Sun StorageTek™ Application Module 6.0 Guide

Adobe PostScript™

Contents

Figures

Tables

Revision History

Short Name	Part Number	Dash	Date	Comments
APPLICATION GUIDE	817-7926-16	-05	January 2008	

Preface

This document describes how to use Sun StorageTek™ Application Module 6.0. This document assumes you have a basic understanding of the following:

- *Networking*
- *Storage Area Networks (SANs)*
- *The Common Information Model (CIM)*

Before You Read This Book

In order to fully use the information in this document, you must have thorough knowledge of the topics discussed in these books:

- *Sun StorageTek™ Operations Manager Installation Guide*
- *Sun StorageTek™ Operations Manager User Guide*

Using UNIX Commands

This document might not contain information on basic UNIX® commands and procedures such as shutting down the system, booting the system, and configuring devices. See the following for this information:

- Software documentation that you received with your system
- Solaris™ operating environment documentation, which is at

  `http://docs.sun.com`

Table with examples of the types of shell prompts that are used in this book.Table with descriptions and examples of the typographic conventions that are used in this book.

Related Documentation

Application	Title	Part Number
Installation	Release Notes	-------------------------
Operations Manager	*Sun StorageTek™ Operations Manager 6.0 Installation Guide*	817-7922-16
Operations Manager	*Sun StorageTek™ Operations Manager 6.0 User Guide*	817-7923-16
CLI	*Sun StorageTek™ Operations Manager 6.0 CLI Guide*	817-7924-16
Resource Manager	*Sun StorageTek™ Resource Manager 6.0 Guide*	817-7925-16

Table listing other documents that are related to this book or product.

Accessing Sun Documentation

You can view, print, or purchase a broad selection of Sun documentation, including localized versions, at:

```
http://www.sun.com/documentation
```

Contacting Sun Technical Support

If you have technical questions about this product that are not answered in this document, go to:

```
http://www.sun.com/service/contacting
```

Sun Welcomes Your Comments

Sun is interested in improving its documentation and welcomes your comments and suggestions. You can submit your comments by going to:

`http://www.sun.com/hwdocs/feedback`

Please include the title and part number of your document with your feedback:

Sun StorageTek™ Application Module 6.0 Guide, part number 817-7926-16

Overview

The management server lets you obtain the latest information about your applications, such as Microsoft Exchange and Oracle. To determine which applications the management server supports, refer to the support matrix, which is accessible from the Documentation Center. The following features help you to easily obtain data about these applications so you can quickly react to changes in your networking environment. For more information about these features, see the user guide.

- **Application Explorer** - Lets you quickly obtain information about the applications in your network. It provides a quick snapshot of the number of applications the management server is monitoring and their events.
- **Reporter** - Lets you obtain reports about an application. You can schedule these reports to be e-mailed to others on a regular basis.
- **System Explorer** - Provides a graphical representation of the applications the management server is monitoring.
- **Properties Tab** - Provides detailed property information about your application. This tab can be accessed by various methods.
- **Topology Tab** - Lets you view the components of your application.
- ***Chargeback** - Lets you determine how much it costs to run an application.
- ***Policy Manager** - Lets you create policies that notify you when a certain amount of free space goes below a threshold and/or the percentage used goes above a threshold.

Overview of the Topics

This guide assumes you have a basic understanding of the features described in the User Guide. This book focuses primarily on using the features specifically for applications. The following table outlines the information presented in this book.

TABLE 1-1 Topics Covered in This Book

Chapter	Contents
Chapter 2 - Accessing Information about Applications	• About Application Explorer • Obtaining a Summary of the Applications • Navigation Information for Applications • Events for Applications • About Chargeback for Applications
Chapter 3 - Monitoring Microsoft Exchange	• Monitoring Microsoft Exchange Overview • Monitoring a Microsoft Exchange Instance • Adding/Modifying Microsoft Exchange Domain Controller • Viewing Events for a Microsoft Exchange Instance • Viewing Properties • Viewing Topology for Microsoft Exchange
Chapter 4 - Monitoring Oracle	• Monitoring Oracle Overview • Monitoring the Oracle Instance • Viewing Events for an Oracle Instance • Viewing Properties • Viewing Topology for Oracle
Chapter 5 - Monitoring Microsoft SQL Server	• Monitoring Microsoft SQL Server • Monitoring the Microsoft SQL Server Instance • Viewing Events for a Microsoft SQL Server • Viewing Properties • Viewing Topology for Microsoft SQL Server
Chapter 6 - Monitoring Sybase	• Monitoring Sybase Overview • Monitoring the Sybase Instance • Viewing Events for a Sybase Instance • Viewing Properties • Viewing Topology for Sybase
Chapter 7 - Monitoring Caché	• Monitoring Caché Overview • Viewing Events for a Caché Instance • Viewing Properties of a Caché Instance • Viewing Topology for Caché

Accessing Information About Applications

This chapter contains the following topics:

About Application Explorer

Caution – Depending on your license, Application Explorer may not be available. See the List of Features to determine if you have access to Application Explorer. The List of Features is accessible from the Documentation Center (**Help** > **Documentation Center**).

Application Explorer lists the applications and their instances running in the storage area network (SAN) and any events associated with them. Application Explorer also provides the following information for applications:

- **Microsoft Exchange** - Data pertaining to navigation, properties, topology, chargeback, reports, monitoring, and policies.
- **Oracle** - Data pertaining to navigation, properties, topology, chargeback, reports, monitoring, and policies.
- **Microsoft SQL Server** - Data pertaining to navigation, properties, topology, chargeback, reports, monitoring, and policies.
- **Sybase** - Data pertaining to navigation, properties, topology, chargeback, reports, monitoring, and policies.

- **Caché** - Data pertaining to navigation, properties, topology, chargeback, reports, monitoring, and policies.
- **Virtual Applications -** Data pertaining to navigation, properties, topology, chargeback, reports, and monitoring.
- **File Servers** - Data pertaining to properties, volumes, extensions, aging, users, groups, events, reports, and policies. Refer to the File SRM Guide for more information.
- **File Server Details** - Provides information about the file systems detected, such as total users, total users space, and total groups.

Access Application Explorer by clicking **AppExplorer** ( ).

Note – Cluster shared resources on file server member nodes are not displayed on the Application Explorer Topology tab.

Obtaining a Summary of the Applications

The Application Summary page is accessible by clicking the **Application Explorer** node in the tree. It provides a snapshot of all the applications the management server detects.
- A pie chart with the number of:
  - Oracle Standalone Instances
  - Oracle RACs
  - SQL Server Standalone Instances
  - SQL Server Cluster Instances
  - Sybase Instances
  - Caché Instances
  - Exchange Standalone Instances
  - Exchange Cluster Instances
  - Virtual Applications
  - Clustered Virtual Applications
  - File Servers
  - Clustered File Servers
- A table to the right of the pie chart displaying the number of:
  - Oracle Standalone Instances
  - Oracle RACs
  - SQL Server Standalone Instances
  - SQL Server Cluster Instances
  - Sybase Instances

- Caché Instances
- Exchange Standalone Instances
- Exchange Cluster Instances
- File Servers
- Clustered File Servers
- Virtual Applications
- Clustered Virtual Applications
- Total Applications

Navigation Information for Applications

The Navigation tab provides information about an element and how it relates to other elements in its path. It is accessible by clicking the host name under the following nodes:

- **Oracle:**

  AppExplorer () **> Oracle**

- **Microsoft Exchange:**

  AppExplorer () **> Microsoft Exchange**

- **Microsoft SQL Server:**

  AppExplorer () **> SQLServer**.

- **Sybase:**

  AppExplorer () **> Sybase**.

- **Caché:**

  AppExplorer () **> Caché**.

To learn more about another element in the path, click the element on the Navigation tab. For an explanation of the boxes for each element, see its corresponding online help.

For example, if you want to learn more about the storage volumes on the host, click the Storage Volumes box on this page. A table appears with the storage volumes listed.

You can access additional functionality by clicking the following tabs at the top of the page.

- **Properties** - The Properties tab provides a detailed status of the element.

- **Events** - The Events tab displays the events pertaining to the element specified.
- **Topology** - The Topology tab provides a graphical representation of an element's path. It displays additional information not found in System Explorer, such as adapters, slots, and Fibre Channel ports.
- **Chargeback** - The Asset Management tab lets you keep track of asset attributes, such as contact information for the element's owner.
- **Collectors** - The Collectors tab lets you start a collector for a report and view the collector's corresponding reports once the information has been gathered.
- **Monitoring** - The Monitoring tab lets you quickly access Performance Explorer. Performance Explorer lets you quickly view information about an application.
- **Policies** - The Policies tab lets you create utilization polices, which can send an e-mail, generate an event, or run a custom script when a set threshold for an element is triggered.

There are some situations in which the tabs may not all be visible:
- The management server has discovered the application, but it cannot obtain additional information about the application.
- The application is a virtual application, which is a placeholder in the topology for applications the management server cannot monitor.
- The element was created when you created a record.

Events for Applications

The Events page view displays the following information about events associated with the application and its dependent elements:
- **ID** - The identifier assigned to the event.
- **Severity** - The severity level of the event.
- **Time** - The time the event was recorded.
- **Summary Text** - A brief explanation of the event. To learn more about an event, click the link for the summary text.

The following table provides an overview of the severity levels.

TABLE 2-1   Icons in Event Manager

Icon	Description
◯	The event is marked cleared.
?	The severity of the event is not known.
I	The event is informational.

TABLE 2-1   Icons in Event Manager *(Continued)*

Icon	Description
	The event might have some impact.
	The event has a minor impact.
	The event has a major impact.
	The event has a critical impact.

To view more information about an event, click the link in its summary text. After you click the link, the Event Details pane provides information on one or more of the following:

- **Serial Number** - The number assigned to the event.
- **Summary Text** - A brief explanation of the event.
- **Element** - The source of the event. An element can be a switch, host, application, fabric, or anything else on the network. If this box is blank, the event did not come from an element.
- **Source** - If the event came from an element, the name of the element.
- **Time Reported** - The time the event was reported to the management server.
- **Probable Cause** - An explanation of a probable cause.
- **Recommended Actions** - Recommendations.
- **Event Type** - A description of the event.
- **Correlated Indications** - Information obtained from the provider.
- **Severity** - The severity level, which can be one of the following:
  - **Clear**
  - **Unknown**
  - **Informational**
  - **Warning**
  - **Minor**
  - **Major**
  - **Critical**
- **Journal Entries** - Use this box to enter additional information and then click Add Journal Entry. This box is limited to 4,000 characters.

Note – Events listed in Event Manager may not be attributed to the correct source until Getting Details has completed.

Accessing the Events Page

To access the Events page for an application, click the **Events** node in the

Application Explorer tree. Traverse the following path: **AppExplorer** () >
[application_name] > **Instance Name**, where **[application_name]** is the name of
the application, for example Oracle. Then, click the **Events** node.

Viewing Performance Information

You can easily access performance information about an element, such as an
application by accessing Performance Explorer. Performance Explorer provides
detailed graphs to help you with monitoring your application. See the User Guide or
online help for more information about Performance Explorer.

About Chargeback for Applications

Chargeback helps you manage departmental ownership, track cost, and assemble
business reports, making inquiries, such as audits and inventory reviews, easier.

