SeeBeyond ICAN Suite

e*Insight Business Process Manager User's Guide

Release 5.0.5 for Schema Run-time Environment (SRE)

SeeBeyond®

Contents

Chapter 4

Designing Business Process Models   35

Chapter 5

Configuring Business Process Models   45

Chapter 6

Exception Handling 82

Chapter 7

Managing Business Process Models 87

Chapter 8

Configuring the e*Gate Schema   101

Chapter 9

Monitoring Business Processes   117

Chapter 13

Establishing User Security for e*Insight 170

List of Tables

List of Figures

Introduction

The user's guide provides instructions and background information for all users of the
e*Insight Business Process Manager™ (e*Insight) application.

1.1 Document Purpose and Scope

This guide explains how to use the SeeBeyond Technology Corporation™
(SeeBeyond™) e*Insight Business Process Manager. This user's guide includes
information on the following topics:

- Creating and configuring business process models

- Monitoring a running business process

- Setting up and configuring security for business process versions

1.2 Intended Audience

This book assumes the reader is familiar with the Microsoft Windows operating
systems and standard graphical user interface (GUI) concepts. It also assumes
familiarity with the business process protocols used by your company. If you will
configure e*Insight business processes to work with e*Gate™, then you should be
familiar with the following e*Gate concepts: Participating Hosts, e*Ways™, BOBs,
Collaboration Rules, and how events are published. You should also be familiar with
JavaScript to understand the syntax required by e*Insight Script and expressions.

Some parts of the book are for all users, and some parts are intended only for the
Administrator or other person who will have access to certain setup procedures. This
book covers the entire e*Insight Business Process Manager application, and provides
procedures for all users.

1.3 Writing Conventions

The writing conventions listed in this section are observed throughout this document.

Hypertext Links

When you are using this guide online, cross-references are also hypertext links and appear in **blue text** as shown below. Click the **blue text** to jump to the section.

Command Line

Text to be typed at the command line appears in a special font as shown below.

```
java -jar ValidationBuilder.jar
```

Variables within a command line are set in the same font and bold italic as shown below.

```
stcregutil -rh hostname -un username -up password -sf
```

Code and Samples

Computer code and samples (including printouts) on a separate line or lines are set in the command-line font as shown below.

```
Configuration for BOB_Promotion
```

However, when these elements (or portions of them) or variables representing several possible elements appear within ordinary text, they are set in *italics* as shown below.

path and *file-name* are the path and file name specified as arguments to **-fr** in the **stcregutil** command line.

Notes and Cautions

Points of particular interest or significance to the reader are introduced with *Note*, *Caution*, or *Important*, and the text appears in *italics*. For example:

Note: *The Actions menu is only available when a Properties window displays.*

User Input

The names of items in the user interface such as icons or buttons that you click or select appear in **bold** as shown below.

Click **Apply** to save, or **OK** to save and close.

File Names and Paths

When names of files are given in the text, they appear in **bold** as shown below.

Use a text editor to open the **ValidationBuilder.properties** file.

When file paths and drive designations are used, with or without the file name, they appear in **bold** as shown below.

In the **Open** field, type **D:\setup\setup.exe** where **D:** is your CD-ROM drive.

Parameter, Function, and Command Names

When names of parameters, functions, and commands are given in the body of the text, they appear in **bold** as follows:

The default parameter **localhost** is normally only used for testing.

The Monk function **iq-put** places an Event into an IQ.

After you extract the Schema files from the CD-ROM, you must import them to an e*Gate Schema using the **stcregutil** utility.

1.4 Online Documents

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

http://www.adobe.com

Note: *When downloading Acrobat Reader, make sure to download the version that includes the option for searching .pdf files. This option is required in order to view the searchable master index.*

Searching the Online Documents

The collection of online documents includes a searchable master index. This index is a convenient way to find a topic when you are not sure which document to consult. The index requires activation of the SeeBeyond master index.

To activate the SeeBeyond master index

1 If you have not already done so, download and install Acrobat Reader; take care to install the version that includes the option for searching **.pdf** files.

2 Start Acrobat Reader.

3 On the **Edit** menu, point to **Search**, and then click **Select Indexes**.

4 In the **Index Selection** dialog box, click **Add**.

5 Locate and open the **<eGate>\client\docs** folder, where **<eGate>** is the location where e*Gate is installed.

6 Double-click **SeeBeyond_Index.pdx**.

7 Click **OK** to close the **Index Selection** dialog box.

To search the master index

1 On the Acrobat Reader **Edit** menu, point to **Search**, and then click **Query**.

2 Type the term or phrase you want to find, and then click **Search**.

A list of documents matching the search criteria appears.

3 Select a title from the list, and then click **View**.

4 Press CTRL+] and CTRL+[to view the next and previous highlighted results.

1.5   SeeBeyond Web Site

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

http://www.SeeBeyond.com

Introduction to the SeeBeyond Business Integration Suite

This chapter provides an overview of the SeeBeyond Business Integration Suite and explains how the e*Insight Business Process Manager interacts with the other suite components.

2.1 SeeBeyond Business Integration Suite

Complex and dynamic partner relationships, and the management of various processes present tremendous challenges to business. Organizations and their trading partners must manage disparate component applications and align proprietary software requirements. Organizations and their trading partners must also agree on data exchange and security standards.

The SeeBeyond Business Integration Suite merges traditional Enterprise Application Integration and Business-to-Business (B2B) interactions into a multi-enterprise business integration product suite.

This suite allows you to:

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

This suite also provides:

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

2.1.1. SeeBeyond Business Integration Suite Components

The SeeBeyond Business Integration Suite includes the following components and sub-components:

- Business integration applications:
  - ◆ e*Insight™ Business Process Manager
  - ◆ e*Xchange™ Partner Manager
  - ◆ e*Xpressway™ Integrator
  - ◆ e*Index™ Global Identifier
- e*Gate™ Integrator components:
  - ◆ e*Way™ Intelligent Adapters
  - ◆ Intelligent Queues (IQ™)
  - ◆ Business Object Brokers (BOBs™)

See Figure 1 for a graphical representation of the SeeBeyond Business Integration Suite and its components.

Figure 1 SeeBeyond Business Integration Suite
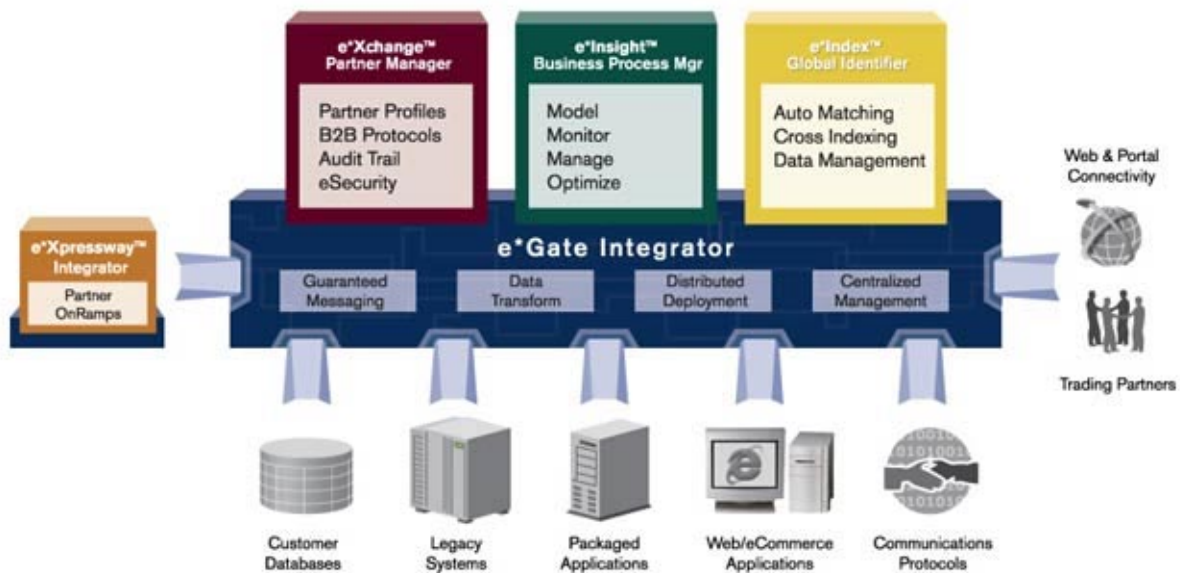
e*Insight Business Process Manager

The e*Insight Business Process Manager facilitates the automation and administration of business process flow across business activities. Graphical modeling and monitoring enables users to instantly assess the state of a business process instance and identify any bottlenecks in the process.

e*Xchange Partner Manager

The e*Xchange Partner Manager manages trading partner profiles and supports standard business message format and enveloping protocols, including RosettaNet,

UN/EDIFACT, ASC X12, NCPDP-HIPAA, and CIDX. The e*Xchange Partner Manager includes a Validation Rules Builder to aid in the creation of X12 and UN/EDIFACT message validations based on industry implementation guides.

Security Manager

The optional Security Manager works with e*Xchange to ensure the integrity of message data sent to and from trading partners, which is imperative when conducting business in the public domain. The Security Manager uses public key infrastructure (PKI) to authenticate the origin of a message sender. Encryption then ensures that business messages remain secure and private.

e*Xpressway Integrator

e*Xpressway Integrator (e*Xpressway) enables rapid trading partner connectivity and integration through a comprehensive B2B implementation methodology, Web-based graphical configuration wizards, and downloadable integration software. Trading partners follow a quick step-by-step process for registering their company profile, installing customized integration software, and configuring connectivity.

e*Index Global Identifier

e*Index Global Identifier (e*Index) is a global cross-indexing application that provides a complete solution for automated person-matching across disparate source systems, simplifying the process of sharing member data between systems.

e*Index centralizes information about the people who participate throughout your business enterprise. The application provides accurate identification and cross-referencing of member information in order to maintain the most current information about each member. e*Index creates a single, consistent view of all member data by providing an automatic, common identification process regardless of the location or system from which the data originates.

e*Gate Integrator Components

e*Gate Integrator enables the flow of information across an enterprise by providing comprehensive connectivity to applications and datastores across a network. e*Gate is based on a distributed architecture with an open design that deploys flexible load balancing options. e*Gate processes Events according to user-defined business logic and integrates business processes between applications, ensuring end-to-end data flow into back-office systems.

e*Way Intelligent Adapters

e*Way Intelligent Adapters provide specialized application connectivity and support for robust data processing such as business Collaborations, transformation logic, and publish/subscribe relationships. e*Way adapters are multi-threaded to enable high-performance distributed processing. This multi-threaded processing allows for exceptional deployment flexibility and load balancing.

Intelligent Queues

Intelligent Queues (IQs) are open-queue services for SeeBeyond or third-party queuing technology that provide robust data transport.

In conjunction with Java-enabled Collaborations, SeeBeyond JMS IQs can provide guaranteed once-only message delivery.

Business Object Brokers

A BOB component is similar to an e*Way in that both establish connectivity and are capable of transforming data. BOBs use Collaborations to route and transform data within the e*Gate system. They have the following properties:

- BOBs only communicate with IQs within e*Gate. They do not communicate with external applications as e*Ways do.

- BOBs are optional by design. You can add them to an environment to remove some load from your e*Ways, either to set up easily maintainable data processing or to enable multiple internal processes.

2.2 Introducing e*Insight Business Process Manager (e*Insight)

A *business process* is a collection of activities and messages that flow in a defined sequence to produce an end result. Within an Business Integration framework, e*Insight helps you organize these processes into *message-based integration solutions*. The message-based process modeling you do in e*Insight determines how data messages flow from activity to activity.

e*Insight is the component within the SeeBeyond Business Integration Suite that facilitates the automation of the business process flow of business activities. The functions of e*Insight include business process model design, monitoring, and execution as well as the ability to analyze historical performance.

Using e*Insight, business analysts are able to design business process models through a user-friendly, fully graphical tool. The e*Insight Business Process Manager provides the appropriate graphical tools for an analyst to define all types of business models, from simple to very complex.

Once a business flow is modeled, the business analyst has the capability to instantly assess the detailed state of a business process instance through a color-coded graphical representation of the model. This way, the user can identify the processes that need intervention, repair, or authorization. e*Insight provides the appropriate facilities for the business analyst to examine the attributes of the business process instance (as defined by the business process analyst, during the design of the model), and—with the appropriate security privileges—modify their values.

For example, the business analyst can examine the contents of a purchase order that failed to be processed, modify (repair) the purchase order, and then restart the failed business process instance, using the modified purchase order.

In addition to the capability of monitoring the state of a given business process instance, the e*Insight provides the business analyst with a complete historical picture, by tracking and storing all instances and the associated attributes of the business process model. The analyst has access to each one of the instances and can assess the

performance of each through examining the values of the model's attributes as instantiated in the specific instance in review.

e*Insight provides the capability to analyze the performance of a business process model on a historical basis, so that trends can be determined and possible bottlenecks identified. The analyst can create charts on the performance of the business process model against an array of system attributes (such as "duration" and "state"), and user-defined attributes (for example, "order amount" or "PO source"). Charting the data in this way makes it easy to discern areas where the model needs re-design.

2.2.1. **Five-step Management**

e*Insight allows you to manage business processes within a five-step life cycle. At the highest level, this life-cycle management of business processes involves:

- **Modeling** the business process in a graphical user interface (GUI) environment
- **Generating** the integration components to accelerate and simplify implementation
- **Monitoring** the running Instances, both visually and through Alerts and Notifications
- **Managing** the Business Processes Exceptions to ensure process integrity
- **Optimizing** the business process through analysis and reporting over time

Figure 2 on page 23 shows a diagram of how this five-step life cycle operates. Examples of common business processes, such as order fulfillment, are shown within the diagram.

Figure 2 Business Process Management Life Cycle
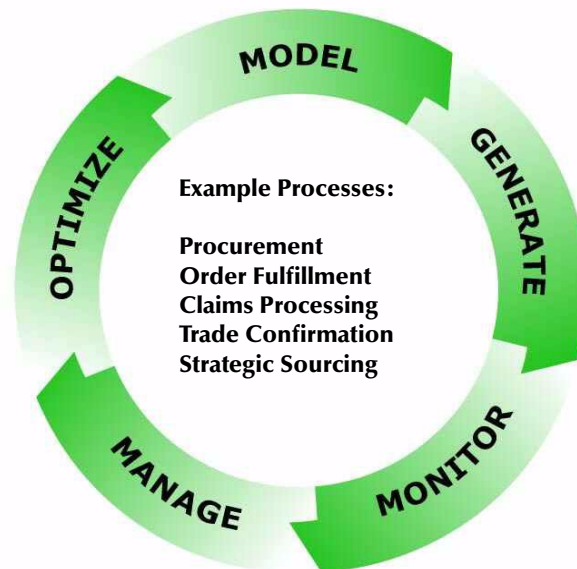
2.2.2. **How e*Insight Operates**

e*Insight is comprised of three primary parts that provide the services of the process-driven Business Integration layer. These components are:

- **e*Insight Modeling Environment** that allows you to collaborate on and accelerate the business process creation; enables you to monitor, manage, and optimize business processes over time

- **e*Insight Database** that acts as a process data warehouse automatically storing process templates and process state information, as well as all current and historical business process data

- **e*Insight Engine** The e*Gate component that manages all running business process instances based on business rules configured in each process model

2.2.3. **How e*Insight Works With e*Gate**

e*Insight uses e*Gate to perform the processes behind activities within the business process model. Figure 3 shows a sample business process model for order processing. The process first checks the inventory to determine whether the product is in stock. If it is in stock then the order is shipped and then the customer is notified; otherwise the customer is notified that the item is out of stock. The following section discusses how e*Gate and e*Insight interact to complete the business process.

Figure 3   Sample Business Process
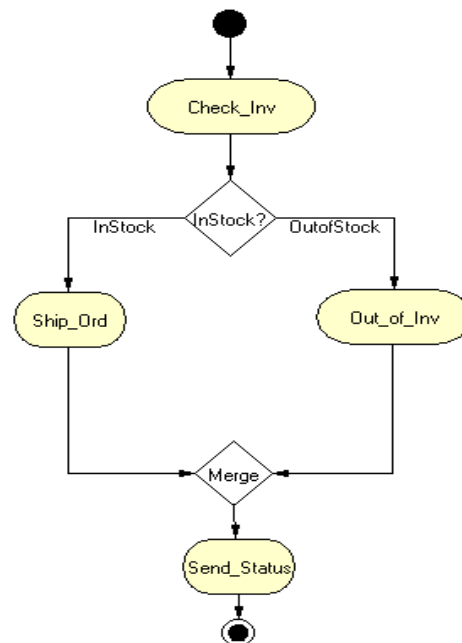
To start the business process e*Gate sends an event to e*Insight which instructs the engine to start a new instance of the business process and provides it with all the required data (for example, the customer details, product, quantity).

The instance details are logged in the e*Insight database and the Check_Inv activity is started. This is processed in e*Gate, so the e*Insight engine sends a "DO" event to the Check_Inv module in e*Gate and provides all the required data (for example, the product code and quantity). The Check_Inv turns blue to show that it is running (see Figure 4).

Figure 4   Process Order Example - Check_Inv
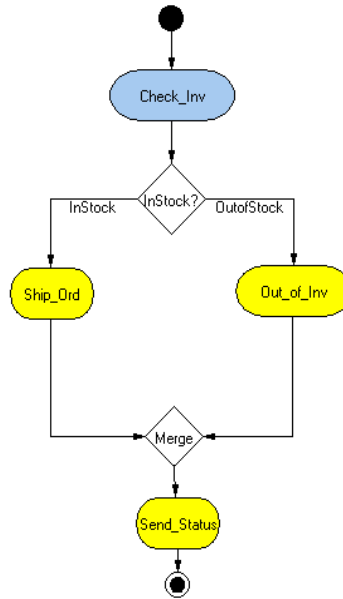
The Check_Inv module determines whether the item is in stock and sends a "DONE" event back to e*Insight. This event holds information about whether or not the item is in stock.

The engine updates the database with the stock information, marks the Check_Inv activity as completed (changes color to green) and then moves to the next activity. The e*Insight engine processes the logic in the decision gate to determine whether the InStock or OutofStock link should be followed.

Assuming the item is in Stock, the **InStock** link is followed and the e*Insight engine starts the **Ship_Ord** activity. This is processed in e*Gate, so the e*Insight engine sends a "DO" event to the **Ship_Ord** module in e*Gate and provides all the required data (for example, the customer details, product code, and quantity). The **Ship_Ord** turns blue to show that it is running, see Figure 5.

Figure 5   Process Order Example - Ship_Ord
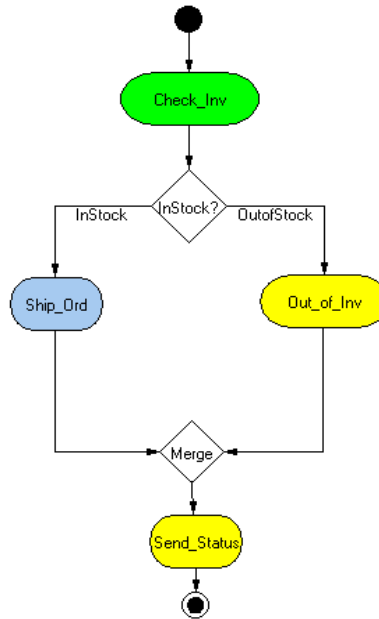
The **Ship_Ord** module ships the order to the customer and sends a "DONE" event back to e*Insight. This event holds information about the status of the order.

The e*Insight engine updates the database with the status information, marks the **Ship_Ord** activity as completed (changes color to green) and then moves to the next activity. The e*Insight engine processes the logic in the merge and moves to the final activity, **Send_Status**. The e*Insight engine also updates the attributes at this time.

The **Send_Status** activity is started. This is processed in e*Gate, so the e*Insight engine sends a "DO" event to the **Send_Status** module in e*Gate and provides all the required data (for example, the customer details and order status). The **Send_Status** activity turns blue to show that it is running, see Figure 6.

Figure 6 Process Order Example - Send_Status
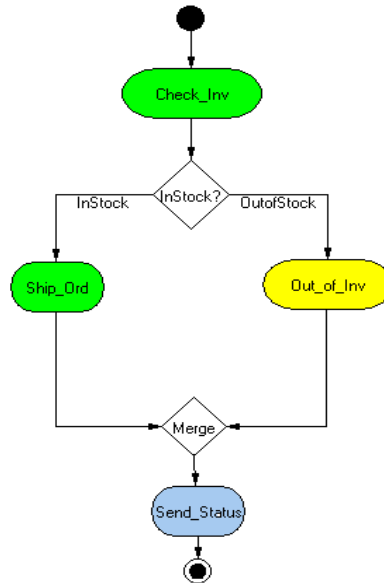
In this example, the **Send_Status** module sends an e-mail to the customer and then sends a "DONE" event back to e*Insight.

The e*Insight engine updates the database and marks the instance as completed, see Figure 7.

Figure 7 Process Order Example - Send_Status
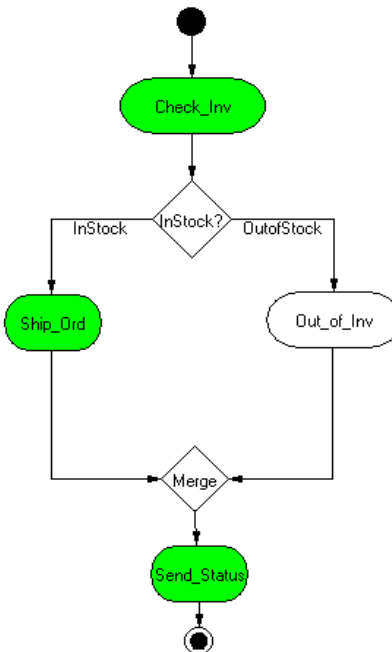
Getting Started With e*Insight

3.1 Overview

e*Insight enables you to design business process models using a GUI, that allows you to easily define all types of business models, from very simple to complex. The business models are created in the form of flow charts, and include activities, sub-process, and operators as their main components. Activities define the steps in the business, while operators control the flow of the business process based on logic.

Once the business flow is modeled, you can use the GUI to monitor the execution of the model's components in real-time. e*Insight's monitoring component provides a color-coded graphical representation of the Business Process Instance (BPI).

The GUI also enables you to create graphs and reports to analyze the historical behavior of the model, in order to identify bottlenecks and where enhancements may be necessary.

This chapter includes information on the following items:

- Log in to e*Insight Business Process Manager
- e*Insight Graphical User Interface Overview
- Log in to e*Gate from e*Insight

For a description of all e*Insight menu commands and toolbar buttons, see **"e*Insight Menus and Tools" on page 187**.

3.2 Log In to e*Insight

Each user must have connectivity to the database and have the necessary ODBC connections established before logging in to the system. Refer the *e*Insight Business Process Manager Installation Guide* for this information.

To log in to e*Insight

1 On the desktop, double-click the **e*Insight** icon.

The database login dialog box displays. (See Figure 8.)

Figure 8   e*Insight Business Process Manager Login Dialog Box

2   In the **Server** box, type the server name.

The server name is the data source name that you set up during the ODBC configuration.

3   In the **Logon ID** box, type your login ID.

This is the database login ID that is specific to the server you are accessing. (The default logon ID is ei_admin).

4   In the **Password** box, type the password. (The default password is ei_admin).

This is the password associated with the database login ID.

5   Click **Log In** to continue.

The **Java Database Configuration** dialog box appears the first time you log in.

Figure 9   Java Database Configuration Dialog Box
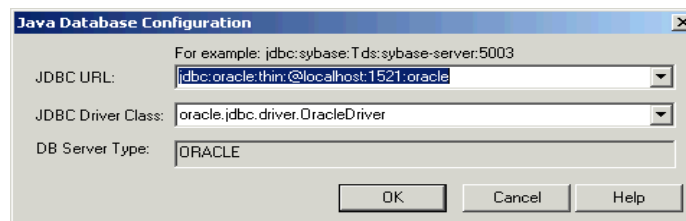
6   In the **JDBC URL** box, type the information for your database connection.

Enter the details of your database.

Oracle

The e*Insight GUI requires either the **JDBC-Thin** (default) or **JDBC-OCI** driver. The **JDBC-OCI** driver is required if you are using the Model Specific database with XML attributes; otherwise, you can use the **JDBC-Thin** driver.

The default URL for the **JCBC-Thin** driver is in the format:

```
jdbc:oracle:thin@<server>:<port>:<service_name>
```

where

<server> is the machine name where the database is installed

<port> is the port number (for example, 1521)

<service_name> is the database service name

Alternatively, you can use the **JDBC-OCI** driver with a URL in the format:

```
jdbc:oracle:oci8:@<service_name>
```

where

<service_name> is the database service name

SQL Server

The default URL is in the format:

```
jdbc:SeeBeyond:sqlserver://
<server>:<port>;DatabaseName=<dbname>;embedded=true;
SelectMethod=cursor
```

where

<server> is the machine name where the database is installed

<port> is the port number

<dbname> is the database name

Sybase

The default URL is in the format:

```
jdbc:sybase:Tds:<server>:<port>:SelectMethod=cursor
```

where

<server> is the machine name where the database is installed

<port> is the port number

Note: *If you receive an error message stating that the connection has been refused, check your JDBC URL configuration.*

7 In the **JDBC Driver** box, change the default driver, if required.

8 Click **OK**.

You are now logged into e*Insight.

Note: *The Database URL and Database Driver parameters are stored in <eInsight>\integrator\stcgui\properties. An XML file is generated for every ODBC data source used to log in to e*Insight and the name is based on the data source name. For example, if your ODBC data source name is eInsight, then the parameters are stored in a file named eInsight.xml. If you want to change the configuration of your Database URL or Database Driver, delete the XML file for the connection. The next time you log in, the Java Database dialog box displays.*

3.3 Working With the e*Insight User Interface

The e*Insight graphical user interface has two modes:

- Design
- Monitor

3.3.1. Design Mode

Design mode is used during the design phase of the process and allows you access to the drawing canvas where the business process flow chart is created. See Figure 10.

The following components are available in design mode:

- Tree View
- Documentation Box
- Modeling Canvas

Tree View

The tree view displays a hierarchical representation of all the business process models, and their activities. The first node reads **SeeBeyond**. The second node is the name of the business process, and the next nodes are the specific business process versions. This view allows you to see at a glance which version is being displayed on the modeling canvas. See Figure 10.

Documentation Box

The documentation box displays comments and free-text descriptions about the business process version. See Figure 10.

Modeling Canvas

The modeling canvas is the portion of e*Insight where you create the business process model in the form of a flow chart. See Figure 10.

Figure 10 Design Mode
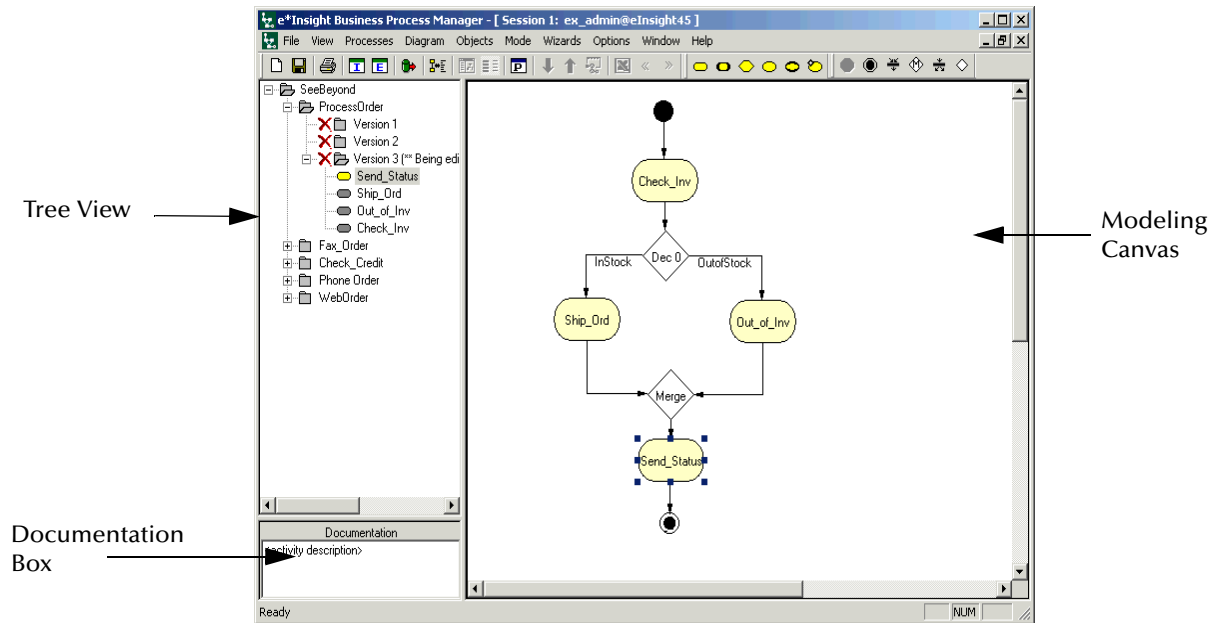
3.3.2. Monitor Mode

Monitor mode is used during the monitoring and reporting phase of the process, and allows you to view the status of the business process.

The following components are available in Monitor mode:

- Tree View
- Documentation Box
- Diagram Pane
- List Pane
- States Legend

Figure 11 Monitor Mode
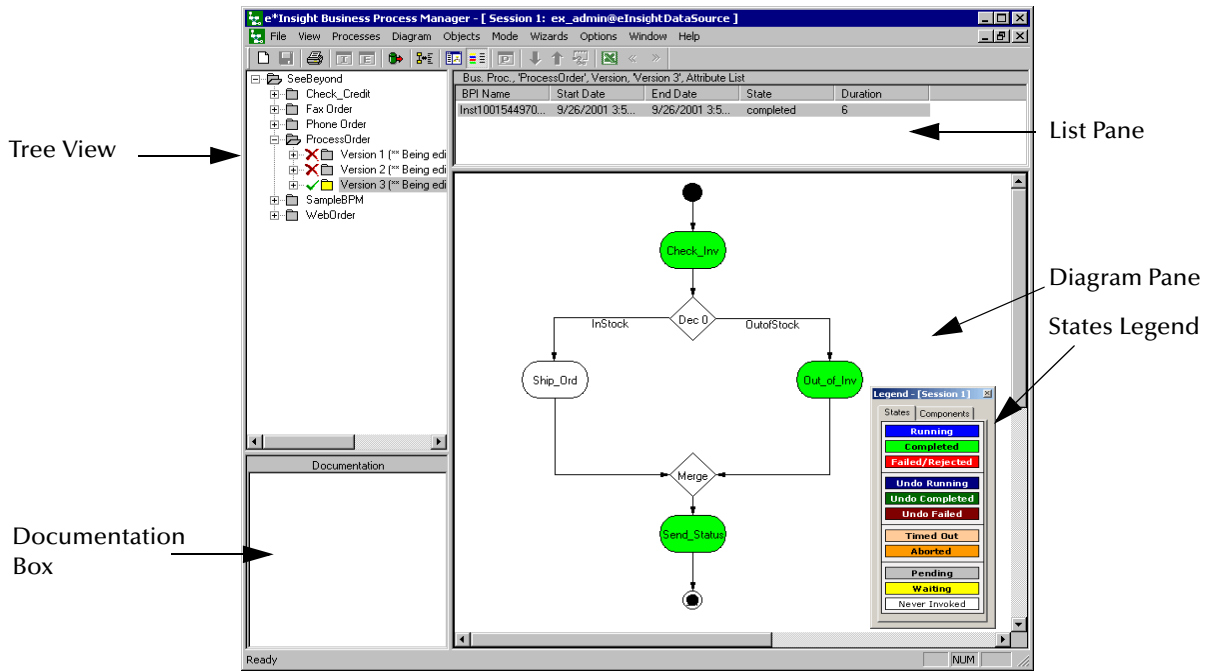
List Pane

The List pane is used in Monitor mode to review the status of a business process version, by reviewing the instances created by it. It also displays the results of any queries against the database, including filtered results. See Figure 12. For more information on the List pane, see the section entitled **"Business Process Monitoring" on page 119**.

Figure 12 List Pane

3.4 Log In to e*Gate From e*Insight

Some e*Insight functions require that you first log in to e*Gate from e*Insight. For example, if you want to edit a Collaboration Rule from e*Insight, you must be logged in to e*Gate in order to view the available rules.

To log in to e*Gate from e*Insight

1 From the **File** menu, select **e*Gate Login**.

The **Please login to e*Gate first** dialog box displays (see Figure 13).

Figure 13   Please login to e*Gate first dialog box
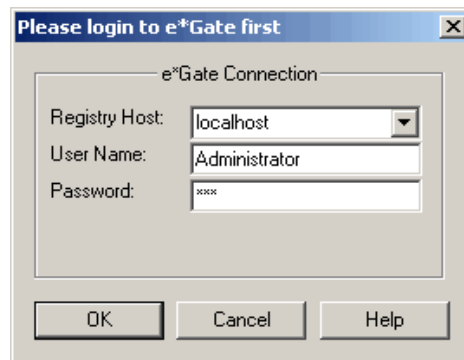
2   Select the registry host from the drop-down list or enter a name.

3   Type the user name and password, and then click **Login**.

The **Select Schema** dialog box displays. See Figure 14.

Figure 14   Select Schema Dialog Box
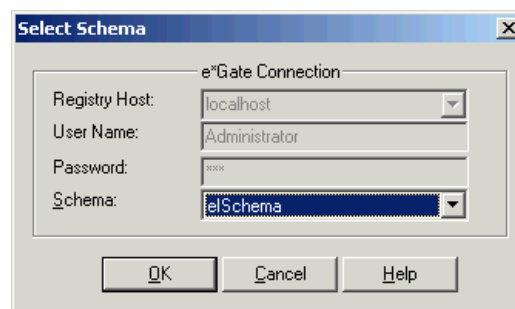
4   From the **Schema** box, select the Schema to which you want to log in, and click **Open**.

You are now logged in to *Gate.

Important: *The Schema should contain all the components provided in the default e*Insight Schema. See **"The e*Gate Schema for e*Insight" on page 101** for details on creating the Schema.*

Designing Business Process Models

You can use e*Insight to simply draw flow charts of your business processes or you can take this a step further and use e*Insight to configure the components depicted by each activity in your business process models. This chapter provides the background information you need to create and understand e*Insight business process models.

4.1 Business Process

A *business process* is a collection of actions and messages, revolving around a specific business practice, that flow in a specific pattern to produce an end result. In e*Insight, a business process is a message-based solution that determines what messages go to what destinations and under what conditions, and what the recipients do when they receive the message.

4.1.1. Business Process Model

A *business process model* is the graphical representation of a business process. It is represented in a diagram that graphically illustrates the path that the business process messages take. See Figure 15 for a sample of a business process model developed using e*Insight.

Figure 15   Sample Business Process Model
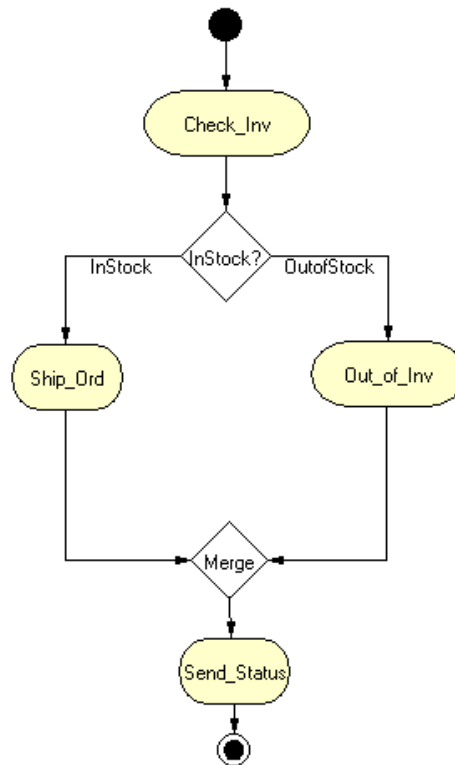
4.1.2. Business Process Version

Business process version control enables you to apply separate version numbers to different versions of the same business process. For instance, you can use versioning to keep track of different iterations of the business process while you are creating it, or to compare one against another to determine which one is most efficient.

Version names are defined either by specific start and end dates (Timestamp format), or user-defined values (User defined).

Timestamp format

The first business process you create will have a start date and an open end date. When you create a new version, the original business process version is end-dated and a new business process version is created. The new business process version has a start date corresponding to the date the business process was created/changed. There should be no "gaps" in the history of valid start and end dates of a business process. See Figure 16.

Figure 16   Business Process Version Names (Date and Time Stamped)
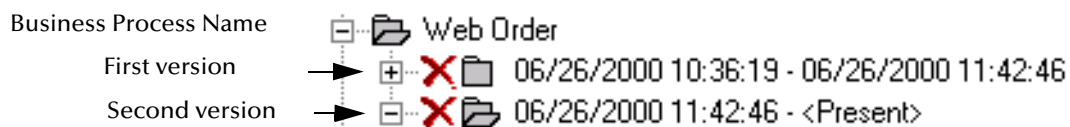
User defined

The first business process version you create will have a default name of Version 1. This can be changed if required. When you create subsequent versions, the default name will be Version 2, Version 3, and so on. These names can be changed as required.

Figure 17   Business Process Version Names (User Defined)

Business Process Name   ProcessOrder

First version   →   Version 1

Second version   →   Version 2
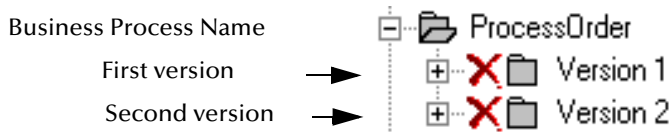
When a business process version is created the system holds definitions for the original business process version and instances of that original business process version. If you create a new business process version, the system shows:

- The original business process version definition
- All instances of the original business process version
- The new business process definition version
- All instances of the new business process version

Note: *All instances are displayed on the **List** view of the e*Insight Business Process Manager.*

4.1.3. Business Process Model Components

Each business process model you create consists of three basic types of components as described below.

Activities and Sub-Processes

There are several different kinds of activities and sub-processes you can include in a business process model. **Figure 18 on page 39** shows examples of each of the different kinds of activities described below. The icons follow the Unified Modeling Language (UML) standard.

Start Activities
A Start activity is a round, black shape. The Start activity marks the beginning of a business process—it identifies exactly which activity should be performed first. There can only be one Start activity for each version of a business process model.

End Activities
An End activity is a round, black shape that is enclosed in a circle. The End activity marks the end of a business process. Since your business process model may contain several processing paths and termination points, you can use as many End activities as you need, within each version of a business process model.

Automated Activities

Automated Activities are processes that are performed by e*Gate or by an e*Insight Script.

Authorization Activities

Authorization Activities require a user to manually authorize a business process from the e*Insight GUI before the process will continue. Each Authorization Activity requires one input link and two output links. One output link is used if the activity is authorized and the other is used if the activity is not authorized.

User Activities

User Activities enable external applications to access attributes in the business process using an API. The API provides a set of functions that allow the external application to access attributes for the User Activity from the e*Insight database. The external application processes and manipulates the attributes, and then sends them back to the e*Insight database. The e*Insight engine uses the returned value of the attributes to continue the business process.

Sub-Processes

A sub-process allows you to use other business process held in the same e*Insight database as components. For example, you can create a business process for an action that you use over and over in different business processes. Then you can use it as a template and build new business processes around it. That way you don't have to keep re-creating a commonly used sub-process each time it is used.

Remote Sub-Processes

A remote sub-process is a business process stored on a remote e*Insight database that is connected via a LAN, WAN, or potentially, the Internet. Like a regular sub-process, a remote sub-process performs a specific set of actions that you want to re-use in one or more business processes. The only difference is that the remote sub-process does not reside in the local e*Insight database. e*Insight uses SOAP messages to communicate with the remote sub-process.

Dynamic Sub-Processes

A Dynamic Sub-Process starts a business process located on your local e*Insight database in one of two ways.

The first method enables a Dynamic Sub-Process to start a sub-process that is named the same as the value of a particular Global Attribute. For example, you can indicate that you want a Dynamic Sub-Process to start a sub-process, named CA, that calculates sales tax for the state of California if the value of the "State" Global Attribute is CA.

The second method enables a Dynamic Sub-Process to start a sub-process based on the results of a logical expression. For example, you can indicate that you want a Dynamic Sub-Process to start a sub-process named CA91000_91500 that calculates sales tax for a particular area code region in California. Your expression would first determine if the value of the "State" global variable identifies California, and then it would determine if the value of the "Zip" global variable falls within the 91000 to 91500 ZIP code range. If these tests are successful, then the CA91000_91500 sub-process is started; if not, then the evaluation of the expressions continues until a default sub-process is started instead.

Figure 18   Sample Activity Shapes
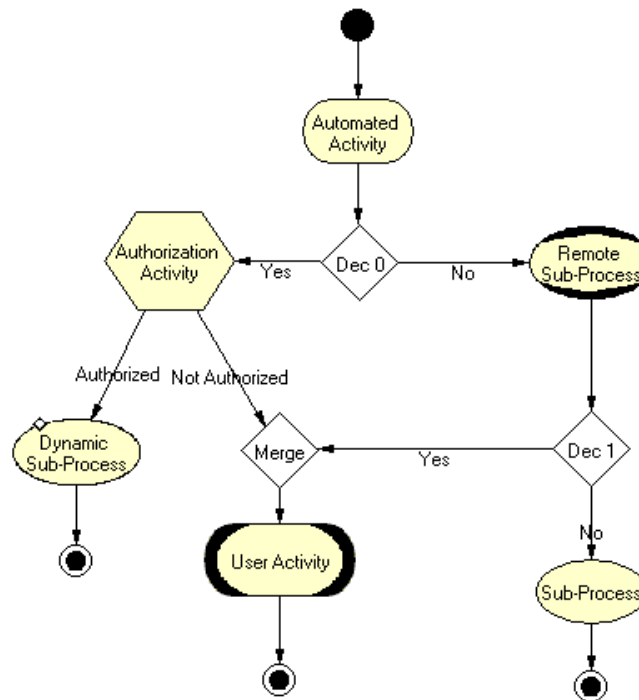
Operators

Operators are objects you add to your business process models to specify the logical flow of information. e*Insight provides four different kinds of operators—Decision gates, Merges, Fork bars, and Join bars.

Decision Gate

Decision gates allows you to control the business process flow with True or False (Boolean) logic. You create separate paths in the business process based on the Boolean outcome from the entered expressions/conditions. Using a Decision gate, you can set up singular or multiple conditions to steer the flow of activities. Multiple conditions can be aggregated into one by using "and" and "or" logic within the Decision gate. Decision gates must have only one input and at least two outputs. Multiple inputs are resolved using a Join bar or a Merge.
One output needs to be defined as the default link. All other outputs will have an associated test to determine whether that link is used. The Decision gate properties can only be configured when the links between the Decision gate and activities are made.

Merge

A Merge allows you to create logic in your business model that requires that at least one previous ("upstream") activity's condition must be met in order for the process to continue to the next activity. A Merge must have two or more inputs and one output. A Merge uses "or" logic.

Fork Bars

A Fork bar allows you to direct a single input to multiple output locations to allow parallel processing. Fork bars must have one input and two or more outputs. All Fork bars must have a corresponding Join bar.

Join Bars

A Join bar requires that the conditions of all upstream activities must be met before continuing to the next activity. For example, a Join bar can be used to ensure that an order will only be processed if the customer's credit is approved and the requested item is in inventory. A Join bar requires input from at least two upstream activities and it passes output to a single activity.

