VMware Smart Assurance Service Assurance Manager Business Impact Manager User Guide

VMware Smart Assurance 10.0.0

vmware®

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Preface

1

As part of an effort to improve its product lines, VMware periodically releases revisions of its software and hardware. Therefore, some functions described in this document might not be supported by all versions of the software or hardware currently in use. The product release notes provide the most up-to-date information on product features.

Contact your VMware representative if a product does not function properly or does not function as described in this document.

Note This document was accurate at publication time. New versions of this document might be released on the VMware online support website. Check the VMware online support website to ensure that you are using the latest version of this document.

This chapter includes the following topics:

- Audience
- VMware Smart Assurance Service Assurance Manager installation directory
- Related documentation
- VMware Smart Assurance Service Assurance Manager
- Suggestions for searching PDF files
- Conventions used in this document
- Pathname conventions
- Graphical conventions
- Manager
- Where to get help
- Your comments

Audience

This guide is intended for administrators who are responsible for deploying, installing, and configuring the Business Impact Manager. IT managers who seek to understand the role of the Business Impact Manager and Global Manager in the context of an VMware Smart Assurance solution may also find this guide useful.

In addition to the configuration guides for specific components, administrators should also read the VMware Smart Assurance Service Assurance Manager Deployment Guide and the VMware Smart Assurance System Administration Guide.

VMware Smart Assurance Service Assurance Manager installation directory

In this document, the term BASEDIR represents the location where VMware Smart Assurance software is installed:

- For UNIX, this location is: /opt/InCharge/<*productsuite*>.

  The <*productsuite*> represents the VMware Smart Assurance product suite to which the product belongs. For example, on UNIX operating systems, VMware Smart Assurance Service Assurance Manager is, by default, installed to /opt/InCharge/SAM/smarts.

  Optionally, you can specify the root of BASEDIR to be something other than /opt/InCharge (on UNIX) but you cannot change the <*productsuite*> location under the root directory.

  The VMware Smart Assurance System Administration Guide provides more information about the directory structure of VMware Smart Assurance software.

Related documentation

In addition to this document, VMware Corporation provides a help system for command line programs as well as product documentation.

Help for command line programs

Descriptions of command line programs are available as HTML pages. The index.html file, which provides an index to the various commands, is located in the BASEDIR/smarts/doc/html/usage directory.

VMware Smart Assurance documentation

Readers of this guide may find the following related documentation helpful:

- VMware Smart Assurance Documentation Catalog
- VMware Smart Assurance System Administration Guide
- VMware Smart Assurance ICIM Reference
- VMware Smart Assurance ASL Reference Guide
- VMware Smart Assurance Perl Reference Guide
- VMware Smart Assurance Dynamic Modeling Tutorial
- VMware Smart Assurance MODEL Reference Guide

VMware Smart Assurance Service Assurance Manager documentation

The following documents are relevant to users of the
VMware Smart Assurance Service Assurance Manager:

- VMware Smart Assurance Service Assurance Manager Release Notes
- VMware Smart Assurance Open Source License and Copyright Information
- VMware Smart Assurance Service Assurance Manager Introduction
- VMware Smart Assurance Installation Guide for SAM, IP, ESM, MPLS, and NPM Managers
- VMware Smart Assurance Service Assurance Manager Deployment Guide
- VMware Smart Assurance Service Assurance Manager Configuration Guide
- VMware Smart Assurance Service Assurance Manager Operator Guide
- VMware Smart Assurance Service Assurance Manager Dashboard Configuration Guide
- VMware Smart Assurance Business Impact Manager User Guide
- VMware Smart Assurance Failover System User Guide
- VMware Smart Assurance Service Assurance Manager Notification Adapters User Guide
- VMware Smart Assurance Service Assurance Manager Adapter Platform User Guide
- VMware Smart Assurance Adapter for Unified Infrastructure Manager/Operations Configuration Guide
- VMware Smart Assurance XML Adapter User Guide
- VMware Smart Assurance Notification Module User Guide
- VMware Smart Assurance Service Assurance Manager Troubleshooting Guide
- VMware Smart Assurance Companion UI Installation and Configuration Guide
- VMware Smart Assurance Companion UI Online Help
- VMware Smart Assurance DataBridge for SAM Open Source License and Copyright Information for GPLv3 as Included with a Distribution of SLES 11
- VMware Smart Assurance Service Assurance Manager Documentation Portfolio

  The VMware Smart Assurance Documentation Catalog provides documentation resources for other VMware Smart Assurance product suites.

VMware Smart Assurance Service Assurance Manager

The VMware Smart Assurance Service Assurance Manager includes the following products:

- Service Assurance Manager (Global Manager), includes Business Impact Manager (BIM) and Failover System

- Global Console
- Business Dashboard
- Companion User Interface (CUI)
- SAM Native Adapters:
  - Service Assurance Manager Notification Adapters (E-Mail Notifier Adapter, Script Notifier Adapter, SNMP Trap Notifier Adapter, Log File Notifier Adapter)
  - Adapter Platform (Adapter Platform server, Syslog Adapter, SNMP Trap Adapter, sm_ems command-line interface)
  - VMware Smart Assurance Adapter for UIM/O
  - XML Adapter

Suggestions for searching PDF files

You can search across multiple PDF files by using the Adobe Acrobat Reader software:

1. If the documentation is not accessible to all users of the VMware Smart Assurance product suite, copy the contents of the BASEDIR/smarts/doc/pdf directory to a central location, such as a shared drive on your LAN, so that operators and others can view the documentation.
2. To search throughout the documentation library, open the Acrobat Reader software:
3. Select **Edit > Search**, and type a word or phrase.
4. Select **All PDF Documents** in, in the **Where would you like to search** option, and type the pathname of the location where the PDF documents reside.

   If you have more than one VMware Smart Assurance product suite installed, you can set up cross-product document searches by copying files from the BASEDIR/smarts/doc/pdf directory for each product suite into this common documentation directory path.

Conventions used in this document

VMware uses the following conventions for special notices:

Danger DANGER indicates a hazardous situation which, if not avoided, will result in death or serious injury.

WARNING indicates a hazardous situation which, if not avoided, could result in death or serious injury.

CAUTION, used with the safety alert symbol, indicates a hazardous situation which, if not avoided, could result in minor or moderate injury.

NOTICE is used to address practices not related to personal injury.

A note presents information that is important, but not hazard-related.

An important notice contains information essential to software or hardware operation.

Typographical conventions

VMware uses the following type style conventions in this document:

Normal	Used in running (nonprocedural) text for: ■ Names of interface elements ■ Names of resources, attributes, pools, Boolean expressions, buttons, DQL statements, keywords, clauses, environment variables, functions, and utilities ■ URLs, pathnames, filenames, directory names, computer names, links, groups, service keys, file systems, and notifications
Bold	Used in running (nonprocedural) text for names of commands, daemons, options, programs, processes, services, applications, utilities, kernels, notifications, system calls, and man pages
	Used in procedures for: ■ Names of interface elements ■ What the user specifically selects, clicks, presses, or types
Italic	Used in all text (including procedures) for: ■ Full titles of publications referenced in text ■ Emphasis, for example, a new term ■ Variables
`Courier`	Used for: ■ System output, such as an error message or script ■ URLs, complete paths, filenames, prompts, and syntax when shown outside of running text
`Courier bold`	Used for specific user input, such as commands
`Courier italic`	Used in procedures for: ■ Variables on the command line ■ User input variables
< >	Angle brackets enclose parameter or variable values supplied by the user
[ ]	Square brackets enclose optional values
|	Vertical bar indicates alternate selections — the bar means “or”
{ }	Braces enclose content that the user must specify, such as x or y or z
...	Ellipses indicate nonessential information omitted from the example

Pathname conventions

Directory pathnames are shown with forward slashes (/).

Graphical conventions

Under UNIX, the consoles appear with slight differences. For example, in views that display items in a tree hierarchy such as the Topology Browser, an open circle appears for UNIX.

Manager

Unless otherwise specified, the term Manager is used to refer to VMware Smart Assurance programs such as Domain Managers, Global Managers, and adapters.

Where to get help

VMware support, product, and licensing information can be obtained as follows:

Product information

For documentation, release notes, software updates, or information about VMware products, licensing, and service, go to the VMware online support website (registration required) at:

```
support.vmware.com
```

For technical support, go to VMware online support and select **Support**. On the Support page, you will see several options, including one to create a service request. Note that to open a service request, you must have a valid support agreement. Contact your VMware sales representative for details about obtaining a valid support agreement or with questions about your account.

Your comments

Your suggestions will help us continue to improve the accuracy, organization, and overall quality of the user publications. Provide your feedback of this document to:

```
docs.vmware.com
```

Introduction

2

This chapter includes the following topics:

- About Business Impact Manager
- Architectural and functional overview
- Business Impact Manager features

About Business Impact Manager

Business enterprises, such as those operated by financial institutions, manufacturers, retailers, and network service providers, consist of the following broad categories of elements as shown in Business enterprise hierarchy of elements:

- Network infrastructure elements

  Devices (such as hosts, routers, and switches) and connections that make up a network.

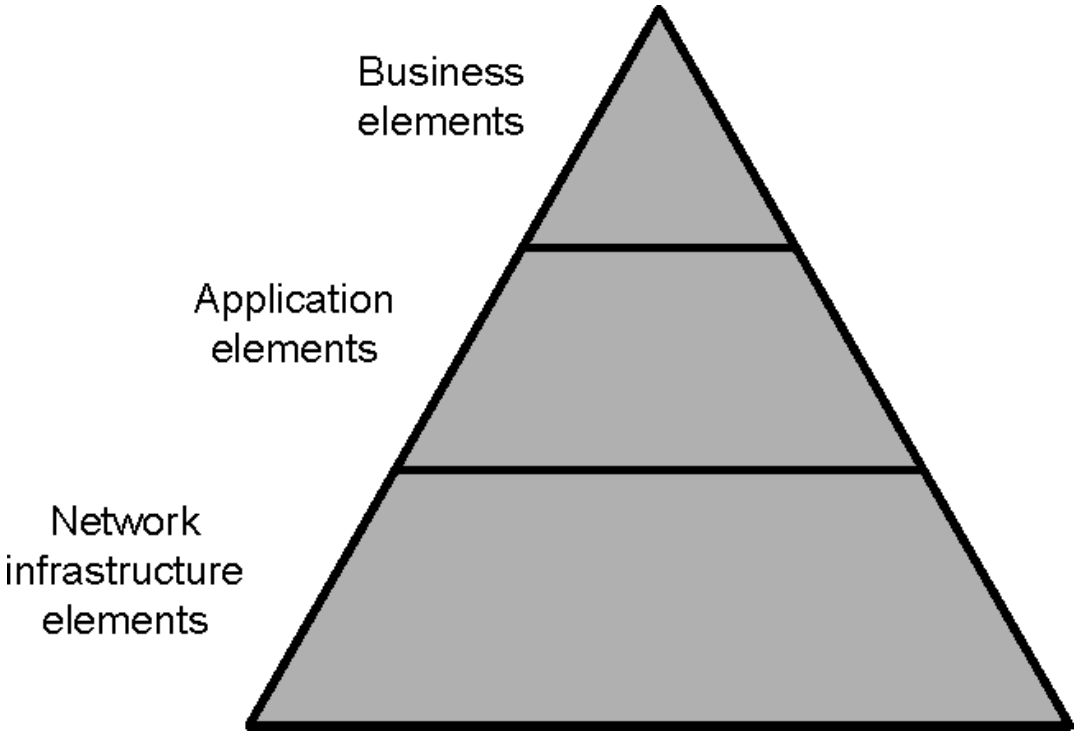
- Application elements

  Software programs (such as accounting packages, order management programs, and inventory control packages) that are layered over and hosted by the network infrastructure elements.

- Business elements

  Business service offerings and business processes and the subscribers (such as service subscribers, customers, organizations, business units, lines of business, and departments) who use those service offerings and processes.

Figure 2-1. Business enterprise hierarchy of elements



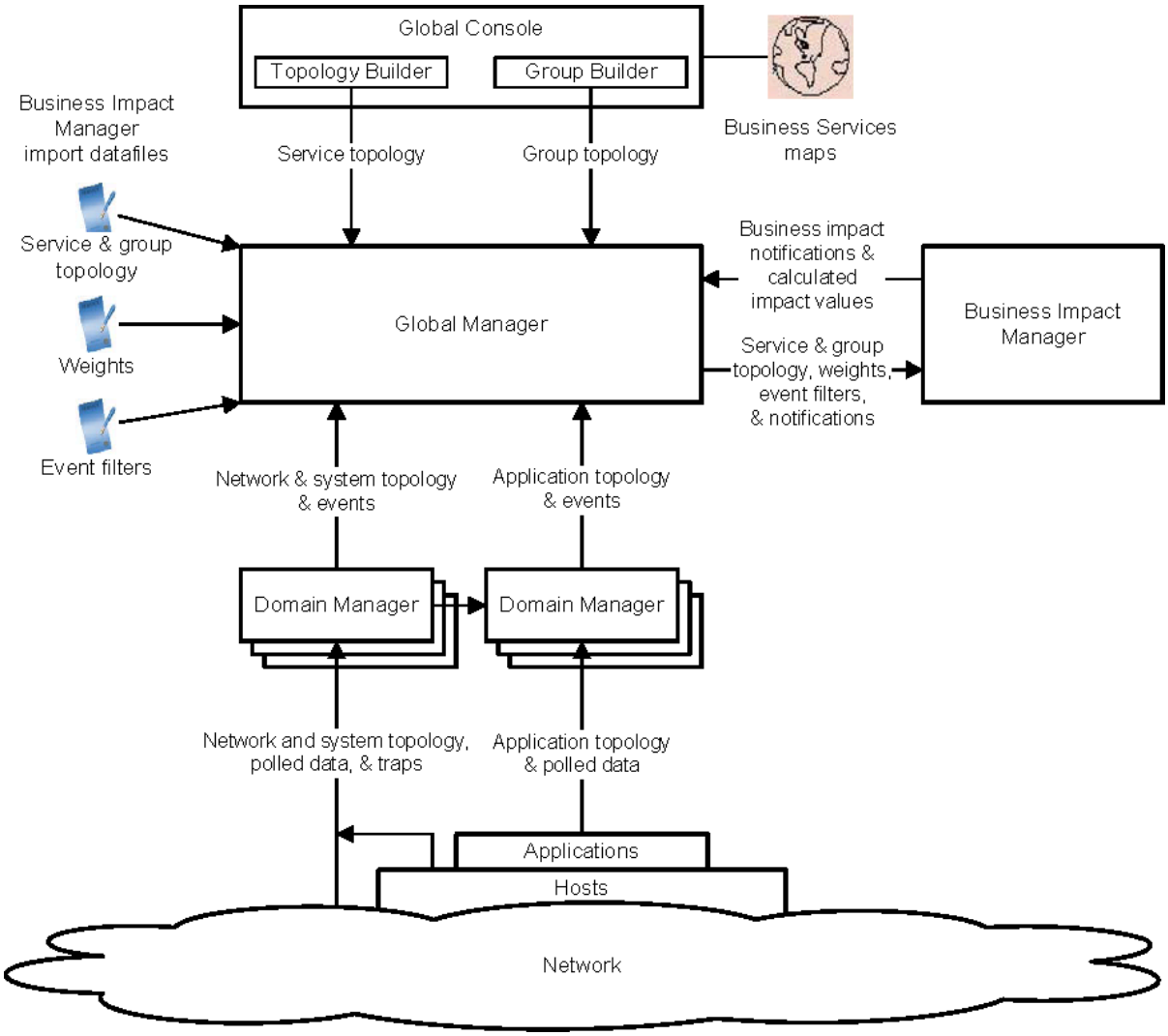
The degradation or failure of important network infrastructure elements can slow or stop vital applications and services, and dramatically reduce user productivity in needed business areas. For example, a host (an infrastructure element) that exhibits degraded performance will slow one or more applications that are running on it. The slow applications will, in turn, disrupt business services and processes on which subscribers depend.

VMware Smart Assurance Business Impact Manager (Business Impact Manager) calculates the impact of network infrastructure and application root-cause problem events on business elements, and creates business impact notifications. The business impact notifications enable business enterprises to immediately identify disruptions and failures, and to prioritize the resolution of the infrastructure and application problems in accordance with their business impact.

Architectural and functional overview

Business Impact Manager operates in conjunction with, and extends the capabilities of, VMware Smart Assurance Service Assurance Manager (Global Manager) to calculate the impact of infrastructure and application problems on business elements.

Figure 2-2. Business Impact Manager 9.1 architecture



To improve Global Manager performance, Business Impact Manager in release 9.1 runs as its own server process instead of running as part of the Global Manager server process. Business Impact Manager 9.1 and Global Manager 9.1 may run on the same host machine or on different host machines.

Business Impact Manager 9.1 still imports its business service topology, hierarchical group topology, and weights from user-configured datafiles loaded into the Global Manager. It may also import business service topology and hierarchical group topology created using the Topology Builder and the Group Builder and event filters from a user-configured event filter datafile.

Note Business service topology includes business service offering elements, business process elements, and business subscriber elements—subscribers who use the business service offerings and processes.

Business Impact Manager subscribes to all infrastructure and application notifications from the Global Manager, calculates the impact of the infrastructure and application root-cause problem notifications on the business elements, and propagates the impacts to the affected business elements. The propagated impacts are discrete notifications that are connected through a causal event chain to the root-cause problems in the network infrastructure layer or the application layer of the business enterprise.

Each infrastructure root-cause problem notification, each application root-cause problem notification, and each business impact notification includes a business impact value, which is specified in the user-configured weight datafile. The business impact value for a notification is displayed in the Notification Log Console of the Global Manager. Concurrently, the propagated impact notification (Impacted) generated for a business element is displayed in Business Services maps in the Map Console of the Global Manager. The Impacted business element shows a Severity icon that is colored according to the severity level of the notification. Double-clicking the element in the Business Services map shows the details of the notification.

Business Impact Manager features

Business Impact Manager provides:

- Business Services maps through which users view impacted business elements.

  Chapter 4 Viewing Business Analysis Results and Topology describes this feature.

- Text import datafiles in which users define business elements in text format, define hierarchical group elements in text format, and define weight elements in text format.

  Chapter 5 Setting Up and Using Business Impact Manager describes this feature.

- A Group Builder, also known as a Group Definitions window, through which users can create and modify hierarchical group elements.

  The VMware Smart Assurance Service Assurance Manager Configuration Guide describes this feature.

- XML import datafiles in which users define the following elements in XML format:
  - Business elements
  - Hierarchical group elements
  - Weight elements
  - Event filter elements

    Event filter elements represent events for which Business Impact Manager does not generate business impact notifications.

    Chapter 5 Setting Up and Using Business Impact Manager describes this feature.

- InMaintenance attribute processing, in which Business Impact Manager sets the InMaintenance attribute to TRUE for any business impact notification created solely from causal infrastructure or application notifications associated with devices in maintenance mode.

  Chapter 5 Setting Up and Using Business Impact Manager describes this feature.

Business Elements and Notifications

3

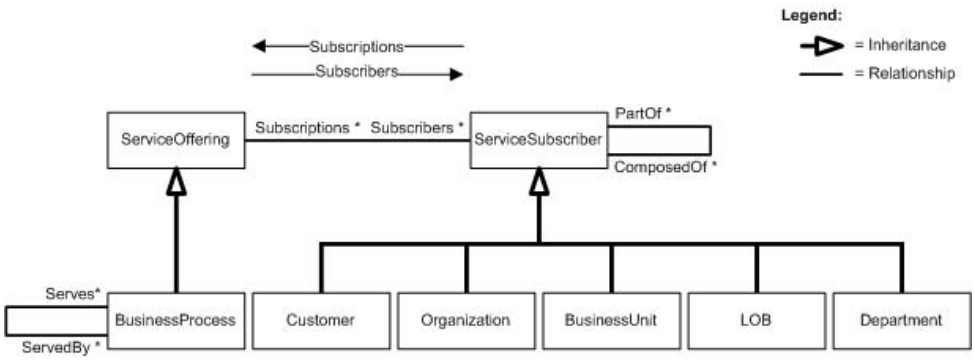
This chapter includes the following topics:

- Business Impact Manager elements
- Business Impact Manager notifications

Business Impact Manager elements

Business Impact Manager uses instances of certain VMware Smart Assurance ICIM classes to create a data model representation of the managed business topology within its repository. ICIM is based on the Common Information Model developed by the Distributed Management Task Force. The data model, shown in Business data model, represents the managed business elements and the relationships between them.

Figure 3-1. Business data model



As shown in the figure, BusinessProcess is a subclass of ServiceOffering, and Customer, Organization, BusinessUnit, LOB, and Department are subclasses of ServiceSubscriber.

ServiceOffering

A ServiceOffering represents a business service delivered to a set of subscribers (consumers). The ServiceOffering is related to its subscribers through the Subscribers/Subscriptions relationship set. A ServiceOffering is also related to the infrastructure and application elements that implement the offering through the ConsistsOf/MemberOf relationship set.

Note ServiceOfferings are usually web hosting or device name services.

BusinessProcess

A BusinessProcess represents functions and operations that support the internal business activities or other processes of a business enterprise or both. In the manufacturing sector, BusinessProcess elements can include, for example, Order Processing, Production Planning, Purchasing and Receiving, Inventory Management, Production Control, and Accounts Payable and Receivable.

In addition to the relationship sets (Subscribers/Subscriptions and ConsistsOf/MemberOf) inherited from ServiceOffering, a BusinessProcess can also participate in the Serves/ServedBy relationship set with other BusinessProcess elements. Serves/ServedBy models the dependencies between business processes.

ServiceSubscriber

A ServiceSubscriber represents a subscriber (consumer) of one or more ServiceOfferings. The ServiceSubscriber relationship to a ServiceOffering is Subscriptions.

Through class inheritance, Customer, Organization, BusinessUnit, LOB, and Department elements also have a Subscriptions relationship to a ServiceOffering. Like ServiceSubscriber, all of these classes consume business services provided by one or more ServiceOfferings.

Customer

A Customer represents one or more business enterprises or individuals that maintain a business relationship with an Organization or one of its BusinessUnit elements.

Organization

An Organization represents a hierarchically structured business enterprise consisting of one or more business units that engage in one or more lines of business. Its primary function is to manage the performance of its composite business units. Organization elements can include, for example, manufacturers, retailers, financial institutions, and service providers.