The management server provides the following types of chargeback.
- **Asset-based** - Asset-based chargeback calculates chargeback based on the
  departmental ownership percentages and the depreciated value of the assets.
  Each piece of equipment is owned by a department or a set of departments. Each
  department has a percentage ownership of the equipment.
- **Storage-based** - Storage-based chargeback calculates charges based on the
  actual amount of storage used by an application, the type of storage it is using,
  and the ownership percentage assigned to each department. The chargeback
  number is further refined by an additional fixed infrastructure tax on a per-
  department basis.

To learn more about Chargeback, refer to the User Guide.

Monitoring Microsoft Exchange

Caution – Depending on your license, monitoring Microsoft Exchange instances may not be available. See the List of Features to determine if you have access to monitoring Microsoft Exchange instances. The List of Features is accessible from the Documentation Center (**Help** > **Documentation Center**).

This chapter contains the following topics:

Monitoring Microsoft Exchange Overview

Before you can monitor Microsoft Exchange Server, you must do the following. See the installation guide for more information.

- Have the license for monitoring Microsoft Exchange. To determine if your license supports the monitoring of Microsoft Exchange, see the List of Features.
- Add information for Microsoft Exchange Domain Controller Access
- Discover hosts running Microsoft Exchange Servers.

Key Benefits

- Accelerates time to deployment of Microsoft Exchange
- Improves Microsoft Exchange availability

- Assists Microsoft Exchange administrators in planning to avert potential disasters
- Maximizes the return on Microsoft Exchange assets

Key Features
- Ability to perform the end-to-end provisioning and configuration required to install Microsoft Exchange
- Real-time monitoring of Microsoft Exchange storage
- Microsoft Exchange store-to-disk topology view
- Intelligent event management that correlates events across the system
- Autodiscovery and management of all the storage infrastructure components required: servers, HBAs, switches, and storage systems
- Standards-based (CIM/WBEM/SMI) management platform
- Web-based global management console
- Ease of installation, deployment, and manageability

Managing Microsoft Exchange Domain Controller Access

This section includes the following procedures:
- "Adding a Microsoft Exchange Domain Controller" on page 10
- "Editing a Microsoft Exchange Domain Controller" on page 11
- "Deleting a Microsoft Exchange Domain Controller" on page 12

Adding a Microsoft Exchange Domain Controller

Before adding a domain controller, note the following:
- The hosts should recognize the management server by name, because a reverse look-up is required by both operating system security and Microsoft Exchange. Make sure the domain controller, Exchange server host, and management server are accessible to one other using the host name and the fully-qualified domain name.
- The user name you provide must be the Common Name (CN) of the Active Directory User for accessing the Microsoft Exchange server. If you enter the Windows user name and it is different from the CN, the management server will not discover the Exchange instance.

   To find the CN for a user on a domain controller server:

   a. Install the ADSIEdit MMC snap-in if it is not installed.

   b. Select **Start > Run** and enter `adsiedit.msc`.

c. When the snap-in opens, expand the DOMAIN directory and navigate to the **CN=Users** folder to see the CN for each user in the Active Directory.

To provide information about your domain controllers:

1. Select **Discovery** > **Setup**, and then click the **Applications** tab.

2. In the Exchange Information section, click **Create**.

3. Click the **Add New Domain Controller** link.

   a. In the Domain box, enter the domain name.

   b. In the Domain Controller Name box, enter the fully qualified DNS name for the domain controller.

   c. In the User Common Name box, enter the Common Name (CN) of the Active Directory User for accessing the Microsoft Exchange server.

   d. In the Domain Password box, enter the corresponding password for accessing the Microsoft Exchange server.

   e. In the Verify Password box, re-enter the password for verification.

4. Click **Add**.

   The domain controller is added to the table.

5. Click **OK**.

6. Repeat these steps for each domain controller.

7. When all of your domain controllers are added, run `wmiadap /f` on the Exchange Server to refresh the Exchange data.

Editing a Microsoft Exchange Domain Controller

To provide information about your domain controllers:

1. Select **Discovery** > **Setup**, and then click the **Applications** tab.

2. Click the **Edit** button next to the Exchange domain controller you want to edit.

3. Enter a new User Common Name or Domain Password.

4. Click **Edit**.

   The domain controller updates are added to the table.

   Click **OK**.

Deleting a Microsoft Exchange Domain Controller

To delete all of the domain controllers of a particular domain:

1. Select **Discovery** > **Setup**, then click the **Applications** tab.

2. Click the **Delete** (🗑) button corresponding to the domain you want to remove.

3. Run Get Details for your changes to take effect.

To delete a particular domain controller in a domain:

1. Select **Discovery** > **Setup**, then click the **Applications** tab.

2. Identify the domain for the domain controller you want to remove, and click the

   Edit (✏) button corresponding to that domain.

3. In the Edit window, click the **Delete** (🗑) button corresponding to the domain controller you want to remove.

4. Run Get Details for your changes to take effect.

Configuring User Mailbox and Public Folder Data Collection

The Application Viewer can be configured to collect information about Exchange user mailboxes and public folders.

Note – The public folders from the default public folder tree are supported. General purpose public folder trees created after the Exchange server installation are not supported, and folders created on general purpose public folder trees are not displayed by the management server.

---

1. On the Exchange server host, change the logon account for the `AppStorWin32Agent` service to a Domain Administrator account with Exchange View Only Administrator privileges and a valid mailbox configured:

   a. Navigate to **Control Panel > Administrative Tools > Services**.

   b. Select the **AppStorWin32Agent** service

c. Click the **Properties** button.

d. Select the **Logon** tab.

e. Change the "Logon as" account to a Domain Administrator account instead of a Local System account, and click **OK**.

f. Restart the **AppStorWin32Agent** service.

2. By default, mailbox collection is disabled on the management server. Schedule and start the Mailbox Collectors on the Collectors tab for the Exchange Server instance. The default time interval for the collector is one week. See the User Guide for instructions on using the Collector's tab.

3. **Microsoft Exchange Server 2007 only:** Download and install the MAPI client library: The MAPI client library is not part of the base Exchange installation and is available as a web download. See your Exchange documentation for more information.

Viewing Events for a Microsoft Exchange Instance

You can view events pertaining to a Microsoft Exchange instance and its dependent elements, such as switches and storage systems, by doing the following:

1. Click **AppExplorer** ( ).

2. Expand the node for the Microsoft Exchange instance from which you want to obtain event information.

3. Click **Path Events**.

The events for that Microsoft Exchange instances and its dependent elements are displayed in the right pane.

The management server provides the following information about the events:
■ **ID**- The identification number assigned to the event.
■ **Severity** - The severity level.
■ **Time** - The time the event was recorded.
■ **Element** - The affected host or application.
■ **Summary Text** - A brief explanation of the event. When you click the summary text, the details of the event are displayed.

For more information, see "Managing Events" in the user guide.

Viewing Properties for a Microsoft Exchange Instance

This section contains the following topics:

Assigning a Custom Name

To make it easier to identify an element instance in the system, assign the instance a Custom Name. The Custom Name also appears in Chargeback.

Caution – Do not assign a custom name during "Get Topology" or Get Details. You can determine if the management server is getting the topology or all element details by looking at the label near the status button.

Note – Since all users query the same database, this name is displayed to others using the software. As a result, you might want to make them aware of the name.

---

1. Access the Custom Name box by doing one of the following:
   - Double-clicking a Microsoft Exchange instance in System Explorer, and then clicking the **Properties** tab.
   - Clicking a Microsoft Exchange instance under the Microsoft Exchange node in Application Explorer, and then clicking the **Properties** tab.

2. In the Custom Name box, enter a name.

   Keep in mind the following:

   - The name must contain 1 to 64 characters.
   - The name must begin with a letter. Any character other than the first character can be a letter, a numeral (0 to 9), or one of the following symbols: dollar sign ($), caret (^), hyphen (-), underscore (_), or space.
   - The name is case sensitive; for example, "Element1" and "element1" are different elements.

3. Click **Save**.

Properties of an Exchange Server

To view detailed properties of the Exchange Server:

1. Access Application Explorer by clicking **AppExplorer** ().

2. Access the Properties tab by doing one of the following:
   - Clicking the Microsoft Exchange instance under the Microsoft Exchange node in Application Explorer.
   - Double-clicking the application icon for the Microsoft Exchange instance in System Explorer.

3. Click the **Properties** tab.

   The following properties are displayed:

   - **Custom Name** - To make it easier to identify the element instance in the system, assign the instance a Custom Name. The Custom Name also appears in Chargeback. Since all users query the same database, this name is displayed to others using the software. As a result, you might want to make them aware of the name. For more information, see "Assigning a Custom Name" on page 14.
   - **Business Cost** - The management server lets you assign a business cost to an application, including virtual applications. This information is used in Event Manager for ranking events from elements. Event Manager determines the rank of an event by taking into account the business cost of the application and the severity of the event. You can sort events by rank in Event Manager by clicking the Rank column. For more information, see "Assigning a Business Cost to an Application" in the user guide.
   - **Type**
   - **Cluster**
   - **Build Number**
   - **Version**
   - **Active Node** (if part of a cluster)
   - **Product Name**
   - **Discovery Status**
   - **Record Created**
   - **Host/Host Cluster** - To learn more about the host, click its link.
   - **Serial Number**
   - **Identification Code**
   - **Description**
   - **Participating Nodes** (clusters only)
   - **Target Operating System**
   - **Contacted**
   - **Vendor**

- **Name Detected**
- **Storage Groups** - To obtain more information about an Exchange storage group, click the storage group.
- **Application Clusters** - To obtain more information about an application cluster, click its link.
- **Update Element Data** - To update the displayed properties, click the **Update Element Data** button at the bottom of the screen. The management server gathers new and changed details from the element and then redraws the topology with the updated information.

Properties of an Exchange Storage Group

To view the properties of a storage group for a Microsoft Exchange instance:

1. Access Application Explorer by clicking **AppExplorer** ( ).

2. Access the Properties tab by doing one of the following:
   - Clicking the Microsoft Exchange instance under the Microsoft Exchange node in Application Explorer.
   - Double-clicking the application icon for the Microsoft Exchange instance in System Explorer.

3. Click the **Properties** tab.

4. In the Storage Groups section, click the storage group you want to learn more about.

   The following properties are displayed for the storage group:

   - **Active Directory Name**
   - **Discovery Status**
   - **Record Created**
   - **Contacted**
   - **Description**
   - **MS Exchange Instance**
   - **MS Exchange Stores** - To learn more about a store, click its link.
   - **MS Transaction Logs** - Click the link to view the log.

Properties of an Exchange Store

To view the properties of a store for a Microsoft Exchange instance:

1. Access Application Explorer by clicking **AppExplorer** ( ).

2. Access the Properties tab by doing one of the following:
   - Clicking the Microsoft Exchange instance under the Microsoft Exchange node in Application Explorer.
   - Double-clicking the application icon for the Microsoft Exchange instance in System Explorer.

3. Click the **Properties** tab.

4. In the Storage Groups table, click the storage group you want to learn more about.

5. In the MS Exchange Stores section, click the mailbox store you want to learn more about.

   The Mailbox Store Properties tab shows:

   - Active Directory Name
   - Discovery Status
   - Record Created
   - MS Exchange Storage Group
   - Logical Disk
   - Contacted
   - File Path
   - Data File Path
   - MS Exchange Instance.

Note – For private stores, the list of user mailboxes is provided with hyperlinks.