Links

Links are the connections between activities, sub-processes, and operators. In your business process models, links appear as arrows. Links can be named and, for Authorization activities, point to the activity to start if the user authorizes the action or to an alternate activity if the user does not authorize the action.

Upstream and Downstream Activities

Upstream activities are those activities that come before a specific activity in the Business Process flow. *Downstream activities* are those activities that come after a specific activity in the same business process flow.

4.2 Modeling Business Processes

The first major task you perform in e*Insight is to model a process used by your business. To draw this model, you must perform the following steps:

1 Create your business process model in *Insight

2 Model your business process using e*Insight

3 Validate the business process model

4 Save the business process model

The following topics explain each step above in detail. When you have completed a business process model, you may want to secure it from access by unauthorized users. For instructions, see **"Securing Business Processes" on page 99**.

4.2.1. Creating a Business Process Model in e*Insight

Before you start to create a model of your business process, you must add a new business process version to e*Insight. Creating a new business process provides a clean modeling canvas for you to work with and allows you to name the business process and the first version of your model. You can name each version of your model using either a User defined value or a Timestamp format.

To create the first version of a business process model

1 In Design mode, click **Add Business Process** from the **Processes** menu.

2 Type the name of the Business Process, and then press **Enter**.

The **Saving new version** dialog box appears.

3 Do one of the following:

▪ To name the business process version using the current date and time, click **Timestamp format**, and then click **OK**.

▪ To name the business process version using a name of your choice, click **User defined**, type the name, and then click **OK**.

The Business Process is added to e*Insight. See Figure 19 for an example of the two different ways that business process model names appear in e*Insight.

Figure 19   Business Process Version Names
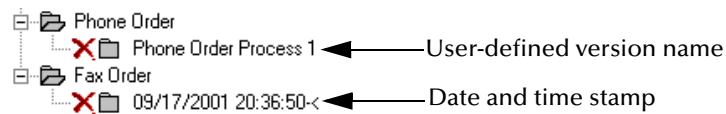
4.2.2. Modeling a Business Process

To model a business process, you place activities, sub-processes, and operators on the e*Insight modeling canvas, and then link these components to reflect the logical flow of the business process. e*Insight provides the tools you need to quickly develop business process models, including graphic editing tools to help you adjust, size, and align model components.

To model a business process

Before you begin, complete **"Creating a Business Process Model in e*Insight" on page 40**.

1 Click the **Start** activity toolbar button to add a starting point. There is only one starting point for any business process model. There can be multiple end points.

2 Add an activity to the modeling canvas by doing the following:

A Click an **activity** toolbar button on the e*Insight toolbar. The selected activity appears on the modeling canvas.

B Type the name of the activity, and then press **Enter**. The activity name must contain at least one character (A-Z, a-z, or 0-9), it must start with a letter or an underscore (_), and it may contain spaces.

3 To add an operator to the modeling canvas, click the **operator** tool on the e*Insight toolbar.

The selected operator appears on the modeling canvas.

4 To connect Automated, User, or any of the Sub-process activities to operators, do the following:

A Click an **activity**. A set of square "handles" surrounds the activity.

B Hold the cursor over the outside edge of the activity until it changes from the arrow pointer to a hand (see Figure 20).

Figure 20 Selected Activity

C Drag a line from the first activity to the center of the second activity, and then release the mouse.

D Type the name of the link and press **Enter**.

5 To connect an Authorization activity to two downstream activities, do the following:

A Drag a line from the Authorization activity to the first downstream activity. The **Authorization Activity Link Type** dialog box displays.

B Choose the **link** type (Authorized or Not Authorized) and press **Enter**. The link name is automatically set to Authorized or Not Authorized depending on the link type you selected.

C Drag a line from the Authorization activity to a second downstream activity. The link name is automatically set to the opposite of the link type you selected in step B. Figure 21 illustrates a connected Authorization activity.

6 Click the **End** activity button on the toolbar to create an end point for any of your business processes. All processes must eventually connect to an end point to be valid. There can be more than one end point.

Figure 21 Connect Authorization Activities
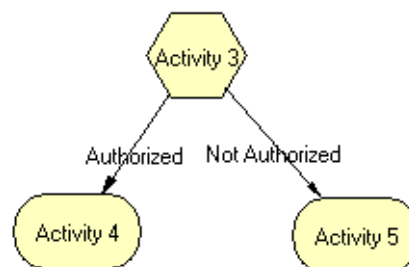
7 When your drawing is complete, click **Save**.

Note: *You can perform a variety of business process model maintenance and update tasks. For example, you can delete an activity, rename an attribute, or export your model*

data to a file. For more information and complete instructions, see **"Managing Business Process Models" on page 87.**

Business Process Modeling Tips

While you are modeling your business process, you should use the following "best practice":

- All paths through a model should end with a discrete End activity. This does not mean that there is only one End activity in a model; rather, that the work flow for a single business process instance should not follow multiple paths to two or more End activities.

While you are modeling your business process, you can use any of the following graphic drawing assistance tools:

- *To create a grid to which you can align model components,* click **Grid** on the Diagram menu. In the Grid dialog box, you can specify the horizontal and vertical spacing of the grid, the line style of the grid (dots, a line, or dotted lines), and the color of the line. You can also indicate if you want to display the grid and whether you want model components to snap to the grid when you move them around on the drawing canvas.

- *To align shapes,* press Shift and click the shapes you want to align, click **Align** on the Diagram menu, and then click either **Left** to align the shapes horizontally or **Top** to align the shapes vertically.

- *To make several model components the same size,* press Shift and click the shapes you want to size, click **Make Same Size** on the Diagram menu, and then click either **Height** to make the shapes the same height or **Width** to make the shapes the same width.

4.2.3. Validating a Business Process Model

After you have drawn a business process model, you can check to see if there are any problems such as activities that are not connected or an incorrect number of output links from an Authorization activity.

To check the business process for errors

- On the **Diagram** menu, select **Check Drawing**.

  If an error is encountered, a message box displays information about the error. If there are no errors, the following message appears: **Drawing OK.**

Note: *If an error message displays, see* **"Saving a Business Process Model"** *for information on repairing errors. Repairing the error may entail such items as adding logic to Decision gates or adding attributes to activities.*

4.2.4. Saving a Business Process Model

Even if a business process model is not complete and contains errors, you can save it as a "work in process" and return to it later.

To save a business process model

1 Do one of the following:

- Pull down the **File** menu and select **Save**

- Press **Ctrl+s** on the Keyboard

- On the toolbar, click **Save**.

Activities display in either red or yellow. Red indicates that there is at least one problem with the process and yellow indicates an error-free process.

If you have an error in your business process, a message box outlining the error message displays. For example, if you have an activity that is not connected, this message appears: **Please ensure there are no Activities in the diagram which are NOT connected to other activities.** Other errors include missing Start activities, missing activity attributes, or activities or gates that are not connected.

2 Click **OK** to close the message box.

A second message box displays confirming that the drawing logic is incomplete, and only the drawing will be saved.

3 Click **OK** to close the second message box.

4 Fix any errors, and save the business process again, fixing any additional errors as needed.

When all of the errors have been repaired in the business process, the activities display in yellow.

Configuring Business Process Models

5.1 Business Process Model Configuration

After you have modeled your business process, you must configure the process and each of the activities within the process for subsequent e*Gate implementation. This chapter explains how to specify the properties needed to configure business process models and activities for subsequent e*Gate implementation.

5.1.1. Attributes

Attributes are data values used by a business process. For example, if you are processing orders, the customer name, address, order quantity, and description of the item ordered are all attributes. In e*Insight, there are two different kinds of attributes.

▪ **Global Attributes**
Global attributes are used to pass values between the business process and external sources. Global attributes can also be assigned to specific activities. For example, the customer name is passed to an order process from the originating source. The customer name may be used by several of the activities in the business process and is included in the business process output.

When Global Attributes are assigned to a business process, you must select how the information is directed in relation to the business process. For example, if you assign the direction of "Input", it means that the attribute must be provided when you start the business process.

▪ **Local Attributes**
Local attributes are values used within activities for internal calculation and processing.

5.1.2. Fixed Local Attributes

The Authorization and User activities require specifically named Local Attributes to perform a particular process. These activity types require two Local Attributes, named **assignedTo** and **performedBy** to compare the user group ID or the login ID of the person who may authorize the process and the login ID of the person who actually authorizes the process. For this type of activity, both login IDs must match (or the login ID must be a member of the specified user group) in order to authorize the process.

5.1.3. # e*Insight Script

e*Insight Script is a scripting language, based on JavaScript™, that you can use from e*Insight to write a program used by the e*Insight engine. Specifically, you can associate e*Insight Script with an Automated activity as an alternative to configuring e*Gate components to perform the activity. See **"Attribute, Expression, and e*Insight Script Conventions" on page 46** for information about naming and other conventions you must understand before writing an e*Insight script.

5.1.4. # Expressions

Expressions are used two different ways in e*Insight. First, you can associate an expression with a Decision gate to determine which activity to process next based on a logical condition. You can also associate an expression with Dynamic Sub-Processes to determine which sub-process to call. See **"Attribute, Expression, and e*Insight Script Conventions" on page 46** for information about naming and other conventions you must understand before writing an expression.

5.1.5. # DO and UNDO Events

DO events are messages that are sent from either e*Gate or e*Insight that specify an activity to be performed. UNDO events are messages that control the rollback functions if an activity encounters an error. You can specify custom DO and UNDO events for Automated activities using e*Insight Script. For more information about how e*Gate publishes events, see the *e*Gate Integrator User's Guide.*

5.1.6. # Attribute, Expression, and e*Insight Script Conventions

Follow JavaScript naming and scripting conventions for attributes, expressions, and e*Insight Scripts. e*Insight supports JavaScript 1.5, Edition 3.

Note: *For Oracle only, you can use double-byte characters for names, attributes, and expressions.*

Attribute Naming Conventions

When you create a local or Global Attribute, you should use standard JavaScript attribute naming conventions, as described below.

- The name must contain at least one character.
- The name can contain letters (A-Z, a-z), digits (0-9), or an underscore character (_).
- The name can contain the special characters:
  - hyphen (**-**)
  - ampersand (**&**)
  - opening parenthesis (**(**)
  - closing parenthesis (**)**)

- ◆ opening curly bracket ({)
- ◆ closing curly bracket (})
- ◆ opening square bracket ([)
- ◆ closing square bracket (])
- ◆ grave accent (')
- ◆ commercial at (@)

Important: *Although these special characters can be used in attribute names, they are not supported in JavaScript. If you want to use the attribute in e*Insight Script or an expression then you must use eBPM.get() or eBPM.set() methods. For more information, see* **"Non-Standard Attribute Names" on page 48***.*

- ▪ The name must start with a letter.
- ▪ The name may not contain spaces or the apostrophe (') character.
- ▪ The name may not contain any of the key or reserved words listed in Table 1.
- ▪ The name may not contain any of the reserved words listed in Table 2.

The following are examples of valid names:

A

Number_1

Table 1 Java Reserved and Key Words

abstract	delete	goto	**new**	synchronized
boolean	**do**	**if**	**null**	**this**
break	double	implements	package	throw
byte	**else**	import	private	throws
case	extends	**in**	protected	transient
catch	**false**	instanceof	public	**true**
char	final	**int**	**return**	try
class	finally	interface	short	**typeof**
const	float	**labeled**	static	**var**
continue	**for**	long	super	void
default	**function**	native	**switch**	**while**
				with

Note: *Keywords are denoted in bold font.*

Table 2 e*Insight Reserved Words

assignedTo	performedBy	subBPName

Expression and e*Insight Script Conventions

When creating logical expressions or writing e*Insight Scripts, you must use proper JavaScript syntax (see your JavaScript documentation for details). You may not use any of the key or reserved words listed in Table 1 or Table 2.

If you choose to use names for attributes within your expressions or e*Insight Script that do not conform to the conventions stated above, then you must use special e*Insight objects in an e*Insight Script program to get and set the free text attribute name. For more information, see **"Non-Standard Attribute Names" on page 48**.

Non-Standard Attribute Names

When you use non-standard (free text) in an attribute name, e*Insight Script, or expression, you must use one of the following e*Insight objects to translate the data into something that can be read as JavaScript.

Variables are items in a database that may assume a number of values. If you need to use a non-JavaScript compliant character or reserved word, you must use the following objects:

```
eBPM.get("keyword")
eBPM.set(attribute_name, value)
```

eBPM.get

This object allows you to use non-conforming script in an expression by assigning a variable to the text. Once a variable is assigned, the expression can be translated by the e*Insight engine, as if the whole expression was JavaScript.

To use eBPM.get, you must use the following format:

```
eBPM.get("keyword")
```

where "**keyword**" is either a keyword, reserved word, or is a string of characters that are not allowed in normal JavaScript.

For example, to test whether the attribute value for **Is_Total_Defined?** is true, enter the following:

```
eBPM.get("Is_Total_Defined?") == true
```

eBPM.set

This object allows you to save a variable containing non-JavaScript formatting in the system.

To use eBPM.set, you must use the following format:

```
eBPM.set(attribute_name, value)
```

where **value** is the variable you want to save.

For example:

```
if(x > 9)
    eBPM.set("3rt", "value was greater than 9")
```

5.1.7. Complex Attribute Support Using XPath

XPath allows JavaScript to contain paths that point to particular nodes, elements, or arrays of elements within a sub-node in which the data values can be used at runtime by the e*Insight engine.

Complex Array Within an XML Structure Example

In a two dimensional array, a sub-node can have an unbounded number of elements that have an known number of attributes.

In this example, the order sub-node has an array of elements (lineitem) in which each element will have three attributes (**Q**, **partnumber**, and **unitprice**).

```
<purchaseOrder orderDate="07.23.2001">
    <recipient country="USA">
        <name>Dennis Scannell</name>
        <street>175 Perry Lea Side Road</street>
        <city>Waterbury</city>
        <state>VT</state>
        <postalCode>05676</postalCode>
    </recipient>
    <order>
        <lineitem Q="5" partnumber="A1521" unitprice="2222.22"/>
        <lineitem Q="25" partnumber="B1306" unitprice="1200.50"/>
        <lineitem Q="10" partnumber="C2612" unitprice="1050.00"/>
    </order>
</purchaseOrder>
```

A common expression that a user may want to build with the above example message is to multiply the quantity (Q) times the unitprice, and then to sum the unitprice to find the total value of the order.

As in:

```
5 x $2222.22 = $11,111.10
25 x $1200.50 = $30,012.50
10 x $1050.00 = $10,500.00
Sum = $51,623.60
```

where $51,623.60 is the amount required for the further evaluation of the expression.

Sample JavaScript that calculates the total sum required for use in the expression:

```
var counter = 1;

var quantity = eBPM.get("po","//lineitem["+counter+"]/@Q");
var price = eBPM.get("po", "//lineitem["+counter+"]/@unitprice");
var total = 0;

while(price != "")
{
    total += parseFloat(price) * parseFloat(quantity);
    counter++;
    quantity = eBPM.get("po","//lineitem["+counter+"]/@Q") ;
    price = eBPM.get("po", "//lineitem["+counter+"]/@unitprice");
```

```
}

total > 50000;
```

Note: *"po" is a Global Attribute name defined in the e*Insight Business Process*
        Properties, design mode.

Filtering results in a Complex Array to Get Multiple Results Example

In some cases, an XML structure may contain multiple groups - for example a daily purchase order report may contain multiple purchase orders. The user may then iterate through the array and filter for particular results to create more complex results.

In the example below, the daily purchase order report contains an array of orders which have the State and Quantity for the order. The user can iterate through the array, accumulating the total quantity for each state.

Sample JavaScript that calculates the total sum required for use in the expression:

```
var counter = 1;

var quantity = eBPM.get("po","//
purchaseOrder[@state='CA']["+counter+"]/@Q");
var totalCa =0;
while(quantity != "")
{
totalCa += parseInt(quantity);
    counter++;
    quantity = eBPM.get("po","//
purchaseOrder[@state='CA']["+counter+"]/@Q");
}

counter = 1;
quantity = eBPM.get("po","//purchaseOrder[@state='OR']["+counter+"]/
@Q");
var totalOr =0;
while(quantity != "")
{
    totalOr += parseInt(quantity);
    counter++;
    quantity = eBPM.get("po","//
purchaseOrder[@state='OR']["+counter+"]/@Q");
}

totalCA + totalOR<100
```

5.2   Configuring Business Process Model Components

After you create your business process model, you must perform the following steps to configure the business process your implementation.

1   Define Global Attributes for the business process

2   Specify properties and attributes for the following:

  ◆ Automated activities

- ◆ Authorization activities

- ◆ User activities

- ◆ Sub-Processes

- ◆ Remote Sub-Processes

- ◆ Dynamic Sub-Processes

3   Define decision gate properties

4   Test the business process model

5   Save the business process model

The following topics explain each step above in detail. When you have finished configuring the business process model version, you may want to secure it from access by unauthorized users, if you have not done so already. For instructions, see **"Securing Business Processes" on page 99**.

5.2.1. Defining Global Attributes

Global attributes are values that can be made available to multiple activities within a business process. For example, to process an order, the order quantity of an item may be used by one activity to check the level of inventory in stock, by a second activity to create a back order, and by a third activity to create an invoice for shipped items. You can create Global Attributes for an entire business process that can be subsequently assigned to individual activities, sub-processes and decision gates.

To add a Global Attribute to a business process

1   From the tree view, right-click the business process model version to which you want to add a Global Attribute, and then click **Properties**.

The **Business Process Properties** dialog box displays (see Figure 22).

2   On the **Business Process Attributes** tab, click **New**.

The **New Business Process Attribute** dialog box displays (see Figure 23).

3   Specify the Global Attribute characteristics, as described in **Table 3 on page 52**.

4   On the **New Business Process Attribute** dialog box, click **OK**.

The **New Business Process Attribute** dialog box is closed, and the attribute is added to the attribute list on the **Business Process Attributes** tab.

5   Repeat steps 2 through 4 as needed to add more attributes.

6   When you have finished entering attributes, click **OK** to close the **Business Process Properties** dialog box.

Figure 22   Business Process Properties Dialog (Global Attributes)
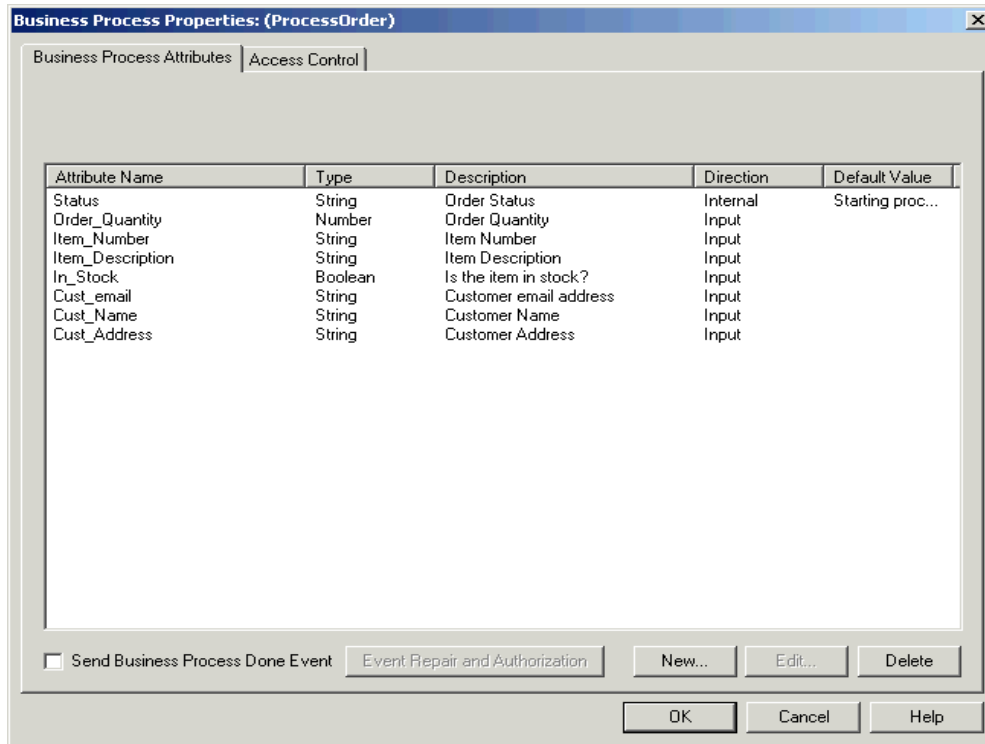
Figure 23   New Business Process Attribute Dialog Box

Table 3   Global Attribute Characteristics

Property	Description
Definition	
Attribute Name	The name of the Global Attribute. This name must contain at least one character (A-Z, a-z, or 0-9), it must start with a letter or an underscore (_), and it may *not* contain any spaces.

Table 3   Global Attribute Characteristics (Continued)

Property	Description	
Attribute Type	The type of data represented by the attribute. Choose one of the following data types.	
	Boolean	True or False
	Number	Numbers only
	String	Any combination of characters and numbers
	XML	Any combination of characters in an XML document.
Description	A description of the Global Attribute.	
Direction	The processing direction of the attribute value. Choose one of the following values.	
	Input	The value of an input attribute is passed into the business process when it is started. Input attributes can be defined as being required or optional. If the business process instance is started, and the values for all the required attributes are not received, then e*Insight returns an error.
	Output	The value of an output attribute is passed from the business process when the business process instance is completed.
	Input/Output	The value of Input/Output attributes are received at the start of the business process instance, and passed out at its completion.
	Internal	The values of internal attributes are used to communicate within a business process instance.
Default Value	The default value of the attribute. You can define a default value for any attribute except for required input values.	
Size	The size allocated to this attribute in the database. This can be set as follows: ▪ Boolean—Set to 1 and is not user configurable. ▪ Number—The first box represents precision, the second box represents scale. ▪ String—The first box represents the length, the second box is unavailable. ▪ XML—Not user configurable. Note: This parameter is only available with a Model Specific Database.	

5.2.2. Configuring Automated Activities

Automated activities control functions that are executed by an e*Way, a BOB, or e*Insight Script.

Perform the following steps to configure an Automated activity for your business process.

1   Configure an Automated activity using an e*Gate component or e*Insight Script.

2   Assign Global Attributes to the Automated activity.

3   Create Local Attributes for the activity, as needed.

The following topics provide the details of each of these steps.

Configuring an Automated Activity Using an e*Gate Component

You can specify properties for an Automated activity in one of two ways, depending on whether you choose to implement the activity using an e*Gate component or e*Insight Script. Use the following procedure to define the activity as an e*Gate component. To implement the activity as an e*Insight Script, see **"Configuring an Automated Activity Using e*Insight Script" on page 57**.

To configure an Automated activity using an e*Gate component

1   Log in to e*Gate (for instructions, see **"Log In to e*Gate From e*Insight" on page 33**).

2   On the modeling canvas, right-click an Automated activity, and then click **Properties**.

    The Activity Properties dialog box displays (see **Figure 24 on page 55**).

3   In the **Activity Performed by** box, click **e*Gate**.

4   Specify the e*Gate component properties, as described in **Table 4 on page 55**.

    Collaboration Rules associated with the activity appear in the **Specify Collaboration Rule** box. Do any of the following:

    ◆ To add a Collaboration Rule without adding the e*Way or BOB to the e*Gate Schema, click **Collaboration Rule only**, and then click **New.** The Define Collaboration dialog displays. For further instructions, see **"Working With Collaboration Rules" on page 108.**

    ◆ To edit an existing Collaboration Rule without adding the e*Way or BOB to the e*Gate Schema, click **Collaboration Rule only**, click the Collaboration Rule you want to change, and then click **Edit.** The Define Collaboration dialog displays. For further instructions, see **"Working With Collaboration Rules" on page 108.**

    ◆ To associate a Collaboration Rule with the activity, click **e*Way** or **BOB**, select the check box next to the name of the Collaboration Rule, and then click **Apply**.

    ◆ To configure the e*Gate Schema with the e*Way or BOB for this activity, click **Configure e*Gate Schema** (for further instructions, see **"Configuring the e*Gate Schema for an Activity" on page 108**).

Figure 24 Automated Activity General Properties
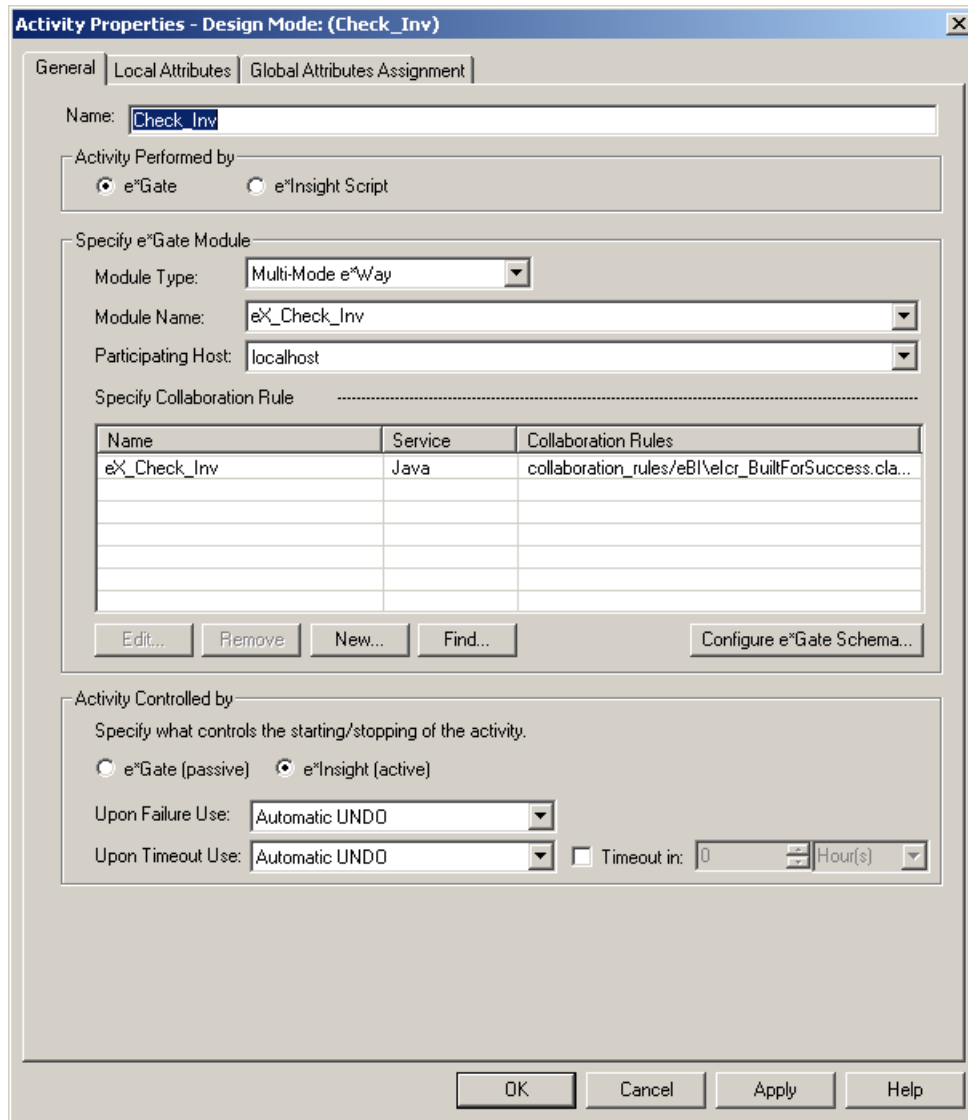
Table 4 General Properties of an Automated Activity

Property	Description
Name	The name of the Automated activity.

Table 4   General Properties of an Automated Activity (Continued)

Property	Description	
Activity Performed by	Indicates how you want to execute the functions associated with this activity. Click one of the following options.	
	e*Gate	Indicates that an e*Gate component executes the functions of this activity.
	e*Insight Script	Indicates that a script that you write from within e*Insight will execute the functions of this activity. If you choose this option, the remaining properties on the General tab are disabled and the e*Insight Script tab appears. You must use the e*Insight Script tab to specify the code required for this activity.
Module Type	Indicates the e*Gate component you want to use to execute the functions of this activity. Click one of the following options.	
	Multi-Mode or Single-Mode e*Way	Indicates that an e*Way executes the functions of this activity. Choose one of these options if the activity must connect to an external system.
	BOB	Indicates that a BOB executes the functions of this activity. Choose this option if this activity does not need to connect to an external system.
	Collaboration Rules Only	Indicates that you just want to create or edit a Collaboration Rule. You can later indicate if you want this activity to execute as a component of an e*Way or a BOB.
Module Name	The name you want to specify for either the e*Way or the BOB associated with this activity. The default is the name of the activity preceded by **eX_**. For example, if the name of the activity is Check_Credit, then the default module name is eX_Check_Credit.	
Participating Host	The name of the e*Gate Participating Host in which the e*Way or BOB will be created. If you are logged in to the e*Gate Registry Host, a list of available Participating Hosts appears. If you are not logged in, a dialog appears (for instructions on using this dialog, see **"Log In to e*Gate From e*Insight" on page 33**).	
Activity Controlled by	The control and monitoring options you want to specify for this activity. Choose the appropriate options, as described below.	
	e*Insight (active)	e*Insight sends a message to e*Gate to start an activity. e*Insight requires a message from e*Gate to determine that the activity has completed processing. If you choose this option, you can manually repair and restart failed activities.
	e*Gate (passive)	e*Insight does not send a message to start the activity, e*Gate must be configured to do this. e*Insight requires a message from e*Gate to determine that the activity has completed processing. If you choose this option, you cannot manually repair or restart failed activities.

Table 4   General Properties of an Automated Activity (Continued)

Property	Description	
	Upon Failure	Enables you to automatically undo, manually restart or use an alternative business path to handle failed activities. This option is only available if e*Insight controls the activity. See **"To set the failure action" on page 85** for more information.
	Upon Time-out	Enables you to automatically undo, manually restart or use an alternative business path to handle timed out activities. This option is only available if e*Insight controls the activity. See **"To set the time-out action" on page 86** for more information.
	Time-out	The amount of time that the activity is allowed to wait for a message to arrive from an e*Gate component before timing out, at which point, you must manually restart, stop, or undo the activity.

Configuring an Automated Activity Using e*Insight Script

You can specify properties for an Automated activity in one of two ways, depending on whether you choose to implement the activity as an e*Gate component or as an e*Insight Script.

Use the following procedure to define the activity using e*Insight Script. To implement the activity as an e*Gate component, see **"Configuring an Automated Activity Using an e*Gate Component" on page 54**.

Note: *If you create.jar files to be used in the e*Insight Script tab, you must place them in the following folder: <eInsight install directory>\JRE\1.3\lib\ext in order for the JavaScript programs to validate successfully.*

To configure an Automated activity using e*Insight Script

1   On the modeling canvas, right-click an Automated activity, and then click **Properties**.

The **Activity Properties** dialog box displays.

2   In the **Activity Performed by Box**, click **e*Insight**, and then click the **e*Insight Script** tab.

The **e*Insight Script** tab displays (see **Figure 25 on page 58**). The name, type, and default value of each Global Attribute assigned to the activity appears on the e*Insight Script tab.

3   In the **Events** field, choose the type of event you want to create (DO or UNDO).

If you choose **DO**, the attributes listed in the **Available Attributes** section of the dialog are the Global Attributes assigned to the activity. If you choose **UNDO**, the attributes that appear are the Local Attributes defined for the activity. You can create one DO and one UNDO event for each activity.

4 In the **Expression** box, do the following:

▪ Type the expression you want to assign to the activity (for naming and syntax conventions, see **"Attribute, Expression, and e*Insight Script Conventions" on page 46**).

▪ To insert an attribute name into the expression, click the name of the attribute in the **Attribute Name** list, and then click **Insert Attribute.** The attribute name appears in the expression at the current cursor position.

▪ To insert an operator into the expression, click the appropriate operator button (for examples, see **Tables 5 through 7**).

5 Click **OK** to close the **Activity Properties** dialog box.

Figure 25   e*Insight Script Properties for an Automated Activity
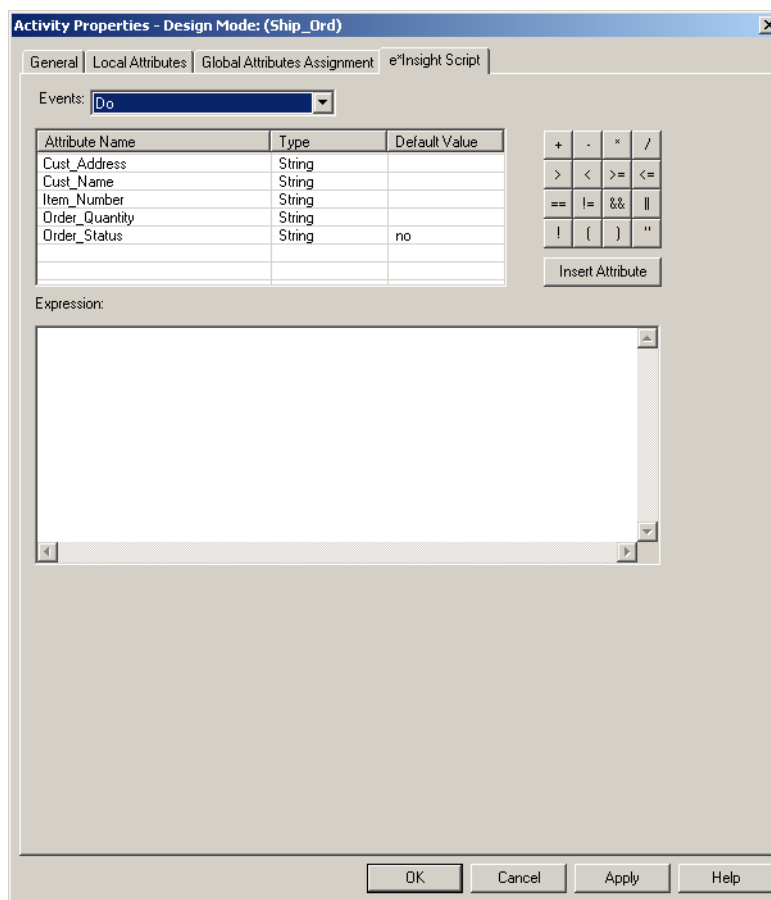
Table 5 Arithmetic Operators

Operator	Name	Definition and Example
+	Addition	Example: non_autographed + autographed Where non_autographed = 10, and autographed = 15 Returns: 25
-	Subtraction	Example: num_ordered – num_remaining Where num_ordered = 6, and num_remaining = 5 Returns: 1
×	Multiplication	Example: num_boxes * boxes_pallet Where num_boxes = 10, and boxes_pallet = 10 Returns: 100
/	Division	Example: boxes_pallet / num_boxes Where boxes_pallet = 100, and num_boxes = 50 Returns: 2

Table 6 Comparison Operators

Operator	Name	Definition and Example
==	Equal To	Returns true if operands are true. Example: Bob == Bob Returns: True Example: Bob == Mary Returns: False
!=	Not Equal To	Returns true if the operands are not equal. Example: Bob == Mary Returns: True Example: Bob == Bob Returns: False
<	Less Than	Returns true if the left operand is less than the right operand. Example: 100 < 1000 Returns: True Example: 100 < 99 Returns: False
>	Greater Than	Returns true if the left operand is greater than the right operand. Example: 100 > 99 Returns: True Example: 100> 1000 Returns: False

Table 6 Comparison Operators (Continued)

Operator	Name	Definition and Example
>=	Greater Than or Equal To	Returns true if the left operand is greater than or equal to the right operand. Example: 100>= 99 Returns: True Example: 100>= 200 Returns: False
<=	Less Than or Equal To	Returns true if the left operand is less than or equal to the right operand. Example: 100 <= 100 Returns: True Example: 100<= 99 Returns: False

Table 7 Logical Operators

Operator	Name	Definition and Example
&&	And	Returns true if both operands are true. Example: (Bob == Bob) && (Mary == Mary) Returns: True Example: (Bob == Bob) && (Mary == Tom) Returns: False
‖	Or	Returns true if either operand is true. Example: (Bob == Bob) II (Mary == Tom) Returns: True Example: (Bob == Mary) II (Mary == Tom) Returns: False
!	Not	Returns true if the negation of the operand is true. (The operand is false.)
(	Opening Parentheses	Used on the left side of an equation, when you want to distinguish order. Example: The following equation returns the following values depending on the placement of the parentheses: 1+ 2* 3+ 4 (1+2) *(3+4) = 21 1+(2*3)+4 = 11
)	Closing Parentheses	Used on the right side of an equation, when you want to distinguish order. Example: The following equation returns the following values depending on the placement of the parentheses: 1+ 2* 3+ 4 (1+2) *(3+4) = 21 1+(2*3)+4 = 11

Table 7   Logical Operators (Continued)

Operator	Name	Definition and Example
"	Quote	Used in Strings. Example: "This is the e*Insight book".

Adding Global Attributes to an Automated Activity

You can assign as many Global Attributes as you need to an Automated activity. Before you begin, make sure that Global Attributes have been defined for the active business process model.

To assign a Global Attribute to an activity

1   On the modeling canvas, right-click the activity to which you want to assign a Global Attribute, and then click **Properties**.

The **Properties** dialog box for the selected activity displays.

2   Click the **Global Attributes Assignment** tab (see Figure 26).

3   From the **Available Attributes** list, click the name of an attribute, and then click the right arrow button.

4   From the **Define Attribute Direction** dialog, select a direction to apply to the attribute, and then click **OK**. (For descriptions of the Input, Output, and Input/ Output directions you can assign, see **Table 3 on page 52**.)

The attribute is added to the **Selected Attributes** section of the **Global Attributes Assignment** tab.

5   Repeat steps 3 and 4 for each attribute you want to assign to the activity.

6   Click **OK** to close the **Properties** window.

Figure 26 Activity Properties - Design Mode: Global Attributes Assignment Tab
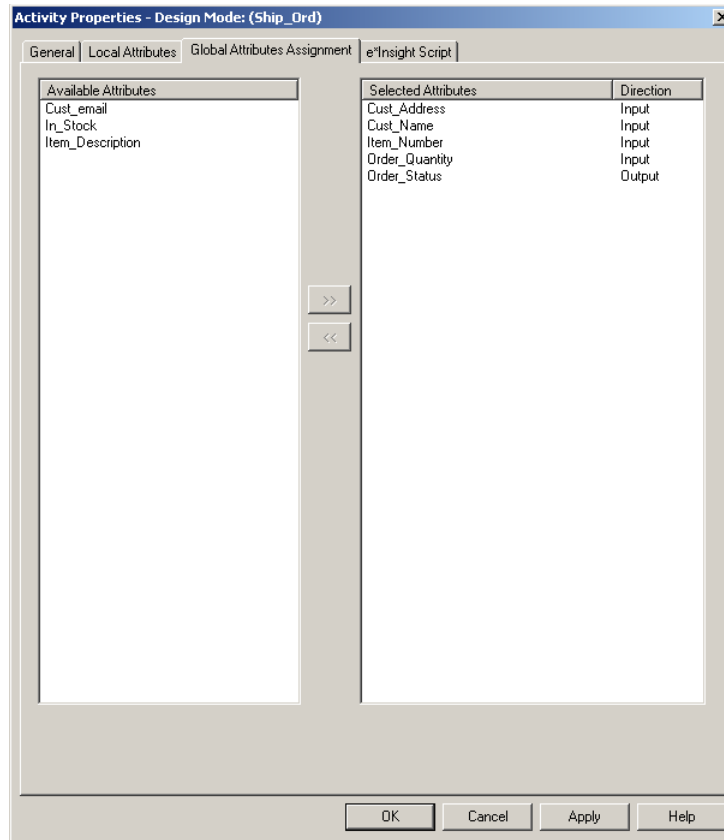
Table 8 Activity Level Attribute Directions

Property	Description
Input	The activity receives a value. For example, if the purpose of the activity is to check a customer's credit, then the input attributes would include the customer name, credit card number, and total order amount.
Output	The activity sends a value back to e*Insight. For example, if the purpose of the activity is to check a customer's credit, then the output attributes should include the customer's credit status.
Input/Output	The activity first receives a value from e*Insight, and then passes it back to e*Insight. This type of direction indicates that the activity serves as a "carrier" for the value of an attribute at a given point in time. For example, if the activity modifies a message type, then it might read an X12 message (input), convert it to RosettaNet, and then write the RosettaNet message back to the database (output).

Specifying Local Attributes for an Automated Activity

You can create as many Local Attributes as you need for calculations and processing performed specifically by the current activity.

To create a Local Attribute

1   On the modeling canvas, right-click an activity, and then click **Properties**.

2   From the **Properties** dialog for the selected activity, click the **Local Attributes** tab (see Figure 27), and then click **New**.

3   From the **New Activity Attribute** dialog, define the Local Attribute characteristics as described in**Table 9 on page 63**, and then click **OK**.

The attribute is added to the **Specify Local Activity Attributes** section of the dialog box.

Figure 27   Local Attributes Tab

Table 9   Local Attribute Characteristics

Property	Description
Definition	
Attribute	The name of the Local Attribute. This name must contain at least one character (A-Z, a-z, or 0-9), it must start with a letter or an underscore (_), and it may *not* contain any spaces.

Table 9   Local Attribute Characteristics (Continued)

Property	Description	
Type	The type of data represented by the attribute. Choose one of the following data types.	
	Boolean	True or False
	Number	Numbers only
	String	Any combination of characters and numbers
	XML	Any combination of characters in an XML document
Value	The default value of the attribute. You can define a default value for any attribute except for required input values.	
Size	The size allocated to this attribute in the database. This can be set as follows: ▪ Boolean—Set to 1 and is not user configurable. ▪ Number—The first box represents precision, the second box represents scale. ▪ String—The first box represents the length, the second box is unavailable. ▪ XML—Not user configurable. Note: This parameter is only available with Model Specific Databases.	

5.2.3. Configuring Authorization Activities

An Authorization Activity requires a user to authorize a business process from the e*Insight GUI before the process will continue.

Perform the following steps to configure an Authorization activity for your business process.

1 Configure the Authorization activity

2 Assign Global Attributes to the activity

3 Create local activity attributes, as needed

The following topics provide the details of each of these steps.

Configuring an Authorization Activity

When you configure an Authorization activity, you can optionally choose to enable e*Gate notification functionality to inform a user that an instance is pending authorization. If you choose to use this option, you must configure an e*Way or a BOB, which you can do from e*Insight.

To configure an Authorization activity

1 Log in to e*Gate (for instructions, see **"Log In to e*Gate From e*Insight" on page 33**).

2 On the modeling canvas, right-click an Authorization activity, and then click **Properties**.

The **Authorization Activity Properties** dialog displays (see Figure 28).

3 In the **Name** field, type the name of the activity.

4   To enable e*Gate notification functionality, click **Send Notifications through e*Gate**, and then define the e*Gate component properties, as described in **Table 4 on page 55**.

5   Do any of the following:

- To add a Collaboration Rule without adding the activity to the e*Gate Schema, click **Collaboration Rule only**, and then click **New.** The **Define Collaboration** dialog displays. For further instructions, see **"Working With Collaboration Rules" on page 108.**

- To edit an existing Collaboration Rule without adding the activity to the e*Gate Schema, c**lick Collaboration Rule only**, click the Collaboration Rule you want to change, and then click **Edit.** The **Define Collaboration** dialog displays. For further instructions, see **"Working With Collaboration Rules" on page 108.**

- To associate a Collaboration Rule with the activity, click **e*Way** or **BOB**, select the check box next to the name of the Collaboration Rule, and then click **Apply**.

