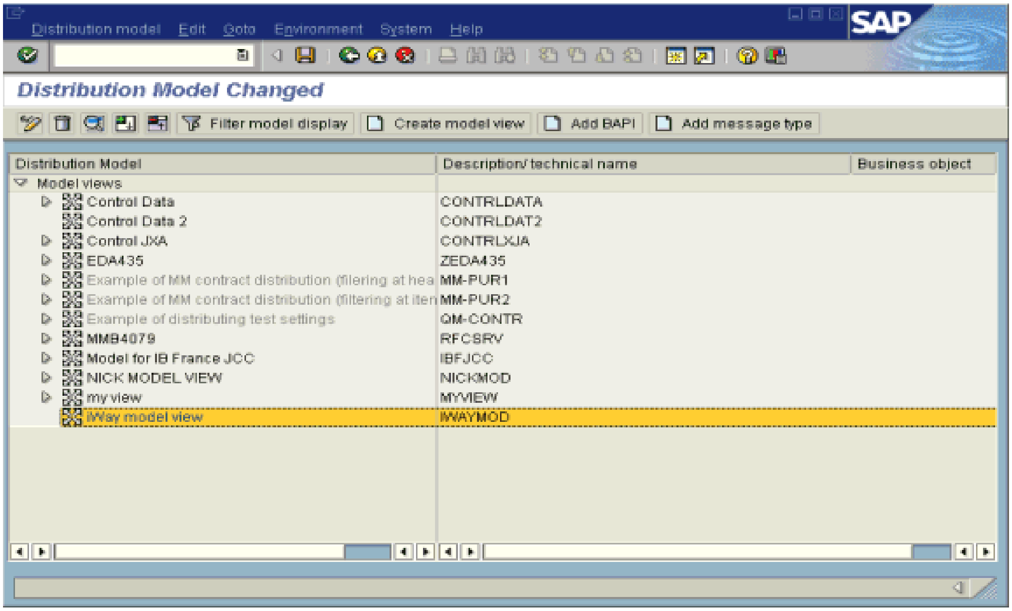
1. In the SAP Workbench, choose *Tools, AcceleratedSAP, Customizing,* and then, *Project Management* or execute the *BD64* transaction.

   The Display Distribution Model window opens.

2. Select *Create model view.* (If required, switch processing mode to edit within Distribution Model/Switch Processing Mode.)

3. Type a short text string and a technical name for your new model view.
4. Click the *Save* button.

   The following window opens.

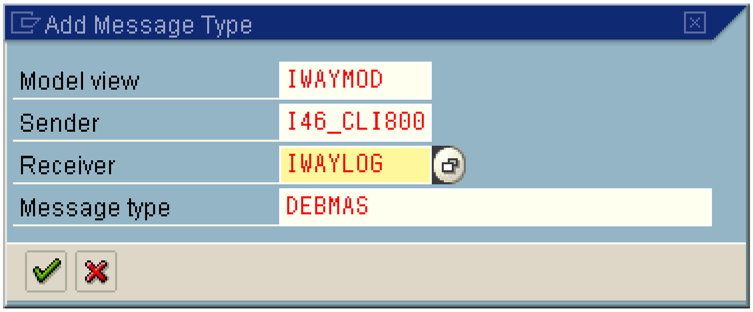


Distribution Model Changed

Distribution Model	Description/ technical name	Business object
Model views		
Control Data	CONTRLDATA	
Control Data 2	CONTRLDAT2	
Control JXA	CONTRLXJA	
EDA435	ZEDA435	
Example of MM contract distribution (filering at hea	MM-PUR1	
Example of MM contract distribution (filtering at iten	MM-PUR2	
Example of distributing test settings	QM-CONTR	
MMB4079	RFCSRV	
Model for IB France JCC	IBFJCC	
NICK MODEL VIEW	NICKMOD	
my view	MYVIEW	
iWay model view	IWAYMOD	

   a. In the Distribution Model tree, select a new model view.
   b. On the right, select *Add message type*.

   The Add Message Type box opens.



Add Message Type

Model view	IWAYMOD
Sender	I46_CLI800
Receiver	IWAYLOG
Message type	DEBMAS

   a. In the Sender field, provide the sender that points to the SAP system that sends the IDoc, for example, I46_CLI800.

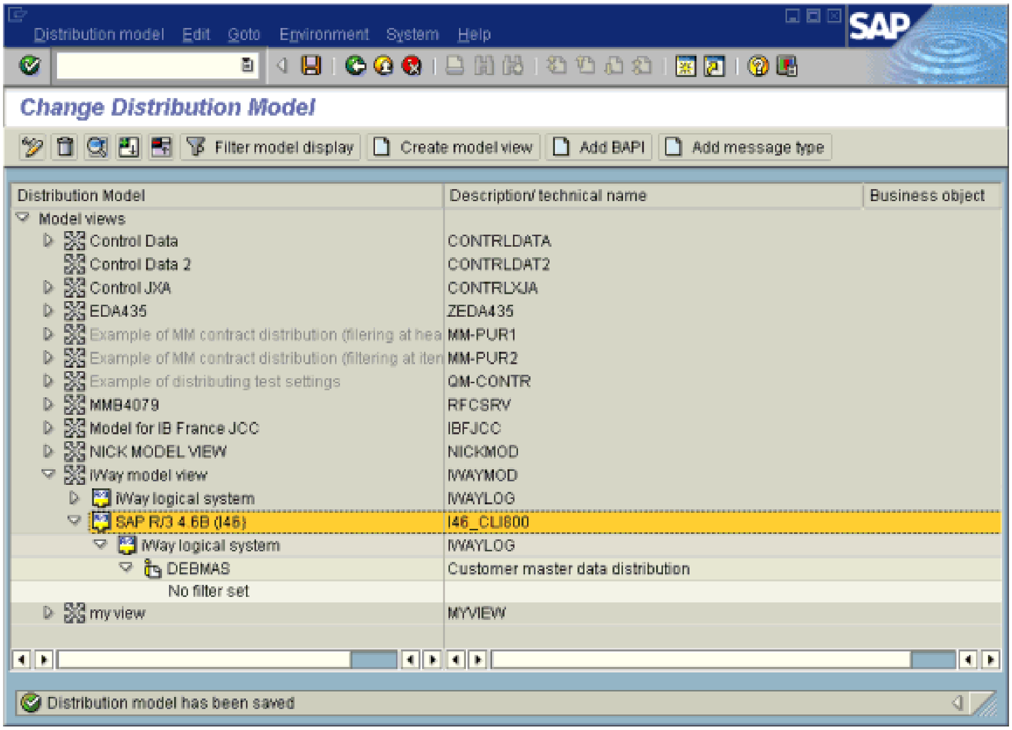
      In this case, the sender is an SAP 4.6B system

- **b.** In the Receiver field, provide the logical system, for example, IWAYLOG.
- **c.** In the Message type field, provide the type of IDoc, for example, DEBMAS.

5. Click the check mark icon.

6. Click the *Save* button.

The following window shows the new model view to use to send message type, DEBMAS, from the I46_CLI800 SAP system to the IWAYLOG logical system.



Distribution Model	Description/ technical name	Business object
Model views		
Control Data	CONTRLDATA	
Control Data 2	CONTRLDAT2	
Control JXA	CONTRLXJA	
EDA435	ZEDA435	
Example of MM contract distribution (filering at hea	MM-PUR1	
Example of MM contract distribution (filtering at iten	MM-PUR2	
Example of distributing test settings	QM-CONTR	
MMB4079	RFCSRV	
Model for IB France JCC	IBFJCC	
NICK MODEL VIEW	NICKMOD	
IWay model view	IWAYMOD	
IWay logical system	IWAYLOG	
SAP R/3 4.6B (I46)	I46_CLI800	
IWay logical system	IWAYLOG	
DEBMAS	Customer master data distribution	
No filter set		
my view	MYVIEW	

Distribution model has been saved

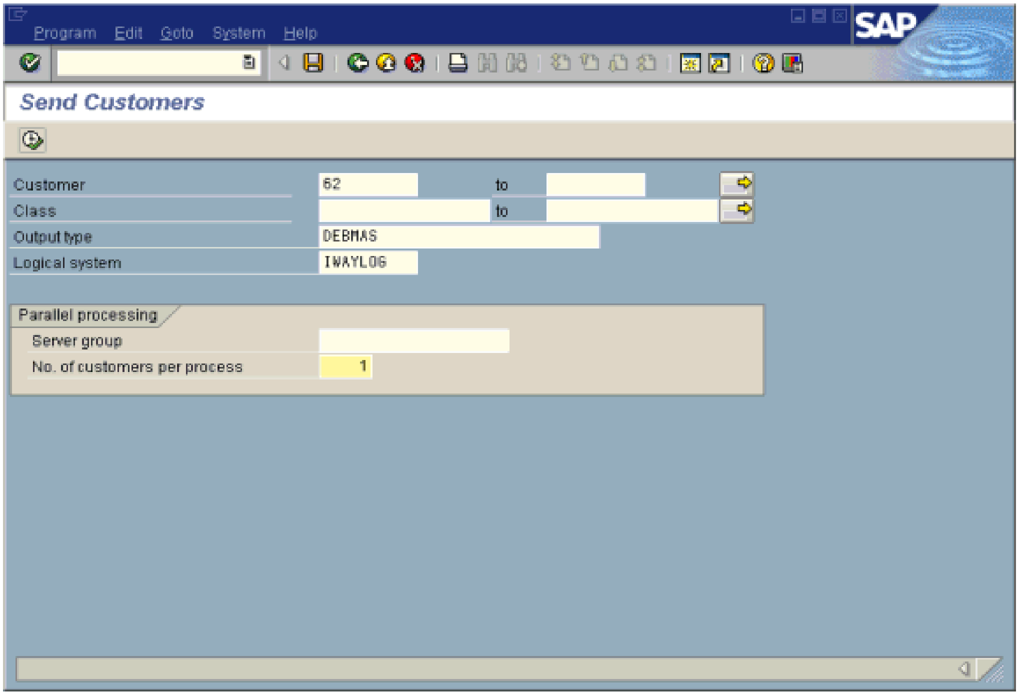
You are now ready to test the connection to the logical system.

Testing the SAP ALE Configuration

In the SAP Server, the BD12 transaction enables you to send IDocs to any logical system, for example, to an event adapter.

Procedure How to Test the SAP ALE Configuration

To test the SAP Application Link Embedding (ALE) configuration:



Send Customers

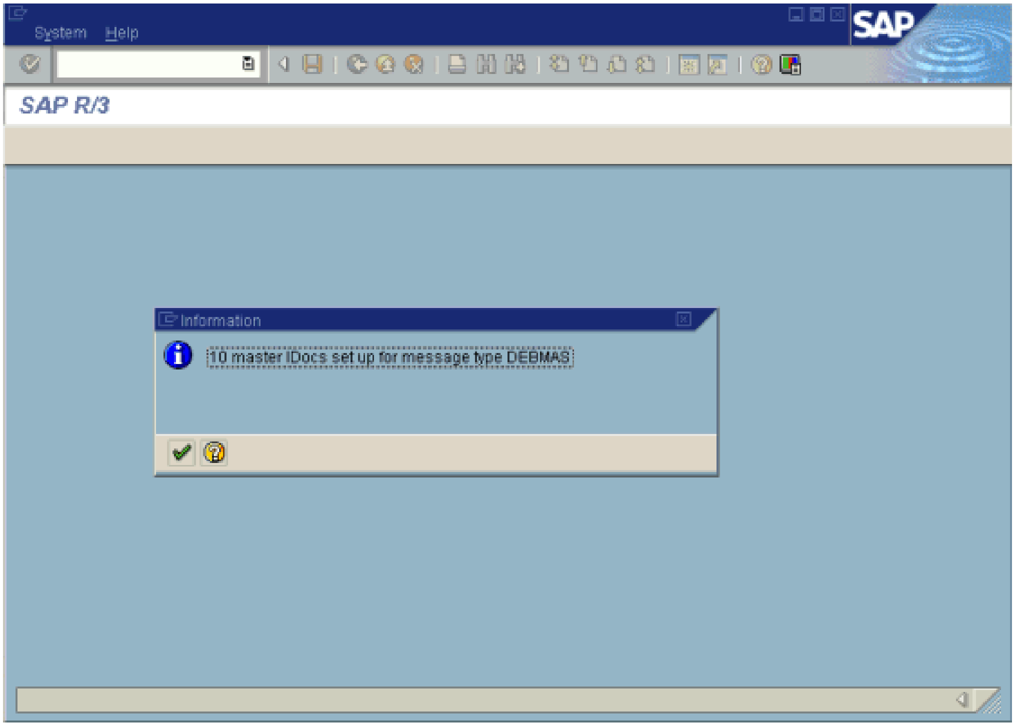
Customer	62	to	
Class		to	
Output type	DEBMAS		
Logical system	IWAYLOG		

Parallel processing

Server group	
No. of customers per process	1

1. In the Output type field, type the IDoc message type, *DEBMAS*.
2. In the Logical system field, type the logical system, for example, IWAYLOG.
3. To transfer data, click *Run*.

The SAP event adapter receives the IDoc in XML format. No response is expected from the event adapter.



10 master IDocs set up for message type DEBMAS

Usage Considerations

The following section provides insight for the use of SAP event handling in BEA WebLogic.

Multiple Events Using Identical Program IDs.

Configuring multiple events in BEA WebLogic that use the same SAP Program ID allows you to load balance SAP event data over multiple adapter event consumers. However, when configuring each event, all the event parameters for each event must match precisely. If one of the event configuration parameters (for example, log level) is different for one of the events, WLI will create a different schema for that event, and event data can be lost.

In this scenario, because you are using the same SAP program ID, SAP will send event data to all events configured with that program ID. WLI, however, creates separate schema for each event (because configuration parameter(s) differ), and then binds a specific event channel to that event schema. The result is that only events that match that schema are sent over a specific channel. While SAP is sending event data to every event configured with the same program ID, WLI, as it validates schemas, rejects any event data that does not match the schema for that channel.

For example, only Doc. A events that appear on the first channel are received and Doc. B events that appear on the second channel are received. Doc. B events that appear on the first channel are rejected since they do not pass schema type validation. The same result occurs for Doc. A events that appear on the second channel.

This usage consideration applies to all supported platforms.

Workaround

If you wish to load balance SAP event data over multiple events in BEA WebLogic, be sure to configure each event in precisely the same way.

If you do not wish to use load balancing, configure a separate event for each SAP program ID. Also, be sure that no other event configured in an Application View or in another BEA application uses the same progam ID

APPENDIX A

Using Application Explorer in WebLogic Workshop

Topics:

- Starting Application Explorer in BEA WebLogic WorkShop
- Creating a New Configuration
- Connecting to SAP
- Viewing an Application System Object and Creating an XML Schema
- Creating an iWay Business Service
- Understanding iWay Event Functionality
- Creating an Event Port
- Modifying an Event Port
- Creating a Channel
- Modifying a Channel
- Adding a Control for an iWay Resource in BEA WebLogic Workshop

This section describes how to use iWay Java Swing Application Explorer in BEA WebLogic Workshop to create XML schemas for SAP BAPIs, RFCs, and IDOCs. In addition, it provides information on listening for events in SAP and creating Web services that are published by the iWay Business Services Engine (iBSE).

Although this section describes the Java Swing implementation of Application Explorer, other implementations provide the same functionality using similar graphical user interfaces. For more information, see the following chapters:

- Chapter 3, *Creating XML Schemas or Web Services for SAP*
- Chapter 4, *Configuring the Event Adapter for SAP*
- Chapter 5, *Creating and Publishing iWay Business Services*

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.

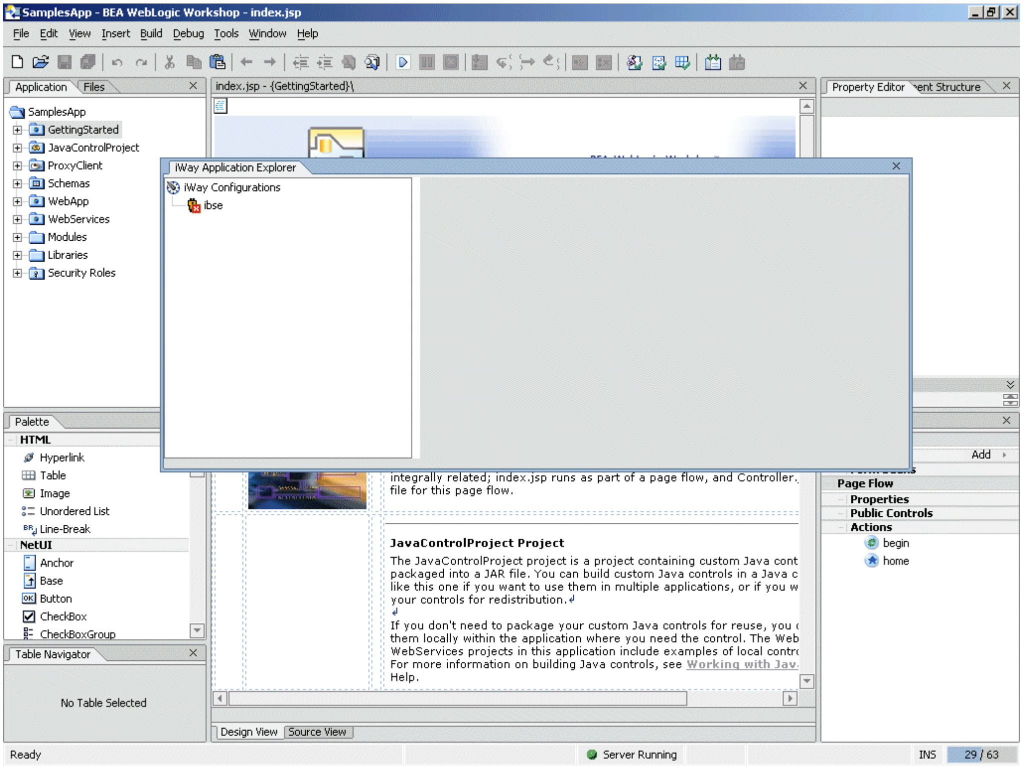
You can run Application Explorer in BEA WebLogic Workshop using an iWay Business Services Engine (iBSE) configuration. If you want to use Application Explorer with a JCA configuration instead of iBSE, you must use the servlet version of Application Explorer that runs outside of WebLogic Workshop. For more information about the servlet version, see Chapter 3, *Creating XML Schemas or Web Services for SAP*.

Procedure How to Start Application Explorer

To start Application Explorer running in BEA WebLogic Workshop:

1. Ensure the server on which Application Explorer is deployed is started.
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.



integrally related; index.jsp runs as part of a page flow, and Controller.
file for this page flow.

JavaControlProject Project

The JavaControlProject project is a project containing custom Java cont
packaged into a JAR file. You can build custom Java controls in a Java c
like this one if you want to use them in multiple applications, or if you w
your controls for redistribution.

If you don't need to package your custom Java controls for reuse, you c
them locally within the application where you need the control. The Web
WebServices projects in this application include examples of local contro
For more information on building Java controls, see Working with Jav
Help.

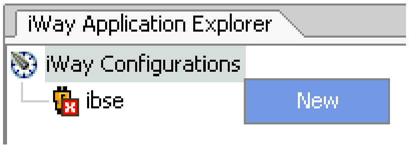
You can resize and drag-and-drop the Application Explorer window within BEA WebLogic Workshop. For example, you can drag it to the upper part of BEA WebLogic Workshop.

Creating a New Configuration

Before you can start using Application Explorer, you must define a new configuration.

Procedure How to Create a New Configuration

To create a new configuration:



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

The New Configuration dialog box opens.

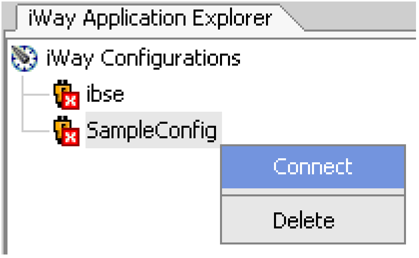
2. Type a name for the configuration, for example, SampleConfig, and click *OK*.

   The dialog box prompts you for the URL of the new instance.

3. Accept the default URL or replace it with a different URL, and click *OK*.

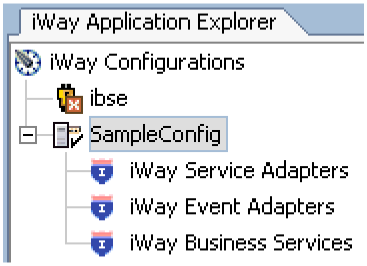
   A node representing the new configuration appears below the iWay Configurations node. The right pane provides details of the configuration you created.

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



4. Right-click the configuration to which you want to connect, for example, SampleConfig, and select *Connect*.

   The iWay Service Adapters, Event Adapters, and Business Services nodes appear.



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

   The iWay Service Adapters list includes an SAP node that enables you to connect to SAP 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-17.

   The iWay Event Adapters list includes an SAP node that enables you to create ports and channels for SAP event handling. For more information, see *Understanding iWay Event Functionality* on page A-26.

Connecting to SAP

To browse BAPIs, RFCs, and IDOCs in SAP, you must create a target for SAP. The target serves as your connection point and is automatically saved after it is created. You must establish a connection to SAP every time you start iWay Application Explorer or after you disconnect from SAP.

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

Creating and Connecting to a Target

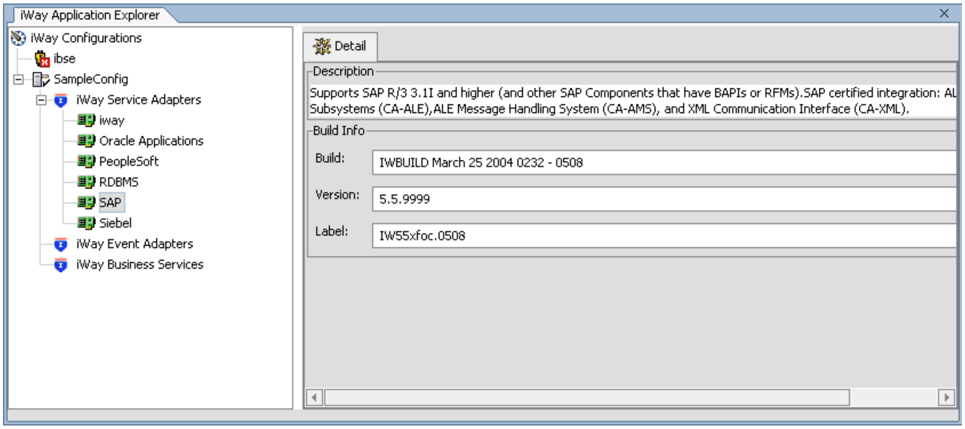
To connect to SAP, you must create and connect to a target using Application Explorer.

Procedure How to Create a New Target for SAP

To create a target for SAP:

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

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



Description

Supports SAP R/3 3.1I and higher (and other SAP Components that have BAPIs or RFMs).SAP certified integration: AL
Subsystems (CA-ALE),ALE Message Handling System (CA-AMS), and XML Communication Interface (CA-XML).

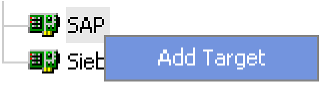
Build Info

Build: IWBUILD March 25 2004 0232 - 0508

Version: 5.5.9999

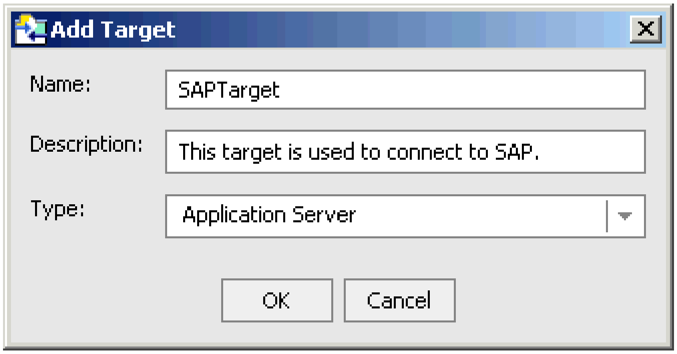
Label: IW55xfoc.0508

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



3. Select *Add Target*.

The Add target dialog box opens.



Name: SAPTarget

Description: This target is used to connect to SAP.

Type: Application Server

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

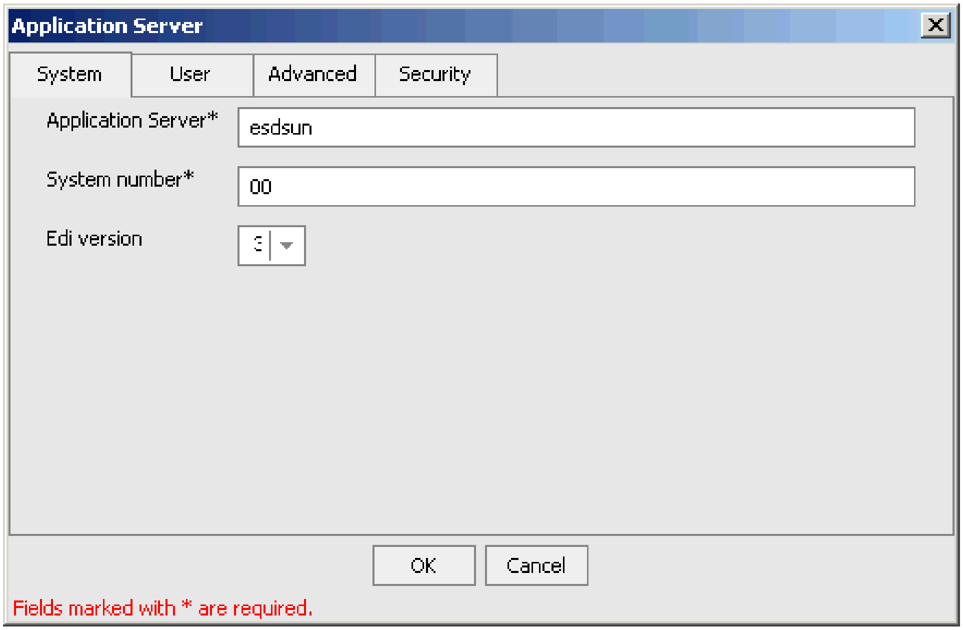
b. In the Description field, enter a brief description for the target.

c. From the Type drop-down list, select the type of server to which you are connecting.