Properties of a User Mailbox

To view the properties of a user mailbox on a Microsoft Exchange private store:

1. Access Application Explorer by clicking **AppExplorer** ( ).

2. Access the Properties tab by doing one of the following:
   - Clicking the Microsoft Exchange instance under the Microsoft Exchange node in Application Explorer.
   - Double-clicking the application icon for the Microsoft Exchange instance in System Explorer.

3. Click the **Properties** tab.

4. In the Storage Groups table, click the storage group you want to learn more about.

5. In the MS Exchange Stores section, click the mailbox store that holds the user mailbox.

6. Click the individual mailbox link to view properties for the mailbox user.

    The Mailbox Properties tab shows:

    ■ Display Name
    ■ Message Size
    ■ Server name
    ■ Storage Limit Information
    ■ User Name (last Logged on User)
    ■ Last Logon Time
    ■ Legacy DN
    ■ Mail Store

Properties of all User Mailboxes from an Exchange Instance

To view all user mailboxes from an Exchange Instance, do the following:

1. Click **Tools > Storage Essentials > Application Viewer**.

2. Click the name of the Microsoft Exchange instance from which you want to obtain information.

3. Click **Mail Boxes** tab.

    The following properties are displayed for each mailbox:

    ■ Mailbox Name
    ■ Owner Name (Last logged on user)
    ■ Last Accessed
    ■ Size in MB
    ■ Storage Limit Information
    ■ Mail Store
    ■ Storage Group
    ■ Path

4. Optional: Filter the data on the Mail Boxes tab:

    a. Click **Show Mailbox Filter**.

    b. Specify the filter criteria from the following:

        Mailboxes: All Mailboxes, Space Quota Not Exceeded, Space Quota Exceeded: Warning Issued, Space Quota Exceeded: Send Prohibited, Space Quota Status Not Checked.

        Not accessed in X days, weeks, or months.

Mailbox Name

Mailbox Size in MB

Mailbox Store

Storage Group

c. Click **Filter**.

Properties of a Public Folder

To view all the Public Folders from an Exchange Instance:

1. Click **AppExplorer** ( ).

2. Click the name of the Microsoft Exchange instance from which you want to obtain information.

3. Click the **Public Folders** tab.

   The following properties are displayed for each public folder:

   - **Public Folder Name**
   - **Last Accessed**
   - **Size in MB**

4. **Optional**: Filter the data on the Public Folders tab:

   a. Click **Show Mailbox Public Folder Filter**.

   b. Specify the filter criteria from the following:

      Not accessed in X days, weeks, or months.

      Public Folder Name

      Public Folder Size in MB

   c. Click **Filter**.

Viewing Topology for Microsoft Exchange

This section contains the following topics:
- "About the Topology Tab for Microsoft Exchange" on page 20

About the Topology Tab for Microsoft Exchange

The Topology tab provides a graphical representation of your storage network.

- **Left pane** - Provides a path view of the Microsoft Exchange database. When you select an element in the left pane, its location is shown in the right pane.
- **Right pane** - Provides a logical diagram of the storage network. From the Topology tab, you can determine the location of a device on the network. For example, let's assume you want to find out which storage group contains the mailbox store. You could use the Topology tab to obtain this information.

From the Topology tab, you can obtain information about the host, storage volume, a Microsoft Exchange storage group, or a Microsoft Exchange store by double-clicking its icon in the topology.

When you first access the Topology tab, you are told that the mount points have been filtered. Note that in the following figure, only the first storage group is displayed.
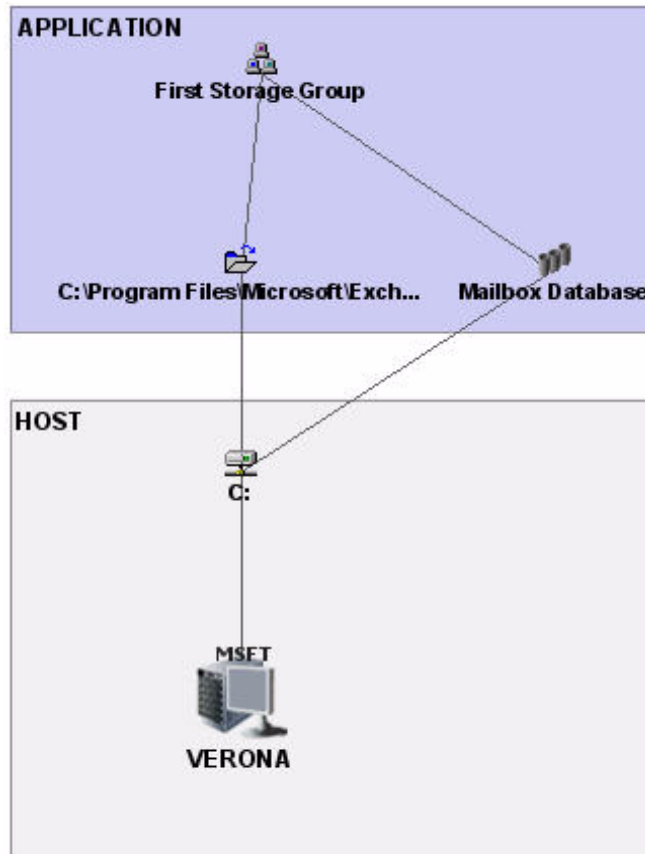
FIGURE 3-1 Topology of Microsoft Exchange without Mount Points

You can view the mount points in either of the following ways:

- Click the **Filter** (⊟) button in the upper-right corner of the screen. To view the **Filter** button, you need to close the left pane. Select the mount points you want to view by clicking the appropriate check boxes, as shown in the following figure.
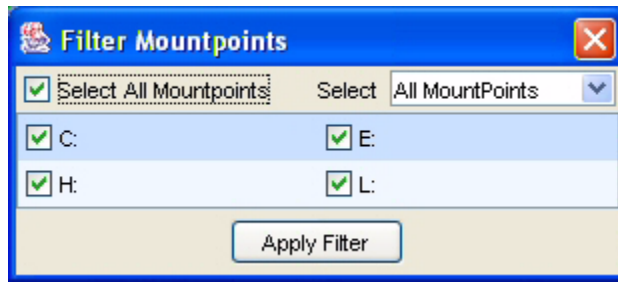
FIGURE 3-2 Selecting Mount Points

■ You can also select the mount points from the **Select** menu.
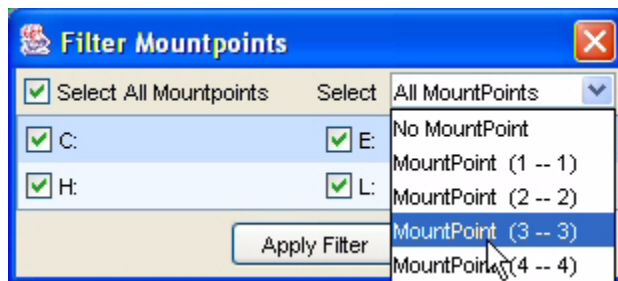
FIGURE 3-3 Selecting Mount Points from Combo Box

When you are done selecting mount points, click **Apply Filter**. In the following figure, all of the mount points were selected. Notice that all the storage groups are now displayed, as well as the connecting switch and storage system.
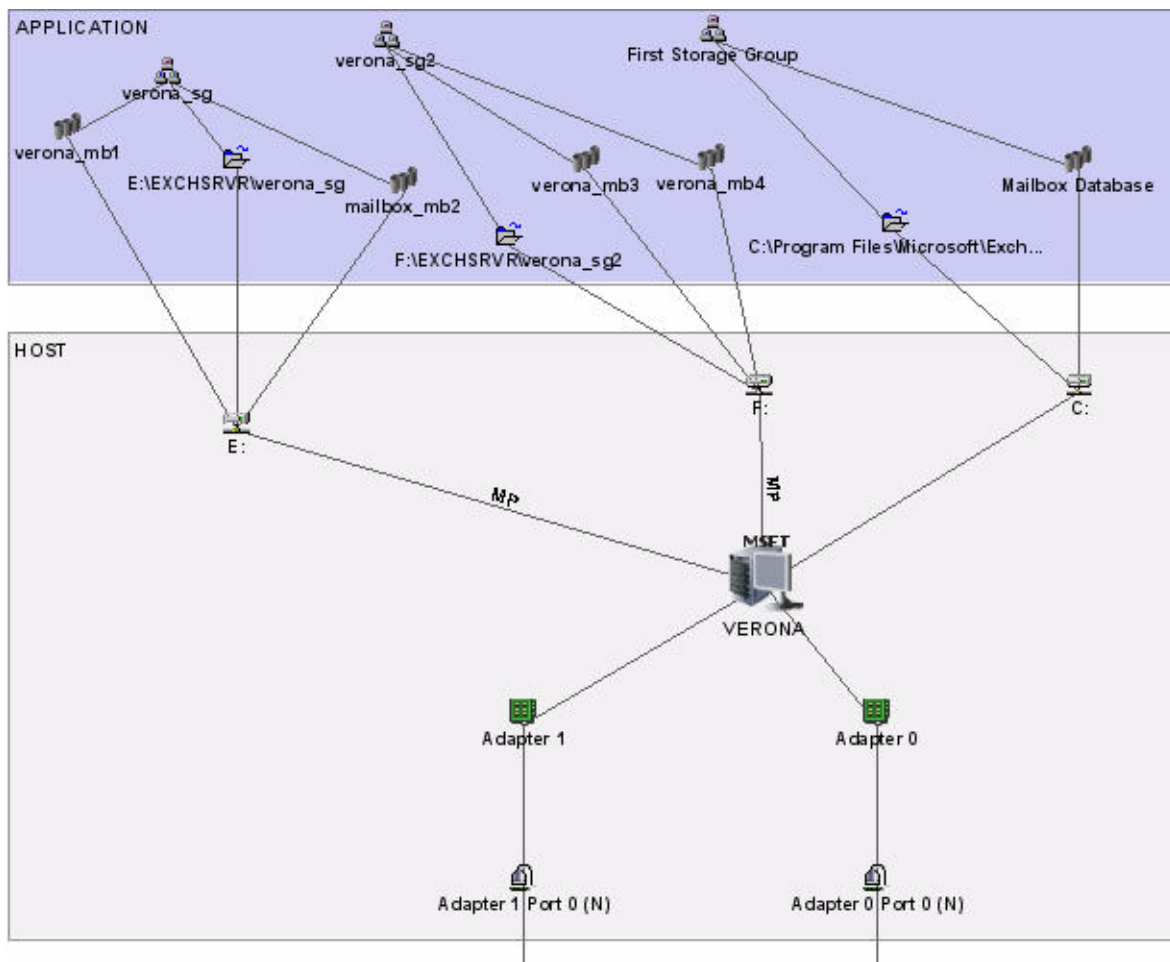
FIGURE 3-4 Topology of Microsoft Exchange with Mount Points (1 of 2)
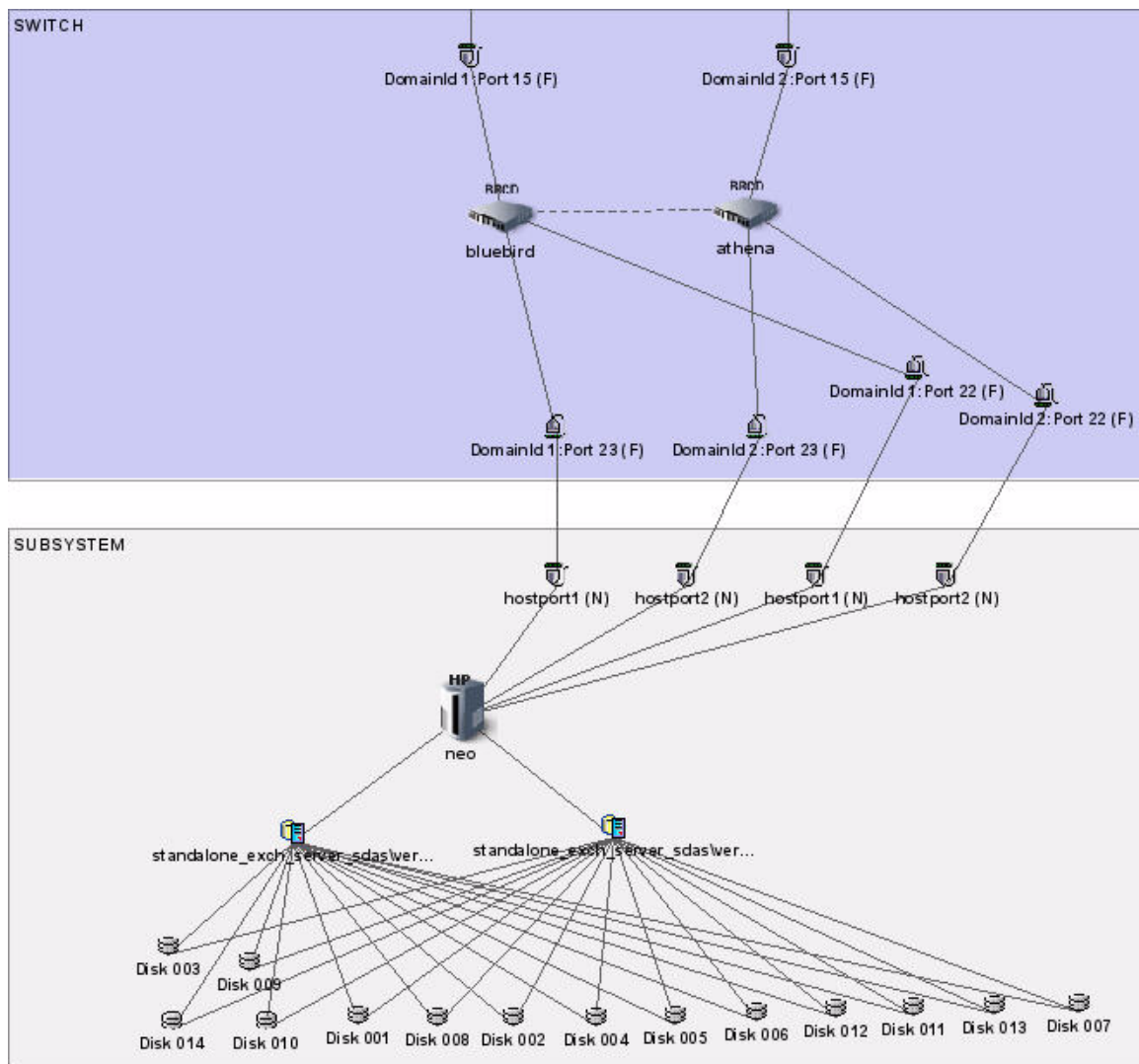
FIGURE 3-5 Topology of Microsoft Exchange with Mount Points (2 of 2)

