SYBASE®

Configurator Guide

e-Biz Impact™

5.4.5

DOCUMENT ID: DC10095-01-0545-01

LAST REVISED: July 2005

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Contents

About This Book

Audience

This book is for system and application administrators that configure e-Biz Impact™ version 5.4.5 implementations.

How to use this book

This book contains these chapters:

- Chapter 1, “Using the Configurator,” describes the Configurator, which is used to configure e-Biz Impact implementations.
- Chapter 2, “Configuring Clusters,” explains how to configure clusters, the logical container for e-Biz Impact components.
- Chapter 3, “Configuring Controllers,” describes how to configure cluster controllers.
- Chapter 4, “Configuring Applications,” explains how to configure Store and Forward Manager (SFM) applications, Object Definition Language (ODL) applications, WebSphere MQ messaging applications, Dfcsrv applications, and Java applications.
- Chapter 5, “Deploying Files and Executing e-Biz Impact Clusters,” describes the procedures you perform to execute an e-Biz Impact cluster. The chapter also explains how to use the Harvest utility.

Related documents

e-Biz Impact documentation The following documents are available on the Sybase™ Getting Started CD in the e-Biz Impact 5.4.5 product container:

- The e-Biz Impact installation guide explains how to install the e-Biz Impact software.
- The e-Biz Impact release bulletin contains last-minute information not documented elsewhere.

e-Biz Impact online documentation The following e-Biz Impact documents are available in PDF and DynaText format on the e-Biz Impact 5.4.5 SyBooks CD:

- The *e-Biz Impact Application Guide* provides information about the different types of applications you create and use in an e-Biz Impact implementation.

- The *e-Biz Impact Authorization Guide* explains how to configure e-Biz Impact security.
- *e-Biz Impact Command Line Tools Guide* describes how to execute e-Biz Impact functionality from a command line.
- The *e-Biz Impact Configurator Guide* (this book) explains how to configure e-Biz Impact using the Configurator.
- The *e-Biz Impact Feature Guide* describes new features, documentation updates, and fixed bugs in this version of e-Biz Impact.
- The *e-Biz Impact Getting Started Guide* provides information to help you quickly become familiar with e-Biz Impact.
- The *Monitoring e-Biz Impact* explains how to use the Global Console, the Event Monitor, and alerts to monitor e-Biz Impact transactions and events. It also describes how e-Biz Impact uses the standard Simple Network Management Protocol (SNMP).
- *Java Support in e-Biz Impact* describes the Java support available in e-Biz Impact 5.4.5.
- The *e-Biz Impact MSG-IDE Guide* describes MSG-IDE terminology and explains basic concepts that are used to build Object Definition Language (ODL) applications.
- The *e-Biz Impact ODL Guide* provides a reference to Object Definition Language (ODL) functions and objects. ODL is a high-level programming language that lets the developer further customize programs created with the IDE tools.
- The *e-Biz Impact TRAN-IDE Guide* describes how to use the TRAN-IDE tool to build e-Biz Impact production objects, which define incoming data and the output transactions produced from that data.

Note The *e-Biz Impact ODL Application Guide* has been incorporated into the *e-Biz Impact ODL Guide*.

The *e-Biz Impact Alerts Guide*, the *e-Biz Impact SNMP Guide*, and the *e-Biz Impact Global Console Guide* have been combined into a new guide—*Monitoring e-Biz Impact*.

Adaptive Server Anywhere documentation The e-Biz Impact installation includes Adaptive Server® Anywhere, which is used to set up a Data Source Name (DSN) used with e-Biz Impact security and authorization. To reference

Adaptive Server Anywhere documentation, go to the Sybase Product Manuals Web site at Product Manuals at http://www.sybase.com/support/manuals/, select SQL Anywhere Studio from the product drop-down list, and click Go.

Note the *SyBooks Installation Guide* on the Getting Started CD, or the *README.txt* file on the SyBooks CD for instructions on installing and starting SyBooks.

Other sources of information

Use the Sybase Getting Started CD, the SyBooks CD, and the Sybase Product Manuals Web site to learn more about your product:

- The Getting Started CD contains release bulletins and installation guides in PDF format, and may also contain other documents or updated information not included on the SyBooks CD. It is included with your software. To read or print documents on the Getting Started CD, you need Adobe Acrobat Reader, which you can download at no charge from the Adobe Web site using a link provided on the CD.
- The SyBooks CD contains product manuals and is included with your software. The Eclipse-based SyBooks browser allows you to access the manuals in an easy-to-use, HTML-based format.

  Some documentation may be provided in PDF format, which you can access through the PDF directory on the SyBooks CD. To read or print the PDF files, you need Adobe Acrobat Reader.

  Refer to the *SyBooks Installation Guide* on the Getting Started CD, or the *README.txt* file on the SyBooks CD for instructions on installing and starting SyBooks.
- The Sybase Product Manuals Web site is an online version of the SyBooks CD that you can access using a standard Web browser. In addition to product manuals, you will find links to EBFs/Maintenance, Technical Documents, Case Management, Solved Cases, newsgroups, and the Sybase Developer Network.

  To access the Sybase Product Manuals Web site, go to Product Manuals at http://www.sybase.com/support/manuals/.

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Technical documentation at the Sybase Web site is updated frequently.

❖ **Finding the latest information on product certifications**

1 Point your Web browser to Technical Documents at http://www.sybase.com/support/techdocs/.

2 Select Products from the navigation bar on the left.

3 Select a product name from the product list and click Go.

4 Select the Certification Report filter, specify a time frame, and click Go.

5 Click a Certification Report title to display the report.

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2 Click MySybase and create a MySybase profile.

Sybase EBFs and software maintenance

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1 Point your Web browser to the Sybase Support Page at http://www.sybase.com/support.

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3 Select a product.

4 Specify a time frame and click Go.

5 Click the Info icon to display the EBF/Maintenance report, or click the product description to download the software.

Conventions

The syntax conventions used in this manual are:

Key	Definition
commands and methods	Command names, command option names, utility names, utility flags, Java methods/classes/packages, and other keywords are in lowercase Arial font.

Key	Definition
variable	Italic font indicates: • Program variables, such as *myServer* • Parts of input text that must be substituted, for example: *Server*.log • File names
File | Save	Menu names and menu items are displayed in plain text. The vertical bar shows you how to navigate menu selections. For example, File | Save indicates "select Save from the File menu."
`package 1`	Monospaced font indicates: • Information that you enter in a graphical user interface, at a command line, or as program text • Sample program fragments • Sample output fragments

Accessibility features

This document is available in an HTML version that is specialized for accessibility. You can navigate the HTML with an adaptive technology such as a screen reader, or view it with a screen enlarger.

For information about how Sybase supports accessibility, see Sybase Accessibility at http://www.sybase.com/accessibility. The Sybase Accessibility site includes links to information on Section 508 and W3C standards.

If you need help

Each Sybase installation that has purchased a support contract has one or more designated people who are authorized to contact Sybase Technical Support. If you cannot resolve a problem using the manuals or online help, please have the designated person contact Sybase Technical Support or the Sybase subsidiary in your area.

CHAPTER 1

Using the Configurator

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Introduction

The Configurator is a Microsoft Management Console (MMC) snap-in that allows you to configure e-Biz Impact and all of its components.

Use the Configurator to define your clusters, controllers, and applications. When you define applications, the objects you create reference the actual code files that you create that contain instructions on how to handle events (receive, transform, store, and deliver transactions or data). Each cluster's and application's configuration details are stored in separate *.xml* and *.cfg* files.

Use MSG-IDE to develop the code for Object Definition Language (ODL) applications. Use TRAN-IDE to develop the code for Store and Forward Manger (SFM) applications.

Note See the *e-Biz Impact MSG-IDE* for detailed information about developing AIMs. See the *e-Biz Impact TRAN-IDE Guide* for details about creating production objects.

Microsoft Management Console

The Microsoft Management Console (MMC) is the Microsoft standard administrative tool that provides one console from which you can run the Configurator, as well as the Authorization Console and Global Console. e-Biz Impact also provides an independent MMC console for each of these tools. This flexibility allows you to run all three tools from one console, or run each tool independently in its own console.

Note The MMC is available only on Windows systems, as are the Configurator, Authorization Console, and Global Console.

- To access the Configurator's independent console, select Start | Programs | Sybase | e-Biz Impact 5.4 | Configurator.
- To use the Configurator, the Authorization Console, and the Global Console from a single user interface, create an MMC console that contains all three snap-ins.

  Note You can also add the snap-ins to an existing MMC console.

  A "snap-in" is the basic component of an MMC console. Snap-ins always reside in a console; they do not run by themselves.

  When you install a component that has a snap-in associated with it on a computer running Windows, the snap-in is available to anyone creating a console on that computer (unless restricted by a user policy).

You can create a shortcut to the console and copy the icon to your desktop for easy access to e-Biz Impact user interfaces.

❖ **Adding the Configurator snap-in**

To start the MMC for the first time and add the appropriate snap-ins:

1 Select Start | Run.

2 Type `mmc` and click OK. The MMC console appears.

Note Windows XP 64-Bit Edition includes both 64-bit and 32-bit versions of MMC. The default version of MMC that runs in Windows XP 64-Bit Edition is the 64-bit version. To work with e-Biz Impact, you must run the 32-bit version of MMC by entering `mmc -21` in the Run dialog box.

3 Select Console | Add/Remove Snap-in.

Note On Windows XP Professional, select File | Add/Remove Snap-in.

4 The Add/Remove Snap-in dialog box appears, click Add.

5 When the Add/Remove Standalone Snap-in window appears, select e-Biz Impact Configurator and click Add.

Note To add the remaining two e-Biz Impact snap-ins, the Authorization Console and the Global Console, select each item and click Add.

6 Click Close when you finish adding snap-ins.

7 Click OK to add the snap-ins and return to the console.

8 Select Console | Save As to name the console. Name the console any name that is meaningful to your e-Biz Impact implementation, for example, *ProductionConsole.msc*. Save the console file to the *\Sybase\ImpactClient-5_4* directory.

9 Select Console | Exit to close the window.

10 To create a shortcut to this console, use the Microsoft File Explorer to right-click the console file, and select Create Shortcut.

11 To add the shortcut to the desktop, select it and drag it to the desktop.

12 To add the shortcut to the Start menu, drag or copy the shortcut to *C:\Documents and Settings\All Users\Start Menu\Programs\Sybase\e-Biz Impact 5.4* or any other location of the Start menu e-Biz Impact shortcuts.

Starting the Configurator

Before you use the Configurator, you must create the actual code for your acquisition and delivery AIMs, and define the production objects referenced by the SFM.

Once you develop these applications, you are ready to create and configure a cluster, the logical root container for all e-Biz Impact components.

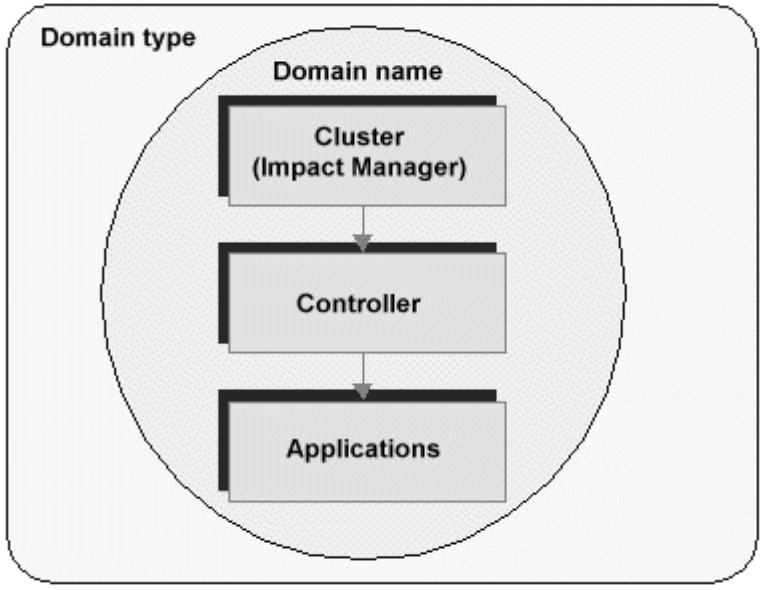
To start the Configurator, select Start | Program Files | Sybase | e-Biz Impact 5.4 | Configurator.

If your e-Biz Impact tools all run from a single MMC console, select Start | Program Files | Sybase | e-Biz Impact 5.4 | *console_name*, where *console_name* is the name under which you saved the console.

Configuring e-Biz Impact

When you configure your implementation, note that e-Biz Impact components have a hierarchical relationship.

Figure 1-1: Component hierarchy



Clusters A cluster is the highest-level logical component of the e-Biz Impact architecture and coordinates the activity of controllers. Each cluster can contain one or multiple controllers. Clusters reside within a domain, which provides a logical grouping under which clusters can be run. Domain types might include Development, Testing, or Production. The default domain is Impact.

A cluster represents a container for a single, distinct e-Biz Impact environment. Each e-Biz Impact instance (installation) can have multiple clusters, which can be local or remote. Multiple clusters allow for development, testing, production, or load-balancing schemes.