- To configure the e*Gate Schema with this activity, click **Configure e*Gate Schema** (for further instructions, see **"Configuring the e*Gate Schema for an Activity" on page 108**).

Figure 28 Authorization Activity Properties
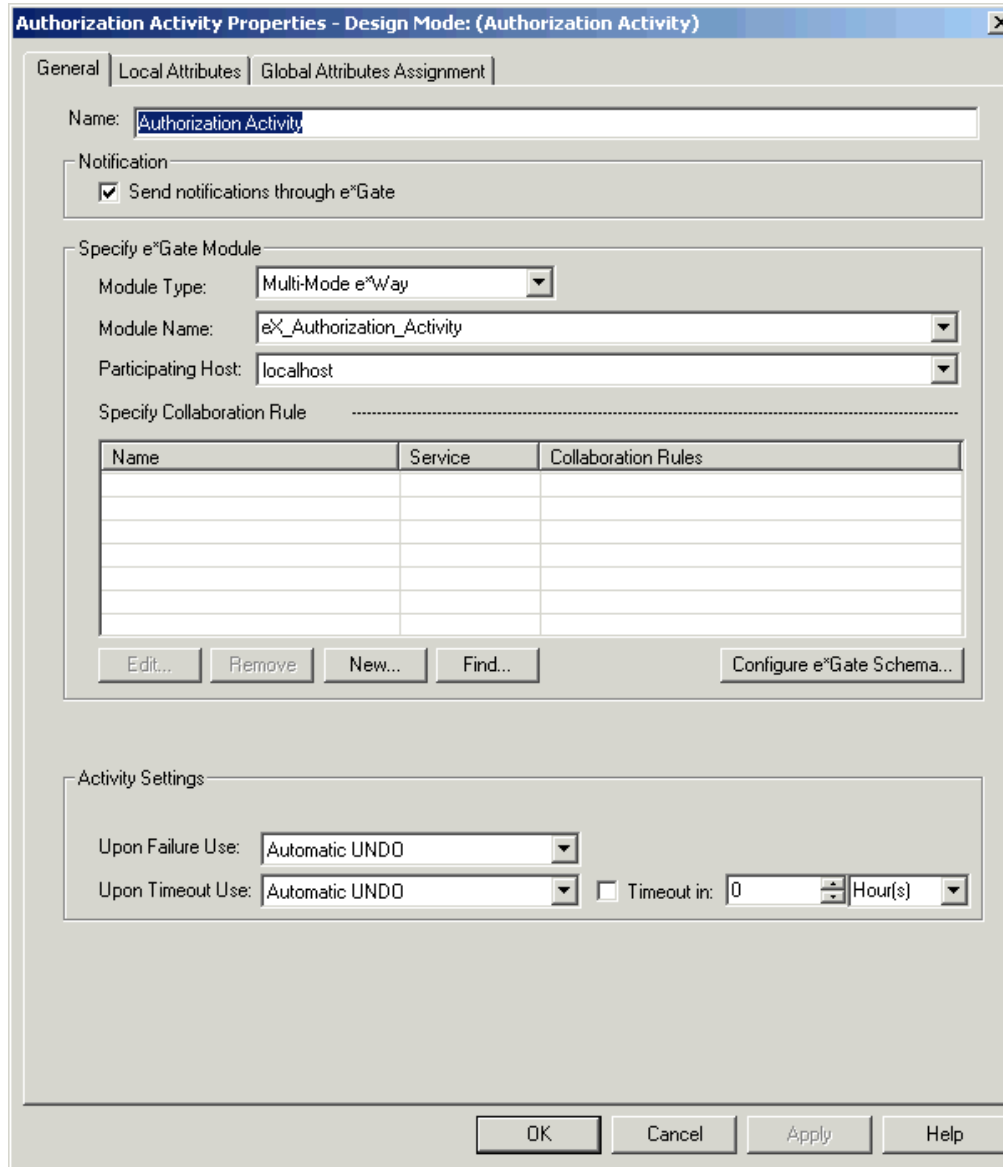
Table 10 General Properties of an Authorization Activity

Property	Description
Name	The name of the Authorization activity.
Send notifications through e*Gate	Indicates that you want e*Gate to send a notification, such as an e-mail, to a user when a business process instance is pending authorization.

Table 10 General Properties of an Authorization Activity (Continued)

Property	Description	
Module Type	Indicates the e*Gate component you want to use to execute the functions of this activity. Click one of the following options.	
	Multi-Mode or Single-Mode e*Way	Indicates that an e*Way executes the functions of this activity. Choose one of these options if the activity must connect to an external system.
	BOB	Indicates that a BOB executes the functions of this activity. Choose this option if this activity does not need to connect to an external system.
	Collaboration Rule only	Indicates that you just want to create or edit a Collaboration Rule. You can later indicate if you want this activity to execute via an e*Way or BOB.
Module Name	The name you want to specify for either the e*Way or the BOB associated with this activity. The default is the name of the activity preceded by **eX_**. For example, if the name of the activity is Authorize_Credit, then the default module name is eX_Authorize_Credit.	
Participating Host	The name of the e*Gate Participating Host in which the e*Way or BOB is created. If you are logged in to the e*Gate Registry Host, a list of available Participating Hosts appears. If you are not logged in, a dialog appears (for instructions on using this dialog, see **"Log In to e*Gate From e*Insight" on page 33**).	
Upon Time-out	Enables you to automatically undo or use an alternative business path to handle timed out activities. This option is only available if e*Insight controls the activity. See **"To set the time-out action" on page 86** for more information.	
Time-out	The amount of time that the activity is allowed to wait for a message to arrive from an e*Gate component before timing out, at which point, you must select an alternate path or undo the activity.	

Adding Global Attributes to an Authorization Activity

You can assign as many Global Attributes as you need to an Authorization activity. The process of assigning Global Attributes to an Authorization activity is the same as adding Global Attributes to an Automated activity. For instructions, see **"Adding Global Attributes to an Automated Activity" on page 61**. Before you begin, make sure that Global Attributes have been defined for the active business process model.

Specifying Local Attributes for an Authorization Activity

You can create as many Local Attributes as you need for calculations and processing performed specifically by the current activity. The process of defining Local Attributes for Authorization activities is the same as defining Local Attributes for Automated activities. For instructions, see **"Specifying Local Attributes for an Automated Activity" on page 62**.

In addition, e*Insight uses logic to evaluate the login ID of the person attempting to authorize an activity against the user login ID or user group allowed to authorize the

activity. To facilitate this security check, the Authorization Activity uses two fixed Local Attributes—**assignedTo** and **performedBy**. The assignedTo attribute stores the login ID or group ID with permission to authorize the activity. The **performedBy** attribute stores the login ID of the person attempting to authorize the activity. These values must match in order for the user to Authorize, Reject, or UNDO the business process instance.

For example, if an activity can be authorized by any user assigned to the Customer_Svc user group, and **jsmith** attempts to authorize the activity, e*Insight checks to ensure that the Customer_Svc user group may authorize the activity and that jsmith is a member of the Customer_Svc user group.

Upstream activities can include logic to determine the user who will be assigned the responsibility. For example, [if STATE="WA", assignedTo="Andrew"; if STATE="NM", assignedTo="Nadine"].

The following rules must be applied:

- The user name of the **assignedTo** attribute must exactly match the name of the user logged in to the e*Insight GUI or the name of the user group to which the user belongs.

- The **assignedTo** attribute must have a value to complete the Authorization process.

- Any user assigned the role of Instance Manager can authorize, reject, or undo an Authorization Activity within a business process instance.

To set a fixed Local Attribute value for an Authorization Activity

1 From the Authorization activity properties, select the **Local Attributes** tab.

2 Select the **assignedTo** Local Attribute, and click **Edit**.

3 In the **Value** box, enter the user login ID or a user group ID.

4 Click **OK**.

To set a value for the assignedTo Local Attribute that is allocated at runtime

To allocate a user name at runtime, use a Global Attribute to set the value for the assignedTo attribute. The Global Attribute needs to be of type **String**. You must create the global variable before referring to it within the Authorization activity.

When you run the Authorization activity, it uses the value that is currently defined in the Global Attribute.

1 From the Authorization activity properties, select the **Global Attributes Assignment** tab.

2 Assign the Global Attributes to the Authorization Activity, and specify a direction of **Input**.

3 Select the **assignedTo** Local Attribute, and click **Edit.**

4 From the **Type** drop-down list, select **Reference**.

5 From the **Value** drop-down list, select the global variable that you created.

*Note: Since the Global Attribute needs to be of type **String**, only global variables of type **String** appear in the drop-down list.*

6 Click **OK**.

5.2.4. Configuring User Activities

User activities allow external applications to access attributes in the business process using an API. The API provides a set of functions that allow the external application to access attributes for the User Activity from the e*Insight database. The external application can then process and manipulate the attributes and then send them back to the e*Insight database. The e*Insight engine uses the returned value of the attributes to continue the business process.

Perform the following steps to configure a User activity for your business process.

1 Configure the User activity

2 Assign Global Attributes to the activity

3 Create local activity attributes, as needed

The following topics provide the details of each of these steps. For more information about the Attribute Access API, see the *e*Insight Business Process Manager Implementation Guide*.

Configuring a User Activity

To configure User activities

1 On the modeling canvas, right-click a User activity, and then click **Properties**.

The **User Activity Properties** dialog displays (see Figure 29).

2 In the **Name** field, type the name of the activity.

3 To enable e*Gate notification functionality, click **Send Notifications through e*Gate**, and then define the e*Gate component properties, as described in **Table 4 on page 55**.

4 Do any of the following:

▪ To add a Collaboration Rule without adding the e*Way or BOB to the e*Gate Schema, click **Collaboration Rule only**, and then click **New.** The **Define Collaboration** dialog displays. For further instructions, see **"Working With Collaboration Rules" on page 108.**

▪ To edit an existing Collaboration Rule without adding the e*Way or BOB to the e*Gate Schema, click **Collaboration Rule only**, click the Collaboration Rule you want to change, and then click **Edit.** The **Define Collaboration** dialog displays. For further instructions, see **"Working With Collaboration Rules" on page 108.**

▪ To associate a Collaboration Rule with the activity, click **e*Way** or **BOB**, select the check box next to the name of the Collaboration Rule, and then click **Apply**.

▪ To configure the e*Gate Schema with the e*Way or BOB this activity, click **Configure e*Gate Schema** (for further instructions, see **"Configuring the e*Gate Schema for an Activity" on page 108**).

Figure 29 User Activity Properties
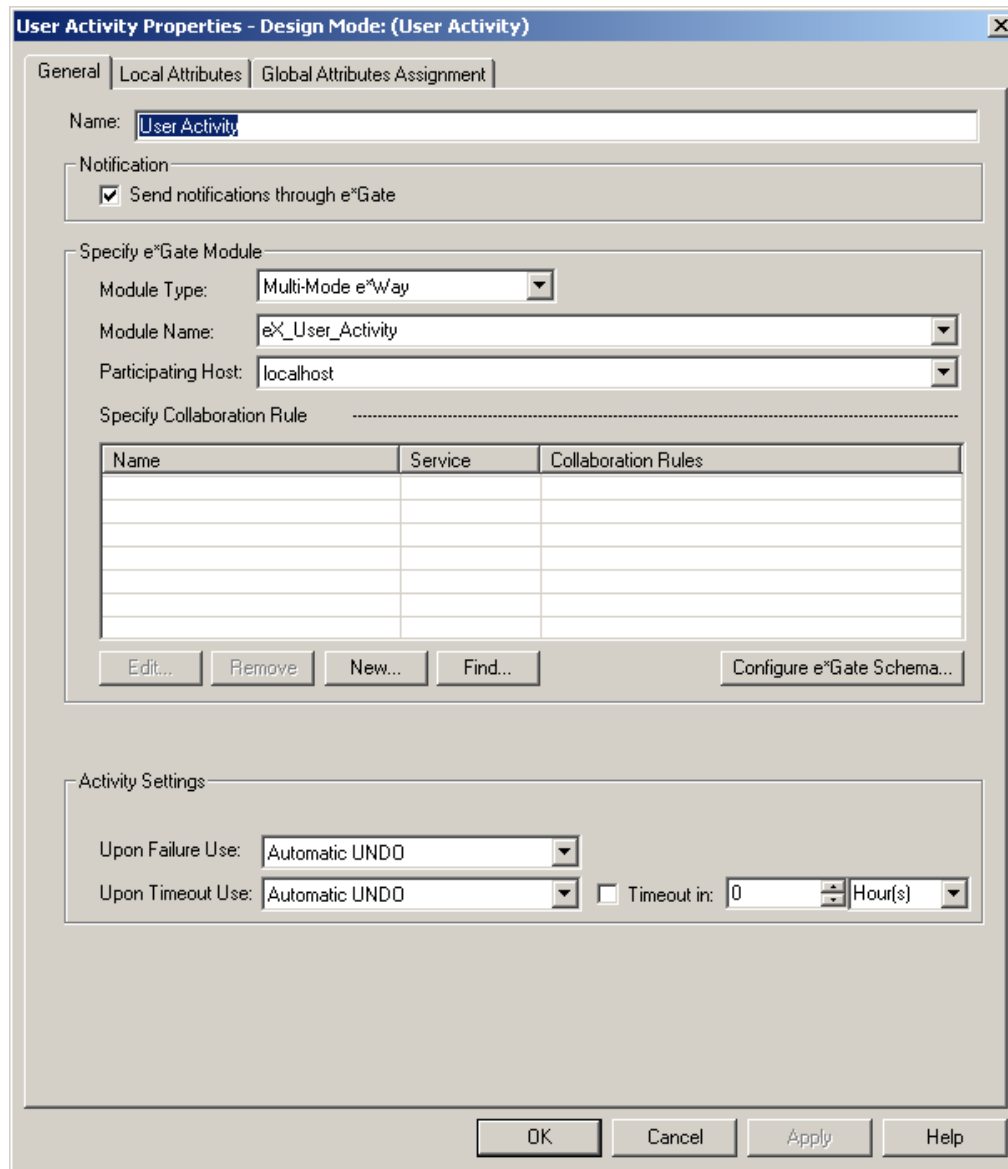
Table 11 General Properties of a User Activity

Property	Description
Name	The name of the User activity.
Send notifications through e*Gate	Indicates that you want e*Gate to send a notification via e-mail to the external application user.

Table 11   General Properties of a User Activity (Continued)

Property	Description	
Module Type	Indicates the e*Gate component you want to use to execute the functions of this activity. Click one of the following options.	
	Multi-Mode or Single-Mode e*Way	Indicates that an e*Way executes the functions of this activity. Choose one of these options if the activity must connect to an external system.
	BOB	Indicates that a BOB executes the functions of this activity. Choose this option if this activity does not need to connect to an external system.
	Collaboration Rule Only	Indicates that you just want to create or edit a Collaboration Rule. You can later indicate if you want this activity to execute via an e*Way or a BOB.
Module Name	The name you want to specify for either the e*Way or the BOB associated with this activity. The default is the name of the activity preceded by **eX_**. For example, if the name of the activity is Authorize_Credit, then the default module name is eX_Authorize_Credit.	
Participating Host	The name of the e*Gate Participating Host in which the e*Way or BOB will be created. If you are logged in to the e*Gate Registry Host, a list of available Participating Hosts appears. If you are not logged in, a dialog appears (for instructions on using this dialog, see **"Log In to e*Gate From e*Insight" on page 33**).	
Upon Failure	Enables you to automatically undo, manually restart or use an alternative business path to handle failed activities. This option is only available if e*Insight controls the activity. See **"To set the failure action" on page 85** for more information.	
Upon Time-out	Enables you to automatically undo, manually restart or use an alternative business path to handle timed out activities. This option is only available if e*Insight controls the activity. See **"To set the time-out action" on page 86** for more information.	
Time-out	The amount of time that the activity is allowed to wait for a message to arrive from an e*Gate component before timing out, at which point, you must manually restart, stop, or undo the activity.	

Adding Global Attributes to an User Activity

You can assign as many Global Attributes as you need to a User activity. The process of assigning Global Attributes to a User activity is the same as adding Global Attributes to an Automated activity. For instructions, see **"Adding Global Attributes to an Automated Activity" on page 61**. Before you begin, make sure that Global Attributes have been defined for the active business process model.

Specifying Local Attributes for a User Activity

You can create as many Local Attributes as you need for calculations and processing performed specifically by the current activity. The process of defining Local Attributes

for User activities is the same as defining Local Attributes for Automated activities. For instructions, see **"Specifying Local Attributes for an Automated Activity" on page 62**.

In addition, the User activity has two fixed Local Attributes—**assignedTo** and **performedBy**. These fixed attributes work in the same manner as the fixed attributes for Authorization activities. For more information, see **"Specifying Local Attributes for an Authorization Activity" on page 67**.

5.2.5. Configuring Sub-Processes

You can call a sub-process from a business process model by inserting the sub-process into the model and mapping the Global Attributes of each process to each other. This mapping defines how the information in the sub-process is routed and processed. If necessary, you can create one–to–many associations, by mapping one sub-process attribute to one or more business process attributes. Each sub-process you call must be stored in your local e*Insight database, and it must be enabled.

You must have at least one additional business process created and enabled before you can use it as a sub-process in another business process.

To define Sub-Process properties

1 On the modeling canvas, right-click a Sub-Process, and then click **Properties**.

    The **Sub Business Process** dialog displays (see **Figure 30 on page 73**).

2 From the **Sub-Process** list, select the business process you want to call from your current business process version.

    Global attributes of the sub-process display on the left side of the **Map Sub-Process Attributes to Business Process Attributes** section.

3 In the **Sub-Process Attributes** column, click a business process attribute to associate with the Global Attribute in the current business process version. When you click the attribute, only those attributes of the same data type appear in the **Business Process Attributes** column.

4 From the **Business Process Attributes** column, click the attribute that corresponds to the attribute selected in the **Sub-Process Attributes** column, and then click **Map**.

    The attribute information is added to the **Mapped Attributes** section of the dialog box. If necessary, you can create one–to–many associations, by mapping one Sub-Process attribute to one or more business process attributes.

5 Once you have mapped all of the necessary attributes, click **OK** to close the **Sub-Process Properties** dialog box.

Figure 30 Sub-Process Properties
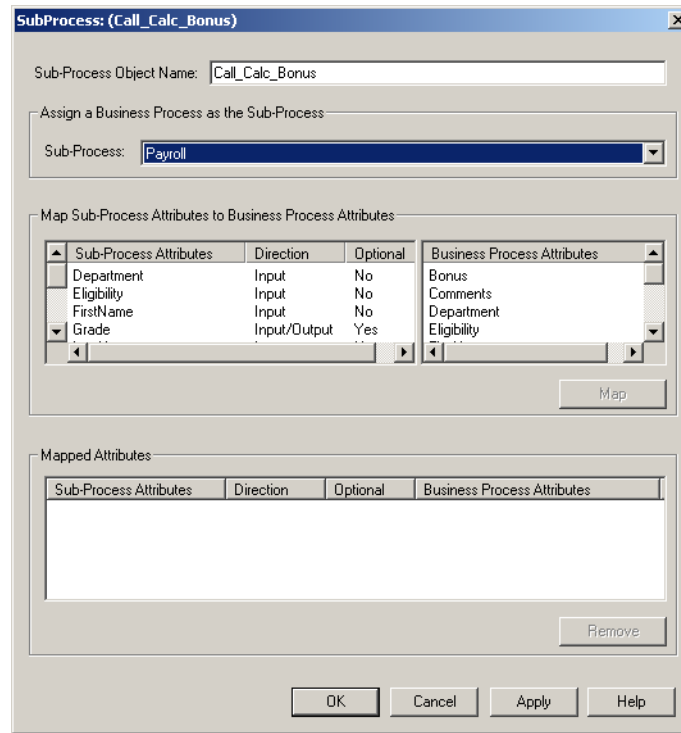
Table 12 General Properties of a Sub-Process

Property	Description	
Sub-Process Object Name	The name of the Sub-Process.	
Sub-Process	The names of enabled business processes stored in your e*Insight database that you can call as sub-processes.	
Sub-Process Attributes	The name of each sub-process Global Attribute.	
Direction	The direction of each sub-process Global Attribute, as described below.	
	Input	Receives the value from the other attribute.
	Output	Sends its value to the other attribute.
	Input/Output	Can both send and receive values, but will result in both values matching.
	Internal	Does not send values to or receive values from the other attribute.
Optional	Indicates if the sub-process Global Attribute is optional or not.	
Business Process Attributes	The names of the current business process Global Attributes that are mapped (or potentially mapped) to the Global Attributes of the sub-process.	

73

5.2.6. **Configuring Remote Sub-Processes**

A Remote Sub-Process can be added to the business process to reduce configuration and maintenance time. Actions that are repeated can be created as a separate business process and then called by other business processes.

The Remote Sub-Process allows you to access a Business Process defined on a different machine. Business Process messages are sent between the two e*Insight databases via a Web Server. The Web Server routes the Business Process message to the correct location.

The implementation of a Remote Sub-Process requires configuration in the remote Business Process and the Business Process that calls the Remote Sub-Process. The implementation of the Remote Sub-Process also requires that Tomcat/Apache is installed and configured on both machines. For information on a complete implementation of the Remote Sub-Process, see the *e*Insight Business Process Manager Implementation Guide*.

You must have at least one additional business process created and enabled before you can use it as a Sub-Process in another business process.

Once you specify the business process you want to call as the Sub-Process, you must also map the Global Attributes. Mapping the Global Attributes between the business process being called and the business process using it allows you to define how the information in the Sub-Process is routed and processed. If necessary, you can create one–to–many associations, by mapping one Sub-Process attribute to one or more business process attributes.

To configure the remote Business Process

1   On the Options menu, select **Define Information for Partners**.

    The **Define Information for Partners** dialog box appears.

2   Type a UUID. This should contain a unique identifier for your database.

3   Type a URL. This should contain the URL for the Web Server that you will use to route your messages.

4   Type a URN. This provides the unique name of your routing process within the Web Server.

An example of a completed Define Information for Partners dialog box is shown in Figure 31.

Figure 31   Define Information for Partners Dialog Box - Remote Business Process
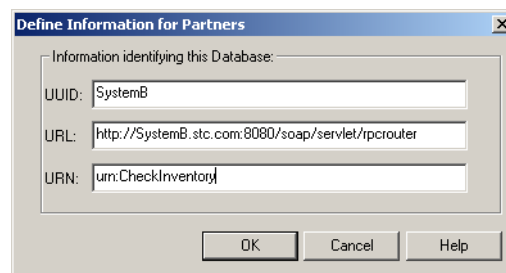
Important: *A database user name and password for the calling Business Process must be created in the database used by the remote Business Process.*

   5 In the business process properties, select **Send Business Process Done Event**. This ensures that the Done Event is returned to the calling business process.

   6 Enable your Business Process.

To configure the calling process using SOAP messages

   1 On the Options menu, select **Define Information for Partners**.

   The **Define Information for Partners** dialog box appears.

   2 Type a UUID. This should contain a unique identifier for your database.

   3 Type a URL. This should contain the URL for the Web Server that you will use to route your messages.

   4 Type a URN. This provides the unique name of your routing process within the Web Server.

   An example of a completed **Define Information for Partners** dialog box is shown in **Figure 31 on page 74**.

   5 Configure the Remote Sub-Process properties (See **Figure 32 on page 76**).

   ▪ Enter the relevant information for the remote e*Insight database including URL, URN, user name and password. Example values:

   URL   http://SystemB:8080/soap/servlet/rpcrouter

   URN   urn:CheckInventory

   Username   Anonymous

   Password

Note: *To use an Anonymous login you must create a user called Anonymous on the remote system. Although e*Insight Administrator requires that a password is defined to create the user, this does not need to be supplied when connecting via SOAP.*

   6 Click **Connect**, and select the business process from the **Remote Sub-Process** drop-down list.

   7 Map attributes as required.

Table 13   Remote Sub-Process Mappings

Sub-Process Attribute Direction	Result on Values
Input	Sends the value from the calling business process to the sub-process.
Output	Sends the value from the sub-process back to the calling business process when the sub-process is complete.

Table 13 Remote Sub-Process Mappings (Continued)

Sub-Process Attribute Direction	Result on Values
Input/Output	Sends the value into the sub-process and receives the value back from the sub-process when the sub-process is complete.
Internal	Does not send values to or receive values from the sub-process.

Figure 32 Remote Sub-Process Properties, Activity Definition Tab
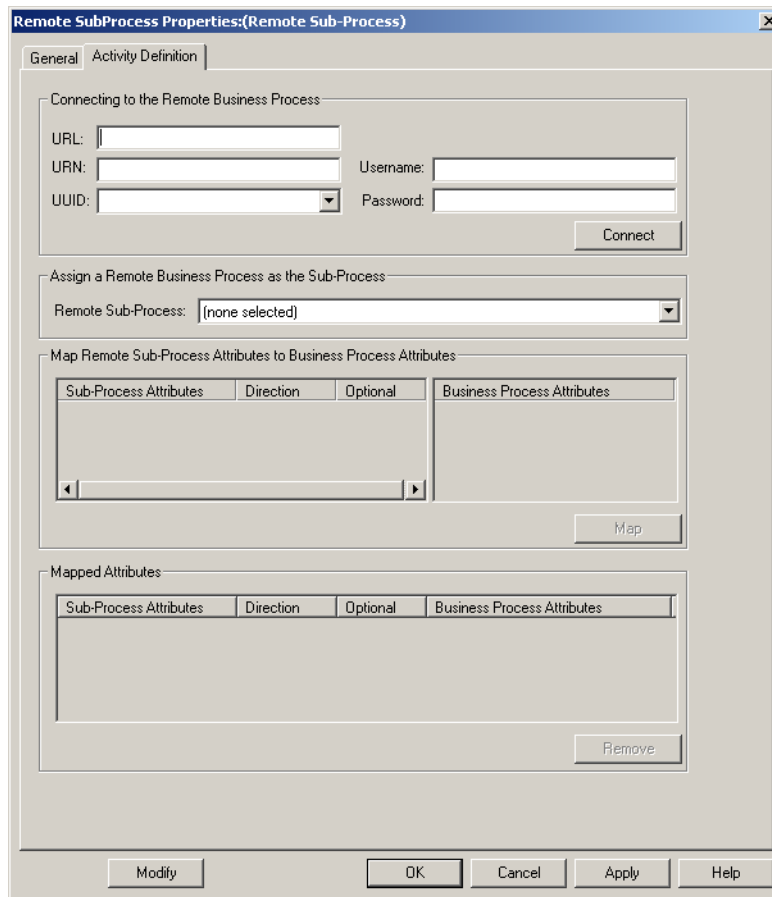
5.2.7. Configuring Dynamic Sub-Processes

Dynamic Sub-Processes start a sub-process based on the value of a particular attribute or the results of a logical expression. Configure Dynamic Sub-Processes using an attribute value in dynamic situations where the business process model changes often. Conversely, configure Dynamic Sub-Processes using an expression for fixed processing circumstances.

Perform the following steps to configure a Dynamic Sub-Process for your business process.

1 Configure a Dynamic Sub-Process using either an attribute or an expression

2 Assign Global Attributes to the activity

3 Create local activity attributes, as needed

The following topics provide the details of each of these steps.

Configuring a Dynamic Sub-Process Using an Attribute Value

To define a Dynamic Sub-Process using an attribute value

1 On the modeling canvas, right-click a **Dynamic Sub-Process**, and then click **Properties**.

   The **Dynamic Sub_Process Properties** dialog displays (see **Figure 33 on page 78**).

2 In the **Dynamically called Sub-Process Using** box, click **Incoming Global Attribute Value**.

   The remaining fields on the **General** tab of the **Dynamic Sub_Process Properties** dialog box are disabled.

3 Click the **Local Attributes** tab, click **subBPName**, click **Edit**, and then select the Global Attribute that specifies the name of the sub-process from the **Value** box (for more information, see **"Specifying Local Attributes for a Dynamic Sub-Process" on page 79**).

Note: *The Dynamic Sub-Process feature relies on implied mapping, so the names and data types of attributes in the sub-process must match the corresponding attributes of the calling process. In addition, the direction of each attribute is meaningful.*

Figure 33 Dynamic Sub-Process Properties (Global Attribute Assignment)
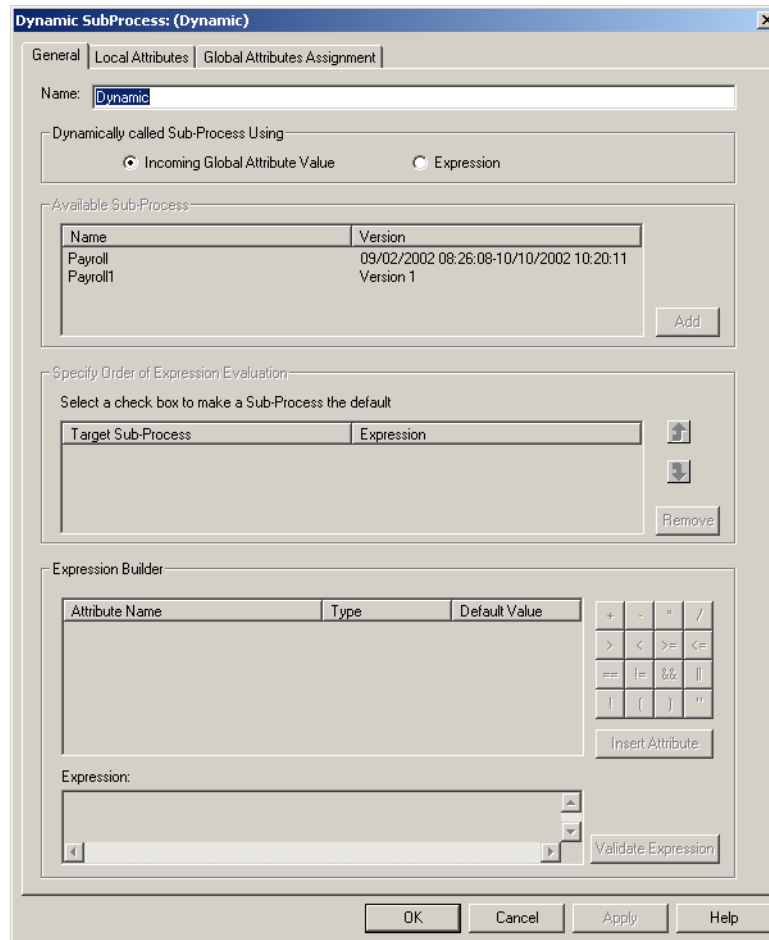
Configuring a Dynamic Sub-Process Using an Expression

To configure a Dynamic Sub-Process using a logical expression

1 On the modeling canvas, right-click a Dynamic Sub-Process, and then click **Properties**.

   The **Dynamic Sub_Process Activity Properties** dialog displays.

2 In the **Dynamically called Sub-Process Using** box, click **Expression**.

3 In the **Available Sub-Process** box, which lists all enabled business process models stored in your local e*Insight database, click the sub-process you want to start from this activity, and then click **Add.** You can add more than one sub-process at a time.

   The selected sub-process appears in the **Specify Order of Expression Evaluation** box. Repeat this step for each sub-process to be started from this activity.

4 Select the check box next to the default sub-process (the sub-process to start if all logic tests performed by this activity expression fail).

The name of the default sub-process moves to the bottom of the list. Since you cannot specify an expression for the default sub-process, the **Expression Builder** box at the bottom of the dialog is disabled.

5   To define the expression to call a particular sub-process, do the following inside the **Expression Builder** box.

A   In the **Expression** box, type the logical expression.

B   To insert an attribute name into the expression, click the name of the attribute in the **Attribute Name** list, and then click **Insert Attribute.** The attribute name appears in the expression at the current cursor position.

C   To insert an operator into the expression, click the appropriate operator button (for examples, see **Table 5 on page 59, Table 6 on page 59 and Table 7 on page 60**).

D   When you are finished specifying the expression, click **Validate Expression**. A message appears indicating whether the expression is valid or not. Correct the expression as necessary until it is valid.

Note: *If you are using a Model Specific database, then the expression is limited to 255 characters.*

6   Click **OK** to close the **Dynamic Sub_Process Activity Properties** dialog box.

Adding Global Attributes to a Dynamic Sub-Process

You can assign as many Global Attributes as you need to a Dynamic sub-process. The process of assigning Global Attributes to a Dynamic sub-process is the same as adding Global Attributes to an Automated activity. For instructions, see **"Adding Global Attributes to an Automated Activity" on page 61**. Before you begin, make sure that Global Attributes have been defined for the active business process model.

Specifying Local Attributes for a Dynamic Sub-Process

You can create as many Local Attributes as you need for calculations and processing performed specifically by the current activity. The process of defining Local Attributes for Dynamic Sub-Process activities is the same as defining Local Attributes for Automated activities. For instructions, see **"Specifying Local Attributes for an Automated Activity" on page 62**.

In addition, the Dynamic Sub-process has one fixed Local Attribute— **subBPName**. This fixed attribute stores the name of the sub-process to call from the Dynamic Sub-Process. For instructions on using this attribute, see **"Configuring a Dynamic Sub-Process Using an Attribute Value" on page 77**.

Note: *If you are using a Model Specific database, then the size allocated to the* ***subBPName*** *attribute is determined by the size of the incoming Global Attribute.*

5.2.8. Configuring Decision Gates

If your business process model contains a Decision gate, you must specify the logical expression required to direct processing flow according to a true/false decision. For example, you can add a Decision gate to a business process that directs processing to one activity or another depending on whether or not a customer's credit is approved. If approved (true), then the processing flow continues to a specific activity. If not approved (false), then processing flows to a different activity. You can build an expression using several true/false tests. A default link is used to direct the flow of processing to a particular activity should all other tests fail.

1 On the modeling canvas, right-click the Decision gate you want to configure, and then click **Properties**.

The **Decision Gate Properties** dialog displays (see Figure 34). The names of activities to which the Decision gate is connected appear in the **Specify Link Order** box next to the names of the links to those activities (for more information about this dialog, see Table 14).

2 In the **Specify Link Order** box, click the check box next to the default link (the activity to process if all logic tests performed by this Decision gate fail).

The name of the default link moves to the bottom of the list. Since you cannot specify an expression for the default link, the **Link Expression** box at the bottom of the dialog is disabled.

3 In the **Link Name** field, change the name of the default link (optional).

4 To assign an expression to a non-default link, do the following inside the **Link Expression** box.

A In the **Expression** box, type the logical expression you want to assign to the link.

B To insert an attribute name into the expression, click the name of the attribute in the **Attribute Name** list, and then click **Insert Attribute.** The attribute name appears in the expression at the current cursor position.

C To insert an operator into the expression, click the appropriate operator button (for examples, see **Table 5 on page 59, Table 6 on page 59 and Table 7 on page 60**).

D When you are finished specifying the expression, click **Validate Expression**. A message appears indicating whether the expression is valid or not. Correct the expression as necessary until it is valid.

5 Repeat step 4 for each non-default link.

Figure 34   Decision Gate Properties Dialog Box
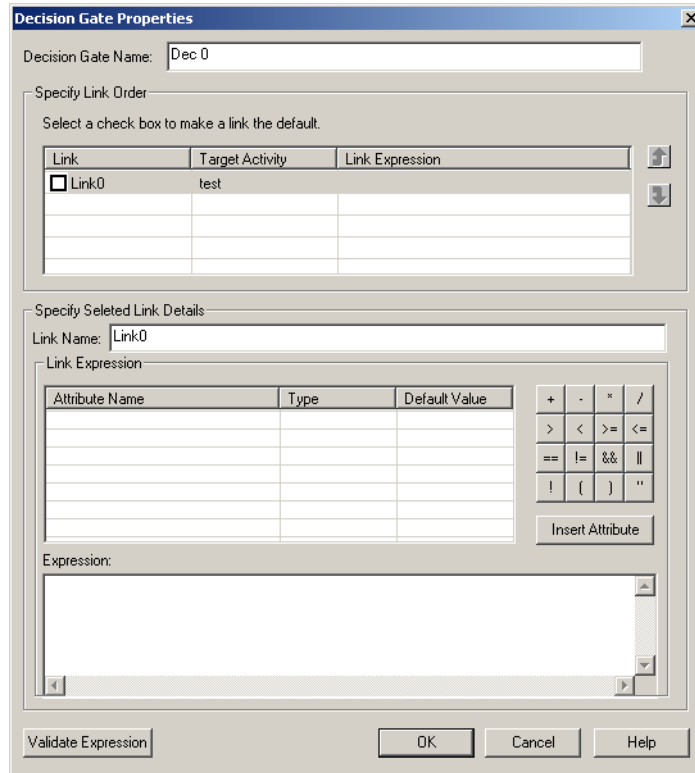
Table 14   Decision Gate Properties

Property	Description
Decision Gate Name	The name of the Decision gate.
Link	The name of each link connected to the Decision gate. A checked box next to the link name identifies the default link.
Target Activity	Identifies the activity to which each link is connected.
Link Expression	The expression that determines whether the process should use this link. If an expression returns a true result then the process uses the link, otherwise the next link expression is evaluated until either an expression returns true or the default link expression is reached.
Link Name	The name of the link. If you change this name, the corresponding name is changed in the Specify Link Order table on the dialog box.
Link Expression	The expression that determines whether the selected link should be used by the process.

Exception Handling

6.1 Overview

When modeling the business process, you may want to consider what should happen if an activity fails or the activity does not complete within a specified time period. In this context, fail means that the e*Insight engine receives a "Done" Event where the status node is set to "FAILURE" rather than "SUCCESS".

e*Insight provides the functionality to take the following actions:

- automatically or manually perform "UNDO" actions on upstream activities
- repair the data and restart the activity
- skip the activity
- take an alternative path through the business process model

This chapter discusses how each of these methods works and how to implement them in your business process.

All of the functions listed above require that the activity is controlled by e*Insight (active mode). For information on how to configure this, see **"To set the activity to active control mode" on page 84**.

Additional exception handling can also be performed directly by e*Gate using the **Resubmitter**. For more information on the Resubmitter, refer to the *e*Insight Business Process Manager Implementation Guide*.

6.2 Undoing Upstream Activities

e*Insight has two methods for undoing a failed business process instance (BPI): automatic and manual. The default setting is automatic undo.

When an activity is set to automatic undo and the activity fails or does not complete within a specified time period, then e*Insight marks the activity as "Failed" in the GUI and publishes an "undo" Event (eX_Activity_Undo) for the last completed activity in the BPI. If the last completed activity is undone successfully, then an "undo" Event is generated for the next activity upstream, and so on, until all the previously completed activities in that BPI have been undone.

If an activity fails or does not complete within a specified time period and you have selected **Manual Restart** on the **General** tab of the **Activity Properties** dialog box for that activity, then e*Insight marks the activity as "Failed" in the GUI and then waits for the user to initiate the next course of action; skip, restart, or UNDO. If the user selects UNDO, then the BPI is undone as described in the paragraph above.

6.2.1. Repairing the Data and Restarting the Activity

An important feature of e*Insight is its ability to allow the operator to fix and restart a business process instance. If the data in one of the business process attributes used by an activity causes the business process to fail, the value can be corrected by the operator and the BPI restarted from the point of failure. When you select the restart activity option, the specified activity is restarted, and if that activity is completed successfully, the process continues to the next downstream activity.

To update an attribute value and restart an activity you must:

- select **Manual Restart** on the **General** tab of the Activity Properties dialog box for that activity, and

- set the direction of the attribute to **Output** or **Input/Output** in the **Global Attribute** tab of the Activity Properties dialog box

If an activity fails or times-out and you have configured it as above, then e*Insight marks the activity as "Failed" in the GUI and then waits for the you to initiate the next course of action; skip, restart, or undo. You can update the attribute value and restart the activity. If the activity then completes successfully, then the process continues to the next downstream activity.

6.2.2. Skipping the Activity

This option allows you to skip the specified activity and then continue the process with the next downstream activity.

To skip an activity, you must select **Manual Restart** on the **General** tab of the **Activity Properties** dialog box for that activity. If the activity fails or does not complete within a specified time period, then e*Insight marks the activity as "Failed" in the GUI and then waits for you to initiate the next course of action; skip, restart, or undo. If you select **skip**, then the activity is skipped and the business process continues with the next downstream activity.

6.3 Using an Alternate Business Process Path

This functionality allows users to model an alternate path for a business process upon Activity Failure or Time-out. When an Activity fails or does not complete within a specified time period and it has been configured to use an alternate business process path, then the business process continues with the next activity on the alternative path. Figure 35 shows a business process that uses an alternate path if the **Check_Inv** Activity fails.

Figure 35 Alternate Business Process Path
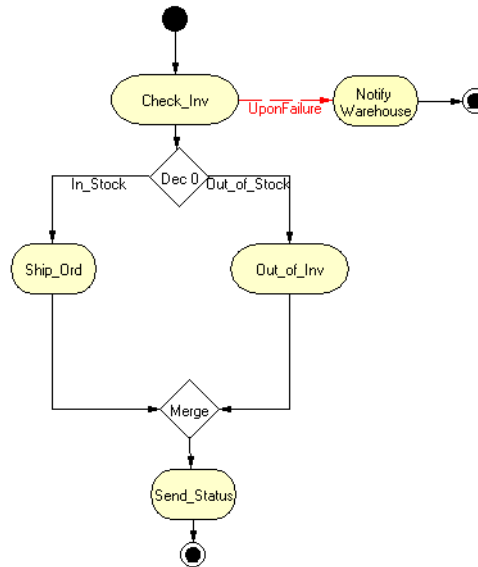
To configure an alternate business process path for an activity, you must select
Alternate Business Process Path on the **General** tab of the **Activity Properties** dialog
box for that activity. If the activity fails, then e*Insight marks the activity as "Failed" in
the GUI and then continues with the business process on the alternate path.

6.4 Configuring the Activity

This section describes how to set the activity to active control mode and how to
configure Automatic UNDO, Manual Restart, and Alternate Business Process Path.

To set the activity to active control mode

1 From the modeling canvas, right-click the activity whose monitoring mode you
want to change. When the popup menu appears, select **Properties**.

The **Activity Properties, General** tab displays. See **Figure 36 on page 85**.