Accessing the Topology Tab

Access the Topology tab by doing one of the following:

- Clicking a Microsoft Exchange instance under the Microsoft Exchange node in Application Explorer, and then clicking the **Topology** button.
- Double-clicking a Microsoft Exchange instance in System Explorer, and then clicking the **Topology** tab.

You can view property information for storage groups and stores by double-clicking their icons in the Topology tab.

Viewing Elements in the Microsoft Exchange Path

You can view elements in the Microsoft Exchange path by doing the following:

1. Access Application Explorer by clicking **AppExplorer** ( ).

2. Click the Microsoft Exchange instance under the Microsoft Exchange node in Application Explorer.

   The Navigation tab displays the elements in the Microsoft Exchange path. You can learn more about an element by clicking it. For example, to view information about dependent switches, click the **Switches** button in the Navigation tab.

Exchange Reports

Viewing Exchange Reports

To view chargeback reports:

1. Click the **Reporter** button, and then expand the **Reporter** > **System > Application** nodes in the tree in the middle pane.

2. Click one of the default Exchange reports:
   - **Top N Exchange Mailboxes** - Displays the largest mailboxes.
   - **Top N Public Folders** - Displays the largest public folders.
   - **Top N Stale Mail boxes** - Displays mailboxes with no activity in a set number of days.
   - **Top N Stale Public Folders** - Displays public folders with no activity in a set number of days.

3. Select the number of results to display from the TopN menu.

4. Select one of the following options for a different output:
   - **HTML**
   - **PDF**
   - **Excel**
   - **XML**

5. To view the report in a new window, select the **Open in new window** option, and then click **Run Report**.

   For information on e-mailing reports, see "Sending a report by E-mail" in the user guide.

Monitoring Oracle

> **Caution –** Depending on your license, monitoring Oracle instances may not be available. See the List of Features to determine if you have access to monitoring Oracle instances. The List of Features is accessible from the Documentation Center (**Help** > **Documentation Center**).

This chapter contains the following topics:
- "Monitoring Oracle Overview" on page 25
- "Changing the Oracle TNS Listener Port" on page 27
- "Viewing Events for an Oracle Instance" on page 28
- "Viewing Properties of an Oracle Instance" on page 28
- "Viewing Topology for Oracle" on page 36

Monitoring Oracle Overview

Before you can monitor the Oracle Database, you must do the following. For more information, see the installation guide.
- Have the license for monitoring Oracle. To determine if your license supports the monitoring of Oracle, see the List of Features.
- Create the APPIQ_USER account for Oracle.
- If necessary, change the TNS Listener port.
- Discover the application.

The management software for Oracle is a CIM-based application storage management solution that lets you realize the benefits of networked storage by more effectively managing your end-to-end Oracle infrastructure from a single, easy-to-use console. By integrating real-time information from storage devices, network

components, servers, and operating systems with the application database, the management software for Oracle can improve your Oracle database performance, availability, and reliability and maximize your return on Oracle storage assets.

To help simplify the management of your Oracle storage, the management software for Oracle provides comprehensive topology visualization from the Oracle tablespace to the mount point to SAN switches to storage systems. This enables your storage and application administrators to immediately visualize the interdependency of the infrastructure to the application. You will no longer need to cross-reference multiple spreadsheets and call multiple people to get an end-to-end picture.

During periods of infrastructure downtime or other times of equipment failures, infrastructure interdependencies are at your fingertips, so you can make the correct split-second decisions when you are having issues with the infrastructure.

The management software for Oracle provides deep visibility into each component that makes up the Oracle application, including Oracle configuration, host configuration, switch configuration, and storage system configuration. This detailed information is provided at every level.

The management software for Oracle is built on CIM, Web-Based Enterprise Management (WBEM), and the Storage Management Initiative (SMI) industry standards for heterogeneous storage network management. The implementation of these standards allows the management software for Oracle to support all your heterogeneous storage needs and ensures that your investments in infrastructure can be leveraged in the future.

Key Benefits
- Improved Oracle database performance
- Increased Oracle database availability and reliability
- Maximized return on Oracle storage assets

Key Features
- Database-to-disk topology view
- Standards-based (CIM/WBEM/SMI-S) management platform
- Database-to-disk monitoring
- Real-time monitoring of Oracle storage
- Web-based global management console
- Ease of installation, deployment, and manageability

Changing the Oracle TNS Listener Port

The software uses port 1521 by default to communicate with the TNS Listener service on the Oracle server. If your port is different or you use multiple ports, you can assign a new port number.

Caution – The hosts should recognize the management server by name, as a reverse look-up is required by operating system security as well as the Oracle Transparent Network Substrate (TNS).

To change this port number or to add ports:

1. Select **Discovery** > **Setup**, and then click the **Applications** tab.

2. To assign a new port, click the **Create** button for the **Oracle Information** table.

3. Enter the new port number, and click **OK**.

4. If necessary, click the **Delete** (🗑) button to remove the old port number.

5. Run discovery for the elements.

Enabling the Autoscan Feature

This feature allows Oracle 9i instances to be discovered automatically without having to enter the application setup information. This feature is disabled by default and does not work for Oracle 10g discovery.

To enable oracle autoscan, perform the following -

1. Select **Configuration** > **Product Health** > **Advanced**.

2. Add the following to the the Custom Properties section:

   `oracleautoscan=true.`

3. Click **Save**.

Viewing Events for an Oracle Instance

You can view events pertaining to an Oracle instance and its dependent elements, such as switches and storage systems, by doing the following:

1. Access Application Explorer by clicking **AppExplorer** ( ).

2. Expand the node for the Oracle instance from which you want to obtain event information.

3. Click **Path Events**.

The events for that Oracle instance and its dependent elements are displayed in the right pane.

The management server provides the following information about the events:
- **ID**- The identification number assigned to the event.
- **Severity** - The severity level.
- **Time** - The time the event was recorded.
- **Summary Text** - A brief explanation of the event. When you click the summary text, the details of the event are displayed.

For more information, see "Managing Events" in the user guide.

Viewing Properties of an Oracle Instance

This section contains the following topics:
- "Assigning a Custom Name" on page 29
- "Properties of an Oracle Instance" on page 29
- "Properties of a Database Instance" on page 31
- "Properties of a Database Control File Group" on page 31
- "Properties of a Database Control File" on page 32
- "Properties of a Database Redo Group" on page 33
- "Properties of a Database Redo File" on page 33
- "Properties of a Tablespace" on page 34
- "Properties of a Tablespace File" on page 35

Assigning a Custom Name

To make it easier to identify an element instance in the system, assign the instance a Custom Name. The Custom Name also appears in Chargeback.

Caution – Do not assign a custom name during "Get Topology" or Get Details. You can determine if the management server is getting the topology or all element details by looking at the label near the status button.

Note – Since all users query the same database, this name is displayed to others using the software. As a result, you might want to make them aware of the name.

---

1. Access the Custom Name box by doing one of the following:
   - Double-clicking an Oracle instance in System Explorer, and then clicking the **Properties** tab.
   - Clicking an Oracle instance under the Oracle node in Application Explorer, and then clicking the **Properties** tab.

2. In the Custom Name box, enter a name.

   Keep in mind the following:

   - The name must contain 1 to 64 characters.
   - The name must begin with a letter. Any character other than the first character can be a letter, a numeral (0 to 9), or one of the following symbols: dollar sign ($), caret (^), hyphen (-), underscore (_), or space.
   - The name is case sensitive; for example, "Element1" and "element1" are different elements.

3. Click **Save**.

Properties of an Oracle Instance

You can view detailed properties of an Oracle instance by doing the following:

1. Access Application Explorer by clicking **AppExplorer** ( ).

2. Click the Oracle instance in Application Explorer.

3. Click the **Properties** tab.

   The following properties are displayed:

- **Custom Name** - To make it easier to identify the element instance in the system, assign the instance a Custom Name. The Custom Name also appears in Chargeback. For more information, see "Assigning a Custom Name" in the user guide.
- **Business Cost** - The management server lets you assign a business cost to an application, including virtual applications. This information is used in Event Manager for ranking events from elements. Event Manager determines the rank of an event by taking into account the business cost of the application and the severity of the event. You can sort events by rank in Event Manager by clicking the Rank column. For more information, see "Assigning a Business Cost to an Application" in the user guide.
- **Vendor**
- **Contacted**
- **Record Created**
- **Discovery Status**
- **Install Date**
- **Name Detected**
- **OID**
- **Description**
- **Target Operating System**
- **Identification Code**
- **Product Name**
- **Serial Number**
- **Build Number**
- **Version**
- **Host** - To learn more about the host, click its link.
- **Database Type**
- **Databases** - To learn more about a database, click its link.
- **Update Element Data** - To update the displayed properties, click the **Update Element Data** button at the bottom of the screen. The management server gathers new and changed details from the element and then redraws the topology with the updated information.