When you save a cluster node in the Configurator (right-click a cluster in the tree view and select Save), the resulting XML file (*<cluster_name>.xml*) contains all configuration information for a specific cluster and references the individual configuration files for each controller and its associated applications.

Note To configure a cluster, see Chapter 2, “Configuring Clusters.”

Controllers Controllers manage e-Biz Impact applications. You can create multiple controllers for each cluster. For example, you can create a controller that includes an SFM and AIMs to interact with billing and inventory systems and another controller to interact with ordering and fulfillment systems.

Note To configure controllers, see Chapter 3, “Configuring Controllers.”

Applications Applications are controller components. You can have all SFMs and AIMs under one controller, or have each AIM and SFM have its own controller to distribute the load. e-Biz Impact applications include:

- SFM – Store and Forward Manager applications that define the routing of information from application to application. SFMs handle message qualification, safe storage, translation, and distribution, in conjunction with the production objects that you build in TRAN-IDE.
- Router – routers are used instead of SFMs in WebSphere MQ messaging implementations. Routers are similar to SFMs, but do not provide safe storage.
- ODL – ODL applications, such as acquisition or delivery AIMs, built using MSG-IDE. ODL applications are responsible for gathering data from an endpoint application and delivering it to another endpoint application via the SFM.
- Multisrv – Multisrv applications work with ODLs to support multiple simultaneous connections on a single socket.
- MQAcq – configurable WebSphere MQ acquisition AIMs.
- MQDel – configurable WebSphere MQ delivery AIMs.
- Java – Java applications, such as Java-based AIMs.
- Dfcsrv – applications that bridge distributed function calls to remote clusters; that is, applications that run on a different cluster.

Each application has its own configuration file that uses a naming convention of <*cluster_name*>.<*application_name*>.*cfg*.

An ODL AIMs have a project file that uses the naming convention <*project_name*>.*prj*. For example, the project file for an acquisition AIM might be *acq.prj*. One project file can also be associated with multiple AIMs.

Note To configure applications, see Chapter 4, “Configuring Applications.”

CHAPTER 2

Configuring Clusters

This chapter explains how to create and configure a cluster, the logical container for e-Biz Impact components.

Creating clusters

Once you develop the code for AIM applications and production objects, use this procedure to create a new cluster.

1 Start the Configurator. See “Starting the Configurator” on page 3.

2 When the Configurator window opens, right-click the e-Biz Impact Configurator node in the tree view and select New Cluster.

A new cluster, “Cluster1,” is created as a child beneath the e-Biz Impact Configurator parent node.

Note If the cluster icon does not appear in the tree view, click the plus sign to the left of e-Biz Impact Configurator to expand the node.

3 Right-click Cluster1 to see a list of available menu options:

- Unload – remove the selected cluster from the Configurator. This option does not remove the cluster configuration files from your development environment; it just removes the cluster from the Configurator. Once you save a cluster, you can reload it by right-clicking the e-Biz Impact Configurator root node and selecting Load Cluster.

  Note To unload all clusters to the working directory, right-click the e-Biz Impact 5.4 Configurator node in the tree view, and select All Tasks | Unload All Clusters.

- Save – save all files associated with the selected cluster under the same name. When you save a cluster for the first time, you provide the name under which to save it. When you subsequently save a cluster, this option saves it under the same name.
- Save As – save the cluster configuration files to a different name or location; for example, to save an existing cluster as a backup before making changes.
- Delete – delete a cluster and the associated files from the development environment.
- Rename – rename the cluster. Right-click the cluster in the tree view and select Rename to rename the cluster. Enter the new name and press Enter.
- Properties – open the Cluster Properties window.

4 Right-click the cluster in the tree view and select Save As to save the cluster for the first time. Afterward, select Save to save any cluster additions or changes.

Note To save all clusters, right-click the e-Biz Impact 5.4 Configurator node in the tree view, and select Save All Clusters.

Configuring cluster properties

After you create the cluster in the Configurator, enter the cluster's properties. You can also modify the properties of an existing cluster.

This procedure allows you to enter the properties for a new cluster, or to modify the properties of an existing cluster.

1 Select the cluster node in the Configurator tree view.

2 Right-click the cluster in the tree view and select Properties.

General tab

1 When the Cluster Properties window opens, select the General tab and complete these fields:

- Cluster Name – enter a unique cluster name (for example, ProductCluster1) to replace the default name of Cluster1.
- Security – click the arrow button to go to the Advanced tab and select whether you are using e-Biz Impact security. See step 4 for instructions. See the *e-Biz Impact Authorization Guide* for more information.
- Monitoring – select the monitoring options you want to run on this cluster.
  - Publish telemetry to SNMP service – publish SNMP telemetry. By default, this option is selected, and is required if you are using the Global Console.
  - Publish alerts to SNMP service – publish generated alerts via SNMP traps.
  - Send alerts as XML to Open Transport – publish generated alerts via a configured Open Transport context name and transport name. When you select this option, you must complete two additional options:
    - Context Name – the Open Transport context stanza name, which must match the context name in the *nnsyreg.dat* file. The name must begin with a letter, and can contain letters, numbers, and the underscore (_) character. The default name is `OTI_Context`.

- Transport Name – identifies the Open Transport transport stanza name, which must match the transport name in the *nnsyreg.dat* file. The default is `AlertsIn`.

Note For more information about Open Transport alert configuration, see the following documents, which are available on the e-Biz Impact 5.4.5 SyBooks CD that comes with the product:

- *Monitoring e-Biz Impact*
- *Open Transport 2.6 Installation and Configuration*

You should also refer to the configuration files that accompany your Open Transport drivers for more information.

- Communication – specify the TCP port through which the cluster can receive external Distributed Function Call (DFC) or command and control (CNC) requests.

2 Click Apply to save the General tab entries.

Advanced tab

1 Select the Advanced tab. The version of e-Biz Impact that was used to create the cluster displays at the top of the tab. Complete these options:

- Security – select this option if you are using the Authorization database for security.

Warning! You must select this option if you are going to use e-Biz Impact security (authorization). If you do not select this option, all security settings entered in the Authorization Console are ignored.

- Data Source Name – enter the name that you created when you configured the ODBC connection, for example, “Cluster1_dsn”.

  The DSN is used by the e-Biz Impact server at runtime to check permissions for every CNC request. This DSN must point to the e-Biz Impact where the cluster will run.

Note Authorization is controlled by the Adaptive Server Anywhere database and the Authorization Console. See the *e-Biz Impact Authorization Guide* for more information.

- Process Distribution – choose how to distribute the processes that run for this cluster's controllers.
  - Single Process – select this option to run each controller that you create for this cluster as a single process, on a single port.
  - Multi-Process – select this option to run each controller as a separate process.
- Email – enter the host name or IP address, and port number of the SMTP e-mail server from which you want to route e-mail message alerts generated by your applications. See *Monitoring e-Biz Impact* for more information.

Note If you leave the Email options blank, the cluster uses the default system configuration (localhost and port 25).

2 Click Apply to save the Advanced tab entries.

Macros and Notes tabs

1 Select the Macros tab to view all system-provided macros configured for this cluster. The macros are used by e-Biz Impact to define global substitution variables used in ODL and Java applications, and are included in the Configurator-generated XML file when you save the cluster. You cannot edit the macros; they display only for your reference.

2 Select the Notes tab. Click Description to enter an optional comment or description about the cluster.

3 Click Apply to save the note.

4 Click OK to close the window.

5 Right-click the cluster and select Save As to save the cluster with a different name. Select Save to save the cluster for the first time or to save an existing cluster under the same name.

Loading existing clusters

When you start the Configurator, it automatically loads all the clusters in its default directory. This directory is set from the NNSY_ROOT environment variable or from the console if NNSY_ROOT is not set.

To load an existing cluster:

1 Start the Configurator. See “Starting the Configurator” on page 3.

2 Right-click e-Biz Impact Configurator in the tree and select Load Cluster.

Note To load all clusters from the specified working directory, right-click the e-Biz Impact 5.4 Configurator node in the tree view, and select All Tasks | Reload All Clusters.

3 When the Open dialog box appears, navigate to the location of the cluster’s XML configuration file, select it, and click Open. The cluster appears in the tree pane of the console where you can edit configuration options as necessary.

Warning! Do not modify the configuration files outside of the Configurator. If the files become corrupted, they cannot be reloaded into the Configurator.

Upgrading clusters

You can upgrade e-Biz Impact version 5.4.0 clusters to version 5.4.5. Upgrading identifies the smallest TCP port number in the cluster and uses it for the external port value.

1 Use the instructions Chapter 5, “Deploying Files and Executing e-Biz Impact Clusters,” to deploy version 5.4.0 clusters to the version 5.4.5 e-Biz Impact server.

2 Use the instructions in “Loading existing clusters” on page 12 to load the clusters into the Configurator and make any necessary changes.

3 Save the upgraded clusters.

Warning! Upgraded clusters do not run on e-Biz Impact server version 5.4.0 and 5.4.2 binaries.

CHAPTER 3

Configuring Controllers

This chapter describes how to create and configure application controllers.

Overview

Each cluster must have at least one controller that governs applications such as AIMs and SFMs.

Note Depending on transaction size considerations, you may want to distribute the processing load and create one controller for each application, or one controller for all applications.

A controller corresponds to a process at runtime and provides a runtime execution environment for the applications it controls.

Creating controllers

To create a new controller:

1 Right-click the Controllers node (beneath the Cluster node in the tree view) and select New | Controller. A new controller, named Controller1, appears in the right pane.

2 Right-click the new controller. A list of menu options appears:

- New – create an application managed by this controller. See Chapter 4, “Configuring Applications.”

- Rename – rename the selected controller. Right-click the controller in the tree view and select Rename to rename the controller. Enter the new name and press Enter.
- Delete – delete the controller from the cluster.
- Properties – display the controller's properties. Right-click the controller and select Properties. The Controller Properties window appears.

Configuring controller properties

This procedure allows you to enter the properties for a new controller, or to modify the properties of an existing controller.

1 Right-click the controller in the tree view and select Properties.

2 When the Controller Properties window opens, select the General tab and complete these fields:

- Name – accept the default controller name or enter another name. Names must begin with a letter, and can include letters, numbers, and the underscore character. A cluster and its associated controllers must have unique names.
- Tracking – if you select this option, the working directory changes accordingly when you change the controller name. This directory tells the e-Biz Impact executable where to find the configuration information for this controller once the configuration files are deployed to the server. This also the working directory for the local controller process when running in multiprocess mode.
- Working Directory – unselect Tracking to enable the Working Directory text box and enter the working directory or accept the default, which matches the controller name.

3 Click Apply to save the General tab entries.

4 Select the Notes tab. Click Description to enter an optional comment or description about the controller.

5 Click Apply to save the note.

6 Click OK to close the window and return to the main console.

CHAPTER 4

Configuring Applications

This chapter describes how to configure the applications that correspond to the AIMs and production objects for which you have developed code.

Introduction

Once you have defined one or more controllers, add and configure the applications for which each controller is responsible. Each controller can define and run multiple applications.

Note Before or after you add and configure applications in the Configurator and prior to deploying a cluster, you must develop the actual application code using MSG-IDE for ODL applications, TRAN-IDE for SFM applications, and third-party products for Java applications.

Each application has its own configuration file that follows a naming convention of *<cluster name>.<application name>.cfg*. This convention makes it easy to copy all configuration files for a particular cluster.

❖ **Creating and configuring applications**

This procedure describes the steps to perform first to create any application type, and assumes that you have already created a cluster and one or more controllers in the Configurator.

1 Start the Configurator. See “Starting the Configurator” on page 3.

2 Load the cluster for which you are defining applications.

   a When the Configurator opens, right-click the e-Biz Impact 5.4 Configurator node in the tree view and select All Tasks | Load.

   b When the Open dialog box appears, navigate to the location of the cluster configuration file, select the file, then click Open. A cluster icon displays in the tree view beneath the Configurator node.

3 In the Configurator tree view (left pane), expand the cluster node; that is, click the plus sign next to the cluster icon to display the objects beneath that cluster.

4 Expand the Controllers node.

5 Right-click the controller for which you want to define applications, select New, then select the type of application you want to create (SFM, ODL, Multisrv, Router, MQAcq, MQDel, Java, or Dfcsrv).

6 Once you select an application, an icon for that application displays in the tree view below the controller and in the right pane.

7 Right-click the new application and select Properties. The Properties window for the selected application opens. Complete the fields and options to configure the application.

❖ **Modifying applications**

- To modify existing applications, right-click the application in the tree view or right pane and select:
  - Cut – to remove the selected application from its current controller and move it to a different controller

    Note You can also drag and drop (move and paste) applications from one controller to another by selecting the application and holding down the mouse button while moving the mouse.

  - Copy – to duplicate the selected application and copy it to a different controller. The duplicate application has the default name of Copy of application1
  - Paste – to paste a cut or copied application from a different controller. This option appears only when you have just used Cut or Copy.
  - Delete – to delete the application from the controller.

- Rename – to rename the selected application. and select Rename to rename the application. Enter the new name and press Enter.
- Properties – to display the application's properties. Right-click the application and select Properties. The Application Properties window appears.