Application Server is the default value.

4. Click *OK*.

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



Application Server* esdsun

System number* 00

Edi version 3

Fields marked with * are required.

5. Enter the following SAP system information on the System tab.

    a. In the Application Server field, type the host name or IP address for the machine that is hosting the SAP application (required).

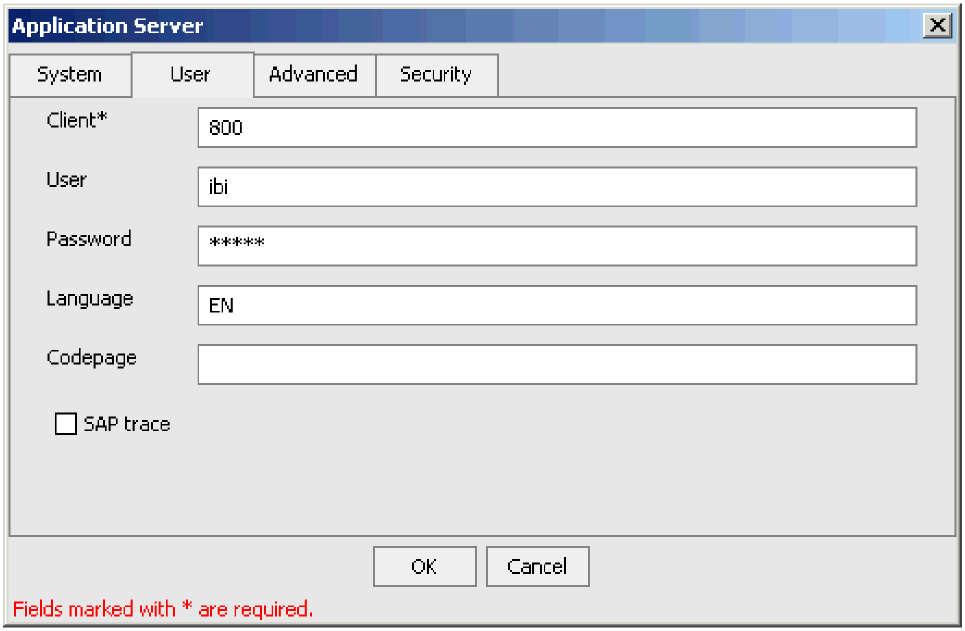
    b. In the System number field, type the system number defined to SAP for client communications (required).

    c. From the EDI version drop-down list, select the Electronic Data Interchange (EDI) document version that you are using with the iWay Application Adapter for SAP.

        Version 3 is the default value.

6. To view and provide information on the User tab, click *User*.

The User tab becomes active.



Client* 800

User ibi

Password *****

Language EN

Codepage

□ SAP trace

Fields marked with * are required.

a. In the Client field, type the client number defined for the SAP application for client communications (required).

b. In the User field, type a valid user ID for the SAP application.

c. In the Password field, type a valid password for the SAP application.

d. In the Language field, type a language key.

   EN (English) is the default value.

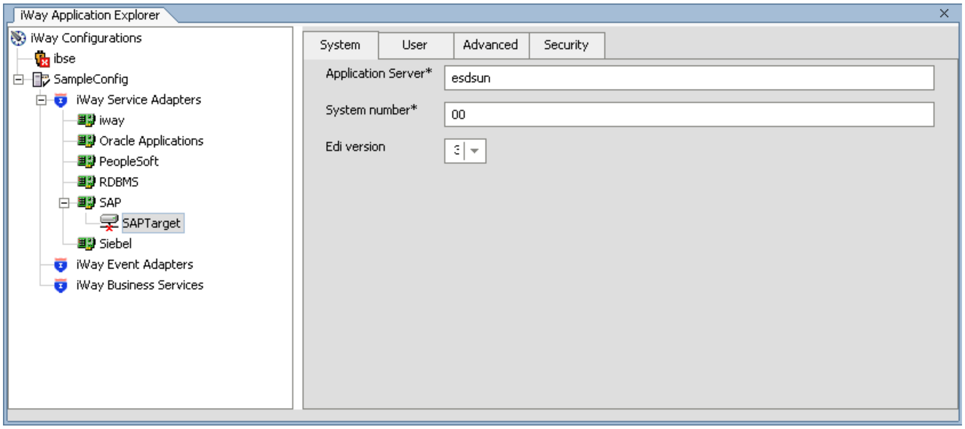
e. In the Codepage field, type a character code page value.

f. To enable traces, select the *SAP trace* check box.

After you provide information for the System and User tabs, you have completed the SAP target configuration. However, you can specify additional parameters in the Advanced and Security tabs.

7. Click *OK*.

The new target (SAPTarget) appears in the left pane under the SAP node.



Application Server*: esdsun

System number*: 00

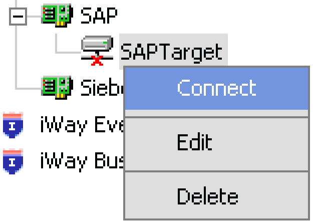
Edi version: 3

In the right pane, you can review the connection information you specified. You are ready to connect to the application target you defined.

Procedure How to Connect to a Target

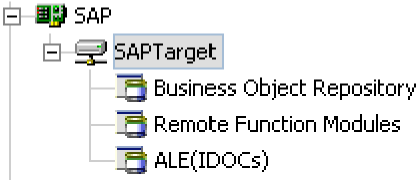
To connect to an Enterprise Information System (EIS), for example, SAP:

1. In the left pane, expand the *SAP* node and select the target to which you want to connect, for example, SAPTarget.
2. In the right pane, click the *User* tab and type a valid password for the SAP application.



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

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



4. Expand the target node to reveal the list of SAP business objects.

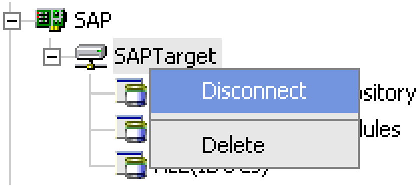
Managing a Target

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:



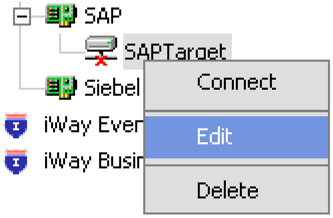
1. Right-click the target from which you want to disconnect.
2. Select *Disconnect*.

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

Procedure How to Edit a Target

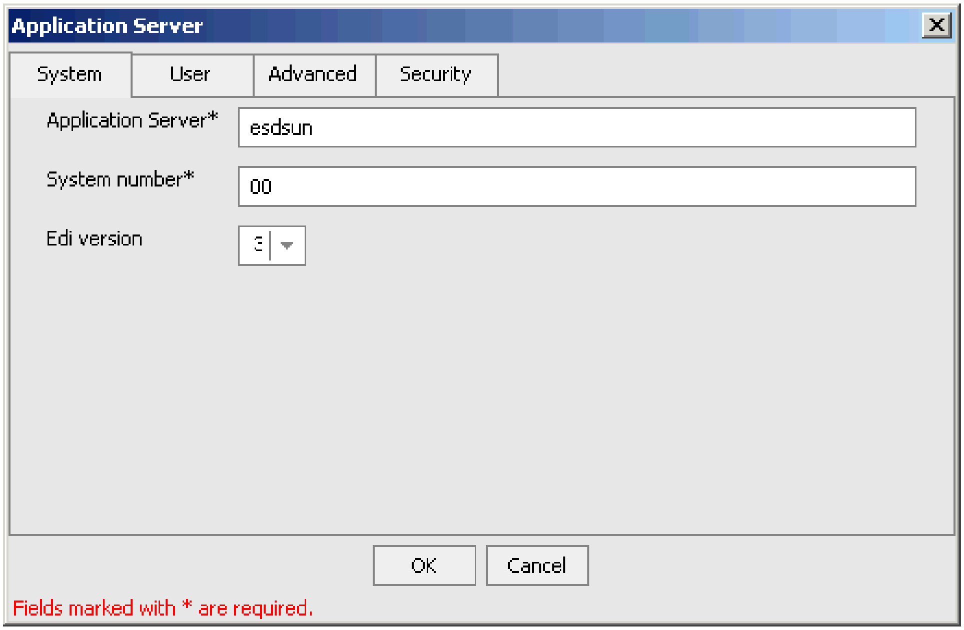
To edit a target:

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



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

The Application Server dialog box opens.



Application Server* esdsun

System number* 00

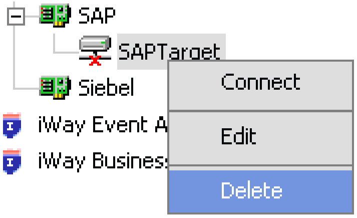
Edi version 3

Fields marked with * are required.

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, for example, SAPTarget.
2. Select *Delete*.

   The SAPTarget node disappears from the left pane.

Viewing an Application System Object and Creating an XML Schema

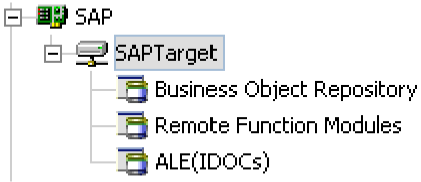
After you create a new configuration and connect to SAP, iWay Application Explorer enables you to explore and browse business object metadata. For example, Application Explorer enables you to view BAPI, RFC, and iDOC metadata stored in the SAP Business Object repository.

Procedure How to View an SAP System Object

To view an application system object:

1. Click the icon to the left of the target name, for example, SAPTarget.

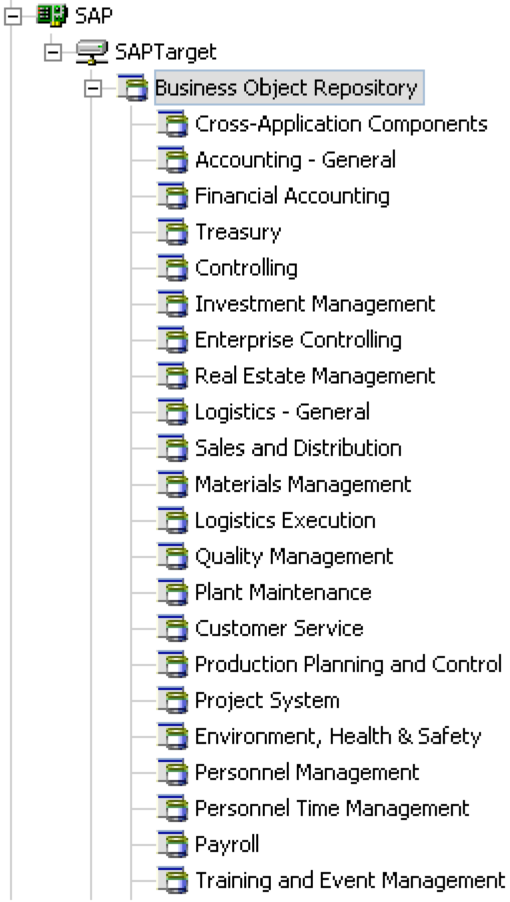
   The available system objects appear.

   SAP
   SAPTarget
   Business Object Repository
   Remote Function Modules
   ALE(IDOCs)

2. To expand the SAP repository node you want to explore, click the icon to the left of the repository name, for example, Business Object Repository.

A list of business object groups appears.



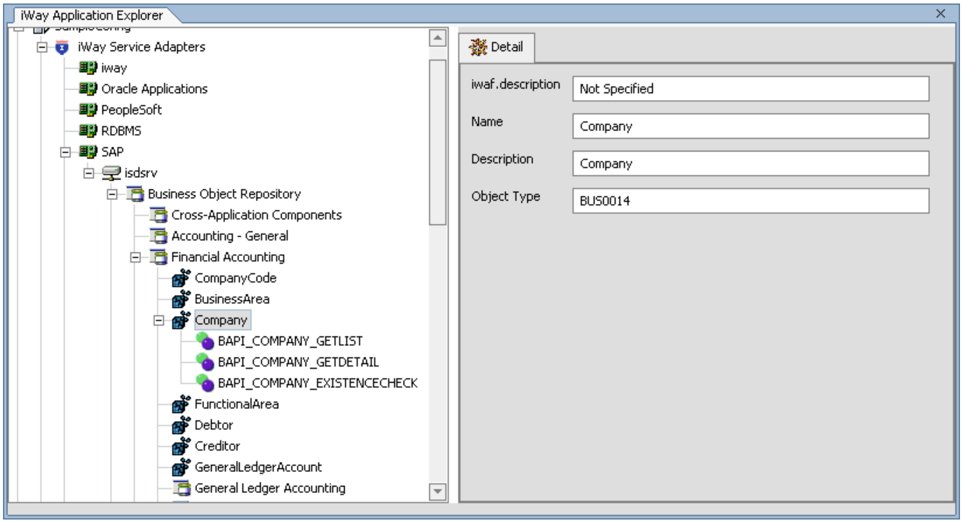
- SAP
  - SAPTarget
    - Business Object Repository
      - Cross-Application Components
      - Accounting - General
      - Financial Accounting
      - Treasury
      - Controlling
      - Investment Management
      - Enterprise Controlling
      - Real Estate Management
      - Logistics - General
      - Sales and Distribution
      - Materials Management
      - Logistics Execution
      - Quality Management
      - Plant Maintenance
      - Customer Service
      - Production Planning and Control
      - Project System
      - Environment, Health & Safety
      - Personnel Management
      - Personnel Time Management
      - Payroll
      - Training and Event Management

3. Expand the *Financial Accounting* group.

   A list of business objects related to Financial Accounting appears.

4. Scroll down and click the *Company* business object.

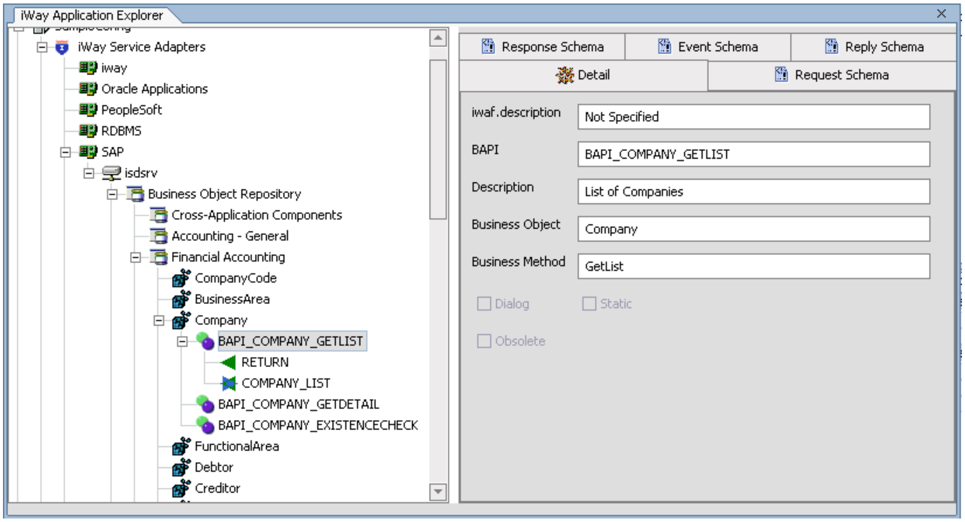
In the left pane, the following list of BAPI methods related to Company appears:



iwaf.description: Not Specified
Name: Company
Description: Company
Object Type: BUS0014

5. Click the BAPI method named *BAPI_COMPANY_GETLIST.*

In the right pane, properties for the BAPI_COMPANY_GETLIST method appear in the Detail tab.



iwaf.description: Not Specified
BAPI: BAPI_COMPANY_GETLIST
Description: List of Companies
Business Object: Company
Business Method: GetList
□ Dialog □ Static
□ Obsolete

To view the following XML schemas for the method, click the corresponding tab in the right pane.

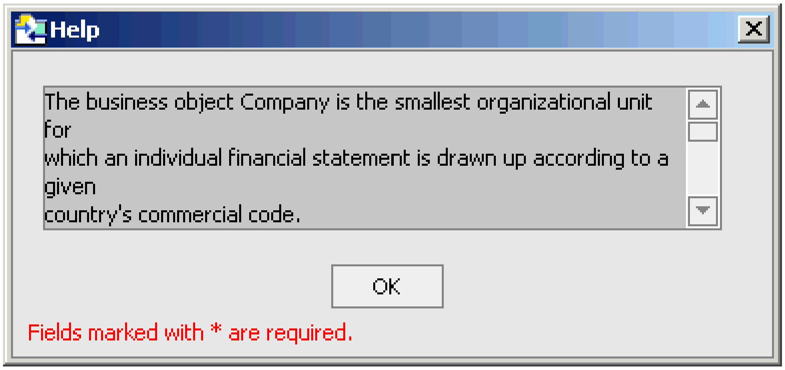
- Request
- Response
- Reply
- Event

Procedure How to View Additional Information for a Group or System Object in SAP

To view additional information for a particular group or object in SAP:

1. Right-click a component, for example, Company, and select *Help*.

   The Help window opens.



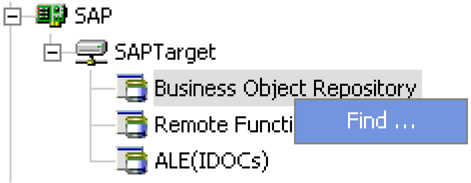
The business object Company is the smallest organizational unit
for
which an individual financial statement is drawn up according to a
given
country's commercial code.

Fields marked with * are required.

2. After you finish viewing the information, click *OK*.

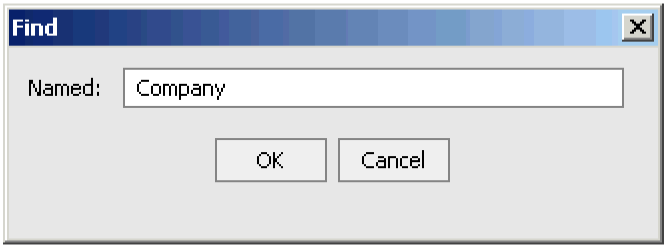
Procedure How to Search for a System Object in SAP

To narrow your search for a system object in SAP:



1. Right-click the system object category, for example, Business Object Repository and click *Find*.

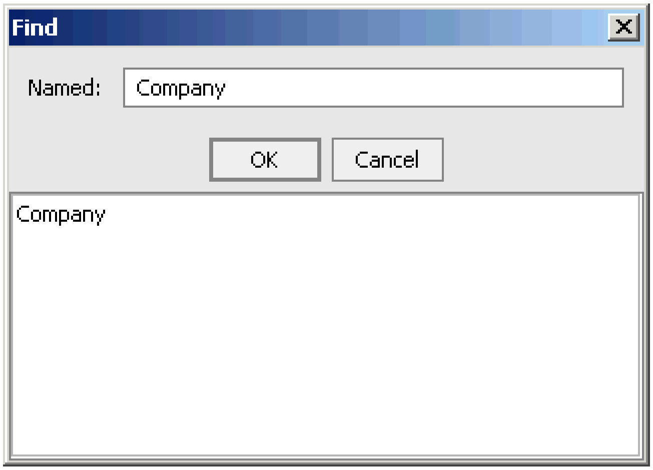
The Find dialog box opens.



Named: Company

2. Type the group name you are searching for and click *OK*.

   If a match is found, the Find dialog box expands to display the results.



Named: Company

Company

   If no matches are found, a message appears that indicates that no matches exist.

3. To automatically expand the group and view all the methods that are available in the left pane of Application Explorer, click the group name in the list of results.

Reference Schema Location

After you browse the application system business object repository and select a specific method, the relevant XML schemas automatically are created for that method and stored in the repository you created, for example:

```
drive:\Program Files\iWay55\bea\ibse\wsdl\schemas\service\SAP
\SAPTarget\S5710F9F
```

where

SAPTarget

Is the name of the SAP target.

`S5710F9F`

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

Creating an iWay Business Service

iWay Java Swing Application Explorer provides Web developers with a simple, consistent mechanism for extending the capabilities of the iWay Adapter. The iWay Business Services Engine (iBSE) exposes functionality as Web services. It 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.

After you browse the application system business object repository and create an XML schema for the object, you can generate an iWay business service for the object you wish to use with your adapter.

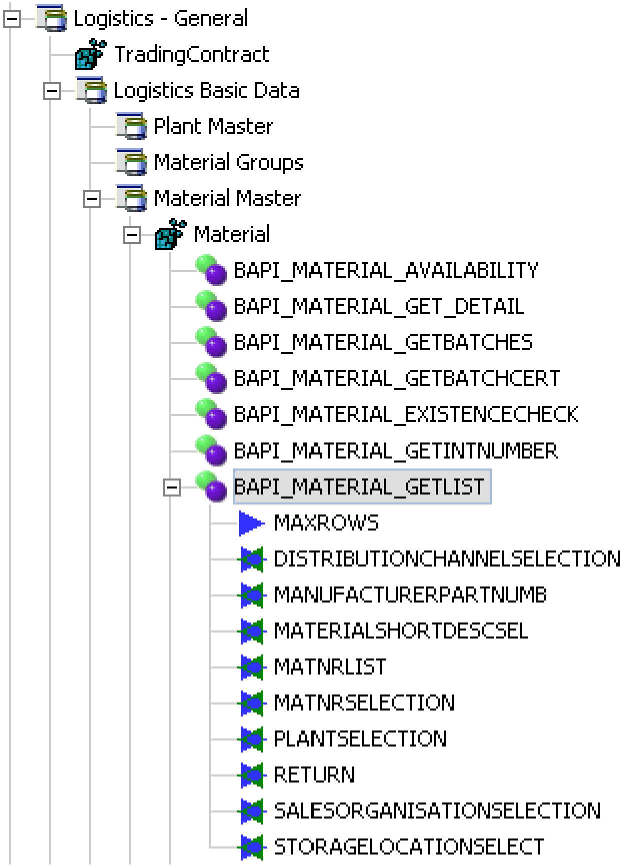
You can generate a business service (also known as a Web service) for objects you wish to use with your adapter. After creating the Web service, you can export the WSDL file for the Web service to a directory accessible by BEA WebLogic Workshop, making it easy to incorporate iWay Web services into BEA WebLogic Workshop workflows.

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*.

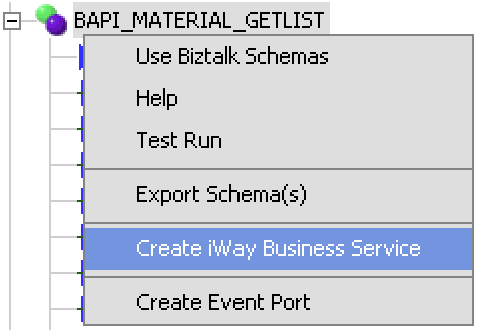
The following procedures use the SAP BAPI method called BAPI_MATERIAL_GETLIST as an example that returns a list of materials from SAP.

Procedure How to Create an iWay Business Service

To create an iWay Business Service:

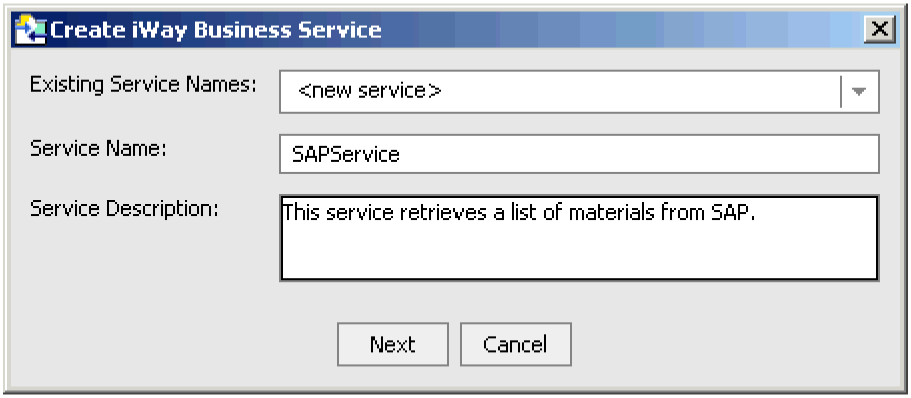


1. Select the *BAPI_MATERIAL_GETLIST* method from the Business Object Repository.



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

   The Create iWay Business Service dialog box opens.



Create iWay Business Service

Existing Service Names: <new service>

Service Name: SAPService

Service Description: This service retrieves a list of materials from SAP.

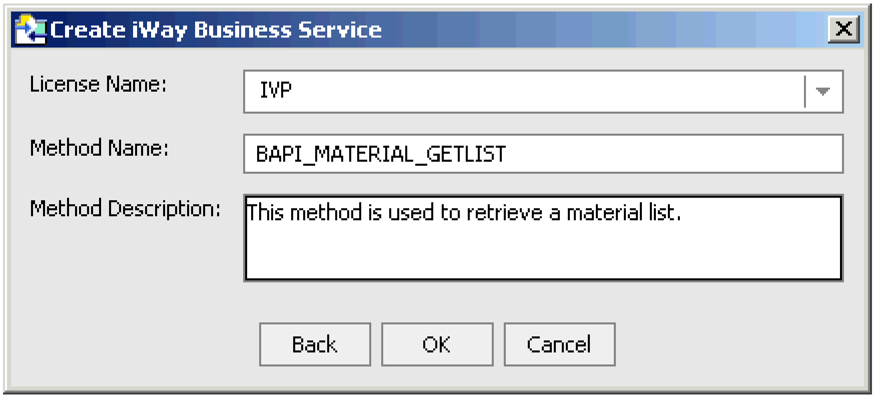
   a. From the Existing Service Names drop-down list, select whether you want to create a new service name or use an existing service name.

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

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

3. Click *Next*.

   The Create iWay Business Service dialog box displays additional fields.



Create iWay Business Service

License Name: IVP

Method Name: BAPI_MATERIAL_GETLIST

Method Description: This method is used to retrieve a material list.