If this instance is an Oracle RAC instance, the following additional properties are displayed:

- **Active Application Instances** - A string representation of all of the active instances that are part of this RAC. The format is:

```
<host1-name>:<instance1-name>, <host2-name>:<instance2-
name>...
```

- **Number of instances -** The number of configured instances on this RAC, including inactive instances.

Properties of a Database Instance

You can view detailed properties of a control group for an Oracle instance by doing the following:

1. Access Application Explorer by clicking **AppExplorer** (![icon]).

2. Click the Oracle instance in Application Explorer.

3. Click the **Properties** tab.

4. Scroll to the bottom of the page, and click the database you want to learn more about.

   The following properties are displayed for the database:

   - **Vendor**
   - **Contacted**
   - **Record Created**
   - **Discovery Status**
   - **Install Date**
   - **Name Detected**
   - **OID**
   - **Description**
   - **Type** - The type of database.
   - **Database Logical Elements** - To learn more about a database logical element, click its link.

Properties of a Database Control File Group

You can find the properties of a database control file for an Oracle instance by doing the following:

1. Access Application Explorer by clicking **AppExplorer** (![icon]).

2. Click the Oracle instance in Application Explorer.

3. Click the **Properties** tab.

4. Scroll to the bottom of the page, and click the database containing the control group you want to learn more about.

5. When you are shown the properties of the database, scroll to the bottom of the page to the Database Logical Elements table, and click the database control file group you want to learn more about.

   The following properties for the database control file group are displayed:

- **Vendor**
- **Contacted**
- **Record Created**
- **Discovery Status**
- **Install Date**
- **Name Detected**
- **OID**
- **Description**
- **Type** - The type of file.
- **Database Physical Elements** - To learn more about a control file, click its link.

Properties of a Database Control File

You can find the properties of a database control file for an Oracle instance by doing the following:

1. Access Application Explorer by clicking **AppExplorer** ( ).

2. Click the Oracle instance in Application Explorer.

3. Click the **Properties** tab.

4. Scroll to the bottom of the page, and click the database containing the control group you want to learn more about.

5. When you are shown the properties of the database, scroll to the bottom of the page to the Database Logical Elements table, and click the database control file group.

6. In the Database Physical Elements table, click the database control file you want to learn more about.

   The following properties for the database control file are displayed:

   - **Vendor**
   - **Contacted**
   - **Record Created**
   - **Discovery Status**
   - **Install Date**
   - **Name Detected**
   - **OID**
   - **Description**
   - **File Path**
   - **Status**
   - **Data File Path**
   - **Type**

- **Oracle Database Control File Group** - Displays the control file group containing the database control file. Click the control file group to learn more about it.

Properties of a Database Redo Group

You can find the properties of a database redo group for an Oracle instance by doing the following:

1. Access Application Explorer by clicking **AppExplorer** ().

2. Click the Oracle instance in Application Explorer.

3. Click the **Properties** tab.

4. Scroll to the bottom of the page, and click the database containing the control group you want to learn more about.

5. When you are shown the properties of the database, scroll to the bottom of the page to the Database Logical Elements table, and click the database redo group you want to learn more about.

   The following properties for the database redo group are displayed:

   - **Vendor**
   - **Contacted**
   - **Record Created**
   - **Discovery Status**
   - **Install Date**
   - **Name Detected**
   - **OID**
   - **Description**
   - **Type** - The type of file.
   - **Database Physical Elements** - To learn more about a database redo file, click its link.

Properties of a Database Redo File

You can find the properties of a database redo file for an Oracle instance by doing the following:

1. Access Application Explorer by clicking **AppExplorer** ().

2. Click the Oracle instance in Application Explorer.

3. Click the **Properties** tab.

4. Scroll to the bottom of the page, and click the database containing the control group you want to learn more about.

5. When you are shown the properties of the database, scroll to the bottom of the page to the Database Logical Elements table, and click the database redo group containing the database redo file.

6. In the Database Physical Elements table, click the database redo file you want to learn more about.

   The following properties for the redo file are displayed:

   - **Vendor**
   - **Contacted**
   - **Record Created**
   - **Discovery Status**
   - **Install Date**
   - **Name Detected**
   - **OID**
   - **Description**
   - **File Path**
   - **Status**
   - **Data File Path**
   - **Type**
   - **Oracle Database Redo Group** - To learn more about the database redo group containing the database redo file, click its link.

Properties of a Tablespace

You can view detailed properties of a tablespace by doing the following:

1. Access Application Explorer by clicking **AppExplorer** ().

2. Click the Oracle instance in Application Explorer.

3. Click the **Properties** tab.

4. Scroll to the bottom of the page, and click the database containing the control group you want to learn more about.

5. When you are shown the properties of the database, scroll to the bottom of the page to the Database Logical Elements table, and click the database tablespace you want to learn more about.

   The following properties for the database tablespace are displayed:

   - **Vendor**

- **Contacted**
- **Record Created**
- **Discovery Status**
- **Install Date**
- **Name Detected**
- **OID**
- **Description**
- **Type** - The type of file.
- **Database Physical Elements** - To learn more about a tablespace file, click its link.

Properties of a Tablespace File

You can view detailed properties of a tablespace file by doing the following:

1. Access Application Explorer by clicking **AppExplorer** (icon).

2. Click the Oracle instance in Application Explorer.

3. Click the **Properties** tab.

4. Scroll to the bottom of the page, and click the database containing the control group you want to learn more about.

5. When you are shown the properties of the database, scroll to the bottom of the page to the Database Logical Elements table, and click the database tablespace you want to learn more about.

6. In the Database Physical Elements table, click a tablespace file.

   The following properties are displayed for the tablespace file:

   - **Vendor**
   - **Contacted**
   - **Record Created**
   - **Discovery Status**
   - **Install Date**
   - **Name Detected**
   - **OID**
   - **Description**
   - **File Path**
   - **Status**
   - **Data File Path**
   - **Type**
   - **Oracle Database Tablespace** - To learn more about the database tablespace containing the database tablespace file, click its link.

Viewing Topology for Oracle

This section contains the following topics:
- "About the Topology Tab" on page 36
- "Accessing the Topology Tab" on page 41
- "Viewing Elements in the Oracle Instance's Path" on page 41

About the Topology Tab

The Topology tab provides a graphical representation of your storage network.
- **Left pane** - Provides a path view of the Oracle database. When you select an element in the left pane, its location is shown in the right pane.
- **Right pane** - Provides a logical diagram of the storage network. From the Topology tab, you can determine the location of a device on the network. For example, you could use the Topology tab to find which tablespace uses a given data file.

From the Topology tab, you can obtain information about the host, Oracle instance, database instance, control files, and redo files by double-clicking the appropriate icon in the topology.

When you first access the Topology tab, you are told that the mount points have been filtered. Note that in the following figure, only one database file is displayed.
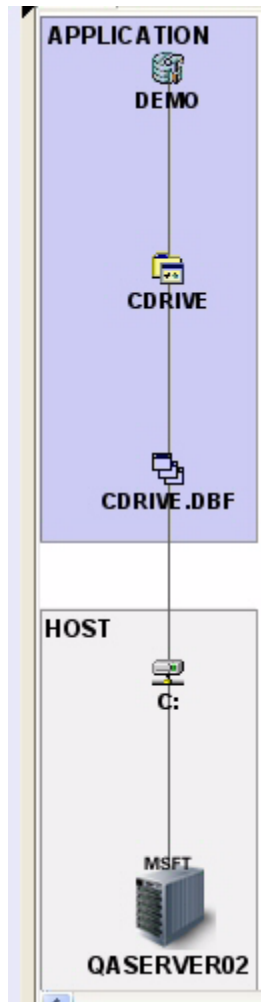
FIGURE 4-1 Topology of Oracle Database without Mount points

You can view the mount points in either of the following ways:

- Click the **Filter** (▣) button in the upper-right corner of the screen. To view the **Filter** button, you need to close the left pane. Select the mount points you want to view by clicking the appropriate check boxes, as shown in the following figure.
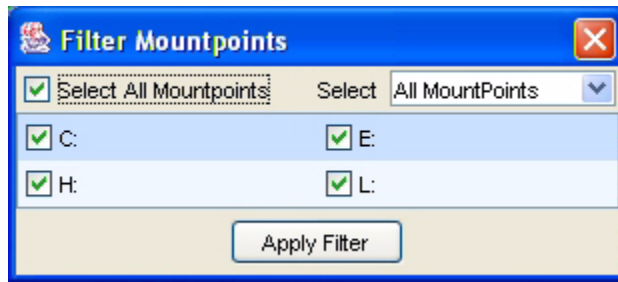
FIGURE 4-2 Selecting Mount Points

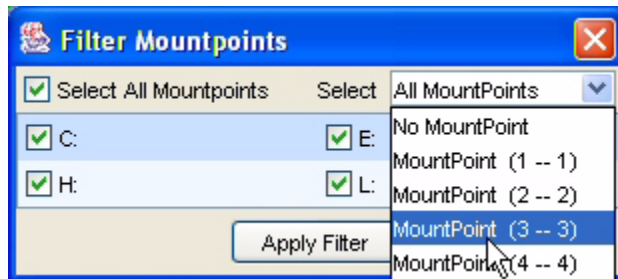■ You can also select the mount points from the **Select** menu.