BusinessUnit

Within an Organization, a BusinessUnit represents a semi-autonomous division that engages in one or more lines of business. Typically, BusinessUnit elements focus on specific product markets (in the computer industry, for example, hardware or software products) or geographical areas (for example, the Eastern United States, Europe, or Asia).

LOB

Within a BusinessUnit, a line of business (LOB) represents a division that focuses on specific product markets. In the insurance industry, LOB elements include, for example, general homeowner policies, fire coverage, and flood insurance. LOB elements can be further categorized as commercial lines (for businesses) and personal lines (for individuals).

Department

Within a BusinessUnit or LOB, a Department represents a group that engages in business functions that support the BusinessUnit or LOB. Two very common, yet vital Department elements can include, for example, Human Resources and Accounting.

Business Impact Manager notifications

Business Impact Manager evaluates events that affect business elements by:

- Calculating business impact values and generating business impact notifications.
- Automatically propagating business impact notifications.

Calculated business impact values

An administrator uses the weights.conf or weights-conf.xml import datafile to assign weights to business elements and to the infrastructure and application elements that support the business elements. Business Impact Manager uses the assigned weights to calculate a numeric impact value for each root-cause problem notification received by the Global Manager from an underlying Domain Manager. Business Impact Manager calculates the impact value for a problem notification as soon as Business Impact Manager imports the notification from the Global Manager.

To calculate a numeric impact value for a root-cause problem notification, Business Impact Manager performs the following operations:

- Determines the infrastructure or application element denoted in the problem notification.
- Determines the infrastructure or application element denoted in each impact notification associated with the problem notification by tracing the Causes relationship from the problem notification to each of its impact notifications:

  problem notification -> Causes -> impact notification

  impact notification -> CausedBy -> problem notification

  The underlying Domain Manager that diagnoses the problem and its impacts creates the Causes/CausedBy relationships between the problem notification and its impact notifications.
- Determines the business elements associated with the infrastructure or application element denoted in the problem notification.
- Determines the business elements associated with each infrastructure or application element denoted in the impact notifications associated with the problem notification.

- Reads the weights assigned to the impacted business, infrastructure, and application elements and adds the weights together to calculate the impact value for the problem notification.

  After calculating the business impact value of a root-cause problem notification, Business Impact Manager assigns that value to the Impact attribute of the notification. When viewing the problem notification in the Notification Log Console of the Global Manager, the business impact value appears in the Impact column.

  Business impact values quantify the business impact of the root-cause problems; the larger the impact value, the larger the business impact (degree of impairment). Administrators can use business impact values to sort problem notifications by the impact that they have on service delivery.

Automatically propagated business impact notifications

Concurrently with calculating a business impact value for a problem notification, Business Impact Manager uses a built-in, automated mechanism to automatically propagate the impact as discrete notifications from the problem element through an event causality chain to the affected business elements. When viewing a business impact notification in the Notification Log Console of the Global Manager, the “Impacted” event name appears in the Event column.

Impacts are propagated as follows:

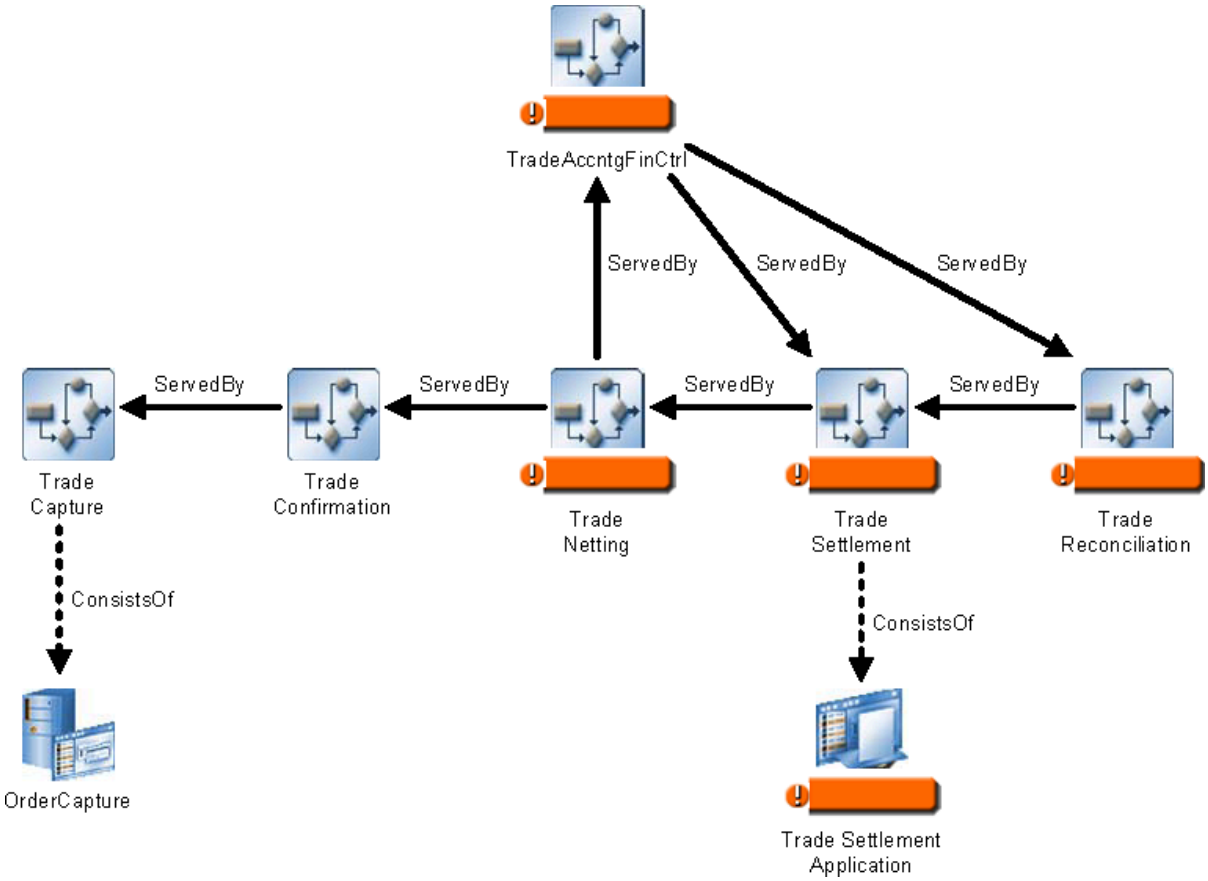
- To a service offering whenever an event occurs on a member of the service offering.
- To the business process that is served by an impacted business process.
- To one service subscriber from another whenever an event occurs on a service offering or business process associated with the service subscriber. In addition, impacts are propagated to service subscribers from the other service subscribers that are part of it. For example, impacts are propagated to an Organization from an impacted Department that is part of the Organization.

  When viewing an impacted business element in a Business Services map in the Map Console, the color of the severity bar associated with the element corresponds to the severity level of the notification. Double-clicking the element displays the details of the notification.

Automatically propagated impact notification scenario

An example of the automatic propagation of impact notifications is shown in Automatically propagated impact notification scenario. In this example, the Trade Settlement BusinessProcess depends on a Trade Settlement Application.

Figure 3-2. Automatically propagated impact notification scenario



When viewing the Business Services map, remember that it shows dependent relationships through arrowed lines: The arrowed lines point from a business element to the element that the business element depends on. Impact notifications propagate in the direction opposite to that of the arrowed lines: The impact notifications propagate toa business element from the element that the business element depends on.

To aid in understanding, read the relationships in Automatically propagated impact notification scenario from top to bottom and left to right. For example, TradeAccntgFinCntr (Trade Accounting Financial Center) is served by Trade Netting, and Trade Netting is served by Trade Settlement.

When the Trade Settlement Application is Degraded (severity level 2, Major notification), the degradation causes Business Impact Manager to generate an impact notification for the Trade Settlement BusinessProcess.

Thus, Trade Settlement Application Degraded causes Trade Settlement Impacted. From Trade Settlement BusinessProcess, the impact notification propagates to any dependant business processes—that is, any business processes that Trade Settlement serves. These are the Trade Reconciliation and TradeAccntgFinCntr BusinessProcesses.

The Trade Reconciliation Impacted and TradeAccntgFinCntr Impacted notifications then propagate further to any business processes served by these processes: to the Trade Netting BusinessProcess from TradeAccntgFinCntr Impacted and, once again, to TradeAccntgFinCntr from Trade Reconciliation Impacted.

As a result, Business Impact Manager generates an impact notification for Trade Settlement, Trade Reconciliation, TradeAccntgFinCntr, and Trade Netting.

Viewing Business Analysis Results and Topology

4

This chapter includes the following topics:

- Before you start
- Attaching the Global Console to the Global Manager
- Business impact notifications
- Business topology
- Business Services maps
- Business Process tools

Before you start

The console operations described in this chapter are controlled by certain console operation options such as **Notification Properties** and **Expand Map Node**. The VMware Smart Assurance Service Assurance Manager Configuration Guide provides instructions on changing the console operations.

Also, accessing the consoles described in this chapter requires attaching the Global Console to the Global Manager (for example, INCHARGE-SA) in your deployment. The VMware Smart Assurance Service Assurance Manager Operator Guide provides information about starting the Global Console, logging in, and attaching to a Manager.

Console access is controlled by the user profile associated with your VMware Smart Assurance user account. You do not need a user account with administrative privileges to access the consoles described in this chapter.

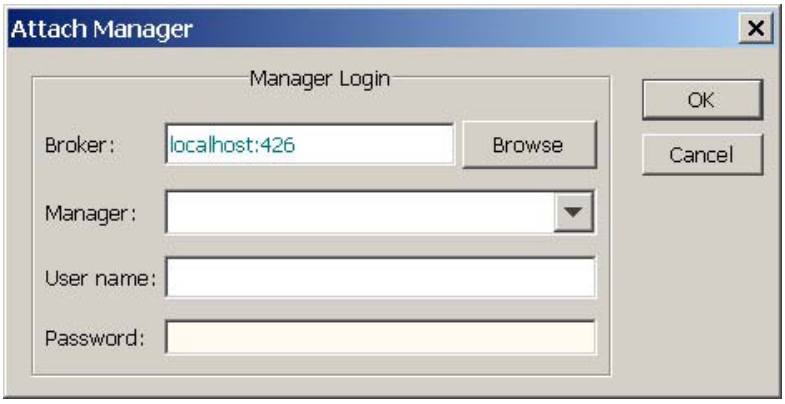
Attaching the Global Console to the Global Manager

To attach the Global Console to the Global Manager in your deployment:

1 Start the **Global Console**.

- The **Attach Manager** dialog box opens as shown in Attach Manager dialog box.

Figure 4-1. Attach Manager dialog box



2 localhost:426

3 In the dialog box:

4 Ensure that the VMware Smart Assurance Broker for your deployment appears in the **Broker** text box.

5 Click the **Manager** list box or the **Browse** button to display a list of active (running) Domain Manager, and from that list select the Global Manager application (for example, **INCHARGE-SA**) in your deployment as the Domain Manager to which you want to connect.

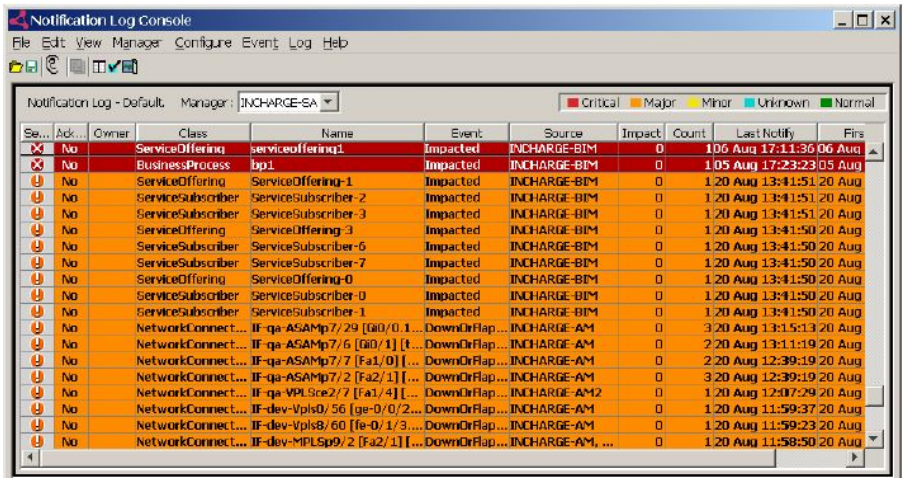
6 Type your login username and password. (The default administration login is username **admin** and password **changeme**.)

7 Click **OK**.

The **Notification Log Console** view of the **Global Console** opens as shown in Figure 6 on page 37.

In the figure, the Notification Log Console is attached to a Global Manager application named INCHARGE-SA.

Figure 4-2. Notification Log Console—example



The Notification Log Console is one of many console views composing the Global Console. One other console view of particular interest to the discussions that follow is the Map Console, which graphically represents topology in a map format.

The VMware Smart Assurance Service Assurance Manager Operator Guide provides detailed information on using the Global Console.

Business impact notifications

Business Impact Manager passes the results of its impact analysis in the form of notifications to the Global Manager. The Global Manager, in turn, combines these notifications with the notifications received from underlying Domain Managers such as IP Availability Manager and then passes the notifications to the Global Console, where they are presented in a tabular form in the Notification Log Console.

Each notification consists of a set of attributes that describe properties of the notification, such as Class, Name, Event, Source, and Impact. The value in the Name attribute is the display name of the notification; Understanding names and display names describes the naming formats used to create business element names. For a root-cause problem notification impacting (affecting) business elements or the infrastructure or application elements that support those business elements, Business Impact Manager sets the notification's Impact attribute to the sum of the weights of the impacted elements; the larger the numeric value, the larger the impact.

The severity of a notification is reflected by its color, where red indicates the highest severity level.

Viewing business impact notifications

You can view the notifications through the Global Console in two basic ways:

- As tabular entries in a Notification Log Console view

  Included with the Notification Log Console view (or any other view where you can see notifications) is a Notification Properties dialog box for viewing detailed information about an individual notification.

- As color-coded severity bar icons in a Map Console view

  In a map, a color-coded severity bar icon appears underneath nodes (graphical representations of topology elements) that are affected by abnormal conditions denoted in notifications.

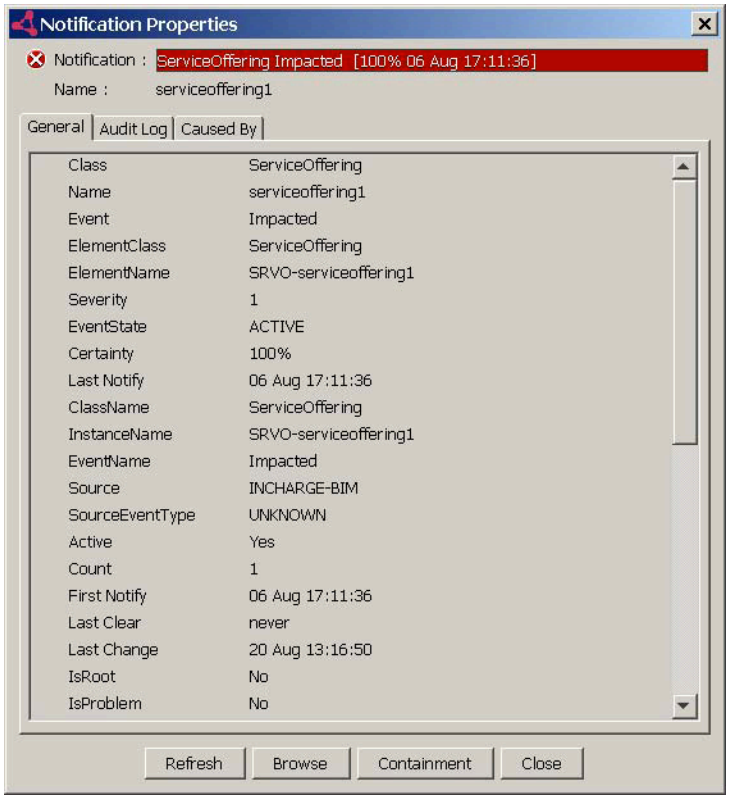
Opening a business Notification Properties dialog box

To obtain detailed information about an individual business impact notification, you can use any of the following common methods to open the Notification Properties dialog box:

- Double-click a business impact notification in the Notification Log Console.
- Select a business impact notification in the Notification Log Console and then click **Show Notification Properties**.
- Right-click a selected business impact notification and then select **Properties** in the pop-up menu.
- Double-click a business map icon (in the Map Console) affected by active events.

  Notification Properties dialog box showing a ServiceOffering Impacted notification is an example of a Notification Properties dialog box showing detailed information for a ServiceOffering Impacted notification diagnosed by Business Impact Manager.

Figure 4-3. Notification Properties dialog box showing a ServiceOffering Impacted notification



In Notification Properties dialog box showing a ServiceOffering Impacted notification, the setting No for attributes IsProblem and IsRoot indicates that the ServiceOffering Impacted notification is not a root cause.

Possible value combinations for IsProblem and IsRoot attributes shows the three possible value combinations for these two attributes and what the combinations mean.

Table 4-1. Possible value combinations for IsProblem and IsRoot attributes

IsProblem value	IsRoot value	Meaning
Yes	Yes	Indicates that this notification is a root-cause problem diagnosed by an underlying Domain Manager using event-correlation analysis.
No	Yes	Indicates that this notification is an event computed by an underlying Domain Manager when a certain polled metric equals or exceeds a threshold. The event is a root cause unto itself.
No	No	Indicates that this notification is an impact event generated by a listening Business Impact Manager or by an underlying Domain Manager, or is an informational event originating from the managed network and forwarded by the underlying Domain Manager to the Global Manager.

Note Except for notifications created for BusinessProcess elements using the tools described in Business Process tools, no root-cause problems are defined for business elements.

By default, the IsProblem and IsRoot attributes columns do not appear in the Notification Log Console. To add the IsProblem attribute column:

1 Right-click an attribute in column heading (for example, Class) in the **Notification Log Console**.

2 Select **Insert Column** in the pop-up menu.

3 Then select **IsProblem** in the submenu. The IsProblem column is inserted to the left of the selected column.

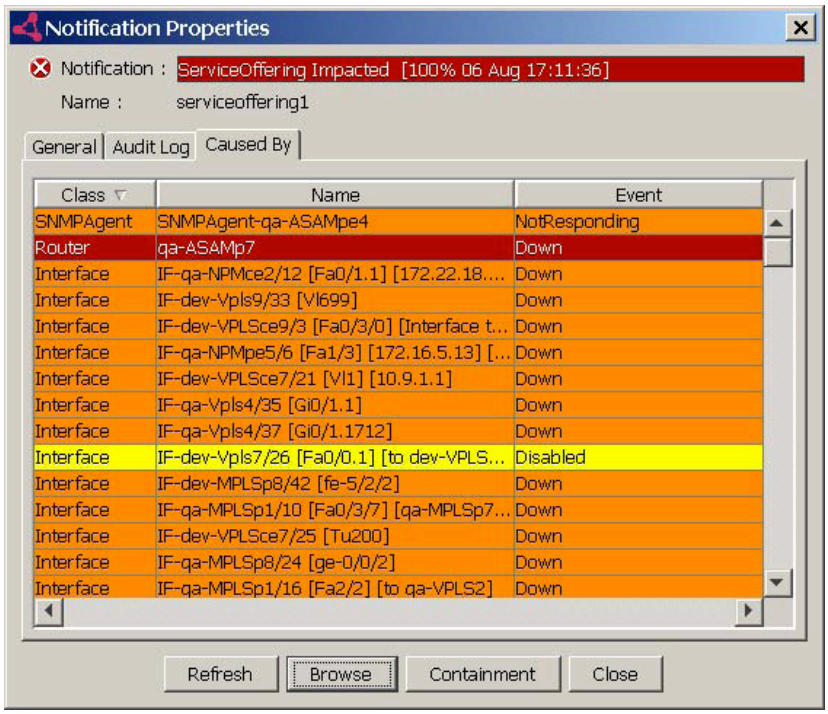
4 Repeat this procedure to add the **IsRoot** attribute column.

Viewing the cause of a business impact notification

You view the cause of a business impact notification by clicking the Caused By tab in the Notification Properties dialog box. The Caused By tab lists the problem that caused the notification.

For example, Caused By tab showing the problem that caused the ServiceOffering Impacted notification identifies the problem that caused the ServiceOffering Impacted notification shown in Viewing the cause of a business impact notification.

Figure 4-4. Caused By tab showing the problem that caused the ServiceOffering Impacted notification



When the problem causing a business impact notification is cleared, the business impact notification is also cleared. A cleared business impact notification has its Active attribute set to No and its IsRoot attribute set to Yes. The Caused By tab does not appear in the Notification Properties dialog box in case of a cleared business impact notification.

Business topology

The Global Manager loads instances of the following topology element types from the import datafiles of the Business Impact Manager. The topology includes offering types, subscriber types, and hierarchical groups:

- **Offering types:**
  - ServiceOffering
  - BusinessProcess
- **Subscriber types:**
  - ServiceSubscriber
  - Customer
  - Organization
  - BusinessUnit
  - LOB

  - Department
- **Hierarchical groups:**
  - HierarchicalGroup

    Business Impact Manager elements and Text import datafile service.data.template describe the offering type and subscriber type topology elements. Text import datafile topology-group.data.template and the VMware Smart Assurance Service Assurance Manager Configuration Guide describe the hierarchical group topology elements.

Business Services maps

The Global Console presents the business topology information in a variety of dynamically updated formats that show the status of the business and group elements and their relationships. One of those formats is the Business Services map, which is a graphical representation of the business topology.

Viewing Business Services maps is an easy and quick way to learn more about the source and cause of business impact notifications. You can view Business Services maps using the Map Console view.

The Business Services map shows business, group, infrastructure, and application elements. The infrastructure and application elements support the ServiceOffering and BusinessProcess business elements and include devices, software services, and groups of devices or software services (HierarchicalGroups).

The relationships between the business, group, infrastructure, and application elements are defined in the Business Impact Manager import datafiles. The infrastructure and application elements are discovered by the underlying Domain Managers.