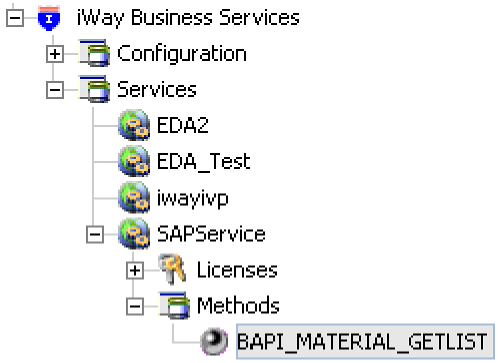
   a. From the License Name drop-down list, select a license.

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

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

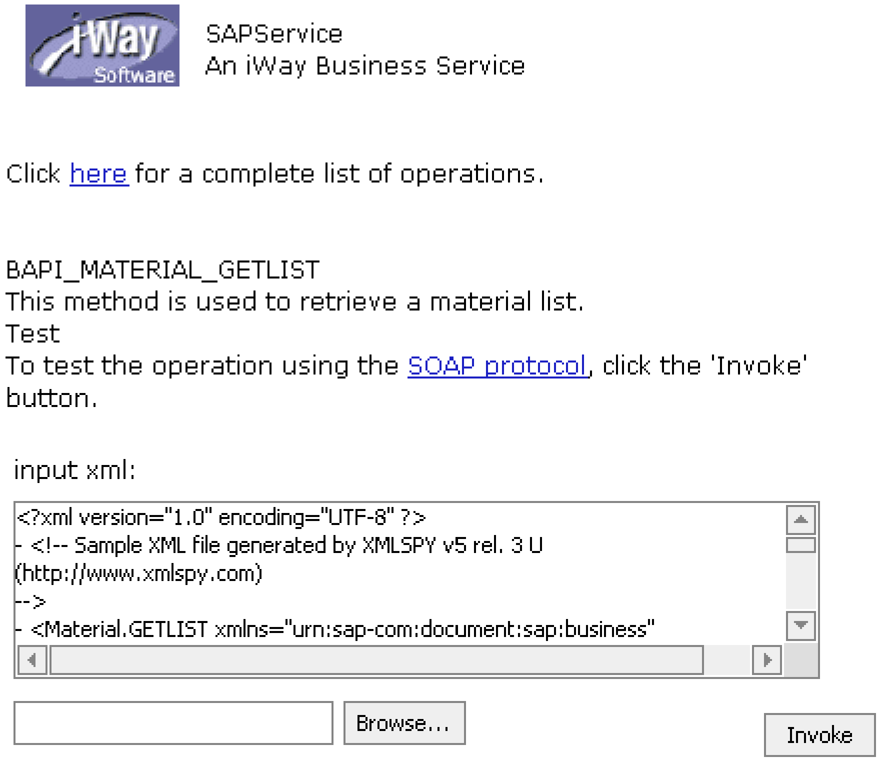
4. Click *OK*.

   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. The SAPService node is expanded, and the BAPI_MATERIAL_GETLIST method automatically is selected.

On the right, the test pane for the BAPI_MATERIAL_GETLIST method opens.



SAPService
An iWay Business Service

Click here for a complete list of operations.

BAPI_MATERIAL_GETLIST
This method is used to retrieve a material list.
Test
To test the operation using the SOAP protocol, click the 'Invoke' button.

input xml:

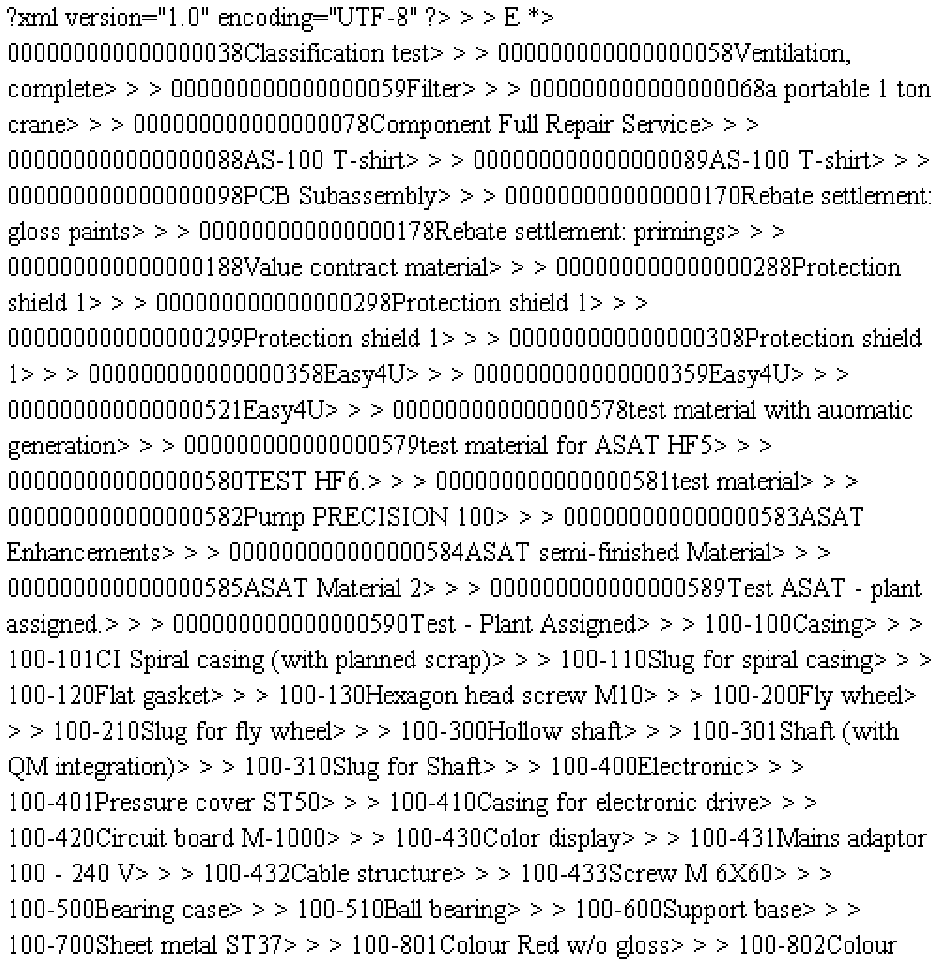
```
<?xml version="1.0" encoding="UTF-8" ?>
- <!-- Sample XML file generated by XMLSPY v5 rel. 3 U
(http://www.xmlspy.com)
-->
- <Material.GETLIST xmlns="urn:sap-com:document:sap:business"
```

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

   For sample input XML, see *Retrieving a List of Materials Using the SAP BAPI_MATERIAL_GETLIST Method* on page A-24.

6. Click *Invoke*.

The result appears in the right pane.



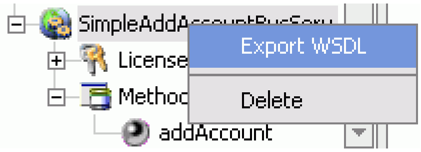
```
?xml version="1.0" encoding="UTF-8" ?> > > E *>
000000000000000038Classification test> > > 000000000000000058Ventilation,
complete> > > 000000000000000059Filter> > > 000000000000000068a portable 1 ton
crane> > > 000000000000000078Component Full Repair Service> > >
000000000000000088AS-100 T-shirt> > > 000000000000000089AS-100 T-shirt> > >
000000000000000098PCB Subassembly> > > 000000000000000170Rebate settlement:
gloss paints> > > 000000000000000178Rebate settlement: primings> > >
000000000000000188Value contract material> > > 000000000000000288Protection
shield 1> > > 000000000000000298Protection shield 1> > >
000000000000000299Protection shield 1> > > 000000000000000308Protection shield
1> > > 000000000000000358Easy4U> > > 000000000000000359Easy4U> > >
000000000000000521Easy4U> > > 000000000000000578test material with auomatic
generation> > > 000000000000000579test material for ASAT HF5> > >
000000000000000580TEST HF6.> > > 000000000000000581test material> > >
000000000000000582Pump PRECISION 100> > > 000000000000000583ASAT
Enhancements> > > 000000000000000584ASAT semi-finished Material> > >
000000000000000585ASAT Material 2> > > 000000000000000589Test ASAT - plant
assigned.> > > 000000000000000590Test - Plant Assigned> > > 100-100Casing> > >
100-101CI Spiral casing (with planned scrap)> > > 100-110Slug for spiral casing> > >
100-120Flat gasket> > > 100-130Hexagon head screw M10> > > 100-200Fly wheel>
> > 100-210Slug for fly wheel> > > 100-300Hollow shaft> > > 100-301Shaft (with
QM integration)> > > 100-310Slug for Shaft> > > 100-400Electronic> > >
100-401Pressure cover ST50> > > 100-410Casing for electronic drive> > >
100-420Circuit board M-1000> > > 100-430Color display> > > 100-431Mains adaptor
100 - 240 V> > > 100-432Cable structure> > > 100-433Screw M 6X60> > >
100-500Bearing case> > > 100-510Ball bearing> > > 100-600Support base> > >
100-700Sheet metal ST37> > > 100-801Colour Red w/o gloss> > > 100-802Colour
```

Exporting iWay WSDL for Use in BEA WebLogic WorkShop Workflows

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 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 iWay WSDL to a directory accessible to BEA WebLogic Workshop:

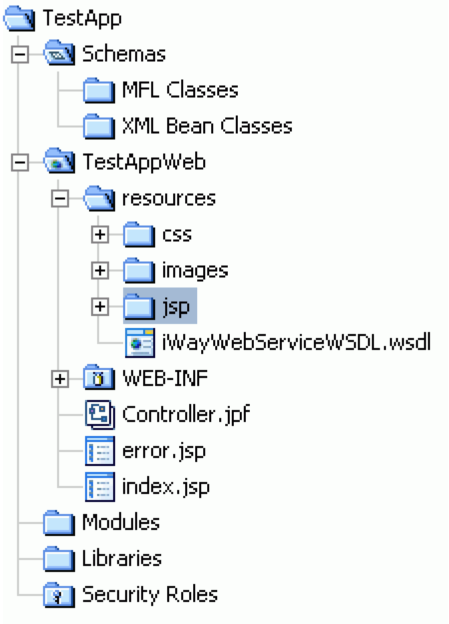


1. After you create the Web service, right-click the Web service name and select *Export WSDL*.

   The Save dialog box appears.

2. Save the WSDL to a directory that is 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.



Example Retrieving a List of Materials Using the SAP BAPI_MATERIAL_GETLIST Method

The following input XML retrieves a list of materials using the SAP BAPI_MATERIAL_GETLIST method. You can use the input XML to test the iWay Business Service you created.

```
  <?xml version="1.0" encoding="UTF-8" ?>
- <!-- Sample XML file generated by XMLSPY v5 rel. 3 U
(http://www.xmlspy.com)
  -->
- <Material.GETLIST xmlns="urn:sap-com:document:sap:business"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xsi:schemaLocation="urn:sap-com:document:sap:business
C:\PROGRA~1\BEASYS~1\BEAAPP~1\sessions\default\SAP\beasap46\service_BAPI_
MATERIAL_GETLIST.xsd">
  <MAXROWS>1000</MAXROWS>
- <DISTRIBUTIONCHANNELSELECTION>
- <item>
  <SIGN />
  <OPTION />
  <DISTR_CHAN_LOW />
  <DISTR_CHAN_HIGH />
  </item>
  </DISTRIBUTIONCHANNELSELECTION>
- <MANUFACTURERPARTNUMB>
- <item>
  <MANU_MAT />
  <MFR_NO />
  </item>
  </MANUFACTURERPARTNUMB>
- <MATERIALSHORTDESCSEL>
- <item>
  <SIGN />
  <OPTION />
  <DESCR_LOW />
  <DESCR_HIGH />
  </item>
  </MATERIALSHORTDESCSEL>
- <MATNRLIST>
- <item>
  <MATERIAL />
  <MATL_DESC />
  <MATERIAL_EXTERNAL />
  <MATERIAL_GUID />
  <MATERIAL_VERSION />
  </item>
  </MATNRLIST>
- <MATNRSELECTION>
- <item>
  <SIGN>E</SIGN>
  <OPTION>BT</OPTION>
  <MATNR_LOW>1000</MATNR_LOW>
  <MATNR_HIGH>1010</MATNR_HIGH>
  </item>
  </MATNRSELECTION>
- <PLANTSELECTION>
- <item>
  <SIGN />
  <OPTION />
  <PLANT_LOW />
  <PLANT_HIGH />
  </item>
  </PLANTSELECTION>
- <RETURN>
- <item>
  <TYPE />
  <ID />
  <NUMBER />
  <MESSAGE />
  <LOG_NO />
  <LOG_MSG_NO />
  <MESSAGE_V1 />
  <MESSAGE_V2 />
  <MESSAGE_V3 />
  <MESSAGE_V4 />
  <PARAMETER />
  <ROW>0</ROW>
  <FIELD />
  <SYSTEM />
  </item>
  </RETURN>
- <SALESORGANISATIONSELECTION>
- <item>
  <SIGN />
  <OPTION />
  <SALESORG_LOW />
  <SALESORG_HIGH />
  </item>
  </SALESORGANISATIONSELECTION>
- <STORAGELOCATIONSELECT>
- <item>
  <SIGN />
  <OPTION />
  <STLOC_LOW />
  <STLOC_HIGH />
  </item>
  </STORAGELOCATIONSELECT>
  </Material.GETLIST>
```

Understanding iWay Event Functionality

Events are generated as a result of activity in an application system. You can an use an event to trigger an action in your application. For example, SAP R/3 may generate an event when customer information is updated. If your application must perform 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 iWay Java Swing Application Explorer. To create an iWay Event, you must create a port and a channel.

- Port

  A port associates a particular business object exposed by the iWay 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*.

- 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 iWay Adapter. For more information, see *Creating a Channel* on page A-44.

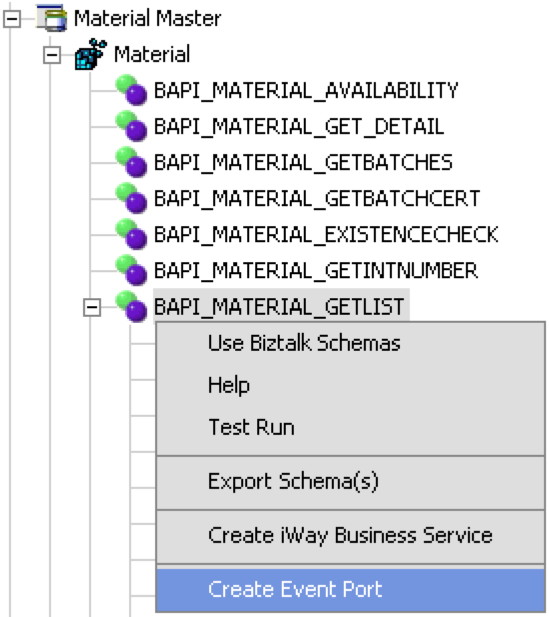
Creating an Event Port

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

- FILE
- IBSE
- MSMQ
- JMSQ
- SOAP
- HTTP
- MQ Series

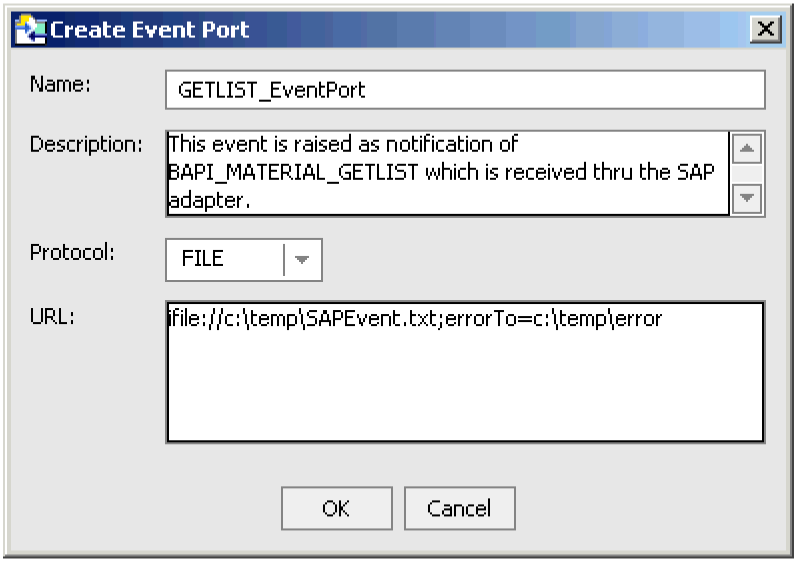
Procedure How to Create an Event Port for the File Disposition

To create an event port for the File disposition:



1. In the Business Object Repository, right-click the *BAPI_MATERIAL_GETLIST* method and select *Create Event Port*.

The Create Event Port dialog box opens.



Name: GETLIST_EventPort

Description: This event is raised as notification of BAPI_MATERIAL_GETLIST which is received thru the SAP adapter.

Protocol: FILE

URL: file://c:\temp\SAPEvent.txt;errorTo=c:\temp\error

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

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 where the event data is written using the following format:

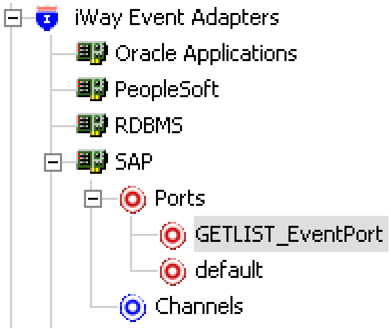
```
file://location[;errorTo=errorDest]
```

The following table describes the disposition parameters.

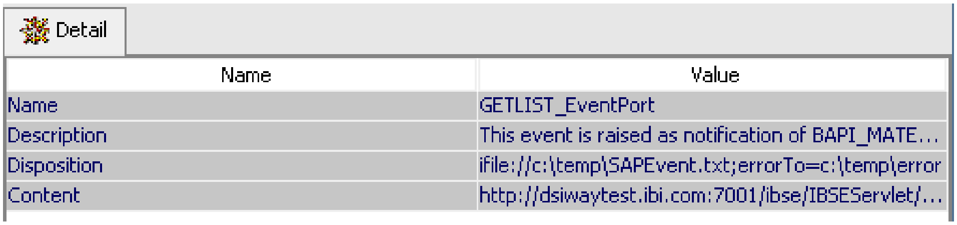
Parameter	**Description**
location	The full directory path and file name to which the data is written.
errorTo	Location where error logs are sent. Optional. A predefined port name or another disposition URL. The URL must be complete, including the protocol.

2. Click *OK*.

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



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



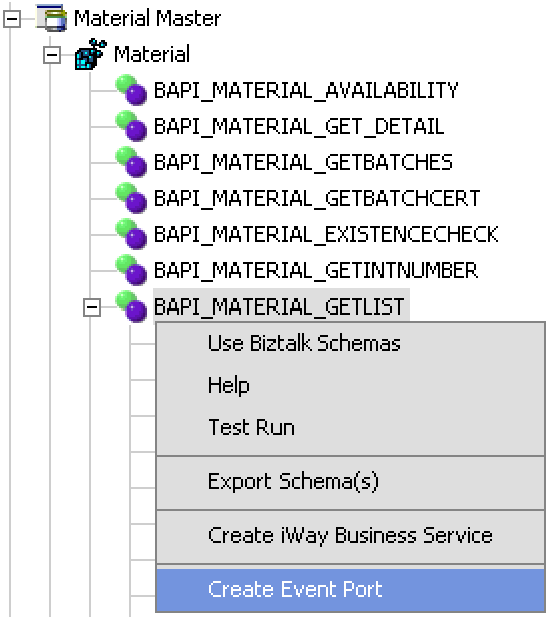
Name	Value
Name	GETLIST_EventPort
Description	This event is raised as notification of BAPI_MATE...
Disposition	iFile://c:\temp\SAPEvent.txt;errorTo=c:\temp\error
Content	http://dsiwaytest.ibi.com:7001/ibse/IBSEServlet/...

You are ready to associate the event port for File with a channel.

Procedure How to Create a Port for the iBSE Disposition

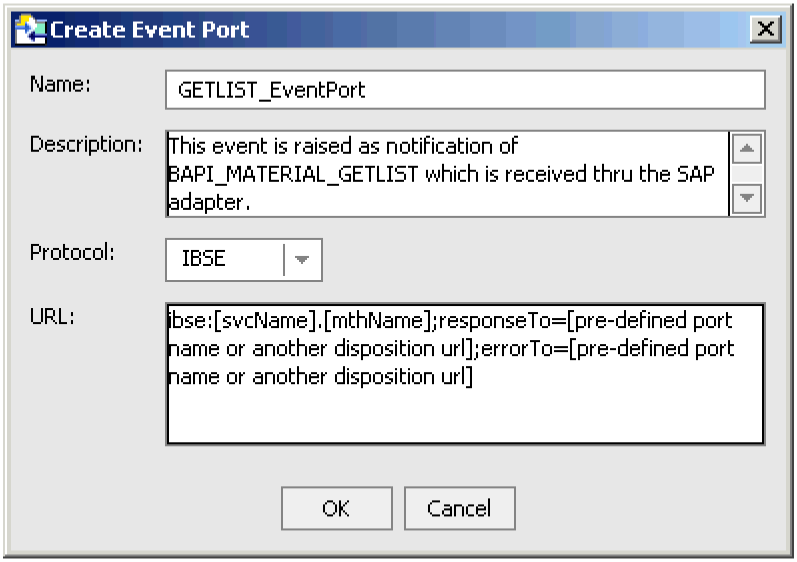
The iBSE disposition allows an event to launch an iWay Business Service Method.

To create a port for iBSE:



1. From the Business Object Repository, right-click the *BAPI_MATERIAL_GETLIST* method and select *Create Event Port*.

The Create Event Port dialog box opens.



Name: GETLIST_EventPort

Description: This event is raised as notification of BAPI_MATERIAL_GETLIST which is received thru the SAP adapter.

Protocol: IBSE

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

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

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:

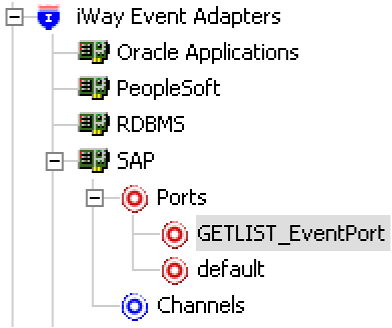
```
ibse:/svcName.methName[;responseTo=respDest][;errorTo=errorDest]
```

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 to post responses to the Web service. 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.

2. Click *OK*.

The event port you created appears in the left pane under the Ports node.

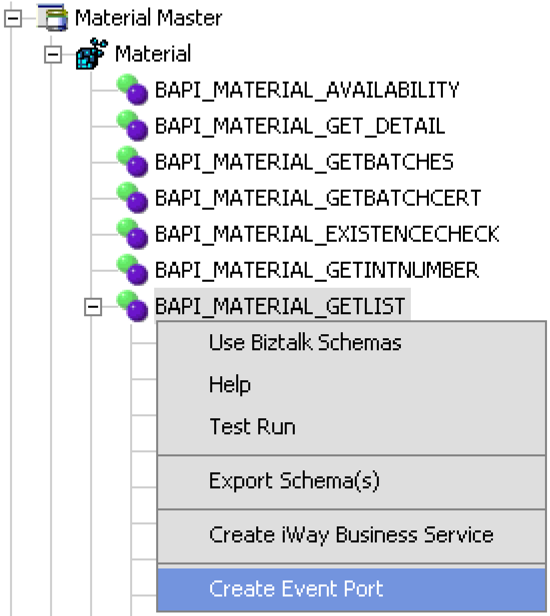


In the right pane, a table appears that summarizes the information associated with the port you created. You are ready to associate the event port for IBSE with a channel.

Procedure How to Create a Port for the MSMQ Disposition

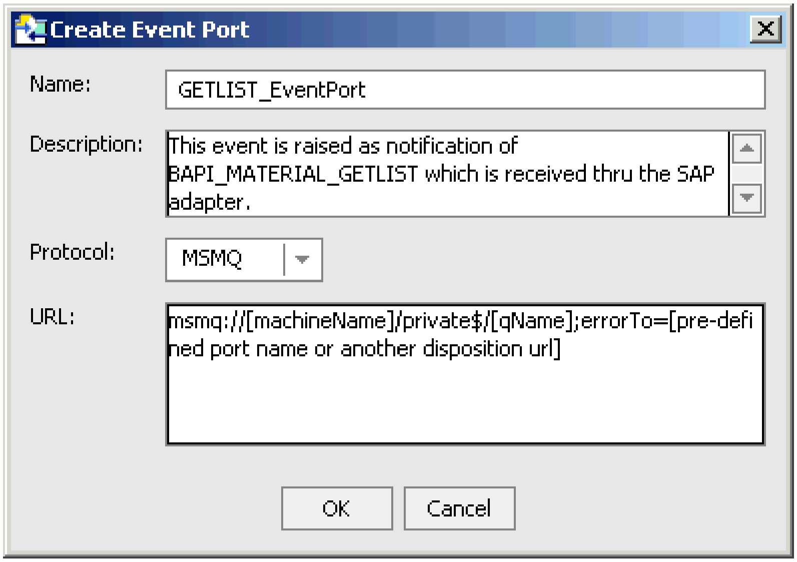
The MSMQ disposition supports public and private queues.

To create a port for MSMQ:



1. In the Business Object Repository, right-click the *BAPI_MATERIAL_GETLIST* method and select *Create Event Port*.

The Create Event Port dialog box opens.



Name: GETLIST_EventPort

Description: This event is raised as notification of BAPI_MATERIAL_GETLIST which is received thru the SAP adapter.

Protocol: MSMQ

URL: msmq://[machineName]/private$/[qName];errorTo=[pre-defined port name or another disposition url]

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

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

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

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

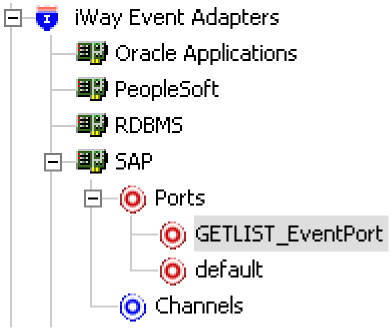
```
msmq:/host/queueType/queueName[;errorTo=errorDest]
```

The following table defines the disposition parameters.

Parameter	Description
host	Name of the host on which the Microsoft Queuing system runs.
queueType	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.
errorDest	Location where error logs are sent. Optional. A predefined port name or another disposition URL. The URL must be complete, including the protocol.