Warning! Do not perform drag and drop operations in the Configurator on Windows XP. Drag and drop procedures are not guaranteed to work and the Microsoft Management Console (MMC) may fail. Use the menu options instead to move and paste applications from one controller to another.

Configuring ODL applications

Before or after configuring an ODL application, use MSG-IDE to create the project for this acquisition or delivery AIM. The resulting project file is referenced in the ODL configuration file generated by the Configurator. See the *e-Biz Impact MSG-IDE Guide* for more detailed information on using MSG-IDE.

All applications run as a single-process thread running in a controller. A controller can contain multiple applications, as well as multiple instances of one application, but each application is single-process thread.

To add and configure an ODL application:

1 Start the Configurator and load the cluster for which you want to add and configure applications. See "Creating and configuring applications" on page 17.

2 Expand the Controllers node in the tree view.

3 Right-click the Controller for which you want to create an application. Select New | ODL. The new ODL, named ODL1, appears below the selected controller and in the right pane.

4 Double-click ODL1 in the right pane or right-click ODL1 in the tree view and select Properties. The ODL Properties window appears.

General tab

1 Select the General tab and complete the following fields to configure the ODL application:

- Active – make the application active. Inactive applications are not loaded when the cluster starts.
- Tracking – allows the ODL application's working directory to be set automatically. Selecting this option dynamically keeps the working directory the same as the ODL application name.
- Name – enter a name for this ODL application. Application names should indicate their purpose; for example, a acquisition AIM could be named "ADT_ACQ."
- Working Directory – unselect Tracking to enable the Working Directory text box. Enter the working directory or accept the default, which matches the ODL application name. This directory tells the e-Biz Impact executable where to find the configuration information for this ODL application once the configuration files are deployed to the server.
- Project File – enter the optional path and file name of the AIM project files generated by MSG-IDE that are associated with this ODL application. Paths are relative to the application working directory.
- Command Line – enter any optional parameters into your ODL application. These arguments can be accessed by the ODL application by using clGetArgc() and clGetArgv(). See the *e-Biz Impact ODL Guide* for more information.
- Log Limit (KB) – defines the size of the ODL application log file. The default of 1024 (1MB) is suggested for optimum performance. If you select the Debug option on the Advanced tab, increase the size of the log.
- Depth – the number of copies of the log file that e-Biz Impact maintains. The default setting of 2 indicates that e-Biz Impact creates an additional file when the main activity log reaches its maximum size. If the second file reaches the limit, e-Biz Impact rolls back to the first file, overwriting the content.
- Instances – enter or select the minimum and maximum number of instances of this ODL application that can be created.
- Mode – select the ODL application mode:

- Acquire – acquire applications are simple acquisition AIMs that acquire data from an endpoint.

  Note Acquire applications run on a single thread and cannot receive DFCs from another application, and cannot use timers or protocols.

- Server – server applications can be acquisition or delivery AIMs that acquire or deliver data to or from endpoints. Most acquisition or delivery AIMs are server applications. Server applications support DFCs, timers, and communication protocols.

- TRAN-IDE Functionality – ODL, like SFM, can use tables. You must keep all tables for an ODL application in the same directory. The Table field is the path to the table directory, which can be an absolute or relative path, starting from the current application working directory.

  - Table – the location of production object tables, if used.

    Note Tables allows you to view table objects in TRAN-IDE. A table object contains columns of data. Use one of the columns to search for a match to data in a field object, then place data from one or more of the other columns into the output transaction. Table objects are not IDE objects; they are wrapped flat files.

  - Dynamic Table Reload – reload the ODL lookup tables during runtime when changes have been made to the table files. The table is also reloaded when the application is restarted (disabled, then enabled).

2 Click Apply.

DFC tab

Declaring DFCs allows other applications to call the DFCs to exchange data. Because only server applications can receive DFCs, these options are not available for acquire applications.

1 Select the DFC tab and complete these options to specify the name and flavor of the DFCs used to call the AIM. For a delivery AIM, there are two DFCs— servayt and servproc. A source AIM listed in the SFM configuration requires a ping function.

- Name – enter the function name. For example, for a delivery AIM, enter the name as defined by the Function Name Override specified for the SFM.
- Flavor – enter the flavor of the function. For example, for a delivery AIM, enter the flavor as defined by the destination flavor specified in the SFM destination.

Note The combination of Name and Flavor makes a function unique.

- Timeout – indicate the amount of time, in seconds, that the calling function waits for a response from the function called before timing out.
- Availability – define when the function can be called.

  Select Availability, then in the drop-down box, select Any, Wk (week), or a day of the week. In the next two boxes, enter the beginning and ending time in the format `hh:mm` (hours:minutes), for example `9:00` to `12:00`. 00:00 to 12:00 is AM, and 13:00 to 24:00 is PM.

  Click Add to add the availability you defined. Select a time and click Delete to remove that availability. Select a time and click Modify to change an availability. Click Clear to erase the entire availability list.

2 Click Add to add the DFC to the list. You can also delete a function by selecting it in the list and clicking Delete.

3 Click Apply.

Advanced tab

1 Select the Advanced tab and complete the Resource options:

- Resources Add – click New to define communication protocol resources. The ODL Resource Info dialog box appears.

- Debug – allows more verbose debug information to be written to the ODL log. If you select this option, increase the Log Limit size on the General tab.
- Name – enter a resource name. If you are using TCP or Telnet, enter the name you assigned to the clcomm object when developing the AIM.
- Type – select the communication protocol used by this application—TCP, Telnet, or TTY.

- Tohost/Fromhost – create a file that records all data going into the endpoint application and all data coming out.
  - Limit (KB) – defines the size of the Tohost/Fromhost file. The default of 10240 (10MB) is suggested for optimum performance.
  - Depth – defines the number of copies of the log file that e-Biz Impact maintains. The default setting of 2 indicates that when the first file reaches the limit setting, it switches to a second file. When that file reaches the limit setting, it switches back to the first file, overwriting all data stored in that file.

Note What displays in the remainder of the window depends on your selection for the Type option.

- TCP Mode (displays for TCP or Telnet) – select:
  - Connect – for an AIM connecting to a socket.
  - Listen – the AIM accepts only one connection; it stops listening for new connections while the initial connection is in progress. Listening does not restart once the connection progress stops, unless it has been explicitly directed to do so with a call to the restart method of the communication object (comm.restart()).
  - Listen Up – the AIM does not stop listening for new connections. Therefore, you can initiate a second connection, but it is not accepted until the first connection is closed.
  - Adopt – used in conjunction with Multisrv applications for multiple connections.
- TCP Connect (displays for TCP or Telnet) – if you selected Connect for TCP Mode, enter a host and port. If you selected Listen or Listen Up, enter only a port. If you selected Adopt, leave these fields blank.

- TTY Settings (displays only for TTY) – select COM Port and leave the properties selected to accept the defaults, or unselect a property and choose an alternate value from the drop-down lists to meet your specific system requirements. You can also select Device to use a logical device. See Table 4-1.

Note Not all TTY combinations are valid. Settings are restricted by the underlying operating system device drivers and hardware devices.

Table 4-1: TTY settings

Property	Description
COM Port	Value must be greater than zero. This value is appended to a platform-specific prefix (*COM* for Windows and */dev/tty* on UNIX) to create a device name of *COMn* or */dev/ttyN*.
Device	The full device name; for example, `COM1` or `/dev/tty01`.
Baud	Select the baud rate from the drop-down list. If on you are on AIX, the value must be less than 38400.
Parity	Select the parity value from the drop-down list. The Mark and Space values are not supported on HP-UX.
Data Bits	Select 5, 6, 7, or 8.
Stop Bits	Select the stop bits value. A value of 2 works with a 6, 7, and 8 data bit value, but not with a data bit value of 5.
Xon/Xoff	This key controls the XON/XOFF software flow control protocol. Off and None disable the XON/XOFF protocol for both inbound and outbound data. On and Both enable the protocol in both directions. To set inbound and outbound independently, use In to enable inbound and Out to enable outbound.
CTS	Select Handshake to enable inbound hardware flow control.
RTS	Select True to enable outbound hardware flow control.
DTR	Specifies the data terminal ready (DTR) flow control. Select On to enable the DTR line and Off to disable the DTR line.
InDSR (Windows NT only)	Specifies whether the communications driver is sensitive to the state of the data set ready (DSR) signal. Select True to ignore bytes received, unless the DSR modem input line is high.
OutDSR	Select True to suspend output. Select False to monitor the DSR signal for output flow control.

2 External Libraries – use this option when the code within the ODL makes calls to custom C or C++ code through a bridged library created using BIDL.

- Name – enter the alias name, which the user-defined name for the custom collection of C or C++ functions.
- Library – enter the actual library file name. (<*file name*>.<*file name_extension*>).

Click Add to add the library to the list. Click Delete to remove a selected library from the list. Click Modify to change the name of a selected library.

3 Custom Keys – to configure custom keys, which can be inserted in the ODL configuration file, click New. Custom keys are defined in groups.

- New – configure and add a new custom keys group.
- Edit – reconfigure the selected custom key group. Alternatively, you can double-click the custom key group to edit.
- Delete – deletes the selected Custom Key group.

Each group is configured through the Custom Keys Info form, using the following attributes:

- Name – enter the key-value group.
- Key – enter a name for a specific key for this group.
- Value – enter the value of the specific key.

Note Use clGetConfig in an ODL application to retrieve a value from the application configured custom keys as generated by the Configurator. See Chapter 2, “Bridge Functions,” in the *e-Biz Impact ODL Guide*.

---

4 The Debugging options allow more verbose messages to be written to the ODL application *xlog*. Use these options primarily when the ODL application is using SFM functionality. Select:

- Tran – to write transaction information into *xlog*.
- Engine – to write ODL engine information into *xlog*.
- Protocol – to write protocol information to *xlog*.

5 Click Apply.

Notes tab

1 Select the Notes tab. Click Description to enter an optional comment or description about the application.

2 Click Apply to save the note.

3 Click OK to exit the window.

Configuring SFM applications

Before or after you configure an SFM application and prior to deploying a cluster, you must use TRAN-IDE to define production objects, which are referenced in the SFM configuration. See the *e-Biz Impact Getting Started Guide* and the *e-Biz Impact TRAN-IDE Guide* for more information on creating production objects.

To add and configure an SFM application:

1 Start the Configurator and load the cluster for which you want to add and configure applications. See “Creating and configuring applications” on page 17.

2 Expand the Controllers icon in the tree view.

3 Right-click the controller icon for which you want to create a SFM application. Select New | SFM. The new SFM, named SFM1, appears below the selected controller and in the right pane.

4 Double-click SFM1 in the right pane or right-click SFM1 in the tree view and select Properties. The SFM Properties window appears.

General tab

1 Select the General tab and complete these fields to define the SFM application:

- Debug – write more verbose debug information to the SFM *xlog*. If you select this option, you may want to increase the size of the *xlog* file on the Logs tab. See “Log Files tab” on page 28.
- Active – make the SFM active. When the cluster is started, only active applications are started.
- Tracking – automatically set the SFM working directory to the name of the SFM.

- Name (function) – defined by default as "SFM*n*" (where "*n*" increments starting with 1), indicating an SFM application and its associated instance. You can modify this name to be consistent within your own environment.
- Flavor (function) – enter an integer between 1 and 4292967295 to use for data routing. The SFM flavor must be unique in the e-Biz Impact cluster.

Note The combination of function Name and function Flavor makes a function unique. Flavor allows functions of the same name to appear more than once, in different applications, which enables dynamic routing. For example, your code calls foo, and at runtime, you determine which foo to use according to the flavor.

- Timeout – the time, in seconds, for a calling application to wait before it times out. Timeout relates to all the DFC entry points to an SFM:

route_rec	route_prod	route_veng2
route_rec2	route_vprod	sfmping
route_recx	route_vprod2	sfmayt
route_vrec	route_veng	sfmproc
route_vrec2		

- Serial Dispatch Mode – allow the SFM to serially dispatch transactions based on a transaction's sequence (the first transaction entered is the first transaction processed; second entered, second processed, and so on). A transaction is processed only when its predecessor has completed processing. This is known as transactionality.

  To define transactionality based on productions objects (that is, a transaction must qualify for and be processed by one production object before a subsequent transaction can be qualified and processed), use RO_SERIALDISPATCH in the route_recx DFC of your acquisition AIM.

Warning! When an SFM receives a transaction that has a priority set, it ignores serialization options and processes the prioritized transaction first.

- Availability – define when the SFM can receive data. This parameter works on all distributed function calls used as entry points by acquisition AIMS such as route_recx, route_rec, and so on.

  Select Availability, then in the drop-down box, select Any, Wk (week), or a day of the week. In the next two boxes, enter the beginning and ending time in the format `hh:mm` (hours:minutes), for example `9:00` to `12:00`. 00:00 to 12:00 is AM, and 13:00 to 24:00 is PM.

  Click Add to add the availability you defined. Select a time and click Delete to remove that availability. Select a time and click Modify to change an availability. Click Clear to erase the entire availability list.