Opening a Business Services map

You can use any of the following common methods to open a Business Services map:

- Open the **Map Console** by selecting the **Show Map** menu option from any opened console attached to the Global Manager. For example, in the **Notification Log Console**, click a business impact notification and then select **Event** > **Show Map**, or right-click the notification and then select **Show Map** in the pop-up menu. In the **Topology Browser Console**, right-click a business element and then select **Show Map** in the pop-up menu.
- Open the **Map Console** from the **Global Console** by selecting **File** > **New** > **Map Console**. In the topology tree of the **Map Console**, click an element to display a map for the element, or right-click an element and then select **Business Services** from the pop-up menu. If the Business Services option is not available (dimmed) in the pop-up menu, a Business Services map is not available for the element.

- In an opened topology map, right-click a map icon and then select **Business Services** from the pop-up menu.

  If an infrastructure or application element has a relationship to ServiceOffering or BusinessProcess elements, the Business Services map is available for that infrastructure or application element in the Topology tab of the Map Console. Likewise, for groups with relationships to ServiceOffering or BusinessProcess elements, the Business Services map is available for the group in the Groups tab of the Map Console.

Business Services map pop-up menus

Two types of pop-up menus are available in a Business Services map:

- Right-click a selected node in the map

  Opens a pop-up menu that enables you to select any of the map types available to the selected node (for example, Business Services, Physical Connectivity), to display notification properties (if any) for the selected node, and so on. For a node marked with a plus sign (+), the Expand Node menu option allows you to expand the node to see all nodes that are physically or logically connected to the node.

- Right-click an open space in the map

  Opens a pop-up menu that enables you to display a circular layout of the map, to manually position nodes in the map, and so on. The Reset map menu option enables you to reset changes made to the map or to return to the saved map display.

  In the topology tree of a Map Console, a pop-up menu is also available when you right-click an object. This menu enables you to select any of the map types available to the selected object, to display notification properties (if any) for the selected object, and so on.

  The VMware Smart Assurance Service Assurance Manager Operator Guide provides detailed descriptions of map menus and pop-up menus available for the Map Console.

Business Services map graphical representations

In a map display, a node is a graphical representation of a topology element, and an edge is a graphical representation of a relationship or connection between elements.

Default icons and edges for the Business Services map identifies and describes the default nodes and edges that may appear in a Business Services map. In the Map Console, you can also select **Map** > **Map Legend** to see a similar list.

Table 4-2. Default icons and edges for the Business Services map

Icon / visual indicator	Description
	Icon represents a ServiceOffering (business element).
	Icon represents a BusinessProcess (business element).
	Icon represents a ServiceSubscriber (business element).
	Icon represents a Customer (business element).
	Icon represents an Organization (business element).
	Icon represents a BusinessUnit (business element).
	Icon represents a line of business (LOB) (business element).
	Icon represents a Department (business element).
	Icon represents a HierarchicalGroup.
	Icon represents a DatabaseServer.
	Icon represents a SoftwareService.

Table 4-2. Default icons and edges for the Business Services map (Continued)

Icon / visual indicator	Description
	Solid line with arrow represents dependency.
	Dotted line with arrow represents dependency, composition, and membership.

Note Your system administrator may replace the default map nodes with other map nodes that are preferred by your organization. In that case, use Map > Map Legend to see the definitions of your map nodes.

You can customize the font and point size of the map icon text. The default map icon font is Helvetica. The default map icon font size is 12 point. The font and font size properties are modified in the webconsole.properties and dashboard.properties files. “Adjusting Java properties” in the VMware Smart Assurance Service Assurance Manager Operator Guide provides detailed information.

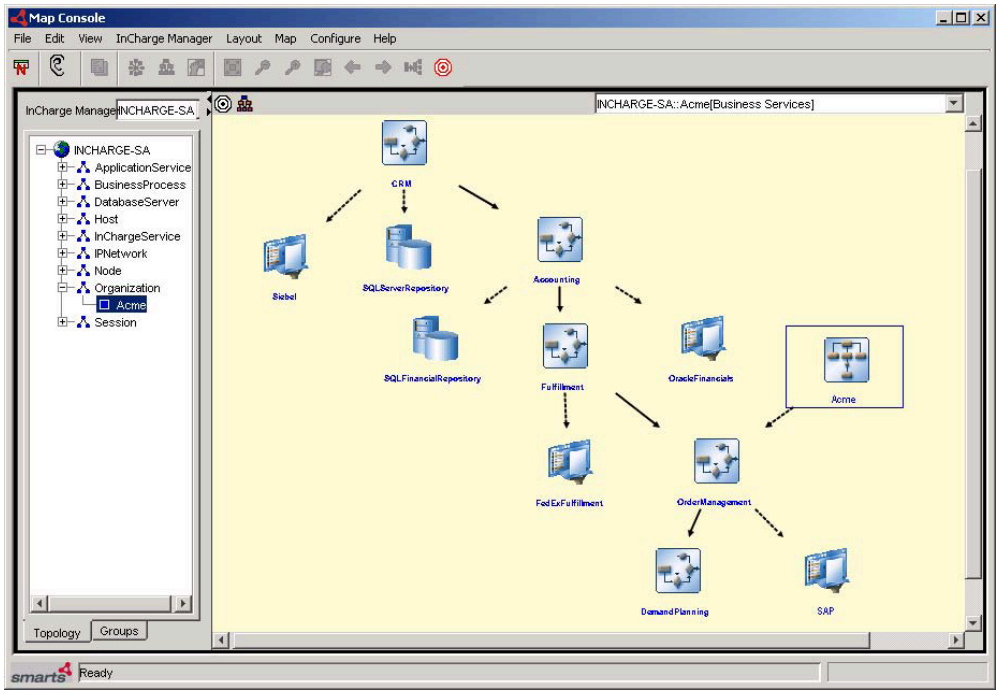
Business Services map example

In the Business Services map examples presented in this section, an Organization named Acme uses an order management process flow. The flow includes five distinct business processes:

- Demand Planning develops product and market forecasts to ensure that Acme can meet customer demands. This process does not rely on a specialized application.
- Order Management uses an SAP application suite to support all order management functions, including scheduling and generating parts lists.
- Fulfillment relies on FedEx fulfillment services to deliver orders to customers.
- Accounting provides customer billing, accounts receivable, and accounts payable functions for Acme. These functions are supported by (1) an SQL database that stores financial data and (2) the Oracle Financials application for bookkeeping.
- Customer Relationship Management (CRM) attempts to ensure customer satisfaction after order delivery by providing product support, refund processing, and warranties. CRM uses the Siebel applications for this purpose.

  The Business Services map, shown in A fully expanded Business Services map shows how the order management process flow is mapped in Business Impact Manager. Acme appears in the topology tree under Organization. When Acme is selected in the topology tree, the Business Services map appears. In the figure, the Business Services map was expanded to show all elements.

Figure 4-5. A fully expanded Business Services map

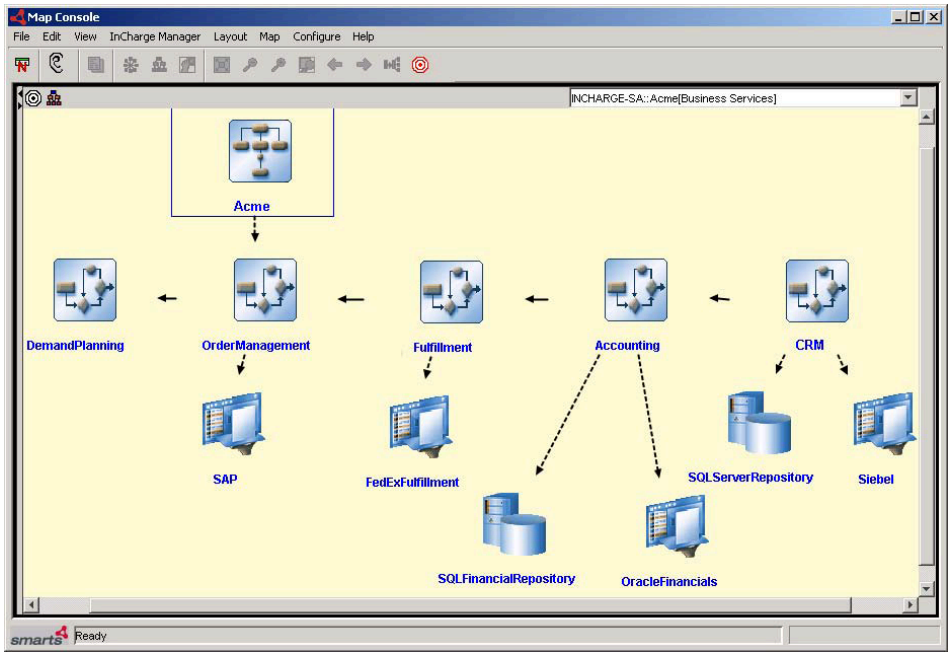


The Business Services map shows that the Organization named Acme relies on five BusinessProcesses through the dependencies. Four of the BusinessProcesses consist of at least one SoftwareService; two BusinessProcesses also consist of a DatabaseServer.

When viewing a Business Services map, you might find it useful to manually rearrange the icons so that the logic of the Organization's business processes is more evident. For example, after manually rearranging the icons, the linear relationship of the BusinessProcesses is obvious in A manually arranged Business Services map showing an organization's business processes:

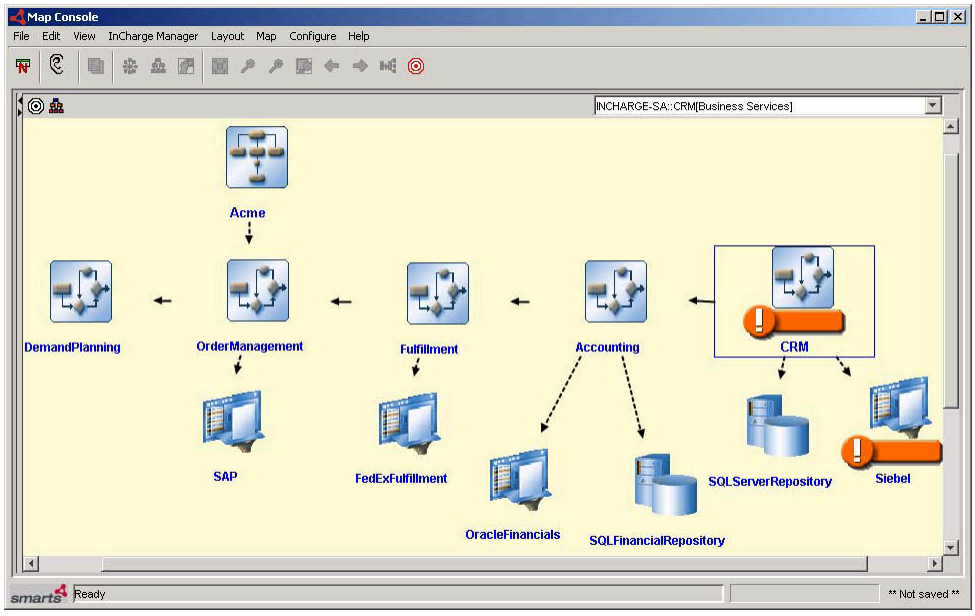
- The BusinessProcesses include DemandPlanning, OrderManagement, Fulfillment, Accounting, and CRM. Remember that the arrowed lines indicate dependencies—not data flow. Therefore, OrderManagement depends on, or is served by, DemandPlanning. Fulfillment is served by OrderManagement, and so on.
- SoftwareServices include SAP, FedExFulfillment, OracleFinancials, and Siebel. Dashed arrowed lines indicate dependency and composition: for example, the OrderManagement BusinessProcess consists of the SAP application, and the Fulfillment BusinessProcess consists of the FedExFulfillment application.
- The DatabaseServers are SQLFinancialRepository and SQLServerRepository. Once again, dashed arrowed lines indicate dependency and composition, so the Accounting BusinessProcess consists of the SQLFinancialRepository data server, and the CRM BusinessProcess consists of the SQLServerRepository data server.

Figure 4-6. A manually arranged Business Services map showing an organization's business processes



When an event occurs, Business Impact Manager calculates the business impact of the event and propagates impact notifications to the affected business elements. Notification propagation in a Business Services map for an organization shows how impacts are automatically propagated in the example. A Degraded event occurs at the Siebel SoftwareService, which indicates Major status (severity 2). An impact notification results at the CRM BusinessProcess, which also indicates Major status (severity 2). No other BusinessProcesses are served by CRM, so there is no further propagation of the impact.

Figure 4-7. Notification propagation in a Business Services map for an organization



Business Process tools

Through the Global Console, you can access a set of server tools to create, modify, or clear BusinessProcess notifications. The tools are called Business Process tools.

VMware Smart Assurance Service Assurance Manager Configuration Guide provides details on the server tools .

BusinessProcess elements are typically affected by performance degradation or failures in infrastructure or application elements, and are displayed as impact notifications. However, business leaders, for example, directors and managers, as well as other authorized personnel, can use the Business Process tools to create root-cause problem notifications for BusinessProcess elements when they notice disruptions in processes.

For example, a financial officer of a business unit can create a root-cause notification if the officer sees that the Accounts Receivable process is impacted by external activities such as construction in the building that prevents access to the Accounts Receivable office. The problem with the process can then be resolved in a timely manner.

Notify Business Process Event tool

This tool enables you to create a notification on a BusinessProcess element. In the dialog box, shown in Notify Business Process Event dialog box, you must provide an event name (other than “Impacted”) for Event Name and a severity level (1, 2, 3, 4, or 5) for Severity. Event Text is optional.

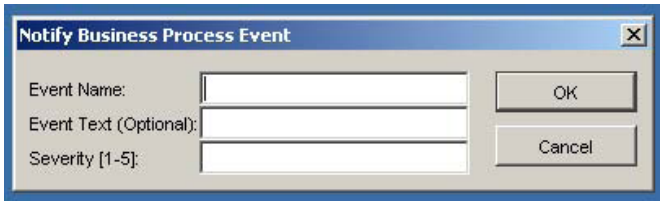


Figure 4-8. Notify Business Process Event dialog box

The Notify Business Process Event tool is accessed from the Topology Browser Console or from a Business Services map in a Map Console by right-clicking an instance of a BusinessProcess element and selecting Notify Business Process Event from the Server Tools menu.

The attribute values automatically assigned to a manually created BusinessProcess notification are listed in Attribute values for manually created business process notifications.

Table 4-3. Attribute values for manually created business process notifications

Attribute	Value
Category	BusinessNotification
Certainty	100
ClearOnAcknowledge	FALSE
EventType	DURABLE
Expiration	0

Table 4-3. Attribute values for manually created business process notifications (Continued)

Attribute	Value
InMaintenance	FALSE
SourceDomainName	INCHARGE-SA (Global Manager name)

Update Business Process Event tool

This tool enables you to change the Event Text and Severity values of a BusinessProcess notification created using the Notify Business Process Event tool. In the dialog box, shown in Update Business Process Event dialog box, you have the option to update the values for Event Text and Severity. If the values are not updated, the current values remain.

Figure 4-9. Update Business Process Event dialog box

The Update Business Process Event tool is accessed from the Notification Log Console by right-clicking a Business Process notification and selecting Update Business Process Event from the Server Tools menu.

Clear Business Process Event tool

This tool enables you to clear a BusinessProcess notification created using the Notify Business Process Event tool. In the dialog box, shown in Clear Business Process Event dialog box, you can update the Event Text.

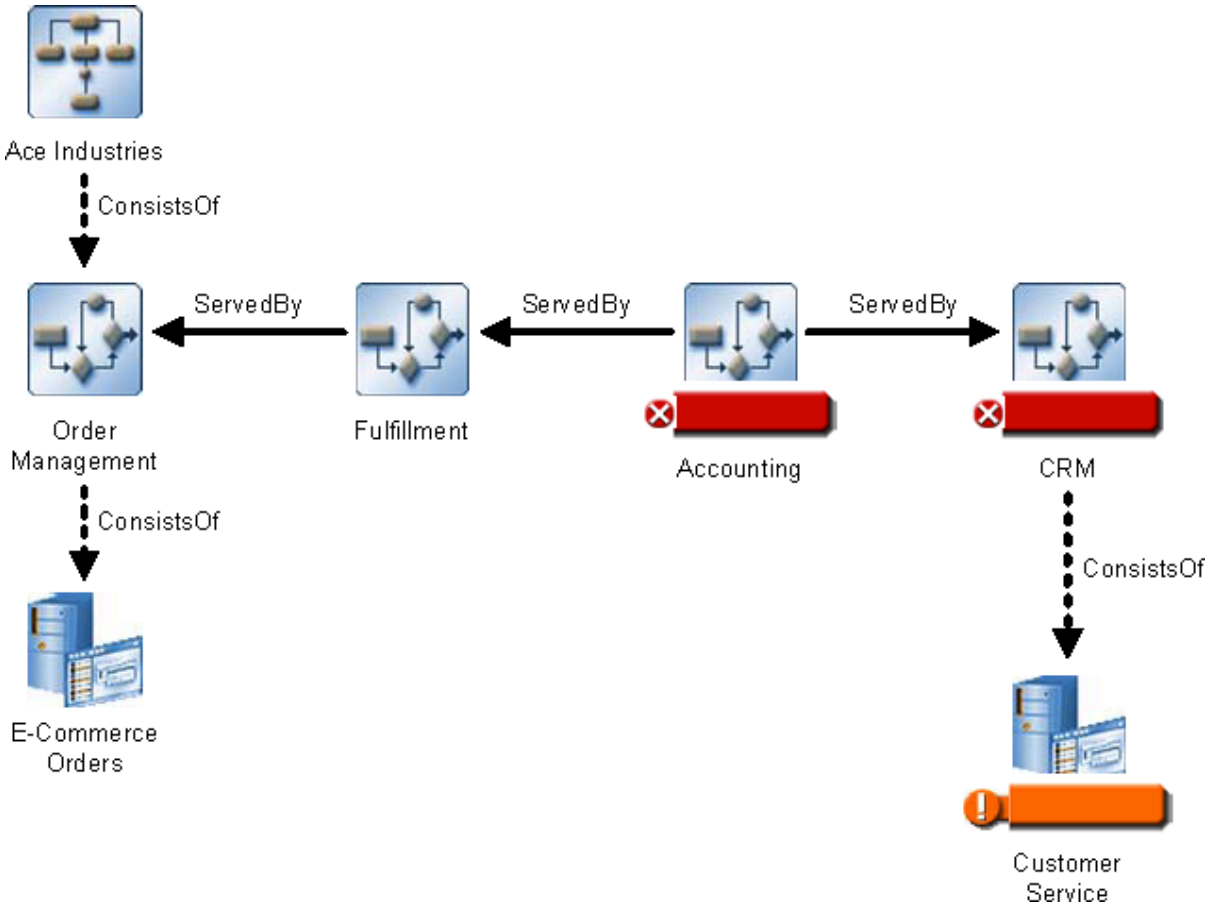
Figure 4-10. Clear Business Process Event dialog box

The Clear Business Process Event tool is accessed from the Notification Log Console by right-clicking an active BusinessProcess notification and selecting Clear Business Process Event from the Server Tools menu.

Business Process tools notification scenario

Business Process tools notification scenario illustrates an impact notification created with the Business Process tools. In the figure, the BusinessProcess Customer Relationship Management (CRM) depends on an application, Customer Service, for its operations. When Customer Service is degraded or down, CRM is degraded or down.

Figure 4-11. Business Process tools notification scenario



When viewing the Business Services map, remember that it shows dependent relationships through arrowed lines: The arrowed lines point *from* a business element *to* the element that the business element depends on. Impact notifications propagate in the direction opposite to that of the arrowed lines: The impact notifications propagate *to* a business element *from* the element that the business element depends on.

To aid in understanding, read the relationships in Business Process tools notification scenario from top to bottom and left to right. For example, CRM consists of Customer Service, and Accounting is served by CRM.

For example, if the customer service representatives decide to go on strike at Ace Industries, their manager can use the Business Process tools to create an UnusualSituation root event on CRM with a severity level 1, critical. Business Impact Manager will also create an impact notification on the affected BusinessProcess CRM, also with severity level 1, critical.

In addition, the CRM notification propagates through the ServedBy relationship to the business process of Accounting. As a result, Business Impact Manager generates an impact notification for Accounting.

Thus, the CRM UnusualSituation notification causes CRM and Accounting Impacted notifications.

Setting Up and Using Business Impact Manager

5

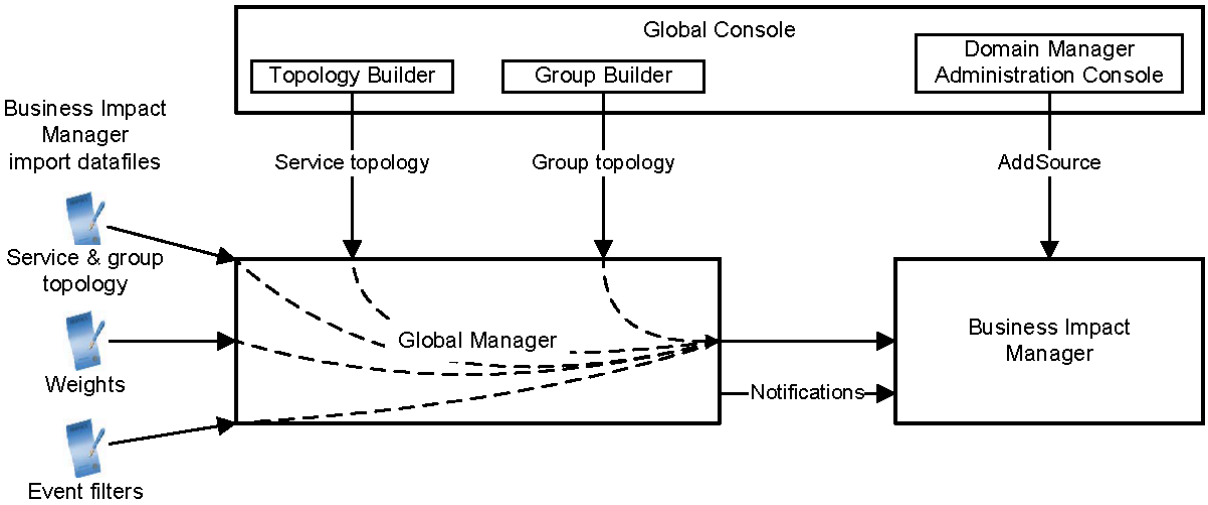
This chapter includes the following topics:

- Configuration overview
- Understanding names and display names
- Defining business service and hierarchical group topology
- Defining business weights
- Defining business event filters
- Specifying text or XML datafiles
- Reloading service and group elements
- Reloading weight and event filter elements
- Using a utility to convert text service and group definitions to XML
- Merging pre-9.1 business-related rules files with 9.1 rules files
- Adding the Global Manager as a topology source
- Specifying a different Global Manager source
- Enabling maintenance tracking

Configuration overview

The Maintenance and Business Impact Manager (MBIM) is a separate service and server, and must be started so that the Business Impact Manager works correctly.