2. Click *OK*.

   In the left pane, the event port you created appears under the Ports node.

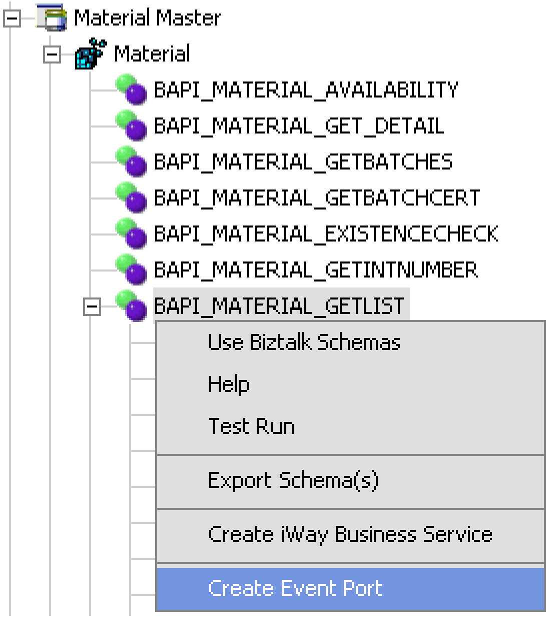


   In the right pane, a table appears that summarizes the information associated with the port you created. You are ready to associate the event port for MSMQ with a channel.

Procedure How to Create a Port for the JMS Disposition

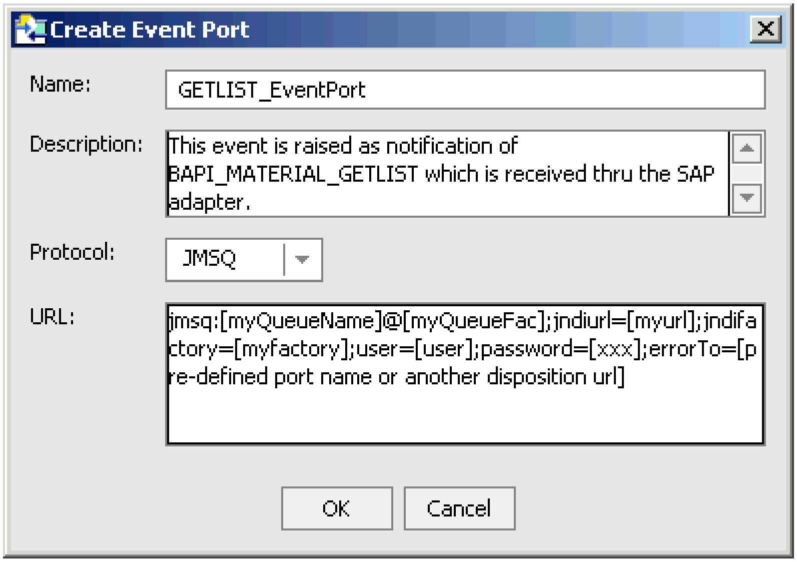
The JMS disposition enables an event to be enqueued to a JMS queue.

To create a port for a JMS queue disposition:



1. In the Business Object Repository, right-click the *BAPI_MATERIAL_GETLIST* method and select *Create Event Port*.

The Create Event Port dialog box opens.



Name: GETLIST_EventPort

Description: This event is raised as notification of BAPI_MATERIAL_GETLIST which is received thru the SAP adapter.

Protocol: JMSQ

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

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

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

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

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

```
jmsq:queue@conn_factory;jndiurl=jndi_url;jndifactory=jndi_factory;
user=userID;password=pass[;errorTo=errorDest]
```

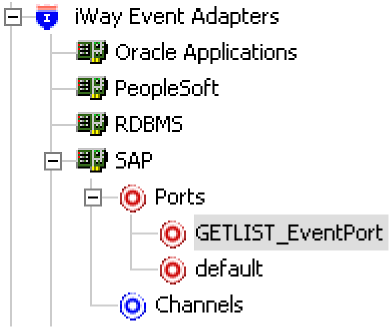
The following table describes the disposition parameters.

Parameter	**Description**
queue	Name of a queue to which events are emitted.
conn_factory	The connection factory, a resource which contains information about the JMS Server. The BEA WebLogic connection factory is: `javax.jms.QueueConnectionFactory`

Parameter	**Description**
jndi_url	The URL of the application server. For BEA WebLogic Server this 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 BEA WebLogic factory is weblogic.jndi.WLInitialContextFactory.
userID	User ID associated with this queue.
pass	Password for 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.

2. Click *OK*.

The event port you created appears in the left pane under the Ports node.

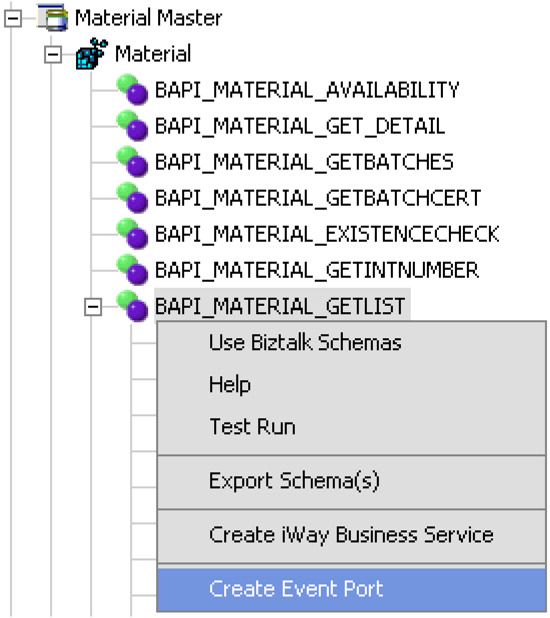


In the right pane, a table appears that summarizes the information associated with the port you created. You are ready to associate the event port for JMSQ with a channel.

Procedure How to Create a Port for the SOAP Disposition

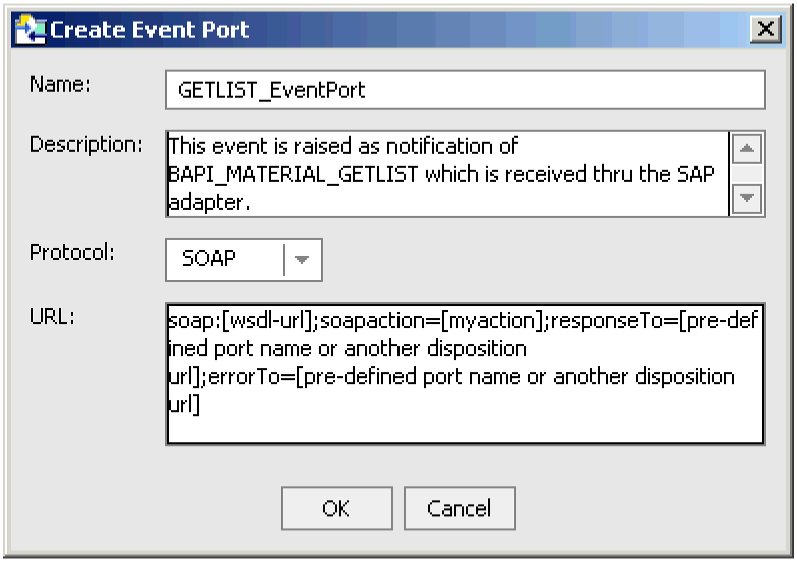
The SOAP disposition allows an event to launch a Web service specified by a WSDL file. A soapaction is optional; "" is the default value.

To create a port for a SOAP disposition:



1. In the Business Object Repository, right-click the *BAPI_MATERIAL_GETLIST* method and select *Create Event Port*.

The Create Event Port dialog box opens.



Create Event Port

Name: GETLIST_EventPort

Description: This event is raised as notification of BAPI_MATERIAL_GETLIST which is received thru the SAP adapter.

Protocol: SOAP

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

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

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

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

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

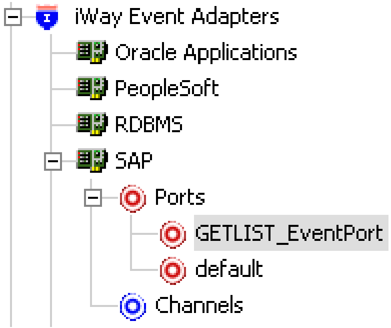
```
soap:wsdl-url;soapaction=action[;responseTo=respDest]
[;errorTo=errorDest]
```

The following table describes the disposition parameters.

Parameter	Description
wsdl-url	The URL to the WSDL file required to create the SOAP message.
action	Method that is called by the disposition.
respDest	Location to post responses. 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.
errorDest	Location where error logs are sent. Optional. A predefined port name or another disposition URL. The URL must be complete, including the protocol.

2. Click *OK*.

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

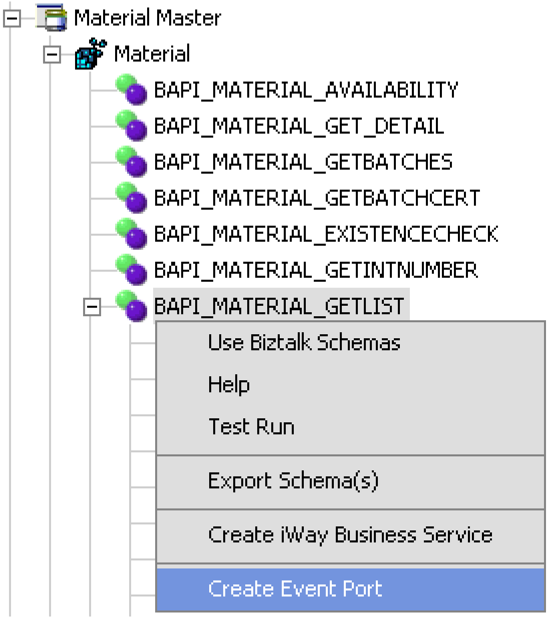


In the right pane, a table appears that summarizes the information associated with the port you created. You are ready to associate the event port for SOAP with a channel.

Procedure How to Create a Port for the HTTP Disposition

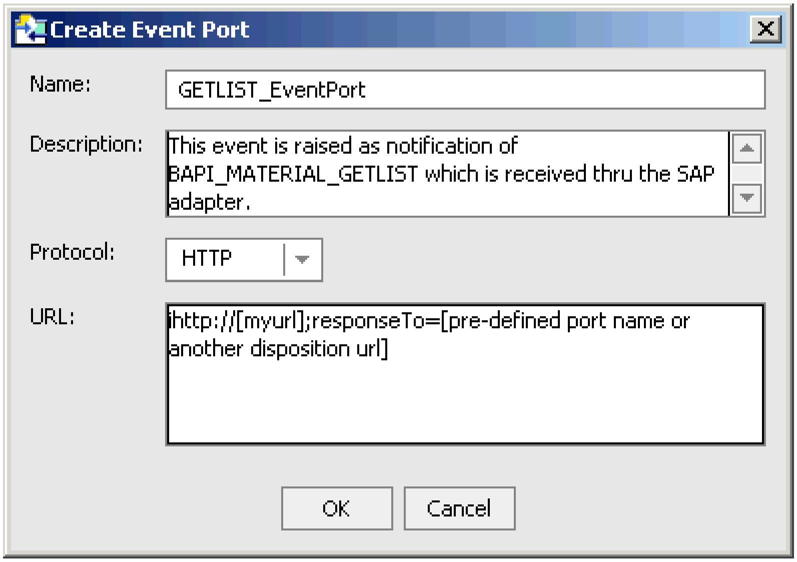
The HTTP disposition uses an HTTP URL to specify an HTTP end point to which the event document is posted.

To create a port for an HTTP disposition:



1. In the Business Object Repository, right-click the *BAPI_MATERIAL_GETLIST* method and select *Create Event Port*.

The Create Event Port dialog box opens.



Name: GETLIST_EventPort

Description: This event is raised as notification of BAPI_MATERIAL_GETLIST which is received thru the SAP adapter.

Protocol: HTTP

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

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

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:

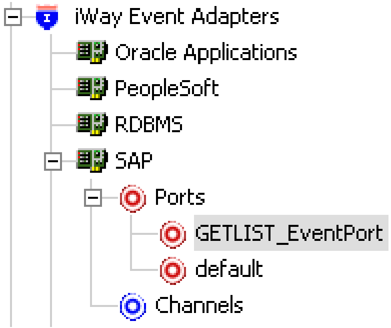
`ihttp://url;responseTo=respDest`

The following table describes the disposition parameters.

Parameter	**Description**
url	The URL target for the post operation.
respDest	The location to which responses are posted. Optional. This can be 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.

2. Click *OK*.

The event port you created appears in the left pane under the Ports node.



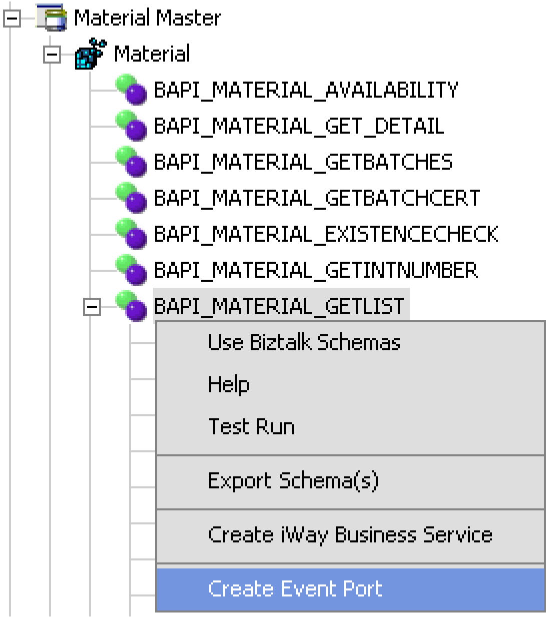
In the right pane, a table appears that summarizes the information associated with the port you created.

You are ready to associate the event port for HTTP with a channel.

Procedure How to Create a Port for the MQ Series Disposition

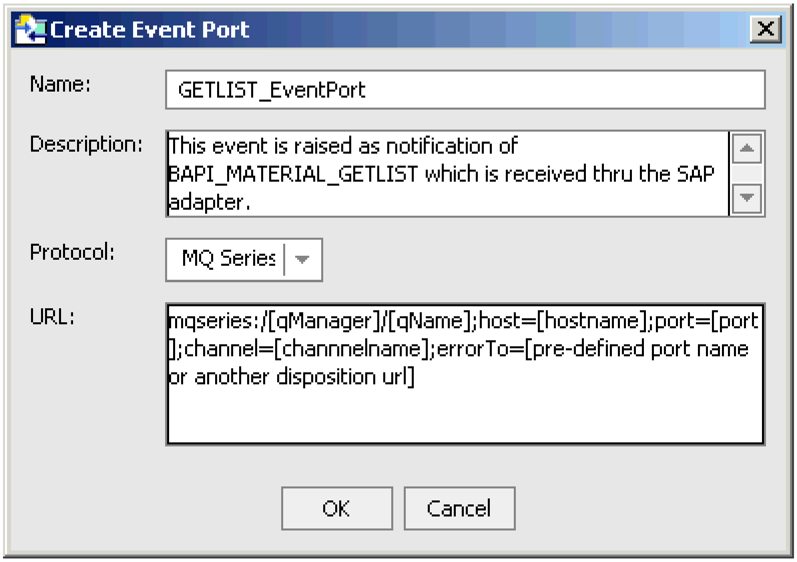
The MQ Series disposition allows an event to be enqueued to an MQ Series queue. Both queue manager and queue name may be specified. To create a port for MQ Series:

1. Select the *BAPI_MATERIAL_GETLIST* method from the Business Object Repository.



2. Right-click the method and select *Create Event Port*.

The Create Event Port dialog box opens.



Name: GETLIST_EventPort

Description: This event is raised as notification of BAPI_MATERIAL_GETLIST which is received thru the SAP adapter.

Protocol: MQ Series

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

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

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

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

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

```
mqseries:/qManager/qName;host=hostName;port=portNum;
channel=chanName[;errorTo=errorDest]
```

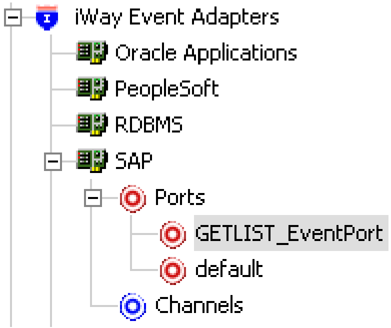
The following table describes the disposition parameters.

Parameter	Description
qManager	Name of the queue manager to which the server must connect.
qName	Name of the queue where messages are placed.
hostName	Name of the host on which MQ Series 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 (for MQ client only). The default MQ Series 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*.

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



iWay Event Adapters
Oracle Applications
PeopleSoft
RDBMS
SAP
Ports
GETLIST_EventPort
default
Channels

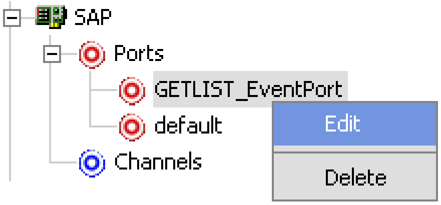
   In the right pane, a table appears that summarizes the information associated with the port you created. You are ready to associate the event port for MQ Series with a channel.

Modifying an Event Port

The following procedures describe how to edit and delete an event port using 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

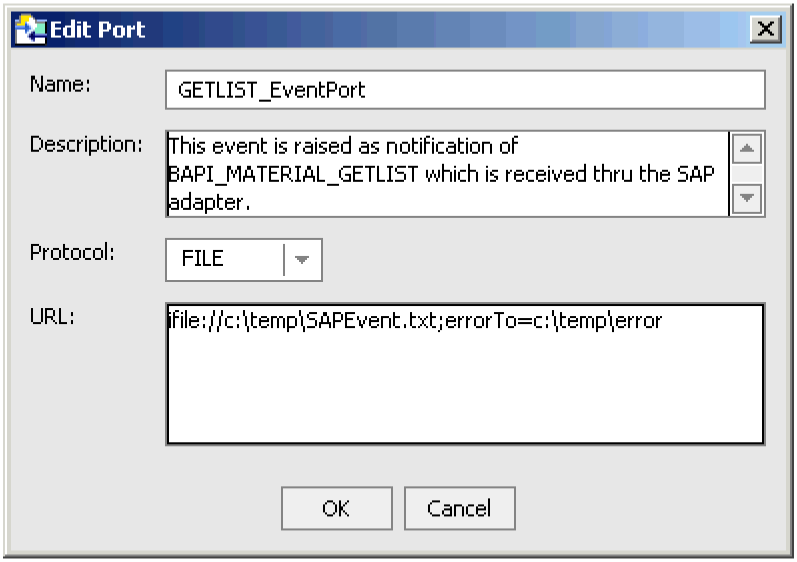
To edit an existing event port:



SAP
Ports
GETLIST_EventPort
default
Channels

1. To view the available ports, click the *Ports* node in the left pane.
2. Right-click the event port you want to edit and select *Edit*.

The Edit Port dialog box opens.



Name: GETLIST_EventPort

Description: This event is raised as notification of BAPI_MATERIAL_GETLIST which is received thru the SAP adapter.

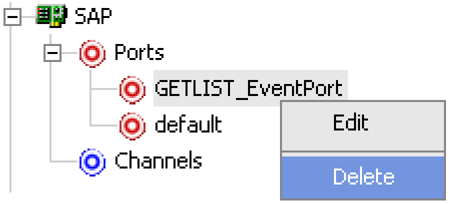
Protocol: FILE

URL: file://c:\temp\SAPEvent.txt;errorTo=c:\temp\error

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 event port you want to remove and select *Delete*.

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

Creating a Channel

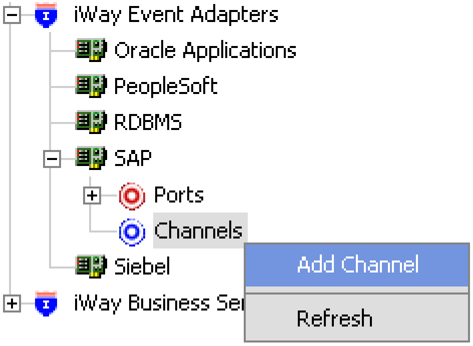
The following procedures describe how to create a channel to listen for SAP events. All defined event ports must be associated with a channel.

Procedure How to Create a Channel

To create a channel:

1. In the left pane, below the configuration you created (for example, SampleConfig), expand the *iWay Event Adapters* node .

   The list of adapters appears.

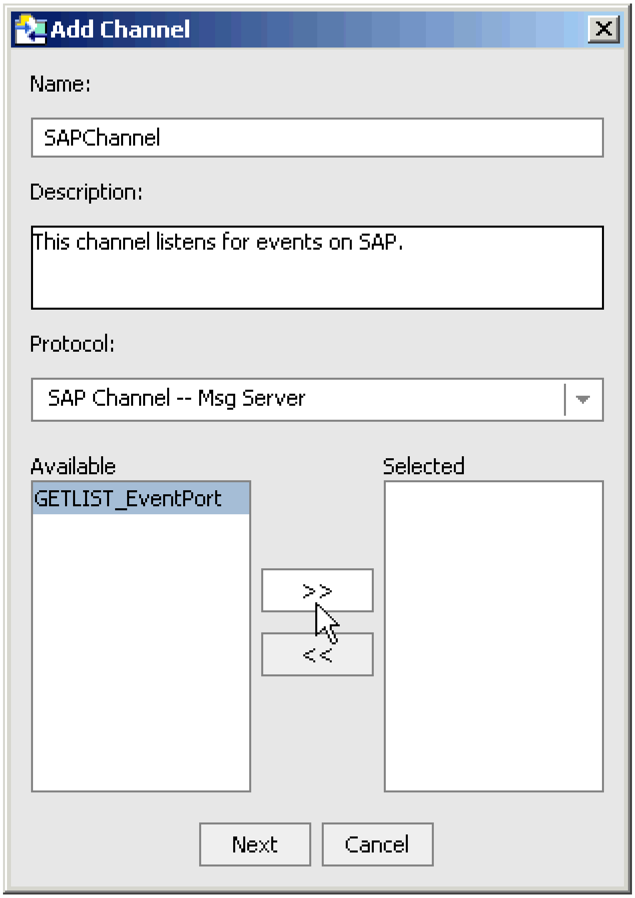
   

2. Click the *SAP* adapter node.

   The node expands, listing the Ports and Channels nodes.

3. Right-click *Channels* and select *Add Channel*.

The Add Channel dialog box opens.



Name:

SAPChannel

Description:

This channel listens for events on SAP.

Protocol:

SAP Channel -- Msg Server

a. In the Name field, type a name for the channel, for example, SAPChannel.

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

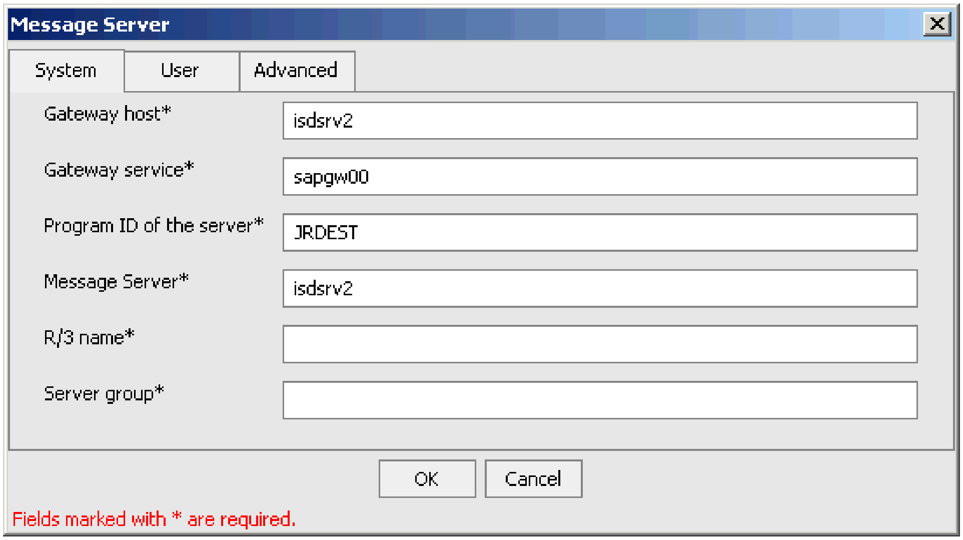
c. From the Protocol drop-down list, select a server that supports event handling.

d. To transfer an event port from the list of Available event ports to the list of Selected ports, click the double right (>>) arrow button.

Note: You can assign multiple event ports to a single channel.

4. Click *Next*.

The Message Server dialog box opens.

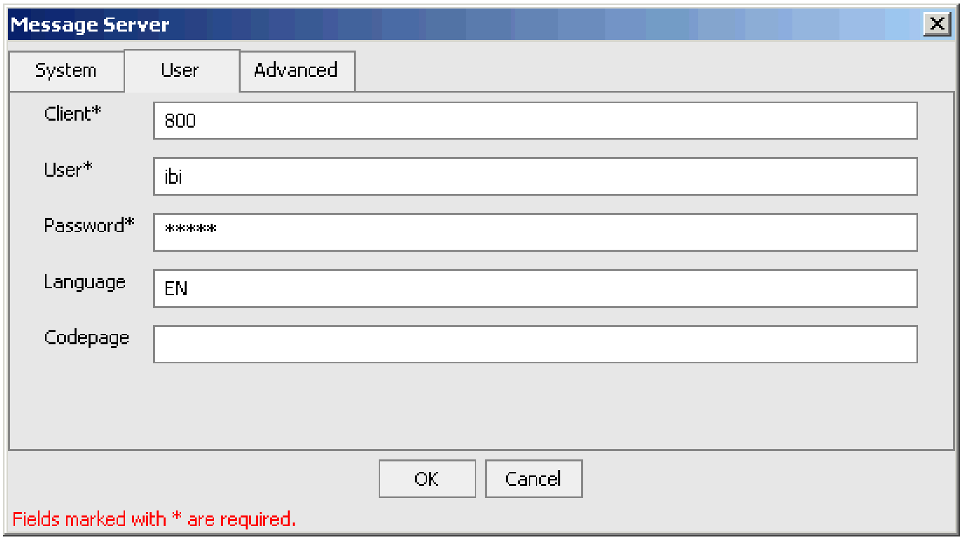


Gateway host*	isdsrv2
Gateway service*	sapgw00
Program ID of the server*	JRDEST
Message Server*	isdsrv2
R/3 name*	
Server group*	

Fields marked with * are required.

a. On the System tab, type the system information that is specific to your SAP system.

b. Click the *User* tab.