2 Complete these fields on the General tab to override the predefined function names of all delivery AIMs for this SFM:

- servayt – the name of the function used to ping the delivery AIM. The default is servayt ("server are you there"), but can be any user-defined name.
- servproc – the name of the DFC function used by SFM when routing a translated transaction to the delivery AIM. The default is servproc ("server process"), but can be any user-defined name.

3 Complete these fields on the General tab to configure SFM directories:

- Dynamic Table Reload – reload the ODL lookup tables during runtime if changes are made to the table files.
- Working – unselect the Tracking option to enable the Working Directory text box and enter the working directory or accept the default, which matches the SFM name. This directory tells the e-Biz Impact executable where to find the configuration information for this SFM once the configuration files are deployed to the server.

  All project files (*.prj*) in this directory will be loaded.
- Project – the location where the production object project files reside.
- Table – the location of production object tables, if used.

Log Files tab

1 Select the Log Files tab and complete the Transaction Log options:

- Sync Write – open the log file with options that cause the write() function to block further processing until the data is physically on the disk.
- Pending – the pending log file is required and contains messages that are accepted by the SFM, but have not been processed. Specify the log name and:
  - Max (KB) – the maximum size, in kilobytes, of the log file. The default is 10240 or 10MB.
  - LWM (%) – the percentage of the pending log file that must be used to clear the HWM alert status.
  - HWM (%) – the maximum percentage of the pending log file that can be used before an alert is generated.

Note When a log file fills up, and the usage percentage is past the high-water mark (HWM), an alert is generated. However, after the initial alert is generated, no other alerts are generated unless the log file is cleared out to the point that its usage percentage falls below the low-water mark (LWM).

For example, let's say the LWM is set to 60 and the HWM is set to 80. Once the HWM is set, even if the percentage of log usage hovers between 61 and 100, no alerts are generated. Once the percentage of log usage hits the LWM, the HWM alert is created, so the next time the percentage of log usage hits the HWM again, another alert is generated.

- Completed – select this option to create a log file that stores completed or cancelled messages in their raw form. Specify the name and maximum size (in kilobytes) of the log file, as well. The default of 10240 is suggested but not required. If you do not specify a completed log, messages that are completed or cancelled are discarded.
- AutoArchive – select this option to have completed transactions moved to an archive file for historical records. If this option is selected, enter a name and size for the archive file. When the archive file reaches the set size, it is appended with an incrementing counter and a new archive file starts.
- Unrouteable – the unrouteable log file is required. This log file contains messages that have not been accepted by the SFM. Specify the name of the unrouteable log file.

2 Complete the following fields to define the *xlog* properties. The *xlog* stores messages related to the function of SFMs and related applications.

- Limit (KB) – defines the log file limit. There is no predefined limit, but the default setting of 1024 (1MB) provides a useful log file without using too much disk space. Increase the value if you expect to use the debug option.
- Depth – the number of copies of the log file that e-Biz Impact maintains. The default setting of 2 indicates that e-Biz Impact creates an additional file when the main activity log reaches its maximum size. If the second file reaches the limit, e-Biz Impact rolls back to the first file, overwriting the content.

Sources tab

1 Select the Sources tab and click New. To view a source (acquisition) AIM in the Global Console, you must add it here. The SFM Source Info dialog box appears.

- Name (function) – enter the name that defines the source from which SFM gets messages.
- Flavor (function) – enter the flavor that defines the source from which the SFM gets messages. This is a user-defined integer between 1 and 4292967295.

Note The flavor must match a DFC ping function declared in the application that is references or used by the ping interval.

- Type – select the source type from the Type drop-down list. The source can be an acquisition AIM or another SFM.
- Ping Intervals – enter the intervals at which the ping function should check whether the source acquisition AIM is operational. This functions sends out a “heartbeat” (a DFC), which the AIM must recognize and return or be immediately marked as stalled.

- Fkey History Length – F-keys are user-supplied foreign keys that endpoints can use to further identify a transaction. Enter the number of previously supplied foreign keys against which this application will check and log.

Note The SFM does not modify the content of Fkeys that come with transactions, but it does check the value against the Fkey history to determine if a transaction is a duplicate for that particular source. This functionality, known as "Once and Once Only," prevents sending duplicate transactions.

If the Fkey History Length is greater than zero,

2 Click Add to add the SFM source. Click Edit to modify a selected source. Click Delete to remove a selected source from the list

Routing tab

1 Select the Routing tab. Routing consists of four components—destinations, routes, production objects, and engines—which determine how transactions are dynamically routed through the SFM.

Click New below the Destinations box. Destinations associate a name with a flavor of aim_ayt and aim_proc. When the SFM routes a transaction to a specific destination, it is making aim_ayt and aim_proc calls of a specific flavor. The SFM Destination Info dialog box appears.

- Name – enter a name that defines the destination.
- Flavor – enter the flavor that defines the destination.

Note The combination of aim_ayt and aim_proc and flavor defines the DFC function of the delivery application servayt@12.

- Type – select the destination type—AIM (delivery AIM), SFM, or NULL.

  Note NULL is used under certain conditions when your system may produce transactions you do not want to process further. For example, when testing a new production object, you may not want to have the output transaction sent to a real destination. When the output of a production object gets recycled back through transaction production, using the ODL command resubmitTransaction(), you would discard the first iteration by sending it to NULL.

- Max Retries – enter the maximum number of times the SFM tries routing the message to the named destination.
- Retry Interval – enter at what interval, in seconds and milliseconds, at which the SFM retries routing the message to the named destination. Set this value to zero to stop trying to route the message.
- Enable Alerts – select this option to activate alerts for this destination.
  - Notification Interval – enter the interval (in seconds) at which alerts should be issued if the Max Queue Depth and Max Queue Times options are met.
  - Max Queue Depth – select this option to specify the maximum number of records that a queue can hold before generating an alert. Enter a positive number to indicate the maximum number of transactions.
  - Max Queue Time – select this option to enable alert notification when the top transaction in the delivery queue reaches the queue time limit (in seconds). Enter a positive number to indicate the maximum number of seconds.

Click Add to add the destination to the list.

Repeat this step for each destination you want to make available to this SFM.

Note To group multiple destinations into a single routing package, use the Routes box.

2 Click New below the Routes box. Routes allow destinations to be arranged together into logical routing groups. When the SFM sends a transaction to a route, it sends the transaction to all the destinations grouped within that route in the order in which the destinations are listed.

- Routes Add – enter the route name.
- Priority – enter a value (from 0 to 255) that specifies the order in which transactions are processed and dispatched through this route.

  Note All transactions that use this route have this priority unless the transactions receive a different priority from a production object, or use the route_recx priority value. Priority is used by the delivery queue to determine which transaction is delivered first. This option works in conjunction with the built-in functions priority set for production objects in TRAN-IDE.

- Destinations – group destinations. The destinations that display are from the Destinations box on the Routing tab. Select a destination, then use the arrow keys to move destinations to the Grouped Dests list.

Click Add.

Repeat this step for all routes that are processed by this SFM.

Click Cancel to cancel the route without saving the changes.

3 Click New below the Production Objects box to specify one route or to group multiple routes into one production object routing package. You see the SFM Production Object Info dialog box.

- Production Objects Add – enter the name for a production object, which you may have already created or will create later in TRAN-IDE.

- Priority – enter a value (0 to 255) that specifies the order in which transactions are processed and dispatched to this destination.

  Note All transactions that go to this route have this priority unless the transactions receive a different priority from a production object. Priority is used by the delivery queue to determine which transaction is delivered first. This option works in conjunction with the built-in priority functions set for production objects in TRAN-IDE.

- Routes – allows you to group multiple routes into one production object. The routes that display are from the Routes box on the Routing tab. Select a route, then use the arrow keys to move routes to the Grouped Routes list.

Click Add.

Repeat this step for all production objects you have created or will create later in TRAN-IDE that should be processed by this SFM.

4 To enlarge the Production Objects box, right-click in the box and select DoubleWide.

5 To create production object audits, right-click in the production object list and select Set Audits. This allows you to specify the production objects through which incoming and outgoing transactions must go before being sent to their destination. You see the Production Object Audits dialog box.

- Entry – enter the name of the production object, or select a production object from the list, through which the SFM should process all incoming transactions before performing transaction qualification or sending transactions to their respective destinations.
- Exit – enter the name of the production object, or select a production object from the list, through which the SFM should process all outgoing transactions before sending the transactions to their respective destinations.

Click Add/Modify to save your entries.

Warning! Sybase recommends that the referenced production object not perform any data manipulation or processing because, when the entrance audit record is present, every transaction sent to this SFM passes through this production object.

6 Click New below the Engines box to specify one engine, or to group multiple production objects into one engine routing package. An SFM engine works with the route_veng DFC, allowing you to limit the number of production objects used to parse and qualify a transaction.

- Engines Add – enter the engine name to specify in the Engine parameter when using route_veng to send a transaction.
- ProdObjs – the objects that display are from the Production Objects box on the Routing tab. Select a production object, then use the arrow keys to move the object to the Grouped ProdObjs list.

Click Add.

Repeat the procedure for all engines processed by this SFM.

Advanced tab

1 Select the Advanced tab.

2 External Libraries – use this option when the ODL code within the SFM makes calls to custom C or C++ code through a bridged library created using BIDL.

- Name – enter the alias name, which is the user-defined name for the custom collection of C or C++ functions.
- Library – enter the actual library file name. (<*file name*>.<*file name_extension*>).

Click Add to add the library to the list. Click Delete to remove a selected library from the list. Click Modify to change the name of a selected library.

3 Configure Custom Keys. Custom keys are available for most applications, including SFM. Custom keys entered here persist in the application configuration file. Custom keys are often used to statically define routing, debugging, or other resource configuration properties. Applications cannot alter custom key values. A custom key is read by an ODL application using clGetConfig. For example:

```
string sAppDebug;
sAppDebug="";
clGetConfig("APP.Debug",&sAppDebug);
```

In this example, the custom key APP.Debug belongs to the APP group (custom keys are defined in groups). The value is read from the application's configuration file every time the application is enabled.

A custom key is read by a Java application using getConfigValue. For example:

```
String sAppDebug="";
sAppDebug = getConfigValue("APP.Debug");
```

Click New below the Custom Keys Info box. These commands are available:

- Name – enter the name of the key-value group.
- Key – enter the name for a specific key for this group.
- Value – enter the value of the specific key.

Click the Add button within the Custom Keys Add box, then click the window's Add button.

4 Go to the 'sfmayt', 'sfmproc' DFC Flavors box. Use this option to declare the entry points using the sfmayt and sfmproc functions when this SFM is the target to receive data from another SFM (also referred to as "SFM-to-SFM communication").

- SFM Flavor – enter the flavor of the source SFM.
- SFM Timeout – enter the time out value, in milliseconds, for the source SFM.

Click Add to add your entry to the list.

Notes tab

1 Select the Notes tab to add additional information. Select Description, then enter any additional information about this SFM. Click OK.

2 Click OK on the SFM Properties window to return to the main Configurator window.

Configuring Multisrv applications

Multisrv applications work with ODLs to support multiple simultaneous connections on a single socket.

To configure a Multisrv application:

1 Start the Configurator and load the cluster for which you want to add and configure applications. See “Creating and configuring applications” on page 17.

2 Expand the Controllers icon in the tree view.

3 Right-click the controller icon for which you want to create a Multisrv application. Select New | Multisrv. The new application, named Multisrv1, appears below the selected controller and in the right pane.

4 Double-click Multisrv1 in the right pane or right-click Multisrv1 in the tree view and select Properties. The Multisrv Properties window appears.

General tab

1 Complete the following fields on the General tab to define a Multisrv application in the current e-Biz Impact cluster:

- Active – make the application active. When the cluster is started, only active applications are started.
- Tracking – automatically set the working directory identical to the name of the Multisrv application.
- Name – defined by default as “Multisrv*n*” (where “*n*” increments, beginning with 1), indicating a Multisrv application and its associated instance. You can modify this name to be consistent within your own environment.
- Working Directory – unselect the Tracking option to enable the Working Directory text box and enter the working directory or accept the default, which matches Multisrv application name. This directory tells the e-Biz Impact executable where to find the configuration information for this Multisrv application once the configuration files are deployed to the server.
- Command Line – enter any optional command line parameters for this Multisrv application.
- Log Limit (K) – defines the log file limit. There is no predefined limit, but the default setting of 1024 (1MB) provides a useful log file without using too much disk space.

- Depth – the number of copies of the log file that e-Biz Impact maintains. The default setting of 2 indicates that e-Biz Impact creates an additional file when the main activity log reaches its maximum size. If the second file reaches the limit, e-Biz Impact rolls back to the first file, overwriting the content.
- Application Name – select the previously-defined application to be used for this Multisrv application.
- Comm Object – enter the name of the communication object used to communicate with the remote application. This is defined in the ODL file associated with the application used for this Multisrv application.
- Port – enter the port number associated with the communication object.
- Connections – enter the maximum number of instances of this application that are spawned by the Multisrv application.