Figure 5-1. Data imported when the Global Manager is added as a topology source



As part of the MBIM configuration, the Service Assurance Manager server must be added as the topology source for the MBIM server. Data imported when the Global Manager is added as a topology source identifies the data imported by the Maintenance and Business Impact Manager server when the Global Manager is added as a topology source to the Maintenance and Business Impact Manager server.

Adding BIM Domain as INCHARGE-SAM-MBIM-SUITE Domain Type

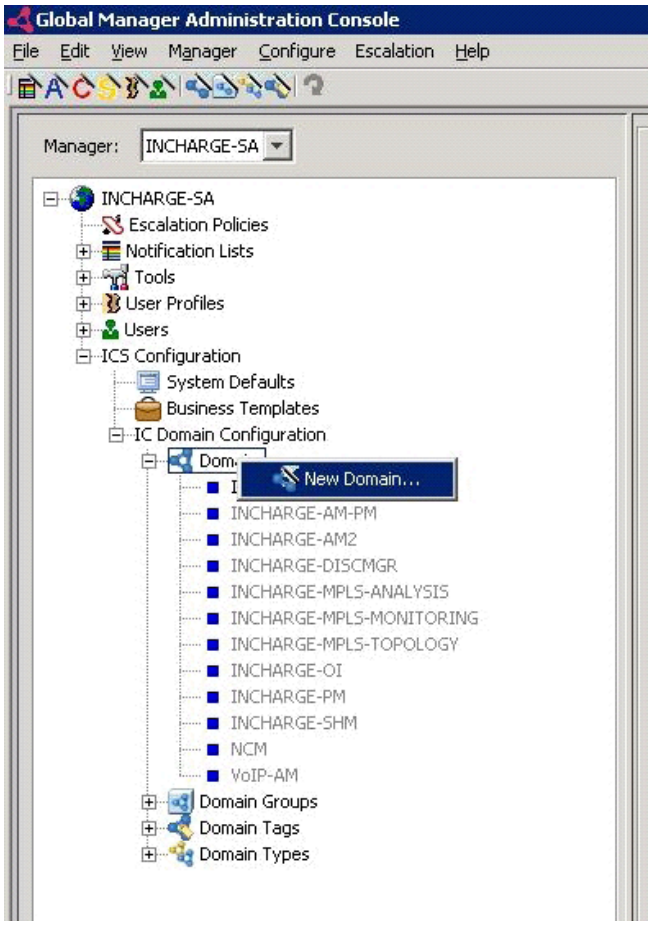
To add the BIM Domain in the avaialable Domains:

1 In **VMware Smart Assurance Global Console ,** select **Configure** > **Global Manager Administration Console**.

2 In the **Global Manager Administration Console**, expand **INCHARGE-SA** (SAM Server)> **ICS Configuration** > **IC Domain Configuration** > **Domains**.

3 Right-click **Domains** > **New Domain. The Domain Creation Wizard** appears.

Figure 5-2. Global Administartion Console for creating a new domain



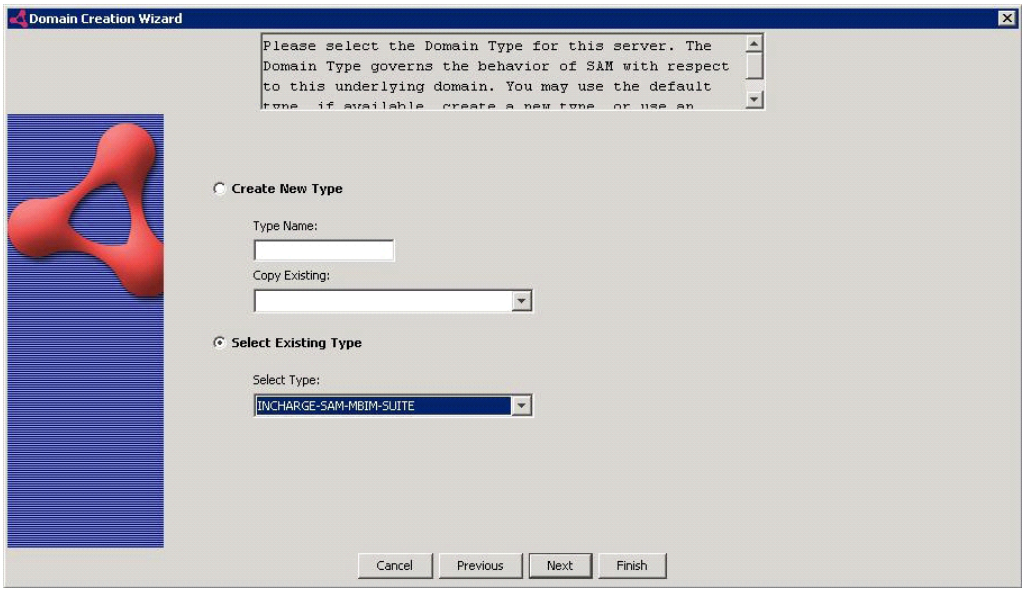
4 In the **Domain Creation Wizard**, type **INCHARGE-MBIM** as Domain Name.

5 Click **Next**.

6 Select **Select Existing Type**.

7 Select **INCHARGE-SAM-MBIM-SUITE** from the **Select Type** list box.

Figure 5-3. Domain Creation Wizard for Select Existing Type



8 Click **Launch Server Reconfiguration** to reconfigure SAM.

Adding Service Assurance Manager as topology source to MBIM server

To add the Service Assurance Manager as a topology source to MBIM:

1 In the **Domain Manager Administration Console**, select **INCHARGE-MBIM** from the **Manager** list box, and select **Topology** > **Add Source** to launch the **Add Source** dialog box.

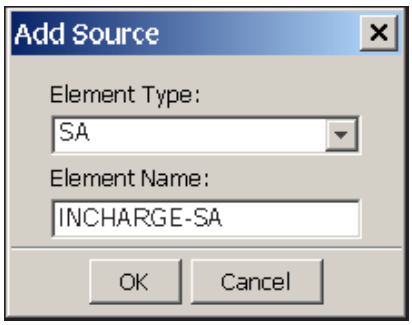
2 In the dialog box, as shown in Add Source dialog box for the Service Assurance Manager server, select **SA** from the **Element Type** list box, type the name of the Service Assurance Manager server (for example, **INCHARGE-SA**) in the **Element Name** field, and then click **OK** to add the Service Assurance Manager server as a topology source.

Figure 5-4. Add Source dialog box for the Service Assurance Manager server

The Service Assurance Manager server contains the complete set of Business Impact Manager topology object data and contains Business Impact Manager maps, too. The MBIM server only imports the minimum required Business Impact Manager data to perform business impact analysis. The MBIM server does not contain a complete set of Business Impact Manager object data.

3 INCHARGE-SA

4 SA



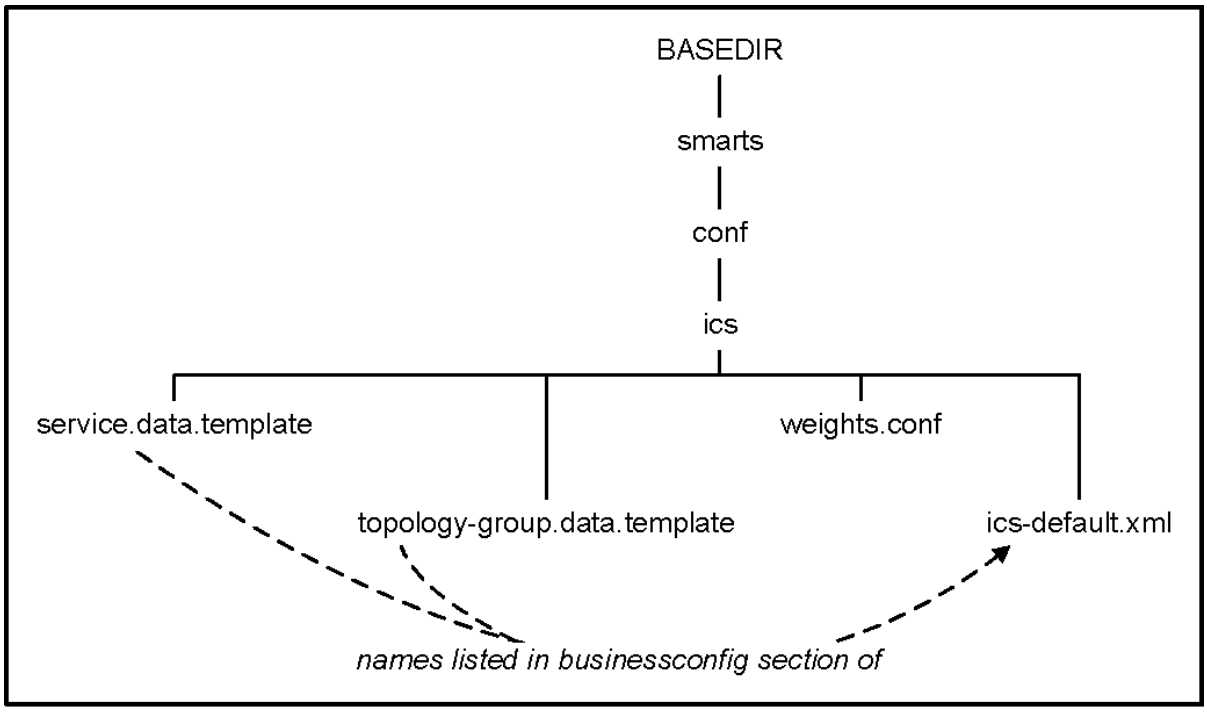
Import datafiles

Two sets of user-configurable import datafiles, identified in Text import datafiles for Business Impact Manager and XML import datafiles for Business Impact Manager, are available with the Global Manager. Defining business service and hierarchical group topology, Defining business weights, and Defining business event filters describe how to define entries in the import datafiles.

Specifying text or XML datafiles describes how to specify which text-format or XML-format import datafiles are loaded by the Global Manager, for subsequent import by Business Impact Manager.

Regardless of the selection (TEXT or XML), the Global Manager will load and the Business Impact Manager will import the event filter import datafile.

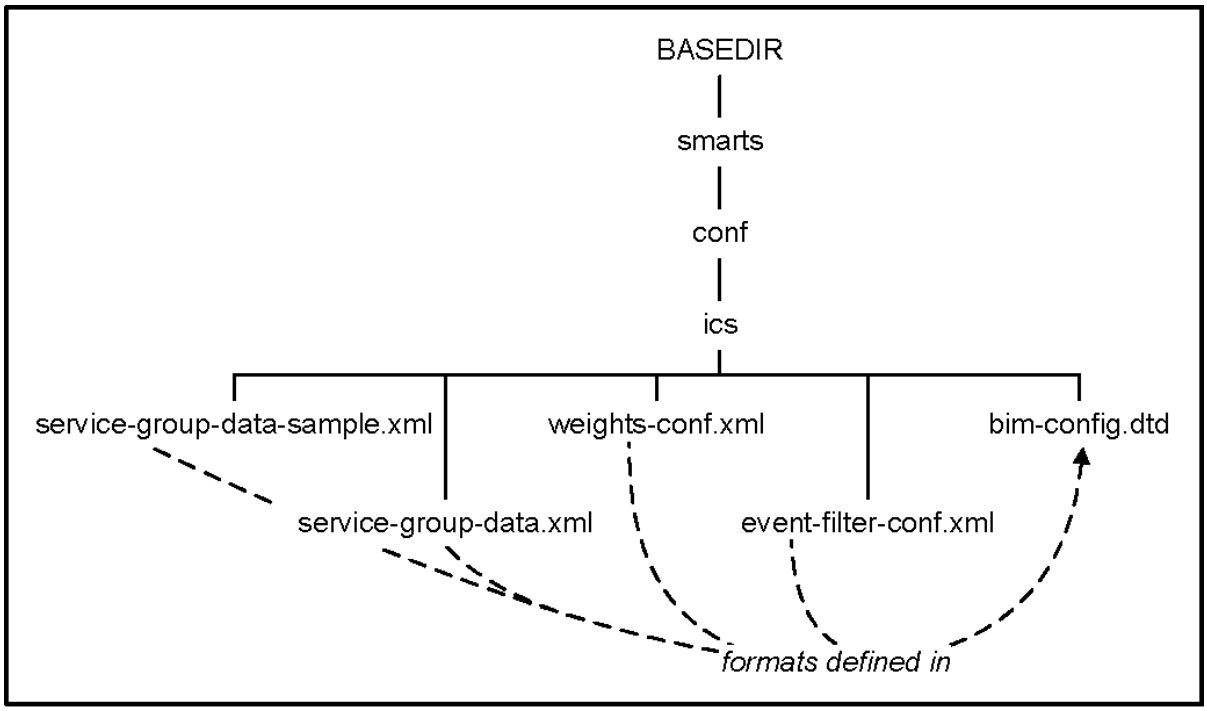
Figure 5-5. Text import datafiles for Business Impact Manager



File definitions:

service.data.template	Text import datafile containing business service topology definitions in text format
topology-group.data.template	Text import datafile containing hierarchical group topology definitions in text format
weights.conf	Text import datafile containing weight definitions in text format
ics-default.xml	XML file containing default configuration settings for the Global Manager

Figure 5-6. XML import datafiles for Business Impact Manager



File definitions:

service-group-data-sample.xml	XML import datafile containing sample business service and hierarchical group topology definitions in XML format
service-group-data.xml	XML import datafile containing no topology; to be used to enter business service and hierarchical group topology definitions in XML format
weights-conf.xml	XML import datafile containing weight definitions in XML format
event-filter-conf.xml	XML import datafile containing event filter definitions in XML format
bim-conf.dtd	Data type definition file containing XML formats for business services, hierarchical groups, weights, and event filters

Topology Builder

In addition to defining business service topology in text or XML import datafiles, users can also use the Topology Builder to create or modify business service topology. The Topology Builder is described in Chapter 6 Creating Business Elements with the Topology Builder

Note that elements or relationships created by the Topology Builder can be removed only by the Topology Builder. Similarly, the Topology Builder Console cannot remove any elements or relationships created or established using the import datafiles.

The Topology Builder can also delete service information created using other means, such as an ASL script or using the create operation with the **dmctl** utility.

Group Builder

In addition to defining hierarchical group topology in text or XML import datafiles, users can also use the Group Builder (also known as a Group Definitions window) to create or modify hierarchical group topology. The VMware Smart Assurance Service Assurance Manager Configuration Guide describes the Group Builder.

Automatic conversion of text service and group definitions to XML

Users can use a Service Assurance topology export utility to convert text-format service and group definitions to XML-format definitions and write the definitions to an XML service-group import datafile. Using a utility to convert text service and group definitions to XML provides the procedure for performing the conversion.

File migration from an old installation to a new installation

When migrating from an old Service Assurance Manager installation to a new Service Assurance Manager installation, users must manually merge any modified business-related rules files with the same files in the new installation. Merging pre-9.1 business-related rules files with 9.1 rules files identifies the files to be merged and provides the procedure for merging the files.

InMaintenance attribute processing

For a business impact notification created solely from causal infrastructure or application notifications associated with devices in maintenance mode, Business Impact Manager will set the InMaintenance attribute of the business impact notification to TRUE.

Put another way, Business Impact Manager will set the InMaintenance attribute of a business impact notification to TRUE when the InMaintenance attribute of each of the underlying causal infrastructure or application notifications is set to TRUE. If the InMaintenance attribute of at least one underlying causal notification is FALSE, Business Impact Manager will set the InMaintenance attribute of the business impact notification to FALSE.

An administrator can configure a notification list and associate it with a user profile to determine whether users of the user profile will see, in their Notification Log Console, those business impact notifications having InMaintenance=TRUE. The VMware Smart Assurance Service Assurance Manager Configuration Guide provides instructions for creating and modifying notification lists.

Global Manager sourcing

Adding the Global Manager as a topology source to Business Impact Manager enables Business Impact Manager to import business service and hierarchical group topology, weights, and event filters from the Global Manager. Adding the Global Manager as a topology source provides instructions for completing this task.

Understanding names and display names

Each element in the Global Manager's repository must have a unique name. When you create a topology element, the Global Manager assigns a predetermined prefix to each element's name to prevent naming conflicts with other topology elements. Prefixes for business element names lists the prefixes for the business elements managed by Business Impact Manager.

Table 5-1. Prefixes for business element names

Prefix	Business element
SRVO-	ServiceOffering
BP-	BusinessProcess
SRVS-	ServiceSubscriber
ORG-	Organization
BU-	BusinessUnit
LOB-	Line of business (LOB)
DEP-	Department
CUS-	Customer
HGRP	HierarchicalGroup

In addition to a Name, each element is also given a DisplayName, which is easier to read and understand. The DisplayName does not include the element prefix.

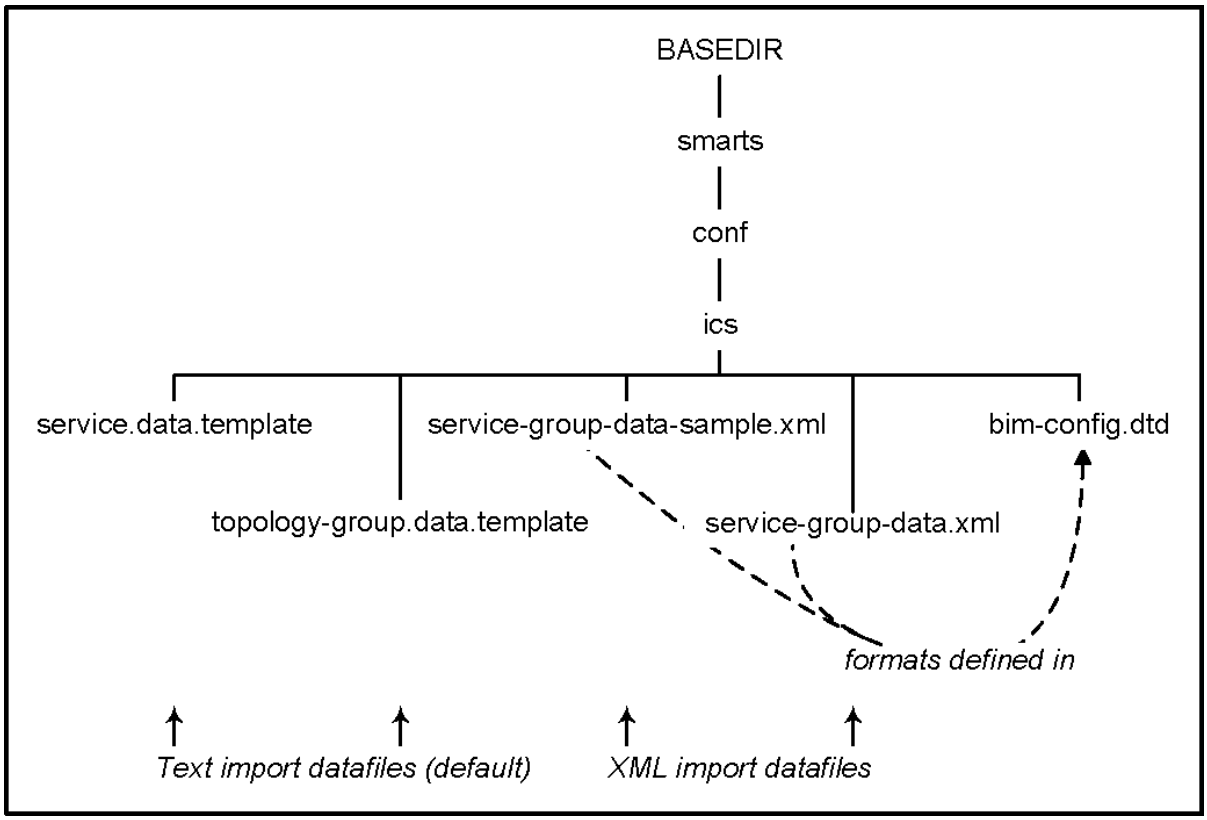
When you create topology elements using topology import datafiles or the Topology Builder, specify the DisplayName. The Global Manager automatically creates the Name by adding the prefix to the DisplayName.

When topology elements are created by other means, for example, through a custom adapter, the Name of the element must include the prefix while the DisplayName should not. Elements created using these methods must observe the naming conventions used by VMware Smart Assurance software.

Defining business service and hierarchical group topology

For Business Impact Manager to import business service and hierarchical group topology from its source Global Manager, you define business service and hierarchal group topology in the two text import datafiles or the single XML import datafile identified in Business service and hierarchal group import datafiles for Business Impact Manager. The datafiles are located in the Service Assurance installation area from which the source Global Manager is invoked.

Figure 5-7. Business service and hierarchal group import datafiles for Business Impact Manager



Whether you choose to use the two text import datafiles or the single XML import datafile to define service and group elements, the Global Manager will load the elements in the same way: At startup, the Global Manager loads the service and group elements and store them in its repository. Specifying text or XML datafiles describes how to specify the import of text-format or XML-format import datafiles.

This section focuses on defining service and group elements in the service.data.template and topology-group.data.template files, respectively. Defining service and group elements in the service-group-data.xml file is identical to defining service and group elements in the two text files except that the definitions are in XML format. The format of the service-group-data.xml file (and the service-group-data-sample.xml file) is defined in the *BASEDIR*/smarts/conf/ics/bim-config.dtd file.

Text import datafile service.data.template

All lines in the original service.data.template file are commented-out (preceded with a pound sign), meaning that by default the Global Manager does not load any business service definitions from the service.data.template file.

The discussions that follow assume that the name of the service import datafile is service.data.template. Of course, when editing the service.data.template file to create a service import datafile, as explained in Procedure for creating a service import datafile, you can save the file as a new name.

Input format

The input format of the service.data.template file is based on Offering Types and Subscriber Types, where:

- Offering Types represent any of the following ICIM classes:
  - ServiceOffering
  - BusinessProcess
- Subscriber Types represent any of the following ICIM classes:
  - ServiceSubscriber
  - Customer
  - Organization
  - BusinessUnit
  - LOB
  - Department

    These ICIM classes compose the business data model, which is described in Business Impact Manager elements.