FIGURE 4-3 Selecting Mount Points from Combo Box

When you are done selecting mount points, click **Apply Filter**. In the following figure, all of the mount points were selected. Notice that all database control files are now displayed.
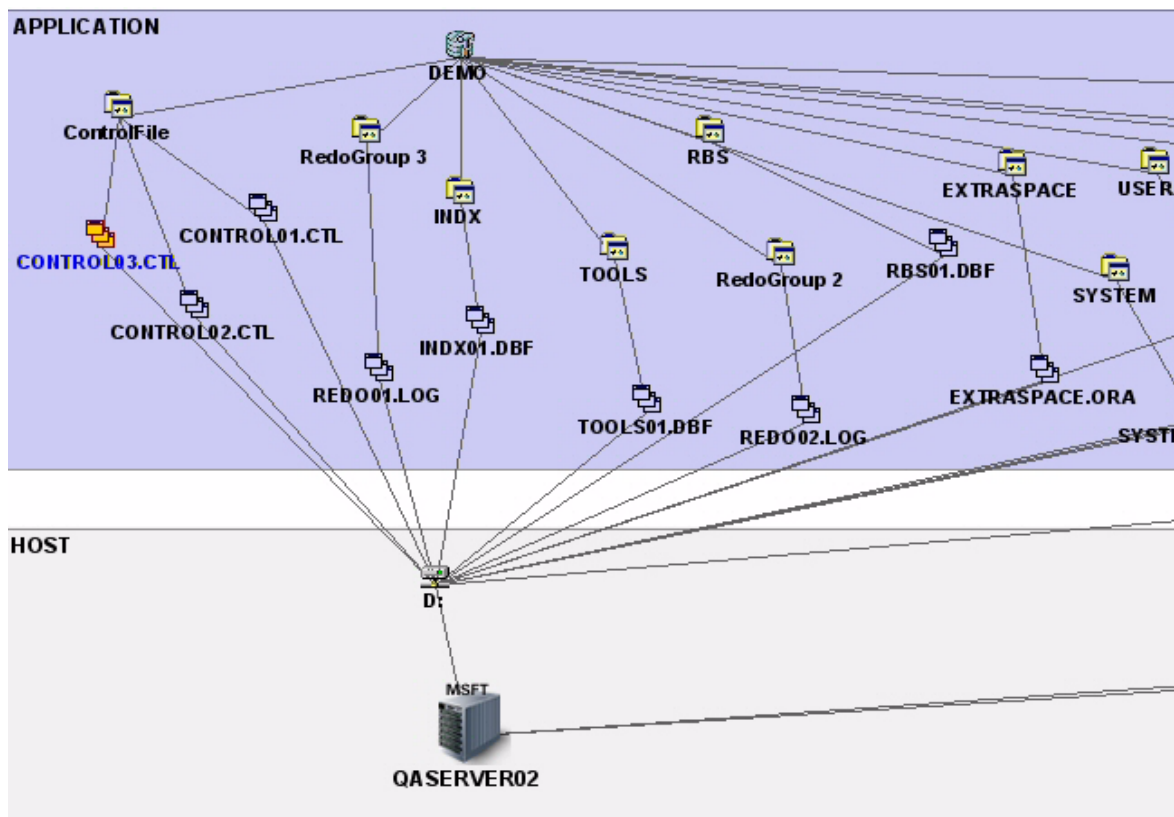
FIGURE 4-4 Topology for an Oracle Instance with Mount Points

Note – The topology was arranged so that as many components as possible could be displayed in the figure; however, not all components could fit in the figure.

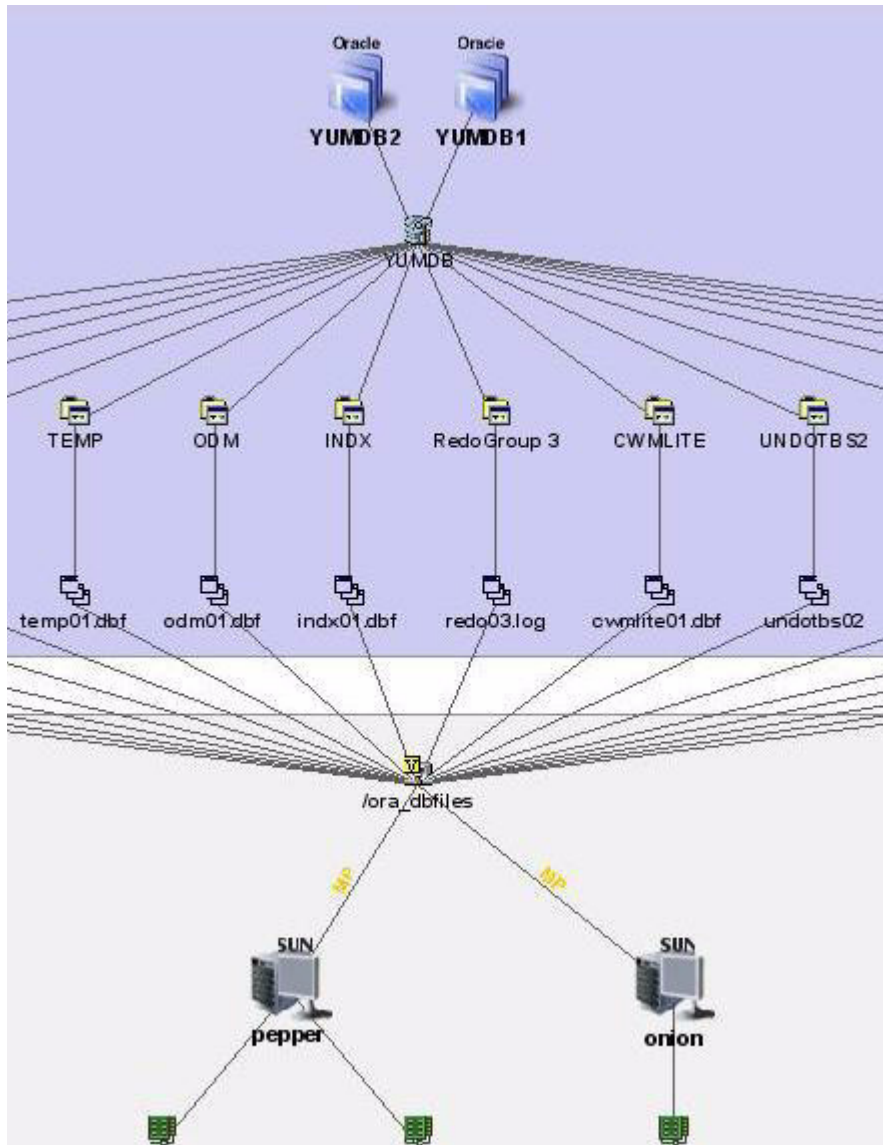You can obtain property information about each component by double-clicking it.

FIGURE 4-5 Topology for Oracle RAC

Note – The topology was arranged so that as many components as possible could be displayed in the figure; however, not all components could fit in the figure.

Accessing the Topology Tab

Access the Topology tab by doing one of the following:

- Clicking an Oracle instance under the Oracle node in Application Explorer, and then clicking the **Topology** tab.
- Double-clicking an Oracle instance in System Explorer, and then clicking the **Topology** tab.

You can view property information for the item displayed in the topology by double-clicking its icon.

Refer to the topic, "About the Topology Tab" in the user guide for more information.

Viewing Elements in the Oracle Instance's Path

You can view elements in the Oracle instance's path by doing the following:

1. Access Application Explorer by clicking **AppExplorer** ( ).

2. Click the Oracle instance in Application Explorer.

3. Click the **Navigation** tab.

4. Do one or more of the following:
   - To learn more about the host, click **Hosts**.
   - To learn more about the switches connected to the host, click **Switches**.
   - To learn more about the storage systems associated with the host, click **Storage Systems**.

Monitoring Microsoft SQL Server

Caution – Depending on your license, monitoring Microsoft SQL Server instances may not be available. See the List of Features to determine if you have access to monitoring Microsoft SQL Server instances. The List of Features is accessible from the Documentation Center (**Help** > **Documentation Center**).

This chapter contains the following topics:

Monitoring Microsoft SQL Server Overview

Before you can monitor Microsoft SQL Server you must do the following. See the installation guide for more information.
- Have the license for monitoring Microsoft SQL Server. To determine if your license supports the monitoring of Microsoft SQL Server, see the List of Features.
- Provide the database server name and port number.
- Discover the application.

Key Benefits
- Improved Microsoft SQL Server database performance
- Increased Microsoft SQL Server availability and reliability
- Maximized return on Microsoft SQL Server storage assets

Key Features
- Database-to-disk topology view

- Standards-based (CIM/WBEM/SMI-S) management platform
- Database-to-disk monitoring
- Real time monitoring of Microsoft SQL Server storage
- Web-based global management console
- Ease of installation, deployment, and manageability

Viewing Events for SQL Server

You can view events pertaining to a SQL Server database and its dependent elements, such as storage systems, by doing the following:

1. Access Application Explorer by clicking **AppExplorer** ( ).

2. Expand the node for the SQL Server database from which you want to obtain event information.

3. Click **Path Events**.

The events for that SQL Server database and its dependent elements are displayed in the right pane.

The management server provides the following information about the events:
- **ID**- The identification number assigned to the event.
- **Severity** - The severity level.
- **Time** - The time the event was recorded.
- **Summary Text** - A brief explanation of the event. When you click the summary text, the details of the event are displayed.

Refer to the Chapter "Managing Events" in the User Guide for more information.

Viewing Properties

This section contains the following topics:
- "Properties of a SQL Server Instance" on page 45
- "Properties of a SQL Server Database" on page 46
- "Properties of a SQL Server Database File" on page 46

Properties of a SQL Server Instance

You can view the properties of a SQL Server instance on a host by doing the following:

1. Access Application Explorer by clicking **AppExplorer** ( ).

2. Click the SQL Server instance in Application Explorer.

3. Click the **Properties** tab.

   The following properties are displayed:

   - **Custom Name** - To make it easier to identify the element instance in the system, assign the instance a Custom Name. The Custom Name also appears in Chargeback. Since all users query the same database, this name is displayed to others using the software. As a result, you might want to make them aware of the name. For more information, see "Assigning a Custom Name" in the user guide.
   - **Business Cost** - The management server lets you assign a business cost to an application, including virtual applications. This information is used in Event Manager for ranking events from elements. Event Manager determines the rank of an event by taking into account the business cost of the application and the severity of the event. You can sort events by rank in Event Manager by clicking the Rank column. For more information, see "Assigning a Business Cost to an Application" in the user guide.
   - **Vendor**
   - **Contacted**
   - **Record Created**
   - **Discovery Status**
   - **Install Date**
   - **Name Detected**
   - **OID**
   - **Description**
   - **Target Operating System**
   - **Identification Code**
   - **Product Name**
   - **Serial Number**
   - **Build Number**
   - **Version**
   - **Host** - To learn more about the host, click its link.
   - **Database Type**
   - **Databases** - To learn more about a database, click its link in the Databases table.

- **Update Element Data** - To update the displayed properties, click the **Update Element Data** button at the bottom of the screen. The management server gathers new and changed details from the element and then redraws the topology with the updated information.

Properties of a SQL Server Database

You can view the properties of a SQL Server database by doing the following:

1. Access Application Explorer by clicking **AppExplorer** ( ).

2. Click the Microsoft SQL Server instance in Application Explorer.

3. Click the **Properties** tab.

4. In the Databases table, click the database you want to learn more about.

   The following properties are displayed:
   - **Name Detected**
   - **Install Date**
   - **Vendor**
   - **Discovery Status**
   - **Record Created**
   - **Contacted**
   - **OID**
   - **Description**
   - **Type**
   - **SQLServer Instance** - To learn more about the instance, click its link.

Properties of a SQL Server Database File

You can view the properties of a SQL Server database file by doing the following:

1. Access System Explorer.

2. Double-click the SQL Server icon in System Explorer.

3. Click the **Topology** tab.

4. Double-click the database file in the topology displayed.

Viewing Topology for a SQL Server

This section contains the following topics:
- "Accessing the Topology Tab" on page 50
- "About the Topology Tab" on page 47

About the Topology Tab

The Topology tab provides a graphical representation of your storage network.
- **Left pane** - Provides a path view of the SQL Server database. When you select an element in the left pane, its location is shown in the right pane.
- **Right pane** - Provides a logical diagram of the storage network. From the Topology tab, you can determine the location of a device on the network. For example, you could use the Topology tab to find which database file corresponds to a database.

From the Topology tab, you can obtain information about an item in the topology by double-clicking its icon.