2 Click OK to return to the main console.

Configuring WebSphere MQ messaging

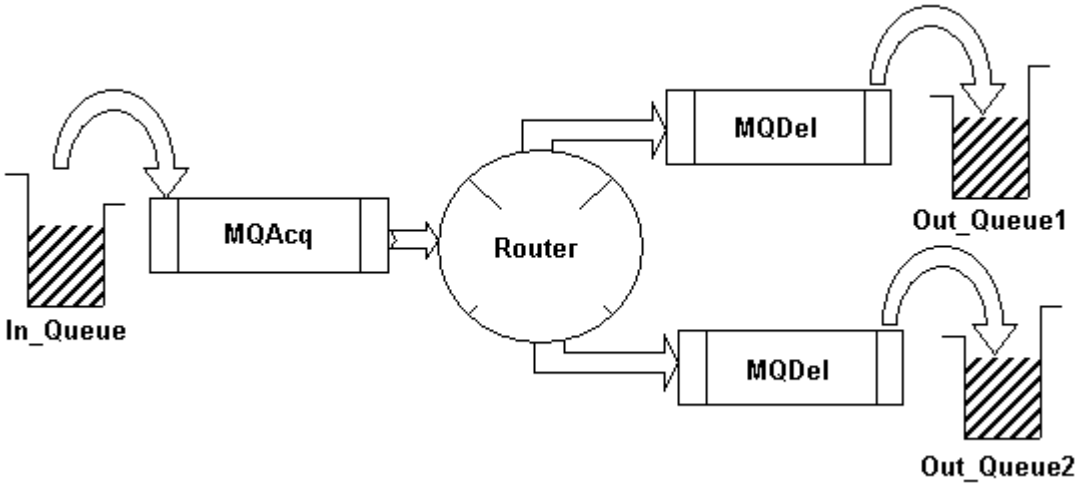
Note e-Biz Impact 5.4 supports IBM WebSphere MQ 5.3.x (formerly MQSeries).

e-Biz Impact 5.4 allows you to use transport objects to access data from WebSphere MQ messaging queues supported by Open Transport (OT) drivers.

Figure 4-1 illustrates a cluster with one MQ application that reads data from an input queue, then passes this data to an in-line router application. The router translates the data and sends two translated output transactions to the MQDel delivery applications. The delivery applications put the message into the delivery queues, then return.

The acquisition, translation, and delivery are made in-line, in a single execution thread.

Figure 4-1: WebSphere messaging sample



To enable e-Biz Impact 5.4 to access WebSphere MQ message queues you:

1 Configure *nnsyreg.dat* to define transport properties. See your Open Transport documentation and the *e-Biz Impact Application Guide*, Chapter 4, “Accessing MQSeries Data,” for more detailed information about *nnsyreg.dat*.

2 Develop and configure an ODL acquisition AIM (MQAcq) to acquire data from WebSphere MQ message queues. Use Open Transport clot objects to define OT instances and implement OT calls through ODL. You then define these instances to access the desired data.

See “Configuring MQAcqs” on page 40.

3 Develop and configure an ODL router application.

MQAcq and MQDel applications work with router applications, rather than an SFM, to route messages to or from WebSphere MQ message queues. A router is an SFM running in “router only” mode. Configuration options for router properties are similar or identical to SFM properties. However, no log file maintenance is provided for routers; the router is responsible only for synchronous routing of the message, not storage.

See “Configuring routers” on page 43.

4 Develop and configure an ODL delivery AIM (MQDel) that accepts a transaction from a router and delivers it to the specified WebSphere MQ message queue. You must also copy the *<install directory>/ImpactServer-5_4/include/IMPACT/MQBRIDGE/mqdel.prj* to the working directory for the application instance. A sample *nnsyreg.dat* file is also provided in the directory.

See "Configuring MQDels" on page 49.

Note The e-Biz Impact prepackaged custom MQAcqs, routers, and MQDels applications are meant only to serve as templates that you can modify to fit your environment and implementation.

See the *e-Biz Impact Application Guide*, Chapter 4, "Accessing MQSeries Data," for more information.

❖ **Creating new MQAcq, router, or MQDel applications**

1 In the Configurator, right-click the controller for which you want to create the application, select New, then select Router, MQAcq, or MQDel. A new application icon appears that uses the application name suffixed with the number 1 (for example, Router1).

2 Rename the application, or accept the default.

3 Right-click the new application and select Properties to complete the configuration values for each new application.

Configuring MQAcqs

General tab

1 Right-click the controller icon for which you want to create an MQAcq application. Select New | MQAcq. The new MQAcq, named MQAcq1, appears below the selected controller and in the right pane.

2 Double-click MQAcq1 in the right pane or right-click MQAcq1 in the tree view and select Properties. The MQAcq Properties window appears.

3 Complete these fields on the General tab to define the MQAcq application:

- Active – select this option to enable the application.

- Tracking – automatically set the working directory identical to the name of the MQAcq.
- Name – the system defines this field as MQAcq*n*, indicating an MQAcq application and its associated instance. You can modify this name to be consistent within your own environment.
- Working Directory – unselect Tracking to enable the Working Directory text box and enter the working directory or accept the default, which matches the ODL application name. This directory tells the e-Biz Impact executable where to find the configuration information for this ODL application once the configuration files are deployed to the server.
- Project – enter the path and file name of the AIM project files generated by MSG-IDE that are associated with this AIM.
- Command Line – enter any optional parameters into your MQAcq application. These arguments can be accessed by the MQAcq application by using clGetArgc() and clGetArgv().
- Log Limit (KB) – defines the log file limit. There is no predefined limit, but the default setting of 1024 (1MB) provides a useful log file without using too much disk space.
- Depth – the number of copies of the log file that e-Biz Impact maintains. The default setting of 2 indicates that e-Biz Impact creates an additional file when the main activity log reaches its maximum size. If the second file reaches the limit, e-Biz Impact rolls back to the first file, overwriting the content.

4 Complete these fields to define route information:

- Route Type – select how transactions are submitted to the router. Select:
  - Route – to route a transaction using route_vrec, which sends the transaction directly to the MQDel AIM, or through all production objects currently available to the router.
  - Prod – to route a transaction using route_vprod, which sends a transaction to the router application and through a single production object.
  - Engine – to route a transaction using route_veng, which sends a transaction to the router application for routing to the MQDel AIM, or through a specific production object, or through all the production objects currently available to the router application

- Router Flavor – identify the flavor of the router that will handle transactions acquired by this application.
- Source Name – identify the source from which to accept the transaction.
- Route Name – identify the transaction ID. The default is ENGINE. This is the engine defined to hold all production objects used for this transaction.

5 Identify the number of instances of this MQAcq application that may be run within this cluster.

6 Click Apply to save the entries.

Queues tab

1 Define the WebSphere MQ IDs, queue names, and time-outs.

Note This information is located in the *nnsyreg.dat* file used to configure Open Transport.

- Context ID – enter the value used to define `OTContext<`***`context1`***`>` in the *nnsyreg.dat* file. The default value is `OTI_Context`.

Warning! Only one context ID is allowed per thread.

- Input Transport ID – enter the ID associated with the input queue.
- Error Transport ID – enter the ID associated with the error queue.
- Input Queue Name – enter the name used to define the input queue.
- Error Queue Name – enter the name used to define the error queue.
- Get Timeout (ms) – enter the amount of time, in milliseconds, for the application to wait when acquiring a message from a queue.

2 Modify the MQ Descriptor Fields Forwarding values (see the WebSphere MQ documentation for details), or accept the defaults.

3 Click Apply to save the entries.

Notes tab

1 Select the Notes tab to add additional information. Select Description, then enter any additional information about this MQAcq AIM. Click OK.

2 Click OK to return to the main console.

Configuring routers

General tab

1 Right-click the controller icon for which you want to create a router application. Select New | Router. The new router, named Router1, appears below the selected controller and in the right pane.

2 Double-click Router1 in the right pane or right-click Router1 in the tree view and select Properties. The Router Properties window appears.

3 Select the General tab to configure the Router Application options:

- Active – make the router active. When the cluster is started, only active applications are started.
- Tracking – automatically set the router working directory identical to the name of the router.
- Name – defined by default as "Router*n*" (where "*n*" increments starting with 1), indicating an router application and its associated instance. You can modify this name to be consistent within your own environment.
- Flavor – enter an integer between 1 and 4292967295 to use for data routing. The router flavor must be unique in the e-Biz Impact cluster.

  Note The flavor applies to functions used as entry points for the router, such as route_sync.

- Timeout – the time, in seconds, for the calling application to wait before it times out. This option applies to route_sync.

4 Configure Function Name Overrides:

- aim_ayt – the name of the function used to ping the MQDel AIM. The default is syncayt ("sync are you there"), but can be any user-defined name.

- aim_proc – the name of the function used to route a transaction to the MQDel AIM. The default is syncproc, but can be any user-defined name.

5 Configure the mode, which controls which application (MQAcq, router, or MQDel) is responsible for performing commit and rollback operations on queues.

Note To allow the source application to perform commit and rollback operations on both input and output queues, select Inline mode for both the router application and the MQDel application to specify that all code execution should be done by the MQAcq AIM thread.

To let the destination application perform commit and rollback operations on output queues, select Queued mode for the MQDel AIM.

Select:

- Inline – if the router application should not have its own execution thread and should execute within the MQAcq thread. If you select this option, you should also select "Inline" for Mode on the General tab of the MQDel Properties window.

  Note Inline is the required mode most of the time for MQ AIMs.

- Queued – if the router application should execute within its own thread and can queue up requests for more than one application.

6 Configure the router *xlog*, which stores messages related to router functions:

- Limit (KB) – defines the log file limit. There is no predefined limit, but the default setting of 1024 (1MB) is designed to provide a useful log file without using too much disk space.
- Depth – the number of copies of the log file that e-Biz Impact maintains. The default setting of 2 indicates that e-Biz Impact creates an additional file when the main activity log reaches its maximum size. If the second file reaches the limit, e-Biz Impact rolls back to the first file, overwriting the content.

7 Configure router directories:

- Dynamic Table Reload – reload the lookup tables during runtime if changes are made to the table files. Tables are also reloaded when the router application is restarted (disabled, then enabled).

- Working – unselect the Tracking option to enable the Working Directory text box and enter the working directory or accept the default, which matches the router name. This directory tells the e-Biz Impact executable where to find the configuration information for this router once the configuration files are deployed to the server.
- Project – the location in which the router production object files reside.
- Table – the location of router tables, if used.

8 Click Apply to save the entries.

Sources tab

1 Select the Sources tab and click New. To view a router application in the Global Console, you must add it here. The Router Source Info dialog box appears.

- Name – enter the name that defines the source from which the router gets messages.
- Flavor – enter the flavor that defines the source from which the router gets messages. This is a user-defined integer between 1 and 4292967295.

Note Unlike SFMs, routers do not monitor source applications because MQAcq applications run in "acquire" mode and cannot service DFCs.

- Type – select the source type from the Type drop-down list. For routers, the only source available is "AIM."
- Fkey History Length – F-keys are user-supplied foreign keys that endpoints can use to further identify a transaction. Enter the number of previously supplied foreign keys against which this application will check and log.

Note The router does not modify the content of Fkeys that come with transactions, but it does check the value against the Fkey history to determine if a transaction is a duplicate for that particular source. This functionality, known as "Once and Once Only," prevents sending duplicate transactions.

Click Add to add the router source. Click Edit to modify a selected source. Click Delete to remove a selected source from the list.

2 Click Apply to save the entries.

Routing tab

1 Select the Routing tab. Routing consists of four components—destinations, routes, production objects, and engines—which determine how transactions are sent through the router.

2 Click New below the Destinations box. Destinations associate a name with a flavor of aim_ayt and aim_proc. When the router sends a transaction to a specific destination, it is making aim_ayt and aim_proc calls of a specific flavor. The Router Destination Info dialog box appears.

- Name (function) – enter a name that defines the destination.
- Flavor (function) – enter the flavor that defines the destination.

  Note The flavor references the aim_ayt of the expected MQDel (delivery AIM).

- Type – select the destination type—AIM (delivery AIM), or NULL.

  Note NULL is used under certain conditions when your system may produce transactions you do not want to process further. For example, when testing a new production object, you may not want to send the output transaction to a real destination. When the output of a production object is recycled back through transaction production, you must still define where the first iteration of the data should go.

- Max Retries – enter the maximum number of times the router attempts to route the message to the named destination, and at what interval (in seconds). Set this value to zero if you do not want to retry routing the message.
- Retry Intervals – enter the interval (in seconds) after which the router retries routing the message to the named destination.

Click Add to add the destination to the list.

Repeat this step for each destination you want to make available to this router.

Note To group multiple destinations into a single routing package, use the Routes box.

3 Click New below the Routes box. Routes allow destinations to be grouped into logical routing groups. When the router sends transactions, it is sending to all the destinations grouped in that route.

- Routes Add – enter the route name.
- Priority – this value determines the order in which transactions are processed and dispatched to the specified destinations.

  Note All transactions that use this route have this priority unless the transactions receive a different priority from a production object. Priority is used by the delivery queue to determine which transaction is delivered first. This option works in conjunction with the built-in functions priority set for production objects in TRAN-IDE.

- Grouped Dests – allows you to group destinations. The destinations that display are from the Destinations box on the Routing tab. Select a destination, then use the arrow keys to move destinations to the Grouped Dests list.

Click Add. Repeat this step for all routes processed by this router. Click Cancel to cancel the route without saving the changes.