Figure 36   Activity Properties—General Tab
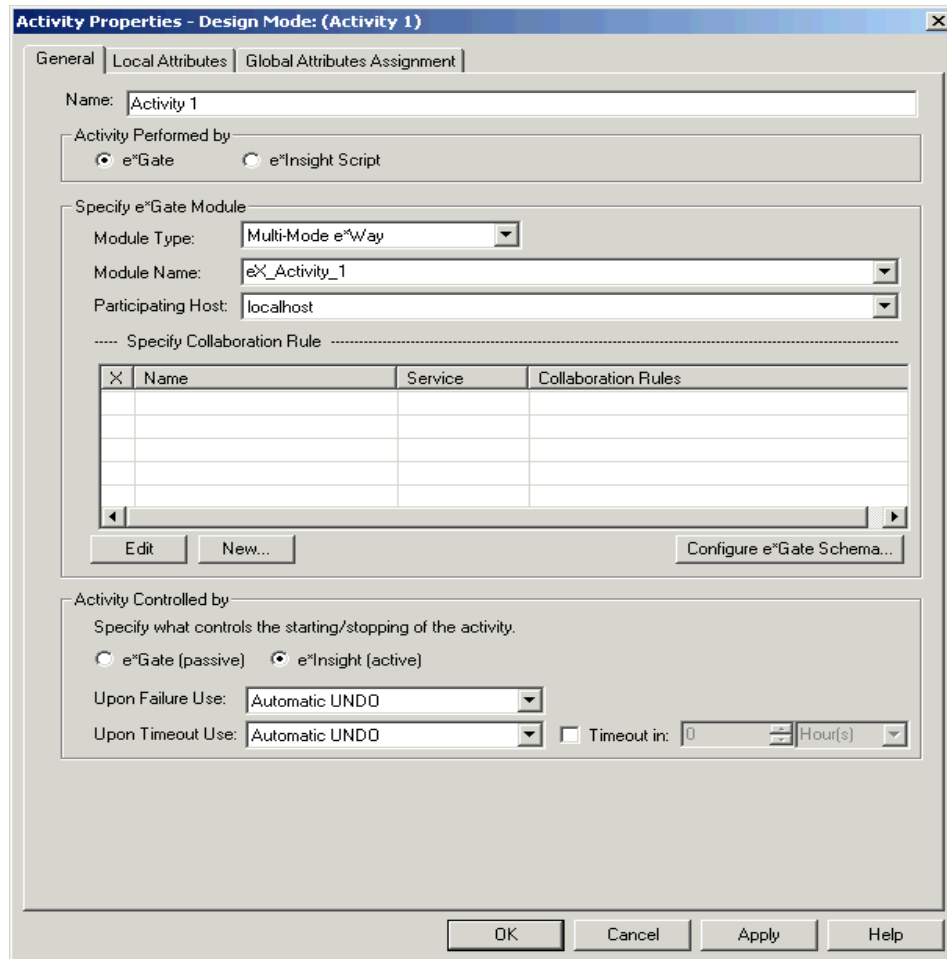
2   In the **Activity Performed by** section, on the **General** tab, select **e*Gate**.

3   In the **Activity Controlled by** section, select **e*Insight**.

4   Click **OK**.

To set the failure action

1   From the modeling canvas, right-click the activity whose control option you want to change. When the popup menu appears, select **Properties**.

The **Activity Properties** dialog box displays.

2   In the **Activity Performed by** section, on the **General** tab, select **e*Gate**.

3   In the **Activity Controlled by** section, select **e*Insight**.

4   From the **Upon Failure Use** drop-down list, select one of the actions listed in Table 15.

Table 15   Activity Failure Options

Action	Description
Automatic UNDO	When an activity fails, e*Insight marks the activity as "Failed" in the GUI, and processes the "UNDO" logic for upstream activities.
Manual Restart	When an activity fails, e*Insight marks the activity as "Failed" in the GUI, and then waits for the user to initiate the next course of action; skip, restart, or undo.
Alternate Business Process Path	When an Activity fails, e*Insight marks the activity as "Failed" in the GUI, and the business process continues with the next activity on the alternative path.

5   Click **OK** to close the **Activity Properties** dialog box.

To set the time-out action

1   From the modeling canvas, right-click the activity whose control option you want to change. When the popup menu appears, select **Properties**.

The **Activity Properties** dialog box displays.

2   In the **Activity Performed by** section, on the **General** tab, select **e*Gate**.

3   In the **Activity Controlled by** section, select **e*Insight**.

4   From the **Upon Time-out Use** drop-down list, select one of the actions listed in Table 16.

Table 16   Activity Time-out Options

Action	Description
Automatic UNDO	When an activity times out, e*Insight marks the activity as "Failed" in the GUI, and processes the "UNDO" logic for upstream activities.
Manual Restart	When an activity times out, e*Insight marks the activity as "Failed" in the GUI, and then waits for the user to initiate the next course of action; skip, restart, or undo.
Alternate Business Process Path	When an Activity times out, e*Insight marks the activity as "Failed" in the GUI, and the business process continues with the next activity on the alternative path.

5   Select the **Time-out in** check box, and then enter a time.

6   Click **OK** to close the **Activity Properties** dialog box.

Managing Business Process Models

This chapter explains how to manage and maintain business process models in e*Insight. When creating or updating a business process model, you may need to make changes such as deleting or renaming activities in a model. This chapter looks at the various actions you may need to perform on the business model. This chapter also explains how to import and export business process instance data.

7.1 Overview

The following sections outlines the topics covered in this chapter

- **"Checking Business Process Versions In and Out" on page 87**
- **"Importing or Exporting Business Process Instance Data" on page 88**
- **"Renaming Activities" on page 88**
- **"Renaming Global Attributes" on page 88**
- **"Deleting Activities, Operators, and Links" on page 89**
- **"Deleting Global Attributes From a Business Process Version" on page 89**
- **"Deleting Global Attributes From an Activity" on page 89**
- **"Deleting Mapped Sub-Process Attributes" on page 90**
- **"Deleting Mapped Remote Sub-Process Attributes" on page 90**
- **"Updating Decision Gate Expressions" on page 91**

7.1.1. Checking Business Process Versions In and Out

You can check Business Process Versions in and out to ensure that only one person is editing the version at any time. If a Business Process Version is currently checked out (being edited) by another user, you are not able to make any changes to it. The user name and machine name of the user who checked out the Business Process Version is shown next to the Business Process Version name.

7.1.2. Importing or Exporting Business Process Instance Data

With the exporting and importing functions, you can copy business process version definitions and instance data between different databases. You can import the same business process version multiple times, and each version will remain separate and not overwrite existing versions or the activity definitions within them.

The export function creates an XML file containing details of the business process model, and optionally, the instance data. The export options are described in Table 17.

Table 17 Export Options

Name	Description
Export Business Process Model Only	Creates an XML file containing information about the business process model.
Export Business Process Model and Instances	Creates an XML file containing information about the business process model and instance data.
Archive	Creates an XML file containing information about the business process model and instance data. Deletes the Business Process Version instance data from the e*Insight database.

For more information about archiving, see **"Archiving Business Process Models" on page 98**.

7.1.3. Renaming Activities

When you rename an activity you need to update the e*Gate Schema with the new values. For more information on updating the e*Gate Schema, see the chapter entitled **"Configuring the e*Gate Schema" on page 101**.

To rename an activity

1 From the modeling canvas, select the activity you want to rename.

2 Type the new name (for naming conventions, see **"Attribute, Expression, and e*Insight Script Conventions" on page 46**).

3 Press **Enter**.

7.1.4. Renaming Global Attributes

If the attribute you rename is used in the Expression Builder or the e*Insight Script tab, you must edit the references accordingly. Additionally you need to update the e*Gate configuration accordingly.

Note: Once the business process is instantiated, you cannot make changes in Design mode.

To rename a global business process attribute

1 From the tree view, right-click the business process version containing the attribute to delete. When the popup menu appears, select **Properties**.

The **Business Process Properties** dialog box displays.

2 On the **Business Process Attributes** tab, select the name of the attribute you want to rename.

3 Click **Edit**.

4 Change the name, and then click **OK** to close the **Business Process Properties** dialog box.

7.1.5. Deleting Activities, Operators, and Links

To delete an activity, operator, or link from a Business Process Version

1 From the tree view, highlight the Business Process Version from which you want to delete an object.

2 On the **Modeling Canvas**, select the object (activity, operator, or link) you want to delete.

3 Click **Delete**.

Note: *Deleting a Decision gate also removes the true and false links to the adjoining activities.*

7.1.6. Deleting Global Attributes From a Business Process Version

To delete a Global Attribute from a Business Process Version

1 From the tree view, right-click the business process version containing the attribute to delete. When the pop-up menu appears, select **Properties**.

The **Business Process Properties** dialog box displays.

2 On the **Business Process Attributes** tab, select the name of the attribute you want to delete.

3 Click **Delete**.

4 Click **OK** to close the **Business Process Properties** dialog box.

Note: *Deleting an attribute only removes the attribute from the business process model. It does not remove the attribute from Collaborations or scripts.*

7.1.7. Deleting Global Attributes From an Activity

To delete a Global Attribute from an activity

1 From the tree view, select the business process version containing the attribute to delete.

2   From the modeling canvas, right-click on the activity from which you want to delete an attribute. When the pop-up menu appears, select **Properties**.

The **Activity Properties** dialog box displays.

3   Select the **Global Attributes Assignment** tab.

4   From the **Selected Attributes** section of the dialog box, select an attribute.

5   Click the [«] button.

6   Repeat steps 2–5 to delete any other attributes, and then click **OK**.

7.1.8. Deleting Mapped Sub-Process Attributes

To delete mapped Sub-Process attributes

1   From the tree view, select the business process containing the Sub-Process from which you want to delete mapped attributes.

2   From the modeling canvas, double-click the Sub-Process from which you want to delete mapped attributes.

The **Sub-Process Properties** dialog box displays.

3   In the **Mapped Attributes** section, select the Sub-Process you want to delete.

4   Click **Remove**.

5   Click **OK** to close the **Sub-Properties** dialog box.

7.1.9. Deleting Mapped Remote Sub-Process Attributes

To delete mapped Remote Sub-Process attributes

1   From the tree view, select the business process containing the Remote Sub-Process from which you want to delete mapped attributes.

2   From the modeling canvas, double-click the Remote Sub-Process from which you want to delete mapped attributes.

The **Remote Sub-Process Properties** dialog box displays.

3   From the **Mapped Attributes** section, select the Remote Sub-Process you want to delete.

4   Click **Remove**.

5   Click **OK** to close the **Remote Sub-Properties** dialog box.

6   From the menu select **View Sub-Process**.

7.1.10. Editing a Local Activity Attribute

To edit a Local Attribute in an Activity

1   From the tree view, right-click the activity which you want to update. When the popup menu appears, select **Properties**.

The **Activity Properties** dialog box displays.

2 Select the **Local Attributes** tab.

3 From the **Specify Local Activity Attributes** section, select the name of the attribute you want to edit.

4 Click **Edit**.

The **Edit Activity Attribute** dialog box displays. See Figure 37.

Figure 37   Edit Activity Attribute Dialog Box
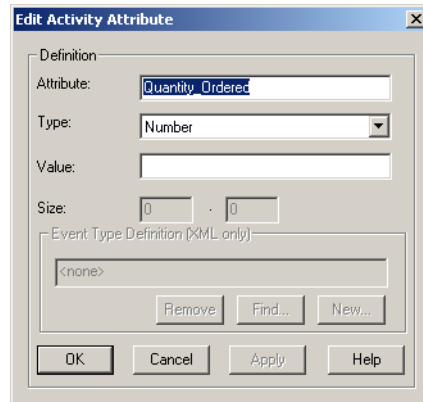
5 Make changes as necessary, and click **OK**.

6 Click **OK** to close the **Activity Properties** dialog box.

7.1.11. Deleting a Local Activity Attribute

To delete a Local Attribute from an Activity

1 From the modeling canvas, right-click the activity from which you want to delete the attribute. When the popup menu appears, select **Properties**.

The **Activity Properties** dialog box displays.

2 Select the **Local Attributes** tab.

3 From the **Specify Local Activity Attributes** section, select the name of the attribute you want to remove.

4 Click **Delete**.

5 Click **OK** to close the **Activity Properties** dialog box.

7.1.12. Updating Decision Gate Expressions

Because each Decision gate should contain an expression, it is preferable to update an expression rather than delete it. To delete the whole expression you can select it and press the Delete key, or delete only the sections you will not use in the expression box at the bottom of the dialog box.

To update a business process expression

1 Right-click the Decision gate in your business model, containing the business process expression you want to update. When the popup menu appears, select **Properties**.

The **Expression Builder** dialog box displays.

2 Make any necessary changes to the expression.

3 Do one of the following:

  A Click OK to save changes.

  B Click Cancel to close.

Note: *To update the business process expression, place your cursor anywhere in the expression and make edits as necessary.*

7.2 Maintaining Business Process Model Versions

7.2.1. Creating a New Business Process Version

To create a new business process version, all links between activities and operators should be made, as well as the necessary attributes assigned to activities. When you create a new business process version, all of the components of the original are copied to the new version. Instances are not copied when a new version is created, which allows you to make modifications to the new version and compare it against the original.

To create a new business process version using timestamp format

1 From the tree view, select the business process version from which you want to create a new version. See Figure 38.

Figure 38   Original Version (Timestamp format)

2 On the **File** menu, select **Save as new version**.

The **Save as new version** dialog box appears.

3 Select **Timestamp format** and click **OK**.

The previous business process version is end-dated and a new business process version is created as shown in Figure 39.

Figure 39   New Version (Timestamp format)
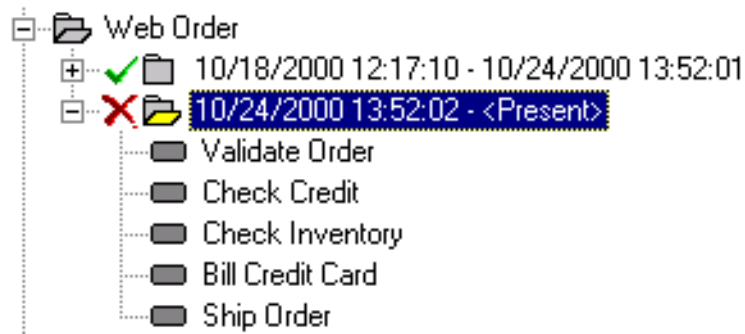
To create a new business process version using a user defined format

   1 From the tree view, select the business process version from which you want to create a new version. See Figure 40.

Figure 40   Original Version (User Defined)

   2 On the **File** menu, select **Save as new version**.

      The **Save as new version** dialog box appears.

   3 Select **User Defined**, change the name if necessary and click **OK**.

      A new business process version is created as shown in Figure 41.

Figure 41   New Version (User Defined)
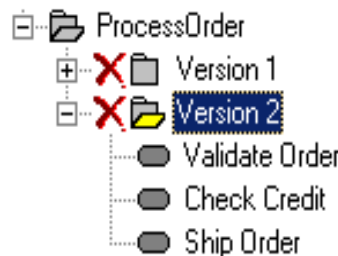
7.2.2. Renaming a Business Process

If you rename a Business Process, you do not lose any of the information you have configured regarding the components of the Business Process. However, you will need to update the name where it is referenced in e*Gate. For information on this, please see the *e*Gate Integrator User's Guide* and *e*Insight Business Process Manager Implementation Guide*.

To rename a Business Process

1 From the tree view, select the name of the Business Process you want to change.

2 Click the name again, to change to edit mode.

3 Type the new name.

4 Press **Enter**.

7.2.3. Deleting a Business Process

When you delete a Business Process, you also delete all of its versions and instances.

To delete a Business Process

1 From the tree view, select the name of the Business Process you want to delete.

2 From the Processes Menu, select **Delete Business Process**.

3 You will be asked if you are sure you want to delete the Business Process and all of its dependents (versions).

4 Click **Yes** to delete the Business Process.

7.2.4. Deleting a Business Process Version

To delete a business process version

1 From the tree view, select the business process version to delete.

2 On the **Processes** Menu, select **Delete Business Process Version**.

A workflow message displays. See Figure 42.

Figure 42 Delete Business Process Confirmation Dialog Box
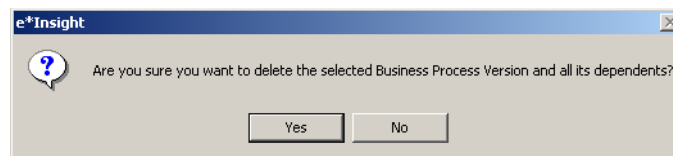
3 Click **Yes** to delete the business process version and its dependents.

7.2.5. Enabling Business Process Versions

Enabling the business process allows you to run the business process version. There can only be one enabled version per business process.

To enable a business process version

1 From the tree view, select the business process version you want to enable.

Note: *An "X" indicates a disabled business process version.*

2 On the **Processes** Menu, select **Enable Business Process Version**.

Chapter 7
Managing Business Process Models

Section 7.2
Maintaining Business Process Model Versions

A warning dialog appears, see Figure 43.

Figure 43   Enable Business Process Warning Dialog Box

Warning

Enabling this Business Process Model Version will automatically check in any changes and release the model.

Yes   No   Help
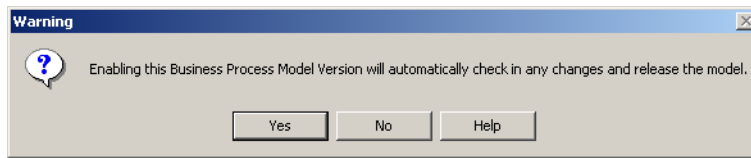
3   Click **Yes** to continue.

If you are using a Model Specific database and the database structure does not match your business process version, then a **Warning** dialog appears.

Figure 44   Warning Dialog Box

Warning

Your Business Process Model version does not match your Model Specific Database. Do you want to fix it now?

Yes   No   Help
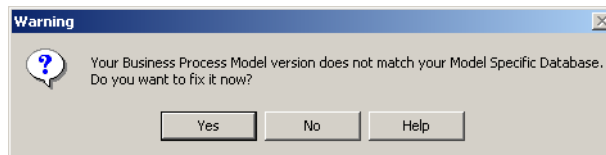
4   Click **Yes** to update the Model Specific database.

The business process version is enabled, and a check mark is placed next to the version. See Figure 45.

Figure 45   Disabled and Enabled Business Process Instances

Disabled ⟶ ✗ 📋 03/27/2000 00:37:04 - 03/27/2000 00:55:09
Enabled ⟶ ✓ 📋 03/27/2000 00:55:09 - ‹Present›

7.2.6. Disabling Business Process Versions

To disable a business process version

1   From the tree view, select the business process version to disable.

Note: A check mark indicates an enabled business process version.

2   On the **Processes** Menu, select **Disable Business Process Version**.

The business process version is disabled, and an X is placed next to the version. See Figure 45.

7.2.7. Checking In a Business Process

You need to release a Business Process Version that is being edited if you want another user to edit it. A Business Process Version can only be released by the user who is currently editing the version. You must be logged on to the same machine on which the model was checked out.

e*Insight Business Process Manager User's Guide   95   SeeBeyond Proprietary and Confidential

To release a Business Process Version

1 Select the Business Process Version you want to release.

2 On the **Processes** menu, select **Release Business Process Version**.

Note: Once a Business Process Version is instantiated, it cannot be edited.

7.2.8. Exporting Business Process Models

The ability to export the business process allows you to import business processes to be used in different databases. You can also export business process versions for others to import. You can also use it as a way to copy or "save as" business processes within the same database. You must first export a business process version to be able to import it.

To Export a Business Process

1 From the tree view, select the business process version you want to export.

2 On the **File** menu, select **Export**.

The **Export Business Process** dialog box displays. See Figure 46.

Figure 46 Export Business Process Dialog Box
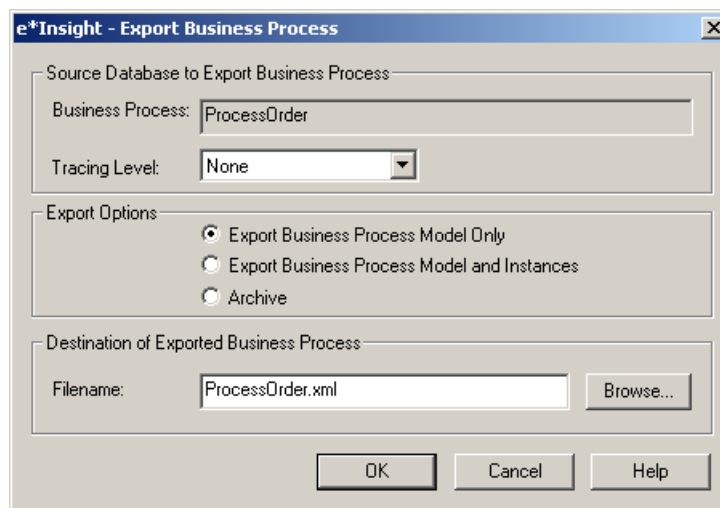
3 Select the tracing level as either None, Information, Debug, or Trace.

4 Select the **Export Option** required. Select **Export Business Process Model and Instances** if you want to export the data in addition to the business process model. Otherwise, select **Export Business Process Model and Instances**.

5 In the **Filename** box, edit the name of the path and the filename that you want to use for the export if necessary, using the extension **xml**. Alternatively, click **Browse** and select the path from the **Open** dialog box.

6 Click **OK**.

The **Business Process Export Results** dialog box displays. See Figure 47.

Figure 47   Business Process Export Results Dialog Box
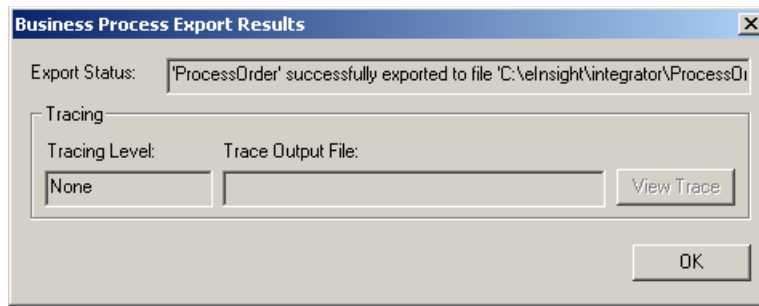
7 (Optional) Click **View Trace** to view the trace information in a **.txt** file.

8 Click **OK**.

7.2.9. Importing Business Process Models

Using the Browse feature, you can import files from anywhere on the system.

Note: *If you are using an Oracle database, you must have Oracle8i 8.1.7 or a higher version of the JDBC Driver installed to import XML data that is greater than 4K.*

To Import a Business Process

1 From the **File** menu, select **Import**.

The **Import Business Process** dialog box displays. See Figure 48.

Figure 48   Import Business Process Dialog Box
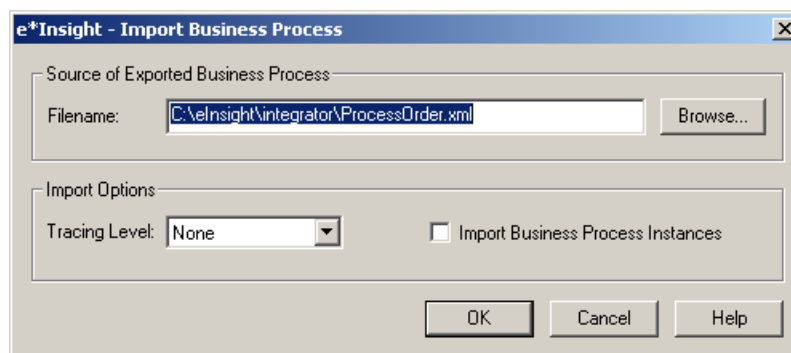
2 Click **Browse**.

The **Open** dialog box displays.

3 Locate the file to import, and click **OK**.

Note: *If you are exporting and importing within the same database instance, e*Insight will automatically give the business process model a new version name to avoid overwriting the original.*

4   In the **Import Options** section, select the tracing level (None, Information, Debug, or Trace).

5   (Optional) Select the **Import Business Process Instances** check box.

6   Click **OK**.

The **Business Process Import Results** dialog box displays. See Figure 49.

Figure 49   Business Process Import Results Dialog Box
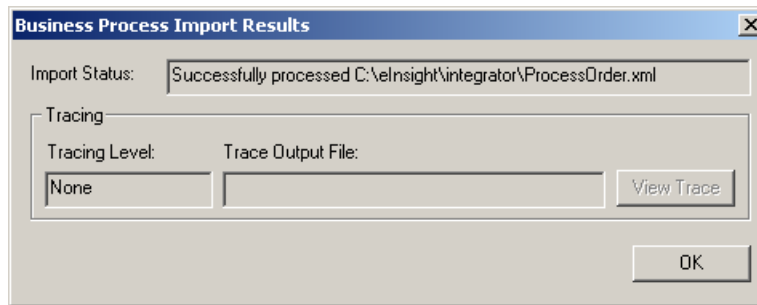
7   (Optional) Click **View Trace** to view the trace information in a **.txt** file.

8   Click **OK**.

7.2.10. Archiving Business Process Models

The ability to archive the business process allows you to keep a copy of business process definitions and instance data, and to delete the Business Process instances from the database and the e*Insight GUI.

The archived Business Process version can be retrieved by importing the archive file.

To archive a Business Process

1   From the tree view, select the business process version you want to archive.

2   From the **File** menu, select **Export**.

The **Export Business Process** dialog box displays. See Figure 46.

Figure 50   Export Business Process Dialog Box
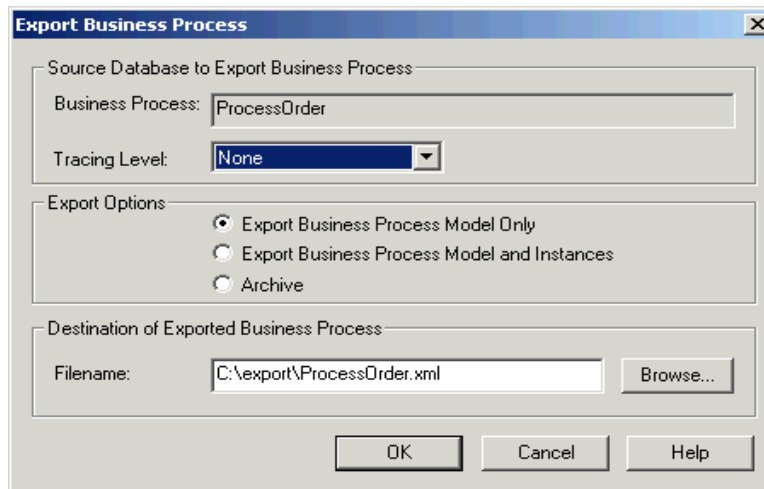
3   Select the tracing level as either None, Information, Debug, or Trace.

4   Select the **Archive** check box.

5   In the **Filename** box, edit the name of the path and the filename that you want to use for the export if necessary, using the extension **xml**. Alternatively, click **Browse** and select the path from the **Open** dialog box.

6   Click **OK**.

The **Business Process Export Results** dialog box displays. See Figure 47.

Figure 51   Business Process Export Results Dialog Box
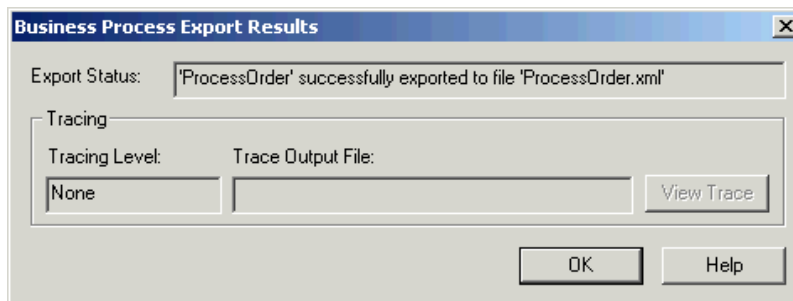
7   (Optional) Click **View Trace** to view the trace information in a **.txt** file.

8   Click **OK**.

7.3   Securing Business Processes

You can limit access to specific business process versions to pre-determined users and groups of users. For instance, you may want to only let users with Administrator privileges have access to certain business process versions that are in development or you may want a specific user to access one particular business process version and be

denied access to another. This chapter explains how to grant user access to business process versions.

User profiles and groups must first be created in the e*Insight Administrator before you can assign them in e*Insight. User security is set up in the e*Insight Administrator. For information on setting up users and groups for e*Insight, see **"Establishing User Security for e*Insight" on page 170**.

Configuring the e*Gate Schema

8.1 Overview

Once you have created and enabled a business process, you must configure the integration Schema for the business process model and the activities within it. e*Gate processes events according to user-defined business logic (Business Processes) and integrates business processes between applications, ensuring end-to-end data flow. The Schema contains the component definition information, configuration information, and files.

Through the process of configuration, the activities created in e*Insight are transformed into e*Ways, Business Object Brokers (BOBs), and Collaborations in e*Gate. Collaborations are components of e*Ways or Business Object Brokers (BOBs) that receive and process Events (messages), and then forward the output to other e*Gate components. Collaborations can be thought of as paired components: the Subscriber half "listens" for Events of a known type, sometimes from a given source, and the Publisher half distributes the transformed Event to a specified Event type.

This chapter includes information on the following items:

- Configuring the e*Gate Schema for a Business Process Version
- Configuring the e*Gate Schema for an Activity
- Creating and Editing Collaboration Rules

8.2 The e*Gate Schema for e*Insight

When the business process has been completed in e*Insight, it is time to configure the Integration Schema in e*Gate. The main steps involved in this process are:

- Create a new Schema in e*Gate — See **"Creating the e*Insight Schema"**.
- Configure the Integration Schema from the e*Insight GUI. This will add components to the Schema, such as e*Ways, BOBs, Event Types, Collaborations, and Collaboration Rules that correspond to the elements of the business process diagram.
- Complete any required configuration in the e*Gate Schema Designer.

8.2.1. The Purpose of the e*Gate Schema for e*Insight

The installation of the e*Gate Schema for e*Insight (e*Insight Schema) creates two default Schemas in e*Gate; a Java Schema and the Classic Schema which uses many Monk components. The default Java e*Insight Schema (eIJSchema) and the default Classic e*Insight Schema (eISchema) both contain a number of components that support:

- the e*Insight engine and its connection to the e*Insight database

- the routing, repair, and resubmitting of failed business process instances

- the data flow within the Schema

A default Schema, or a copy of the default Schema, must be used as a basis for each business process.

8.2.2. Creating the e*Insight Schema

There are different ways of maintaining the default e*Insight Schema (eIJSchema (Java)) or eISchema (Classic)). These are discussed in the *e*Insight Business Process Manager Implementation Guide*.

To create a new Schema from the e*Insight GUI

Important: *You must install the e*Gate Schema for e*Insight on the Registry Host before creating a new e*Gate Schema from the e*Insight GUI.*

1 From the **File** menu, select **Create New e*Gate Schema**.

2 The **New e*Gate Schema** dialog box appears. See Figure 52.

Figure 52 New e*Gate Schema dialog box
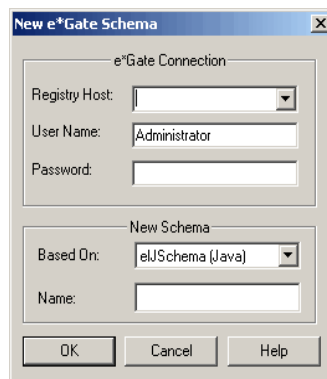
3 Enter or select the name of the Registry Host where you want to create the Schema.

4 Enter a user name and password that are valid on the Registry Host.

5 From **Based On** drop-down list, select either **eIJSchema** (Java) or **eISchema** (Classic).

6 Enter a name for the Schema in the **Name** box.

7   Click **OK**.

8.2.3. e*Insight's Relation to e*Gate

The relationship between components in e*Insight and their corresponding components in e*Gate are shown in Table 18.

Table 18   e*Insight's Relation to e*Gate

e*Insight Component	e*Gate Component
Business Process	Schema (A Schema can include multiple Business Processes)
Activities	e*Ways or BOBs, Collaborations, Collaboration Rules, and Event Types
Attributes	Used in Collaboration Rule Scripts
Links	Create the routing between components
Data Instances	Events

8.3   Activity e*Ways and BOBs

Most of the e*Gate Schema components can be created and configured from e*Insight. By default, the components created provide the basis for sending a "DO" or "UNDO" message to the e*Way or BOB and returning a "DONE" event to e*Insight once the activity e*Way or BOB has completed processing.

Figure 53 below shows the components created when a Multi-Mode e*Way is used to perform the processing for an activity. The example shows component names based on Activity, however this name is user-defined and is usually based on the activity name.

Figure 53   Multi-Mode e*Way Components for an Activity
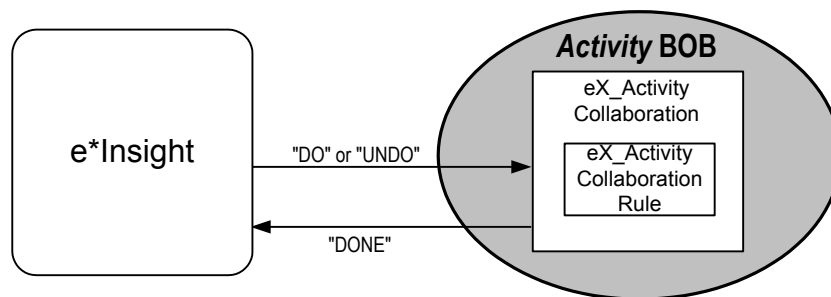
Since a Multi-Mode e*Way can communicate with an external system directly from the Collaboration, a single Collaboration/Collaboration Rule is created and configured. **eX_Activity** receives the "DO" or "UNDO" event from e*Insight, processes the data (which may require connecting to an external system), and then sends the "DONE" event back to e*Insight.

Most of the above components can be created automatically from e*Insight. Since a connection to the external system is not required and is completely user defined, the automatic configuration of the components does not include those used to connect to an external system.

Table 19 shows the Components that are created automatically in eIJSchema (Java). The configuration for eISchema (Classic) is the same, except the Collaboration Service is always **PassThrough**. The subscription and publication relationships are created automatically, but are dependant on the Schema that you are using. Refer to the *e*Insight Business Process Implementation Guide* for more information. You must create the Collaboration Rules script with the business logic for your implementation. This can be done either in e*Insight or in the e*Gate Schema Designer.

Table 19   Default Multi-Mode e*Way Components

Default Editor	Module Name	Collaboration	Collaboration Rule	Collaboration Service	Collaboration Rule Script
Java	eX_Activity	eX_Activity	eX_Activity	Java	eI_crBuiltforSuccess
Monk	eX_Activity	eX_Activity	eX_Activity	PassThrough	N/A

Note: *eI_crBuiltforSuccess.class is a pre-defined Java Collaboration Rule Script that copies the input event to the output, and sets the status to "SUCCESS".*

Figure 54 below shows the components created when an e*Way is used to perform the processing for an activity. The example shows component names based on Activity, however this name is user-defined and is usually based on the activity name.

Figure 54   Single-Mode e*Way Components for an Activity
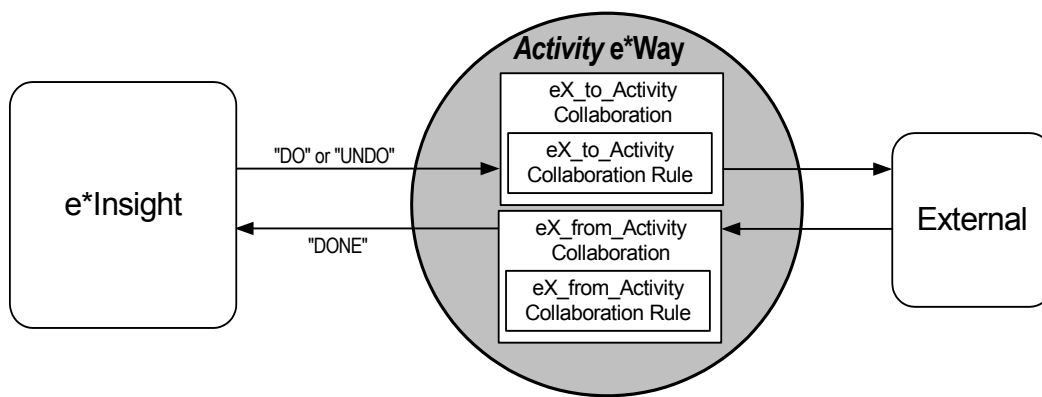
Since the e*Way is used to communicate with an external system, two Collaborations/ Collaboration Rules are created and configured. **eX_to_Activity** receives the "DO" or "UNDO" event from e*Insight, processes the data, and then sends a message to the external system. **eX_from_Activity** receives the response from the external system, formats the data for e*Insight, and then sends the "DONE" event to e*Insight.

Table 20 shows the Components that are created automatically in eIJSchema (Java). The configuration for eISchema (Classic) is the same, except the Collaboration Service is

always PassThrough. The subscription and publication relationships are created automatically, but are dependant on the Schema that you are using. Refer to the *e*Insight Business Process Implementation Guide* for more information. You must create the Collaboration Rules Script with the business logic for your implementation. This can be done either in e*Insight, or in the e*Gate Schema Designer.

Table 20   Default Single-Mode e*Way Java Components

Default Editor	Module Name	Collaboration	Collaboration Rule	Collaboration Service	Collaboration Rule Script
Java	eX_from_Activity	eX_from_Activity	eX_from_Activity	Java	eI_crBuiltforSuccess
	eX_to_Activity	eX_to_Activity	eX_to_Activity	Java	STCJavaPassThrough
Monk	eX_from_Activity	eX_from_Activity	eX_from_Activity	PassThrough	N/A
	eX_to_Activity	eX_to_Activity	eX_to_Activity	PassThrough	N/A

Note: *eI_crBuiltforSuccess.class is a pre-defined Java Collaboration Rule Script that copies the input event to the output, and sets the status to "SUCCESS".*

Figure 53 below shows the components created when a BOB is used to perform the processing for an activity. The example shows component names based on Activity, however this name is user-defined and is usually based on the activity name.

Figure 55   BOB Components for an Activity
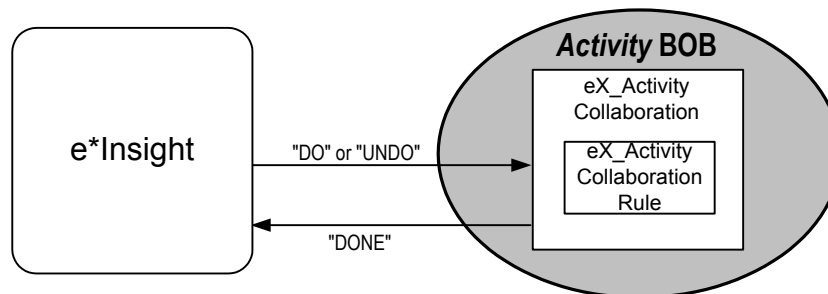
Since a BOB is not typically used to communicate with an external system, a single Collaboration/Collaboration Rule is created and configured. **eX_Activity** receives the "DO" or "UNDO" event from e*Insight, processes the data, and then sends the "DONE" event back to e*Insight.

Table 21 shows the Components that are created automatically in eIJSchema (Java). The configuration for eISchema (Classic) is the same, except the Collaboration Service is always PassThrough. The subscription and publication relationships are created automatically, but are dependant on the Schema that you are using. Refer to the *e*Insight Business Process Implementation Guide* for more information. You must create the Collaboration Rules Script with the business logic for your implementation. This can be done either in e*Insight or in the e*Gate Schema.

Table 21   Default BOB Java Components

Default Editor	Module Name	Collaboration	Collaboration Rule	Collaboration Service	Collaboration Rule Script
Java	eX_Activity	eX_Activity	eX_Activity	Java	eI_crBuiltforSuccess
Monk	eX_Activity	eX_Activity	eX_Activity	PassThrough	N/A

Note: *eI_crBuiltforSuccess.class is a pre-defined Java Collaboration Rule Script that copies the input event to the output, and sets the status to "SUCCESS".*

8.3.1. e*Insight Default Names

By default, the names of the components created in e*Gate are based on the Activity name. For example, if you create an activity called **Calculate_Bonus** and are using a Multi-Mode e*Way, then the e*Way, Collaboration, and Collaboration Rule are all named **eX_Calculate_Bonus**.

If you are using an international version of e*Insight (Japanese, Korean, or Traditional Chinese), an activity has two names defined, **Name** and **Name(Eng)**. **Name** is used for defining the name that appears in the e*Insight Business Process diagram and can contain international characters. **Name(Eng)** is the English only name that is used to generate the e*Gate component names. The default names are Activity 1, Activity 2 and so on.

8.3.2. Creating the Activity e*Way or BOB with Default Associations

There are a number of routes to creating the e*Gate components required for an activity. The procedures below show two different ways to create the components described previously.

The first procedure describes creating the Collaboration Rule and Collaboration Rule Script, and then creating the remaining components in e*Insight. The second procedure describes creating all components in e*Insight first, except the Collaboration Rules script. The Collaboration Rules script can then be added from e*Insight or from the e*Gate Enterprise Manager.

To configure the activity in e*Insight starting with the Collaboration Rule/Script

1   Select the default editor, either Java or Monk. See **"Selecting the Default Editor" on page 107**.

2   Create the Collaboration Rule and Collaboration Rule Script in e*Insight. Table 22 shows the default Collaboration Rules that are created for each module type.

Table 22   Default Module and Collaboration Rule Relationship

Module	Collaboration Rule
Multi-Mode e*Way	eX_<ActivityName>

Table 22   Default Module and Collaboration Rule Relationship (Continued)

Module	Collaboration Rule
Single-Mode e*Way	eX_to_<ActivityName>
	eX_from_<ActivityName>
BOB	eX_<ActivityName>

See **"To create a Collaboration Rule from e*Insight" on page 109**.

3 Create all e*Gate components, first ensuring that the Collaboration Rules created in Step 2 are associated with this activity. See **"To configure the e*Gate Schema for one activity" on page 108**.

To configure the activity in e*Insight starting with all e*Gate components

1 Select the default editor, either Java or Monk. See **"Selecting the Default Editor" on page 107**.

2 Create all e*Gate components, first ensuring that no Collaboration Rules are associated with this activity. See **"To configure the e*Gate Schema for one activity" on page 108**.

3 Edit the Collaboration Rules created in Step 2, and create the Collaboration Rule Script in e*Insight (see **"To create a Collaboration Rule from e*Insight" on page 109**) or e*Gate.

8.3.3. Selecting the Default Editor

The default editor determines whether the Collaboration Rule uses Java or Monk for the Collaboration Rule Script. This not only determines whether the Java or Monk editor is started from the activity properties, but also determines the subscription and publication information in the Collaboration and Collaboration Rule. When you choose Java as your default editor, you may also set your ETD option defaults.
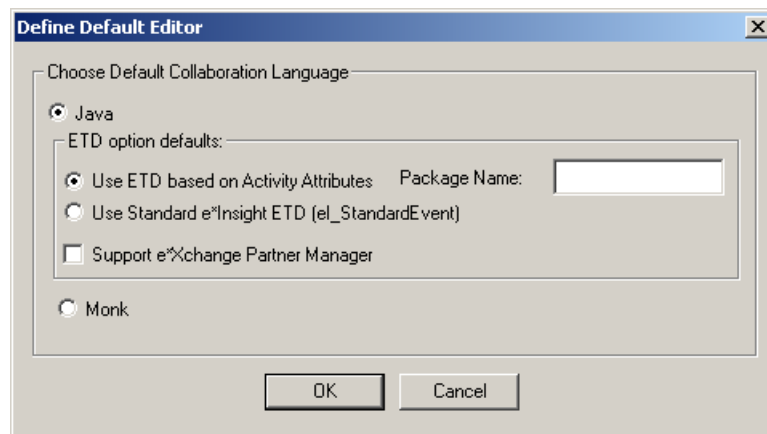
To select and configure Java as your default editor

1 From the **Options** menu, click **Define Default Editor**.

   2   Choose **Java**.

   3   Select either **Use ETD based on Activity Attributes** or **Use Standard e*Insight ETD (eI_StandardEvent)**.

   The package name is created for you.

   4   (Optional) Choose the **Support e*Xchange Partner Manager** option if you plan to use e*Xchange Partner Manager in this implementation.

To select Monk as your default editor

   1   From the **Options** menu, click **Define Default Editor**.

   2   Choose **Monk**, and then click **OK**.

   There are no other configuration choices for this option.

8.3.4. Configuring the e*Gate Schema for an Activity

You can configure the e*Gate Schema for one activity at a time. Configuring the e*Gate Schema at the activity level allows you to have control over the module type that is created, as well as the name of the module. If you want to configure multiple activities at a time you can follow the directions outlined in **"Configuring the e*Gate Schema for the Business Process Version" on page 114**.