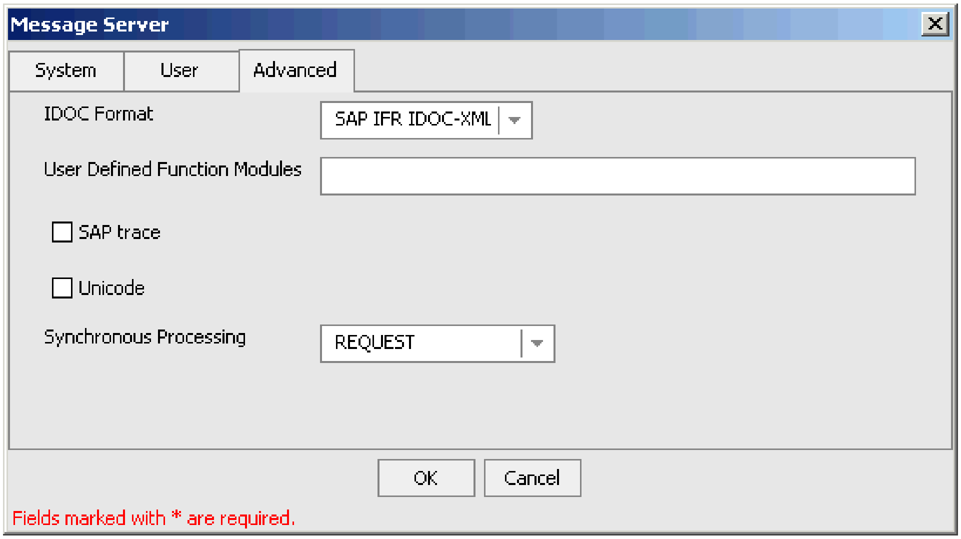
Client*	800
User*	ibi
Password*	******
Language	EN
Codepage	

Fields marked with * are required.

c. Enter the user information that is specific to your SAP system.

d. Click the *Advanced* tab.

The Advanced tab becomes active.


Message Server

IDOC Format: SAP IFR IDOC-XML

User Defined Function Modules:

□ SAP trace

□ Unicode

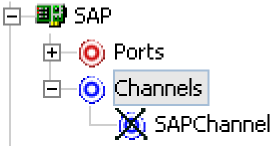
Synchronous Processing: REQUEST

Fields marked with * are required.

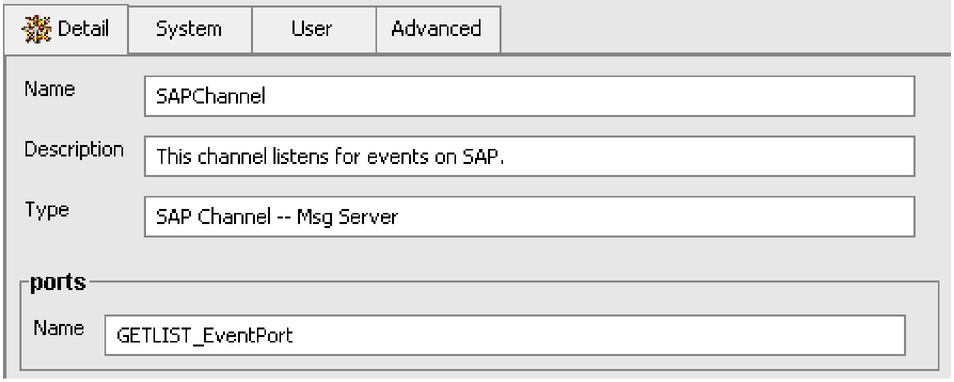
e. Specify any additional information or criteria for the channel you are creating.

5. Click *OK*.

The channel you created appears in the left pane below the Channels node.



When you select the channel, a table in the right pane summarizes all the information associated with the channel you created.



Name: SAPChannel

Description: This channel listens for events on SAP.

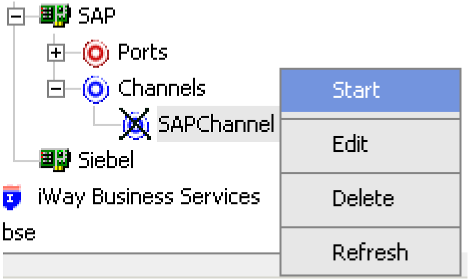
Type: SAP Channel -- Msg Server

ports

Name: GETLIST_EventPort

A Ports area appears on the Details tab that lists the event port you assigned to this channel.

You are ready to start your channel to listen for events.



6. In the left pane, right-click the channel, for example, SAPChannel, and select *Start*.

   The channel you created is now active.

   a. To stop the channel, right-click the channel.

   b. Select *Stop*.

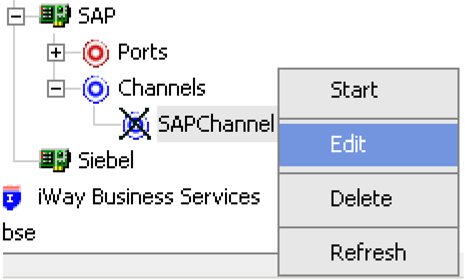
Modifying a Channel

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

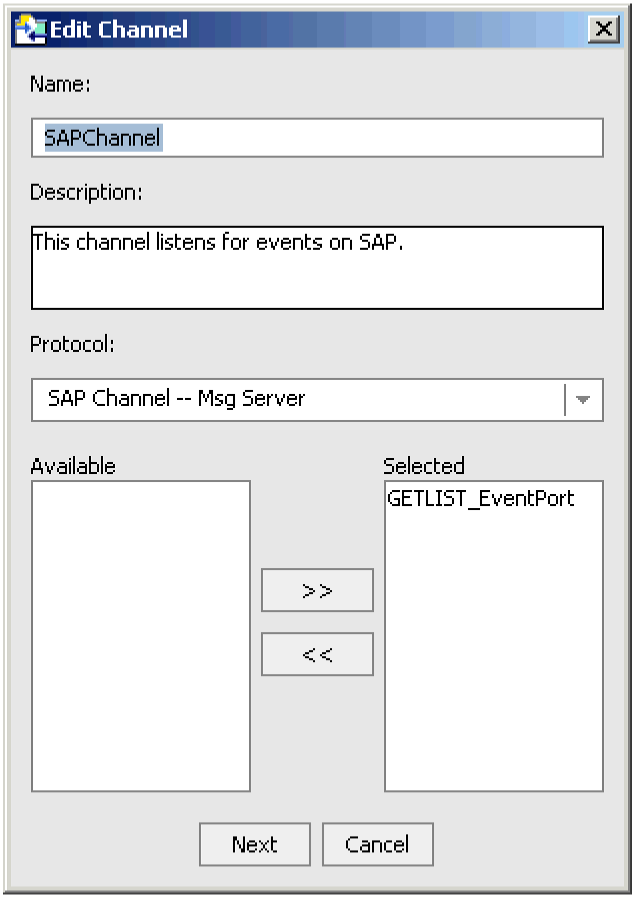
To edit an existing channel:

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, SAPChannel, and select *Edit*.

The Edit Channel dialog box opens.



Edit Channel

Name: SAPChannel

Description: This channel listens for events on SAP.

Protocol: SAP Channel -- Msg Server

Available

Selected: GETLIST_EventPort

3. Make the required changes to the channel configuration.
4. Click *Next*.

   The Message Server dialog box opens.

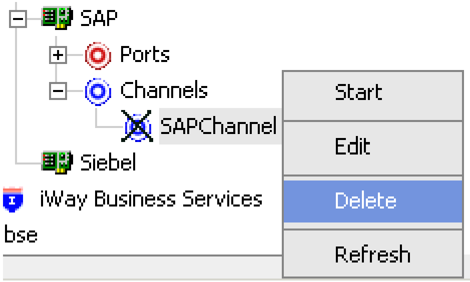
   a. If changes are required, click the appropriate tab (System, User, or Advanced).

   b. Make the required changes.
5. Click *OK*.

Procedure How to Delete a Channel

To delete an existing channel:

1. In the left pane, select the channel you want to delete.



2. Right-click the channel, for example, SAPChannel, and select *Delete*.

   The channel disappears from the Channels list.

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 iWay Application Explorer, or you can add controls that enable you to take advantage of the JCA resources of Application Explorer.

Note: You can create Web services using Application Explorer running in BEA WebLogic Workshop. However, you cannot use Application Explorer in BEA WebLogic Workshop in conjunction with an iWay JCA deployment. When using Application Explorer in conjunction with an iWay JCA deployment, use servlet Application Explorer to create targets and generate schema.

For more information, see Chapter 3, *Creating XML Schemas or Web Services for SAP* and Chapter 5, *Creating and Publishing iWay Business Services*.

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.

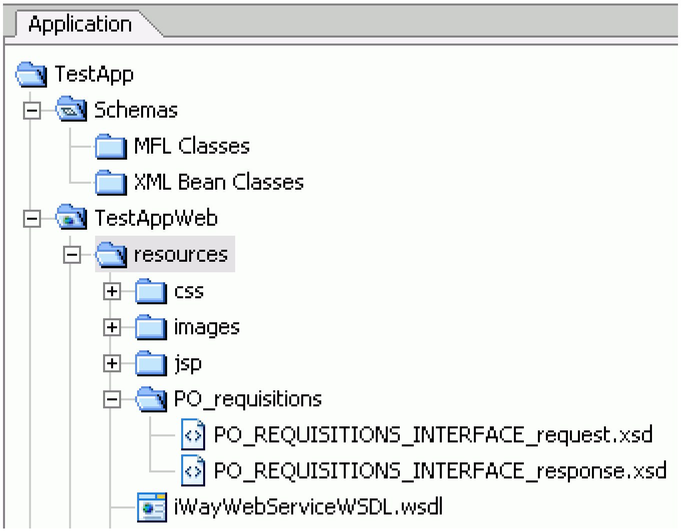
For more information on exporting a WSDL file, see *How to Export iWay WSDL for Use in BEA WebLogic Workshop Workflows* on page A-23.

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.

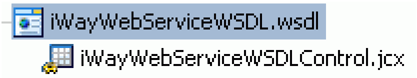


Application

TestApp
Schemas
MFL Classes
XML Bean Classes
TestAppWeb
resources
css
images
jsp
PO_requisitions
PO_REQUISITIONS_INTERFACE_request.xsd
PO_REQUISITIONS_INTERFACE_response.xsd
iWayWebServiceWSDL.wsdl

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.



iWayWebServiceWSDL.wsdl
iWayWebServiceWSDLControl.jcx

Adding an iWay Control to a BEA WebLogic Workshop Application

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. You must add the control in each application you create with BEA WebLogic Workshop.

Before adding an iWay control to an application or project, you must configure targets using servlet Application Explorer. For more information on defining targets using servlet Application Explorer, see *Establishing a Target for SAP* in Chapter 3, *Creating XML Schemas or Web Services for SAP*.

Procedure How to Add an iWay Control to a BEA WebLogic Workshop Application

Ensure you configure targets before you add a control.

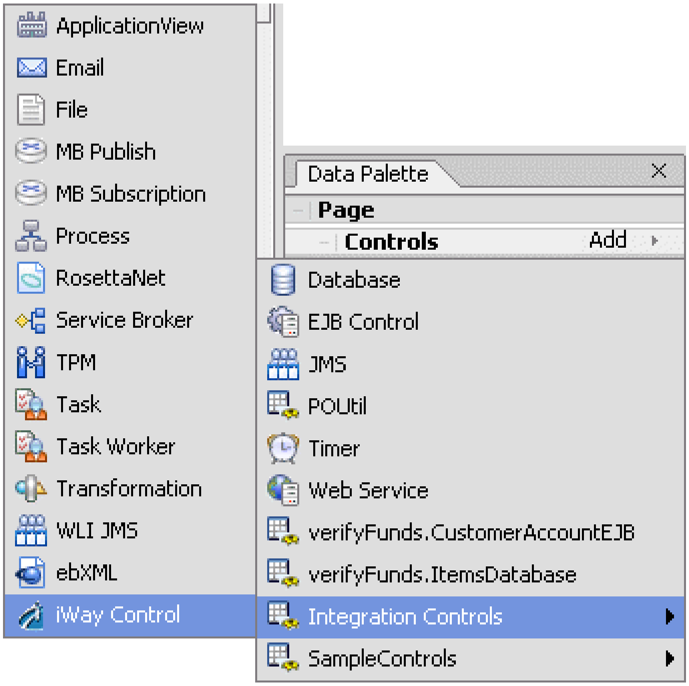
To add an iWay control to a BEA WebLogic Workshop application:

1. Start BEA WebLogic Workshop.
2. If it is not open, open or create an application where you want to use the iWay control.
3. In the Application pane, right-click the *Libraries* folder and choose *Add Library*.

   The system prompts you for a file.
4. Browse to and select the following file:

   `BEA_HOME\bea\ext_components\iWay Software\controls\iwaycontrol.jar`
5. Click *Open*.

   The iWay Control becomes available on the Data Palette tab of BEA WebLogic Workshop. The Data Palette tab appears when an appropriate file, such as a JPD file, loads in the center pane of BEA WebLogic Workshop.



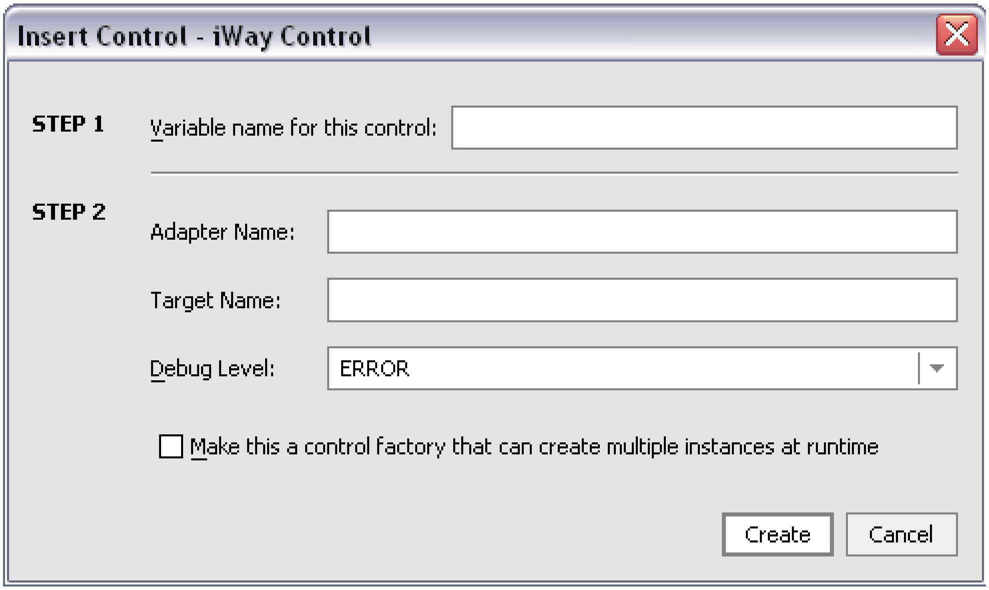
   a. In the Data Palette tab, under Page and Controls, click *Add*.

   b. Select *Integration Controls*.

6. Select *iWay Control*.

   Note: If the iWay control does not appear, restart BEA WebLogic Workshop.

   The Insert Control - iWay Control dialog box appears.



Insert Control - iWay Control

STEP 1

Variable name for this control:

STEP 2

Adapter Name:

Target Name:

Debug Level: ERROR

□ Make this a control factory that can create multiple instances at runtime

   a. In the Variable name field, type a name for the control.

   b. In the Adapter Name field, type the name of the adapter for which you are creating the control.

      The adapter name must match the name of the adapter as it appears in the left pane of servlet Application Explorer.

   c. In the Target Name field, type the name of the target you created for this adapter.

      The target name appears below the adapter node in the left pane of Application Explorer.

   d. From the Debug Level drop-down list, select the appropriate debug level.

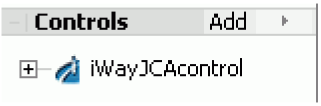
      For information on debug levels, see the BEA WebLogic Workshop online help.

   e. To make the control instance a control factory, select the check box.

      A control factory enables a single application to manage multiple instances of the same control.

7. Click *Create*.

The control appears below the available controls in the Data Palette.



APPENDIX B

Using WebLogic Workshop to Access Web Services

Topics:

- Using WebLogic Workshop to Access an SAP BAPI or an SAP RFC
- Running the JWSNAME Web Service From WebLogic Workshop

This section describes how to access Web services created for an SAP Business Application Programming Interface (BAPI) and an SAP Remote Function Call (RFC) using WebLogic Workshop.

Using WebLogic Workshop to Access an SAP BAPI or an SAP RFC

WebLogic Workshop provides a framework for building Web services. The Web services that you build with WebLogic Workshop are enterprise-class services, and WebLogic Workshop provides simple controls for connecting to your enterprise resources.

At the same time, WebLogic Workshop simplifies the process of creating Web services by insulating developers from the low-level implementation details that have traditionally made Web service development the domain of sophisticated J2EE developers. With WebLogic Workshop, you can build powerful Web services whether you are an application developer or a J2EE expert.

Accessing an SAP BAPI

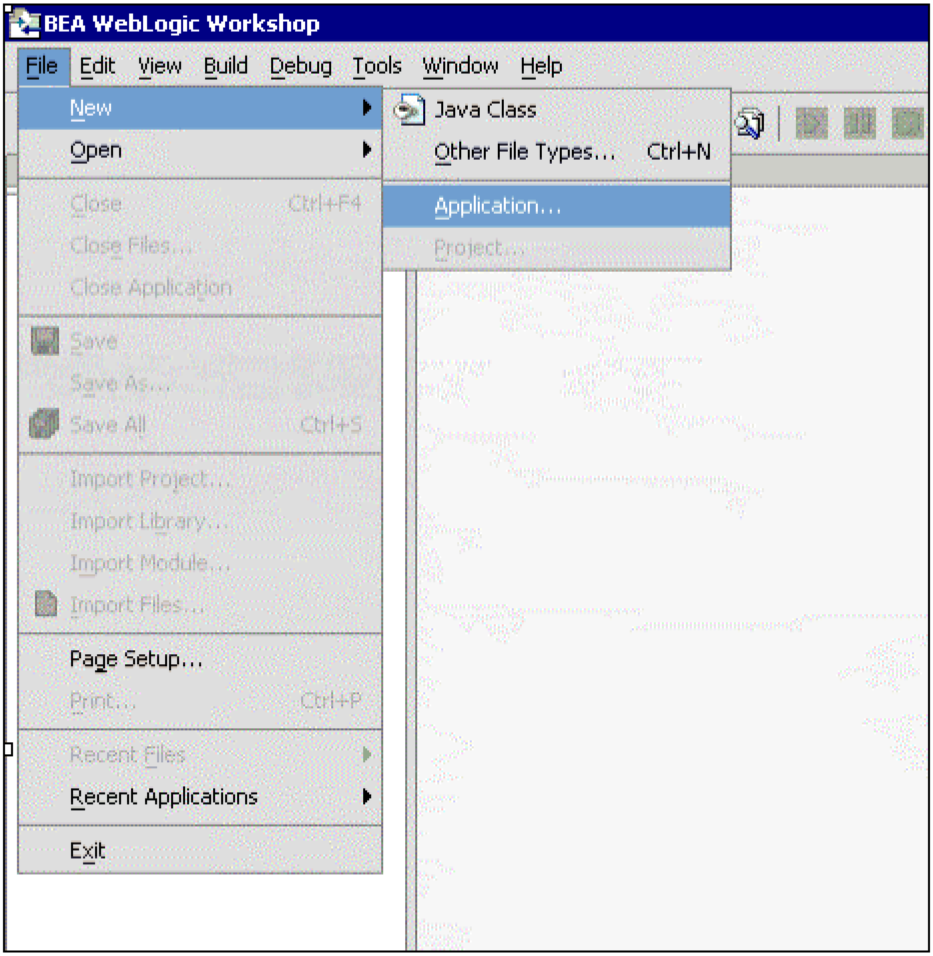
The following procedures assumes you already created and tested a Web service using iWay Application Explorer. It also assumes you created the WSDL used to access the service. For more information on creating Web services, see Chapter 4, *Configuring the Event Adapter for SAP*.

Procedure How to Access an SAP BAPI

To access an SAP Business Application Programming Interface (BAPI):

1. From the Start menu, choose *Programs*, *WebLogic Platform 8.1*, and then *WebLogic Workshop* 8.1.

BEA WebLogic Workshop opens.



2. Create a new application.
   a. From the File menu, select *New* and then, *Application*.
   b. In the upper-left pane, select all and then, select *Empty Application*.
   c. In the directory field, type *C:\IWAYSRV*.
   d. Click *Create*.
3. In the Application tab, right-click the *IWAYSRV* folder and select *New Project*.
4. In the upper-left pane, select all and then, select *Web Project*.
5. In the name field, type *BAPIProj* and click *Create*.

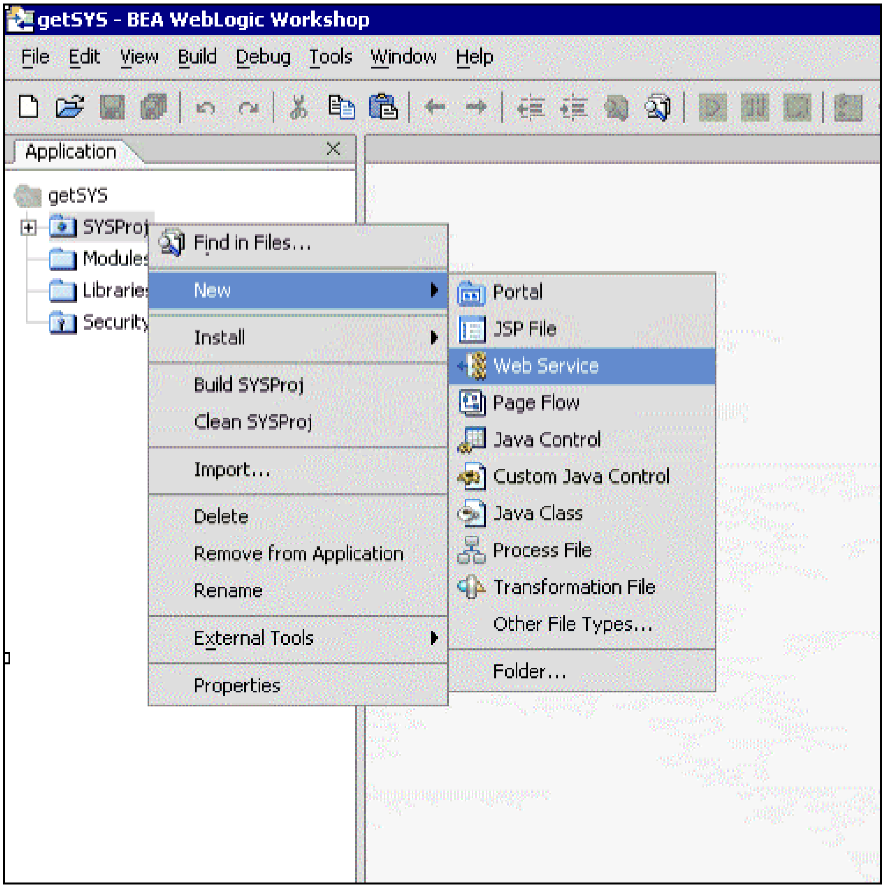
Calling a New Web Service for a BAPI

The code for a Web service is contained within a JWS (Java™ Web Service) file. A JWS file is a JAVA file in that it contains code for a Java class. However, because a file with a JWS extension contains the implementation code intended specifically for a Web service class, the extension gives it special meaning in the context of the WebLogic Server.

After you access the Business Application Programming Interface (BAPI), the New Web Service dialog box opens, and you can continue and call a Web service.

Procedure How to Call a New Web Service

To call a new Web service:



1. In the Application tab, right-click the *BAPIProj* folder and select *New*.
2. Select *Web Service*.

3. In the upper-left pane, select all and then, select *Web Service* in the right pane.

   a. In the name field, type *JWSNAME.jws*.

   b. Click *Create.*

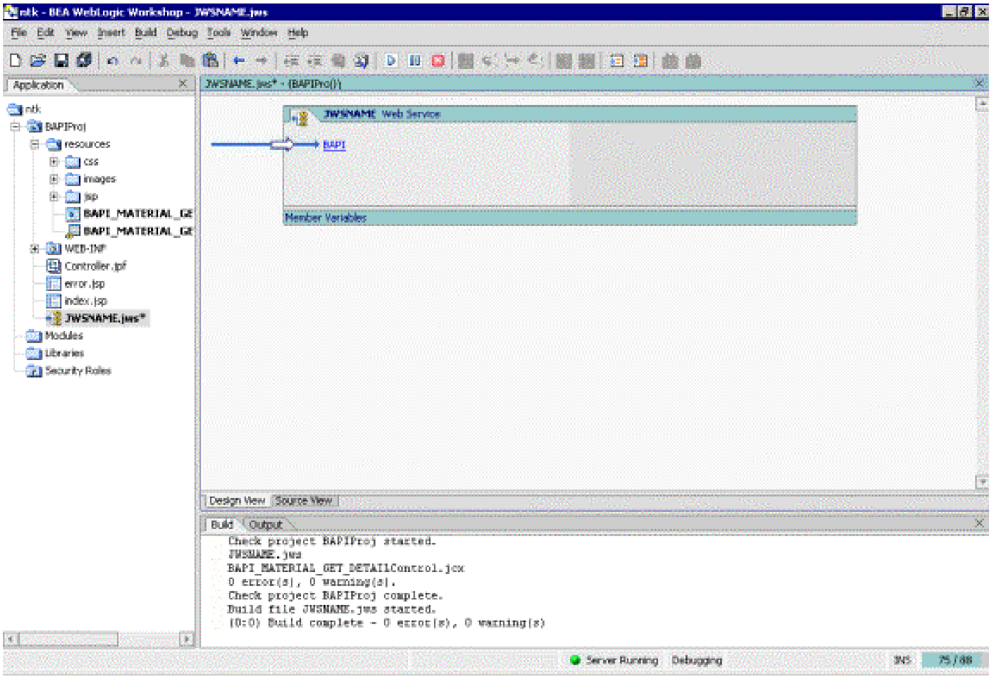
      The design view window opens.