4 Click New below the Production Objects box to specify one route or to group multiple routes into one production object routing package. You see the Router Production Object Info dialog box.

- Production Objects Add – enter the name for a production object, which you must have already created in TRAN-IDE.
- Priority – this value determines the order in which transactions associated with this production object are processed and dispatched to the specified destinations. Production object priority supersedes route priority.
- Grouped Routes – allows you to group multiple routes into one production object. The routes that display are from the Routes box on the Routing tab. Select a route, then use the arrow keys to move routes to the Grouped Routes list.

Click Add. Repeat this step for all production objects you have created in TRAN-IDE to be processed by this router.

5 To enlarge the Production Objects box, right-click in the box and select DoubleWide.

6 Click New below the Engines box to specify one engine or to group multiple production objects into one engine routing package. A router engine works with the route_sync, which allows you to limit the number of production objects used to parse and qualify a transaction.

- Engines Add – enter the engine name to specify in the Engine parameter when using route_sync to send a transaction.
- Grouped ProdObjs – the objects that display are from the Production Objects box on the Routing tab. Select a production object, then use the arrow keys to move the object to the Grouped ProdObjs list.

Click Add. Repeat the procedure for all engines processed by this router.

7 Click Apply to save the entries.

Advanced tab

1 Select the Advanced tab to configure additional options. The following properties are available:

- External Libraries – use this option when the code within the router makes calls to custom C or C++ code through a bridged library created using BIDL.
  - Name – enter the alias name, which is the user-defined name for the custom collection of C or C++ functions.
  - Library – enter the actual library file name. (<*file name*>.<*file name_extension*>).

  Click Add to add the library to the list. Click Delete to remove a selected library from the list. Click Modify to change the name of a selected library.

2 Click Add to add the library to the list. Click Delete to remove a selected library from the list. Click Modify to change the name of a selected library.

3 Click Apply to save the entries. Click OK to return to the main console window.

Configuring MQDels

General tab

1 Right-click the controller for which you want to create an MQDel application. Select New | MQDel. The new MQDel, named MQDel1, appears below the selected controller and in the right pane.

2 Double-click MQDel1 in the right pane or right-click MQAcq1 in the tree view and select Properties. The MQDel Properties window appears.

3 Select the General tab and complete the following fields to define the MQDel application:

- Name – the system defines this field as MQDel*n*, indicating an MQDel application and its associated instance. You can modify this name to be consistent within your own environment.
- Working Directory – unselect Tracking to enable the Working Directory text box and enter the working directory or accept the default, which matches the MQDel application name. This directory tells the e-Biz Impact executable where to find the configuration information for this MQDel application once the configuration files are deployed to the server.
- Project – specify the location in which the project files reside.
- Active – select this option to enable the application.
- Command Line – enter any optional parameters into your MQDel application. These arguments can be accessed by the MQDel application using clGetArgc() and clGetArgv().
- Log Limit (K) – defines the log file limit. There is no predefined limit, but the default setting of 1024 (1MB) is designed to provide a useful log file without using too much disk space.
- Depth – the number of copies of the log file that e-Biz Impact maintains. The default setting of 2 indicates that e-Biz Impact creates an additional file when the main activity log reaches its maximum size. If the second file reaches the limit, e-Biz Impact rolls back to the first file, overwriting the content.

4 Identify the minimum and maximum number of instances of this MQDel application that can be run within this cluster.

5 Configure the Mode, which controls which application (MQAcq, router, or MQDel) is responsible for performing commit and rollback operations on queues.

Note To allow the source application to perform commit and rollback operations on both input and output queues, select Inline mode for both the router application and the MQDel application to specify that all code execution will be done by the MQAcq AIM thread.

To let the destination application perform commit and rollback operations on output queues, select Queued mode for the MQDel AIM.

Select:

- Inline – if the application should not have its own execution thread and should execute within the MQAcq thread. If you select this option, you should also select "Inline" for Mode on the General tab of the Router Properties window.

  Note Inline is the required mode most of the time for MQ AIMs.

- Queued – if the application should execute within its own thread and can queue up requests for more than one application.

6 Configure the WebSphere MQ context ID, queue, and Open Transport ID. This information is in the *nnsyreg.dat* file used to configure Open Transport.

- Context ID – enter the value used to define OTContext.<Context1> in your *nnsyreg.dat* file. One context ID is allowed per thread.
- Transport ID – enter the Open Transport ID associated with the queue name defined in the Queue Name field.
- Queue Name – enter the name of the queue in to which MQDel put the transaction.

See Chapter 4, "Accessing WebSphere MQ Data," in the *e-Biz Impact Application Guide*, the *New Era of Networks Adapter for SAP R/3 3.9 User's Guide*, and the Open Transport documentation located on the e-Biz Impact SyBooks CD that comes with the product.

7 To configure sync_proc options, see the "DFC tab" on page 51.

Advanced tab

Modify the MQ Descriptor values or accept the defaults.

See the IBM WebSphere MQ documentation, and the Open Transport documentation located on the e-Biz Impact SyBooks CD that comes with the product for details.

Notes tab

1 Select the Notes tab to add additional information. Select Description, then enter any additional information about this MQDel AIM.

2 Click to save the note.

DFC tab

1 Complete these fields to specify the name and flavor of the DFCs used to call the AIM. For a delivery AIM, there are two; syncayt and syncproc.

- Name – enter the name of the function call, as defined by the Function Name Override specified for the SFM.
- Flavor – enter the flavor of the function call as defined by the destination flavor specified in router Destinations.

Warning! Use the same flavor for both the syncayt and syncproc functions.

- Timeout – indicate the amount of time, in seconds, that the source waits for a response from the DFC before timing out.

Click Add to add the DFC to the list.

To modify a function, double-click the function. The selected DFC's attributes display in the Name, Flavor, and Timeout fields. Change the values as necessary, then click Modify.

To delete a function, select the function in the list, click Delete, then click Yes when asked to confirm that you want to delete the function.

2 Select Availability, then in the drop-down box, select Any, Wk (week), or a day of the week. In the next two boxes, enter the beginning and ending time in the format `hh:mm` (hours:minutes), for example `9:00` to `12:00`. 00:00 to 12:00 is AM, and 13:00 to 24:00 is PM.

Click Add to add the availability you defined. Select a time and click Delete to remove that availability. Select a time and click Modify to change an availability. Click Clear to erase the entire availability list.

Note Because MQDel is a server-type application, it can service DFCs. Add DFCs on the DFC tab (see "DFC tab" on page 51).

3 Click Apply to save the entries.

4 Click OK to return to the main console window.

Configuring Java applications

Before or after you configure a Java AIM, you must create the actual Java application plug-in code. See *Java Support for e-Biz Impact* for instructions.

To configure a Java application:

1 Start the Configurator and load the cluster for which you want to add and configure applications. See "Creating and configuring applications" on page 17.

2 Expand the Controllers icon in the tree view.

3 Right-click the controller icon for which you want to create a Java application. Select New | Java. The new application, named Java1, appears below the selected controller and in the right pane.

4 Double-click Java1 in the right pane or right-click Java1 in the tree view and select Properties. The Java Properties window appears.

General tab

1 Select the General tab and complete the Java application options:

- Debug – enables debugging, which logs messages to the application's *xlog* file.
- Active – have e-Biz Impact start this application, which allows you to configure a Java application without enabling it.

- Tracking – set the application's working directory automatically, which dynamically keeps the working directory the same as the application's name.
- Name – enter the name of the Java application. The name must begin with a letter and can contain only letters, numbers, and underscores (_).
- Working Directory – enter the path to the Java application working directory, which is where the configuration file associated with this Java application resides.
- Plug-in Class Name – enter the name of the class that extends the application; for example, `myBob`. Enter the location of the class files or archives in the Class Path Items list box. See "Plug-in Class Name and Class Path Items field entries" on page 54 for more information about this field.
- Command Line – enter any command line arguments used by the Java application. You can leave this field blank.
- Log Limit (K) – enter the size of the Java application log file. The default is 1024 (1MB), which allows a balance of storage and disk usage.
- Depth – the number of copies of the log file that e-Biz Impact maintains. The default setting of 2 indicates that e-Biz Impact creates an additional file when the main activity log reaches its maximum size. If the second file reaches the limit, e-Biz Impact rolls back to the first file, overwriting the content.

2 List the path to the class, JAR, or package for this Java application to execute. The classpath is relative to the controller working directory.

- Name – enter the name of the JAR file, which can include the path.
- Click Add to add the new JAR file, click Delete to remove the file, and click Modify to change the selected JAR's file name.

See "Plug-in Class Name and Class Path Items field entries" on page 54 for more information about this field.

3 Complete the Instances options:

- Min – enter the minimum number of instances of this Java application that e-Biz Impact can spawn. This value must be at least "1".

- Max – enter the maximum number of instances of this Java application that e-Biz Impact can spawn. This value must be greater than or equal to the value specified for Min.

4 Custom Keys allow you to insert custom key values into the Java configuration file. Custom keys are defined in groups.

- New – click New to display the form that allows you to add and configure a new custom key group.
  - Name – enter the name of the new custom key group.
  - Key – enter the name of one specific key that belongs to this group.
  - Value – enter the value of the key.

  Click Add to add the new custom key group, Delete to remove a group, and Modify to edit an existing group.
- Delete – remove the selected custom key group.
- Edit – modify the configuration of the selected custom key group. You can also modify a custom key group by double-clicking the group name.

Plug-in Class Name and Class Path Items field entries

When you specify the class that extends the application (Plug-in Class Name) and the path to that class (Class Path Items), your entries fall into one of four categories:

Package, No; JAR, No The class is not part of a package or a JAR file.

- Plug-in Class Name – enter the class file name; for example, "myBob".
- Class Path Items – enter the path to the class; for example, *D:\working*.

Package, No; JAR, Yes The class is not part of a package, but is part of a JAR file.

- Plug-in Class Name – enter the class name; for example, "myBob".
- Class Path Items – enter the path to the JAR file that contains the class; for example, *D:\working\MyJar.jar*.

Package Yes; JAR, No The class is part of a package file, but not part of a JAR file.

- Plug-in Class Name – enter the class name; for example, “com.foo.myBob”.
- Class Path Items – enter the path to the package file; for example, *D:\working*.

Package, Yes; JAR, Yes The class is part of a package and a JAR file.

- Plug-in Class Name – enter the class name; for example, “com.foo.myBob”.
- Class Path Items – enter the path to the class; for example, *D:\working\com\foo\MyJar.jar;* .

  Class Path Items can also take a relative path. “.” corresponds to the controller working directory.

Java package names consists of a series of alphanumeric characters separated by periods. Java expects one-to-one mapping of the package name and the file system directory structure; that is, place the file in the directory structure that mirrors the package name. For example:

- Working directory – *C:\working*
- Package – com.foo.myBob
- File – *C:\working\com\myBob.java*
- Classpath – *C:\working\com\foo\myBob.class*

DFC tab

1 Select the DFC tab.

2 Distributed Functions – list the DFC entry points into the Java application. Frequently, these are servproc and servayt.

   - Name – enter the distributed function’s name, which should match the function name override specified in the SFM.
   - Flavor – enter the function’s flavor, which should match the destination flavor defined in the SFM’s properties on the Routing tab. See “Configuring SFM applications” on page 26 for more information about SFM routing destinations.
   - Timeout – enter the amount of time, in milliseconds, that the source waits for a response from the receiving application before timing out.

Click Add to add the DFC you defined. Select a DFC, and click Delete to remove that function. Select a DFC, and click Modify to change a function. Click Clear to erase the entire DFC list.

3 Availability – define when the Java AIM can receive data.

Select Availability, then in the drop-down box, select Any, Wk (week), or a day of the week. In the next two boxes, enter the beginning and ending time in the format `hh:mm` (hours:minutes), for example `9:00` to `12:00`. 00:00 to 12:00 is AM, and 13:00 to 24:00 is PM.

Click Add to add the availability you defined. Select a time and click Delete to remove that availability. Select a time and click Modify to change an availability. Click Clear to erase the entire availability list.

Notes tab

Select Description and enter an optional description or note about this Java application. This information is for reference only and does not affect the e-Biz Impact environment.

When you finish your entries, click Apply, then click OK to close the window.

See *e-Biz Impact Getting Started Guide* for instructions on the remaining e-Biz Impact work flow.

Configuring Dfcsrv applications

Dfcsrv applications allow applications that are running under different clusters to communicate.

To create a new Dfcsrv application:

1 Right-click a controller node and select New | Dfcsrv. A new Dfcsrv, named Dfcsrv1, appears below the controller in the tree view and in the right pane.

2 Right-click Dfcsrv1 and select Properties. You see the Dfcsrv Properties window.

General tab

1 Complete the General tab options:

- Active – make the application active. When the cluster is started, only active applications are started.
- Tracking – automatically sets the working directory identical to the name of the application.
- Name – defined by default as "Dfcsrv*n*" (where "*n*" increments, beginning with 1), indicating a Dfcsrv application and its associated instance. You can modify this name to be consistent within your own environment.
- Working Directory – unselect the Tracking option to enable the Working Directory text box and enter the working directory or accept the default, which matches application name. This directory tells the e-Biz Impact executable where to find the configuration information for this application once the configuration files are deployed to the server.
- Instances count– define the minimum and maximum number of instances of the Dfcsrv that can be run.