When you first access the Topology tab, you are told that the mount points have been filtered. Note that in the following figure, only one logical drive is displayed.
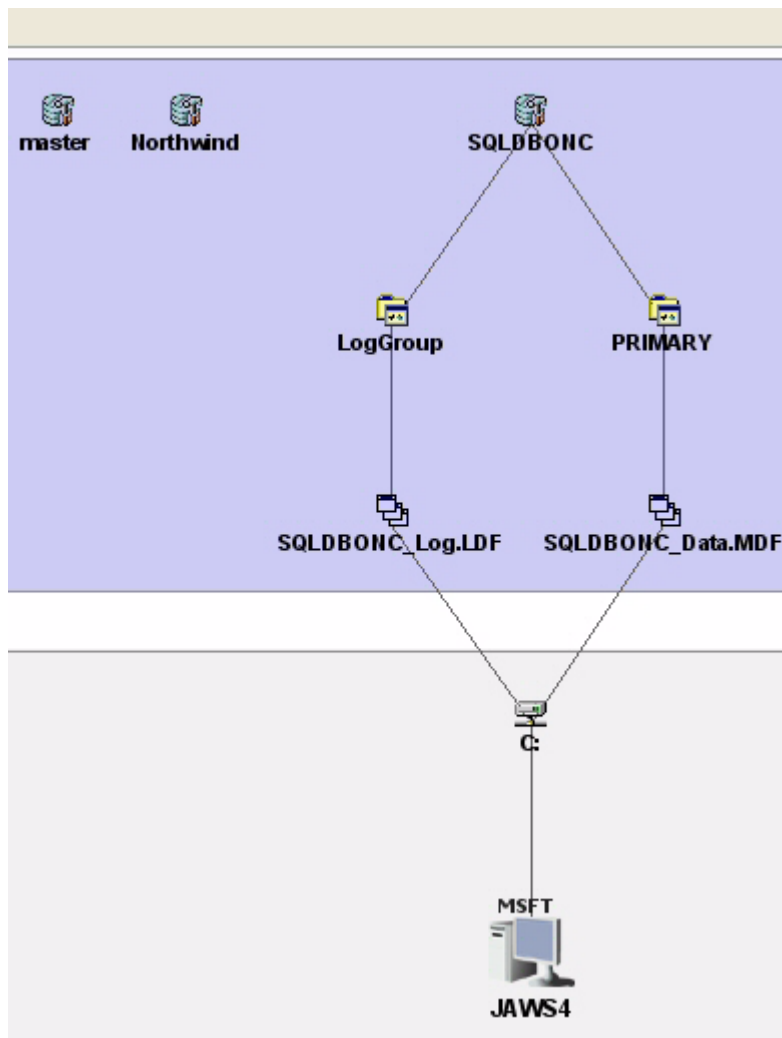
FIGURE 5-1 SQL Server without Mount Points

You can view the mount points in either of the following ways:

- Click the **Filter** (⊞) button in the upper-right corner of the screen. To view the **Filter** button, you need to close the left pane. Select the mount points you want to view by clicking the appropriate check boxes, as shown in the following figure.
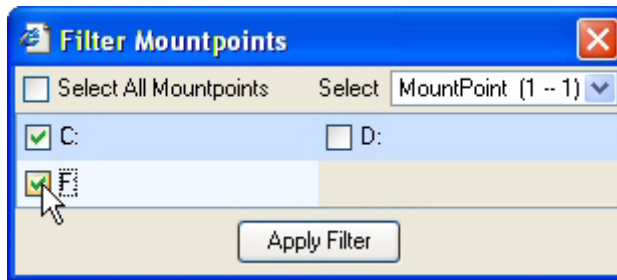
FIGURE 5-2 Selecting Mount Points

■ You can also select the mount points from the **Select** menu. You can only select one mount point at a time when you select a mount point from the Select menu. For example, assume you have mount points C and F selected. If you select a mount point from the Select menu, only one mount point is selected.
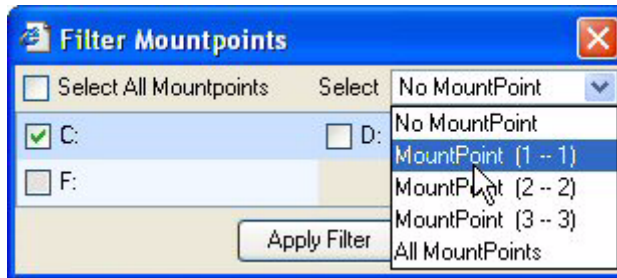
FIGURE 5-3 Selecting a Mount Point from the Select Menu

When you are done selecting mount points, click **Apply Filter**. In the following figure, mount points C and F were selected, but not D. Since the Northwind database is connected to the D mount point, it is not shown as connected.
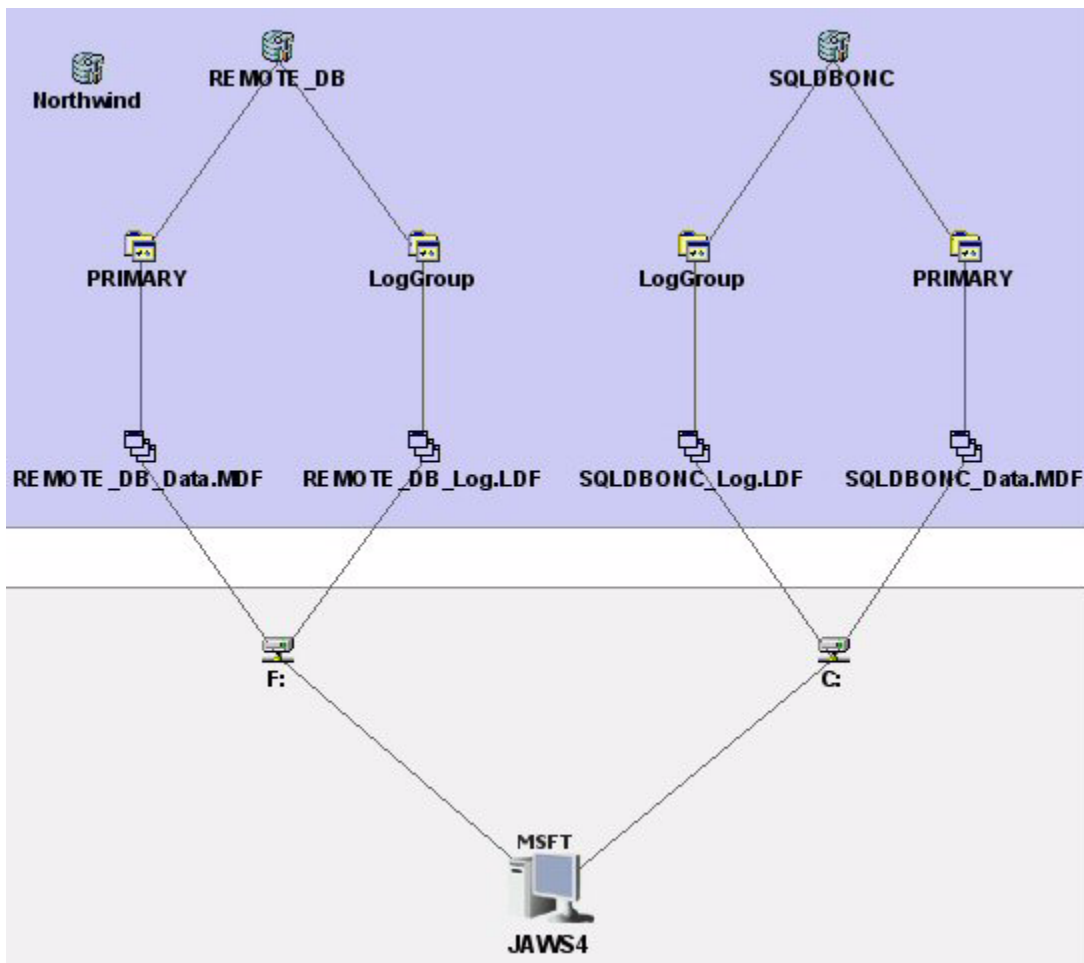
FIGURE 5-4 Topology of SQL Server Database with Two Mount Points

You can obtain property information about each component by double-clicking it.

Accessing the Topology Tab

Access the Topology tab by doing one of the following:
- Clicking a SQL Server instance under the SQLSERVER node in Application Explorer, and clicking the **Topology** button.
- Double-clicking a SQL Server instance in System Explorer, and then clicking the **Topology** tab.

You can view property information for storage groups and stores by double-clicking their icons in the Topology tab.

Monitoring Sybase

Caution – Depending on your license, monitoring Sybase instances may not be available. See the List of Features to determine if you have access to monitoring Sybase instances. The List of Features is accessible from the Documentation Center (**Help** > **Documentation Center**).

This chapter contains the following topics:
- "Monitoring Sybase Overview" on page 53
- "Viewing Events for Sybase" on page 54
- "Viewing Properties" on page 55
- "Viewing Topology for Sybase" on page 58

Monitoring Sybase Overview

Before you can monitor Sybase Adaptive Server Enterprise, you must do the following. For more information, see the installation guide.:
- Have the license for monitoring Sybase Adaptive Server Enterprise. To determine if your license supports the monitoring of Sybase, see the List of Features.
- Create APPIQ_USER account on the database to be managed.
- Provide the database server name and port number.
- Discover the application.

The management software for Sybase is a CIM-based application storage management solution that lets you realize the benefits of networked storage by more effectively managing your end-to-end Sybase infrastructure from a single, easy-to-use console. By integrating real time information from storage devices, network components, servers, and operating systems with the application database, the

management software for Sybase can improve your application's performance, availability, and reliability and maximize your return on the applications storage assets.

To help simplify the management of your Sybase storage, the management software for Sybase provides comprehensive topology visualization from the Sybase database files to the mount point to SAN switches to storage systems. This enables your storage and application administrators to immediately visualize the interdependency of the infrastructure to the application. You will no longer need to cross-reference multiple spreadsheets and call multiple people to get an end-to-end picture.

During periods of infrastructure downtime or other times of equipment failures, infrastructure interdependencies are at your fingertips, so you can make the correct split-second decisions when you are having issues with the infrastructure.

The management software for Sybase provides deep visibility into each component that makes up the Sybase application, including Sybase configuration, host configuration, switch configuration, and storage system configuration. This detailed information is provided at every level.

The management software for Sybase is built on CIM, Web-Based Enterprise Management (WBEM), and the Storage Management Initiative (SMI) industry standards for heterogeneous storage network management. The implementation of these standards allows the management software for Sybase to support all your heterogeneous storage needs and ensures that your investments in infrastructure can be leveraged in the future.

Key Benefits
- Improved Sybase database performance
- Increased Sybase database availability and reliability
- Maximized return on Sybase storage assets

Key Features
- Database-to-disk topology view
- Standards-based (CIM/WBEM/SMI-S) management platform
- Database-to-disk monitoring
- Real-time monitoring of Sybase storage
- Web-based global management console
- Ease of installation, deployment, and manageability

Viewing Events for Sybase

You can view events pertaining to a Sybase database and its dependent elements, such as storage systems. by doing the following:

1. Access Application Explorer by clicking **AppExplorer** ( ).

2. Expand the node for the Sybase database from which you want to obtain event information.

3. Click **Path Events**.

The events for that Sybase database and its dependent elements are displayed in the right pane.

The management server provides the following information about the events:
- **ID**- The identification number assigned to the event.
- **Severity** - The severity level.
- **Time** - The time the event was recorded.
- **Summary Text** - A brief explanation of the event. When you click the summary text, the details of the event are displayed.

Refer to the chapter "Managing Events" in the user guide for more information.