To configure the e*Gate Schema for one activity

   1   Log in to the Schema in which you will configure the activity (for instructions, see **"Log In to e*Gate From e*Insight" on page 33***)*.

   2   Right click an activity and select properties.

   3   In the **Activity Performed by** box, select **e*Gate**.

   4   In the **Specify e*Gate Module** box, select **Module Type** of either **Multi-Mode e*Way**, **Single-Mode e*Way**, **Collaboration Rules Only** or **BOB**.

   5   Select the participating host from the list.

   6   Click **Configure e*Gate Schema**.

   7   Click **OK** to return to the **Activity Properties** dialog box.

   8   Click **OK** to close the **Activity Properties** dialog box.

Note: *To see a list of all the activities configured for this business process, see* **"Review e*Gate Schema Configuration" on page 116***.*

Working With Collaboration Rules

You can use the e*Gate Monk or Java Collaboration editor from e*Insight to do any of the following:

   ▪ Create a Collaboration Rule

   ▪ Modify a Collaboration Rule

- Create a run-time association between a Collaboration Rule and an e*Way or BOB that you associate with an activity.

- Create a conceptual association between a Collaboration Rule and an e*Way or BOB that you associate with an activity. In this case, a run-time association does not exist.

- Create a conceptual association between an activity and a Collaboration Rule. In this case, a run-time association does not exist.

To create a Collaboration Rule from e*Insight

1 Log in to e*Gate (for instructions, see **"Log In to e*Gate From e*Insight" on page 33**).

2 From the modeling canvas, right-click the activity to configure, and then click **Properties**.

3 In the **Activity Performed by** box, click **e*Gate**.

4 Select the Participating Host.

   A list of Collaboration Rules appears in the Specify Collaboration Rule area of the General tab (see Figure 56).

Figure 56   Collaboration Rules on the Activity Properties—General Tab
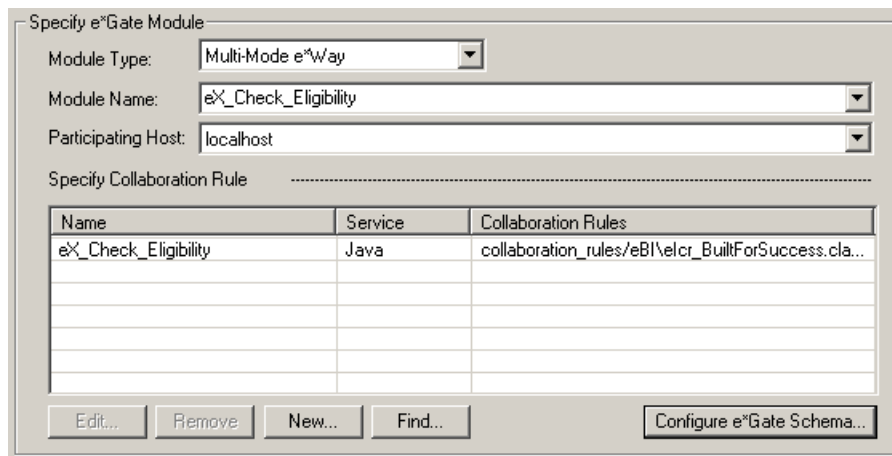
5 Click **New.**

   The Collaboration dialog displays (see Figure 57).

Figure 57 Define Collaboration Dialog Box
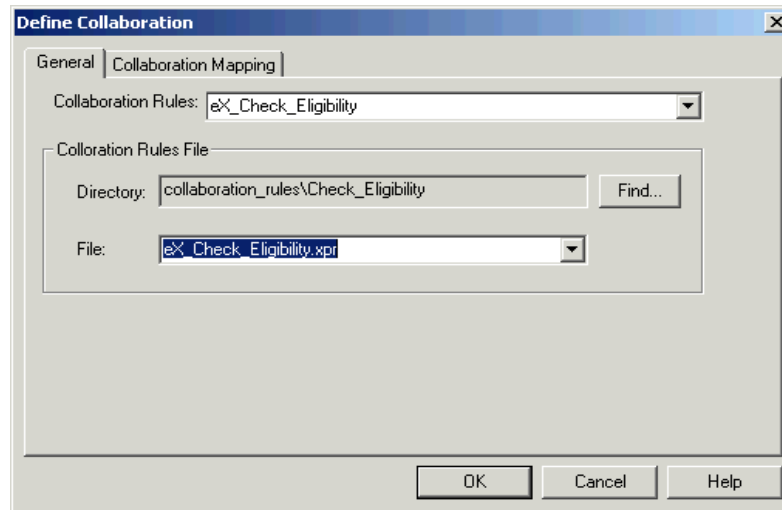
6 On the **General** tab of the **Define Collaboration** dialog box, do the following:

A In the **Collaboration Rules** list, select or enter the name of the Collaboration Rule you want to create.

Note: *By default, two Collaboration Rules are created for a Single-Mode e*Way (eX_to_<ActivityName> and eX_from_<ActivityName>) and one Collaboration Rule is created for a Multi-Mode e*Way or BOB (eX_<ActivityName>). For more information on the components created, see* **"Activity e*Ways and BOBs" on page 103**.

B In the **Collaboration Rules File** box, type the name of the Collaboration Rules file you want to create.

Java Collaboration Rule Scripts use the XPR extension and Monk Collaboration Rule Scripts use the TSC extension. When creating the new file, it is recommended that you use the same naming convention as the Collaboration Rules. If you have already created files in this database Schema, you can select one from the list.

Note: *A default directory is created in the registry for each activity. This default directory has the same name as the activity. You can save Collaboration Rules in this default directory or you can create other sub-directories as needed.*

7 If you are using the Java editor, then you can configure the Collaboration Mapping tab.

Note: *If a Collaboration Rule already exists with the same name as defined on the* **General** *tab, then the Collaboration Mapping is taken from the Collaboration Rule. To ensure that the default Collaboration Mapping is defined; either use a unique Collaboration Rule name, or delete the Collaboration Rule via the e*Gate Schema Designer.*

For more information on configuring the Collaboration Mapping, see the *e*Insight Business Process Manager Implementation Guide*.

8   Click **OK**.

The Collaboration Rule is created, **e*Gate** is launched, and either the Monk or Java **Collaboration Rules Editor** displays.

Important: *The Collaboration Rule is created in e*Gate using the properties specified in the **Define Collaboration** dialog box. If you save the Collaboration Rules Script with a different name, then the changes are not reflected in e*Gate and the Collaboration Rule does not reference the newly created Collaboration Rules Script.*

For more information on configuring the Collaboration Rule file, see the *e*Insight Business Process Manager Implementation Guide*.

To modify a Collaboration Rule from e*Insight

1   Log in to e*Gate (for instructions, see **"Log In to e*Gate From e*Insight" on page 33**).

2   From the modeling canvas, right-click the activity to configure, and then click **Properties**.

3   In the **Activity Performed by** box, click **e*Gate**.

4   Select the Participating Host.

A list of Collaboration Rules appears in the **Specify Collaboration Rule** area of the **General** tab (see Figure 58).

Figure 58   Collaboration Rules on the Activity Properties—General Tab
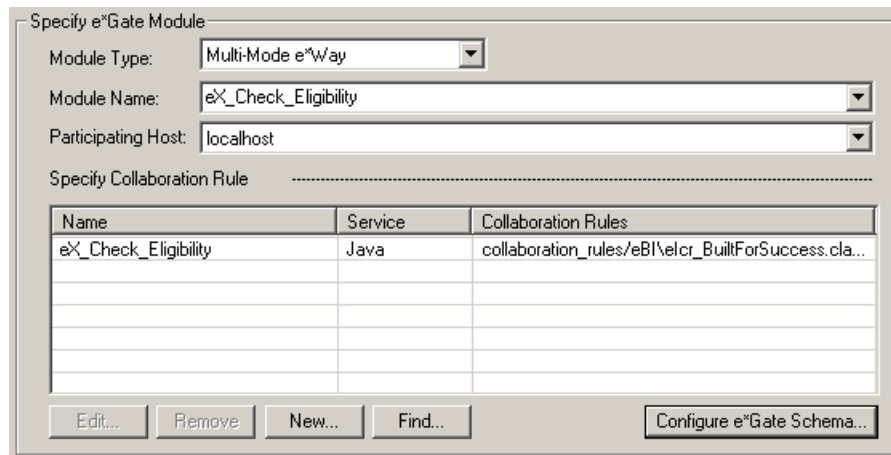
5   Highlight the Collaboration Rule that you want to modify, and then click **Edit**.

The **Define Collaboration** dialog displays (see **Figure 57 on page 110**).

Figure 59 Define Collaboration Dialog Box
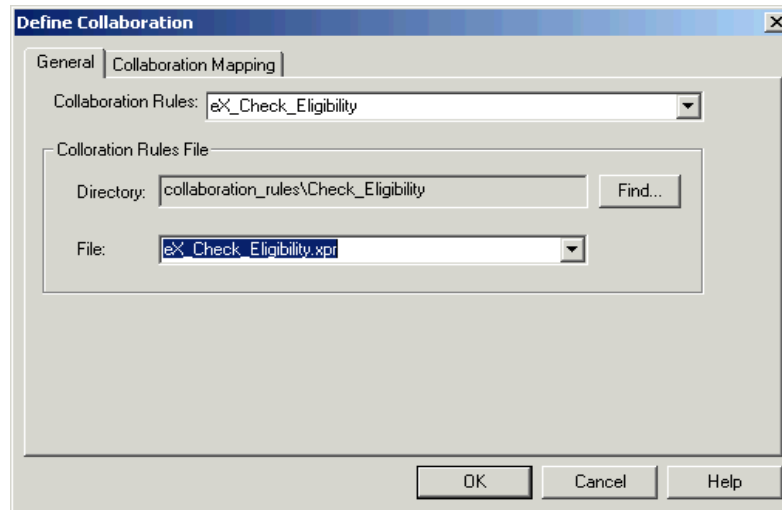
6 On the **General** tab of the **Define Collaboration** dialog, do the following:

   A In the **Collaboration Rules** list, ensure that the correct Collaboration Rule is selected.

   B In the **Collaboration Rules File** box, enter or select the name of the Collaboration Rules file. If the file does not already exist, then it is created.

   Java Collaboration Rule Scripts use the XPR extension and Monk Collaboration Rule Scripts use the TSC extension. When creating the new file, it is recommended that you use the same naming convention as the Collaboration Rules. If you have already created files in this database Schema, you can select one from the list.

Note: *A default directory is created in the registry for each activity. This default directory has the same name as the activity. You can save Collaboration Rules in this default directory or you can create other sub-directories as needed.*

7 If you are using the Java editor, then you must configure the **Collaboration Mapping** tab.

   For more information on configuring the Collaboration Mapping, see the *e*Insight Business Process Manager Implementation Guide*.

8 Click **OK**.

   The Collaboration Rule is updated, **e*Gate** is launched, and either the Monk or Java **Collaboration Rules Editor** displays.

Important: *The Collaboration Rule is created in e*Gate using the properties specified in the **Define Collaboration** dialog box. If you save the Collaboration Rules Script with a different name, then the changes are not reflected in e*Gate and the Collaboration Rule does not reference the newly created Collaboration Rules Script.*

   For more information on configuring the Collaboration Rule file, see the e*Insight Business Process Manager Implementation Guide*.*

To create a run-time association between an activity, a Collaboration Rule, and an e*Gate component

1   Log in to e*Gate (for instructions, see **"Log In to e*Gate From e*Insight" on page 33**).

2   On the modeling canvas, right-click an Automated activity, and then click **Properties**.

    The **Activity Properties** dialog appears.

3   In the **Activity Performed by** box, click **e*Gate**.

4   In the **Specify e*Gate Module** box, click either **Multi-Mode e*Way**, **Single-Mode e*Way** or **BOB**.

5   Select the Participating Host.

   A list of Collaboration Rules appears in the **Specify Collaboration Rule** area of the **General** tab (see **Figure 56 on page 109**).

6   Click **Configure e*Gate Schema**.

    The e*Way or BOB, and Collaboration are created if they do not already exist. The Collaboration Rule is associated with the Collaboration.

To create a conceptual association between an activity, a Collaboration Rule, and an e*Gate component

1   Log in to e*Gate (for instructions, see **"Log In to e*Gate From e*Insight" on page 33**).

2   On the modeling canvas, right-click an Automated activity, and then click **Properties**.

    The Activity Properties dialog appears.

3   In the **Activity Performed by** box, click **e*Gate**.

4   In the **Specify e*Gate Module** box, click either **Multi-Mode e*Way**, **Single-Mode e*Way** or **BOB**.

5   Select the Participating Host.

    A list of Collaboration Rules appears in the **Specify Collaboration Rule** area of the **General** tab (see **Figure 56 on page 109**).

6   Click **Apply**.

    The activity, Collaboration Rule, and e*Gate component are associated with each other.

To create a conceptual association between an activity and a Collaboration Rule

1   Log in to e*Gate (for instructions, see **"Log In to e*Gate From e*Insight" on page 33**).

2   On the modeling canvas, right-click an Automated activity, and then click **Properties**.

    The **Activity Properties** dialog appears.

3 In the **Activity Performed by** box, click **e*Gate**.

4 In the **Specify e*Gate Module** box, click **Collaboration Rules Only**.

5 Select the participating host.

A list of Collaboration Rules appears in the **Specify Collaboration Rule** area of the General tab (see Figure 56).

6 Click **Apply**.

The activity and the Collaboration Rule are conceptually associated.

8.4 Configuring the e*Gate Schema for the Business Process Version

This option allows you to configure one or more activities at the same time. When you configure activities at the business process level, the default module type assigned to each activity is an e*Way, and the module name is also defaulted. If you want to configure each activity separately, configure an activity as a BOB, or use a specific module name, follow the directions in **"Configuring the e*Gate Schema for an Activity" on page 108**.

To configure the e*Gate Schema for the business process version

Important: *You must first be logged onto the Schema in which you will be configuring the activities. See* **"Log In to e*Gate From e*Insight" on page 33***.*

1 In Design mode, from the tree view, right-click the business process version you want to configure. When the popup menu appears, select **e*Gate Configuration**.

The **e*Gate Configuration** dialog box displays. See Figure 60.

Figure 60 e*Gate Configuration—Before Dialog Box
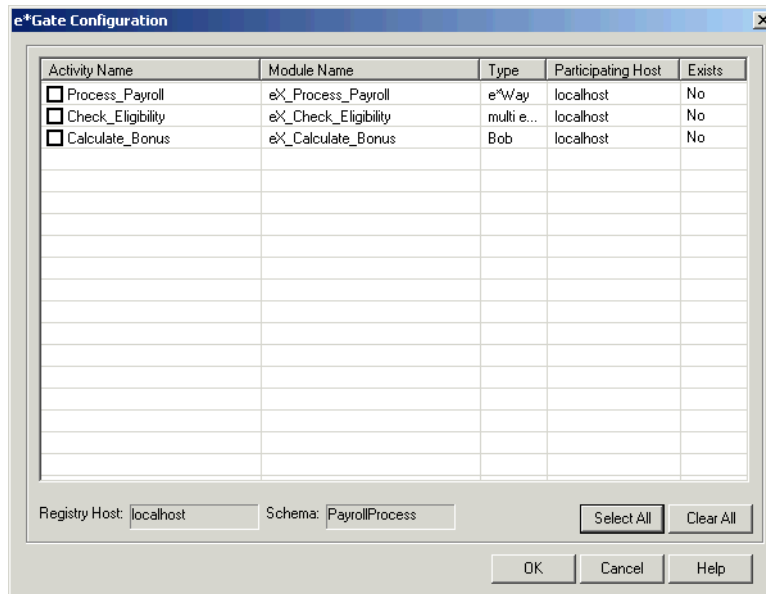
2 Remove the check marks from any activities that you do NOT want to configure.

Note: *Only those activities with check marks will be configured. Use the **Select All** or **Clear All** button to add all check marks or remove all check marks respectively.*

3 Click **OK**.

If there is a Collaboration associated with the component in e*Gate that you have not associated with the Activity, then the **Delete Collaborations?** dialog appears.

4 Click **Yes** to delete the Collaboration from the e*Gate Schema or click **No** to leave the Collaboration in the Schema.

The e*Way or BOB and Collaboration are created if they do not already exist. The Collaboration Rule is associated with the Collaboration.

5 A message box displays acknowledging the activities that have been configured, along with the module name that was created. See Figure 61.

Figure 61 Configuration Confirmation Message Box
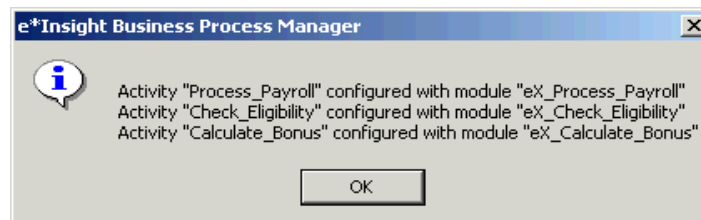
6 Click **OK** to close the confirmation message box.

8.4.1. Review e*Gate Schema Configuration

Once you have created Collaborations at the business process level, you can review the changes in the e*Gate Configuration dialog box.

To review the e*Gate Schema configuration for the business process

1 In Design mode, from the tree view, right-click the business process version for which you want to view the configuration. When the popup menu appears, select **e*Gate Configuration**.

2 The **e*Gate Configuration** dialog box displays. See Figure 60.

Figure 62 e*Gate Configuration—After Dialog Box
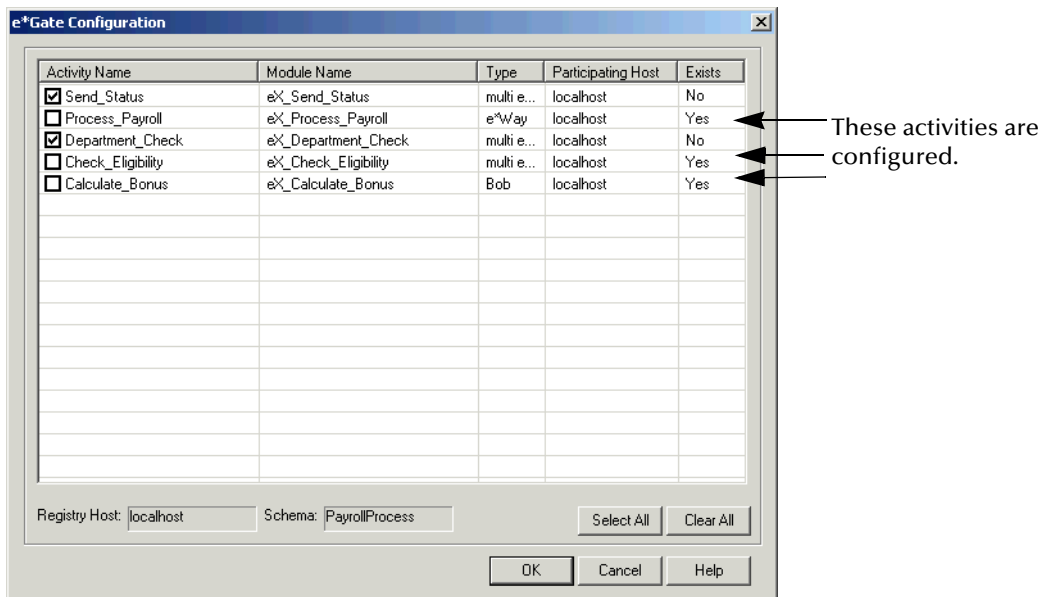
3 Review the information, and then click **OK** to close the **e*Gate Configuration** dialog box.

Monitoring Business Processes

9.1 Overview

This chapter describes how you monitor the business process model and its instances. Once you have instantiated the business process, you can monitor the state of a single instance with the same style of graphical interface as the one in which the business process was created. The monitored state, however, also uses color-coding to illustrate the state of each activity as it passes through the stages of the process.

In addition to reviewing the instance information in table format, you can also create reports and graphs based on various attributes. See the chapter entitled **"Generating Reports and Graphs" on page 130** for more information.

This chapter includes information on the following items:

- Activity States
- Business Process Monitoring
- Business Process Failure Handling and Event Repair

9.1.1. Activity States Summary

Activity states are the stages that activities within the business process instance go through as the business process version is being run.

Table 23 shows the different states assigned to the activities in e*Insight.

Table 23   e*Insight Activity States

State	Color
Running	Blue
Completed	Light Green
Failed/Rejected	Red
UNDO Running	Dark Blue
UNDO Completed	Dark Green
UNDO Failed	Brown
Timed Out	Light Orange
Aborted	Orange

Table 23   e*Insight Activity States (Continued)

State	Color
Pending	Gray
Waiting	Yellow
Never Invoked	White

Figure 63   States Legend—States Tab

9.1.2. Activity States Detail

Running

The Running state indicates that the activity has received a "DO" message if actively controlled, or, if passively monitored, that all appropriate upstream activities have reached a completed state and thus the activity has been initiated. The activity remains in the Running state until e*Insight receives a "Done" activity message for that specific activity.

*Note: The "DO" and "Done" messages are sent from e*Gate.*

Completed

When e*Insight receives a "Done" message with a status of "SUCCESS," the activity is placed in the Completed state.

Having placed the activity into the Completed state, e*Insight then determines the next activity to be started in the business process model, and issues a "DO" message for that activity (if the activity is actively controlled).

Failed/Rejected

The Failed/Rejected state is similar to the Completed state, but is generated when a "Done" message with a status of "FAILED" is received or when an Authorization Activity has been rejected.

Additionally, if the failure handling setting is set to Automatic, then all activities that were "Completed" receive an "UNDO" message and are placed in the UNDO Running state.

UNDO Running

The UNDO Running state indicates that the activity has received an UNDO message, and e*Insight is awaiting a status message.

UNDO Completed

The UNDO Completed state indicates that the activity has succeeded at the process of undoing any actions that were associated with that activity.

UNDO Failed

The UNDO Failed state indicates that the activity has failed at the process of undoing actions that were associated with that activity.

Timed Out

The Timed Out state indicates that the activity has exceeded the time-out period.

Aborted

The Aborted state indicates that the activity had not yet started when the process was stopped. Activities that are downstream from the activity that encountered the failure are marked as Aborted when UNDO processing begins.

Pending

The Pending state indicates that the activity is being processed by an external application or that the activity is waiting to be manually processed.

Waiting

The Waiting state indicates that the activity has not yet been started by e*Insight.

Never Invoked

The *Never Invoked* state indicates that the specific activity was never invoked during the business process instance. When the business process instance has completed and there are no more "active" states, any states that were in the waiting state are changed to Never Invoked.

9.2   Business Process Monitoring

In Monitor mode, two panes allow you to view the status of the business process instance:

- Diagram

- List

See Figure 64 for an example of a Business Process Version shown in Monitor mode.

Figure 64 e*Insight Window - Monitor mode
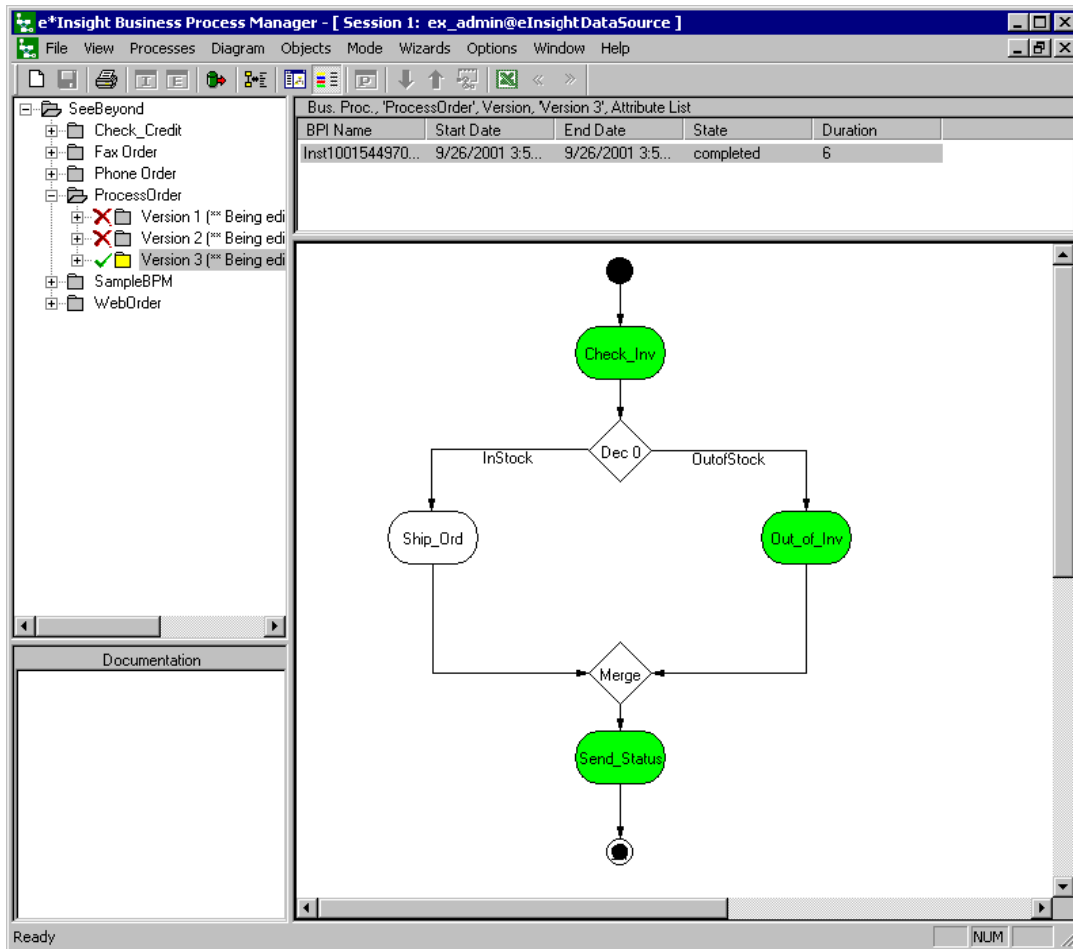
9.2.1. **Using the Status Diagram**

In the **Diagram** pane in the e*Insight Business Process Manager, you can view a pictorial representation of the business process instance. The representation is a color-coded copy of the original business process which was created in the Design mode, where each activity state is represented by a different color. See **Figure 63 on page 118** for a list of the states and their associated colors.

The States Legend also shows the component types represented by each component. See Figure 65.

Figure 65 States Legend—Components Tab
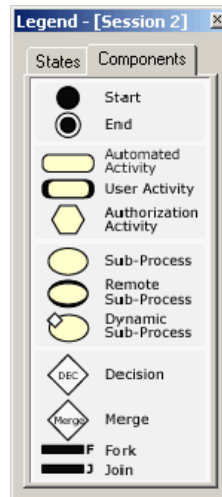
9.2.2. Viewing the Business Process Version in Monitor Mode

To view the Business Process Instance list

- In Monitor mode, from the tree view, select the business process version you want to view.

  The business process version displays.

  The List pane displays all the Business Process Instances.

Note: *If you have more instances than can be displayed on a single page, the **Next Page** and **Previous Page** tools are enabled. Use these tools to page through the additional instances. The default number of instances to display on a page is 50.*

  The Diagram pane shows the Business Process diagram, along with the **States Legend**, unless an instance is highlighted. The Business Process diagram is not associated with any particular business process instance, so it is shown with the default design color.

Note: *To toggle the States Legend off or on, use the **Toggle States Legend** tool on the toolbar.*

To change the format of the List pane

  See **"The List Wizard" on page 126** for information on changing the format of the list pane.

To sort the instances in the List pane

  See **"The List Wizard" on page 126** for information on sorting the instances in the list pane.

To view the Business Process Diagram for a BPI

1 In Monitor mode, from the tree view, select the business process version you want to view.

2 From the list pane, select the Business Process Instance. The Business Process Diagram for this instance displays.

9.2.3. Viewing a Sub-Process

When a Business Process uses a Sub-Process, the information about a Business Process Instance is held in two locations.

To view the Sub-Process from the main Business Process

1 In Monitor mode, from the tree view, select the business process version for which you want to view the instance information.

2 Select the Business Process Instance from the **List** pane.

3 Right-click on the Sub-Process in the **Diagram** pane. See Figure 66.

   The Business Process Instance for the Sub-Process displays.

4 To view the parent process (that is, the business process model from which the sub-process is called), click the UP arrow button on the toolbar.

5 To view a child sub-process (that is, the sub-process inserted into a business process model), click the DOWN arrow button on the toolbar.

Figure 66 Viewing Sub-Process
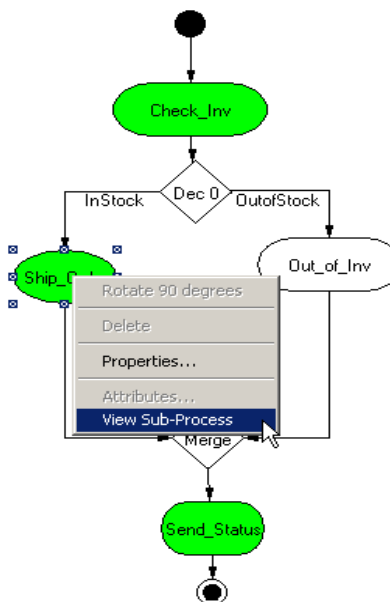
Figure 67   Sub-Process

9.2.4. Viewing Business Process Instances

You can select the number of instances that are displayed per page.

Note: *By default, all of the business process instances are displayed on the **List** pane, although these may appear on different pages. To sort the instances listed on this tab, see* **"The List Wizard" on page 126**.

To select the number of instances displayed on a page

1   From the **View** menu, select **Preferences**.

The **Preferences** dialog box displays.

2   In the **Query maximum lines box**, enter the number of instances you want displayed on each page.

The default is 50, and the maximum number allowed is 4000.

3   Click **OK**.

9.2.5. Rearranging Column Layout

You can rearrange the positions of the columns in the **List** pane, to view columns in a specific order.

To rearrange the layout of the existing columns

▪ Click on the column heading and drag it to the new position.

▪ Repeat as necessary.

9.2.6. Exporting to Excel

The **export to Excel** function allows you to select data from the **List** pane, and display it in a Microsoft Excel spreadsheet. From the Microsoft Excel worksheet, you can create graphs and reports on the attribute data.

1 On the **List** pane, select the instances to export to Microsoft Excel.

2 On the toolbar, click **Export to Excel**.

   Excel opens, and the data is placed on a new worksheet.

3 Perform reporting or graphing as necessary.

4 Save the file if necessary.

5 To return to e*Insight, close Microsoft Excel.

9.2.7. Viewing Attribute Values

Attribute values associated with a business process instance can be viewed in a number of locations. These include the List view (see **"Formatting the List pane" on page 126**), the Business Process version properties, or the Activity properties.

To view a global business process attribute from a Business Process

1 Select Monitor mode.

2 Select the Business Process Instance from the **List** pane.

3 From the tree view, right-click the business process version containing the attribute you want to update. When the popup menu appears, select **Properties**.

   The **Business Process Properties** dialog box displays.

4 The Business Process Attribute values appear in the **Value** column.

5 Click **OK** to close the **Business Process Properties** dialog box.

To view a global business process attribute from the Activity

1 Select Monitor mode.

2 Select the Business Process Instance from the **List** pane.

3 From the tree view, right-click the activity you want to update. When the popup menu appears, select **Properties**.

   The **Activity Properties** dialog box displays.

4 Select the **Business Process Attributes** tab.

5 The Business Process Attributes values appear in the **Value** column.

6 Click **OK** to close the **Activity Properties** dialog box.

Viewing a Local Attribute

To view an Local Attribute

1 Select Monitor mode.

2 Select the Business Process Instance from the **List** view.

3 From the tree view, right-click the activity which you want to update. When the popup menu appears, select **Properties**.

   The **Activity Properties** dialog box displays.

4 Select the **Local Attributes** tab.

5 The Local Attribute values appear in the **Value** column.

6 Click **OK** to close the **Activity Properties** dialog box.

Viewing Long Data

Attribute values that are greater than 4 KB are considered long data and are held in a separate location in the database. When you view the attribute value in the e*Insight GUI it appears as <long data> and the Long Data Viewer must be used to view the actual data.

You can only access the Long Data Viewer from the List view. For information on adding the attribute to the List view, see **"Formatting the List pane" on page 126**.

To view long data

1 Select Monitor mode.

2 Select the Business Process Instance from the **List** view.

3 Right-click the Business Process Instance you want to view. When the popup menu appears, select **View Long Data**.

   The **Long Data Viewer** dialog box displays.

4 Click **OK** to close the **Long Data Viewer** dialog box.

Viewing XML Attributes

You cannot view attributes with a data type of XML using the same method that you would use to view other data types. This section describes how you can display the complete XML message contained in the attribute.

Important: *If you are using a Model Specific database, then you must have the Oracle ODBC driver version 8.1.7.5.0 installed in order to view XML data.*

To view an XML attribute

1 From the tree view, right-click the business process instance containing the attribute you want to repair. When the popup menu appears, select **Properties**.

   The **Business Process Properties** dialog box displays.

2   On the **Business Process Attributes** tab, from the **Attribute Name** column, select an attribute with the value of **XML**.

3   Click **Event Repair and Authorization**.

The Event displays in an **Event Repair** text editor. See Figure 68.

Important: *If the **Event Repair and Authorization** button is not enabled, double-check that failure handling is set to active control. See **"Activity Control" on page 145**.*

Figure 68   Event Repair (message shown in Text Editor)
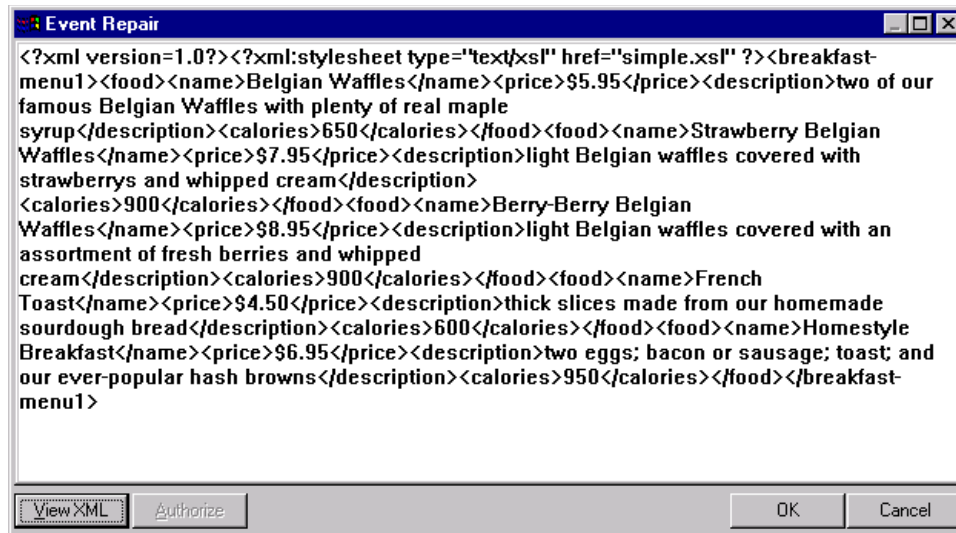
4   Click **OK** to close the dialog box.

9.3   The List Wizard

Once the business process has been instantiated, you can review the instances on the **List** pane. The **List** pane displays either business process or activity attributes, depending upon which item (business process version or activity) you have selected from the tree view.

Using the List Wizard you can define the format of the information shown in the **List** pane. You can use the List Wizard to filter and sort the instances. Filtering criteria can be built using the attributes associated with the business process version, or the selected activity. Only those items in the list that meet the criteria of the filter are displayed once the filter is implemented.

9.3.1.   Formatting the List pane

By default, the **List** pane lists all available instances, and displays columns for the five standard business process attributes: BPI Name, Start Date, End Date, State, and Duration.

Note: *You must be in Monitor mode and have Business Process Instances associated with the Business Process Version for the List Wizard to be available.*

To format the List pane

1 In Monitor mode, from the tree view, select a business process version for which you want to view and filter instance data.

2 From the Wizards menu, select the **List Wizard**.

3 The **Welcome to the e*Insight List Wizard** dialog appears. Click **Next** to continue.

4 On the next dialog, select **Create**, and then click **Next**.

The **Select Attributes** dialog box appears.

Figure 69   Select Attributes Dialog Box
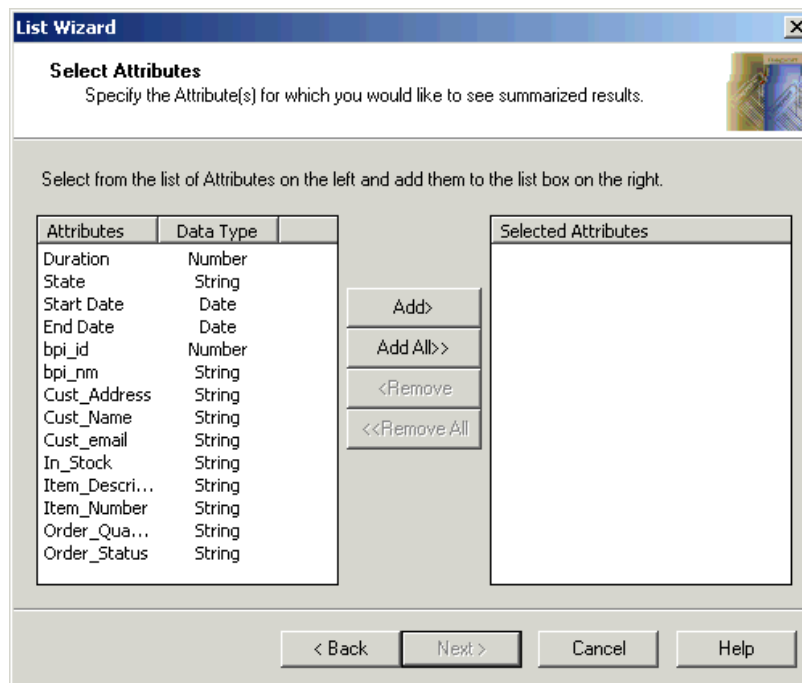
5 Move all the Attributes that you want to view to the **Selected Attributes** box. This defines the columns that appear in the **list pane**. The order that they appear in the list determines the order in which they appear in the **list pane**. You can change the order by dragging and dropping here, or by dragging and dropping column headings in the **list pane**. Click **Next** to continue.

Note: *Use the **Add All** button to move all attributes to the **Selected Attributes** box.*

Important: *If you are using a Sybase database, it is not possible to display more than 8 columns.*

The **Select Filters** dialog box appears. For more information on Filters see **"Setting Filters" on page 139**.

6 Select **Specify New**, and select Based on Dates, Based on Business Process State(s), or Based on Attribute(s).

If Based on Dates was selected, the **Select Filters using Dates** dialog box appears.

7   Enter the date criteria, and then click **OK**.

The **Select Filters using Business Process States** dialog box appears, if Based on Business Process State(s) was selected.

8   Select the states, and click **OK**.

The **Select Filters using Attributes** dialog box appears, if Based on Attribute(s) was selected.

9   Select the Attributes, and click **OK**.

The **Sort your Results** dialog box appears.

Figure 70   Sort Your Results Dialog Box
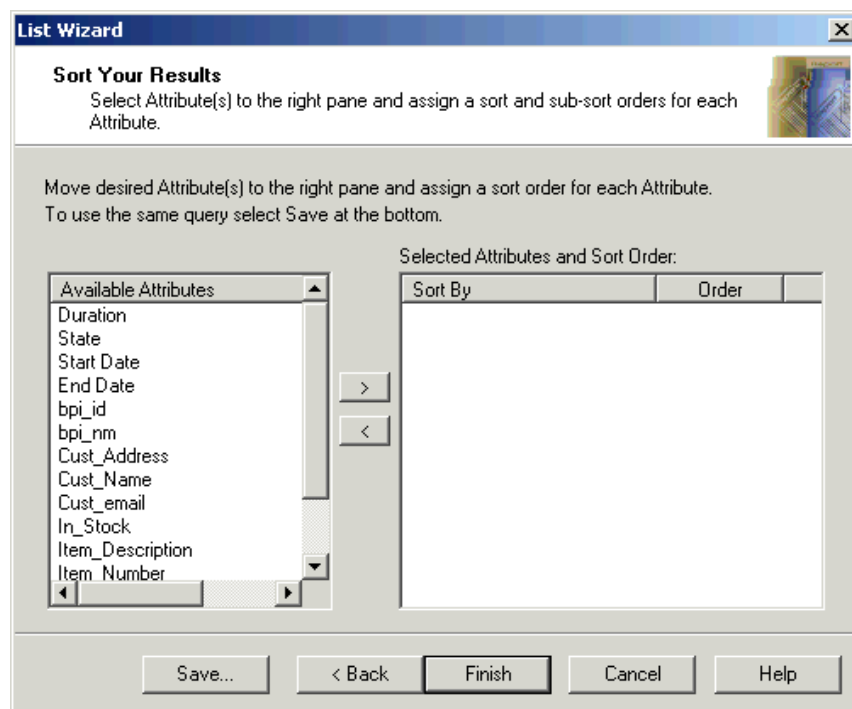
10   Move the Attributes that you want to sort by to the **Selected Attributes and Sort Order** box, either by dragging and dropping or using the **>** button. Click **Finish**.

Note: You cannot sort by string attributes that are longer than the maximum database size or XML attributes.

The instances in the **List** pane now appear in the format defined by the List Wizard.

9.3.2. Re-using a List Format

You can save a list format that you have created and re-use it later.

To save a list format

1 Create a new list format using the List Wizard.

2 From the **Sort Your Results** dialog box, click **Save**.

3 Type a name for the file. The file is automatically given an **.lrp** extension.

4 Click **OK**.

5 Click **Finish**.

To open a previously saved list format

1 Start the List Wizard.

2 Click **Open**. Type the name of the file, or browse for the file.

3 Use the **Preview** button to view the format options, if required.

4 Click **Finish**.

Generating Reports and Graphs

This section describes how to create reports and graphs based on your business process instance data. In addition to reviewing the instance information, you can also print and export your data.

10.1 Overview

This chapter includes information on the following items:

- Generating custom reports
- Using the Report Wizard
- Printing and exporting data
- Filtering and sorting data

10.2 Generating Custom Reports

Most of the e*Insight tables are accessible, if you need to create your own reports with a third-party reporting tool. The table information and descriptions are available in **Appendix B**.

10.3 The Report Wizard

The Report Wizard allows you to create reports and graphs based on Business Process Instances. The data can be presented using different styles. These include:

- Group
- Summary

10.3.1. Group Style

The group style allows you to group your report into categories. Consider an example where you want to display summary information for every customer. Grouping by customer allows you to summarize the information in this way. See Figure 71.

Figure 71 Grouping by Customer Name—Tabular Report

Cust_Name	Duration (AVG)	Duration (MAX)	Duration (MIN)	Order_Quantity (COUNT)
Alex Green	189	311	0	21
Andrea Brown	216	312	0	32
Bryce Ferney	214	313	0	59
David Humphr	177	303	101	6
James Anderso	250	311	100	4
Jim Griffin	207	311	102	6
Jo Smith	214	314	98	31
Rachel Swans	201	304	101	6
Robert Rowell	199	304	101	4
Samantha Sha	230	313	101	5

Further levels of grouping can be added. Figure 72 shows the report categorized first by customer, and then by item number.