Relationship keywords

The following portion of the service.data.template file shows the relationship keywords (in bold) that can be stated between Offering Types and Subscriber Types, between Subscriber Types and Subscriber Types, and between Offering Types and underlying infrastructure elements and applications. The serves and servedby relationships are valid for the BusinessProcess Offering Type but not for the ServiceOffering Offering Type:

```
# <Offering Type> <service> subscribers <Subscriber Type>::<subscriber1> ...
# <Offering Type> <service> subscribers file:<//foo/bar/service.subscribers>
# <Offering Type> <service> members <class1>::<instance1> ...
# <Offering Type> <service> members file:<//foo/bar/service.members>
#
# <Subscriber Type> <subscriber> subscriptions <Offering Type>::<service1> ...
# <Subscriber Type> <subscriber> composedof <Subscriber Type>::<subscriber1> ...
# <Subscriber Type> <subscriber> partof <Subscriber Type>::<subscriber1> ...
#
# BusinessProcess <bProcess> serves <bProcess1> ...
# BusinessProcess <bProcess> servedby <bProcess1> ...
```

Relationships enable Business Impact Manager to associate business elements with each other, and with underlying infrastructure elements and applications. Relationships also identify dependencies of elements on other elements, and identify groupings. Examples:

- subscriptions

- (corresponds to the ICIM-defined relationship named Subscriptions):

  Associates a Subscriber Type to one or more Offering Types that are being provided to the Subscriber Type.
- subscribers
- (corresponds to the ICIM-defined relationship named Subscribers):

  Associates an Offering Type to one or more Subscriber Types who subscribe to the Offering Type.
- members
- (corresponds to the ICIM-defined relationship named ConsistsOf):

  Associates an Offering Type to one or more underlying infrastructure, application, or hierarchical group elements that are directly relied upon by the Offering Type. The list of underlying elements might be a list of network elements (hosts, routers, and so on), a list of applications, or a HierarchicalGroup.
- servedby
- (corresponds to the ICIM-defined relationship named ServedBy):

  Associates a BusinessProcess to one or more other BusinessProcesses that serve the BusinessProcess.

Syntax

The syntax for defining business services in the service.data.template file is as follows:

```
<class> <instance> <relationship keyword> <related_instance>
```

Business service definition examples

In the following examples, relationship keywords are indicated in bold type.

Here is a ServiceSubscriber example:

```
ServiceSubscriber subscriber1 subscriptions service1 service2
   BusinessProcess::bProcess1
```

This business service definition results in the creation of the ServiceSubscriber element subscriber1 and the ServiceOffering elements service1 and service2. The bProcess1 element will also be created as an instance of the class, BusinessProcess. The ServiceOffering class is not specified because the subscriptions keyword implies that these elements are instantiated from the ServiceOffering class.

The ServiceOffering example that follows uses similar logic:

```
ServiceOffering service1 subscribers subscriber1 subscriber2 Customer::customer1
```

This business service definition results in the creation of the ServiceOffering element service1 and the ServiceSubscriber elements subscriber1 and subscriber2. The customer1 element will also be created as an instance of the class, Customer. The ServiceSubscriber class is not specified because the subscribers keyword implies that these elements are instantiated from the ServiceSubscriber class.

When the relationship keyword is serves or servedby, the value of *<class>* is BusinessProcess, and the implied class for *<related_instance>* is also BusinessProcess:

```
BusinessProcess bProcess1 serves bProcess2 BusinessProcess::bProcess3
BusinessProcess bProcess1 servedby bProcess4
```

Here are some more Subscriber Type examples:

```
Organization organization1 subscriptions service1 BusinessProcess::bProcess1
BusinessUnit business_unit1 subscriptions service1 BusinessProcess::bProcess1
LOB lob subscriptions ServiceOffering::service1 BusinessProcess::bProcess1
Department department subscriptions service1 BusinessProcess::bProcess1
Customer customer subscriptions service1 service2 BusinessProcess::bProcess1
```

Additionally, Subscriber Type elements can be a part of or composed of other Subscriber Type elements. The syntax is:

```
Organization organization1 composedof BusinessUnit::business_unit1
   Department::department1
LOB lob1 partof business_unit1 BusinessUnit::business_unit2
```

After a BusinessProcess instance is specified in the service.data.template file, it can be specified as a member of a ServiceOffering or HierarchicalGroup that is also defined in the service.data.template file:

```
ServiceOffering service1 members BusinessProcess::bProcess1 Host::H1
HierarchicalGroup group1 members BusinessProcess::bProcess1 Router::R1
```

A BusinessProcess may consist of SoftwareService elements or other logical elements that already exist in the topology:

```
BusinessProcess bProcess1 members SoftwareService::A1 SoftwareService::A2
```

For a complete example, the Organization, BusinessProcess, DatabaseServer, and SoftwareService elements and their relationships shown in the Business Services map in Business service definition examples through Business service definition examples are defined as follows:

```
BusinessProcess CRM servedby BusinessProcess::Accounting
BusinessProcess Accounting servedby BusinessProcess::Fulfillment
BusinessProcess Fulfillment servedby BusinessProcess::OrderManagement
BusinessProcess OrderManagement servedby BusinessProcess::DemandPlanning
Organization Acme subscriptions BusinessProcess::OrderManagement
BusinessProcess OrderManagement members SoftwareService::SAP
BusinessProcess Fulfillment members SoftwareService::FedExFulfillment
```

```
BusinessProcess Accounting members SoftwareService::OracleFinancials
   DatabaseServer::SQLFinancialRepository
BusinessProcess CRM members SoftwareService::Siebel
   DatabaseServer::SQLServerRepository
```

When dealing with large numbers of members in a ServiceOffering, it may become more practical to use HierarchicalGroups to represent a group of network elements. Groups may be defined in the service.data.template file along with the ServiceOfferings. The *VMware Smart Assurance Service Assurance Manager Configuration Guide* contains additional information on defining and importing HierarchicalGroups.

Optional input files

Listing related (<*related_instance*>) subscribers, members, or applications is not practical because there are too many of them, elements can be listed in separate input files that are referenced in the service.data.template file. For example:

```
BusinessProcess bProcess1 serves bProcess2 bProcess3 bProcess4
```

is the same as:

```
BusinessProcess bProcess1 serves file://C:/mydir/myfile
```

where C:/mydir/myfile consists of three lines:

```
bProcess2
bProcess3
bProcess4
```

Input files must be specified in the service.data.template file.

Each element in an input file must use the <*class_name*>::<*instance*> syntax with one entry per line. Similar to the service.data.template file, Business Impact Manager assumes that elements in the input file for an Offering Type having a subscribers relationship keyword are ServiceSubscriber elements.

When members are specified, the elements must already exist in the topology so that the relevant relationship keyword can be established with the requested element. Otherwise, such items will be ignored.

Rules and considerations for creating business service definitions

When defining business service definitions in the service.data.template file, keep the following rules and considerations in mind:

- Each business element to be included must start with the class name (for example, ServiceOffering, ServiceSubscriber).
- You can combine ServiceOffering data with group data (HierarchicalGroups) in the service.data.template file.

- When defining members or subscribers in a separate input file, *<file_name>* is a file that will contain one member or subscriber name per line, as an alternative to listing members in the service.data.template file. For members, the *<class_name>*::*<instance>* syntax is required.
- Each relationship must be defined on a separate line.
- The same business element can appear in multiple lines (so you do not have to list all of the related elements on a single line).
- Because a service is created as a ServiceOffering of a subscriber, it does not need to be defined separately if it does not have any other subscribers or any members of its own. Similarly, when a subscriber appears in a line where an offering is listed, it is automatically created. You do not have to define it individually.
- The system name of an element does not need to be a fully qualified domain name. The truncated system name will be searched for and matched.

Procedure for creating a service import datafile

You use the service.data.template file as the basis for creating a service import datafile.

To create a service import datafile:

1. In the installation area from which the source Global Manager is invoked, go to the *BASEDIR*/smarts/bin directory and type the following command to open the service.data.template file:

   ```
   sm_edit conf/ics/service.data.template
   ```

2. Add your business service definitions to the file.
3. Save and close the file. The modified version of the service.data.template file is saved to the *BASEDIR*/smarts/local/conf/ics directory in the installation area.

   If you saved the service import datafile as a new name, the file is saved as the new name in the *BASEDIR*/smarts/local/conf/ics directory. Perform the procedure in Specifying text or XML datafiles to make the Global Manager aware of the new service import datafile. Then, perform the procedure in Reloading service and group elements to force the Global Manager to load the elements defined in the new service import datafile.

   If you saved the service import datafile as is, the file is saved as service.data.template in the *BASEDIR*/smarts/local/conf/ics directory. If the Global Manager was running before you created the file, perform the procedure in Reloading service and group elements to force the Global Manager to load the elements defined in the service import datafile.

   Thereafter, every time that you modify the service import datafile, perform the procedure in Reloading service and group elements to force the Global Manager to reload the elements defined in the service import datafile.

Text import datafile topology-group.data.template

All lines in the original topology-group.data.template file are commented-out (preceded with a pound sign), meaning that by default the Global Manager does not load any hierarchical group definitions from the topology-group.data.template file.

The discussions that follow assume that the name of the group import datafile is topology-group.data.template. Of course, when editing the topology-group.data.template file to create a group import datafile, as explained in Procedure for creating a group import datafile, you can save the file as a new name.

Input format and relationship keywords

The following portion of the topology-group.data.template file shows the input format of the topology-group.data.template file and the relationship keywords (in bold) that can be stated between HierarchicalGroups and children or member groups:

```
# HierarchicalGroup <group> children <group1> <group2> ...
# HierarchicalGroup <group> members  <class1::instance1> <class2::instance2> ...
# HierarchicalGroup <group> members  file:<//foo/bar/group.members>
```

The members relationship keyword corresponds to ConsistsOf in the ConsistsOf/MemberOf ICIM-defined relationship set, and the children relationship keyword corresponds to ChildGroups in the ChildGroups/ParentGroup ICIM-defined relationship set.

The *VMware Smart Assurance Service Assurance Manager Configuration Guide* provides information about defining and importing HierarchicalGroups.

Hierarchical group definition examples

In the following examples, relationship keywords are indicated in bold type:

```
HierarchicalGroup "Groups of SO1" children "Group1 of SO1" "Group2 of SO1"
HierarchicalGroup "Groups of SO1" members file:/foo/bar/g1_so1.members
HierarchicalGroup "Routers of SO1" children Critical
HierarchicalGroup "Routers of SO1" members Router::lab-gw.smarts.com
   Router::ny-sma-1
HierarchicalGroup "Routers of SO1" members file:/foo/bar/routers_so2.members
HierarchicalGroup Critical members Router::moto-gw
HierarchicalGroup G1 children G2
HierarchicalGroup G1 members VLAN::VLAN-1 Cable::IF-172.16.0.0
   IPNetwork::LINK-IF-172.16.0.0
```

Procedure for creating a group import datafile

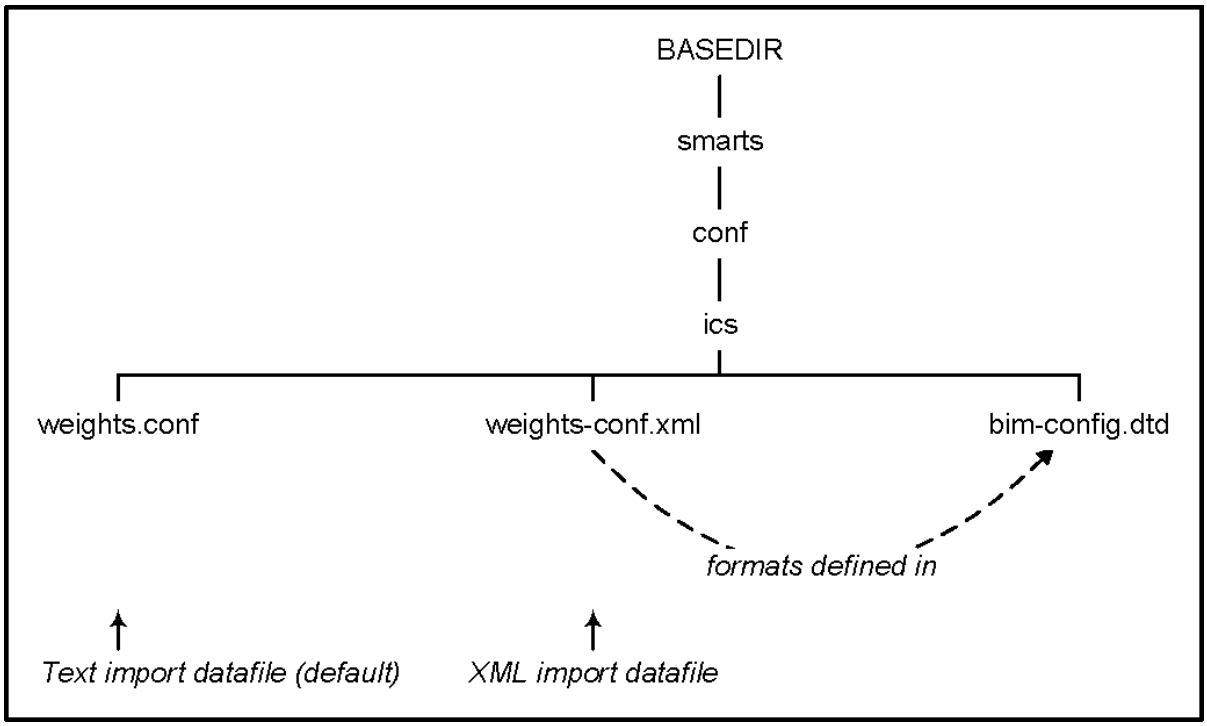
You use the topology-group.data.template file as the basis for creating a group import datafile.

To create a group import datafile, follow the instructions in Procedure for creating a service import datafile; substitute service.data.template with topology-group.data.template in the procedure and add your hierarchical group definitions to the group import datafile.

Defining business weights

For Business Impact Manager to import weights from its source Global Manager, you define weight elements in the text or XML import datafile identified in Weights import datafiles for Business Impact Manager. The datafiles are located in the Service Assurance installation area from which the source Global Manager is invoked.

Figure 5-8. Weights import datafiles for Business Impact Manager



Whether you choose to use the text or the XML import datafile to define weight elements, the Global Manager will load the elements in the same way: At startup, the Global Manager loads the weight elements but does not store them in its repository. Specifying text or XML datafiles describes how to specify the import of text-format or XML-format import datafiles.

This section focuses on defining weight elements in the weights.conf file. Defining weight elements in the weights-conf.xml file is identical to defining weight elements in the text file except that the definitions are in XML format. The format of the weights-conf.xml file is defined in the *BASEDIR*/smarts/conf/ics/bim-config.dtd file.

Text import datafile weights.conf

All but the following lines in the original weights.conf file are commented-out (preceded with a pound sign), meaning that by default the Global Manager loads the following weight definitions from the weights.conf file:

- ClassWeight ICIM_ManagedElement 1
- ClassWeight UnitaryComputerSystem 1

- ClassWeight ICIM_Service 1
- ClassWeight ServiceOffering 1
- ClassWeight ServiceSubscriber 1

Impact value calculations

Business Impact Manager calculates a numeric impact value for a root-cause problem notification by summing the weights of all of the elements affected by the problem. The numeric impact value appears in the Impact column for the problem notification in the Notification Log Console.

A weight is a numeric value that you assign to an element (for example, a ServiceOffering, a BusinessProcess, or an infrastructure or application element supporting a ServiceOffering or BusinessProcess) based on its importance to your business. By summing all of the assigned values, Business Impact Manager determines which problem notifications have a greater business impact than other problem notifications. Assigning weights allows you to apply your own criteria to “weigh” problems based on information that is most important to you at any given time; it enables you to prioritize support efforts based on business impacts.

Only root-cause problem notifications can have a non-zero Impact value. A notification can both cause and be caused by other notifications, as shown in Impact value calculation and impact propagation.

Figure 5-9. Impact value calculation and impact propagation

Notification N2 is caused by N1, and causes notification N3. However, even if a notification causes other notifications, if it is not the root-cause problem notification, its Impact value is zero. Only notification N1 has an Impact value greater than zero.

In the figure, note that even if the element denoted in notification N1 has a weight assigned to it, Business Impact Manager does not include that weight in the calculated impact value for N1. Business Impact Manager includes in its calculation only the weights of the elements affected by the problem element.

Mechanisms for assigning weights

Business Impact Manager uses the weights.conf file to assign weights to ICIM classes and instances (elements, objects). By default, Business Impact Manager assigns a weight of “1” for each managed infrastructure or business element in the ICIM_ManagedElement class. Therefore, if left at this default level, all impacted infrastructure, ServiceOffering, BusinessProcess, and ServiceSubscriber elements carry equal “weight” when determining an event’s impact.

Strategies for assigning weights

Weight values are assigned to ICIM classes and instances in the weights.conf file.

Weights can be assigned to any class or instance by specifying one of the following keywords:

- ClassWeight
- InstanceNameWeight
- InstanceWeight

  The syntax in the file is as follows:

  ```
  ClassWeight <class_name> <value>
  InstanceNameWeight <class_name> <DisplayName> <value>
  InstanceNameWeight <class_name> <full_instance_name> <value>
  InstanceWeight <class_name> <instance_name> <value>
  ```

  For the keyword InstanceNameWeight, business classes are specified by their DisplayName, without a prefix. For all other classes, you must specify the *<full_instance_name>*, or the complete name of the element, including the prefix of the element. For *<instance_name>*, you can specify the DisplayName or you can specify a wildcard pattern. The symbols for wildcards are listed and described in the weights.conf file.

  When you assign weight values to elements, categorize the elements according to their importance within your environment. Then, assign greater values to the elements that are more important to your business.

  For example:

  ```
  ClassWeight     ICIM_ManagedElement 1
  InstanceNameWeight  BusinessProcess Inventory 4000
  InstanceNameWeight  Application APP-Inventory Service 4000
  InstanceWeight      Router *[Gg][Ww]* 1000
  ```

Similarly, you can assign varying weights to service subscribers:

```
ClassWeight   Organization    1000
ClassWeight   BusinessUnit    1200
ClassWeight   LOB             1400
ClassWeight   Department      1600
ClassWeight   Customer        1800
```

In Business Impact Manager's calculations, the weight assigned to an instance takes precedence over the weight assigned to a class, and the weight assigned to a subclass takes precedence over the weight assigned to the parent class.

Procedure for creating a weights import datafile

You use the weights.conf file as the basis for creating a weights import datafile.

To create a weights import datafile:

1 In the installation area from which the source Global Manager is invoked, go to the *BASEDIR*/smarts/bin directory and type the following command to open the weights.conf file:

```
sm_edit conf/ics/weights.conf
```

2 Add your weight definitions to the file.

3 Save and close the file. The modified version of the weights.conf file is saved to the *BASEDIR*/smarts/local/conf/ics directory in the installation area.

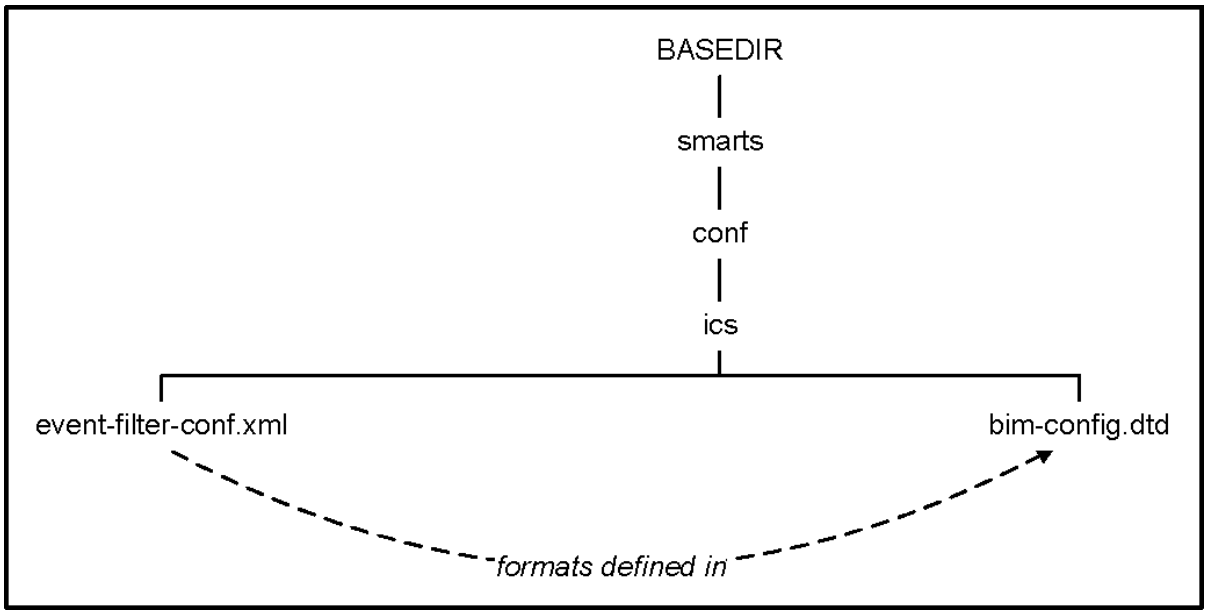
If the Global Manager was running before you created your weights import datafile, perform the procedure in Reloading weight and event filter elements to force the Global Manager to load the weight elements defined in the *BASEDIR*/smarts/local/conf/ics/weights.conf file.

Thereafter, every time that you modify the weights import datafile, perform the procedure in Reloading weight and event filter elements to force the Global Manager to reload the weight elements defined in the *BASEDIR*/smarts/local/conf/ics/weights.conf file.

Defining business event filters

For Business Impact Manager to import event filters from its source Global Manager, you define event filter elements in the XML import datafile identified in Event filter import datafile for Business Impact Manager. The datafile is located in the Service Assurance installation area from which the source Global Manager is invoked.

Figure 5-10. Event filter import datafile for Business Impact Manager



At startup, the Global Manager loads the event filter elements but does not store them in its repository.

XML import datafile event-filter-conf.xml

All lines in the original event-filter-conf.xml file are commented-out, meaning that by default the Global Manager does not load any event filter definitions from the event-filter-conf.xml file.