2 Complete these options:

- Remote Cluster –
  - Host Name or IP – enter the host name or IP address of the machine on which the remote cluster resides.
  - Discover Cluster Port – use SNMP to discover the TCP port of the remote cluster. Use this option only if the cluster publishes SNMP telemetry.
    - Cluster Name – enter the name of the remote cluster.
    - Domain Name – enter the name of the remote cluster's domain or accept the default "Impact."
    - Domain Type – enter the domain type associated with the remote cluster's domain name or accept the default of "Impact."
    - SNMP Port – enter the SNMP port associated with the domain entered in the Domain Name field. The default is 161.

- Specify Cluster Port – this TCP port references the remote cluster's external port through which the remote cluster listens for DFC or CNC requests. To use a specific port, select this option and enter the TCP port to use to access the remote cluster. For e-Biz Impact 5.4.5 and later, only one TCP port is required for external communication with a remote cluster. All interprocess communication (inside the same cluster) is done through shared memory.

Note If you have a cluster running under domain type "production" and domain name "ABC", and another cluster running under domain type production, but named "XYZ", you must modify the domain name to connect to the correct location.

3 Remote Functions – add any remote functions that you want called on the remote cluster of e-Biz Impact. Enter the function Name, Flavor, and Timeout. Function names and flavors must exactly match the functions that are declared in the remote cluster.

Click Add to add the function to the list. To delete a function, select it from the list and click Delete.

4 Click Apply to save your entries. Click OK to return to the main console.

Adding and configuring custom applications

Custom applications can be any user-defined application, such as C-based AIMs, that can communicate via DFCs. You must first define an Application Type that references the custom application library, then create an application of that custom type.

Adding custom application types

1 To add a new application type:

a Beneath a cluster, right-click the Application Types node and select New | AppType. The new application type, named AppType1, appears in the right pane.

b Right-click AppType1 in the tree view and select Properties. The Application Type properties window appears.

2 Complete these options:

- Name – Enter a name that describes the application type.
- Mode – enter the application mode:
  - Acquire – defines client applications.
  - Server – defines server applications.
- Library Name – enter the library name associated with your custom application.
- Description – enter a short description of the custom application type.
- Plugin Name – the system automatically populates this field with a value identical to Name. Accept this value or type in a different value if your library contains a different plug-in name.
- Owner – enter your company name or accept the default value of "custom."

3 Click OK to save your entries and return to the main console.

Configuring custom applications

To configure a custom application:

1 Expand the Controllers icon in the tree view.

2 Right-click the controller icon for which to configure a custom application. Select New | Custom.

When the dialog box displays asking you to select the custom application, make a selection from the drop-down list and click OK.

3 Double-click the new application, named Custom1 by default, in the right pane. The Custom Properties window displays.

What the property window displays depends on whether this is a custom acquire or custom server application.

Configuring custom acquire applications

1 Complete these fields on the General tab to define a custom acquire application of a user-defined type in the current e-Biz Impact cluster:

- Active – make the application active.
- Tracking – automatically sets the working directory identical to the name of the application.
- Name – enter the name of the custom application.
- Working Directory – unselect the Tracking option to enable the Working Directory text box and enter the working directory or accept the default, which matches the custom application name. This directory tells the e-Biz Impact executable where to find the configuration information for this custom application once the configuration files are deployed to the server.
- Command Line – enter any optional command line parameters for this custom application.
- Log Limit (K) – this value defines the size of the application log file. The default of 1024 (1MB) is suggested for optimum performance.
- Depth – the number of copies of the log file that e-Biz Impact maintains. The default setting of 2 indicates that e-Biz Impact creates an additional file when the main activity log reaches its maximum size. If the second file reaches the limit, e-Biz Impact rolls back to the first file, overwriting the content.

2 Enter or select the total number of instances of this application that can be created by the e-Biz Impact controller.

3 The Mode option displays the custom application type based on the selection you made in step 2 of “Configuring custom applications” on page 59. You cannot edit this field.

4 Click Apply to save your entries.

5 Click OK to return to the main console window.

Configuring custom server applications

If the custom application you choose to configure is a server application, additional or modified options display.

1 Complete these fields on the General tab to define a custom server application of a user-defined type in the current e-Biz Impact cluster:

- Active – make the application active. Inactive applications are not loaded when the cluster starts.
- Tracking – automatically sets the working directory identical to the name of the application.
- Name – enter the name of the custom application.
- Working Directory – unselect the Tracking option to enable the Working Directory text box and enter the working directory or accept the default, which matches the custom application name. This directory tells the e-Biz Impact executable where to find the configuration information for this custom application once the configuration files are deployed to the server.
- Command Line – enter any optional command line parameters for this custom application.
- Log Limit (K) – this value defines the size of the application log file. The default of 1024 (1MB) is suggested for optimum performance.
- Depth – the number of copies of the log file that e-Biz Impact maintains. The default setting of 2 indicates that e-Biz Impact creates an additional file when the main activity log reaches its maximum size. If the second file reaches the limit, e-Biz Impact rolls back to the first file, overwriting the content.

2 Enter or select the minimum and maximum number of instances of this application that can be created by the e-Biz Impact controller.

3 Complete the following fields to specify the name and flavor of the DFCs available to this application.

- Name – enter the name of the function call.
- Flavor – enter the flavor of the function call. This is a user-defined value that helps to further identify a function.

Note The combination of Name and Flavor makes a function unique.

- Timeout – indicate the amount of time, in seconds, that the source waits for a response from the receiving application before timing out.

Click Add to add the DFC to the list. You can also delete a function by selecting it and clicking Delete.

4 Select Availability, then in the drop-down box, select Any, Wk (week), or a day of the week. In the next two boxes, enter the beginning and ending time in the format `hh:mm` (hours:minutes), for example `9:00` to `12:00`. 00:00 to 12:00 is AM, and 13:00 to 24:00 is PM.

   Click Add to add the availability you defined. Select a time and click Delete to remove that availability. Select a time and click Modify to change an availability. Click Clear to erase the entire availability list.

5 Click OK to return to the main console.

CHAPTER 5

Deploying Files and Executing e-Biz Impact Clusters

This chapter describes the procedures you must perform before you execute an e-Biz Impact cluster. Also included are the commands used to start the cluster and begin data acquisition, processing and transformation, and delivery.

Introduction

Once you have created your AIMs and production objects, configured your system, and set up optional security, you must deploy the configuration and cluster files to the location from which you want to run the cluster. This location must be on the same system where the e-Biz Impact server is installed, usually a UNIX box. Afterward, you can start the e-Biz Impact cluster.

You use the deploy utility to copy the cluster configuration and cluster files (*.xml* and *.cfg* files) to the runtime location. You also must manually copy any project, module, and table files (*.prj*, *.mod*, and *.tbl* files) to the same location.

When you start the cluster, the e-Biz Impact executable launches a separate process for each controller associated with the specified cluster. The controller process then launches each child application, as defined in each application's configuration file.

Note When a cluster has multiple controllers, the order in which controllers start is by the alphabetic order of controller names. When a controller is responsible for multiple applications, the order in which the applications start within the controller is by type—server applications first, then acquire applications, then by the alphabetic order within those types.

You can run e-Biz Impact as a Windows service or add the executable to a UNIX *rc* script for automatic start-up.

Note The *rc* script files contain start-up instructions for an application, program, or entire operating system. The *rc* script is usually a text file containing commands that are executed automatically each time the system starts up. See your operating system documentation for more information.

Before you execute a cluster, you must:

1 Add the *ims* wrapper script location to the path where the cluster will run. See "Setting the ims wrapper script path" on page 64.

2 Deploy the cluster's configuration files, and manually move the cluster's project, module, and application files to the runtime location. See "Deploying cluster files" on page 67.

Once you perform these procedures, you can execute the cluster. See "Starting clusters" on page 71.

Setting the *ims* wrapper script path

Use the PATH variable to find commands within the directory hierarchy. If you execute a command in a terminal window (UNIX systems) or at a DOS command line (Windows) and do not have the PATH variable set correctly, the system cannot find the command unless you include the full path to the executable when you type the command.

You must set the PATH environment variable for the *ims* wrapper script, which is used to execute the cluster and perform other cluster operations. The ims executable is located in *Sybase\ImpactServer-5_4\bin* on Windows and in *<install_directory>/Sybase/ImpactServer-5_4/bin* on UNIX systems (where *<install_directory>* is where the e-Biz Impact 5.4.5 server is installed).

❖ **Setting the PATH variable for the *ims* script on Windows**

1 Select Start | Settings, then double-click Control Panel.

2 When the Control Panel window opens, double-click the System icon.

3 When the System Properties window opens, select the Advanced tab, then click Environment Variables.

4 In the System Variables section of the window, select the PATH variable and click Edit.

5 In the Edit System Variable dialog box, append the *ims* wrapper script location to the PATH statement. For example, if the e-Biz Impact server is installed in the root of drive D: on Windows, enter this at the end of the PATH statement in the Variable Value field:

```
;D:\Sybase\ImpactServer-5_4\bin
```

Note Separate the existing path statement and the new entry with a semicolon (;) with no space after the semi-colon.

6 Click OK to save your entry and close the Edit System Variable dialog box.

7 Click OK to close the Environment Variable window, then click OK to close the System Properties window.

8 Close the Control Panel window.

9 Restart your machine to implement the new PATH statement.

❖ **Setting the PATH variable for the *ims* script on UNIX systems**

This procedure is for the C-shell user environment. If your UNIX system uses a different shell (for example, the Bourne shell or Korn shell), see your UNIX system documentation for instructions on setting the PATH variable.

Note To see which shell is the default on your system, type `echo $SHELL` in a terminal window.

You can set the PATH variable each time you open a terminal session and start the cluster, or you can set the PATH variable permanently for all terminal sessions by adding the ims wrapper script path to the *$HOME/.cshrc* file.

Note Generally, shell variables apply only to the current instance of the shell and are used to set short-term working conditions; environment variables have a farther reaching significance, and those set at login are valid for the duration of the session. By convention, environment variables are uppercase and shell variables are lower case names.

The PATH environment variable and path shell variable specify directories to search for commands and programs. Both variables always represent the same directory list, and altering either automatically causes the other to be changed.

---

1 To permanently add the *ims* executable to your path:

   a Open the *$HOME/.cshrc* file in a text editor.

   b Add the following line to the *.cshrc* after the list of other commands:

```
set path = ($path /<install_directory>/Sybase/ImpactServer-5_4/bin)
```

   where <*install_directory*> is the location where the e-Biz Impact version 5.4.5 server is installed.

   c Save the *.cshrc* file and close the text editor.

   d Log out of the system and log back in to establish the new path.

2 To add the *ims* path to the end of your existing path for only the current session, open a terminal window and enter the following on one line:

```
set path = ($path <install_directory>/Sybase/ImpactServer-5_4/bin)
```

   where <*install_directory*> is the location where the e-Biz Impact version 5.4.5 server is installed.

Note If you did not use step 1 to permanently add the *ims* wrapper script location to your path, each time you open a terminal window to execute the cluster, you must first enter the command shown in step 2 to set the PATH variable for the ims wrapper script for that session.

Deploying cluster files

A cluster's configuration, project, module, and application files must be located in the same directory as the e-Biz Impact server. This section describes how to copy a cluster's configuration files to to the location from which you want the cluster to run.

Windows

When the e-Biz Impact server is installed on Windows, you create a true runtime directory on Windows and use the e-Biz Impact deploy utility to copy the cluster's configuration files to that location ("Deploying cluster files" on page 67). Afterward, you use the instructions in "Moving application, module, and production object files" on page 69 to copy the remaining cluster files to the runtime directory.

UNIX

When the e-Biz Impact server is installed on UNIX, you create a temporary deployment directory on Windows and use the e-Biz Impact deploy utility to copy the cluster's configuration files to that location (see "Deploying cluster files" on page 67). Next you manually move the remaining cluster files to the same temporary directory. Afterward, you use the instructions in "Moving application, module, and production object files" on page 69 to copy or FTP all of the cluster files from the temporary Windows directory to a permanent user-created runtime directory on UNIX where the e-Biz Impact server is installed.

Note Before you run the deploy utility, you must use the Configurator to generate a set of configuration files for a cluster. Cluster configuration files are generated by the Configurator when you save a cluster. See Chapter 2, "Configuring Clusters," for instructions.

❖ **Deploying cluster configuration files**

1 In the Windows File Explorer, verify that the cluster's configuration files (*.xml* and *.cfg*) exist in the same default directory (*x:\Sybase\ImpactClient-5_4\config*) or the working directory that you specified when you saved the cluster.

2 Open the Windows File Explorer.

3 Create a directory to copy the cluster's configuration files.

When the e-Biz Impact server is installed on Windows, this is the location from which you want to run the cluster. For example, you could create the directory called "Working\Config" on drive D—*D:\Working* or *D:\Sybase\ImpactServer-5_4\Working*.