Figure 72 Grouping by Customer Name and Item Number—Tabular Report

Cust_Name	Item_Number	Duration (AVG)	Duration (MAX)	Duration (MIN)	Order_Quantity (COUNT)
David Humphr	44444	155	303	101	5
James Anderso	44444	250	311	100	4
Jim Griffin	44444	207	311	102	6
Jo Smith	11111	106	115	98	2
Jo Smith	44444	221	314	102	29
Rachel Swans	44444	201	304	101	6
Robert Rowell	11111	104	104	104	1
Robert Rowell	44444	296	304	289	2
Robert Rowell	99999	101	101	101	1
Samantha Sha	11111	101	101	101	1
Samantha Sha	22222	303	303	303	1
Samantha Sha	44444	249	313	131	3

10.3.2. Summary Style

The Summary style allows you to generate a report detailing summary information for the instances that meet the defined criteria. See Figure 73 for an example.

Figure 73 Summary - Tabular Report

Duration (AVG)	Duration (MIN)	Duration (MAX)	Order_Quantity (COUNT)
210	0	314	174

See Figure 74 for an example of the chart created.

Figure 74   Summary—Chart
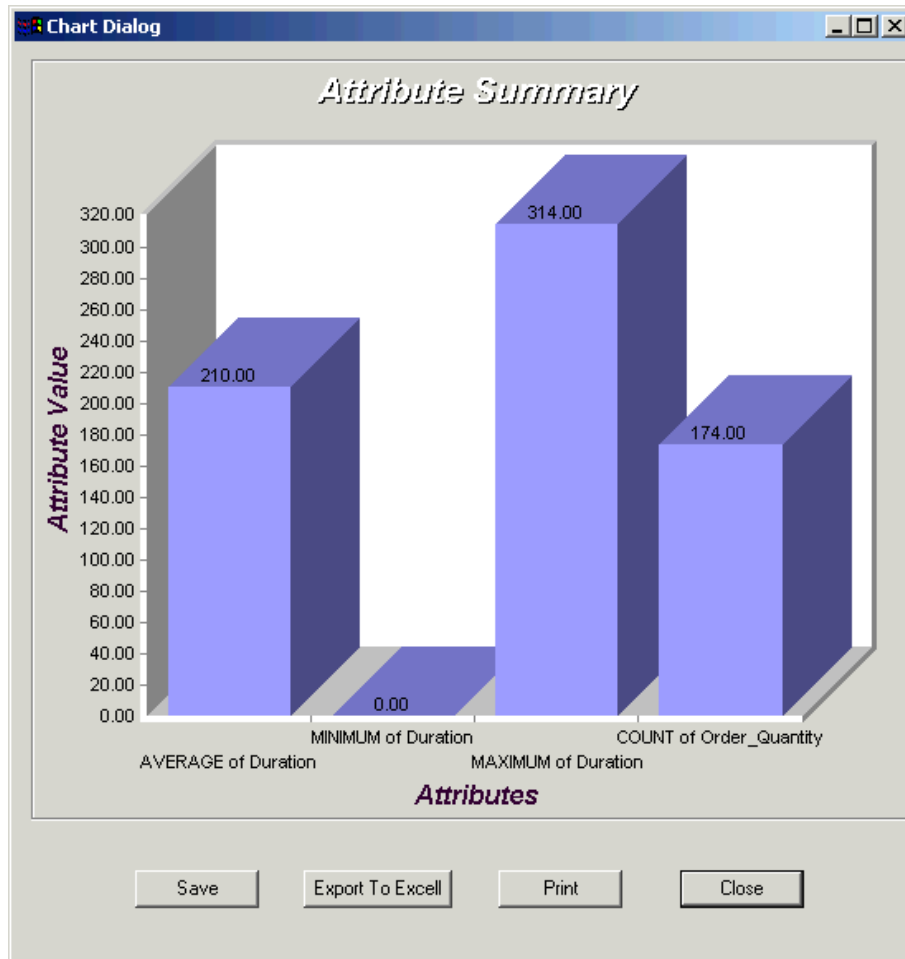
10.3.3. Creating a Group Report

1 In monitor mode, select the Business Process Version for which you want to generate a report.

2 From the **Wizards** menu, select **Report Wizard**.

The Welcome Screen displays.

Note: *If you do not want the see this dialog in future, select the **Do not show this welcome page again** check box.*

3 Click **Next** to continue.

The **Select Your Report Type** dialog box appears.

Figure 75   Select Your Report Type Dialog Box
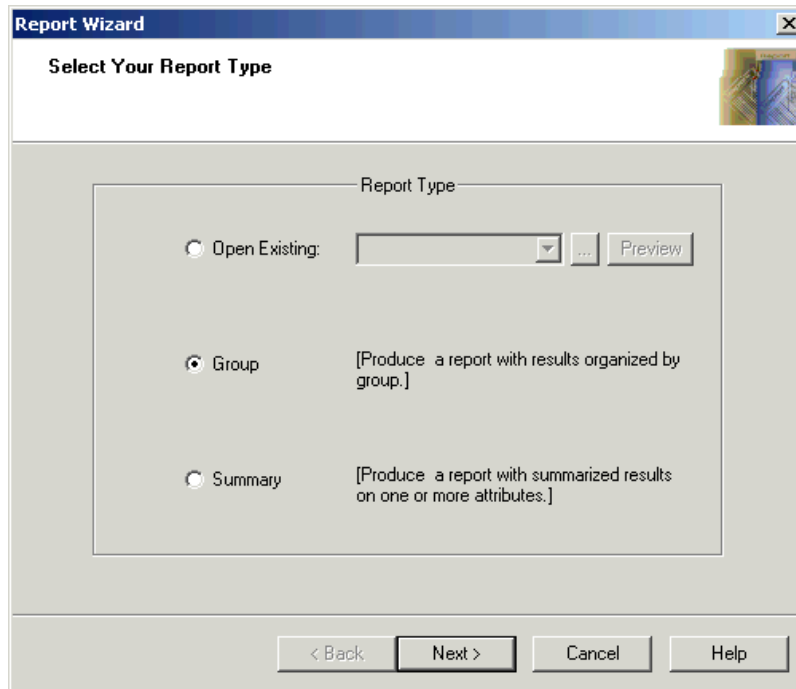
4   Select **Group** and click **Next**.

The **Select Attributes to Create Groupings** displays.

Figure 76   Select Attributes to Create Groupings Dialog Box
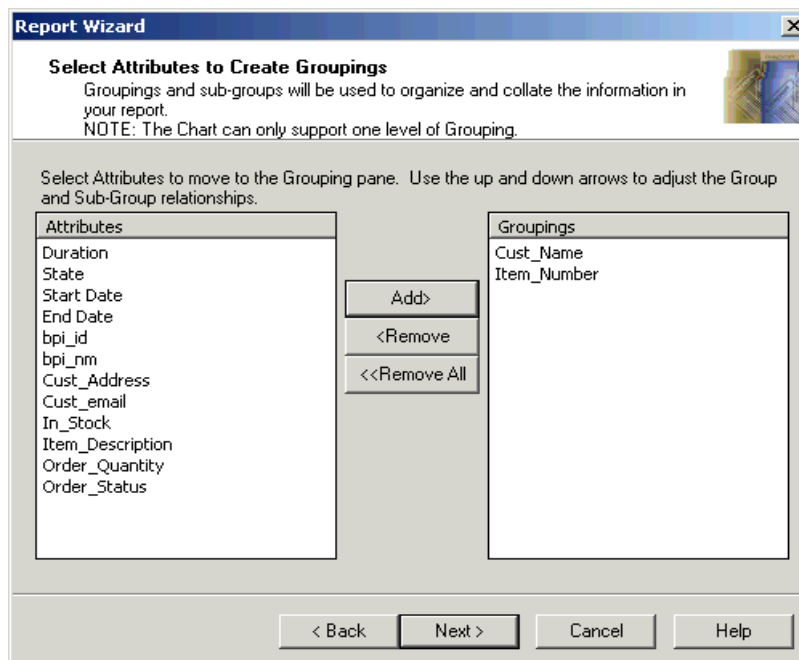
5   Move the required attributes to the Groupings box using the **Add>** button. Use the up and down arrows to adjust the Group and Sub-Group relationships.

Note: *You cannot group by string attributes that are longer than the maximum database*
size or XML attributes.

6 Click **Next** to Continue.

The **Select Functions to Apply to Attributes** dialog box appears.

Figure 77 Select Functions to Apply to Attributes Dialog Box
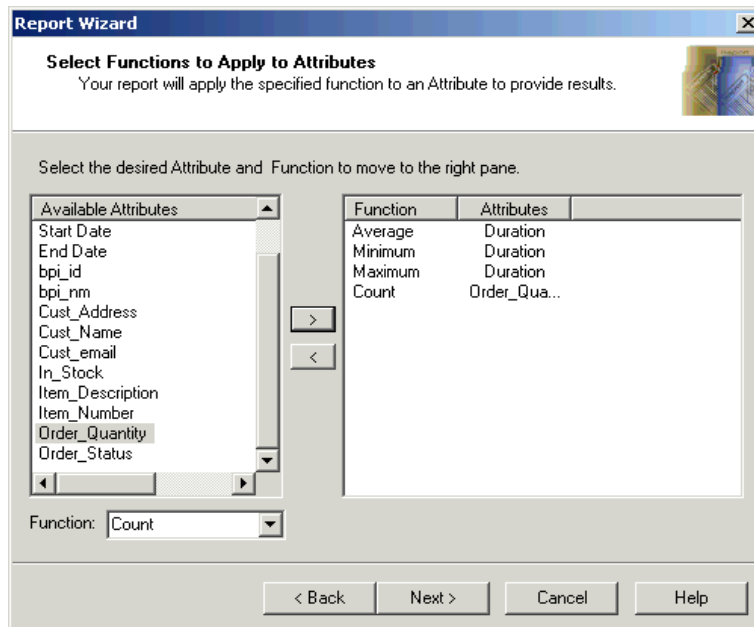
7 Select an Attribute, then select a function from the drop-down list. Use the **>** button,
or drag and drop, to add the Attribute to the right pane.

Note: *The functions available depend on the Attribute type. If the attribute is a string,*
then count is the only function available. If the Attribute type is a number, then
numerical functions are available.

8 Click **Next** when you have added all attributes.

The **Select Filters** dialog box appears. For more information on filters see **"Setting
Filters" on page 139**.

9 Select **None**, and then click **Next** to continue.

The **Sort Your Results** dialog box appears.

Figure 78   Sort Your Results Dialog Box
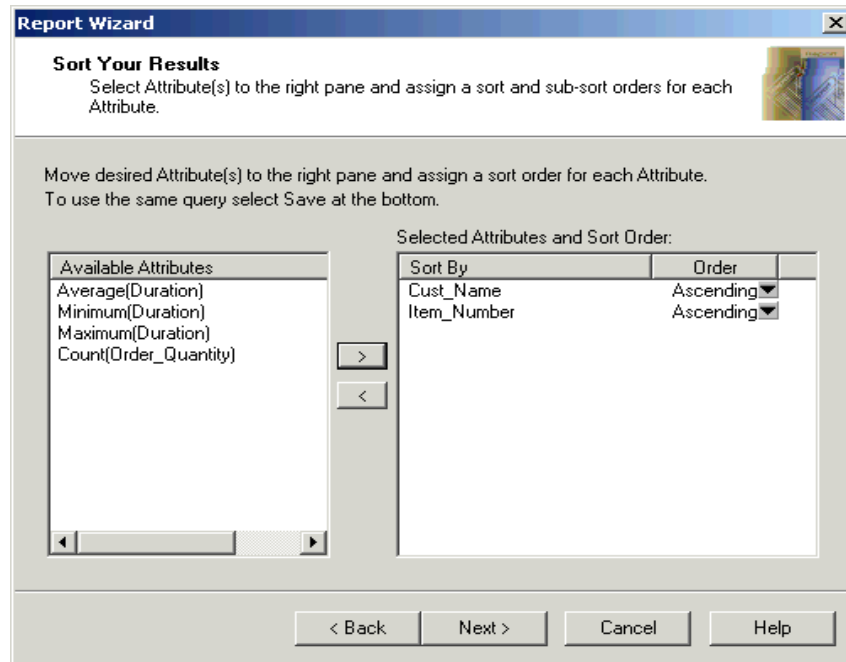
10   Select an Attribute by which to sort the results, and then click **Next**.

Note: *You cannot sort by string attributes that are longer than the maximum database size or XML attributes.*

The **Select Report Type** dialog box appears.

11   Select **Tabular Report** to view results in a tabular format, or **Chart** to view results in a graphical format

12   Click **Finish**.

10.3.4. Creating a Summary Report

1   In Monitor mode, select the Business Process Version for which you want to generate a report.

2   From the **Wizards** menu, select **Report Wizard**.

The Welcome Screen displays.

Note: *If you do not want the see this dialog in future, select the* **Do not show this welcome page again** *check box.*

3   Click **Next** to continue.

The **Select Your Report Type** dialog box appears.

Figure 79   Select Your Report Type Dialog Box
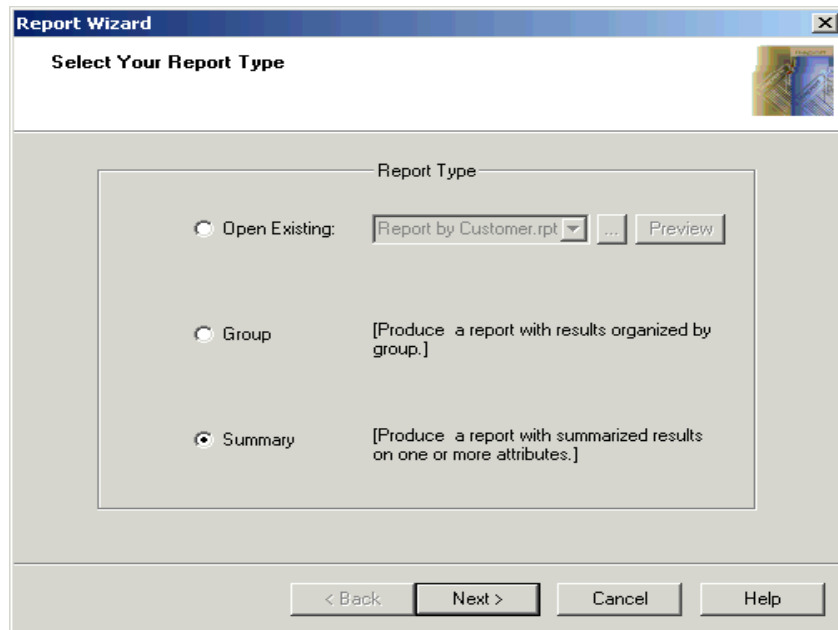
4   Select **Summary** and click **Next**.

The **Select Functions to Apply to Attributes** dialog box appears.

Figure 80   Select Functions to Apply to Attributes Dialog Box
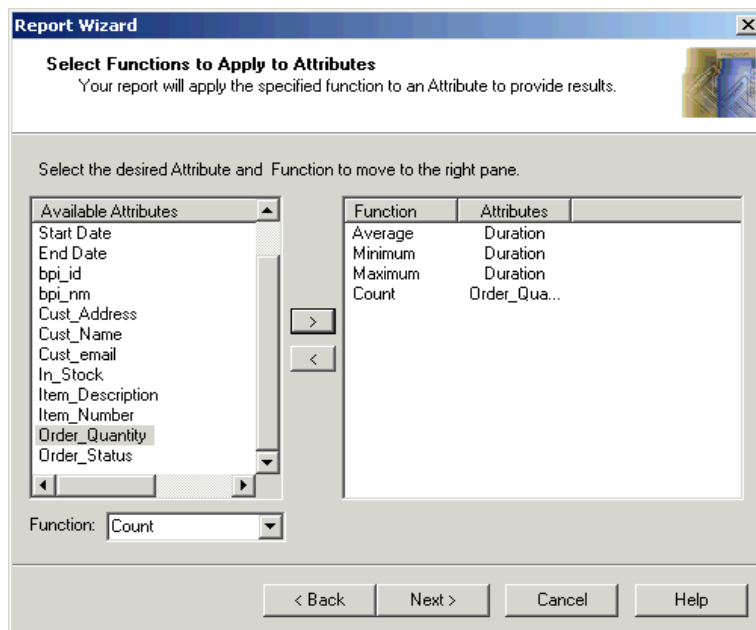
5   Select an Attribute, then select a function from the drop-down list. Use the **>** button to add the Attribute to the right pane.

> *Note:* *The functions available depend on the Attribute type. If the attribute is a string,*
> *then* ***count*** *is the only function available. If the Attribute type is a number, then*
> *numerical functions are available.*

6   Click **Next** when you have added all attributes.

The **Select Filters** dialog box appears. For more information on filters see **"Setting Filters" on page 139**.

7   Select **None**, and then click **Next** to continue.

The **Select Report Type** dialog box appears.

8   Select **Tabular Report** to view results in a tabular format, or **Chart** to view results in a graphical format.

10.3.5. Re-using Report Structures

You can save a report structure that you have created and re-use it later.

To save a report structure

1   Create a new report structure using the Report Wizard.

2   From the **Select your Report Type** dialog box, click **Finish** to display either the Chart or Table. Click **Save**.

3   Type a name for the file. The file is automatically given a **.rpt** extension.

4   Click **OK**.

5   Click **Finish**.

To open a previously saved report structure

1   Start the Report Wizard.

2   When the Welcome Screen appears, click **Next**.

The **Select Your Report Type** dialog box appears.

Figure 81   Select Your Report Type Dialog Box
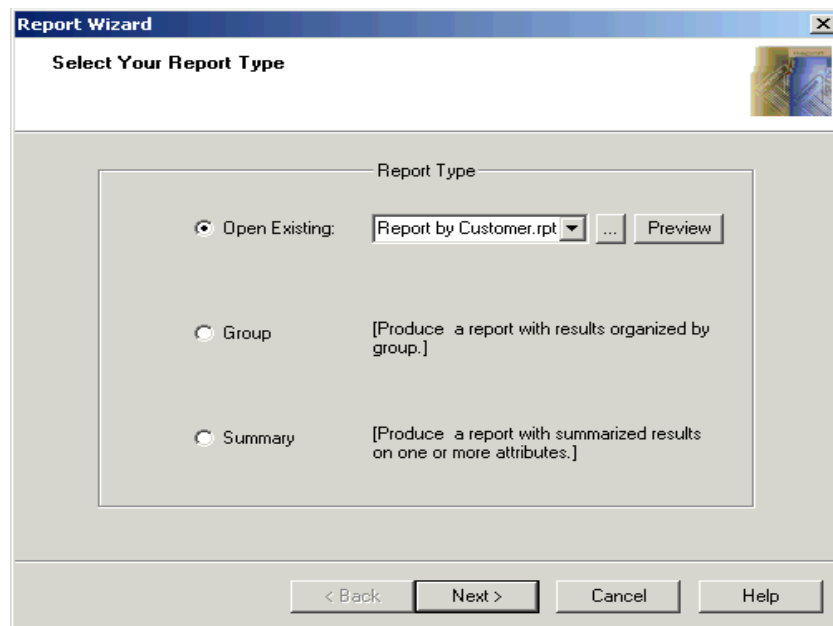
3 Select **Open**. Type the name of the file, or browse for the file.

4 Use the **Preview** button the view the format options, if required.

5 Click **Finish**.

10.3.6. Printing a Report

You can print your report as a graph or in a tabular format.

To print a report

1 Create a new report structure using the Report Wizard.

2 From the **Select your Report Type** dialog box, click **Finish** to display either the Chart or Table.

The graph or table displays.

3 Click **Print**.

10.3.7. Exporting to Excel

The **exporting to Excel** function allows you to select data from the **List** pane and display it in a Microsoft Excel spreadsheet. From the Microsoft Excel worksheet, you can use Excel's functionality.

To export to Excel

1 Create a new report structure using the Report Wizard.

2 From the **Select your Report Type** dialog box, click **Finish** to display the Chart or Table.

The graph or table displays.

3 Click **Export to Excel**.

   Excel opens, and the data is placed on a new worksheet.

4 Perform Excel functions as required.

5 Save the file, if necessary.

6 To return to e*Insight, close Microsoft Excel.

10.4 Setting Filters

Filters are used to define a subset of all the instances associated with the Business Process Version. Only those instances that meet the criteria of the filter will be included in the report. Filters can be:

- Based on Dates
- Based on Business Process States
- Based on Attributes

Filters can be used in all report styles. The filters also appear in the List Wizard.

10.4.1. Filtering Based on Dates

Filters are available when using all of the report styles.

Filter Date Options

There are a number of ways to determine valid dates for your report. These include:

Table 24 Date Filters

How to filter information	Description
Start Date to End Date (Range)	Specifies a range of dates to include in the report.
< Start Date	Specifies that all instances that have a start date before this date/time are included in the report.
<= Start Date	Specifies that all instances that have a start date on or before this date/time are included in the report.
= Start Date	Specifies that all instances that have a start date on this date/time are included in the report.
= End Date	Specifies that all instances that have a end date on this date/time are included in the report.
> Start Date	Specifies that all instances that have a start date after this date/time are included in the report.

The steps below show how to define a filter based on dates assuming that the initial configuration of the report is completed and the **Select Filters** dialog box displays.

To filter based on dates

1 Select the **Based on Dates** check box and then click **Next**.

The **Select Filters Using Dates** dialog box appears.

Figure 82 Select Filters Using Dates Dialog Box
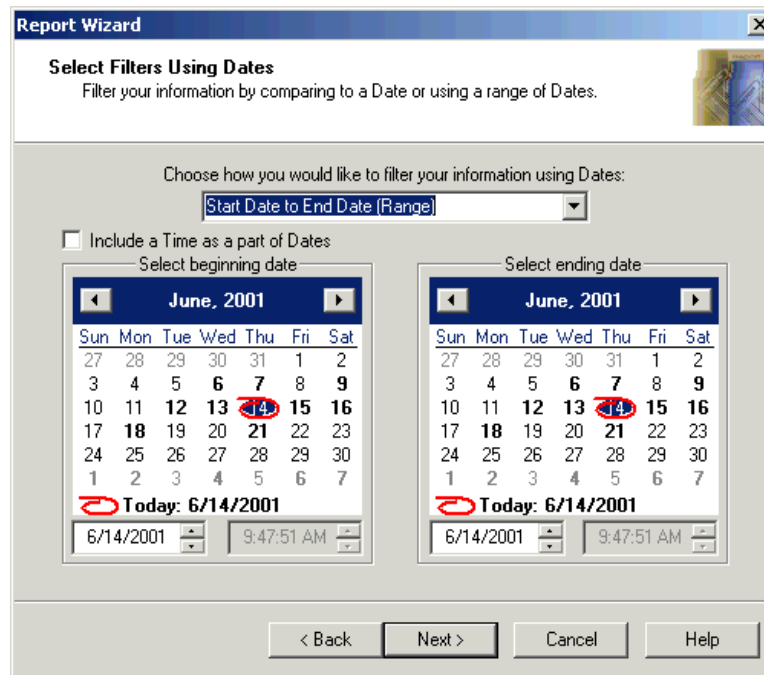
2 Select an item from the **Choose how you would like to filter your information using Dates:** drop-down list.

3 Select the **Include a Time as a part of Dates** check box, if you want to define the time as part of the date.

4 Select a Start date, End date, Start time, and End time as required.

10.4.2. Filtering Based on Business Process States

Filters are available when using all of the report styles. Filtering by Business Process States allows you to only show instances that are at a specific state. The states available include:

- Never Invoked
- Waiting
- Running
- Completed
- Failed

- Aborted
- UNDO Running
- UNDO Completed
- UNDO Failed
- Timed Out
- Rejected
- Pending

The steps below show how to define a filter based on dates assuming that the initial configuration of the report is completed.

To filter based on business process states

1 Select the **Based on Business Process States** check box and click **Next**.

The **Select Filters Using Business Process States** dialog box appears.

Figure 83 Select Filters Using Business Process States Dialog Box
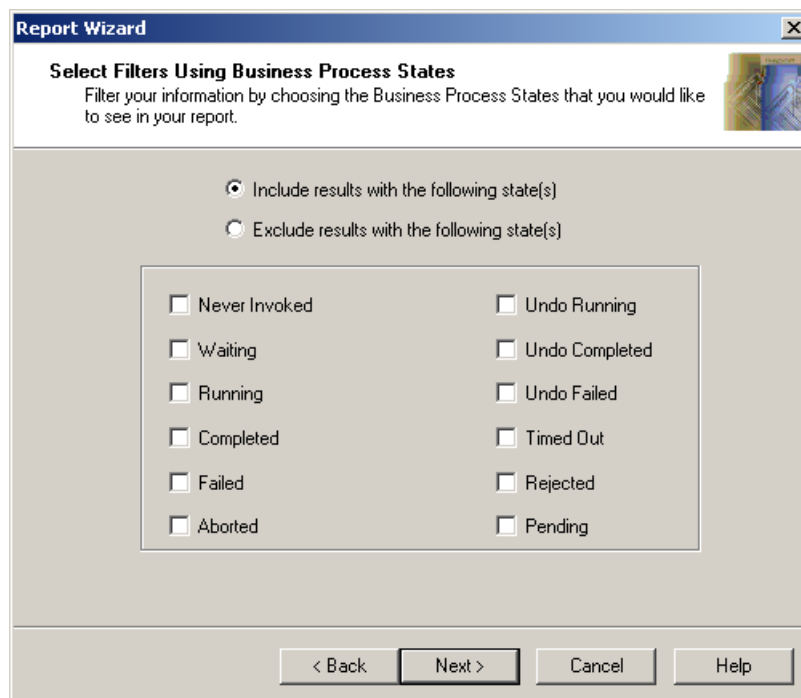
2 Select **Include results with the following state(s)** if you are selecting Business Process States that you want included in the report. If you would like to exclude certain Business Process states, choose **Exclude results with the following state(s)**.

3 Select the Business States as required.

10.4.3. Filtering Based on Attributes

Filters are available when using all of the report styles. e*Insight provides five standard attributes: BPI Name, Start Date, End Date, State, and Duration. The table Table 25 shows the attribute name, its type and description.

Table 25   Standard Filter Attributes

Attribute Name	Type	Description
BPI Name	String	The BPI Name is a combination of the user-defined business process name and a generated number.
Start Date	Date/Time	Start Date is broken up into date and time. You can use either date, time or both data and time to search on. If you search on date only, it returns all items on the specified date regardless of time. If you search on time only, it returns all items from the specific time, regardless of date. The Recommended Date format is MM/DD/YYYY, and the Time format is HH/MM/SS.
End Date	Date/Time	End date is broken up into date and time. You can use either date, time or both data and time to search on. If you search on date only, it returns all items on the specified date regardless of time. If you search only on time, it returns all items from the specific time, regardless of date. The recommended date format is MM/DD/YYYY, and the time format is HH/MM/SS.
State	String	State is generated by the back end.
Duration	Number	Duration is generated by the back end. This is the time (in seconds) it took for the activity or business process to be processed. Any duration less than one second is listed as 0.

When creating filters, you can use these attributes, as well as any you have defined at the business process level.

10.4.4. Filter Examples

When creating criteria and using comparisons in the filtering criteria, the types of the attributes must match and be valid. These are examples of invalid criteria or comparisons based on invalid matching:

End Date == True

Duration >= Started

(Start Date >= 2/22/2000 14:30:01) && (End Date <= False)

(State == Failed) && (State == 7)

Each type will be evaluated separately. For instance, a number will be evaluated against numeric criteria, a string against string criteria, and so on.

Table Table 26 illustrates some examples of correct filters and their outcome.

Table 26   Filter Examples

| Filter Example	Outcome
State == Completed	Returns all items with the state of Completed, regardless of date or time.
(Duration >= 1) && (Duration <= 10) && (End Date == 11/09/2000)	Returns all items with the duration between one and ten for November 9, 2000.
(End Date == 11/09/2000) && (Duration == 0)	Returns all items with the duration of zero for November 9, 2000.
(End Date > 11/09/2000 12:30:58)	Returns all items that ended after 12:30:58 on November 9, 2000.
(End Date >= 12:00:00) && (End Date <= 14:00:00)	Returns all items between 12:00pm and 2:00pm, regardless of the day.

The steps below show how to define a filter based on dates assuming that the initial configuration of the report is completed, and the **Select Filters** dialog box displays.

To filter based on attributes

1   Select the **Based on Attributes** check box. Click **Next**.

The **Select Filters Using One or More Attributes** dialog box appears.

Figure 84   Select Filters Using One or More Attributes Dialog Box
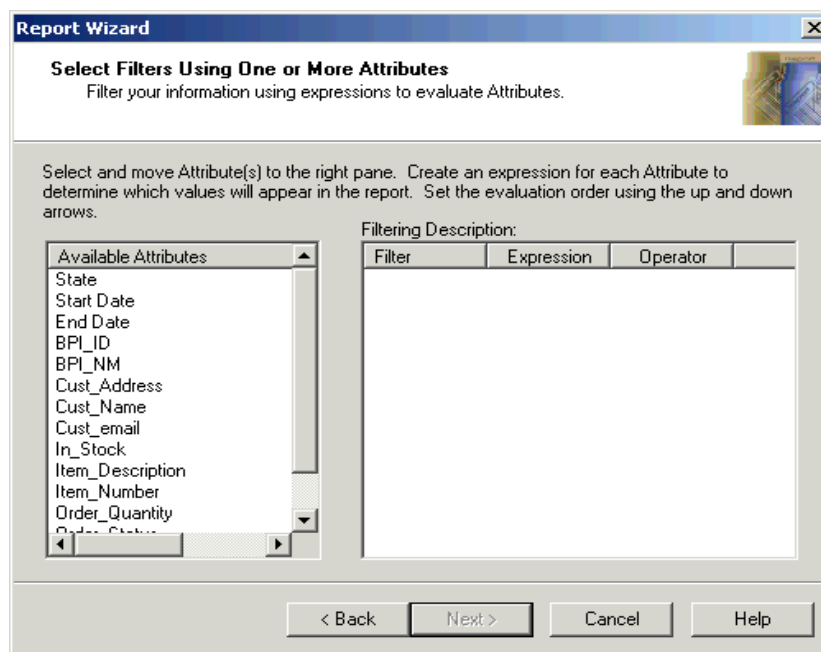
2 Drag and drop the attribute that you want to use as the filter to the right pane.

The **Expression** dialog box appears.

Figure 85 Expression Dialog Box
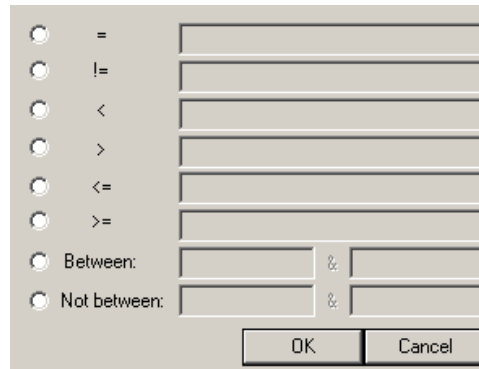
3 Enter the criteria as required, and then click **OK**.

The **Select Filters Using One or More Attributes** dialog box displays the attribute and expression.

Figure 86 Updated dialog showing attribute
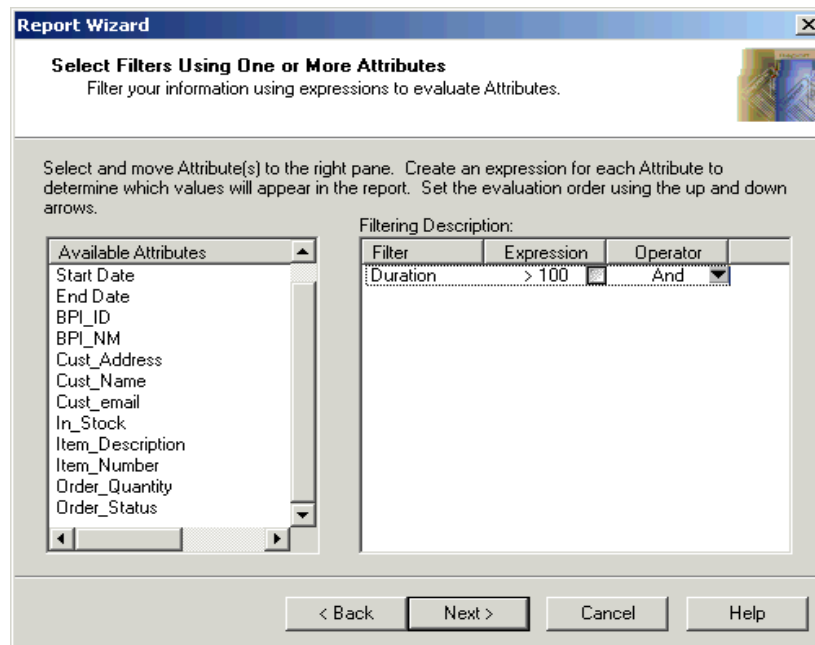
4 Add more attribute filters, as required.

5 Set the operator to define either an **or** relationship or an **and** relationship between the filters.

Activity Control

This chapter explains how to control activities in e*Insight. During a business process, an activity may fail. This chapter looks at the various ways of handling such a failure. This chapter also explains how to manually respond to an Authorization Activity.

11.1 Overview

This chapter includes information on the following items:

- Activity control
- Instances
- Authorization Activity

11.2 Activity Control

During the business process instance cycle, an activity may fail. When this happens, the attributes are committed to the database and the activity displays as "failed" in the Monitor mode of e*Insight. When the failure occurs, if you have selected to have e*Insight control the activity, you can manually repair any failed activities and restart the failed activity.

*Note: When the failure occurs, if you have selected to have e*Gate control the activity (passive mode), you do not have the option to manually repair any failed activities or restart the failed activity.*

When the activity is controlled by e*Insight, it allows you to review the business process after it receives a failed message, because the failed activities stay in that state until they are fixed. Once you have reviewed and possibly modified the failed activities, you can manually restart the business process instance if you have selected the manual restart option.

To set the activity to active control mode

1 From the modeling canvas, right-click the activity whose monitoring mode you want to change. When the popup menu appears, select **Properties**.

The **Activity Properties, General** tab displays. See Figure 87.

Figure 87 Activity Properties—General Tab

2   On the **General** tab, in the **Activity Performed by** section, select e*Gate.

3   In the **Activity Controlled by** section, select **e*Insight**.

4   Click **OK**.

To set the activity to manual restart

1   From the modeling canvas, right-click the activity whose control option you want to to change. When the popup menu appears, select **Properties**.

   The **Activity Properties** dialog box displays.

2   On the **General** tab, in the **Activity Performed by** section, select e*Gate.

   3 In the **Activity Controlled by** section, select **e*Insight**.

   4 Select the **Manual Restart** check box.

   5 Click **OK** to close the **Activity Properties** dialog box.

11.2.1. Manual Activity Options

If an activity that has been set to manual restart fails, you have the ability to restart the activity, skip the activity, or undo the business process. See **"To set the activity to manual restart" on page 146**.

To manually restart the activity

When you select the restart activity option, the specified activity will be restarted, and if that activity is completed successfully, the process will continue to the next downstream activity.

An important feature of e*Insight is the ability to edit both global and Local Attributes and restart the business process instance. If the data in one of the business process attributes used by an activity causes the business process to fail, the value can be corrected and the business process instance restarted from the point of failure. To achieve this, the attribute value must be changed before restarting the activity. See **"Editing Attribute Values" on page 149** for more information.

   1 Select Monitor mode.

   2 Select the Business Process Instance from the **List** pane.

   3 From the tree view, right-click the activity that you want to restart. When the popup menu appears, select **Properties**.

   The **Activity Properties** dialog box displays.

   4 Select the **Business Process Attributes** tab. See Figure 88.

Figure 88 Activity Properties—Business Process Attributes Tab
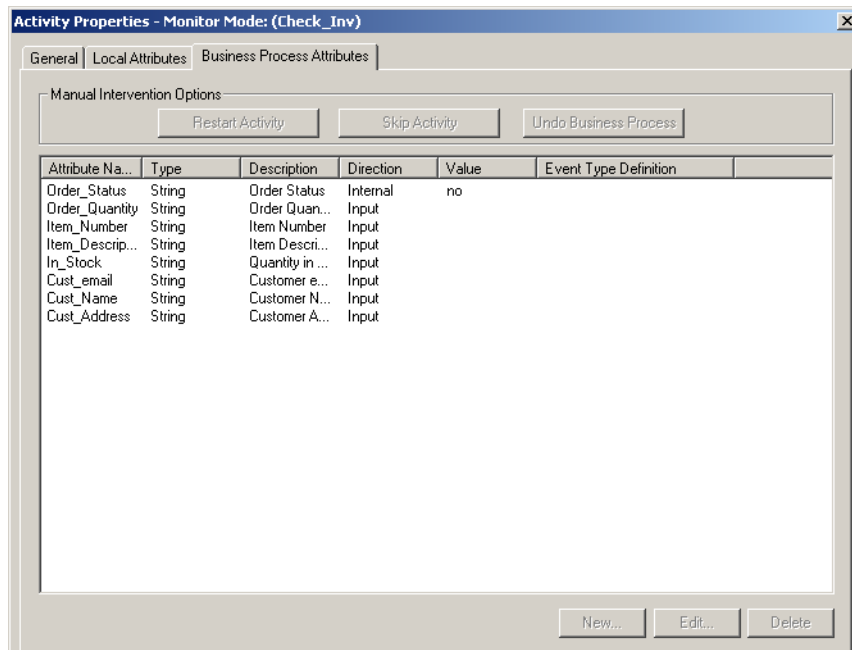
5 Click **Restart Activity**.

6 Once you have finished restarting the activity, click **OK** to close the **Activity Properties** dialog box.

To skip the activity

When you select the skip activity option, the specified activity is skipped, and then the process continues to the next downstream activity.

1 Select Monitor mode.

2 Select the Business Process instance from the **List** pane.

3 From the tree view, right-click the activity that you want to restart. When the popup menu appears, select **Properties**.

The **Activity Properties** dialog box displays.

4 Select the **Business Process Attributes** tab.

5 Click **Skip Activity**.

6 Once you have skipped the activity, click **OK** to close the **Activity Properties** dialog box.

To UNDO the business process

When you select the undo business process option, the specified activity, and all upstream activities are undone. The activity below the specified activity is aborted, and all other downstream activities display as Aborted.

1 Select Monitor mode.

2 Select the Business Process instance from the **List** pane.

3 From the tree view, right-click the activity that you want to undo. When the popup menu appears, select **Properties**.

The **Activity Properties** dialog box displays.

4 Select the **Business Process Attributes** tab.

5 Click **UNDO Business Process**.

6 Once you have undone the business process, click **OK** to close the **Activity Properties** dialog box.

11.2.2. Editing Attribute Values

An important feature of e*Insight is the ability to edit both global and Local Attributes and restart the business process instance. If the data in one of the business process attributes causes the business process to fail, the value can be corrected and the business process instance restarted from the point of failure. To achieve this, the attribute value must be changed before restarting the activity. See **"To manually restart the activity" on page 147** for information on restarting the activity. This section describes how to edit all attribute data types except XML. For information on editing XML attributes, see **"Editing XML Attribute Values" on page 151**.

*Note: You must configure the activity for manual restart (set in the Activity properties, **General** tab), and set the direction of the business process attribute to Output or Input/Output at the activity level (set in the Activity properties, **Business Process Attribute** tab) in order to update a business process attribute.*

To edit a Global Business Process attribute

1 Select Monitor mode.

2 Select the Business Process Instance from the **List** pane.

3 From the tree view, right-click the business process version containing the attribute you want to update. When the popup menu appears, select **Properties**.

The **Business Process Properties** dialog box displays.

4 From the **Business Process Attributes** tab, select the name of the attribute you want to update.

5 Click **Edit**.

The **Edit Business Process Attribute** dialog box displays. See Figure 89.

Figure 89 Edit Business Process Attribute
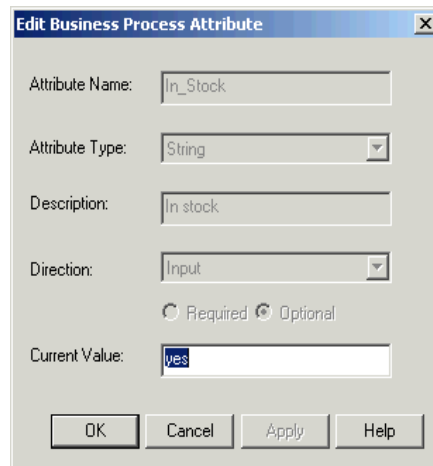
6 Make the necessary updates to the current value, and click **OK** to return to the **Business Process Properties** dialog box.

The change is reflected in the attribute list.

7 Click **OK** to close the **Business Process Properties** dialog box.

8 Restart the activity. See **"To manually restart the activity" on page 147**.

Editing a Local Attribute

To edit an activity attribute

1 Select Monitor mode.

2 Select the Business Process Instance from the **List** pane.

3 From the tree view, right-click the activity you want to update. When the popup menu appears, select **Properties**.

The **Activity Properties** dialog box displays.

4 Select the **Local Attributes** tab.

5 From the **Specify Local Activity Attributes** section, select the name of the attribute you want to edit.

6 Click **Edit**.

The **Edit Activity Attribute** dialog box displays. See Figure 90.

Figure 90 Edit Activity Attribute
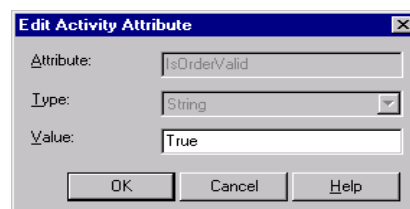
7 In the **Value** box, make changes as necessary, and then click **OK**.

8 Click **OK** to close the **Activity Properties** dialog box.

11.2.3. Editing XML Attribute Values

When you create a business process with the type of XML, you can use an editor to repair it if necessary. This XML structure can be known as an Event or message, and is passed into the attribute from an external source. You can fix the form of the message as well as the actual content of the message.

To edit the values of other types of business process attributes (String, Boolean, or Number) see **"Editing Attribute Values" on page 149**.

Important: *If you are using a Model Specific database, then you must have the Oracle ODBC driver version 8.1.7.5.0 installed in order to view XML data.*

11.2.4. Repairing Attributes with the Type of XML

When you are repairing XML messages you can fix both semantic and syntactic errors. If the message contains both syntactic and semantic errors, first fix syntactic errors within a text editor, and then fix semantic errors within a tree view.

Important: *You must be in Monitor mode and have selected a business process instance before you can access the XML message repair features.*

To repair the syntactic errors of an XML message

1 From the tree view, right-click the business process instance containing the attribute you want to repair. When the popup menu appears, select **Properties**.

The **Business Process Properties** dialog box displays.

2 On the **Business Process Attributes** tab, from the **Attribute Name** column, select an attribute with the value of **XML**.

3 Click **Event Repair and Authorization**.

The Event displays in an **Event Repair** text editor. See Figure 91.