You use the event-filter-conf.xml file to create a table of events for which Business Impact Manager will not generate business impact notifications. An event filter definition is designated as a ClassName::EventName pair.

The format of the event-filter-conf.xml file is defined in the *BASEDIR*/smarts/conf/ics/bim-config.dtd file.

Procedure for creating an event filter import datafile

You use the event-filter-conf.xml file as the basis for creating an event filter import datafile.

To create an event filter import datafile:

1 In the installation area from which the source Global Manager is invoked, go to the *BASEDIR*/smarts/bin directory and type the following command to open the event-filter-conf.xml file:

```
sm_edit conf/ics/event-filter-conf.xml
```

2 Add your event filter definitions to the file.

3 Save and close the file. The modified version of the event-filter-conf.xml file is saved to the *BASEDIR*/smarts/local/conf/ics directory in the installation area.

   If the Global Manager was running before you created your event filter import datafile, perform the procedure in Reloading weight and event filter elements to force the Global Manager to load the event filter elements defined in the *BASEDIR*/smarts/local/conf/ics/event-filter-conf.xml file.

   Thereafter, every time that you modify the event filter import datafile, perform the procedure in Reloading weight and event filter elements to force the Global Manager to reload the event filter elements defined in the *BASEDIR*/smarts/local/conf/ics/event-filter-conf.xml file.

Specifying text or XML datafiles

You use the Business Templates configuration window of the Global Manager Administration Console attached to the source Global Manager to specify whether the source Global Manager loads, and the Business Impact Manager imports:

- The text-format service and group import datafiles (service.data.template and topology-group.data.template by default) or the XML-format service-group import datafile (service-group-data.xml for example).
- The text-format weights import datafile (weights.conf by default) or the XML-format weights import datafile (weights-conf.xml).

Open the Global Manager Administration Console

The VMware Smart Assurance Service Assurance Manager Operator Guide provides information about starting the Global Console, logging in, and attaching to a Manager. You need a user account with administrative privileges to access the Global Manager Administration Console. The default administrative account is username **admin** and password **changeme**.

Attaching the Global Console to the Global Manager provides additional information.

The VMware Smart Assurance System Administration Guide provides information about changing the password for the default administrative account (recommended) and configuring access privileges. The VMware Smart Assurance Service Assurance Manager Configuration Guide provides information on configuring permissions to perform specific console operations.

To open the Global Manager Administration Console:

1 Attach the Global Console to the Global Manager in your deployment.

   A **Notification Log Console** opens.

2 In the console, select **Configure** > **Global Manager Administration Console** to open the **G lobal Manager Administration Console**.

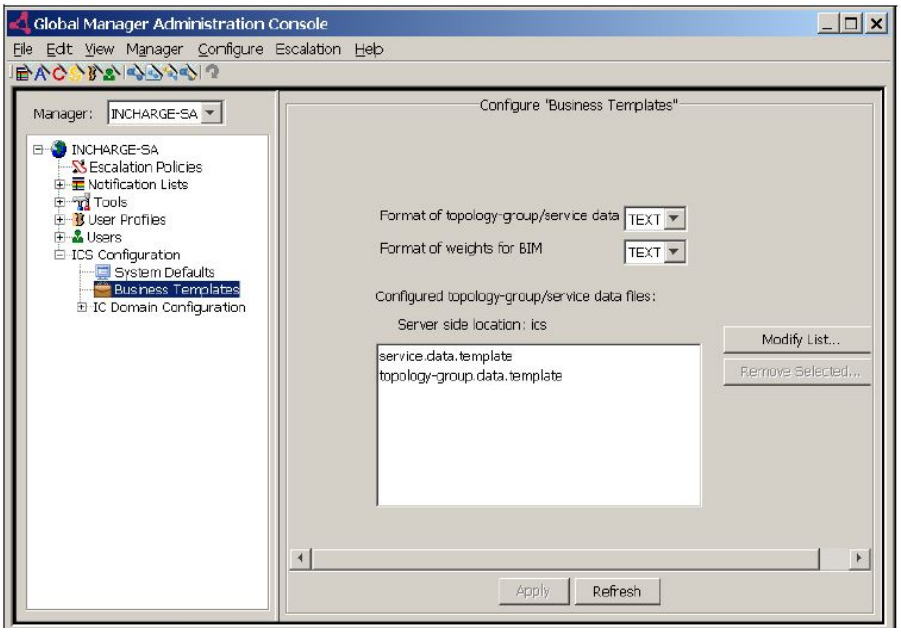
Open the Business Templates configuration window

To open the Business Templates configuration window:

1 In the left panel of the **Global Manager Administration Console**, expand the configuration tree to display **Business Templates**.

2 Click **Business Templates** to display its configuration window as shown in Business Templates configuration window—example.

Figure 5-11. Business Templates configuration window—example



In the Business Templates configuration window, the upper list box determines the topology format (TEXT|XML) of the service/group import datafiles, and the lower list box determines the format (TEXT|XML) of the weights import datafile, that is, determines whether the weights.conf file or the weights-conf.xml file is to be loaded by the Global Manager. The text box identifies which service/group import datafiles are currently selected for loading by the Global Manager.

With the exception of using the lower list box to determine the weights import datafile, all functions available through the Business Templates configuration window pertain to selecting which service/group import datafiles are to be loaded by the Global Manager.

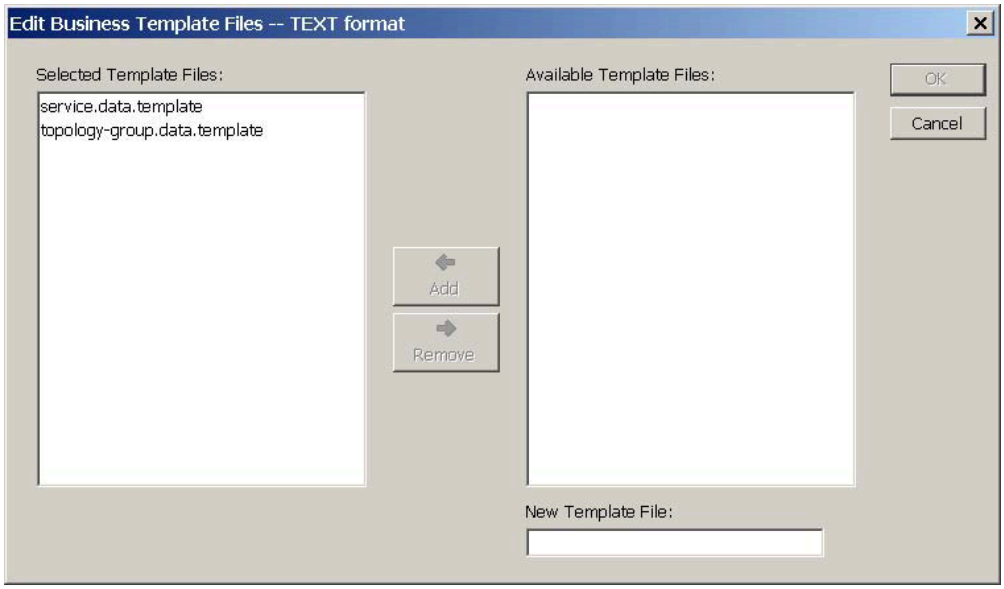
Configure a service/group import datafile list

To configure a service/group import datafile list:

1 In the **Business Templates** configuration window, select **TEXT** in the upper list box if you want to configure a text service/group import datafile list, or select **XML** if you want to configure an XML service/group datafile list.

2 In the **Business Templates** configuration window, click **Modify List** to launch the **Edit Business Template Files** dialog box as shown in Edit Business Template Files dialog box—example.

Figure 5-12. Edit Business Template Files dialog box—example



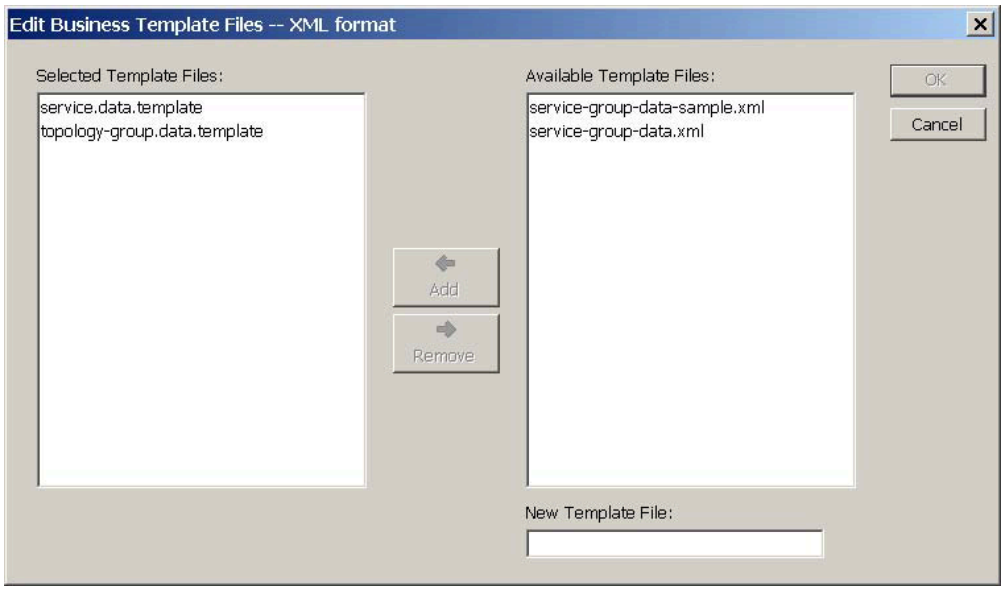
If TEXT is selected in the upper list box of the Business Templates configuration window, all files with names matching *.template in the *BASEDIR*/smarts/local/conf/ics or *BASEDIR*/smarts/conf/ics directory will appear in the Available Template Files list of the dialog box, except for any already selected matching text files, which will appear in the Selected Template Files list. You can select one or more text service/group import datafiles for loading by the Global Manager.

Note The asterisk (*) is a wildcard character that matches an arbitrary string of characters, including an empty string.

If XML is selected in the upper list box of the Business Templates configuration window, all files with names matching *service-group-data*.xml in the *BASEDIR*/smarts/local/conf/ics or *BASEDIR*/smarts/conf/ics directory will appear in the Available Template Files list of the dialog box, except for any already selected matching XML file, which will appear in the Selected Template Files list. You can select only one XML service-group import datafile for loading by the Global Manager.

Be aware that even after the format in the Business Templates configuration window is changed to the opposite value, whatever service/group import datafiles are currently selected for loading will appear in the Selected Template Files list. For example, if you set the upper list box in Configure a service/group import datafile list to XML and click Modify List, the service.data.template and topology-group.data.template files will still appear in the Selected Template Files list as shown in Edit Business Template Files dialog box—example 2.

Figure 5-13. Edit Business Template Files dialog box—example 2



Of course, all files with names matching **service-group-data*.xml* in the *BASEDIR*/smarts/local/conf/ics or *BASEDIR*/smarts/conf/ics directory will appear in the Available Template Files list.

You remove an unwanted, currently selected file from the Business Templates configuration by selecting it in the Selected Template Files list and clicking Remove. Or, as an alternative, you can remove the file by selecting it in the Business Templates configuration window, Configure a service/group import datafile list, and clicking Remove Selected.

Note At anytime, you can click Refresh in the Business Templates configuration window to populate the window with its original settings.

To modify the list of selected service/group import datafiles:

3 In the **Edit Business Template Files** dialog box, select a file in the **Available Template Files** list box or in the **Selected Template Files** list box.

4 Click **Add** to move an available file to the **Selected Template Files** list, or click **Remove** to move a selected file to the **Available Template Files** list.

5 In the **Edit Business Template Files** dialog box, type the name of a service/group import datafile in the **New Template File** text box.

For TEXT format, you can type the name of any text service/group import datafile except a name matching *.xml. For XML format, you can type the name of any XML service-group import datafile matching *.xml. The datafile must reside in the *BASEDIR*/smarts/local/conf/ics directory.

6 Click **Add** to move the new file to the **Selected Template Files** list.

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

8 In the **Business Templates** configuration window, click **Apply** to save your changes.

Upon clicking Apply, the underlying software loads a single configuration object named ICS_BusinessTemplatesConfiguration::ICS-Business Templates and stores it in the Global Manager's repository. The attributes of this object hold most of the settings of the Business Templates configuration, including the names of the selected service/group import datafiles and the format (TEXT|XML) of the datafiles. An attribute of the BIM_Manager::BIM-Manager object holds the format (TEXT|XML) of the selected weights import datafile.

To load the topology elements defined in the service/group import datafiles, perform the procedure given in Reloading service and group elements. To load the weight elements defined in the weights import datafile, perform the procedure given in Reloading weight and event filter elements.

Each time an import datafile is reloaded, the new definition set replaces the current one. Any eliminated definition from an import datafile will remove that definition from the Global Manager's memory.

Note The Global Manager automatically loads the topology elements defined in the service/group datafiles whenever it performs a topology synchronization with an underlying Domain Manager.

Reloading service and group elements

When you modify the content of a text service import datafile, a text group import datafile, or an XML service-group import datafile that has already been loaded by the source Global Manager, you must issue a **dmctl** command to force the Global Manager to reload the elements defined in the service and group import datafiles. The dmctl command invokes a driver that loads the elements defined in these datafiles.

To reload business service and hierarchical group elements:

1 In the installation area from which the source Global Manager is invoked, go to the *BASEDIR*/smarts/bin directory and type the following command on one line:

```
dmc

tl -s <
Global Manager name
>

   invoke GA_DaemonDriver::ICS-Group-Driver start
dmctl -s INCHARGE-SA invoke

   GA_DaemonDriver::ICS-Group-Driver start
```

2 If prompted for a username and password, specify your user account; for example, to specify the default administrative account, enter username **admin** and password **changeme**.

   Each time a service/group import datafile is reloaded, the new definition set replaces the current one. Any eliminated definition from a service/group import datafile will remove that definition from the Global Manager's repository.

   Reimporting affects the elements or relationships previously created by a service/group data import; it does not affect the elements or relationships created using the Topology Builder Console.

Reloading weight and event filter elements

When you modify the content of a weights or event filter import datafile that has already been loaded by the source Global Manager, you must issue an **sm_adapter** command to force the Global Manager to reload the elements defined in the weights and event filter import datafiles. The **sm_adapter** command invokes the drivers that load the elements defined in these datafiles.

To reload business weight and event filter elements:

1 In the installation area from which the source Global Manager is invoked, go to the *BASEDIR*/smarts/bin directory and type the following command:

```
s

m_adapter -s <
Global Manager name
> ics/ICS_RemoteConfig.as
l
sm_adapter -s INCHARGE-SA ics/ICS_RemoteConfig.asl
```

2 If prompted for a username and password, specify your user account; for example, to specify the default administrative account, type username **admin** and password **changeme**.

   Each time a weights or event filter import datafile is reloaded, the new definition set replaces the current one. Any eliminated definition from a weights or event filter import datafile will remove that definition from the Global Manager's memory.

Using a utility to convert text service and group definitions to XML

You can use a Service Assurance topology export utility to convert text-format service and group definitions to XML-format definitions and write the definitions to an XML service-group import datafile. The final location of this XML service-group import datafile must be the *BASEDIR*/smarts/local/conf/ics directory in the installation area.

To automatically convert text service and group definitions to XML:

1 Consult Specifying text or XML datafiles and select the text service and group import datafiles that you want to convert to XML.

2 Consult Reloading service and group elements and load the topology elements defined in the import datafiles selected in step 1 .

3 In the installation area from which the source Global Manager is invoked, go to the *BASEDIR*/smarts/bin directory and type the following command on one line:

```
dmctl -s
<Global Manager name>
 invoke

   ICS_ConfigurationManager::ICS-ConfigurationManager

   exportConfigFor BIM_Topology >

   <BASEDIR/smarts/local/conf/ics/name of XML datafile into which

   to write the service-group definitions>
dmctl -s <
INCHARGE-SA
> invoke

   ICS_ConfigurationManager::ICS-ConfigurationManager

   exportConfigFor BIM_Topology >


/opt/InCharge/SAM/smarts/local/conf/ics/service-group-data.xml
```

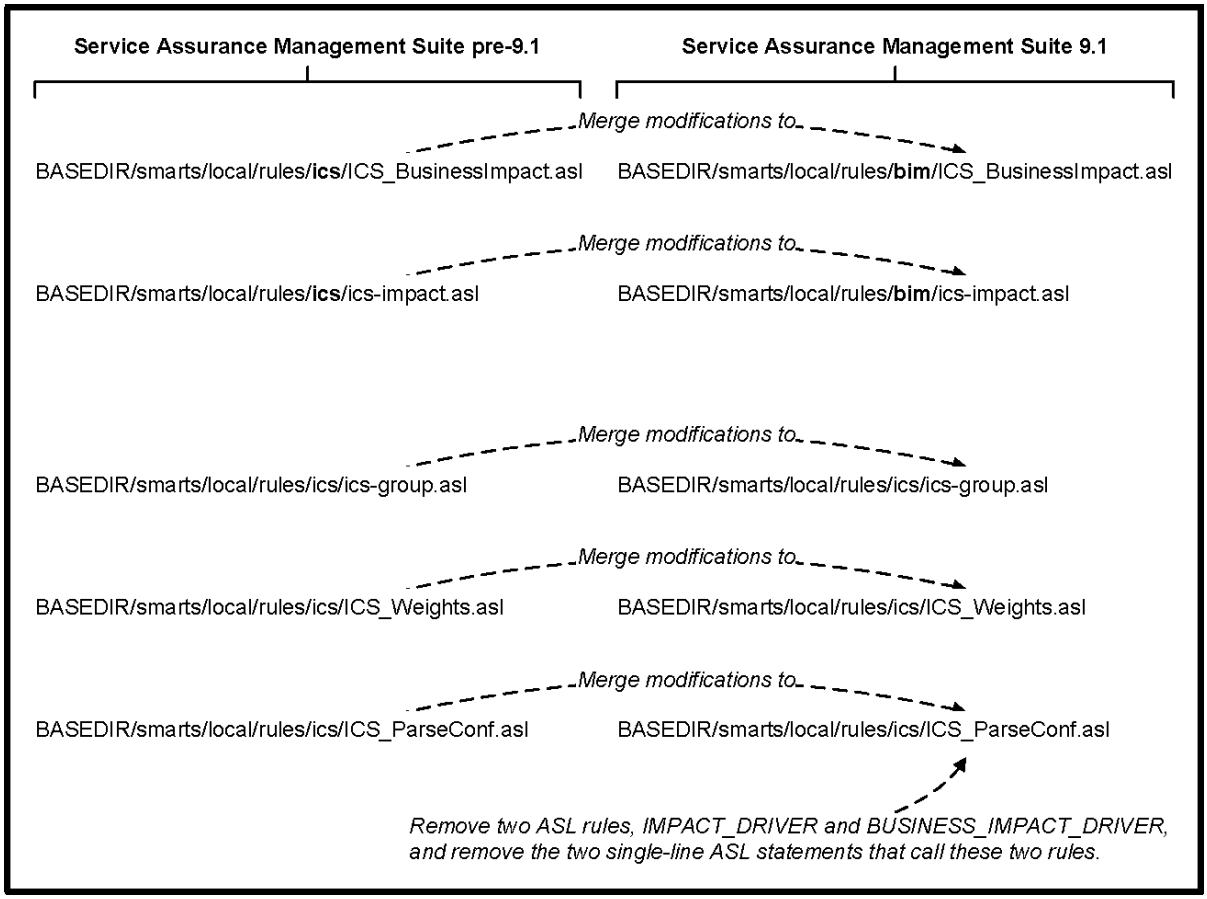
4 If prompted for a username and password, specify your user account; for example, to specify the default administrative account, type username **admin** and password **changeme**.

If you want to convert text-format weight definitions to XML-format definitions and save the definitions to the *BASEDIR*/smarts/local/conf/ics/weights-conf.xml import datafile, you can do so manually by following the classweightconfig format defined in the bim-config.dtd.

Merging pre-9.1 business-related rules files with 9.1 rules files

When migrating from a Service Assurance Manager pre-9.1 installation to a Service Assurance Manager 9.1 installation, you must manually merge any modified business-related rules files with the same files in the 9.1 installation. File merging when migrating from a pre-9.1 installation to an 9.1 installation identifies the files to be merged.

Figure 5-14. File merging when migrating from a pre-9.1 installation to an 9.1 installation



In the figure, the top two files are relevant to Business Impact Manager operation, and the bottom three files are relevant to Global Manager operation.

If you have not modified any of these files in the pre-9.1 installation from which you are migrating, you do not need to merge the older versions of the files in the pre-9.1 installation with the newer versions of the files in the 9.1 installation.

To merge a pre-9.1 business-related rules file with the 9.1 rules file:

1 Use an editor application with a file-comparison capability to open both the pre-9.1 file and the 9.1 file.

2 Perform a comparison of the pre-9.1 file with the 9.1 file to identify your modifications.

3 Add your modifications to the 9.1 file. You can copy text from the pre-9.1 file and copy it into the 9.1 file.

4 Close the pre-9.1 file without saving the file.

5 Save and close the 9.1 (and modified) file to the /local subdirectory identified in File merging when migrating from a pre-9.1 installation to an 9.1 installation.

Adding the Global Manager as a topology source

You use the Domain Manager Administration Console attached to Business Impact Manager to add the Global Manager as a topology source to Business Impact Manager.

When you add the Global Manager as a topology source, Business Impact Manager imports business service topology, hierarchical group topology, weights, and event filters from the Global Manager.

Open the Domain Manager Administration Console

The VMware Smart Assurance Service Assurance Manager Operator Guide provides information about starting the Global Console, logging in, and attaching to a Manager. You need a user account with administrative privileges to access the Domain Manager Administration Console. The default administrative account is username **admin** and password **changeme**.

Attaching the Global Console to the Global Manager provides additional information.

The VMware Smart Assurance System Administration Guide provides information about changing the password for the default administrative account (recommended) and configuring access privileges. The VMware Smart Assurance Service Assurance Manager Configuration Guide provides information on configuring permissions to perform specific console operations.

To open the Domain Manager Administration Console:

1 Attach the Global Console to the Business Impact Manager in your deployment.

   A **Topology Browser Console** opens.

2 In the console, select **Configure** > **Domain Manager Administration Console** to open the **Domain Manager Administration Console**.