Viewing Properties

This section contains the following topics:
- "Properties of a Sybase Instance" on page 55
- "Properties of a Sybase Database" on page 56
- "Properties of a Sybase Database File" on page 57

Properties of a Sybase Instance

You can view the properties of a Sybase instance on a host by doing the following:

1. Access Application Explorer by clicking **AppExplorer** ( ).

2. Click the Sybase instance in Application Explorer.

3. Click the **Properties** tab.

    The following properties are displayed:

    - **Custom Name** - To make it easier to identify the element instance in the system, assign the instance a Custom Name. The Custom Name also appears in Chargeback. Since all users query the same database, this name is displayed to others using the software. As a result, you might want to make them aware of the name.

- **Business Cost** - The management server lets you assign a business cost to an application, including virtual applications. This information is used in Event Manager for ranking events from elements. Event Manager determines the rank of an event by taking into account the business cost of the application and the severity of the event. You can sort events by rank in Event Manager by clicking the Rank column. See the topic, "Assigning a Business Cost to an Application" for more information.
- **Vendor**
- **Contacted**
- **Record Created**
- **Discovery Status**
- **Install Date**
- **Name Detected**
- **OID**
- **Description**
- **Target Operating System**
- **Identification Code**
- **Product Name**
- **Serial Number**
- **Build Number**
- **Version**
- **Host** - To learn more about the host, click its link.
- **Database Type**
- **Databases** - To learn more about a database, click its link in the Databases table.
- **Update Element Data** - To update the displayed properties, click the **Update Element Data** button at the bottom of the screen. The management server gathers new and changed details from the element and then redraws the topology with the updated information.

Properties of a Sybase Database

You can view the properties of a Sybase database by doing the following:

1. Access Application Explorer by clicking **AppExplorer** (   ).

2. Click the Sybase instance in Application Explorer.

3. Click the **Properties** tab.

4. In the Databases table, click a database you want to learn more about.

   The following properties are displayed:

   - **Vendor**
   - **Contacted**

- **Record Created**
- **Discovery Status**
- **Install Date**
- **Sybase Instance**
- **Name Detected**
- **OID**
- **Description**
- **Type**
- **Database Logical Elements** - To learn more about a Sybase database file, click its link.

Properties of a Sybase Database File

You can view the properties of a Sybase database file by doing the following:

1. Access Application Explorer by clicking **AppExplorer** ( ).

2. Click the Sybase instance in Application Explorer.

3. Click the **Properties** tab.

4. In the Databases table, click a database.

5. In the Database Logical Elements table, click the database file you want to learn more about.

   The following properties are displayed:

   - **Vendor**
   - **Contacted**
   - **Record Created**
   - **Discovery Status**
   - **Install Date**
   - **Name Detected**
   - **OID**
   - **DB Logical**
   - **File Path**
   - **Status**
   - **Data File Path**
   - **Type**

Viewing Topology for Sybase

This section contains the following topics:
- "About the Topology Tab" on page 58
- "Accessing the Topology Tab" on page 61

About the Topology Tab

The Topology tab provides a graphical representation of your storage network:
- **Left pane** - Provides a path view of the Sybase database. When you select an element in the left pane, its location is shown in the right pane.
- **Right pane** - Provides a logical diagram of the storage network. From the Topology tab, you can determine the location of a device on the network. For example, you could use the Topology tab to find which database file corresponds to a database.

From the Topology tab, you can obtain information about an item in the topology by double-clicking its icon.

When you first access the Topology tab, you are told that the mount points have been filtered. Note that in the following figure, only one logical drive is displayed. One of the database instances, sybsystemprocs, is shown disconnected, because its logical drive is not displayed.
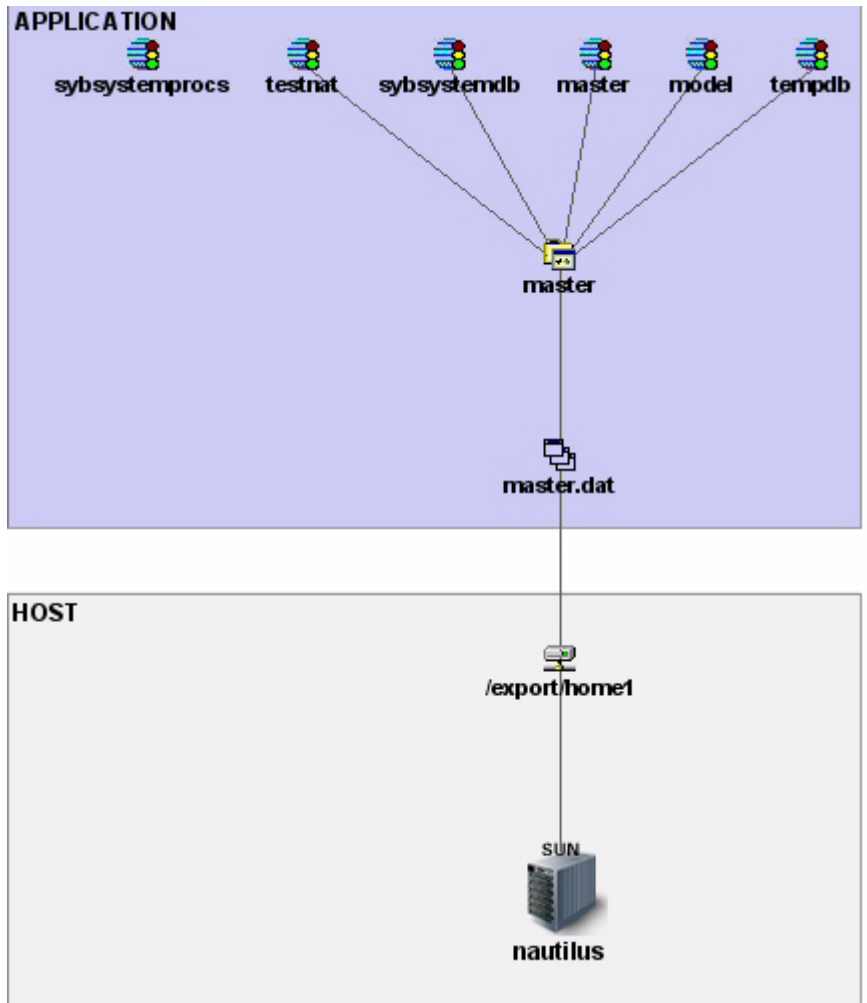
FIGURE 6-1 Topology of Sybase Database without Mount Points

You can view the mount points in either of the following ways:

- Click the **Filter** (⊞) button in the upper-right corner of the screen. To view the **Filter** button, you need to close the left pane. Select the mount points you want to view by clicking the appropriate check boxes, as shown in the following figure.
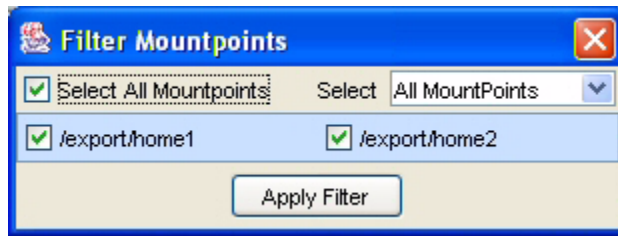
FIGURE 6-2 Selecting Mount Points

■ You can also select the mount points from the **Select** menu.
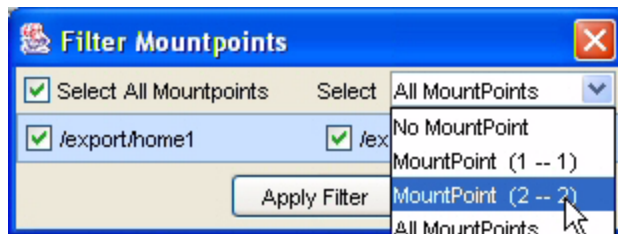
FIGURE 6-3 Selecting Mount Points from Combo Box

■ When you are done selecting mount points, click **Apply Filter**. In the following figure, all of the mount points were selected. Notice that all database control files are now displayed, and the database instance sybsystemprocs is shown connected to its logical drive.
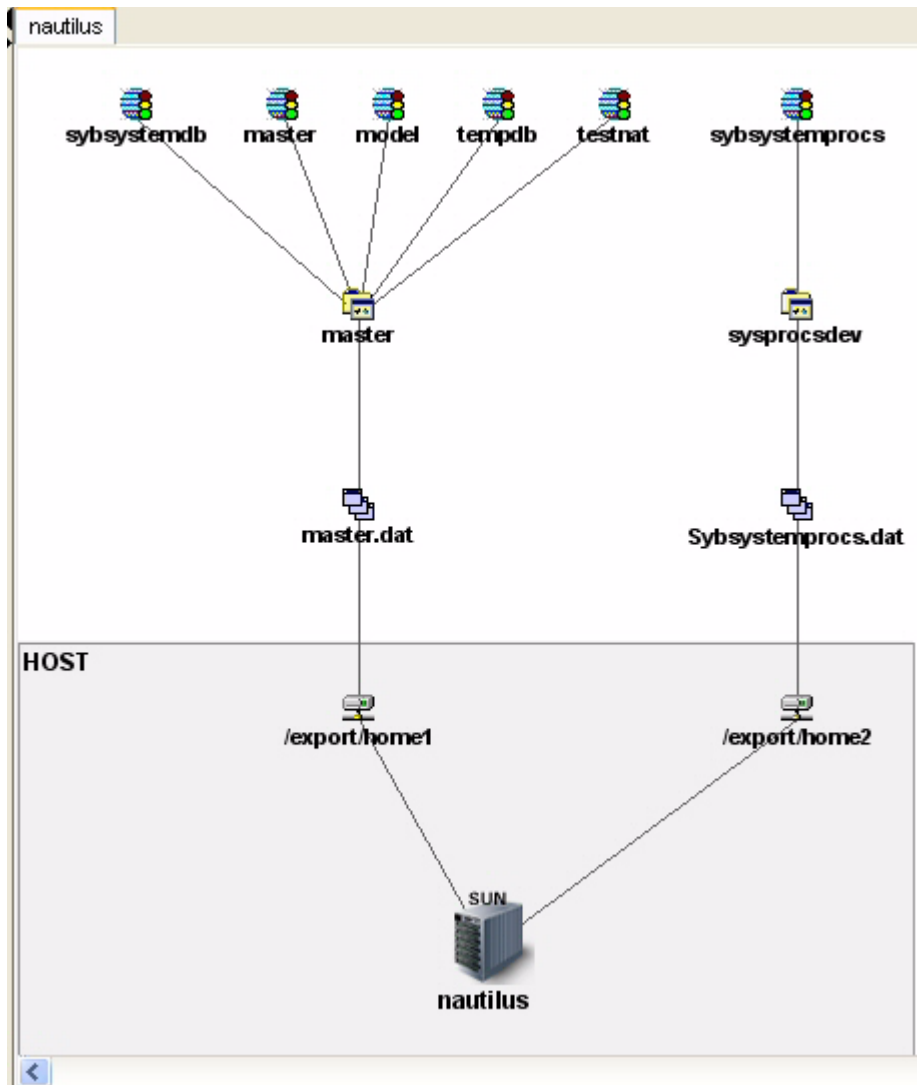
FIGURE 6-4 Topology of Sybase Database with Mount Points

You can obtain property information about each component by double-clicking it.

Accessing the Topology Tab

Access the Topology tab by doing one of the following:

- Clicking a Sybase instance under the Sybase node in Application Explorer, and clicking the **Topology** button.
- Double-clicking a Sybase instance in System Explorer, and then clicking the **Topology** tab.

You can view property information for storage groups and stores by double-clicking their icons in the Topology tab.

Index