Important: *If the **Event Repair and Authorization** button is not enabled, double-check that failure handling is set to active control. See **"Activity Control" on page 145**.*

Figure 91 Event Repair (message shown in Text Editor)
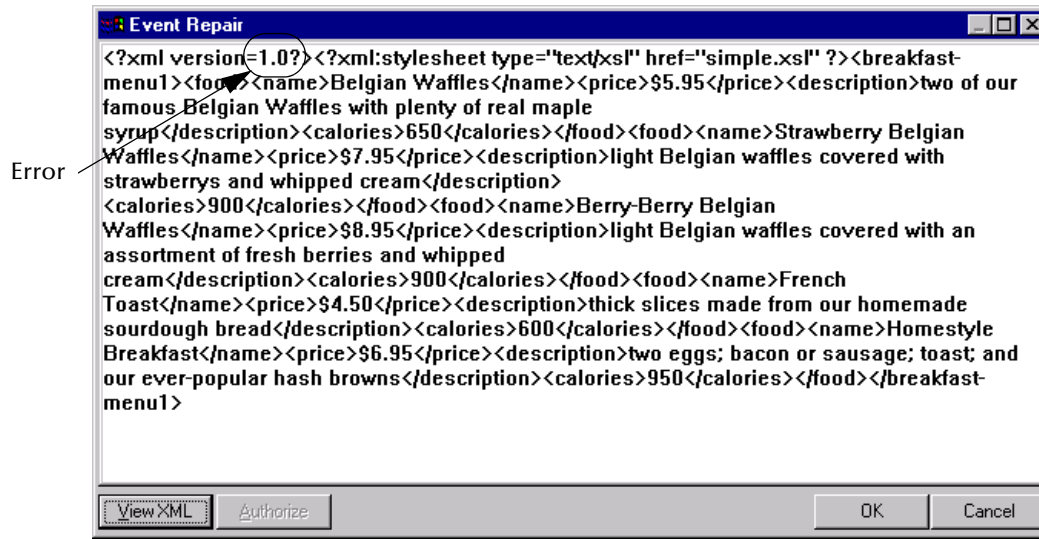
4 Click **View XML**.

An error message displays, pointing you to the section of the XML message containing the error. Figure 92 shows a typical error message.

Note: *For example, the error message in Figure 92 is describing the section circled in Figure 91. The 1.0 in the first line should read "1.0".*

Figure 92 Error Message Dialog Box
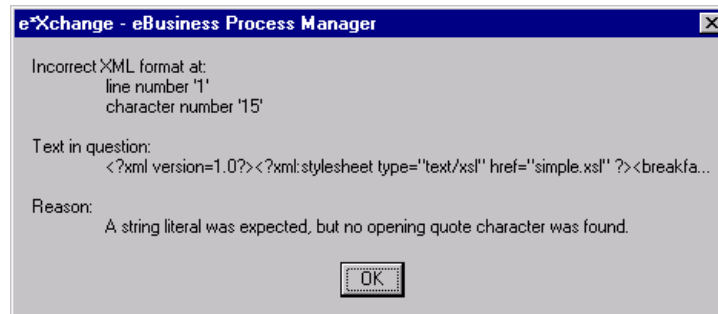
5 Click **OK** to close the dialog box.

6 Make the necessary repairs to the XML message, according to the error message, directly in the **Event Repair** dialog box.

7 Repeat steps 4–6 as necessary until the errors are all repaired.

8 Continue to the next section entitled **"To repair the semantic errors of an XML message" on page 153**.

Note: *To determine whether all of the errors are repaired, click **View XML**. If the Event Repair tree view dialog box displays, all of the syntactic errors have been repaired. If*

an error message displays, return to **"To repair the syntactic errors of an XML message" on page 151**.

To repair the semantic errors of an XML message

1 Follow the steps outlined in **"To repair the syntactic errors of an XML message" on page 151**.

If the **Event Repair** tree view displays, all of the syntactic errors have been repaired. See Figure 93.

Figure 93 Event Repair—Tree View
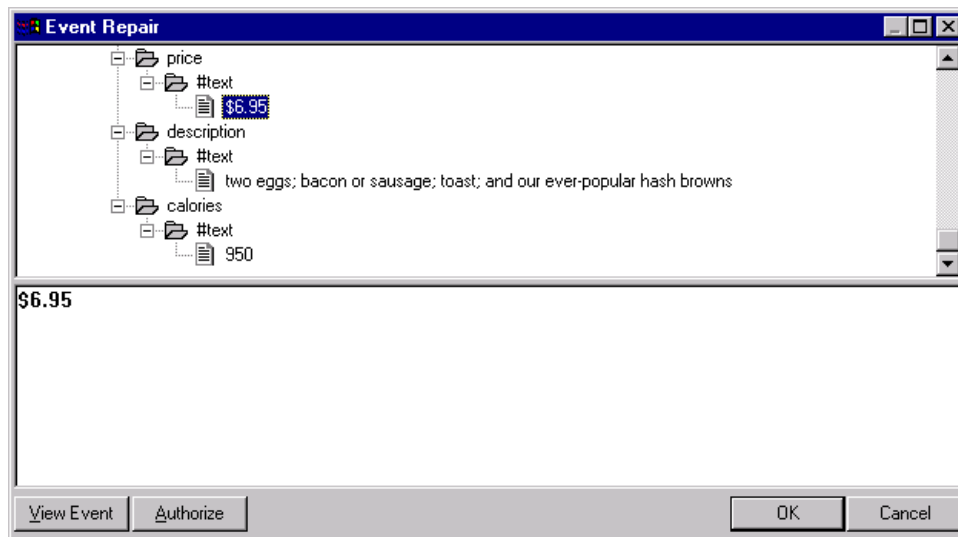
2 In the top section of the **Event Repair** tree view, highlight the node to repair.

3 In the bottom section of the **Event Repair** tree view, make necessary changes to the message.

4 Click **Authorize** to save the changes.

5 Click **OK** to return to the **Business Process Properties** dialog box.

11.3 Authorization Activity Control

The Authorization Activity allows you to intervene in the business process and authorize a business process instance. The decision to authorize or reject is entered via the e*Insight monitor GUI. This section describes how this is done.

To authorize the activity

When you select the authorize option, the business process will continue with the activity on the **Authorized** link.

1 Select Monitor mode.

2 Select the Business Process instance from the **List** pane.

3   From the tree view, right-click the Authorization activity. When the popup menu appears, select **Properties**.

The **Authorization Activity Properties** dialog box displays.

4   Select the **Business Process Attributes** tab. See Figure 94.

Figure 94   Authorization Activity Properties - Business Process Attributes Tab
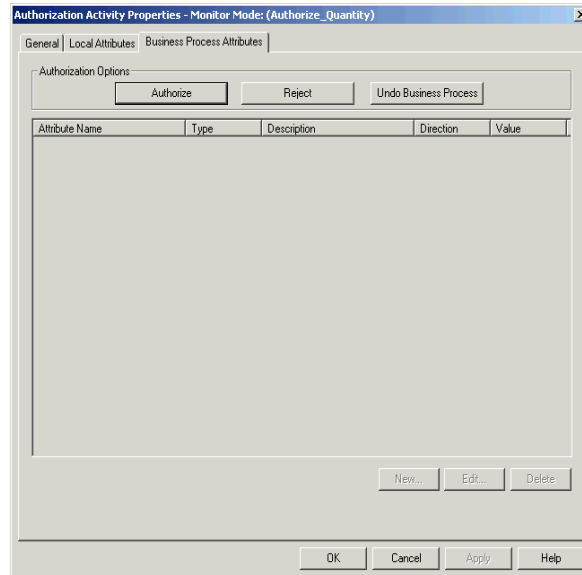
5   Click **Authorize**.

6   Once you have authorized the business process, click **OK** to close the **Authorization Activity Properties** dialog box.

To reject the business process instance

When you select the reject option, the business process will continue with the activity on the **Not Authorized** link.

1   Select Monitor mode.

2   Select the Business Process instance from the **List** pane.

3   From the tree view, right-click the Authorization activity. When the popup menu appears, select **Properties**.

The **Authorization Activity Properties** dialog box displays.

4   Select the **Business Process Attributes** tab.

5   Click **Reject**.

6   Once you have authorized the business process, click **OK** to close the **Authorization Activity Properties** dialog box.

The e*Insight Database

This chapter discusses the Generic and Model Specific database, providing information on the different structures and how the Model Specific database can improve performance. It also includes instructions on how to create a Model Specific database for e*Insight.

This chapter also describes methods of archiving and purging Business Processes and Business Process Instances directly from the database, as well as database resource planning.

12.1 Overview

This chapter includes information on the following items:

- Generic Database
- Model Specific Database
- Creating a Model Specific Database
- Updating a Model Specific Database
- Purge and Archive Business Processes and Instances
- Database Resource Planning

12.2 Overview of the e*Insight Database

The e*Insight database holds information about your e*Insight implementation, including configuration information and run-time messages. The Generic database model is automatically created when a business process is first created. It is the traditional e*Insight database structure for business process models, as used in earlier versions of e*Insight and can be used with no modifications.

A Model Specific database uses an optimized structure for its attributes, which can improve performance.

*Note: See **Appendix B** for a detailed description of the important database tables.*

12.3 Model Specific e*Insight Database

The Model Specific database uses a different structure than the generic database for storing the attribute values. If you are using the Model Specific database, you can modify the database to your specific data requirements by controlling the size allocated to each attribute value. You need to create the necessary database tables before running your e*Insight Schema. Every business process version uses its own set of tables for attributes.

You can create the tables from the menu options (see **"Creating a Model Specific Database" on page 156**), or from the dialog box that appears if you try to use an invalid database structure (see **"Enabling Business Process Versions" on page 94**).

12.3.1. Creating a Model Specific Database

Using a Model Specific database requires some configuration from the e*Insight GUI.

To create a Model Specific database

1 Create a new business process version.

2 From the **Processes** menu, select **Use Model Specific database**.

3 Set the size for every local and Global Attribute. Refer to the following sections:

  ⬩ **"To set the size for a Global Attribute" on page 156**

  ⬩ **"To set the size for a Local Attribute" on page 157**

4 From the **Processes** menu, select **Create Database**.

Note: *When creating Model Specific database tables, e*Insight does not set up table sizing parameters within the Create Table statement. The default setting for a Model Specific table is usually 1MB. See your database administrator to determine whether this is sufficient for your implementation.*

To set the size for a Global Attribute

1 Right-click on the Business Process version and select **Properties**.

2 Click **New** to create a new Business Process attribute (see **"Defining Global Attributes" on page 51**) or if the attribute already exists, click **Edit**.

  Either the **New Business Process Attribute** dialog or the **Edit Business Process Attribute** dialog appears. See Figure 95.

Figure 95 Edit Business Process Attribute Dialog

3 Edit the size as required. This sets the column size in the table. You can significantly increase performance by reducing the column size, so you should set this value to closely match the length of the attribute value at run-time, if known. However, you must ensure that the column size is adequate for the data, otherwise the attribute value is truncated. The available settings depend on the data type of the attribute. This can be set as follows:

   ◆ **Boolean**—Set to 1 and is not user configurable.

   ◆ **Number**—The first box represents the number of digits before the decimal point (scale), the second box represents the number of decimal places (precision).For example, setting 4 (scale) and 2 (precision) allows numbers from -9999.99 to 9999.99.

   ◆ **String**—The first box represents the length, the second box is unavailable.

   ◆ **XML**—Not user configurable.

4 Click **OK**.

To set the size for a Local Attribute

1 Right-click on the activity and select **Properties**.

2 Click **New** to create a new Local Attribute (see **"Specifying Local Attributes for an Automated Activity" on page 62**) or if the attribute already exists, click **Edit**.

   Either the **New Local Attribute** dialog or the **Edit Local Attribute** dialog appears. See Figure 95.

Figure 96 Edit Local Attribute Dialog

3 Edit the size as required. This sets the column size in the table. You can significantly increase performance by reducing the column size, so you should set this value to closely match the length of the attribute value at run-time, if known. However, you must ensure that the column size is adequate for the data, otherwise the attribute value is truncated. The available settings depend on the data type of the attribute. This can be set as follows:

   ◆ **Boolean**—Set to 1 and is not user configurable.

   ◆ **Number**—The first box represents the number of digits before the decimal point (scale), the second box represents the number of decimal places (precision). For example, setting 4 (scale) and 2 (precision) allows numbers from -9999.99 to 9999.99.

   ◆ **String**—The first box represents the length, the second box is unavailable.

   ◆ **XML**—Not user configurable.

4 Click **OK**.

12.4 Updating a Model Specific Database

You can update a Model Specific database after the tables have been created. The update procedure drops the relevant tables and recreates them. This is performed automatically when the database is created.

However, once the business process version has been enabled and has one or more instances, the table structure is locked for run-time and no additional updates to the database structure can take place.

To update a Model Specific database

1 Select the business process version.

2 Make the required changes.

3 From the **Processes** menu, select **Create Database**.

12.5 # Structure of the Model Specific database

The tables used for both the Generic and Model Specific database are the same, except for the tables where the attribute information is held. The Generic database uses nine tables for instance data, where each attribute has its own row. The Model Specific database uses the same tables for the business process instance and activity instance, but merges the six attribute tables. A mapping table is used to look up the table and column name for the global and Local Attributes.

The Model Specific database uses a different structure for storing the attribute values, increasing performance. Every business process version uses its own set of tables for attributes.

One or more table is created to hold Global Attribute values. A column is required for every Global Attribute that is defined in a business process version. The number of attribute columns that are added to a table depends on the size associated with each attribute. If it is not possible to fit all attribute columns into one table, then additional tables are created. The Local Attribute tables are structured in the same way.

12.5.1. ## Naming Conventions

This section describes how the names of the tables that hold the global and Local Attribute values are generated. It also describes how the attribute column names are defined.

Restricted Characters

The following characters are not allowed in table or column names so e*Insight automatically strips them from the name:

- Space
- Dash
- Underline
- Ampersand (&)
- Bracket (,{ , [,), },]
- Period (.)
- Apostrophe (`)
- Comma (,)
- @

For example, if a Business Process Version appears as **Version 1** in the e*Insight GUI, the corresponding name used in the database is **Version1**.

Global Attribute Table Name

<BPO_VERSION_NAME>_<BPO_ID>_GA_<TABLE_NUM>

where:

- <BPO_VERSION_NAME> is the Business Process Version name (for example, Version1)

- <BPO_ID> is the Business Process ID. For information on how to retrieve this value, see **"Determining the BPO_ID" on page 160**.

- GA stands for Global Attributes

- <TABLE_NUM> is the table number

Local Attribute Table Name

<BPO_VERSION_NAME>_<BPO_ID>_LA_<TABLE_NUM>

where:

- <BPO_VERSION_NAME> is the Business Process Version name (for example, Version 1)

- <BPO_ID> is the Business Process ID. For information on how to retrieve this value, see **"Determining the BPO_ID" on page 160**.

- LA stands for Local Attributes

- <TABLE_NUM> is the table number

Attribute Names

<ATTRIBUTE_NAME>_<ATTRIB_NUM>

where:

- <ATTRIBUTE_NAME> is the attribute name, as defined in the e*Insight GUI.

- <ATTRIB_NUM> is the index for duplicate attributes

Determining the BPO_ID

To determine the BPO_ID for an attribute, use the following:

```
select bpo_id from business_process_object where bpo_logical_nm =
'<BUSINESS_PROCESS_NAME>' and version_name = '<BPO_VERSION_NAME>'
```

where:

- <BPO_PROCESS_NAME> is the Business Process name

- <BPO_VERSION_NAME> is the Business Process Version name (for example, Version 1)

12.5.2. Running Reports Against Attributes

You can run third party reports against the e*Insight database.

Note: *You should give Local Attributes unique names in a business process so they are easier to identify.*

Although it is possible to create your own reports, you should take the following into consideration:

- Each model version has a different set of tables so reports are version specific.

- The database tables are likely to change between versions of e*Insight

12.6 Archive and Purge Business Processes and Instances

This section describes how to remove Business Processes and Business Process Instances from the e*Insight database by purging or archiving the data. Purge and archive scripts are used to delete or archive Business Process Instances. Both sets of scripts are installed with the same stored procedure.

The scripts run on Oracle, Microsoft SQL Server, and Sybase with both Generic and Model Specific databases. The scripts are located in the DBScripts directory of your e*Insight installation.

This section also describes how to manually delete all Business Processes or Business Process Instances from a Generic Oracle database.

Note: *You can delete a Business Process and a Business Process Version directly from the e*Insight GUI. For more information, see* **"Deleting a Business Process" on page 94** *and* **"Deleting a Business Process Version" on page 94***.*

Installing the Stored Procedures

You need to install the stored procedure before you can run it. If the stored procedure is already installed, see **"Running the stored procedure" on page 165** for instructions on how to run the stored procedures.

To install the stored procedures on Oracle

1 Verify that **sqlplus.exe** is in the current path.

2 From a command prompt, navigate to the location of the files:

```
<eInsight>\DBScripts\Oracle_Schema
```

where:

- <eInsight> is the e*Insight directory.

3 Enter the following command:

```
install_ora_purge_scripts <user_name> <password> <TNS>
```

where:

- <user_name> is the Schema owner

- <password> is the Schema owner password

- <TNS> is the TNS name for the e*Insight database

The stored procedures for purging and archiving are installed.

To install the stored procedures on SQL Server

1   Make sure **isql.exe** is in the current path.

2   Make sure the existing **ss_ex_defs.cmd** file has the correct configuration parameters.

3   From a command prompt, navigate to the location of the files:

    <eInsight>\DBScripts\sqlserver_schema

    where:

    - <eInsight> is the e*Insight directory.

4   Enter the following command:

    install_ss_purge_scripts

The stored procedures for purging and archiving are installed.

To install the stored procedures on Sybase

1   Make sure **isql.exe** is in the current path.

2   Make sure the existing **syb_ex_defs.cmd** file has the correct configuration parameters.

3   From a command prompt, navigate to the location of the files:

    <eInsight>\DBScripts\sybase_schema

    where:

    - <eInsight> is the e*Insight directory.

4   Enter the following command:

    install_syb_purge_scripts

The stored procedures for purging and archiving are installed.

12.6.1. Archive Scripts

The archive scripts allow you to store instances from the e*Insight database based on a number of days and instance status. You also need to specify if you wish to archive only, or archive and purge the data. The data is archived to e*Insight history tables.

When running the stored procedure you can specify a number of days to retain instances. For example, you can use the stored procedure to keep instances that completed during the last two days, and archive any instances completed previously.

Note: *You may see errors when archiving data with Model Specific databases because Model Specific databases do not accept duplicates.*

Running the stored procedure

Once the stored procedure is installed, you can run it as required. The scripts archive instances based on a number of days, state of the task and whether to purge the data from the current tables. The number of days to archive is counted from the end date.

Table 27 on page 165 lists the states as they appear in the e*Insight GUI, and the value that should be entered in the archive script.

Note: *A sub-process will not archive with the parent process if it is in a different state than your archive parameters specify.*

To run the stored procedure on Oracle

1 (Optional) Stop the e*Insight engine.

Note: *You can run the archive script without stopping the engine, but you may notice reduced performance while the archive script is running.*

2 Make sure **sqlplus.exe** is in the current path.

3 From a command prompt, navigate to the location of the files:

```
<eInsight>\DBScripts\Oracle_Schema
```

where:

- <eInsight> is the e*Insight directory.

4 Enter the following command:

```
arch_ora_bpi_days <user_name> <password> <TNS> <days> <state> <1
or 0>
```

where:

- ◆ <user_name> is the Schema owner
- ◆ <password> is the Schema owner password
- ◆ <TNS> is the TNS for the e*Insight database
- ◆ <days> is the number of days to retain
- ◆ <state> is the current state of the BPI, see (Table 27)
- ◆ <1 or 0> 1 is archive and purge data from the tables, 0 is archive only.

Check the log files for any errors.

To run the stored procedure on SQL Server

1 (Optional) Stop the e*Insight engine.

Note: *You can run the script without stopping the engine, but you may notice reduced performance while the script is running.*

2 Make sure **isql.exe** is in the current path.

3 From a command prompt, change directory to the location of the files:

```
<eInsight>\DBScripts\sqlserver_schema
```

where:

- <eInsight> is the e*Insight directory.

4   Make sure the existing **ss_ex_defs.cmd** file has the correct configuration parameters.

5   Enter the following command:

```
arch_ss_bpi_days <days> <state> <1 or 0>
```

where:

- ◆ <days> is the number of days to retain
- ◆ <state> is the current state of the BPI, see **Table 27 on page 165**
- ◆ <1 or 0> 1 is archive and purge data from the tables, 0 is archive only.

Check the log files for any errors.

To run the stored procedure on Sybase

1   (Optional) Stop the e*Insight engine.

Note: *You can run the script without stopping the engine, but you may notice reduced performance while the script is running.*

2   Make sure **isql.exe** is in the current path.

3   From a command prompt, change directory to the location of the files:

```
<eInsight>\DBScripts\sqlserver_schema
```

where:

- <eInsight> is the e*Insight directory.

4   Make sure the existing **syb_ex_defs.cmd** file has the correct configuration parameters.

5   Enter the following command:

```
arch_syb_bpi_days <days> <state>
```

where:

- ◆ <days> is the number of days to retain
- ◆ <state> is the current state of the BPI, see **Table 27 on page 165**
- ◆ <1 or 0> 1 is archive and purge data from the tables, 0 is archive only.

Check the log files for any errors.

Tables created by running purge or archive scripts

The following tables are created when you run the purge and archive scripts:

```
ACT_INST_ATTR_HIST;
ACT_INST_HIST;
AI_BOOLEAN_ATTR_HIST;
AI_NUMERIC_ATTR_HIST;
BP_BOOLEAN_ATTR_HIST;
BP_INST_ATTR_HIST;
BP_INST_HIST;
BP_NUMERIC_ATTR_HIST;
```

12.6.2. Purge Scripts

The purge scripts allow you to delete instances from the e*Insight database based on a date and the instance status. When running the stored procedure you can specify a number of days to retain instances. For example, you can use the stored procedure to keep instances that completed during the last two days, but delete any instances completed previously.

Running the stored procedure

Once the stored procedure has been installed, you can run it as required. The purge scripts delete instances based on a date and state. **Table 27 on page 165** lists the states as they appear in the e*Insight GUI, and the value that should be entered in the purge script.

Table 27   States used in Scripts

State shown in e*Insight GUI	State used in Scripts
Completed	done
Running	running
UNDO Running	rollingback
Failed	failed
Rollbackfailed	rollbackfailed
Time Out	expired

To run the stored procedure on Oracle

1 (Optional) Stop the e*Insight engine.

Note: You can run the purge script without stopping the engine, but you may notice reduced performance while the purge script is running.

2 Make sure **sqlplus.exe** is in the current path.

3 From a command prompt, change directory to the location of the files:

```
<eInsight>\DBScripts\Oracle_Schema
```

where:

- <eInsight> is the e*Insight directory.

4 Make sure the existing **ex_defs.sql** file has the correct configuration parameters.

5 Enter the following command:

```
purge_ora_bpi_days <user_name> <password> <TNS> <days> <state>
```

where:

- <user_name> is the Schema owner

- <password> is the Schema owner password

- <TNS> is the TNS for the e*Insight database

- <days> is the number of days to retain

- <state> is the current state of the BPI, see **Table 27 on page 165**

Check the log files for any errors.

To run the stored procedure on SQL Server

1 (Optional) Stop the e*Insight engine.

Note: *You can run the purge script without stopping the engine, but you may notice reduced performance while the purge script is running.*

2 Make sure **isql.exe** is in the current path.

3 From a command prompt, change directory to the location of the files:

```
<eInsight>\DBScripts\sqlserver_schema
```

where:

- <eInsight> is the e*Insight directory.

4 Make sure the existing **ss_ex_defs.cmd** file has the correct configuration parameters.

5 Enter the following command:

```
purge_ss_bpi_days <days> <state>
```

where:

- <days> is the number of days to retain

- <state> is the current state of the BPI, see **Table 27 on page 165**.

Check the log files for any errors.

To run the stored procedure on Sybase

1 (Optional) Stop the e*Insight engine.

Note: *You can run the script without stopping the engine, but you may notice reduced performance while the script is running.*

2 Make sure **isql.exe** is in the current path.

3 From a command prompt, change directory to the location of the files:

```
<eInsight>\DBScripts\sqlserver_schema
```

where:

- <eInsight> is the e*Insight directory.

4 Make sure the existing **syb_ex_defs.cmd** file has the correct configuration parameters.

5 Enter the following command:

```
purge_syb_bpi_days <days> <state>
```

where:

- <days> is the number of days to retain

- <state> is the current state of the BPI, see **Table 27 on page 165**.

Check the log files for any errors.

12.6.3. Manually Deleting Business Processes and Instances

The following instructions allow you to delete business processes and business process instances from a Generic database.

Important: *These procedures should only be used during development. Depending on the script you run, either all business processes or all business process instances are deleted.*

Deleting BPIs from a Business Process

To delete **all** business process instances from **all** of the business processes stored in the e*Insight database, use the following procedure for an Oracle database.

1 Stop the e*Insight engine.

Note: *You can run the script without stopping the engine, but you may experience problems if an instance arrives while the tables are being truncated.*

2 Log in to SQL*Plus with administrator privileges for the e*Insight database Schema (that is, the owner of the e*Insight tables). The default account is ei_admin/ ei_admin.

Execute the following commands:

```
truncate table ACTIVITY_INSTANCE;
truncate table ACTIVITY_INSTANCE_ATTR;
truncate table BUSINESS_PROCESS_INSTANCE;
truncate table BUSINESS_PROCESS_INSTANCE_ATTR;
truncate table ebpm_ctrl;
truncate table long_data;
truncate table bp_numeric_attr;
truncate table bp_boolean_attr;
truncate table ai_numeric_attr;
truncate table ai_boolean_attr;
commit;
```

3 Exit SQL*Plus

Deleting Business Processes from the e*Insight Database

To delete all the business processes and their associated BPIs from the e*Insight database use the following procedure for an Oracle database.

1 Stop the e*Insight engine.

Note: *You can run the script without stopping the engine, but you may experience problems if an instance arrives while the tables are being truncated.*

2 Log in to SQL*Plus with administrator privileges for the e*Insight database Schema (that is, the owner of the e*Insight tables). The default account is ei_admin/ ei_admin.

3 Execute the following commands.

```
truncate table activity_object_attr;
truncate table activity_object;
truncate table activity_instance;
truncate table activity_instance_attr;
truncate table business_process_object;
truncate table business_process_object_attr;
truncate table business_process_instance;
truncate table business_process_instance_attr;
truncate table routing_expression;
truncate table routing_object;
truncate table ebpm_ctrl;
truncate table bp_numeric_attr;
truncate table bp_boolean_attr;
truncate table ai_numeric_attr;
truncate table ai_boolean_attr;
delete long_data;
commit;
```

4 Exit SQL*Plus.

12.6.4. Database Resource Planning

Table Space Descriptions

Use the following information to plan for future growth of your e*Insight database. The information is valid for all Generic database types and all model specific databases.

- EI_EBPM_DYN_DATA (high transactional tablespace)

  The **dynamic_data** tablespace holds run-time information about the Schema that is currently active on the e*Insight GUI. Tables on the **dynamic_data** tablespace can grow to as large as 75 million rows.

- EI_EBPM_STAT_DATA: holds metadata about a model and system related e*Insight information. The **stat_data** tablespace also holds the metadata about the current model(s) on the e*Insight Schema plus the e*Insight system information.

- EI_EBPM_INDX: index tablespace.

- EI_TEMP_DATA: temporary table allocation.

The e*Insight database at install time consist of four basic tablespaces/filegroups:

- EI_EBPM_STAT_DATA

- EI_EBPM_DYN_DATA

- EI_INDX_DATA

- EI_TEMP_DATA

Note: *Previous versions were prefixed by EX_.*

Table 28   Tablenames with Tablespaces

ACTIVITY_INSTANCE	EI_EBPM_DYN_DATA
BP_BOOLEAN_ATTR	EI_EBPM_DYN_DATA
BP_NUMERIC_ATTR	EI_EBPM_DYN_DATA
BUSINESS_PROCESS_INSTANCE	EI_EBPM_DYN_DATA
BUSINESS_PROCESS_INSTANCE_ATTR	EI_EBPM_DYN_DATA
COMPLEX_TYPE	EI_EBPM_DYN_DATA
EBPM_CTRL	EI_EBPM_DYN_DATA
EBPM_SERVER	EI_EBPM_DYN_DATA
LONG_DATA	EI_EBPM_DYN_DATA
PARTNER_INFO	EI_EBPM_DYN_DATA
WF_INST_ATTR	EI_EBPM_DYN_DATA
WORKFLOW_INST_NM	EI_EBPM_DYN_DATA
AI_BOOLEAN_ATTR	EI_EBPM_DYN_DATA
AI_NUMERIC_ATTR	EI_EBPM_DYN_DATA
ACTIVITY_OBJECT	EI_EBPM_STAT_DATA
ACTIVITY_OBJECT_ATTR	EI_EBPM_STAT_DATA
ACTIVITY_INSTANCE_ATTR	EI_EBPM_STAT_DATA
BUSINESS_PROCESS_MAP	EI_EBPM_STAT_DATA
BUSINESS_PROCESS_OBJECT	EI_EBPM_STAT_DATA
BUSINESS_PROCESS_OBJECT_ATTR	EI_EBPM_STAT_DATA
SB_DEFAULTS	EI_EBPM_STAT_DATA
COMPLEX_TYPE_CODE	EI_EBPM_STAT_DATA
STATE_CODE	EI_EBPM_STAT_DATA
STC_SYS_OPT	EI_EBPM_STAT_DATA
BP_INSTANCES	EI_EBPM_STAT_DATA
ES_DB_ROLES	EI_EBPM_STAT_DATA
STC_USER	EI_EBPM_STAT_DATA
STC_USER_ACCESS	EI_EBPM_STAT_DATA
STC_USER_GROUP	EI_EBPM_STAT_DATA
ROUTING_EXPRESSION	EI_EBPM_STAT_DATA
ROUTING_OBJECT	EI_EBPM_STAT_DATA

Establishing User Security for e*Insight

13.1 Overview

e*Insight Administrator is a separate application that installs as a sub-component of e*Insight. When you install the e*Insight Administrator, make sure that e*Gate is installed on the same machine or make sure to alter your path to include: **eInsight/ Integrator** or the e*Insight Administrator will not work properly.

It is important to restrict access to sensitive information in your database to the appropriate users. You will probably want some users to have broader access, while others will have limited access—such as read-only—or no access at all to certain functions.

Users and user groups for e*Insight are set up via the e*Insight Administrator. This provides several key default user groups, and allows the administrator to define additional user groups as needed. Each user is defined in the e*Insight Administrator and assigned to the appropriate user groups.

Once the users and groups have been defined in the e*Insight Administrator, you can use the security features of e*Insight to tailor access of users and groups to individual components, as needed. This allows you to ensure the maximum security possible while ensuring that each user has access to the information he or she needs.

Before users can log in to e*Insight, you must use the e*Insight Administrator to:

- Create user groups
- Add users, assigning a role to each
- Assign user accounts to user groups

You can also delete user records that are no longer needed.

13.1.1. User Accounts

A *user account* is information about a particular user that you store in a database for security purposes. When adding a user to the system, you include the following:

- The user's first name and last name
- Login ID and password
- Effective date for the user's access rights
- Optional: expiration date for the user's access rights

- User groups to which the user is assigned (see **"User Groups"**)

- The user's role. At the highest level, the role defines the user's access rights. When adding a new e*Insight user, you must assign the role **einsight_user_role**.

The login ID and password allow the user to log in to e*Insight, providing the appropriate access rights have been granted.

13.1.2. User Groups

User groups allow you to grant access permissions to a set of users with similar processing needs without having to specify individual privileges for each user. For example, the administrator can set up a group for users who need full access to a specific trading partner profile, but who should not be able to view information about any other profile.

The administrator assigns each user that meets this criterion to a particular user group in e*Insight Administrator. Then, in e*Insight, the administrator (or another user who has been granted appropriate privileges) grants access privileges to this user group so that all members of the group can view and modify the desired information. This approach makes it possible to streamline access rights without having to specifically define all access rights for each user.

13.1.3. Predefined User Groups

When you install e*Insight, the e*Insight Administrator has three pre-existing user groups:

- **User Administrator Group**
  Assign users to this group if you want them to be able to add users, add groups, assign users to groups, and perform all other user security maintenance tasks. The pre-defined **ei_admin** account is automatically assigned to this group.

- **eI Administrator Group**
  Assign users to this group if you want them to be able to perform all administrative tasks, such as establishing defaults, message definitions, and initial data. The pre-defined ei_admin account is automatically assigned to this group.

- **eBPM Access Group**
  Assign any user who needs access to e*Insight to this group.

Note: *After you have assigned all applicable users to these default access groups, you can create new user groups as needed and assign the appropriate users to the groups.*

13.1.4. Keeping Access Rights Current

Over time, users come and go; new groups are needed, and others become redundant. A user might go away for a while, for example on vacation; or a user might leave permanently.

To cater to changing conditions and keep access security tight, there are two options for disabling the access rights of a user or a group:

- **Temporary**—to disable access rights temporarily, expire the user or group. Expiring renders a user or group inactive and denies access rights. The user or group is still displayed in the e*Insight Administrator window, but appears dimmed. You can easily reactivate the user or group by right-clicking and selecting **Activate User** (for a user) or **Activate Group** (for a group).

- **Permanent**—to disable access rights permanently, delete the user. Once deleted, a user cannot be reactivated.

13.1.5. Controlling User Access

Access to e*Insight Business Process Manager is controlled in the following ways:

- **User Role**
  The user must be assigned the role **einsight_user_role** in order to have access to the e*Insight user interface.

- **Right to log in to e*Insight**
  Each user must enter a valid login ID and password to use e*Insight. The administrator specifies a login ID as part of each user's account. The login ID and password must match the login ID and password required for the user to log in to the system on which e*Insight is installed. Otherwise, the user cannot log in. User accounts can be expired and reinstated, as needed, to control user access to e*Insight.

Note: *The administrator sets up each new user with a default password. You should change your password as soon as possible.*

- **Right to access e*Insight Administrator functions**
  The user group to which each user is assigned controls the primary functions that e*Insight Administrator users can access. Users assigned to the User Administrator group can perform all user maintenance functions. User group assignments can be expired and reinstated, as needed, to control user access to these basic functions.

  Permissions can be changed, expired, and reinstated, as needed, to control user access to specific components.

13.1.6. Logging In to the e*Insight Administrator

To log in to e*Insight Administrator, you must enter your login ID, your password, and the database instance you want to use.

Note: *To access user security, you must be a member of the eIAdministrator group.*

To log in to e*Insight Administrator

1 From the Windows **Programs** menu, select **SeeBeyond Business Integration Suite**, then **eInsight Administrator**.

   The e*Insight Administrator login dialog box appears (see Figure 97).

2 Specify the server.

Choose the name of the data source that you want to use from the drop-down list.

3 Type your login ID and password. For more information, see **Table 29 on page 173**.

Note: *The first time you log in to the e*Insight Administrator, use the predefined user account named ei_admin. This account provides full access to the e*Insight Administrator.*

4 Click **Login**.

The e*Insight Administrator window appears (see **Figure 98 on page 174**).

**Figure 97**   e*Insight Administrator Login Dialog Box

Note: *When you first log in under your own user ID, you will be use a default password. You should select a unique password at that time.*

Table 29   e*Insight Login Fields

Name	Description
Server	The data source name that was set up during the ODBC configuration. Select from the drop-down list. Next time you log in, this defaults to your last selection.
Login ID	Your user ID, which is case-sensitive. The login ID must match the user ID required for you to access the server on which the e*Insight Administrator data files are stored. Default: The user ID previously used to access the e*Insight Administrator.
Password	Your password, which must match the password required for you to access the server on which the e*Insight Administrator data files are stored. Maximum password length is 20 characters. **Note**: If your database is case-sensitive, make sure you use the correct capitalization in the password. If you are using Sybase, the password must have at least six characters.
Version	The version number displays.

Figure 98   e*Insight Administrator Window
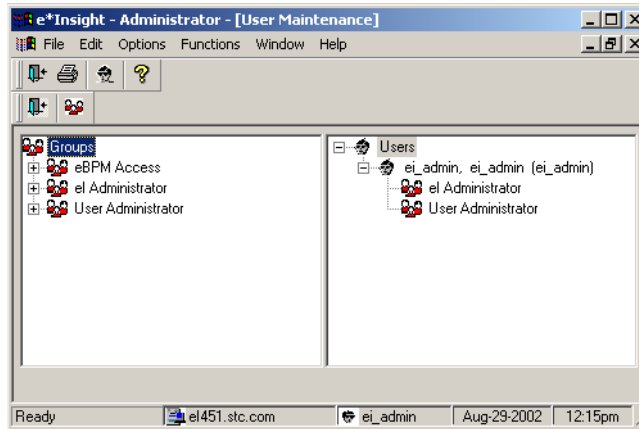
13.1.7. e*Insight Administrator Primary Toolbar

The Primary toolbar appears below the e*Insight Administrator Menu bar and contains the following tools.

Table 30   Primary Toolbar

Tool	Name	Description
	Exit	Exits the e*Insight Administrator.
	Print Active Screen	Prints an image of the active window.
	User Maintenance	Opens the User Maintenance main window.
	Help	Displays the Help window.

13.1.8. e*Insight Administrator Function Toolbar

The e*Insight Administrator Function toolbar appears below the primary toolbar in e*Insight Administrator and contains, at any point, a selection of the following tools. The availability of tools on this toolbar depends on what is highlighted in the right or left pane, or what dialog is currently open.

Table 31   Function Toolbar

Tool	Name	Description
	Close	Closes the window or dialog box that is currently open.
	New Group	Opens the **New Group** dialog box. Available when a group is selected in the left pane.

Table 31 Function Toolbar (Continued)

Tool	Name	Description
	New User	Opens the **New User** dialog box. Available when a user is selected in the right pane.
	Delete User	Deletes the user that is currently selected in the right pane.
	Apply	Saves changes in the current dialog box without closing the dialog box.
	Cancel	Closes the dialog box that is currently open, without saving changes.
	Activate Group Activate User	Activates the currently-selected inactive group. Activates the currently-selected inactive user.
	Expire Group Expire User	Marks the currently-selected active group as expired. Marks the currently-selected active user as expired.
	Properties	Allows you to view or modify the properties of the highlighted company.

13.2 Creating Users and User Groups

You must complete the following steps to add new users and user groups. To access user security, you must be a member of the eIAdministrator group.

1   Obtain user information

2   Add user groups

3   Add users

4   Assign users to the appropriate user groups

Note: *If you want to add users now and assign them to groups later, complete steps 1 through 3 above, and then follow the instructions provided in* .

13.2.1.Obtaining User and Group Information

Before you add users, identify the individuals who need access to e*Insight and determine their processing needs. Once you have identified these needs, group users into categories. For example, you could put users who need to create business process models in one category and users who need to monitor business process instances in another category. With this information, you should be able to identify the user groups you need to add and the users that you should assign to each user group.

13.2.2. Defining User Groups

e*Insight Administrator provides three predefined user groups. For more information, see **"Predefined User Groups" on page 171**. You can create additional user groups as needed for your business.

To define a user group

Before you begin, complete **"Obtaining User and Group Information" on page 175**, and then log in to e*Insight Administrator.

1 Click **New Group**.

The **New Group** dialog box appears (see Figure 99).

2 On the **General** tab of the **New Group** dialog box, identify the user group. For more information, see Table 32.

3 Click **Apply** to save the user group and add another, or **OK** to save and close.

4 Continue to **"Adding a User" on page 177**.

Figure 99   New Group Dialog Box

Table 32   New Group Dialog Box

Name	Description
Group Login ID	An identification code for the user group.
Name	The name of the user group. This is the name that will appear in the Groups list.
Eff Date	The first date on which a user assigned to this user group can log in. Default: the current date.

Table 32 New Group Dialog Box (Continued)

Name	Description
Exp Date	The date on which the group's access rights expire. On this date, users assigned to this group will not be able to log in to e*Insight unless they are also assigned to another group that has access. Defaults to 00/00/00, which means that no expiration date is currently set.
Description	A description of the primary tasks or responsibilities performed by users associated with this group.
Created By	The user ID of the person who saved or updated the user group.
Created Time	The date and time the user group was saved or updated.

Tips for Maintaining User Groups

After you have saved a new user group, you can modify information about the group or expire the group if it is no longer needed. Once expired, you can reinstate the group if needed.

- To change information about an existing user group, see **"Modifying a User Group" on page 181**.

- To expire an obsolete user group, see **"Expiring a User Group" on page 184**.

- To reinstate an expired user group, see **"Reactivating an Expired User Group" on page 184**.

13.2.3. Adding a User

Before a user can log in to e*Insight, you must set up the user in the e*Insight Administrator. The information you add identifies the user and provides basic information such as the first and last dates the user can access e*Insight. For more information, see **"Assigning Existing Users to User Groups" on page 182**

To add a new user

Before you begin, complete **"Defining User Groups" on page 176**.

1. Click anywhere on the right pane of the **User Maintenance** window.

2. On the e*Insight Administrator toolbar, click **New User**.

    The **New User** dialog box appears (see Figure 101).

3. On the **User** tab of the **New User** dialog box, identify the user. For more information, see **Table 33 on page 179**.

4. Click **Apply**.

    The **Confirm Password** dialog box appears, as shown in Figure 100.

Figure 100   Confirm Password Dialog Box
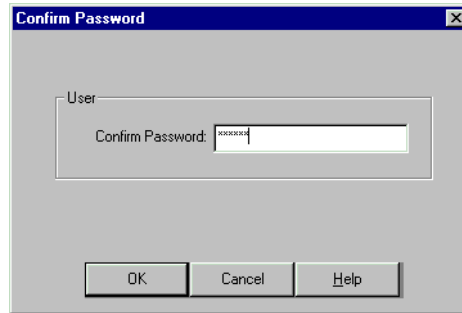
5 On the **Confirm Password** dialog box, type the password that you specified on the **New User** dialog box and click **OK**. One of the following occurs:

- If the password matches, the **Confirm Password** dialog box closes and the **Group** tab of the **New User** dialog box appears. Continue to step 6.

- If the password does not match, the following message appears:

   User password: The password you type does not match.

   Re-type the password and click **OK**. If the message appears again, the passwords were not specified correctly on the **New User** dialog box. Re-enter the passwords on the **New User** dialog box, and then repeat this step until the passwords match.

6 Do one of the following:

- To assign the user to a group now, continue to **"Assigning a New User to a User Group" on page 180**.

- To assign the user to a group later, click **OK**. The **New User** dialog box closes and the name of the user appears in the Users list on the right pane of the **User Maintenance** window.

Figure 101 New User Dialog Box
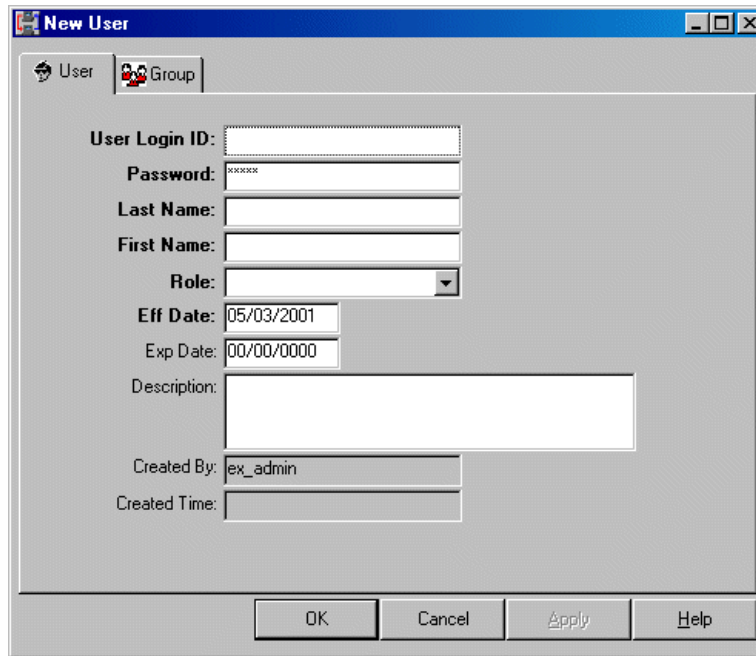
Table 33 New User Fields

Name	Description
User Login ID	The user's login ID for the UNIX server on which e*Insight is installed.
Password	The password the user must enter to access the server on which e*Insight is installed. Maximum password length is 20 characters.
Last Name	The user's last name.
First Name	The user's first name.
Role	The role that the user will have. The only option is **einsight_user_role**.
Eff Date	The first date on which the user can log in to the GUI. Default: the current date.
Exp Date	The date on which the user's access rights expire. On this date, the user will not be able to log in to e*Insight. Defaults to 00/00/00, which means that no expiration date is currently set.
Description	A description of the user; for example, you could add a statement of the primary tasks or responsibilities performed by this user.
Created By	The user ID of the person who last saved the user record.
Created Time	The date and time the user record was last saved.