Add the Global Manager as a topology source

To add the Global Manager as a topology source to Business Impact Manager:

1 In the **Domain Manager Administration Console**, select **Business Impact Manager (BIM)** from the **Manager** list box, and select **Topology** > **Add Source** to launch the **Add Source** dialog box.

2 In the dialog box, as shown in Add Source dialog box for the Global Manager—example, select **SA** from the **Element Type** list box, type the name of the Global Manager application (for example, **INCHARGE-SA**) in the **Element Name** field, and then click **OK** to add the Global Manager as a topology source.

   Figure 5-15. Add Source dialog box for the Global Manager—example

   In response, Business Impact Manager:

   - Adds the specified Global Manager as a topology source.
     - Creates in its repository an InChargeDomain object (for example, INCHARGE-SA) for the Global Manager instance added as a topology source.

- Establishes a connection to the Global Manager source.

  A Discovery Progress window opens, displays progress messages. When you see "Last discovery completed" near the end of the progress report in the Discovery Status section, the setup of the Global Manager as a source to Business Impact Manager is complete.

  At that point, Business Impact Manager:

- Probes the Global Manager source for business service topology, group topology, weights, and event filters.
- Imports and loads this data to its repository.
- Subscribes to infrastructure and application notifications from the Global Manager.

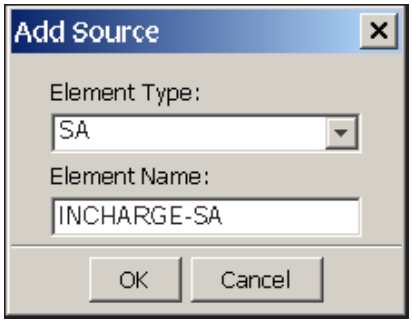
3 INCHARGE-SA

4 SA

5 Click **Close** to close the Discovery Progress window.

After completing its initial import from the Global Manager, Business Impact Manager will import business service topology, group topology, weights, and event filters from the Global Manager whenever any of this data changes in the Global Manager.

Note Upon adding a Global Manager source, the **Topology** > **Add Source** menu option on the Domain Manager Administration Console is unavailable (dimmed) to prevent users from adding more than one Global Manager source to Business Impact Manager.



Specifying a different Global Manager source

You can specify a different Global Manager source for Business Impact Manager by performing the following two steps:

1 Remove the current Global Manager source by stopping the Business Impact Manager and then restarting it with a startup command line that contains the **--norestore** option.

2 Add a new Global Manager source by completing the procedure in Adding the Global Manager as a topology source.

   Including the **--norestore** option in the startup command line will start Business Impact Manager without restoring any saved objects from its repository file. (Business Impact Manager repository files are located in the *BASEDIR*/smarts/local/repos/icf directory.) This mode of startup is necessary to delete from the repository the topology elements associated with the Global Manager source that is targeted for source removal.

   Because the Business Impact Manager startup command created during the Service Assurance Manager installation does not contain the **--norestore** option, you will need to either temporarily modify the Business Impact Manager startup command (substitute **--ignore-restore-errors** with **--norestore**) or create a new service startup command or a new native startup command that contains the **--norestore** option.

Example procedure for specifying a different Global Manager source

What follows is an example procedure of specifying a different Global Manager source; that is, an example procedure for removing the current Global Manager source and adding a new Global Manager source. A native startup command containing the **--norestore** option is included in the procedure.

To specify a different Global Manager source:

1 In the installation area from which Business Impact Manager is invoked, go to the *BASEDIR*/smarts/bin directory and type the following command to stop Business Impact Manager:

```
sm_service stop --force ic-mbim-server
```

   Press **Enter**.

2 On a UNIX system:

```
sm_server --name=INCHARGE-MBIM --config=bim --subscribe=default
--norestore --output --daemon
```

   Note On a UNIX system, including the --daemon option in the command line starts the VMware Smart Assurance process running in the background, leaving the original UNIX shell free to receive more commands.

3 Consult Adding the Global Manager as a topology source and add the new Global Manager source.

Enabling maintenance tracking

You can track the maintenance of specific managed elements by enabling the maintenance tracking option. To enable maintenance tracking:

1 Log in to the console.

2 In the **Topology Browser Console**, select Service Assurance Manager (SAM) from the **Manager** list box.

3 Right-click the **SAM** manager.

   A submenu appears.

4 Select **Enable Maintenance**.

Disabling maintenance tracking

To disable maintenance tracking:

1 Log in to the console.

2 In the **Topology Browser Console**, select Service Assurance Manager (SAM) from the **Manager** list box.

3 Right-click the **SAM** manager.

   A submenu appears.

4 Click **Disable Maintenance**.

Creating Business Elements with the Topology Builder

6

This chapter includes the following topics:

- Topology Builder overview
- Business elements
- Relationships
- Accessing the Topology Builder Console
- Opening the Topology Builder Console
- Understanding the layout of the Topology Builder Console
- Modifying topology
- Adding business elements to your topology
- Adding relationships to your topology
- Deleting business elements and relationships
- Synchronizing topology

Topology Builder overview

The Topology Builder is a tool used to create and add business elements to the business-related topology loaded into the Global Manager's repository from the Business Impact Manager's import datafiles. Typically, you use the import datafiles to create most of the business elements, and use the Topology Builder to create smaller collections of business elements.

You use the Topology Builder to create business elements, to create relationships (links) between business elements, and to create relationships between business elements and infrastructure, application, or hierarchical group elements. The analysis performed by a Manager such as Business Impact Manager depends on the relationships between topology elements.

Business elements

You use the Topology Builder to create and add instances of the ICIM business classes and their subclasses identified in Business classes added to the Global Manager topology using the Topology Builder to the Global Manager's topology. These classes and subclasses compose the business data model shown in Business elements.

Table 6-1. Business classes added to the Global Manager topology using the Topology Builder

Business class	Subclasses	Description
ServiceOffering		Represents a business service delivered to a set of subscribers (consumers).
	BusinessProcess	Represents the functions and operations that support the internal business activities or other processes of a business enterprise.
ServiceSubscriber		Represents a subscriber (consumer) of one or more ServiceOfferings.
	Customer	Represents one or more business enterprises or individuals that maintain a business relationship with an Organization or one of its BusinessUnit elements.
	Organization	Represents a hierarchically structured business enterprise consisting of one or more business units that engage in one or more lines of business (LOBs).
	BusinessUnit	Within an Organization, represents a semi-autonomous division that engages in one or more LOBs.
	LOB	Within a BusinessUnit, represents a division that focuses on specific product markets.
	Department	Within a BusinessUnit or LOB, represents a group that engages in business functions that support the BusinessUnit or LOB.

Relationships

ICIM-defined relationships enable Business Impact Manager to associate business elements with each other, and with underlying infrastructure, application, or hierarchical group elements. The relationships also identify the dependencies of elements on other elements, and identify groupings.

In most cases, a relationship has an inverse relationship. For example, the relationship PartOf is the inverse relationship of ComposedOf. A relationship pair, such as ComposedOf/PartOf, is referred to as a relationship set.

You use the Topology Builder to create the following relationships between elements (nodes) in Business Services map displays:

- Subscriptions/Subscribers relationship set
- (corresponds to subscriptions/subscribers relationship keywords in import datafiles):

  The Subscriptions relationship associates a ServiceSubscriber or ServiceSubscriber subclass to one or more ServiceOfferings or BusinessProcesses that are being provided to the ServiceSubscriber or ServiceSubscriber subclass.

  The Subscribers relationship associates a ServiceOffering or BusinessProcess to one or more ServiceSubscribers or ServiceSubscriber subclasses who subscribe to the ServiceOffering or BusinessProcess.
- ConsistsOf/MemberOf relationship set

- (corresponds to members relationship keyword in import datafiles):

  The ConsistsOf relationship associates a ServiceOffering or BusinessProcess to one or more underlying infrastructure, application, or hierarchical group elements that are directly relied upon by the ServiceOffering or BusinessProcess. The list of underlying elements might be a list of network elements (hosts, routers, and so on), a list of applications, or a HierarchicalGroup.

  The MemberOf relationship associates an underlying infrastructure, application, or hierarchical group element to one or more ServiceOfferings or BusinessProcesses that directly rely upon the infrastructure, application, or hierarchical group element.

  The ConsistsOf/MemberOf relationship set can also associate a ServiceOffering to another ServiceOffering, or to a BusinessProcess, and can associate a BusinessProcess to another BusinessProcess, or to a ServiceOffering.

- ServedBy/Serves relationship set
- (corresponds to servedby/serves relationship keywords in import datafiles):

  The ServedBy relationship set associates a BusinessProcess to one or more other BusinessProcesses that serve the BusinessProcess.

  The Serves relationship associates a BusinessProcess to one or more other BusinessProcesses that are served by the BusinessProcess.

- ComposedOf/PartOf relationship set
- (corresponds to composedof/partof relationship keywords in import datafiles):

  The ComposedOf relationship associates a ServiceSubscriber or ServiceSubscriber subclass to one or more other ServiceSubscribers or ServiceSubscriber subclasses that it contains.

  The PartOf relationship associates a ServiceSubscriber or ServiceSubscriber subclass to one or more other ServiceSubscribers or ServiceSubscriber subclasses in which it is contained.

  Because the arrowed lines in a Business Services map point from a business element to the element that it depends on, only the Subscriptions, ConsistsOf, ServedBy, and ComposedOf relationships appear in a Business Services map. Their inverse relationships are implied but not shown.

Accessing the Topology Builder Console

Accessing the Topology Builder Console and the Business Services map requires attaching the Global Console to the Global Manager (for example, INCHARGE-SA) in your deployment. The VMware Smart Assurance Service Assurance Manager Operator Guide provides information about starting the Global Console, logging in, and attaching to a Manager.

Attaching the Global Console to the Global Manager provides additional information.

You need a user account with administrative privileges to access the Domain Manager Administration Console. The default administrative account is username **admin** and password **changeme**.

The VMware Smart Assurance System Administration Guide provides information about changing the password for the default administrative account (recommended) and configuring access privileges. The VMware Smart Assurance Service Assurance Manager Configuration Guide provides information on configuring permissions to perform specific console operations.

Opening the Topology Builder Console

To open the Topology Builder Console:

1 Attach the Global Console to the Global Manager in your deployment.

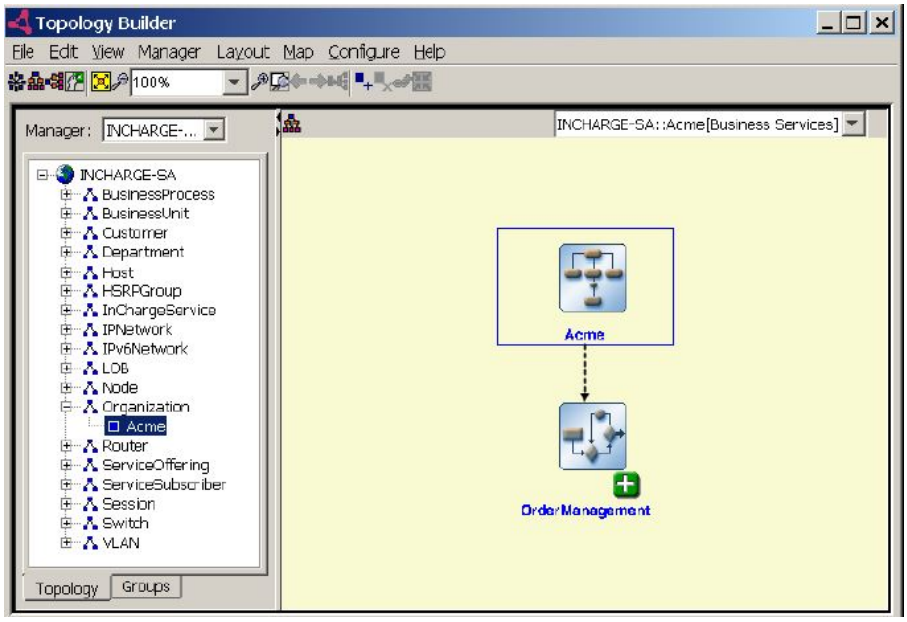
A **Notification Log Console** opens.

2 In the console, select **Configure** > **Topology Builder** to open the **T opology Builder Console**.

Understanding the layout of the Topology Builder Console

Figure 31 on page 108 shows an example Topology Builder Console display. In the display, the Topology Builder Console is attached to a named INCHARGE-SA.

Figure 6-1. Topology Builder Console—example



Topology tree and topology graphical display

The Topology Builder Console is divided into two panels: a topology tree panel (left panel) and a topology graphical display panel (right panel). The topology tree panel contains a Topology tab and a Groups tab.

The topology tree of the Topology tab shows the business-related topology of the attached Global Manager. The topology tree of the Groups tab shows the hierarchical group business-related topology of the attached Global Manager. Clicking the plus sign next to a topology element class shows the topology elements associated with the class. Clicking a topology element launches a graphical topology representation—a Business Services map—in the right panel of the console.

To display a list of nodes (graphical representations of elements) and edges (graphical representations of relationships and connections) that may appear in a graphical topology representation, select **Map** > **Map Legend** in the Topology Builder Console.

Toolbar buttons

Toolbar buttons for editing business-related topology describes the toolbar buttons used to create business elements and relationships.

Table 6-2. Toolbar buttons for editing business-related topology

Button	Description
	Create Node creates a new business element in a Business Services map and adds the element to the existing topology.
	Remove deletes the selected business element or relationship from a Business Services map. You can only remove elements and relationships that were created with the Topology Builder Console.
	Link Node creates a relationship between two selected elements in a Business Services map.
	Synchronize Topology forces the attached Global Manager to export topology updates to all listening Managers, including Business Impact Manager.

An unavailable (dimmed) toolbar button indicates that the associated function is not available, or that you do not have sufficient permission to perform the action.

Modifying topology

You use the Topology Builder to add new business elements and relationships to your topology and to delete business elements and relationships created with the Topology Builder. Your topology modifications are automatically saved as you make them, and are stored in the Global Manager's repository.

You cannot use Topology Builder to add or modify elements and relationships that are discovered by the underlying Domain Manager topology sources or defined in the Business Impact Manager import datafiles. For example, you cannot create a new element for the Host class.

Clicking the **Synchronize Topology** toolbar button exports your topology changes to the listening Business Impact Manager. Invoke Synchronize Topology after you have completed your changes.

Adding business elements to your topology

You can create and add business elements to your topology using one of several methods:

- Add elements using the “Create Node” toolbar button
- Add elements using the Create Instance menu option
- Add elements using the “Create Instance” pop-up menu option
- Add elements using the “Create” pop-up menu
- Add elements using the “Add to map” pop-up menu

  The new elements will be visible as element names in the topology tree and as nodes in a graphical topology representation—a Business Services map. If the ICIM class of a new element is not already listed in the topology tree, the class will automatically be added to the topology tree.

  When creating new elements, follow the naming conventions in Understanding names and display names to name them. You use the DisplayName format when naming a new element.

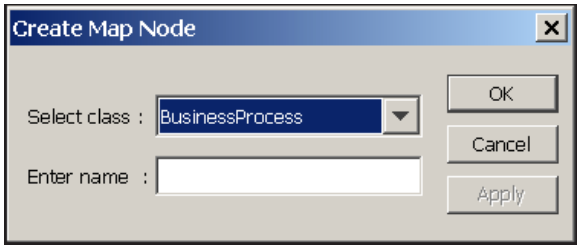
  After creating and adding the new elements to your topology, follow the procedure in Adding relationships to your topology to create relationships for them.

Add elements using the “Create Node” toolbar button

This method is available only when a Business Services map is displayed in the Topology Browser Console. This method adds a new business element to both the Business Services map and the topology tree.

To add a business element using the Create Node toolbar button:

1. Click an element in the topology tree to open a Business Services map in which you want to add the new element. The clicked element becomes the focal element (object) of the map display and is surrounded by a box.
2. Click the **Create Node** toolbar button to display the **Create Map Node** dialog box.
3. In the dialog box, select an element class (BusinessProcess, BusinessUnit, Customer, Department, LOB, Organization, ServiceOffering, or ServiceSubscriber) from the **Select class** list box.
4. Type the name of the new element.
5. Click **Apply** to add the new element to the topology, and continue to create additional elements. Or, click **OK** to add the new element and close the **Create Map Node** dialog box.



Add elements using the Create Instance menu option

This method is available whether or not a Business Services map is displayed in the Topology Browser Console. This method adds a new business element to the topology tree.

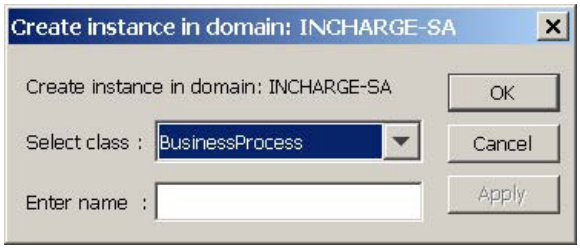
To add a business element using the Create Instance menu option:

1 In the menu bar, select **Edit** > **C reate Instance** to launch the **Create instance in domain** dialog box.

2 In the dialog box, select an element class (BusinessProcess, BusinessUnit, Customer, Department, LOB, Organization, ServiceOffering, or ServiceSubscriber) from the **Select class** list box.

3 Type the name of the new element.

4 Click **Apply** to add the new element to the topology, and continue to create additional elements. Or, click **OK** to add the new element and close the **Create instance in domain** dialog box.



Add elements using the “Create Instance” pop-up menu option

This method is identical to the method described in the previous section, Add elements using the Create Instance menu option.

To initiate this method:

In the topology tree, right-click the name of the Global Manager (for example, **INCHARGE-SA**) and select **Create Instance** from the pop-up menu. The **Create instance in domain** dialog box appears.

Add elements using the “Create” pop-up menu

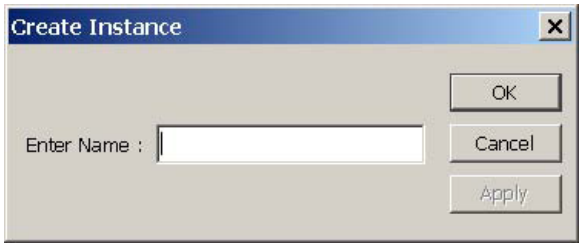
This method is available whether or not a Business Services map is displayed in the Topology Browser Console. This method adds a new business element to the topology tree.

To add a business element using the Create pop-up menu option:

1 In the topology tree, right-click the element class (BusinessProcess, BusinessUnit, Customer, Department, LOB, Organization, ServiceOffering, or ServiceSubscriber) for which you want to add an element and select **Create** from the pop-up menu. The **Create Instance** dialog box appears.

2 In the dialog box, type the name of the new element.

3 Click **Apply** to add the new element to the topology, and continue to create additional elements. Or, click **OK** to add the new element and close the **Create Instance** dialog box.



Add elements using the “Add to map” pop-up menu

This method is available only when a Business Services map is displayed in the Topology Browser Console. This method adds any element in the topology tree—including a non-business element—to the currently displayed Business Services map.

To add any element in the topology tree to the currently displayed Business Services map:

1 Click an element in the topology tree to open a Business Services map in which you want to add an instance of an existing element.

2 In the topology tree, right-click the element (any business or non-business element) that you want to add and select **Add to map** from the pop-up menu. The element appears as a node in the Business Services map.

Adding relationships to your topology

After you add new business elements to your topology, you need to add ICIM-defined relationships to link them to related topology elements. You add relationships between the new business elements, and between the new business elements and existing business, infrastructure, application, or hierarchical group elements. The analysis performed by a Manager such as Business Impact Manager depends on the relationships between topology elements.

When an underlying infrastructure or application element has a problem, the problem may propagate to a manually added business element through a manually added relationship, or may propagate to an existing business element through a manually added relationship. The additional symptoms resulting from these propagations help Business Impact Manager better calculate the impact of underlying problems on business elements.

To establish a relationship between two elements:

1 Click an element in the topology tree to open a **Business Services** map in which you want to add the relationship.

2 Press **Ctrl** and select the source element and then the related element between which you want to create the relationship. The source element refers to the first element selected, and the related element refers to the second element selected.

3 Click the **Link Node** toolbar button. What happens at this point depends on the source element and the related element:

- For a source ServiceSubscriber or ServiceSubscriber subclass element and a related ServiceOffering or BusinessProcess element, the Topology Browser automatically adds a Subscriptions relationship from the source element to the related element. For example:
  - (Inverse of previous bulleted item) For a source ServiceOffering or BusinessProcess subclass element and a related ServiceSubscriber or ServiceSubscriber subclass element, the Topology Browser automatically adds a Subscriptions relationship from the related element to the source element. For example:
  - For a source ServiceOffering or BusinessProcess element and a related infrastructure, application, or hierarchical group element, the Topology Browser automatically adds a ConsistsOf relationship from the source element to the related element. For example:
  - (Inverse of previous bulleted item) For a source infrastructure, application, or hierarchical group element and a related ServiceOffering or BusinessProcess element, the Topology Browser automatically adds a ConsistsOf relationship from the related element to the source element. For example:
  - For a source (“From”) ServiceOffering element and a related (“To”) BusinessProcess element, a **Link Selected Map Nodes** dialog box similar to this one appears:
  - (Inverse of previous bulleted item) For a source (“From”) BusinessProcess element and a related (“To”) ServiceOffering element, a **Link Selected Map Nodes** dialog box similar to this one appears:
  - For a source (“From”) BusinessProcess element and a related (“To”) BusinessProcess element, a **Link Selected Map Nodes** dialog box similar to this one appears:
  - For a source (“From”) ServiceSubscriber or ServiceSubscriber subclass element and a related (“To”) ServiceSubscriber or ServiceSubscriber subclass element, a **Link Selected Map Nodes** dialog box similar to this one appears:

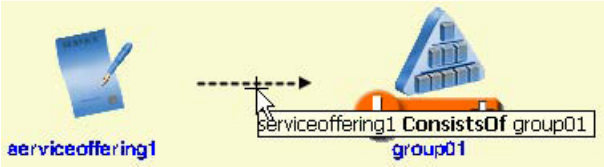
4 If a **Link Selected Map Nodes** dialog box appears, select a relationship from the list. (Typically, you create only one relationship—or more precisely, only one relationship set—between a source element and a related element.) Click **OK** to add the relationship and to close the **Link Selected Map Nodes** dialog box.

Because the arrowed lines in a Business Services map point from a business element to the element that it depends on, the Topology Browser creates only Subscriptions, ConsistsOf, ServedBy, or ComposedOf relationships.