When the e-Biz Impact server is installed on UNIX, this is a temporary Windows directory. For example, you could create the directory called "deploy" on drive D—*C:\Deploy* or *D:\Sybase\ImpactClient-5_4\Deploy*.

4 Close the Windows File Explorer.

5 Select Start | Run, enter `cmd` in the Open text box, then click OK to open a command window.

6 When the command window opens, go to the directory containing the cluster configuration files; for example:

```
cd x:\Sybase\ImpactClient-5_4\config
```

where "*x*" is the drive where the e-Biz Impact client is installed.

7 At the command line, enter:

```
ims deploy -cluster <cluster_name> -root <path>
```

and press Enter.

<*cluster_name*> is the name of the e-Biz Impact cluster for which you are deploying files, and <*path*> is the root directory path under which the deployment utility copies all files. This is the directory that you created in step 3.

Warning! Do not enter the filename extension (*.xml*) for the *cluster_name* variable; that is, only enter the portion of the cluster configuration file name that precedes the file name's *.xml* extension. This ensures that the deployment utility copies all configuration files for that cluster. If you include the filename extension, the deploy utility fails.

8 Close the command line window.

Example

The assumptions for this example are:

- The example cluster is named "Cluster1."
- On Windows, the e-Biz Impact 5.4.5 server is installed in *D:\Sybase\ImpactServer-5_4*. On UNIX, the e-Biz Impact server is installed in */Working/ImpactServer-5_4/clusters/*.
- The cluster files have been saved to the default *D:\Sybase\ImpactClient-5_4\config* directory.

To deploy the example cluster's configuration files, you:

1 Create the Windows runtime directory *D:\Sybase\ImpactServer-5_4\Working\Config* when the server is on Windows, or create the temporary directory */Working/ImpactServer-5_4/clusters/Cluster1/Config* when the server is on UNIX.

2 Open a command window and go to *D:\Sybase\ImpactClient-5_4\config*.

3 At the command line, enter this command on one line:

e-Biz Impact server on Windows:

```
ims deploy -cluster Cluster1 -root D:\Sybase\
      ImpactServer-5_4\Working\Config
```

e-Biz Impact server on UNIX:

```
ims deploy -cluster Cluster1 -root D:\Sybase\Deploy\Config
```

All of the cluster's configuration files *(.cfg* and *.xml)* are copied to the appropriate Windows directory.

Example

To deploy the example cluster configuration files, you would:

1 Create a *Cluster1* subdirectory on the UNIX machine where the e-Biz Impact 5.4 server is installed; for example:

```
cd /Working/Sybase/ImpactServer-5_4/Clusters/
mkdir Cluster1
chmod a=rwx Cluster1
```

These commands create the *Cluster1* directory, and grant read, write, and execute permission to the world on the *Cluster1* directory.

2 In Windows, use FTP or NFS to copy the cluster files to the directory you created on the server machine: */working/Sybase/ImpactServer-5_4/clusters/Cluster1*.

Moving application, module, and production object files

This section explains how to move the remaining cluster files (server on Windows) or all cluster files (server on UNIX) to the final runtime location from which you want to execute the cluster.

Windows

When the e-Biz Impact server is installed on Windows, you must move the remaining cluster files (production objects, project, module, and table files) to the runtime location, created in the the previous section, from which you want to execute the cluster.

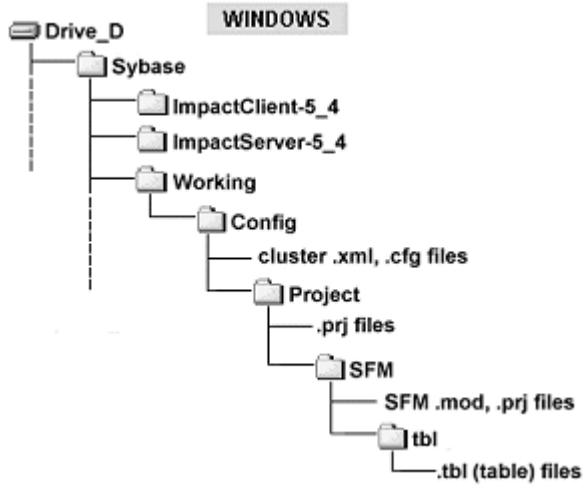
UNIX

When the e-Biz Impact server is installed on UNIX, you move the remaining cluster files to the temporary Windows deployment directory, create a permanent runtime directory on UNIX, then copy or FTP all of the cluster's files to the UNIX runtime directory from which you want to execute the cluster.

Moving remaining cluster files for Windows e-Biz Impact server

The runtime directory structure for e-Biz Impact is user-defined, and although all of a cluster's files can reside in the same directory, Figure 5-1 illustrates a more structured directory arrangement.

Figure 5-1: Windows runtime directory structure

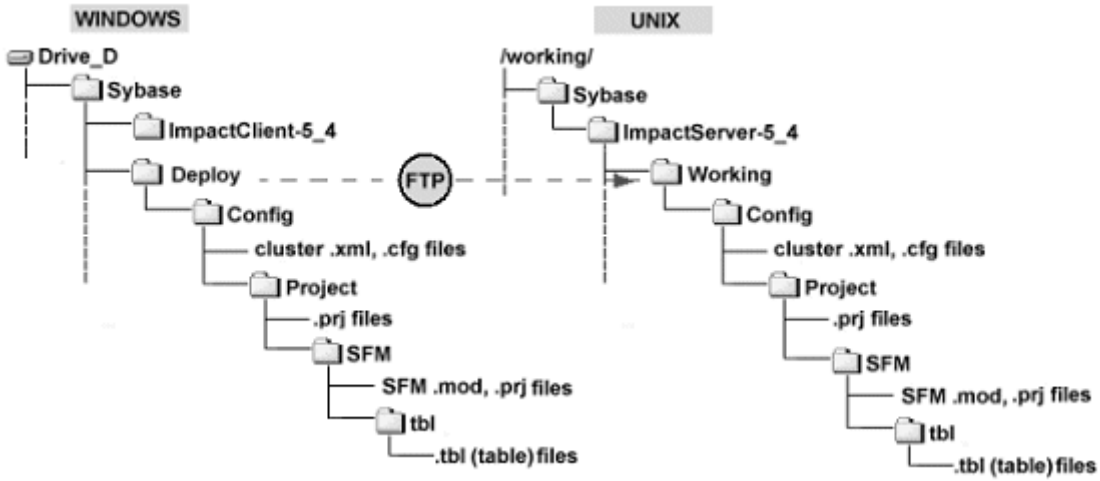


On Windows, use the Windows File Explorer to move the cluster project (*.*prj*), module (*.*mod*), and table (*.*tbl*) files to the appropriate subdirectories below the root runtime directory.

Client installed on Windows, server installed on UNIX

The runtime directory structure for e-Biz Impact is user-defined, and although all of a cluster's files can reside in the same directory, Figure 5-2 illustrates a more structured directory arrangement.

Figure 5-2: e-Biz Impact server installed on UNIX



On UNIX systems, use FTP to move the cluster project (**.prj*), module (**.mod*), and table (**.tbl*) files from the Windows client to the appropriate subdirectories below the root runtime directory (Figure 5-2) on the UNIX server from which you will execute e-Biz Impact.

Starting clusters

After you create your AIMs and production objects, configure your system in the Configurator, deploy the configuration files, and set up security and monitoring functions, you can start the e-Biz Impact cluster.

The e-Biz Impact executable launches a separate process for each controller beneath the specified cluster based on the cluster XML configuration file. The controller process launches each cluster application, as defined in each application's configuration files.

All e-Biz Impact executable arguments are set using a configuration file. See “Using the Harvest utility” on page 75.

Using wrapper scripts

Note Unless otherwise stated, the wrapper scripts referenced in this section replace all command shells and environmental requirements in earlier versions of e-Biz Impact.

The *ims* wrapper script is used with each major component, including e-Biz Impact and Adaptive Server Anywhere executables. The *ims* script contains the core of the executable name and associated command line arguments. See “Additional ims commands” on page 74.

For example, the binary used to run an e-Biz Impact cluster is *ims54cluster*. The command line executable is:

```
ims cluster -cluster.name myCluster
```

where *myCluster* is the name of the cluster you want to run.

For Windows NT, you must specify the full executable name:

```
ims.nt ims54cluster -cluster.name myCluster
```

You can modify wrapper information to enable execution from different e-Biz Impact instance directories. Wrappers also enable you to seamlessly update e-Biz Impact regardless of version or executable name changes.

Note Before you execute the cluster, add the wrappers directory, installed by default in *Sybase\ImpactServer_5-4\bin* on Windows and in */usr/ImpactServer-5_4/bin* on UNIX, to your PATH. See “Setting the ims wrapper script path” on page 64.

❖ **Starting e-Biz Impact on Windows**

1 Enter the following at a DOS command line:

```
ims cluster -cluster.name <clusterName> -file <fileName>

                    -cluster.name clusterName
                    -cluster.mode clusterMode
                    -cluster.home homeDir
                    -domain.type domainType
```

```
-domain.name domainName
-env.snmp.port snmpPort
-env.trap.port trapPort
-file file name
```

Table 5-1: Cluster command arguments

Argument	Description
cluster.name	The name of the cluster you want to start. The cluster name is the name of the XML file.
cluster.mode	The mode in which to start the cluster. Valid values are cluster and manager. The default mode is cluster.
cluster.home	The directory in which the cluster.XML file exists. Used as the working directory for the cluster.
domain.type	The type of domain under which the cluster runs, providing a logical grouping under which clusters can be run. Domain types might include development, testing, or production. The default value is “Impact.”
domain.name	The name of the domain under which the cluster runs. Along with domain type, provides a logical grouping under which clusters can be run. Domain names might include sales, accounting, or marketing. The default value is “Impact.”
env.snmp.port	The custom SNMP port to which the cluster publishes telemetries. The default SNMP port is 161.
env.trap.port	The custom trap port to which the cluster publishes alerts. The default port is 162.
file	The name of the configuration file in which all or some of the command arguments are defined. The arguments made on the command line take precedence over a value in this file.

2 To install, configure, remove, stop, and start the cluster as a service on Windows, use the ims clustersvc executable:

```
ims clustersvc -home <homeDir> -file <config file name>
```

where <*homeDir*> is the directory where the cluster service starts. A *cluster.home* argument in the configuration file overrides this value. The `-file` argument indicates the name of the configuration file (for example, *myCluster.cfg*) where you defined argument values for the *ims54cluster* binary.

3 Once installed, use Start | Settings | Control Panel | Administrative Tools | Services to start and stop the service.

❖ **Starting e-Biz Impact on UNIX**

1 Enter the following command on one line:

```
ims cluster -cluster.name <clusterName>
     -shell
     -mode {cluster | manager}
     -file xmlcfg
```

- `-shell` – optional. By default, the cluster runs as a daemon. To run a cluster in the foreground (so the process can be stopped using Ctrl+C, and the cluster exits when the terminal window is closed), use the shell option.
- `-mode` – determines the role or personality the cluster executable assumes. The options are `cluster` and `manager`.
- `-file` – the name of the cluster's configuration file.

2 If you run e-Biz Impact without the `-shell` flag, use the UNIX kill command with the process ID of the appropriate application to stop the cluster.

Additional *ims* commands

Use these parameters to execute *ims* wrapper script commands:

- *ims.sr* – executes any SNMP related commands using the form:

  ```
  ims.sr <COMMAND>
  ```

  where <*COMMAND*> is an SNMP command followed by any parameters specific to that command.

- *ims.setsrports* – sets the ports to which SNMP broadcasts telemetry and traps, using the form:

  ```
  ims.setsrports <PORT1> <PORT2>
  ```

  where <*PORT1*> is the telemetry port and <*PORT2*> is the trap port.

- *ims* – executes all e-Biz Impact related commands using the form:

  ```
  ims <COMMAND>
  ```

  where <*COMMAND*> is the command type followed by any parameters specific to that command.

- *ims.nt* – executes all e-Biz Impact-related commands on only Windows NT using the format:

  ```
  ims.nt <COMMAND>
  ```

where <*COMMAND*> is the command type followed by any parameters specific to that command.

- *ims.nn* – executes all NNconfig-related commands using the form:

  ```
  ims.nn <COMMAND>
  ```

  where <*COMMAND*> is the command type followed by any parameters specific to that command.

- *ims.db* – executes all commands associated with the authorization database using the form:

  ```
  ims.db <COMMAND>
  ```

  where <*COMMAND*> is any database command you would use.

Note See the *e-Biz Impact Command Line Tools* for command type definitions and their associated parameters.

Using the Harvest utility

The Harvest utility allows you to change the e-Biz Impact configuration by modifying the most recent configuration files. The Harvest utility runs like the deployment utility—it picks up the previously deployed files and copies them back into the original working directory so you are sure to make changes to the original files.

To run the Harvest utility, go to the e-Biz Impact server installation directory and execute *Sybase\ImpactServer-5_4\bin\ims54harvest.exe* on Windows or */usr/ImpactServer-5_4/bin/ims54harvest.sh* on UNIX.

```
ims54harvest -cluster <clustername> -root <path>
```

where <*clustername*> is the name of the e-Biz Impact cluster for which you are harvesting files, and <*path*> is the root directory path, from which the Harvest utility copies all files.

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