Tips for Maintaining User Information

After you have added a new user, you can modify the user information, expire a user record, or reactivate an expired user record.

▪ To modify a user record, see **"Updating a User Record" on page 182**.

- To assign a user to a user group, see **"Assigning Existing Users to User Groups" on page 182**.

- To delete a user from a group, see **"Expiring Users from User Groups" on page 183**.

- To reinstate an account expired from a group, see **"Reactivating Users Expired from a Group" on page 183**.

- To terminate a user's access rights, see **"Expiring a User Account" on page 185**.

- To reactivate a user record, see **"Reinstating an Expired User Account" on page 185**.

13.2.4. Assigning a New User to a User Group

The administrator must add all new users to the predefined access group eBPM. By assigning users to groups, access rights can later be granted to multiple users at the same time.

To assign a new user to a user group

Before you begin, complete **"Adding a User" on page 177**.

1 From the **Available Groups** list on the right pane of the **New User** dialog box, choose the name of the desired user group.

2 Click the **Add** button.

The name of the group you selected appears in the list on the left pane.

3 If necessary, do either of the following:

- *To add the user to another group*, click **Apply** and repeat steps 1 and 2.

- *To delete a group*, click the name of the group on the left pane and click the **Remove** button. The name of the group reappears in the **Available Groups** list on the right pane.

4 On the **New User** dialog box, click **OK**.

The name of the new user displays on the right pane of the **User Maintenance** window. Once you refresh the display, you can expand the user level by clicking on the plus sign (⊞) next to the user to show the groups of which the new user is a member.

5 Inform all users with rights to grant user access to others that users and user groups have been added to the e*Insight Administrator. These users can now set up appropriate user and group access for others.

13.3 Managing Users and User Groups

After users are assigned to user groups, you can perform any of the following tasks:

- Modify information about a user group

- Update a user record

- Assign an existing user to a user group

- Expire a user from a user group

- Add a user that was removed back to a user group

- Expire a user group

- Reinstate an expired user group

- Expire a user's access rights

- Reinstate a user whose access rights are expired

- Delete a user account

Note: *To perform these tasks, you must either log in to the e*Insight Administrator using the **ei_admin** user ID or log in using a user ID that has been added to the User Administrator group.*

13.3.1.Modifying a User Group

After you add a user group to e*Insight Administrator, you can retrieve and modify some of the information.

To modify a user group

1 From the **Groups** list on the left pane of the **User Maintenance** window, select the name of the group you want to change.

2 Click **Properties**.

The **Group Properties** dialog box appears.

Figure 102   Group Properties Dialog Box
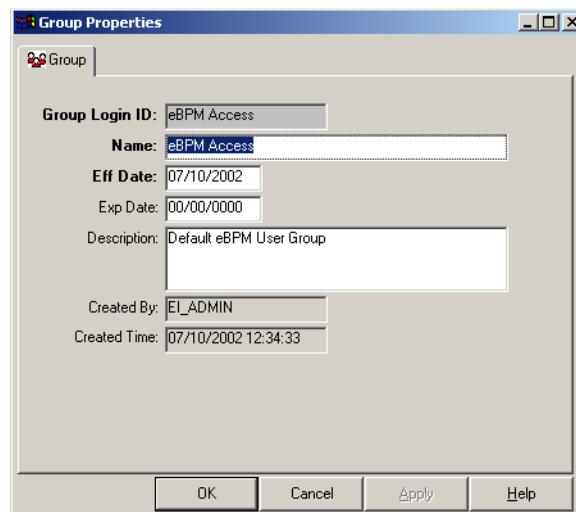
3 Change any available values as needed. For more information, see **Table 32 on page 176**.

4   Click **OK** to save and close.

13.3.2. Updating a User Record

After you add a user, you might need to update some of the information.

To modify a user record

1   From the **Users** list on the right pane of the **User Maintenance** window, select the user record you want to change.

2   On the toolbar, click **Properties**.

The **User Properties** dialog box appears.

3   Change any of the following values: **Password**, **Last Name**, **First Name**, **Eff Date**, **Exp Date**, **Explanation**.

To change the password, type the new password and click **OK**. The **Confirm Password** dialog box appears. Type the new password again and click **OK**.

Note: *If you are using a Sybase database and change the user password, the **Enter Admin. Password** dialog box appears. Type in your own password and click **OK**. Your ID is stored as the administrator who changed the user's password. For more information, see* **Table 33 on page 179***.*

4   Click **OK** to save and close.

13.3.3. Assigning Existing Users to User Groups

After you add a user, you can assign the user to one or more user groups.

To assign existing users to user groups

1   If necessary, do one of the following to determine if a user has already been assigned to a user group:

A   In the **Groups** list on the left pane, expand the row that contains the name of the group to which you want to assign the user. If the name of the user appears, the user is already assigned to the group. If the icon next to a user name appears dimmed the user was previously assigned to the user group, but the assignment has expired.

B   In the **Users** list on the right pane, expand the row that contains the name of the user. If the name of the group to which you want to assign the user appears, the assignment has already been made. If the icon next to a user group ID appears dimmed, it means the user was previously assigned to the group, but the assignment has expired.

2   From the **Users** list on the right pane, choose the name of the user you want to assign to a user group.

3   Drag the highlighted user name to the name of the desired user group on the left pane.

The following message appears:

```
Add name into group
```

-where *name* is the name of the user, as set up in the e*Insight Administrator,

-and *group* is the name of the user group you selected: for example, **Add Jones, Mary (Mary) into 'ePM Access'** for a user named Mary Jones being added into the ePM Access group.

4   When the above message appears, click **Yes**.

The user name appears below the user group ID on the Groups list, and the user group ID appears below the user name on the Users list.

5   Repeat steps 2 through 4 for each group assignment you want to make.

13.3.4. Expiring Users from User Groups

You might need to expire a user from a user group. You can:

- Expire one or more users from an individual user group
- Expire a user from one or more user groups

To expire one or more users from a user group

1   From the Groups list on the left pane of the **User Maintenance** window, expand the row that contains the name of the group.

The names of all users assigned to the user group appear.

2   Click the name of the user you want to expire.

3   On the toolbar, click **Expire Group/User**.

The user is expired from the selected group.

To expire a user from one or more user groups

1   From the Users list on the right pane of the User Maintenance window, expand the row that contains the name of the user.

All groups to which the user is assigned are listed.

2   Click the name of the group from which you want to expire the user.

3   On the toolbar, click **Expire User/Group**.

The user is expired from the selected user group.

13.3.5. Reactivating Users Expired from a Group

You may need to reactivate a user that was previously expired from a user group. You can:

- Reactivate a user that was expired from one or more user groups
- Reactivate one or more users that were expired from an individual user group

To reactivate a user that has been expired from one or more user groups

1 From the Groups list on the left pane of the User Maintenance window, expand the row that contains the name of the group.

The names of all users assigned to the user group appear. Previously expired users also appear, but the corresponding icons appear dimmed.

2 Click the name of the user you want to reinstate.

3 On the toolbar, click **Activate User**.

The user is reinstated to the group.

4 Repeat steps 1–3 as needed for other groups from which the user was expired.

To reactivate one or more users that have been expired from an individual user group

1 From the Users list on the right pane of the User Maintenance window, expand the row that contains the name of the user.

The names of all user groups to which the user is assigned are listed. Groups from which the user was previously expired also appear, but the corresponding icons appear dimmed.

2 Click the name of the group to which you want to reinstate the account.

3 On the toolbar, click **Activate Group**.

The account is reinstated to the group.

4 Repeat steps 1–3 as needed for other users that were expired from the group.

13.3.6. Expiring a User Group

If a user group is no longer valid, you can expire the group. When you expire a group, access permissions granted to the group are no longer valid. If you are expiring a user group, you might also need to reassign some user accounts to other user groups.

To expire a user group

1 From the Groups list on the left pane of the **User Maintenance** window, highlight the name of the group you want to expire.

2 On the User Maintenance toolbar, click **Expire Group**.

The icon that corresponds to the group appears dimmed to show that the group is now expired, and the expiration date of the group appears on the **Properties** dialog box for the group. On the right pane of the window, the icon next to the group appears dimmed for each account that was assigned to the group.

13.3.7. Reactivating an Expired User Group

You can reinstate an expired user group, if necessary. All previous account assignments are reinstated when the group is reactivated. If individual accounts were previously expired from the group, they are not reinstated when the group is reactivated.

To reactivate an expired user group

1   From the Groups list on the left pane of the **User Maintenance** window, click the name of the expired group you want to reactivate.

2   On the User Maintenance toolbar, click **Activate Group**.

The icon that corresponds to the group on both panes of the **User Maintenance** window no longer appears dimmed. The expiration date no longer appears on the **Properties** dialog box for the group, and the effective date changes to the current date.

13.3.8.Expiring a User Account

If a user account is no longer valid, you can expire the account. When you expire an account, that user can no longer log in to the application.

To expire a user account

1   From the Users list on the right pane of the **User Maintenance** window, click the name of the user account you want to expire.

2   On the User Maintenance toolbar, click **Expire User**.

The icon that corresponds to the account on both panes of the **User Maintenance** window appears dimmed to show that the account is now expired, and the expiration date appears on the **Properties** dialog box for the account.

13.3.9.Reinstating an Expired User Account

You can reinstate an expired user account, if necessary. All previous group assignments are reinstated when the account is reactivated. If an account was previously expired from a particular group, it is not reassigned to that group when the account is reactivated.

To reactivate an expired user account

1   From the Users list on the right pane of the **User Maintenance** window, click the name of the expired account you want to reactivate.

2   On the User Maintenance toolbar, click **Activate User**.

The icon that corresponds to the account no longer appears dimmed on both panes of the **User Maintenance** window. On the **Properties** dialog box for the account, the effective date of the account changes to the current date and the expiration date no longer appears.

13.3.10.Deleting a User

When someone will no longer be using the system at all, you can delete that user from the system. This procedure removes a user permanently from the system.

To delete a user

1   In the right pane of the **User Maintenance** window, highlight the user to be deleted.

    2 Click **Delete User**.

    A message displays:

```
Are you sure you want to delete user (user name)?
```

    3 Click **Yes** to delete the user.

Repeat this procedure for any other users you want to delete.

e*Insight Menus and Tools

This appendix identifies and describes all the e*Insight menu commands and toolbar buttons.

A.4 e*Insight Menus

The following section describes the options available from the e*Insight menu bar.

Table 34 File Menu

Option	Description
New Connection	Displays the e*Insight login window so you can log in to another database.
Close	Closes the current e*Insight window.
Save	Saves the business process version you are currently working in. *Note: If this selection is not enabled, the business process version is already saved.*
Save as new version	Saves the selected business process version as a new version.
Print	Prints the selected business process version.
Print Preview	Shows a preview of the selected business process version. *Note: This function toggles on and off in the menu.*
Print Setup	Displays the **Print Setup** dialog box, allowing you to select a printer and print format.
Import	Displays the **Import Business Process** dialog box. This dialog allows you to import business process version definitions and instance data from other databases.
Export	Displays the **Export Business Process** dialog box. This dialog allows you to export business process version definitions and instance data to other databases.
e*Gate Login	Allows you to log in to e*Gate.
eInsight Administrator	Starts e*Insight Administrator.
Change Password	Allows you to change your password.
Exit	Closes the currently selected business process.

Table 35   View Menu

Option	Description
Toolbar	Toggles the Toolbar on and off.
Status Bar	Toggles the status bar on and off.
States Legend	Toggles the States Legend on and off. *Note: This option is only available in Monitor mode.*
Preferences	Allows you to select how many instances display per page, on the **List** pane. The default is 50.
Toggle Splitter Orientation	Allows you to switch the orientation of the splitter bar between the list and diagram panes in Monitor mode. *Note: This option is only available in Monitor mode.*
Refresh	Refreshes the results of the **List** pane, or the status of the business process in the **Diagram** pane.
Auto Refresh Setup	Allows you to define an automatic refresh time interval.
Zoom	Displays the **Zoom** dialog box, which enables you to zoom the view in and out.
View Long Data	Displays a text viewer for values that are larger than 4 KB.

Table 36   Processes Menu

Option	Description
Add Business Process	Adds a new business process.
Delete Business Process	Deletes the selected business process.
Enable Business Process Version	Enables the currently selected business process version.
Disable Business Process Version	Disables the selected business process version.
Edit Business Process Version	Checks out the currently selected business process version for editing.
Release Business Process Version	Releases the lock on the currently selected business process version.
Delete Business Process Version	Deletes the currently selected business process version.
Export Business Process Version	Displays the **Export Business Process** dialog box. This dialog allows you to export business process version definitions and instance data to other databases.
Import Business Process Version Instances	Displays the **Import Business Process Instances** dialog box. This dialog allows you to import instances into the selected version.
Use Generic Database	Uses a predefined format.
Use Model Specific Database	Uses a Model Specific database where the user defines the tables and columns to hold instance data for attributes.

Table 36 Processes Menu (Continued)

Option	Description
Create Model Specific Database	Automatically creates the database based on the configuration of local and Global Attributes.
Properties	Displays the **Business Process Properties** dialog box.

Table 37 Diagram Menu

Option	Description
Add	
Activity	
Automated	Adds a new Activity to the Modeling Canvas.
User	Adds a new User Activity to the Modeling Canvas.
Authorization	Adds a new Authorization Activity to the Modeling Canvas.
Sub-Process	Adds a new Sub-Process to the Modeling Canvas.
Dynamic Sub-Process	Adds a new Dynamic Sub-Process to the Modeling Canvas.
Remote Sub-Process	Adds a new Sub-Process to the Modeling Canvas.
Operator	
Join	Adds a Join bar to the Modeling Canvas.
Merge	Adds a Merge to the Modeling Canvas.
Fork	Adds a Fork bar to the Modeling Canvas.
Decision	Adds a Decision gate to the Modeling Canvas.
Align	*Two or more activities must be selected before you can use this option.*
Left	Aligns the selected activities with the left-most activity.
Top	Aligns the selected activities with the top-most activity.
Check Drawing	Checks the current version for errors, and displays a message box if any are found.
Rotate 90 degrees	Rotates the currently selected Fork or Join bar by 90 degrees.
Delete	Deletes selected attributes.
Link Style	The following options create a specific type of link between activities. *Note: You must choose the link type before connecting the activities.*
Polyline	Creates a straight line between two flow chart components.
Bezier	Connects two flow chart components with a line that can have both rounded and straight sections.
Vert Hor	Creates a line between two flow chart components in the following order: vertical, horizontal.
Hor Vert	Creates a line between two flow chart components in the following order: horizontal, vertical.
Vert Hor Vert	Creates a line between two flow chart components in the following order: vertical, horizontal, vertical.

Table 37 Diagram Menu (Continued)

Option	Description
Hor Vert Hor	Creates a line between two flow chart components in the following order: horizontal, vertical, horizontal.
Vert Hor Vert Hor	Creates a line between two flow chart components in the following order: vertical, horizontal, vertical, horizontal.
Hor Vert Hor Vert	Creates a line between two flow chart components in the following order: horizontal, vertical, horizontal, vertical.
Vert Hor Vert Hor Vert Hor	Creates a line between two flow chart components in the following order: vertical, horizontal, vertical, horizontal, vertical, horizontal.
Hor Vert Hor Vert Hor Vert	Creates a line between two flow chart components in the following order: horizontal, vertical, horizontal, vertical, horizontal, vertical.
Make Same Size	*Note: Two or more activities must be selected before you can use these options.*
Height	Changes the height of all selected activities to match the tallest one selected.
Width	Changes the width of all selected activities to match the widest one selected.
Select All	Selects all of the activities on the Modeling Canvas.
Grid	Displays the **Grid Settings** dialog, which allows you to create a business process model layout grid to your specifications.
View Sub-Process	Displays the Business Process called by a Sub-Process. *Note: This option is only available when a Sub-Process is selected.*
View Calling Process	Displays the Business Process that calls the current Business Process.
View Business Process Attributes	Switches to display the Business Process attributes associated with a Business Process Instance, rather than the Activity attributes. *Note: This option is only available when an activity is selected in Monitor mode.*

Table 38 Objects Menu

Option	Description
Properties	Displays the object's **Properties** dialog box.

Table 39 Mode Menu

Option	Description
Switch to Monitor Mode	Changes the view to **Monitor** mode.
Switch to Design Mode	Changes the view to **Design** mode.

Table 40   Wizards Menu

Option	Description
Report Wizard	Launches the Report Wizard.
List Wizard	Launches the List Wizard.

Table 41   Options Menu

Option	Description
Define Default Editor	Defines the default editor to be either Java or Monk.
Define Information for Partners	Displays the **Define Information for Partners** dialog, which identifies information about the local e*Insight database.

Table 42   Window Menu

Option	Description
Cascade	Displays two or more windows so that each window's title remains visible.
Tile Horizontally	Tiles two or more windows horizontally.
Tile Vertically	Tiles two or more windows vertically.
Arrange Icons	Allows you to arrange multiple minimized e*Insight windows.
(List of Open Windows)	All open windows are assigned a number as they are opened. This allows you to select one from the list to view. *Note: The window that is currently displayed has a check mark next to its number.*

Table 43   Help Menu

Option	Description
e*Insight Help	Displays the e*Insight Help System.
About e*Insight	Displays version and copyright information.

Table 44   Right-Click Menu (Modeling Canvas)

Option	Description
Add	
Activity	
Automated	Adds a new Activity to the Modeling Canvas.
User	Adds a new User Activity to the Modeling Canvas.
Authorization	Adds a new Authorization Activity to the Modeling Canvas.
Sub-Process	Adds a new Sub-Process to the Modeling Canvas.
Remote Sub-Process	Adds a new Sub-Process to the Modeling Canvas.

Table 44 Right-Click Menu (Modeling Canvas) (Continued)

Option	Description
Operator	
Join	Adds a Join bar to the Modeling Canvas.
Merge	Adds a Merge to the Modeling Canvas.
Fork	Adds a Fork bar to the Modeling Canvas.
Decision	Adds a Decision gate to the Modeling Canvas.
Align	*Two or more activities must be selected to use this option.*
Left	Aligns the selected activities with the left-most activity.
Top	Aligns the selected activities with the top-most activity.
Check Drawing	Checks the current version for errors and displays a message box if any are found.
Delete	Deletes selected attributes.
Link Style	The following options create a specific type of line between activities. *Note: You must choose the link type before connecting the activities.*
Polyline	Creates a straight line between two flow chart components.
Bezier	Connects two flow chart components with a line that can have both rounded and straight sections.
Vert Hor	Creates a line between two flow chart components in the following order: vertical, horizontal.
Hor Vert	Creates a line between two flow chart components in the following order: horizontal, vertical.
Vert Hor Vert	Creates a line between two flow chart components in the following order: vertical, horizontal, vertical.
Hor Vert Hor	Creates a line between two flow chart components in the following order: horizontal, vertical, horizontal.
Vert Hor Vert Hor	Creates a line between two flow chart components in the following order: vertical, horizontal, vertical, horizontal.
Hor Vert Hor Vert	Creates a line between two flow chart components in the following order: horizontal, vertical, horizontal, vertical.
Vert Hor Vert Hor Vert Hor	Creates a line between two flow chart components in the following order: vertical, horizontal, vertical, horizontal, vertical, horizontal.
Hor Vert Hor Vert Hor Vert	Creates a line between two flow chart components in the following order: horizontal, vertical, horizontal, vertical, horizontal, vertical.
Make Same Size	*Note: Two or more activities must be selected before you can use these options.*
Height	Changes the height of all selected activities to match the tallest one selected.
Width	Changes the width of all selected activities to match the widest one selected.
Select All	Selects all of the activities on the Modeling Canvas.

Table 44 Right-Click Menu (Modeling Canvas) (Continued)

Option	Description
Grid	Displays the **Grid Settings** dialog, which allows you to create a business process model layout grid to your specifications.
Zoom	Displays the **Zoom** dialog box, which enables you to zoom the view in and out.
Export Business Process Version	Allows you to export business process version definitions and instance data to other databases.

Table 45 Right-Click Menu (Object - Design Mode)

Option	Description
Rotate 90 degrees	Rotates the currently selected Fork or Join bar by 90 degrees.
Delete	Deletes the selected object.
Properties	Displays the object's **Properties - Design Mode: (Activity Name)** dialog box.
View Sub-Process	Displays the business process diagram for the Business Process called as a Sub-process. *Note: A Sub-Process must be selected before you can use this option.*

Table 46 Right-Click Menu (Business Process/BPI)

Option	Description
Add Business Process	Adds a new business process.
Delete Business Process	Deletes the selected business process.
Enable Business Process Version	Enables the currently selected business process version.
Disable Business Process Version	Disables the currently selected business process version.
Edit Business Process Version	Locks the currently selected business process version for edit.
Releases Business Process Version	Releases the lock on the currently selected business process version.
Delete Business Process Version	Deletes the currently selected business process version.
Export Business Process Version	Allows you to export (and import) business process version definitions and instance data between different databases.
Properties	Displays the **Business Process Properties** dialog box. *Note: This option is available in both Design and Monitor mode.*
Save as new version	Saves the selected business process version as a new version.
e*Gate Configuration	Displays the **e*Gate Configuration** dialog box. Allows you to view the components that have been configured for that business process.

Table 46 Right-Click Menu (Business Process/BPI) (Continued)

Option	Description
Refresh	Refreshes the results of the List pane, or the status of the business process in the **Diagram** pane.

Table 47 Right-Click Menu (List pane)

Option	Description
Properties	Displays the **Business Process Properties** dialog box.
View Long Data	Displays a text viewer to for values that are larger than 4 KB.

A.5 e*Insight Toolbar

This section describes the available tools in e*Insight.

Table 48 Toolbar

Tool	Name	Description
	New	Creates a new e*Insight window.
	Save	Saves the currently selected business process version.
	Print	Prints the currently selected business process version.
	Import	Displays the **Import Business Process** dialog box. This dialog allows you to import business process version definitions and instance data from other databases.
	Export	Displays the **Export Business Process** dialog box. This dialog allows you to export business process version definitions and instance data to other databases.
	Refresh	Refreshes the views in the Monitor mode. *Note: This can be used for refreshing the state of the diagram or the list.*
	Toggle Modes	Changes the mode between Monitor and Design.
	Toggle Splitter Orientation	Toggles the orientation of the splitter bar between the list and diagram panes in Monitor Mode. *Note: This tool is only available in Monitor mode.*

Table 48 Toolbar (Continued)

Tool	Name	Description
	Toggle States Legend	Toggles the States Legend off and on. *Note: This tool is only available in Monitor mode.*
	Properties	Displays the object's Properties dialog box. *Note: An object must be selected before you can use this tool.*
	View Business Process Attribute List	Switches to display the Business Process attributes associated with a Business Process Instance, rather than the Activity attributes. *Note: This option is only available when an activity is selected in Monitor mode.*
	Export to Excel	Exports the data in the List pane to Excel, and displays the Excel worksheet. *Note: The List pane must be selected before you can use this tool.*
	View Sub-Process	Displays the Business Process called by a Sub-Process. *Note: This option is only available when a Sub-Process is selected.*
	View Calling Process	Displays the Business Process that calls the current Business Process.
	Previous Page	Displays the previous page of data in the List pane. *Note: There must be at least 51 instances in the **List** pane for this tool to be enabled.*
	Next Page	Displays the next page of data in the List pane. *Note: There must be at least 51 instances in the List pane for this tool to be enabled.*
	Automated Activity	Adds a new Automated activity.
	User Activity	Adds a new User activity.
	Authorization Activity	Adds a new Authorization activity.
	Sub-Process	Adds a new sub-process.
	Remote Sub-Process	Adds a new Remote Sub-Process.

Table 48 Toolbar (Continued)

Tool	Name	Description
	Dynamic Sub-Process	Adds a new Dynamic Sub-Process.
	Start Activity	Adds a start activity.
	End Activity	Adds an end activity.
	Join	Adds a Join bar, which acts as an 'and'.
	Merge	Adds a Merge, which acts as an 'or'.
	Fork	Adds a Fork bar.
	Decision	Adds a Decision gate.

e*Insight Physical Data Model

Table 49   e*Insight Database Tables

Table Name	Description
ACTIVITY_INSTANCE	Holds the start and end time, and current state of an Activity
ACTIVITY_INSTANCE_ATTR	Holds the current String or XML Attribute values for any Activity (e.g., a String variable for Customer Name is set to "HiltonHotels")
ACTIVITY_OBJECT	Holds the activity name and description
ACTIVITY_OBJECT_ATTR	Holds the specific details of the Attributes that are associated with and Activity, includes the metadata for the Local and associated Global Attributes
AI_BOOLEAN_ATTR	Contains current Activity related Local Attribute values of the datatype Boolean (including the default value)
AI_NUMERIC_ATTR	Contains current Activity related Local Attribute values of the datatype Number (including the default value)
BP_BOOLEAN_ATTR	Contains current Global Attribute values of the type Boolean (including the default value)
BP_INSTANCES	Stores the list of BP_ID's (cache)
BP_NUMERIC_ATTR	Contains current Global Attribute values of the datatype Number (including the default value)
BUSINESS_PROCESS_INSTANCE	Holds the start and end times and current state of a business process
BUSINESS_PROCESS_INSTANCE_ATTR	Contains current Global Attributes values of the datatype String and XML (including the default value)
BUSINESS_PROCESS_MAP	If the business process uses the Model Specific DB option, this table references the tables and columns created for that model
BUSINESS_PROCESS_OBJECT	Holds details about a business model, such as the name, version, default editor, generic or model specific DB, option enable/disable, and so on

Table 49 e*Insight Database Tables (Continued)

Table Name	Description
BUSINESS_PROCESS_OBJECT_ATTR	Holds the Global Attribute details for a business process model
COMPLEX_TYPE	Stores activity-specific ETDs
COMPLEX_TYPE_CODE	Stores activity-specific ETDs
EBPM_CTRL	Uses as an e*Insight queue to hold interrupted process flows (restart, skip, undo) and to receive messages from external applications via the User Activity API
LONG_DATA	Any data exceeding the database column constraint (size) is placed here as a BLOB.
ROUTING_EXPRESSION	Contains encoded Javascript for the Decision Gates and Expressions, and possibly e*Insight script
ROUTING_OBJECT	Holds routing logic (the flow and order of the business process)

Table 50 ACTIVITY_INSTANCE Table Description

Column Name	Data Type	Column Description
AI_ID	NUMBER(12)	Activity Instance ID
RO_ID	NUMBER(12)	Routing Object ID map
BPI_ID	NUMBER(12)	Business Process Instance ID
AI_STATE_CD	VARCHAR2(4000)	Activity Instance state code: • done • running • waiting
AI_START_DT	DATE	Activity Instance start time
AI_END_DT	DATE	Activity Instance end time

Table 51 ACTIVITY_INSTANCE_AFTER Table Description

Column Name	Data Type	Column Description
AOA_ID	NUMBER(12)	Activity Object Attribute ID
BPI_ID	NUMBER(12)	Business Process Instance ID
AI_VALUE_TXT	VARCHAR2(4000)	Activity Instance value
AIA_ID	NUMBER(12)	Activity Instance Attribute ID
AI_ID	NUMBER(12)	Activity Instance ID
AIA_LEN	NUMBER(12)	Activity Instance Attribute Length
AIA_CD	VARCHAR2(32)	Activity Instance Attribute state code
LD_ID	NUMBER(12)	Long Data ID
AO_ID	NUMBER(12)	Activity Object ID

Table 52 ACTIVITY_OBJECT Table Description

Column Name	Date Type	Column Description
AO_ID	NUMBER(12)	Activity Object ID
AO_LOGICAL_NM	VARCHAR2(1024)	Activity Logical name
AO_ALIAS_NM	VARCHAR2(1024)	AO alias name
AO_DSC_TXT	VARCHAR2(4000)	AO description
WF_ID	NUMBER(12)	map ID of the workflow_inst_nm
AO_STATE_CD	VARCHAR2(16)	AO state code: ▪ enabled ▪ disabled
BPO_ID	NUMBER(12)	Business Process ID
RO_ID	NUMBER(12)	Routing Object map
ORDER_NO	NUMBER(12)	

Table 53 ACTIVITY_OBJECT_ATTR Table Description

Column Name	Date Type	Column Description
AO_ID	NUMBER(12)	Activity Object ID
AO_KEY_TXT	VARCHAR2(1024)	AO name
AOA_ID	NUMBER(12)	Activity Object Attribute ID
AO_VALUE_TXT	VARCHAR2(4000)	AO value
AO_ATTR_CD	VARCHAR2(1024)	AO attribute code, such as system_executable, system_mode, Input. Output, system, and so on
DEFAULT_VALUE	VARCHAR2(4000)	AO default length
ATTR_LENGTH	NUMBER(5)	AO attribute length
ATTR_SCALE	NUMBER(5)	AO if number scale
ATTR_PRECISION	NUMBER(5)	AO attribute if number , number of decimals
ATTR_TRANSIENT_IND	NUMBER(1)	
COMPLEX_TYPE_ID	NUMBER(5)	

Table 54 AI_BOOLEAN_ATTR Table Description

Column Name	Data Type	Column Description
AIA_ID	NUMBER(12)	Activity Instance Attribute ID
BPI_ID	NUMBER(12)	Business Process Instance ID
AOA_ID	NUMBER(12)	Activity Object Attribute ID
AI_ID	NUMBER(12)	Activity Instance ID
VALUE	NUMBER(1)	value for the boolean datatype or default

Table 54   AI_BOOLEAN_ATTR Table Description (Continued)

Column Name	Data Type	Column Description
AO_ID	NUMBER(12)	Activity Object ID

Table 55   AI_NUMERIC_ATTR Table Description

Column Name	Data Type	Column Description
AIA_ID	NUMBER(12)	Activity Instance Attribute ID
BPI_ID	NUMBER(12)	Business Process Instance ID
AOA_ID	NUMBER(12)	Activity Object Attribute ID
AI_ID	NUMBER(12)	Activity Instance ID
VALUE	NUMBER(20,10)	value for the numeric AI attribute and default value
AO_ID	NUMBER(12)	Activity Object ID

Table 56   BP_BOOLEAN_ATTR Table Description

Column Name	Data Type	Column Description
BPIA_ID	NUMBER(12)	Business Process Instance Attribute ID
BPI_ID	NUMBER(12)	Business Process Instance ID
BPOA_ID	NUMBER(12)	Business Process Object Attribute ID
VALUE	NUMBER(1)	BPIA value of the boolean attribute
BPO_ID	NUMBER(12)	Business Process Object ID

Table 57   BP_INSTANCES Table Description

Column Name	Data Type	Column Description
BPI_ID	NUMBER(12)	BPI_ID's

Table 58   BP_NUMERIC_ATTR Table Description

Column Name	Data Type	Column Description
BPIA_ID	NUMBER(12)	Business Process Instance attribute ID
BPI_ID	NUMBER(12)	Business Process Instance ID
BPOA_ID	NUMBER(12)	Business Process Object Attribute ID
VALUE	NUMBER(20,10)	BPIA numeric value
BPO_ID	NUMBER(12)	Business Process Object ID

Table 59   BUSINESS_PROCESS_INSTANCE Table Description

Column Name	Data Type	Column Description
BPI_ID	NUMBER(12)	Business Process Instance ID
BPI_NM	VARCHAR2(1024)	Business Process Instance Name
P_BPI_ID	NUMBER(12)	
P_AO_ID	NUMBER(12)	
BPI_STATE_CD	VARCHAR2(16)	BPI state code: ▪ available ▪ done ▪ running
BPI_START_DT	DATE	BPI start date
BPI_END_DT	DATE	BPI end time
CREATOR_ID	NUMBER(12)	Map Id to the ebpm_server ID for the e*Gate engine that is running the instance
PARTNER_ID	NUMBER(12)	
SYS_OPT_ID	NUMBER(10)	SYS_OPT ID

Table 60   BUSINESS_PROCESS_INSTANCE_ATTR Table Description

Column Name	Data Type	Column Description
BPOA_ID	NUMBER(12)	Business Process Object Attribute ID
BPI_VALUE_TXT	VARCHAR2(4000)	BPI value name
BPIA_ID	NUMBER(12)	Business Process Instance attribute ID
BPI_ID	NUMBER(12)	Business Process instance ID
BPIA_LEN	NUMBER(12)	BPI length of the attribute
BPIA_CD	VARCHAR2(32)	
LD_ID	NUMBER(12)	Long Data ID
BPO_ID	NUMBER(12)	Business Process Object ID

Table 61   BUSINESS_PROCESS_MAP Table Description

Column Name	Data Type	Column Description
TYPE_CD	NUMBER	TYPE : 1
OBJECT_ID	NUMBER(12)	Object ID
TABLE_NAME	VARCHAR2(32)	Table name
COLUMN_NAME	VARCHAR2(32)	Column name based on the attributes of the BPO

Table 61 BUSINESS_PROCESS_MAP Table Description (Continued)

Column Name	Data Type	Column Description
HIST_TABLE_NAME	VARCHAR2(32)	History table name to work with the archive/purge scripts
BPO_ID	NUMBER(12)	BPO map

Table 62 BUSINESS_PROCESS_OBJECT Table Description

Column Name	Data Type	Column Description
BPO_ID	NUMBER(12)	BPO ID
BPO_LOGICAL_NM	VARCHAR2(1024)	BPO name value
BPO_DSC_TXT	VARCHAR2(4000)	BPO description
WF_ID	NUMBER(12)	EBPM_SERVER id map
BPO_STATE_CD	VARCHAR2(16)	BPO state code: ▪ disabled ▪ enabled
VALID_START_DT	DATE	BPO start time
VALID_END_DT	DATE	BPO end time
BPO_DIAGRAM_LEN	NUMBER(12)	Length of the diagram workflow
BPO_DIAGRAM_LNG	LONG RAW	Binary data of the diagram
EDITOR	VARCHAR2(256)	
VERSION_NAME	VARCHAR2(256)	Version name of the BP
MAPPED_IND	NUMBER(1)	If using the Custom Model DB this column will be 1 or else 0
IMAGE_FIXED	NUMBER(1)	
BPI_ID	NUMBER(12)	Business Process Instance ID
SYS_OPT_ID	NUMBER(10)	SYS_OPT ID

Table 63 BUSINESS_PROCESS_OBJECT_ATTR Table Description

Column Name	Data Type	Column Description
BPO_ID	NUMBER(12)	BPO ID
BPO_KEY_TXT	VARCHAR2(32)	BPO name text
BPOA_ID	NUMBER(12)	Business Process Object Attribute ID
BPO_ATTR_TYPE_CD	VARCHAR2(256)	BPOA type code : ▪ Boolean ▪ Number ▪ String ▪ XML
BPO_XML_DTD_TXT	VARCHAR2(4000)	For activity-specific ETDs

Table 63 BUSINESS_PROCESS_OBJECT_ATTR Table Description (Continued)

Column Name	Data Type	Column Description
DEFAULT_VALUE	VARCHAR2(4000)	
ATTR_DIRECTION	VARCHAR2(32)	Direction of the attribute ▪ INPUT ▪ INPUT_OUTPUT ▪ OUTPUT
ATTR_LENGTH	NUMBER(5)	
ATTR_SCALE	NUMBER(5)	
ATTR_PRECISION	NUMBER(5)	
ATTR_TRANSIENT_IND	NUMBER(1)	
COMPLEX_TYPE_ID	NUMBER(5)	

Table 64 COMPLEX_TYPE Table Description

Column Name	Data Type	Column Description
COMPLEX_TYPE_ID	NUMBER(5)	
COMPLEX_TYPE_CODE	NUMBER(5)	
NAME	VARCHAR2(255)	
ETD_CLASS_NAME	VARCHAR2(255)	
ETD_PACKAGE_NAME	VARCHAR2(255)	
ETD_CREATE_TIME	DATE	
TYPE_DEFINITION	NCLOB(4000)	

Table 65 COMPLEX_TYPE_CODE Table Description

Column Name	Data Type	Column Description
CODE	NUMBER(5)	
VALUE	VARCHAR2(64)	
DESCRIPTION	VARCHAR2(255)	

Table 66 EBPM_CTRL Table Description

Column Name	Data Type	Column Description
CTRL_ID	NUMBER(15)	CRTL ID
MSG_TXT	VARCHAR2(4000)	Incoming message
STATUS	VARCHAR2(32)	Status
OWNER	VARCHAR2(32)	Engine owner

Table 66   EBPM_CTRL Table Description (Continued)

Column Name	Data Type	Column Description
MSG_DT	DATE	
LD_ID	NUMBER(12)	Long Data Id
SERVER_ID	NUMBER(12)	

Table 67   LONG_DATA Table Description

Column Name	Data Type	Column Description
LD_ID	NUMBER(12)	Long data ID
DATA_DT	DATE	
DATA	LONG	
RO_ID	NUMBER(12)	Routing Object ID
ORDER_NO	NUMBER(12)	
CTRL_ID	NUMBER(15)	CRTL ID

Table 68   ROUTING_EXPRESSION Table Description

Column Name	Data Type	Column Description
RE_ID	NUMBER(12)	
AO_ID	NUMBER(12)	
BPOA_ID	NUMBER(12)	
RHS_OPERAND_TXT	VARCHAR2(128)	
OPERATOR_CD	VARCHAR2(8)	
ROW_OPERATOR_CD	VARCHAR2(8)	
EXPRESSION	VARCHAR2(4000)	
LD_ID	NUMBER(12)	

Table 69   ROUTING_OBJECT Table Description

Column Name	Data Type	Column Description
AO_ID	NUMBER(12)	Activity Object ID
OP_RO_ID	NUMBER(12)	
ORDER_NO	NUMBER(12)	
RO_ID	NUMBER(12)	Routing Object ID
AO_TYPE_CD	VARCHAR2(256)	
CHILD_BPO_ID	NUMBER(12)	Child BPO Id if any

Table 69 ROUTING_OBJECT Table Description (Continued)

Column Name	Data Type	Column Description
AO_SEQ_NO	NUMBER(12)	Activity Object ID
LABEL	VARCHAR2(1024)	Label text on graphic
EXPRESSION	VARCHAR2(4000)	Java script expression
LD_ID	NUMBER(10)	Long Data ID
CONNECTION_DOC	VARCHAR2(4000)	
LOGICAL_NAME	VARCHAR2(1024)	Logical name of the routing object
NODE_DOC	VARCHAR2(4000)	Node comments
BPO_ID	NUMBER(12)	BPO ID

Glossary

activity

An organizational unit for performing a specific function. An activity defines a step of a particular business process.

activity states

The stages that activities within the business process instance go through as the business process version is being run.

attribute

Attributes pass user-defined control information (programming arguments) to and from the e*Insight Business Process Manager and its activities.

Attribute Access API

A set of functions that enables an external application to access attributes for a User Activity from the e*Insight database.

authorization activity

An activity that requires authorization to enable the business process to continue.

automated activity

Must be executable within e*Insight/e*Gate.

business process

A business process is a collection of actions and messages, revolving around a specific business practice, that flow in a specific pattern to produce an end result.

business process attributes

Business process attributes pass user-defined control information (programming arguments) to and from the e*Insight Business Process Manager, external sources, and internal components.

business process expression

Business process expressions allow you to dictate business process logic flow based on the ability to perform various types of logic on business process instance attributes.

business process instance (BPI)

A unique instantiation of a business process.

business process model

The graphical representation of a business process.

business process version
  A form or variant of the original business process model.

Collaboration
  A component of an e*Way or BOB that receives and processes Events and forwards the output to other e*Gate components. Collaborations perform three functions: they subscribe to Events of a known type, they apply business rules to Event data, and they publish output Events to a specified recipient. Collaborations use Monk translation script files with the extension "**.tsc**" to do the actual data manipulation.

Design mode
  The mode used during the design phase of the business process. Design mode allows you access to the drawing canvas, enabling you to create or modify a business process version, based on its status.

Diagram pane
  The Diagram pane is used in Monitor mode to review the status of a business process instance, using a pictorial representation of it. Various colors assigned to the activities within the instance inform you of the status of each activity during the cycle of the instance.

documentation box
  The documentation box displays comments and free-text descriptions about the business process version.

e*Insight Business Process Manager (e*Insight)
  The component within the SeeBeyond Business Integration Suite product suite that facilitates the automation of the business process flow of business activities.

e*Xchange Partner Manager (e*Xchange)
  An application within the SeeBeyond Business Integration suite of products that you use to set up and maintain trading partner profiles and view processed messages. e*Xchange also processes inbound and outbound messages according to certain business protocols and your validation Collaborations.

Event (Message)
  Data to be exchanged between e*Insight/e*Gate and external systems, which has a defined data structure; for example, a known number of fields, with known characteristics and delimiters. Events are classified by type using Event Type Definitions.

Event Type Definition (ETD)
  An Event Type template, defining Event fields, field sequences, and delimiters. Event Type Definitions enable e*Insight systems to identify and transform Event Types. They are Monk script files with an extension of "**.ssc**,", and Java script files with an extension of **xsc**.

e*Insight Administrator

An application within the business Integration Solutions suite of products that you use to establish user security for e*Insight Business Process Manager (e*Insight).

gate

Controls the logical flow of data-based decisions in the business process model. A gate outputs specific information when specified input conditions are met.

Graph Wizard

The Graph Wizard is used in Monitor mode to display custom graphs, based on instance data.

GUI

Graphical User Interface. A type of computer interface that enables the user to perform actions via the use of symbols, visual metaphors and pointing devices.

List pane

The List pane is used in Monitor mode to review the status of a business process version, by reviewing the instances created by it.

modeling canvas

The modeling canvas is the portion of the e*Insight Business Process Manager where you create the business process model, in the form of a flow chart.

Monitor mode

Monitor mode is used during the monitoring and reporting phase of the process, and allows you to view the status of the business process.

Schema

Schemas are files and associated stores that contain the parameters of all the components that control, route, and transform data as it moves.

security

Security is the ability to limit user access to specific items based on a pre-determined profile of the user.

State

See *activity states*

String

A sequence of text characters.

sub-process

A sub-process is a business process version which is called, or used by, another business process, as a sub-component.

syntax

The form of a message. Contrast with *semantic*

tree view

The tree view displays a hierarchical representation of all the business process models, and their activities.

user account

A user account is information about a particular user that is stored in a database for security purposes.

user activity

Allows external applications to access attributes in the business process using an Attribute Access API.

user group

User groups allow you to grant access permissions to a set of users with similar processing needs without having to specify individual privileges for each user.

XML

Extensible Markup Language. XML is a language that is used in Events or messages in e*Insight, containing structured information. XML is different from String in that XML messages can contain both content, and information about the content.

Index