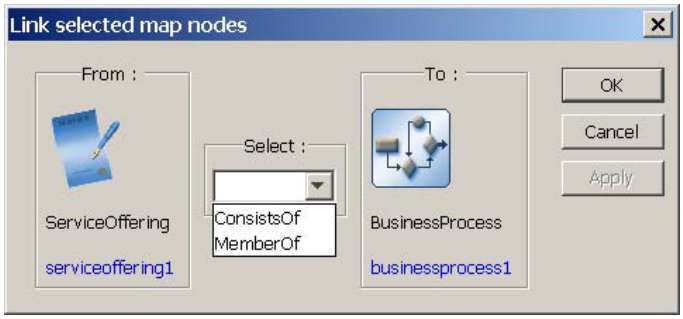
If you select Subscribers, MemberOf, Serves, or PartOf in a **Link Selected Map Nodes** dialog box, the Topology Browser will create a Subscriptions, ConsistsOf, ServedBy, or ComposedOf relationship from the related (“To”) element to the source (“From”) element.

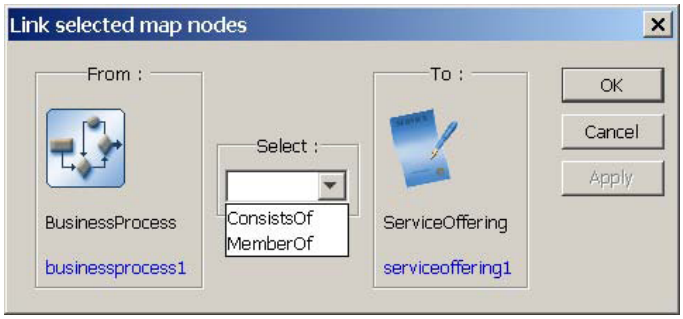
customer1 Subscriptions businessprocess1
customer1
businessprocess1

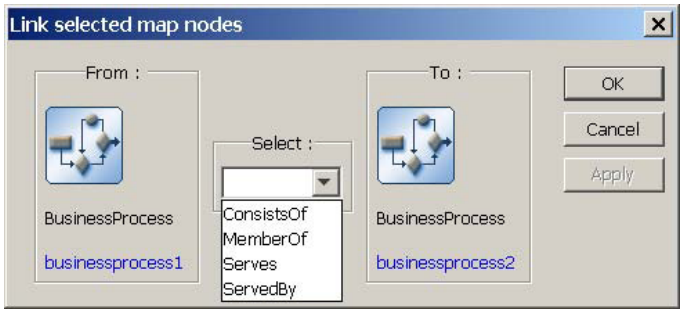
customer1 Subscriptions businessprocess1
customer1
businessprocess1

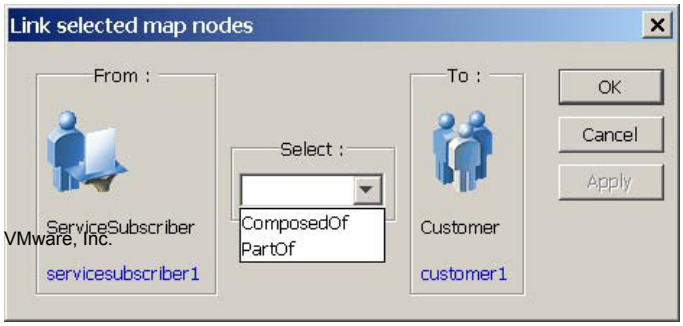

serviceoffering1 ConsistsOf group01
serviceoffering1
group01

serviceoffering1 ConsistsOf group01
serviceoffering1
group01


Link selected map nodes
From :
ServiceOffering
serviceoffering1
Select :
ConsistsOf
MemberOf
To :
BusinessProcess
businessprocess1
OK
Cancel
Apply


Link selected map nodes
From :
BusinessProcess
businessprocess1
Select :
ConsistsOf
MemberOf
To :
ServiceOffering
serviceoffering1
OK
Cancel
Apply


Link selected map nodes
From :
BusinessProcess
businessprocess1
Select :
ConsistsOf
MemberOf
Serves
ServedBy
To :
BusinessProcess
businessprocess2
OK
Cancel
Apply


Link selected map nodes
From :
ServiceSubscriber
servicesubscriber1
Select :
ComposedOf
PartOf
To :
Customer
customer1
OK
Cancel
Apply

Deleting business elements and relationships

You use the Remove toolbar button to delete one or more selected business elements or relationships from the Global Manager's topology. You can delete elements and relationships created with the Topology Builder, but you cannot delete elements and relationships that are discovered by the underlying Domain Manager topology sources or defined in the Business Impact Manager import datafiles.

To remove a new business element or relationship:

1 Click an element in the topology tree to open a **Business Services** map in which you want to delete the new element or relationship.

2 In the map, select the element or relationship that you want to remove. (To select multiple elements or relationships, press **Ctrl** while making your selections.)

3 Click the **Remove** toolbar button to remove the element or relationship from the topology.

Synchronizing topology

After you have completed your changes, click the **Synchronize Topology** toolbar button to export your topology changes to the listening Business Impact Manager, at which time the updates become available to Business Impact Manager for analysis. The updates do not affect analysis locally (at the attached Global Manager, itself) or remotely (at the listening Business Impact Manager) until the topology is synchronized.

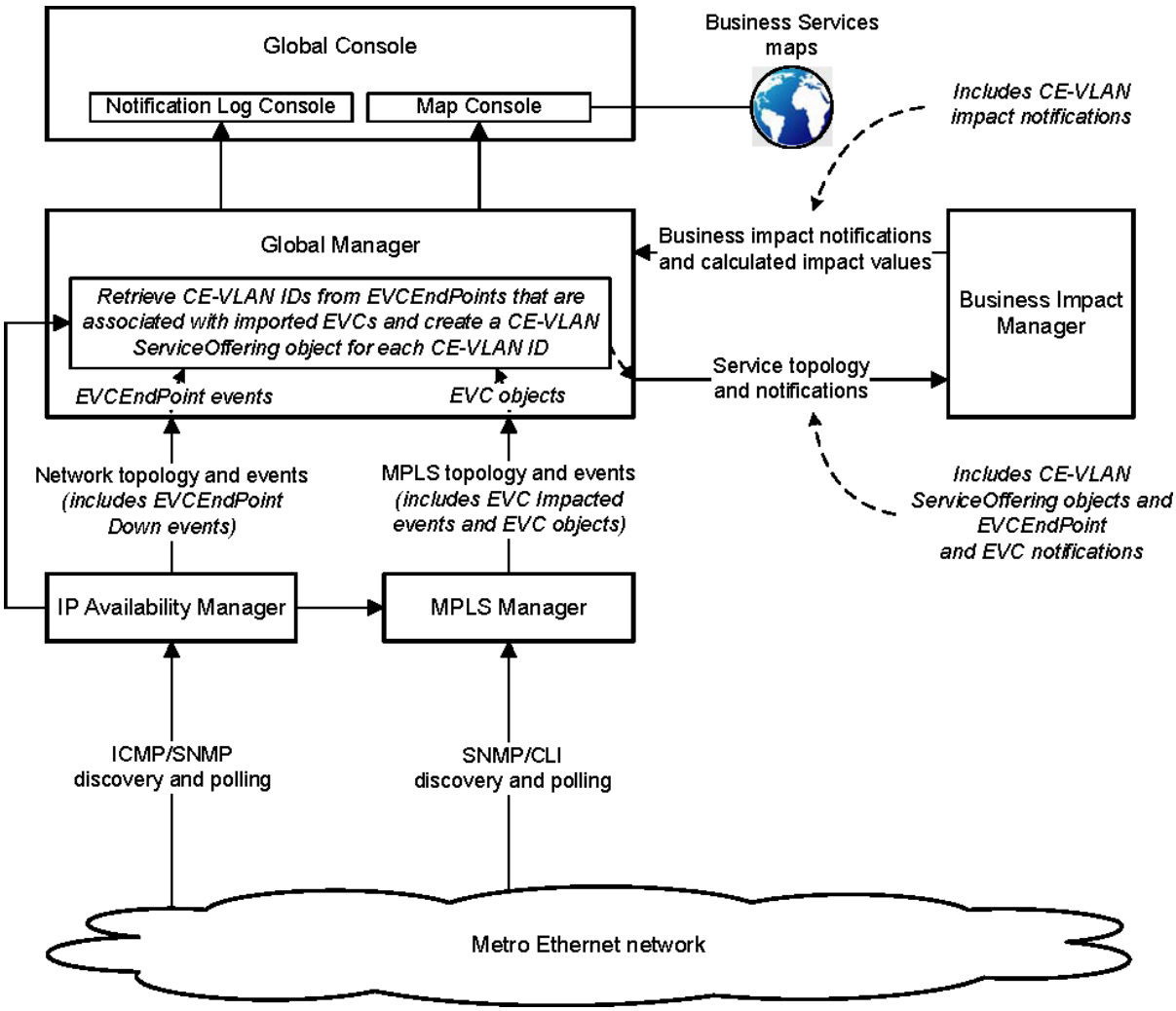
If you do not invoke Synchronize Topology and you exit the Topology Builder, the attached Global Manager does not export the updates to Business Impact Manager.

Root Cause and Impact Analysis of Metro Ethernet Failures on CE-VLANs

7

This section describes how the IP Manager, MPLS Manager, Global Manager, and Business Impact Managerwork together to determine how Metro Ethernet failures impact customer VLANs (CE-VLANs). Flow of information to determine how Metro Ethernet failures Impact CE-VLANsshows the flow of information between the Managers to accomplish this end.

- **Figure 7-1. Flow of information to determine how Metro Ethernet failures Impact CE-VLANs**



As implied in the figure, Business Impact Managercalculates the impact of EVC events on CE-VLAN ServiceOffering objects, and creates CE-VLAN impact notifications. The CE-VLAN impact notifications enable users to immediately identify disruptions and failures to CE-VLANs due to EVC events, and to prioritize the resolution of the network and MPLS problems in accordance with their business impact.

This chapter includes the following topics:

- CE-VLAN ServiceOffering object creation
- CE-VLAN impact notifications
- EVC topology maps
- Disabling CE-VLAN impact analysis

CE-VLAN ServiceOffering object creation

When the Global Manager imports topology from the MPLS Topology Server, and that topology contains EVCs, the Global Manager runs a script that reads the EVC IDs of the EVCs. The script then proceeds as follows:

- Contacts the underlying IP Availability Manager and retrieves the CE-VLAN IDs from the EVCEndPoints that match the EVC IDs.
- Creates a CE-VLAN ServiceOffering object for each retrieved CE-VLAN ID and assigns a name to the ServiceOffering object (SO-CEVLAN<*CE-VLAN ID*>).
- For each CE-VLAN ServiceOffering object, creates a LayeredOver relationship from the ServiceOffering object to the associated EVC object.

  Business Impact Manager imports the CE-VLAN ServiceOffering objects from the Global Manager and subscribes to EVCEndPoint Down and EVC Impacted notifications.

CE-VLAN impact notifications

Through a Global Console attached to the Global Manager, a user can view the CE-VLAN impact notifications that are created by Business Impact Manager as tabular entries in a Notification Log Console view. In addition, a user can view the CE-VLAN impact notifications as blue severity bar icons underneath CE-VLAN ServiceOffering nodes in a Map Console view: A blue severity bar icon will appear underneath any CE-VLAN ServiceOffering node that has an active EVC::Impacted notification.

EVC topology maps

The Global Manager supports Business Services topology maps. And like most types of topology maps, the display of Business Services maps is disabled by default.

Enabling display of Business Services maps

To enable the display of Business Services maps and to associate this functionality to user profiles:

1 Attach the Global Console to the Global Manager (for example, INCHARGE-SA) in your deployment.

   By default, a Notification Log Console opens.

2 In the Notification Log Console, select **Configure > Global Manager Administration Console** to open the Global Manager Administration Console.

3 In the left panel of the Global Manager Administration Console, expand the configuration tree to display the **User Profiles**.

4 Select a user profile (for example, **admin-profile**) to display its configuration window.

5 In the configuration window, locate **Console Operations** and click its **Modify List** button to launch the Console Operations dialog box.

6 In the Console Operations dialog box, expand the **Map** option and click the **Business Service** checkbox.

7 Click **OK** to close the Console Operations dialog box.

8 In the configuration window, click **Apply** to save your configuration changes.

9 Repeat Steps 4 through 8 to enable the display of Business Services maps for any other user profiles that need to see these maps.

10 Detach and reattach the Global Console to the Global Manager in order to view the Business Services maps. Start by selecting **Manager > Detach**.

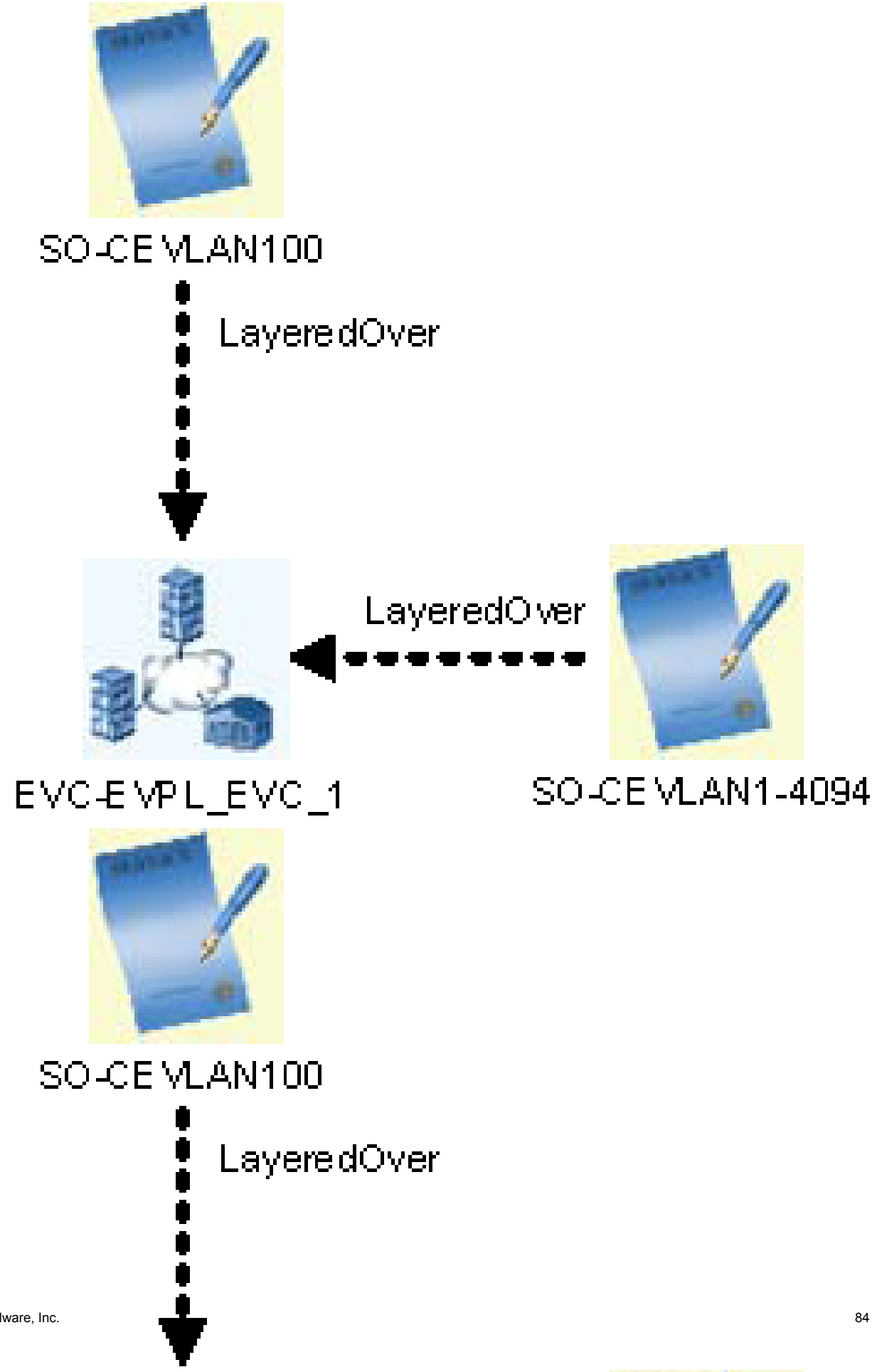
Launching Business Services maps

Business Services maps can be launched for CE-VLAN notifications or objects. A user can launch a Business Services map for a CE-VLAN by using any of the following methods:

- In a Notification Log Console, click a CE-VLAN notification and select **Event > Show Map**, or right-click the notification and select **Show Map** in the pop-up menu.
- In a Topology Browser Console, right-click a CE-VLAN object and select **Show Map** in the pop-up menu.
- In the topology tree of the Map Console, click a CE-VLAN object to display a Business Services map for the object, or right-click a CE-VLAN object and select **Business Services** in the pop-up menu.
- In an opened topology map, right-click a CE-VLAN node and select **Business Services** in the pop-up menu.

  Business Services map launched for a CE-VLAN ServiceOffering object is an example of a Business Services map that is launched for a CE-VLAN object.

  a


SO-CE VLAN100
LayeredOver
LayeredOver
EVC-EVPL_EVC_1
SO-CE VLAN1-4094
SO-CE VLAN100
LayeredOver

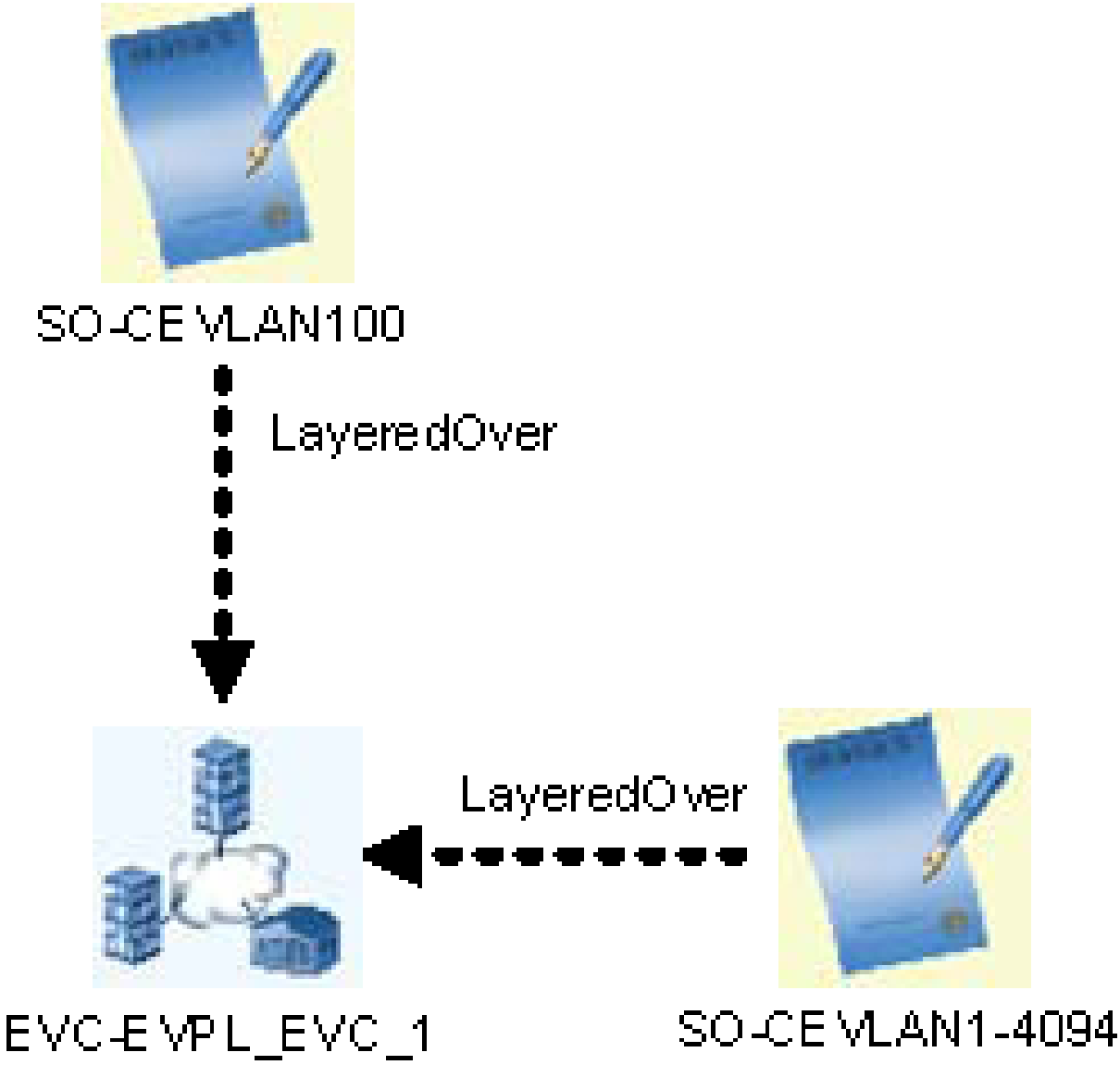


Figure 7-2. Business Services map launched for a CE-VLAN ServiceOffering object

A Business Services map shows dependent relationships through arrowed lines: The arrowed lines point *from* a business object *to* the object that the business object depends on. Impact notifications propagate in the direction opposite to the arrowed lines: The impact notifications propagate *to* a business object *from* the object that the business object depends on.

In Figure 33, when EVC object *EVC-EVPL_EVC_1* is impacted, the degradation causes Business Impact Manager to generate an impact notification for CE-VLAN service objects *SO-CEVLAN100* and *SO-CEVLAN1-4094*.

Disabling CE-VLAN impact analysis

By default, CE-VLAN impact analysis is enabled. You can edit the bim.conf file and disable the analysis.

To disable CE-VLAN impact analysis:

1 Go to the BASEDIR/smarts/bin directory in the Business Impact Manager installation area and type the following command to open the bim.conf file:

```
sm_edit conf/bim/bim.conf
```

2 Find the following line:

```
CEVLANImpactEventEnable = TRUE
```

3 Change **TRUE** to **FALSE**.

4 Save and close the file.

The modified version of the bim.conf file is saved to the BASEDIR/smarts/local/conf/bim directory.

5 If Business Impact Manager was running before you edited the bim.conf file, restart Business Impact Manager.