      Web services expose their functionality through methods that clients invoke when they want to request something from the Web service. In this case, clients invoke a method to call the BAPI_MATERIAL_GET_DETAIL Control that is exposed later in this procedure.

4. If it is not selected already, click the *Design View* tab.

   a. From the Insert menu, select *Method.*

   b. In the space provided, replace *method1* with *BAPI*, and press *Enter.*



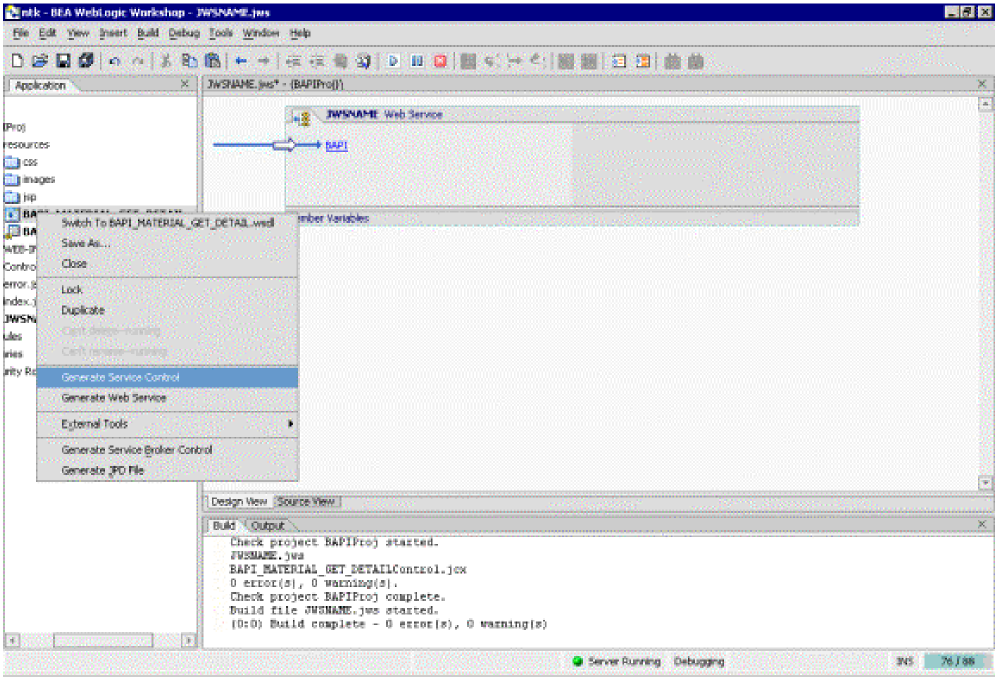
```
Check project BAPIProj started.
JWSNAME.jws
BAPI_MATERIAL_GET_DETAILControl.jcx
0 error(s), 0 warning(s).
Check project BAPIProj complete.
Build file JWSNAME.jws started.
(0:0) Build complete - 0 error(s), 0 warning(s)
```

5. Right-click the *resources* sub-folder project and select *Import.*

6. Import *BAPI_MATERIAL_GET_DETAIL.WSDL* .

   For more information on creating a WSDL file, see Chapter 4, *Configuring the Event Adapter for SAP*.

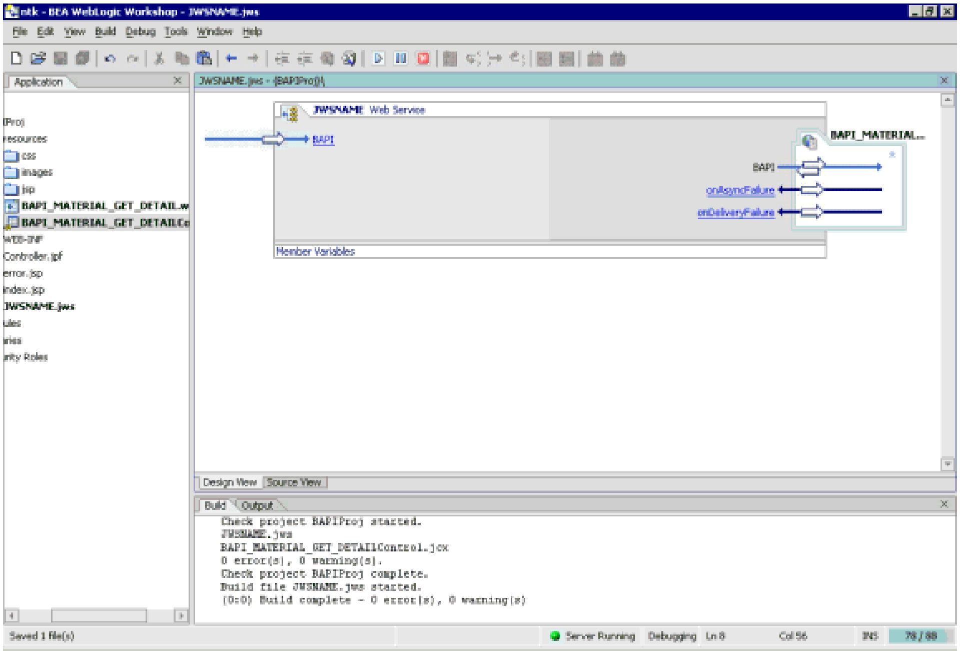
The following opens.



```
Check project BAPIProj started.
JWSNAME.jws
BAPI_MATERIAL_GET_DETAILControl.jcx
0 error(s), 0 warning(s).
Check project BAPIProj complete.
Build file JWSNAME.jws started.
(0:0) Build complete - 0 error(s), 0 warning(s)
```

7. To generate a Java Control file, right-click the *BAPI_MATERIAL_GET_DETAIL.wsdl* file and select *Generate Service Control*.

8. Drag the *BAPI_MATERIAL_GET_DETAIL.jcx* file onto the JWSNAME Web service as follows:



```
Check project BAPIProj started.
JWSNAME.jws
BAPI_MATERIAL_GET_DETAILControl.jcx
0 error(s), 0 warning(s).
Check project BAPIProj complete.
Build file JWSNAME.jws started.
(0:0) Build complete - 0 error(s), 0 warning(s)
```

9. Click the *Source View* tab to modify the source code and call the iWay *BAPI_MATERIAL_GET_DETAIL* Web service.

10. Add the following code to the source view:

```
 public void
BAPI(BAPI_MATERIAL_GET_DETAILControl.BAPI_MATERIAL_GET_DETAIL input)
  {
    BAPI_MATERIAL_GET_DETAILControl.BAPI(input)
```

11. To save your current work, press *Control* + *S*.

The resulting Java code looks similar to the following:

```
import resources.BAPI_MATERIAL_GET_DETAILControl;

public class JWSNAME implements com.bea.jws.WebService
{
 /**

     * @common:control
     */
    private resources.BAPI_MATERIAL_GET_DETAILControl
BAPI_MATERIAL_GET_DETAILControl;




    static final long serialVersionUID = 1L;

    /**
     * @common:operation
     */
    public void
BAPI(BAPI_MATERIAL_GET_DETAILControl.BAPI_MATERIAL_GET_DETAIL input )
  {
    BAPI_MATERIAL_GET_DETAILControl.BAPI(input);
  }
}
```

Accessing an SAP RFC

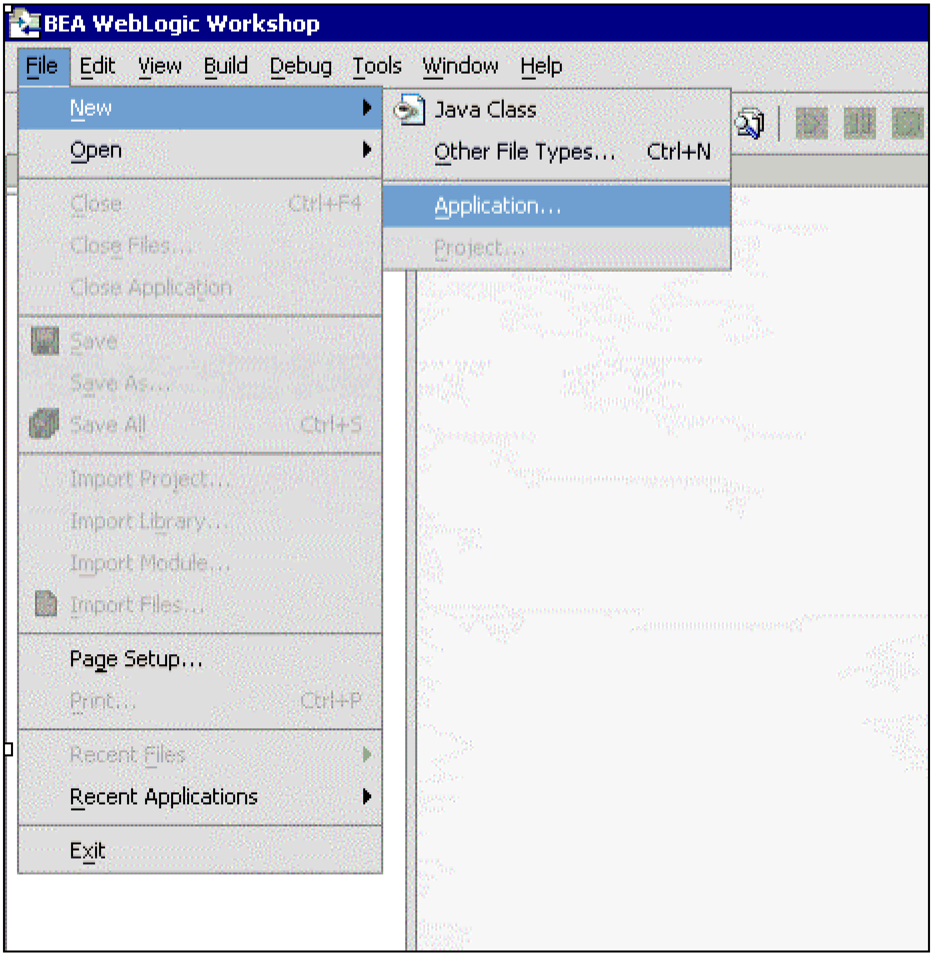
The following procedure describes how to access an SAP Remote Function Call (RFC) and assumes you already created and tested a Web service using iWay Application Explorer. It also assumes you created the WSDL used to access the service. For more information on creating Web services, see Chapter 4, *Configuring the Event Adapter for SAP*.

Procedure How to Access an SAP RFC

To access an SAP Remote Function Call (RFC):

1. From the Start menu, choose *Programs*, *WebLogic Platform 8.1*, *WebLogic Workshop*, and then *WebLogic Workshop*.

BEA WebLogic Workshop opens.



2. Create a new application.
   - a. From the File menu, select *New* and then, *Application*.
   - b. In the upper-left pane, select all and then, select *Empty Application*.
   - c. In the directory field, type *C:\IWAYSRV*.
   - d. Click *Create*.
3. In the Application tab, right-click the *IWAYSRV* folder and select *New Project*.
4. In the upper-left pane, select all and then, select *Web Project*.
5. In the name field, type *RFCProj* and click *Create*.

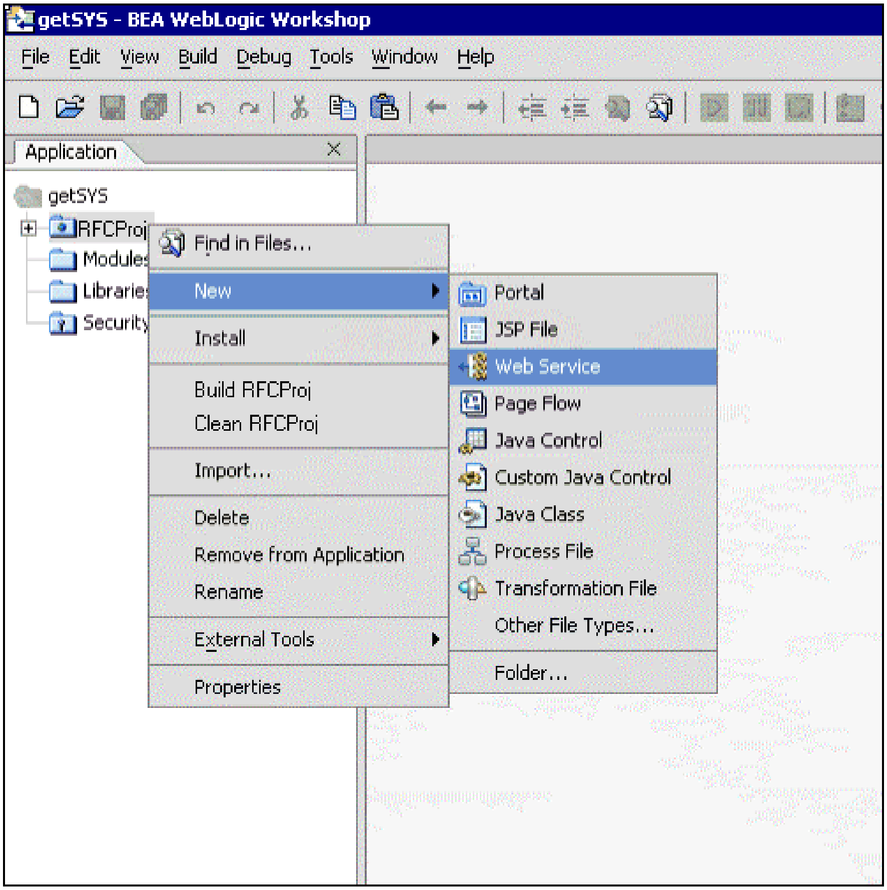
Calling a New Web Service for an RFC

The code for a Web service is contained within a JWS (Java Web Service) file. A JWS file is a JAVA file in that it contains code for a Java class. However, because a file with a JWS extension contains the implementation code intended specifically for a Web service class, the extension gives it special meaning in the context of the WebLogic Server.

After you access the Remote Function Call (RFC), the New Web Service dialog box opens, and you can continue and call a Web service.

Procedure How to Call a New Web Service

To call a new Web service:



1. In the Application tab, right-click the *RFCProj* folder and select *New*.
2. Select *Web Service*.

3. In the upper-left pane, select all and then, select *Web Service* in the right pane.

   a. In the name field, type *RFC.jws*.

   b. Click *Create.*

      The design view window opens.

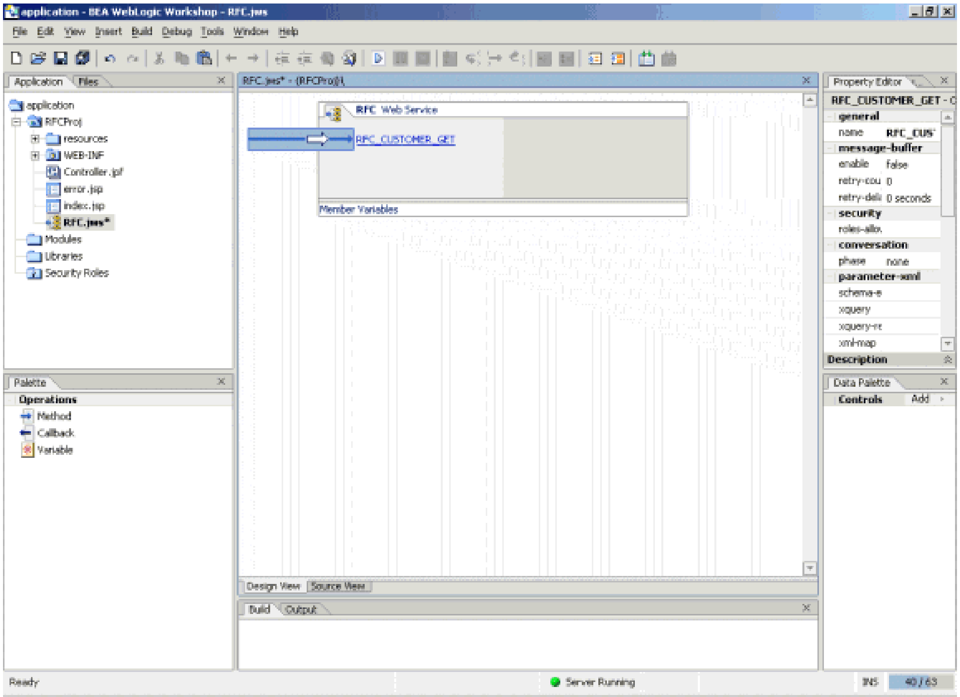
      Web services expose their functionality through methods that clients invoke when they want to request something from the Web service. In this case, clients invoke a method to call the RFC_CUSTOMER_GET Control that is exposed later in this procedure.

4. If it is not selected already, click the *Design View* tab.

   a. From the Insert menu, select *Method.*

   b. In the space provided, replace *method1* with *RFC_CUSTOMER_GET.*

5. Press *Enter.*

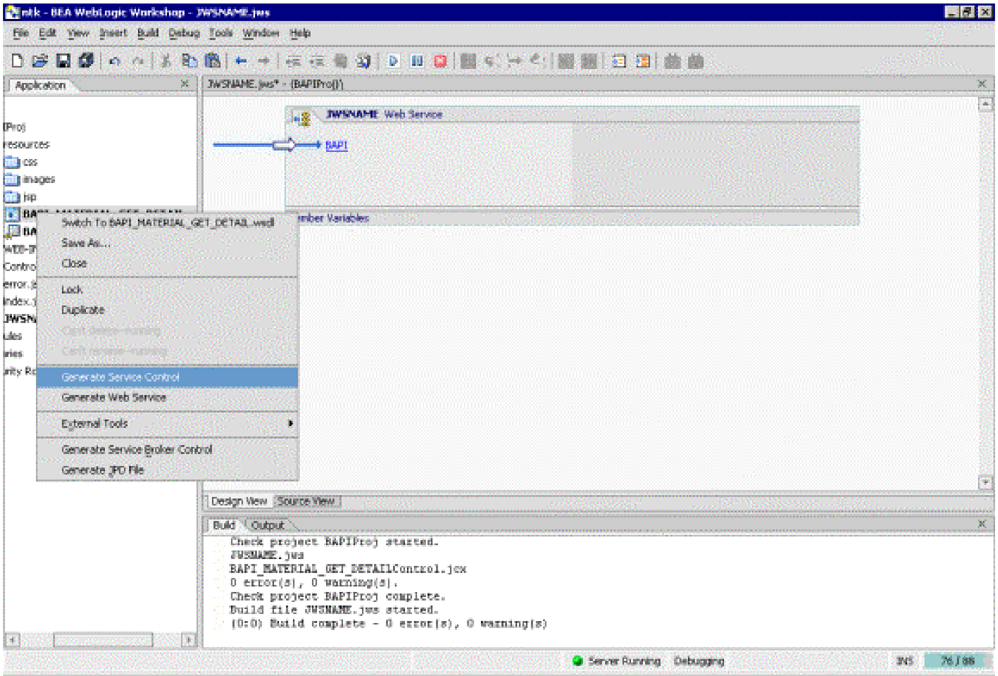


   a. Right-click the *resources* sub-folder project and select *Import*.

   b. Import the *RFC.WSDL*.

For more information on creating a WSDL file, see Chapter 4, *Configuring the Event Adapter for SAP*.

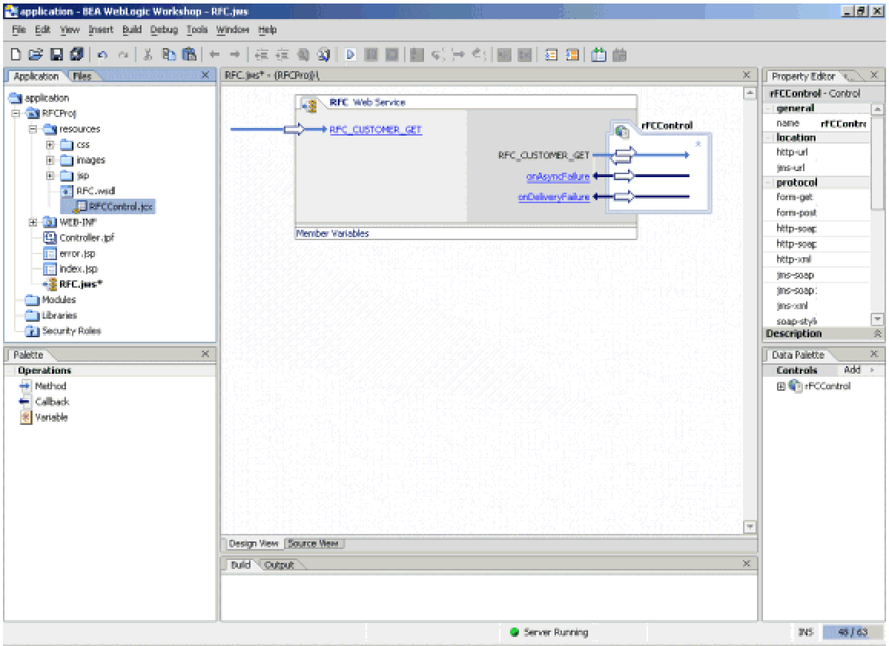
The following opens.



```
Check project BAPIProj started.
JWSNAME.jws
BAPI_MATERIAL_GET_DETAILControl.jcx
0 error(s), 0 warning(s).
Check project BAPIProj complete.
Build file JWSNAME.jws started.
(0:0) Build complete - 0 error(s), 0 warning(s)
```

6. To generate a Java Control file, right-click the *RFC_CUSTOMER_GET.wsdl* file and select *Generate Service Control*.

7. Drag the *RFC.jcx* file onto the JWSNAME Web service as follows:



8. Click the *Source View* tab to modify the source code and call the iWay RFC Web service.

9. Add the following code to the source view:

```
public void RFC_CUSTOMER_GET(RFCControl.RFC_CUSTOMER_GET input)
  {
    RFCControl.RFC_CUSTOMER_GET(input)
```

10. To save your current work, press *Control* + *S*.

The resulting Java code looks similar to the following:

```
import resources.RFCControl;

public class RFC implements com.bea.jws.WebService
{
 /**

     * @common:control
     */
    private resources.RFCControl RFCControl;




    static final long serialVersionUID = 1L;

    /**
     * @common:operation
     */
    public void RFC_CUSTOMER_GET(RFCControl.RFC_CUSTOMER_GET input )
  {
    RFCControl.RFC_CUSTOMER_GET(input);
  }
}
```

Running the JWSNAME Web Service From WebLogic Workshop

When you create a new Web service tutorial application, you must ensure that WebLogic Server is running while you build your Web service.

Confirming WebLogic Server is Running

You can confirm whether WebLogic Server is running by looking at the status bar at the bottom of WebLogic Workshop. If WebLogic Server is running, a green ball appears. If WebLogic Server is not running, a red ball appears. If you see the red ball in the status bar, then start WebLogic Server, as described in the following procedure

Procedure How to Start WebLogic Server

To start WebLogic Server:

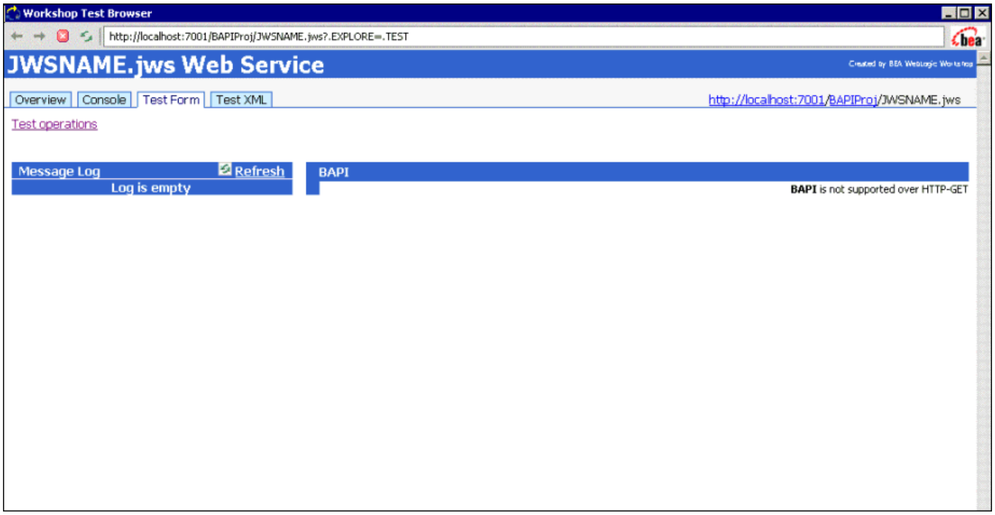
1. From the Tools menu, select *WebLogic Server* and then, *Start WebLogic Server.*
2. To deploy the application to WebLogic, select *Tools* and then, *Deploy Application*.
3. Click the *Start* button on the toolbar to start the application.

Running the JWSNAME Web Service for a BAPI

The following procedure describes how to run the JWSNAME for a Business Application Programming Interface (BAPI).

Procedure How to Run the JWSNAME Web Service for a BAPI

After you click the *Start* button on the toolbar to start the application, the following test window opens.



http://localhost:7001/BAPIProj/JWSNAME.jws?.EXPLORE=.TEST

http://localhost:7001/BAPIProj/JWSNAME.jws

Log is empty

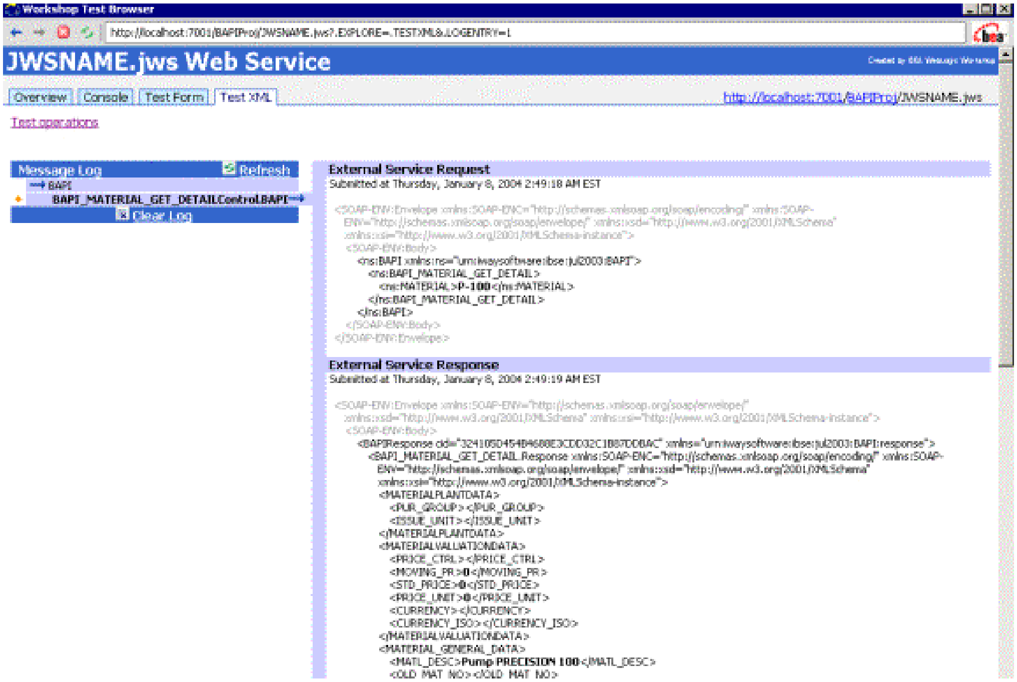
BAPI is not supported over HTTP-GET

1. Click the *Test XML* tab to enter and test the XML stream to be passed to the Web service.
2. Replace the string XML input with the following:

```
<?xml version="1.0"  encoding="UTF-8"?>
   <BAPI_MATERIAL_GET_DETAIL>
   <MATERIAL>P-100</MATERIAL>
<BAPI_MATERIAL_GET_DETAIL/>
```

3. Click the *BAPI* button to submit the request.

After the SOAP request is sent to the iWay Business Services Engine (iBSE), the following response is returned:


Workshop Test Browser
http://localhost:7001/BAPIProj/JWSNAME.jws?.EXPLORE=.TESTXML&.LOGENTRY=1
JWSNAME.jws Web Service
Overview
Console
Test Form
Test XML
http://localhost:7001/BAPIProj/JWSNAME.jws
Test operations
Message Log
Refresh
BAPI
BAPI_MATERIAL_GET_DETAILControl.BAPI
Clear Log

External Service Request

Submitted at Thursday, January 8, 2004 2:49:18 AM EST

```
<SOAP-ENV:Envelope xmlns:SOAP-ENC="http://schemas.xmlsoap.org/soap/encoding/" xmlns:SOAP-
  ENV="http://schemas.xmlsoap.org/soap/envelope/" xmlns:xsd="http://www.w3.org/2001/XMLSchema"
  xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">
  <SOAP-ENV:Body>
    <ns:BAPI xmlns:ns="urn:iwaysoftware:ibse:jul2003:BAPI">
      <ns:BAPI_MATERIAL_GET_DETAIL>
        <ns:MATERIAL>P-100</ns:MATERIAL>
      </ns:BAPI_MATERIAL_GET_DETAIL>
    </ns:BAPI>
  </SOAP-ENV:Body>
</SOAP-ENV:Envelope>
```

External Service Response

Submitted at Thursday, January 8, 2004 2:49:19 AM EST

```
<SOAP-ENV:Envelope xmlns:SOAP-ENV="http://schemas.xmlsoap.org/soap/envelope/"
  xmlns:xsd="http://www.w3.org/2001/XMLSchema" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">
  <SOAP-ENV:Body>
    <BAPIResponse cid="324105D454B4688E3CDD32C1B87DDBAC" xmlns="urn:iwaysoftware:ibse:jul2003:BAPI:response">
      <BAPI_MATERIAL_GET_DETAIL.Response xmlns:SOAP-ENC="http://schemas.xmlsoap.org/soap/encoding/" xmlns:SOAP-
        ENV="http://schemas.xmlsoap.org/soap/envelope/" xmlns:xsd="http://www.w3.org/2001/XMLSchema"
        xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">
        <MATERIALPLANTDATA>
          <PUR_GROUP></PUR_GROUP>
          <ISSUE_UNIT></ISSUE_UNIT>
        </MATERIALPLANTDATA>
        <MATERIALVALUATIONDATA>
          <PRICE_CTRL></PRICE_CTRL>
          <MOVING_PR>0</MOVING_PR>
          <STD_PRICE>0</STD_PRICE>
          <PRICE_UNIT>0</PRICE_UNIT>
          <CURRENCY></CURRENCY>
          <CURRENCY_ISO></CURRENCY_ISO>
        </MATERIALVALUATIONDATA>
        <MATERIAL_GENERAL_DATA>
          <MATL_DESC>Pump PRECISION 100</MATL_DESC>
          <OLD_MAT_NO></OLD_MAT_NO>
```

The previous sample is a very simple example of calling an iWay Web service. You may want to perform more complex operations in your workflow. For an example, see the following topic, *Calling Complex Operations in a Workflow for a BAPI*.

Calling Complex Operations in a Workflow for a BAPI

You may want to perform more complex operations in your workflow for a Business Application Programming Interface (BAPI). The following code represents sample Java code used to calculate the execution time of the Web service. You can do similar coding for benchmarking or other puposes.

```
import resources.BAPI_MATERIAL_GET_DETAILControl;

import java.io.*;
import java.lang.*;
import java.util.*;

public class JWSNAME implements com.bea.jws.WebService
{
    /**
     * @common:control
     */
    private resources.BAPI_MATERIAL_GET_DETAILControl
BAPI_MATERIAL_GET_DETAILControl;


    static final long serialVersionUID = 1L;

    /**
     * @common:operation
     */
    public void
BAPI(BAPI_MATERIAL_GET_DETAILControl.BAPI_MATERIAL_GET_DETAIL input)
throws Exception    {

    File outFile=new File("RESULTS.txt"); //creating an output file
    FileWriter out=new FileWriter(outFile); //creating a fileWriter for
the output file

    long diff=0; //used to store the execution time

   Calendar cal_start=Calendar.getInstance(TimeZone.getTimeZone("EST"));
//creating a start calendar
  System.out.println("<<<< start: "+ cal_start.getTimeInMillis());
//Display the start time of execution to the WEBLOGIC CONSOLE

         BAPI_MATERIAL_GET_DETAILControl.BAPI(input);

        Calendar
cal_end=Calendar.getInstance(TimeZone.getTimeZone("EST")); //create end
calendar
```

```
        System.out.println("<<<< end: "+ cal_end.getTimeInMillis());
Display the end time of execution to the WEBLOGIC CONSOLE
        diff=cal_end.getTimeInMillis()-cal_start.getTimeInMillis();
//Calculating the difference (execution time)
        System.out.println("<<<< EXECUTION time in Milliseconds:" +diff);
//Displaying the execution time to the WEBLOGIC Console

//writing to file
       out.write( "start time: "+ cal_start.getTimeInMillis()+"\n");
 out.write("end time: "+cal_end.getTimeInMillis()+"\n");
 out.write("execution time : "+diff+"\n");


    out.close(); //closing file



    }
}
```

The results of the execution are saved in a file as follows:

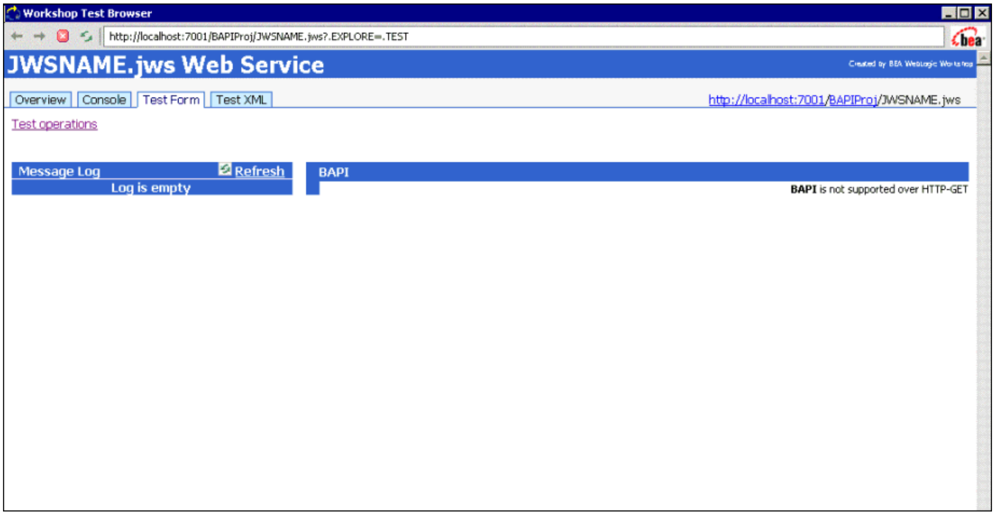
```
start time: 1073598362655
end time: 1073598362775
execution time : 120
```

Running the JWSNAME Web Service for an RFC

The following procedure describes how to run the JWSNAME for a Remote Function Call (RFC). You first must ensure that WebLogic Server is running. For more information on confirming that WebLogic Server is running, see *Confirming WebLogic Server is Running* and *How to Start WebLogic Server*.

Procedure How to Run the JWSNAME Web Service for an RFC

After you click the *Start* button on the toolbar to start the application, the following test window opens.


Workshop Test Browser
http://localhost:7001/BAPIProj/JWSNAME.jws?.EXPLORE=.TEST
JWSNAME.jws Web Service
Created by BEA WebLogic Workshop
Overview
Console
Test Form
Test XML
http://localhost:7001/BAPIProj/JWSNAME.jws
Test operations
Message Log
Refresh
BAPI

Log is empty

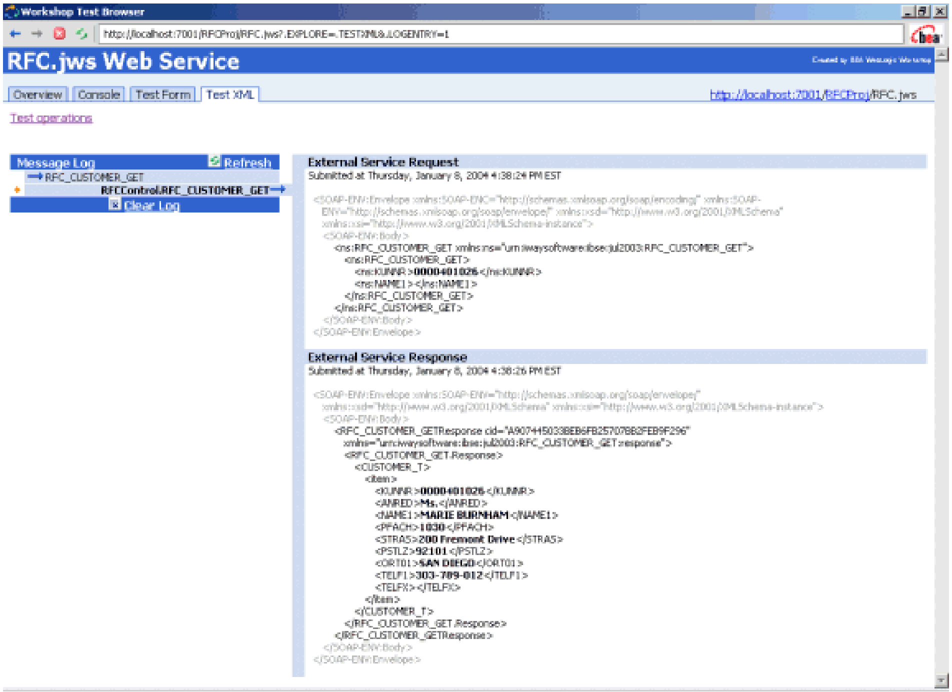
BAPI is not supported over HTTP-GET

1. Click the *Test XML* tab to enter and test the XML stream to be passed to the Web service.
2. Replace the string XML input with the following:

```
<RFC_CUSTOMER_GET xmlns="http://www.openuri.org/">
 <input>
   <KUNNR>0000401026</KUNNR>
    <NAME1></NAME1>
 </input>
</RFC_CUSTOMER_GET>
```

3. Click the *RFC_CUSTOMER_GET* button to submit the request.

After the SOAP request is sent to the iWay Business Services Engine (iBSE), the following response is returned:



Workshop Test Browser
http://localhost:7001/RFCProj/RFC.jws?.EXPLORE=.TESTXML&.LOGENTRY=1
RFC.jws Web Service
Overview
Console
Test Form
Test XML
http://localhost:7001/RFCProj/RFC.jws
Test operations
Message Log
Refresh
RFC_CUSTOMER_GET
RFCControl.RFC_CUSTOMER_GET
Clear Log

External Service Request

Submitted at Thursday, January 8, 2004 4:38:24 PM EST

```
<SOAP-ENV:Envelope xmlns:SOAP-ENC="http://schemas.xmlsoap.org/soap/encoding/" xmlns:SOAP-
  ENV="http://schemas.xmlsoap.org/soap/envelope/" xmlns:xsd="http://www.w3.org/2001/XMLSchema"
  xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">
  <SOAP-ENV:Body>
    <ns:RFC_CUSTOMER_GET xmlns:ns="urn:iwaysoftware:ibse:jul2003:RFC_CUSTOMER_GET">
      <ns:RFC_CUSTOMER_GET>
        <ns:KUNNR>0000401026</ns:KUNNR>
        <ns:NAME1></ns:NAME1>
      </ns:RFC_CUSTOMER_GET>
    </ns:RFC_CUSTOMER_GET>
  </SOAP-ENV:Body>
</SOAP-ENV:Envelope>
```

External Service Response

Submitted at Thursday, January 8, 2004 4:38:26 PM EST

```
<SOAP-ENV:Envelope xmlns:SOAP-ENV="http://schemas.xmlsoap.org/soap/envelope/"
  xmlns:xsd="http://www.w3.org/2001/XMLSchema" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">
  <SOAP-ENV:Body>
    <RFC_CUSTOMER_GETResponse cid="A9074415033BEB6FB257078B2FEB9F296"
      xmlns="urn:iwaysoftware:ibse:jul2003:RFC_CUSTOMER_GET:response">
      <RFC_CUSTOMER_GET.Response>
        <CUSTOMER_T>
          <item>
            <KUNNR>0000401026</KUNNR>
            <ANRED>Ms.</ANRED>
            <NAME1>MARIE BURNHAM</NAME1>
            <PFACH>1030</PFACH>
            <STRAS>200 Fremont Drive</STRAS>
            <PSTLZ>92101</PSTLZ>
            <ORT01>SAN DIEGO</ORT01>
            <TELF1>303-709-012</TELF1>
            <TELFX></TELFX>
          </item>
        </CUSTOMER_T>
      </RFC_CUSTOMER_GET.Response>
    </RFC_CUSTOMER_GETResponse>
  </SOAP-ENV:Body>
</SOAP-ENV:Envelope>
```

The previous sample is a very simple example of calling an iWay Web service.

You may want to perform more complex operations in your workflow.

Calling Complex Operations in a Workflow for an RFC

You may want to perform more complex operations in your workflow for a Remote Function Call (RFC). The following code represents sample Java code used to calculate the execution time of the Web service. You can do similar coding for benchmarking or other puposes.

```
import resources.RFCControl;

import java.io.*;
import java.lang.*;
import java.util.*;

public class RFC implements com.bea.jws.WebService
{
    /**
     * @common:control
     */
    private resources.RFCControl RFCControl;


    static final long serialVersionUID = 1L;

    /**
     * @common:operation
     */
    public void RFC_CUSTOMER_GET(RFCControl.RFC_CUSTOMER_GET input)
throws Exception    {

    File outFile=new File("RESULTS.txt"); //creating an output file
    FileWriter out=new FileWriter(outFile); //creating a fileWriter for
the output file

    long diff=0; //used to store the execution time

   Calendar cal_start=Calendar.getInstance(TimeZone.getTimeZone("EST"));
//creating a start calendar
  System.out.println("<<<< start: "+ cal_start.getTimeInMillis());
//Display the start time of execution to the WEBLOGIC CONSOLE

         RFCControl.RFC_CUSTOMER_GET(input);

        Calendar
cal_end=Calendar.getInstance(TimeZone.getTimeZone("EST")); //create end
calendar

        System.out.println("<<<< end: "+ cal_end.getTimeInMillis());
Display the end time of execution to the WEBLOGIC CONSOLE
        diff=cal_end.getTimeInMillis()-cal_start.getTimeInMillis();
//Calculating the difference (execution time)
        System.out.println("<<<< EXECUTION time in Milliseconds:" +diff);
//Displaying the execution time to the WEBLOGIC Console

//writing to file
       out.write( "start time: "+ cal_start.getTimeInMillis()+"\n");
```

```
 out.write("end time: "+cal_end.getTimeInMillis()+"\n");
 out.write("execution time : "+diff+"\n");


    out.close(); //closing file



    }
}
```

The results of the execution are saved in a file as follows:

```
start time: 1073598362650
end time: 1073598362775
execution time : 125
```

APPENDIX C

Sample Files and Coding Techniques

Topics:

This section provides sample request and response documents sent between SAP and the iWay Application Adapter for SAP for BEA WebLogic . It also includes a sample RFC module and a sample wrapper module to call functions on remote destinations.

Sample RFC Request Document

```
<?xml version="1.0" ?>

<doc:RFC_WALK_THRU_TEST xmlns:doc="urn:sapcom:document:sap:business:rfc">

   <TEST_IN>
      <RFCFLOAT>0.0</RFCFLOAT>
      <RFCCHAR1></RFCCHAR1>
      <RFCINT2>0</RFCINT2>
      <RFCINT1>0</RFCINT1>
      <RFCCHAR4></RFCCHAR4>
      <RFCINT4>10</RFCINT4>
      <RFCHEX3>000000</RFCHEX3>
      <RFCCHAR2></RFCCHAR2>
      <RFCTIME>10:09:32</RFCTIME>
      <RFCDATE>2001-09-05</RFCDATE>
      <RFCDATA1>Hello World</RFCDATA1>
      <RFCDATA2></RFCDATA2>
   </TEST_IN>
   <DESTINATIONS>
   </DESTINATIONS>
   <LOG>
   </LOG>
</doc:RFC_WALK_THRU_TEST>
```

Sample RFC Response Document

```
<?xml version="1.0" ?>

<doc:RFC_WALK_THRU_TEST.Response
xmlns:doc="urn:sapcom:document:sap:business:rfc">

   <TEST_OUT>
      <RFCFLOAT>0.0</RFCFLOAT>
      <RFCCHAR1></RFCCHAR1>
      <RFCINT2>0</RFCINT2>
      <RFCINT1>0</RFCINT1>
      <RFCCHAR4></RFCCHAR4>
      <RFCINT4>10</RFCINT4>
      <RFCHEX3>000000</RFCHEX3>
      <RFCCHAR2></RFCCHAR2>
      <RFCTIME>10:09:32</RFCTIME>
      <RFCDATE>2001-09-05</RFCDATE>
      <RFCDATA1>Hello World</RFCDATA1>
      <RFCDATA2></RFCDATA2>
   </TEST_OUT>
   <DESTINATIONS>
   </DESTINATIONS>
   <LOG>
   </LOG>
</doc:RFC_WALK_THRU_TEST.Response>
```

Sample IDOC XML for Message Type DEBMAS

```
<?xml version="1.0" ?>
<DEBMAS01>
   <IDOC BEGIN="1">
      <EDI_DC40 SEGMENT="1">
         <TABNAM>EDI_DC40</TABNAM>
         <MANDT>800</MANDT>
<DOCNUM>0000000000236015</DOCNUM>
         <DOCREL>46C</DOCREL>
         <STATUS>30</STATUS>
         <DIRECT>1</DIRECT>
         <OUTMOD>2</OUTMOD>
         <EXPRSS></EXPRSS>
         <TEST></TEST>
         <IDOCTYP>DEBMAS01</IDOCTYP>
         <CIMTYP></CIMTYP>
         <MESTYP>DEBMAS</MESTYP>
         <MESCOD></MESCOD>
         <MESFCT></MESFCT>
         <STD></STD>
         <STDVRS></STDVRS>
         <STDMES></STDMES>
         <SNDPOR>SAPI46</SNDPOR>
         <SNDPRT>LS</SNDPRT>
         <SNDPFC></SNDPFC>
         <SNDPRN>I46_CLI800</SNDPRN>
         <SNDSAD></SNDSAD>
         <SNDLAD></SNDLAD>
         <RCVPOR>A000000018</RCVPOR>
         <RCVPRT>LS</RCVPRT>
         <RCVPFC></RCVPFC>
         <RCVPRN>SAMP</RCVPRN>
         <RCVSAD></RCVSAD>
         <RCVLAD></RCVLAD>
         <CREDAT>2001-09-04</CREDAT>
         <CRETIM>16:44:52</CRETIM>
         <REFINT></REFINT>
         <REFGRP></REFGRP>
         <REFMES></REFMES>
         <ARCKEY></ARCKEY>
         <SERIAL>20010904164452</SERIAL>
     </EDI_DC40>
```

```
<E1KNA1M SEGMENT="1">
   <MSGFN>005</MSGFN>
   <KUNNR>0000000001</KUNNR>
   <ANRED></ANRED>
   <AUFSD></AUFSD>
   <BAHNE></BAHNE>
   <BAHNS></BAHNS>
   <BBBNR>0000000</BBBNR>
   <BBSNR>00000</BBSNR>
   <BEGRU></BEGRU>
   <BRSCH></BRSCH>
   <BUBKZ>0</BUBKZ>
   <DATLT></DATLT>
   <FAKSD></FAKSD>
   <FISKN></FISKN>
   <KNRZA></KNRZA>
   <KONZS></KONZS>
   <KTOKD>0001</KTOKD>
   <KUKLA></KUKLA>
   <LAND1>US</LAND1>
   <LIFNR></LIFNR>
   <LIFSD></LIFSD>
   <LOCCO></LOCCO>
   <LOEVM></LOEVM>
   <NAME1>Apple Corp</NAME1>
   <NAME2></NAME2>
   <NAME3></NAME3>
   <NAME4></NAME4>
   <NIELS></NIELS>
   <ORT01>Floral Park</ORT01>
   <ORT02></ORT02>
   <PFACH></PFACH>
   <PSTL2></PSTL2>
   <PSTLZ>10010</PSTLZ>
   <REGIO>NY</REGIO>
   <COUNC></COUNC>
   <CITYC></CITYC>
   <RPMKR></RPMKR>
   <SORTL>APPLE</SORTL>
   <SPERR></SPERR>
   <SPRAS>E</SPRAS>
   <STCD1></STCD1>
   <STCD2></STCD2>
   <STKZA></STKZA>
   <STKZU></STKZU>
   <STRAS>123 Main street</STRAS>
```

```
<TELBX></TELBX>
<TELF1></TELF1>
<TELF2></TELF2>
<TELFX></TELFX>
<TELTX></TELTX>
<TELX1></TELX1>
<LZONE>0000000001</LZONE>
<XZEMP></XZEMP>
<VBUND></VBUND>
<STCEG></STCEG>
<GFORM></GFORM>
<BRAN1></BRAN1>
<BRAN2></BRAN2>
<BRAN3></BRAN3>
<BRAN4></BRAN4>
<BRAN5></BRAN5>
<UMJAH>0000</UMJAH>
<UWAER></UWAER>
<JMZAH>000000</JMZAH>
<JMJAH>0000</JMJAH>
<KATR1></KATR1>
<KATR2></KATR2>
<KATR3></KATR3>
<KATR4></KATR4>
<KATR5></KATR5>
<KATR6></KATR6>
<KATR7></KATR7>
<KATR8></KATR8>
<KATR9></KATR9>
<KATR10></KATR10>
<STKZN></STKZN>
<UMSA1>0</UMSA1>
<TXJCD></TXJCD>
<PERIV></PERIV>
<KTOCD></KTOCD>
<PFORT></PFORT>
<DTAMS></DTAMS>
<DTAWS></DTAWS>
<HZUOR>00</HZUOR>
<CIVVE>X</CIVVE>
<MILVE></MILVE>
<SPRAS_ISO>EN</SPRAS_ISO>
<FITYP></FITYP>|
<STCDT></STCDT>
<STCD3></STCD3>
<STCD4></STCD4>
<XICMS></XICMS>
<CFOPC></CFOPC>
```

```
      <TXLW1></TXLW1>
      <TXLW2></TXLW2>
      <CCC01></CCC01>
      <CCC02></CCC02>
      <CCC03></CCC03>
      <CCC04></CCC04>
      <CASSD></CASSD>
      <KDKG1></KDKG1>
      <KDKG2></KDKG2>
      <KDKG3></KDKG3>
      <KDKG4></KDKG4>
      <KDKG5></KDKG5>
      <NODEL></NODEL>
      <XSUB2></XSUB2>
     <WERKS></WERKS>

    <E1KNVVM SEGMENT="1">
       <MSGFN>005</MSGFN>
       <VKORG>0001</VKORG>
       <VTWEG>01</VTWEG>
       <SPART>01</SPART>
      <BEGRU></BEGRU>
      <LOEVM></LOEVM>
      <VERSG></VERSG>
      <AUFSD></AUFSD>
      <KALKS>1</KALKS>
      <KDGRP></KDGRP>
      <BZIRK></BZIRK>
      <KONDA></KONDA>
      <PLTYP></PLTYP>
      <AWAHR>100</AWAHR>
      <INCO1></INCO1>
      <INCO2></INCO2>
      <LIFSD></LIFSD>
      <AUTLF></AUTLF>
      <ANTLF>9</ANTLF>
      <KZTLF></KZTLF>
      <KZAZU>X</KZAZU>
      <CHSPL></CHSPL>
      <LPRIO>00</LPRIO>
      <EIKTO></EIKTO>
      <VSBED>01</VSBED>
      <FAKSD></FAKSD>
      <MRNKZ></MRNKZ>
      <PERFK></PERFK>
      <PERRL></PERRL>
      <WAERS>EUR</WAERS>
      <KTGRD></KTGRD>
```

```
<ZTERM></ZTERM>
<VWERK></VWERK>
<VKGRP></VKGRP>
<VKBUR></VKBUR>
<VSORT></VSORT>
<KVGR1></KVGR1>
<KVGR2></KVGR2>
<KVGR3></KVGR3>
<KVGR4></KVGR4>
<KVGR5></KVGR5>
<BOKRE></BOKRE>
<KURST></KURST>
<PRFRE></PRFRE>
<KLABC></KLABC>
<KABSS></KABSS>
<KKBER></KKBER>
<CASSD></CASSD>
<RDOFF></RDOFF>
<AGREL></AGREL>
<MEGRU></MEGRU>
<UEBTO>0.0</UEBTO>
<UNTTO>0.0</UNTTO>
<UEBTK></UEBTK>
<PVKSM></PVKSM>
<PODKZ></PODKZ>
<PODTG>         0</PODTG>

<E1KNVPM SEGMENT="1">
    <MSGFN>005</MSGFN>
    <PARVW>AG</PARVW>
    <KUNN2>0000000001</KUNN2>
    <DEFPA></DEFPA>
    <KNREF></KNREF>
    <PARZA>000</PARZA>
</E1KNVPM>

<E1KNVPM SEGMENT="1">
    <MSGFN>005</MSGFN>
    <PARVW>RE</PARVW>
    <KUNN2>0000000001</KUNN2>
    <DEFPA></DEFPA>
    <KNREF></KNREF>
    <PARZA>000</PARZA>
</E1KNVPM>
```

```
        <E1KNVPM SEGMENT="1">
            <MSGFN>005</MSGFN>
            <PARVW>RG</PARVW>
            <KUNN2>0000000001</KUNN2>
            <DEFPA></DEFPA>
            <KNREF></KNREF>
            <PARZA>000</PARZA>
        </E1KNVPM>

        <E1KNVPM SEGMENT="1">
            <MSGFN>005</MSGFN>
            <PARVW>WE</PARVW>
            <KUNN2>0000000001</KUNN2>
            <DEFPA></DEFPA>
            <KNREF></KNREF>
            <PARZA>000</PARZA>
        </E1KNVPM>

        <E1KNVIM SEGMENT="1">
             <MSGFN>005</MSGFN>
             <ALAND>DE</ALAND>
             <TATYP>MWST</TATYP>
             <TAXKD>0</TAXKD>
        </E1KNVIM>

     </E1KNVVM>
   </E1KNA1M>
  </IDOC>
</DEBMAS01
```

Collected IDocs

When using collected IDocs on any platform during inbound processing (service mode), if the DOCNUM field does not have a unique document number for each IDoc, the system creates an IDoc for each header record in the collected IDoc file and duplicates the data for each IDoc.

Make sure the DOCNUM field is included in the EDI_DC40 structure and that each IDoc has a unique sequence number within the collected IDoc file.

Sample RFC Module

After you have configured the SAP event adapter and the RFC destination, you can write ABAP code to execute calls at your new destination (the event adapter).

The following sample code uses a user-defined RFC module named Z_EVENT_DISPATCH.

```
FUNCTION Z_01_EVENT_DISPATCH.
CALL FUNCTION 'Z_EVENT_DISPATCH'
  DESTINATION 'IWAYDEST'
  EXPORTING
    EVENT = EVENT
    RECTYPE = RECTYPE
    OBJTYPE = OBJTYPE
    OBJKEY = OBJKEY
  TABLES
    EVENT_CONTAINER = EVENT_CONTAINER.
ENDFUNCTION.
```

Sample Wrapper Module to Call Functions on Remote Destinations (Service)

This topic describes how to invoke a service that employs SAP remote data. For example, you can use this technique to write a function using C on a UNIX server that queries an Informix database and returns the response to SAP.

The ABAP command, CALL FUNCTION, takes as an argument, DESTINATION. Using RFC (Remote Function Call) destinations, programs can be executed on external systems, and the results can be returned into SAP function module programs. For more information on this functionality, see your SAP documentation, which is available at the following URL:

http://help.sap.com

Since DESTINATION is not part of an individual BAPI (Business Application Programming Interface) or Remote Function Module (RFM), but a parameter of the SAP function mechanism, you require a *wrapper module* to invoke it as a service. In addition, you must invoke the wrapper module in place of the original function.

The wrapper module is written using SAP's ABAP/4 programming language and contains the same input and output parameters as the original function. You can obtain allof the parameters of a remote function in the function editor by selecting Edit and then, Pattern and entering the function name.

The destination inside the wrapper module must be a valid SAP RFC destination with an RFC Server program running on the remote host. For more information, see SAP's RFC Programming manual, which is available at the following URL:

http://service.sap.com

The RFC Server program must return the data to SAP in a format that follows the exact structure of the Remote Function interface, or an abnormal ending occurs in SAP.

The following is an example of a wrapper module for the SAP test function named RFC_CUSTOMER_GET.

```
FUNCTION Z_CALL_EXTERNAL.
*"----------------------------------------------------------------------
*"*"Local interface:
*"  IMPORTING
*"     VALUE(MYKUNNR) LIKE  KNA1-KUNNR DEFAULT SPACE
*"     VALUE(MYNAME1) LIKE  KNA1-NAME1 DEFAULT SPACE
*"  EXPORTING
*"     VALUE(ERRORCODE) LIKE  SY-SUBRC
*"  TABLES
*"      MYCUSTOMER_T STRUCTURE  BRFCKNA1
*"----------------------------------------------------------------------
ERRORCODE = 0.
CALL FUNCTION 'RFC_CUSTOMER_GET'
 DESTINATION 'JRDEST'
  EXPORTING
    KUNNR                   = MYKUNNR
    NAME1                   = MYNAME1
    TABLES
    CUSTOMER_T              = MYCUSTOMER_T
EXCEPTIONS
      COMMUNICATION_FAILURE = -1
      SYSTEM_FAILURE        = -2
      NOTHING_SPECIFIED     = -3
      NO_RECORD_FOUND       = -4
      OTHERS                = -5.

CASE SY-SUBRC.
     WHEN 0.
     ERRORCODE = 0.
     EXIT.
     WHEN -1 .
      ERRORCODE = 1.
     EXIT.
     WHEN -2.
      ERRORCODE = 2.
     EXIT.
     WHEN -3.
      ERRORCODE   =  3.
      EXIT.
      WHEN -4.
      ERRORCODE = 4.
      EXIT.
     WHEN -5.
     ERRORCODE  = 99999.
      EXIT.
  ENDCASE.
```

```
          .
* IF SY-SUBRC <> 0.
*ERRORCODE = SY-SUBRC.
* MESSAGE ID SY-MSGID TYPE SY-MSGTY NUMBER SY-MSGNO
*         WITH SY-MSGV1 SY-MSGV2 SY-MSGV3 SY-MSGV4.
*ENDIF.
ENDFUNCTION.
```

Calling External Functions Through the SAP DESTINATION Keyword

By using the DESTINATION argument of CALL FUNCTION, you can call synchronous remote functions based on an event in your SAP system. This feature uses the adapter architecture to trigger a synchronous process from an event within the SAP system. For more information on outbound processing, see Chapter 6, *Understanding SAP Events*.

You enable this feature by using two coding techniques:

- The DESTINATION argument of the ABAP command, CALL FUNCTION.
- A custom agent node added to a dictionary file and compiled Java program that performs the particular function(s) you require.

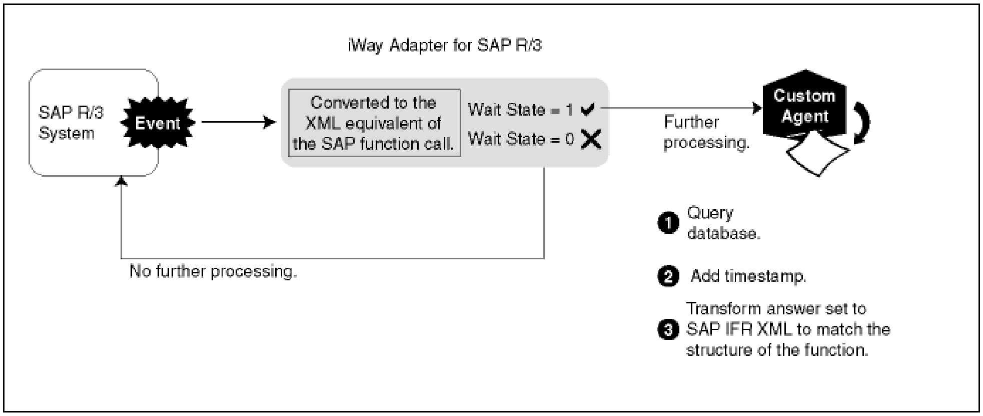
The ABAP command, CALL FUNCTION, takes as an argument, DESTINATION. Using RFC (Remote Function Call) destinations, programs can be executed on external systems, and the results can be returned into SAP function module programs. For more information on this functionality, see *Sample Wrapper Module to Call Functions on Remote Destinations (Service)* on page C-9. In addition, consult your SAP documentation, which is available at the following URL:

```
http://help.sap.com
```

After the Remote Function Call using the DESTINATION argument is made, the iWay Adapter for SAP captures the remote function call parameters. At this point, the adapter can include settings that are used to invoke synchronous processing by a custom agent.

For example, the iWay Adapter for SAP can detect a Remote Function Call that is issued from within SAP. After this SAP event occurs, the adapter can be configured not only to extract data from a SQL database but also place a time stamp on the process. The output is returned to the adapter and is used to update the SAP system. The data must be returned to SAP in a format that follows the exact structure of the Remote Function interface, or an abnormal ending occurs in SAP.

The following diagram illustrates the example in which a SQL database is queried and a timestamp is added to the query. The data is transformed to SAP IFR XML to match the structure of the Remote Function before it is returned by the adapter to SAP. The event loop is not closed (when wait is set to "1") until the agent returns the data. Then, control (and data) returns to SAP.



The default state is “0,” meaning that control is returned to SAP immediately. An XML document is generated with the parameters passed to it by SAP, and the agent determines where the data is sent. If further processing is required, it is done asynchronously.

Note: If synchronous processing is required, the Synchronous Process option must be selected when you configure the event adapter.

To enable synchronous processing, a custom agent node must be described in a dictionary file.

In the scenario, further processing takes place through a custom agent. A Java program, represented as the custom agent in the diagram, makes a call through JDBC™ against an SQL database. In addition, the Java program adds a timestamp to the query. A compiled Java program must be supplied to perform such operations and return the answer set to the adapter, which returns it to SAP. The following example is a basic sample Java code that illustrates the type of code that is required:

```
import com.ibi.edaqm.*;
import java.util.*;

/**
 *
 * <P>
 * This class extends the XDAgent class, which provides
 * several services, such as tracing.
 * <P>
 * <P>
 * Agents exist in user space, and are NOT part of
 * the edaqm package, although they are reached from the package.
 * Template Version : 5.2.9999
 * @since 2003-06-17T15:55:02Z
 */
```

```
public final class JoeRudich  extends XDAgent
{
    /**
     * Agents have a null constructor. It must be public
     * as it is reached from the edaqm package.
     */
    public JoeRudich()
    {
        super();
    }

    /**
     * Returns a short description of the agent's use.
     *
     * @return  Description
     */
    public String getDesc()
    {
        return "";
    }

    String [] Parm1 = {"Parm1", "string", "", "", "yes", "hello"};
    String [] Parm1Enum = null;
    String [] Parm2 = {"Parm2", "integer", "", "", "yes", "42"};
    String [] Parm2Enum = null;

    String[][] parmsMeta  = {
                             Parm1,
                             Parm2,
                            };

    String[][] parmsEnums = {
                             Parm1Enum,
                             Parm2Enum,
                            };

    public int getIPCount() {
        return parmsMeta.length;
    }

   private String[] groupNames ;

    private  int[][] groups ;

   private void initGroups () {
      initGroupNames();
      initGroupIdxs();
   }
```

```
    private void initGroupNames ()
    {
       int i,j;
       Vector vNames=new Vector();
       for ( i=0; i<parmsMeta.length; i++) {
          String gName=parmsMeta[i][3];
          int len=vNames.size();
          for ( j=0; j<vNames.size();j++) {
             String cur=(String)vNames.elementAt(j);
             if (cur.equals(gName))
                j=len+1;
          }
          if ( j==len)
             vNames.addElement(gName);
       }
       groupNames=new String[vNames.size()];
       for ( i=0; i < vNames.size(); i ++)
          groupNames[i]=(String)vNames.elementAt(i);
    }

    private void initGroupIdxs ()
    {
       int i,j;
       groups = new int [groupNames.length] [];
       for ( i = 0; i < groupNames.length; i++) {
          int [] idxs = new int [parmsMeta.length];
          int idxsCount=0;
          String gName= groupNames[i];
          for ( j=0; j<parmsMeta.length; j++) {
             if ( parmsMeta[j][3]==gName ) {
                idxs[idxsCount]=j;
                ++idxsCount;
             }
          }
          groups[i]= new int [idxsCount];
          for ( j = 0 ; j < idxsCount; j++ ) {
             groups[i][j]=idxs[j];
          }
       }
    }

    /**
     * Returns a String array containing the names of the parameter
groups.
     * @return array containing parameter group names
     */
    public String[] getIPGroups() {
      return groupNames;
    }
    /**
     * Returns indexes of parameters belonging to the group.
     * @param groupName name of the group
     * @return indexes of parameters belonging to the group
     */
    public int[] getIPGroupIndexes(String groupName) {
      for (int i = 0; i < groupNames.length; i++) {
        if (groupName.equals(groupNames[i]))
          return groups[i];
      }
      return new int[0];
    }

    HashMap parmMap;       // parms are stored here
    public void init(String[] parms) throws XDException
    {
        // merge input parmaters, account for required parms, and make
final parameter map
        parmMap = initParms(parms,parmsMeta);

        // your initialization code here
    }

    public String getIPName(int index)
    {
        if ((index<0)||(index>=parmsMeta.length))
        {
            return "";
        }
        return parmsMeta[index][0];
    }

    public String getIPDesc(int index)
    {
        if ((index<0)||(index>=parmsMeta.length))
        {
            return null;
        }
        return parmsMeta[index][2];
    }

    public boolean getIPReqd (int index)
    {
        if ((index<0)||(index>=parmsMeta.length))
        {
            return false;
        }
        return (parmsMeta[index][3]).equalsIgnoreCase("yes");
    }
    public String[] getIPEnum(int i)
    {
        if ((i<0)||(i>=parmsMeta.length))
        {
            return null;
        }

        return parmsEnums[i];
    }

    public int getIPType(int index)
    {
        return rtnIPType(index,parmsMeta); //service routine in extended
class
    }

    public String getIPDefaultValue(int index)
    {
        if ((index<0)||(index>=parmsMeta.length))
        {
            return null;
        }
        return parmsMeta[index][4];
    }

    /**
     * Execution of the agent begins at the process method.
     * The input document and the output document are pass in.
     *
     * @param docIn  Input document.
     * @param docOut Output document to create.
     * @exception XDException (unused in this implementation)
     */
    public void process(XDDocument docIn, XDDocument docOut)
    throws  XDException {
   // sample for copy process only; remove this and insert your code here
        docOut.setRoot(XDNode.cloneTree(docIn.getRoot()));
    }
}
<sample code block>
import java.sql.* ;

class JDBCQuery
{
 public static void main( String args[] )
  {
  try
     {
      // Load the database driver
      Class.forName( "sun.jdbc.odbc.JdbcOdbcDriver" ) ;
  // Get a connection to the database
  Connection conn = DriverManager.getConnection( "jdbc:odbc:Database" ) ;

  // Get a statement from the connection
  Statement stmt = conn.createStatement() ;

// ===> read the xml document here and extract customer number to pass to
the sql code

      // Execute the query
      ResultSet rs = stmt.executeQuery( "SELECT
NAME,ADDRESS,POST_CODE,CITY * FROM Customer
                     WHERE CUSTOMER_NUMBER = ?" ) ;

      // Loop through the result set
      while( rs.next() )
// ===> instead of println on the screen, write to the document the
information from the executed sql statement above


         System.out.println( rs.getString(1) ) ;
      // Close the result set, statement and the connection
      rs.close() ;
      stmt.close() ;
      conn.close() ;
     }
  catch( SQLException se )
     {
      System.out.println( "SQL Exception:" ) ;

      // Loop through the SQL Exceptions
      while( se != null )
         {
          System.out.println( "State   : " + se.getSQLState()  ) ;
          System.out.println( "Message: " + se.getMessage()    ) ;
          System.out.println( "Error   : " + se.getErrorCode() ) ;

          se = se.getNextException() ;
         }
     }
The results of the query along with the timestamp are then returned to
SAP. For SAP to use this output, however, it must be properly structured
or an abnormal ending will occur in SAP.
```

Using Staging BAPIs to Retrieve SAP BW Metadata

The Staging (or Warehouse Management) BAPIs (Business Application Programming Interfaces) include methods to update and retrieve metadata for InfoObjects, InfoCubes, InfoObjectCatalogs, and the definition of InfoPackages, an SAP Business Warehouse (BW), from a third party tool.

By using these BAPIs, you can connect metadata repositories and extraction engines to the SAP Business Information Warehouse. BEA WebLogic enables you to link these systems to the rest of the enterprise.

For complete documentation on the individual data structures and individual BAPI calls, see Business Information Warehouse available at the following URL:

`http://service.sap.com`

Procedure How to Deploy BAPIs Through BEA WebLogic

To deploy BAPIs through BEA WebLogic:

1. Start the iWay Servlet Application Explorer and connect to SAP.
2. Select an object to query.

   In this procedure, you use BAPI_INFOCUBE_GETLIST as an example.
3. Create a schema.
4. Create an XML instance from the schema.
5. Modify the XML by entering *A* for active version in the version tag as follows:

   ```
   <VERSION>A</VERSION>
   ```

   ```
   </InfoObject.GetList>
   ```

   The goal is to retrieve a list of all active InfoCubes, so the character, A, is entered in the VERSION parameter of the tag.
6. Start BEA WebLogic and configure a File event.

   When the XML document is placed into the specified file listener directory, BEA WebLogic automatically submits it to SAP for processing and returns the document with a list of all active InfoCubes from the SAP Business Warehouse.

   For example, the following is the request:

   ```
   <?xml version="1.0" encoding="UTF-8" ?><InfoCube.GetList.Response
   xmlns="urn:sap-com:document:sap:business"
   schemaLocation="urn:sap-com:document:sap:business
   C:\PROGRA~1\COMMON~1\iway\Adapters\5.2.104\sessions\default\sap\GAH\se
   rvice_BAPI_CUBE_GETLIST_response.xsd"
   xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"><RETURN><TYPE/><
   ID/><NUMBER>000</NUMBER><MESSAGE/><LOG_NO/><LOG_MSG_NO>000000</LOG_MSG
   _NO><MESSAGE_V1/><MESSAGE_V2/><MESSAGE_V3/>
   <MESSAGE_V4/><PARAMETER/><ROW>0</ROW><FIELD/><SYSTEM/></RETURN>
   ```

For example, the following is the response:

```
<INFOCUBELIST><item><INFOCUBE>0BWTCFC1</INFOCUBE><OBJVERS>A</OBJVERS>
<TEXTLONG>BW Technical Content
FC1</TEXTLONG><OBJSTAT>ACT</OBJSTAT><ACTIVFL>X</ACTIVFL>
<INFOAREA>0BWTCT_FCHA</INFOAREA><CUBETYPE>B</CUBETYPE>
</item><item><INFOCUBE>0BWTCFC2</INFOCUBE><OBJVERS>A</OBJVERS>
<TEXTLONG>BW Technical Content
2</TEXTLONG><OBJSTAT>ACT</OBJSTAT><ACTIVFL>X</ACTIVFL>
<INFOAREA>0BWTCT_FCHA</INFOAREA><CUBETYPE>B</CUBETYPE>
      </item>
.
.
.
</INFOCUBELIST></InfoCube.GetList.Response>
```

Creating XML Islands

The following topic and example describe how to create XML islands by embedding iWay requests into an input document.

Document Enrichment

After an input document is transformed and then executed at run time, the original input data is preserved in the output document and returned with the query results to the client. This is referred to as document enrichment.

The following rules apply when embedding requests:

1. The root tag must *not* be <eda> or <iway>.
2. Valid tags for the embedded request include <eda> or <iway>.
3. A valid SAP agent must be defined and referenced in the DSN attribute of the request tag.

You can combine islands for different agents (for example, PeopleSoft and SAP) in the same document.

If an error causes an exception, all processing stops and exception processing occurs. If the target system returns the error (for example, no data found, invalid parameters, and so forth), the errors are returned back in the document.

Example Transforming SAP IFR XML Into an Embedded iWay Request

The following example describes how to transform an XML document that contains data to an embedded iWay request document. An embedded iWay request document contains an iWay request segment (with an SAP function), but it is embedded within the original XML input document.

Source Input Document (XML)

The example input document contains XML that represents a search to retrieve a list of:

- Potential customers by names that start with the characters AB.
- High performers by names that start with the characters BA.

Note: This document has an XML root tag of <Customers>, an arbitrary name used to differentiate the two in the configuration.

```
<?xml version="1.0" encoding="ISO-8859-1" ?>
<Customers>
    <referer>Jack London</referer>
    <message>Here is the list of potential customers. I have assigned
each
     salesman a small group listed by alphabetical order. More prospects
     tommorow</message>
</Customers>
```

Target Transformation Output (Embedded iWay Request)

The transformation takes the original document and embeds the request within it:

```
<?xml version="1.0" encoding="ISO-8859-1" ?>

<Customers>
  <referer>Jack London</referer>
  <message>Here is the list of potential customers. I have assigned each
   salesman a small group listed by alphabetical order. More prospects
   tommorow</message>
 <salesman_arthur>
  <eda>
   <request agent="mysap">
    <data>
     <RFC_CUSTOMER_GET>
      <KUNNR />
      <NAME1>AB*</NAME1>
     </RFC_CUSTOMER_GET>
    </data>
   </request>
  </eda>
 </salesman_arthur>
 <message1>remember that a pleasant smile is the best sales
  technique</message1>
 <message2>region 1 high performers get an extra bonus</message2>
 <salesman_jenkens>
  <eda>
   <request agent="mysap">
    <data>
     <RFC_CUSTOMER_GET>
      <KUNNR />
      <NAME1>BA*</NAME1>
     </RFC_CUSTOMER_GET>
    </data>
   </request>
  </eda>
 </salesman_jenkens>
 <footing>Please report all results at the end of the day to
  555-555-1214</footing>
</Customers>
```

Target Transformation Output (Embedded iWay Response)

After the transformation is defined, it must be deployed to the BEA WebLogic run-time environment where it can be executed. In this case, the incoming <Customers> document is transformed into the embedded request that contains the SAP function (RFC_CUSTOMER_GET). BEA WebLogic then executes the SAP function and returns the original document that was enriched with the list of potential customers and high performers that meets the search criteria. The following is the ultimate output returned to the client:

```
<?xml version="1.0" encoding="ISO-8859-1" ?>

<Customers>
 <referer>Jack London</referer>
 <message>Here is the list of potential customers. I have assigned each
  salesman a small group listed by alphabetical order. More prospects
  tommorow</message>
 <salesman_arthur>
  <eda>
   <response>
    <cncresult>
     <edastatus>0</edastatus>
     <result>
      <RFC_CUSTOMER_GET.Response>
       <CUSTOMER_T>
        <item>
         <KUNNR>0000003691</KUNNR>
         <ANRED />
         <NAME1>ABC Architects</NAME1>
         <PFACH />
         <STRAS>1 1 123 N Daleware Ave</STRAS>
         <PSTLZ>19107</PSTLZ>
         <ORT01>PHILADELPHIA</ORT01>
         <TELF1 />
         <TELFX />
        </item>

       <item>
         <KUNNR>0000100073</KUNNR>
         <ANRED>Firma</ANRED>
         <NAME1>ABC Marketing</NAME1>
         <PFACH />
         <STRAS>14 Picadilli Circus</STRAS>
         <PSTLZ />
         <ORT01>London</ORT01>
         <TELF1 />
         <TELFX />
        </item>

       <item>
         <KUNNR>0000100074</KUNNR>
         <ANRED>Firma</ANRED>
         <NAME1>ABC Marketing</NAME1>
         <PFACH />
         <STRAS>Burgstraße 20</STRAS>
         <PSTLZ>78467</PSTLZ>
         <ORT01>Konstanz</ORT01>
         <TELF1>07531 365734</TELF1>
         <TELFX />
        </item>

       <item>
         <KUNNR>0000300170</KUNNR>
         <ANRED>Company</ANRED>
         <NAME1>ABC Americas, Inc.</NAME1>
         <PFACH />
         <STRAS>5300 Memorial Drive</STRAS>
         <PSTLZ>99694</PSTLZ>
         <ORT01>HOUSTON</ORT01>
         <TELF1 />
         <TELFX />
        </item>
```

```
<item>
  <KUNNR>0000300280</KUNNR>
  <ANRED>Company</ANRED>
  <NAME1>ABC Technology</NAME1>
  <PFACH />
  <STRAS>678 Philmont Avenue</STRAS>
  <PSTLZ>02195</PSTLZ>
  <ORT01>NEWTON</ORT01>
  <TELF1 />
  <TELFX />
 </item>

<item>
  <KUNNR>1000000030</KUNNR>
  <ANRED />
  <NAME1>ABACO, CASA DE BOLSA</NAME1>
  <PFACH />
  <STRAS>1 Bosque de Duraznos</STRAS>
  <PSTLZ>17000</PSTLZ>
  <ORT01>Mexiko City</ORT01>
  <TELF1>3268000</TELF1>
  <TELFX>3268001</TELFX>
 </item>

</CUSTOMER_T>
```

```
      </RFC_CUSTOMER_GET.Response>
     </result>
    </cncresult>
   </response>
  </eda>
 </salesman_arthur>
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555-555-1214</footing>
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