HP Storage Essentials

For the Windows® and Linux operating systems

Software Version: 9.70

Application Guide

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Contents

Chapter 1

Overview

The management server enables you to obtain the latest information about your applications, such as Microsoft Exchange and Oracle. To determine which applications the management server supports, see 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 Viewer** – Enables you to 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.

- **Report Optimizer** – Enables you to obtain reports about an application. You can schedule these reports to be emailed to others on a regular basis.

- **System Manager** – Provides a graphical representation of the applications the management server is monitoring.

- **Properties Tab** – Provides detailed property information about your application.

- **Topology Tab** – Enables you to view the components of your application.

- **Chargeback Manager** – Enables you to determine how much it costs to run an application.

- **Policy Manager** – Enables you to create policies that notify you when a certain amount of free space goes below a threshold or the percentage used goes above a threshold.

Chapter 2

Accessing Information About Applications

This section consists of the following topics:

About Application Viewer

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

Access Application Viewer by clicking **Application Viewer** ( ).

Application Viewer lists the applications and their instances running in the storage area network (SAN) and any events associated with them. Application Viewer 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.

- **DB2** – Data pertaining to navigation, properties, topology, chargeback, reports, monitoring, and policies.

- **Informix** – Data pertaining to navigation, properties, topology, chargeback, reports, monitoring, and policies.

- **Virtual Applications** – Data pertaining to navigation, properties, topology, chargeback, reports, and monitoring.

Obtaining a Summary of the Applications

The Application Summary page is accessible by clicking the Application Viewer 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

- DB2 Instances

- Informix Instances

- Exchange Standalone Instances

- Exchange Cluster Instances

- Virtual Applications

- Clustered Virtual Applications

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

- DB2 Instances

- Informix Instances

- Exchange Standalone Instances

- Exchange Cluster Instances

- 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:

  Application Viewer ( ) > **Oracle**

- Microsoft Exchange:

  Application Viewer ( ) > **Microsoft Exchange**

- Microsoft SQL Server:

  Application Viewer ( ) > **SQLServer**.

- Sybase:

  Application Viewer ( ) > **Sybase**.

- Caché:

  Application Viewer ( ) > **Caché**.

- DB2:

  Application Viewer ( ) > **DB2**

- Informix:

  Application Viewer ( ) > **Informix**.

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 Manager, 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 Manager. Performance Manager lets you quickly view information about an application.

- **Policies** – The Policies tab lets you create utilization polices, which can send an email, generate an event, or run a custom script when a set threshold for an element is triggered.

There are some situations in which all the tabs might not 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 severity levels are the following:

Icon	Description
◯	The event is marked cleared.
⑦	The severity of the event is not known.
ⓘ	The event is informational.
◆	The event might have some impact.
❗	The event has a minor impact.

Icon	Description
	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.

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:

1. Click the **Events** node in the Application Viewer tree.

2. Traverse the following path:

   Application Viewer ( ) > **[application_name]** > **Instance Name**

   In this instance, [application_name] is the name of the application; for example, Oracle.

3. Click the **Events** node.

Viewing Performance Information

You can easily access performance information about an element, such as an application by accessing Performance Manager. Performance Manager provides detailed graphs to help you with monitoring your application.

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, see the user guide.

Chapter 3

Monitoring Microsoft Exchange

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 section consists of the following topics:

- "Monitoring Microsoft Exchange Overview " below

- "Managing Microsoft Exchange Domain Controller Access" on the next page

- "Configuring User Mailbox and Public Folder Data Collection" on page 21

- "Viewing Properties for a Microsoft Exchange Instance" on page 22

- "Viewing Topology for Microsoft Exchange " on page 28

- "Viewing Exchange Reports" on page 34

Monitoring Microsoft Exchange Overview

Before you can monitor Microsoft Exchange Server, you must do the following:

- 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.

For more information, see the *Installation Guide*.

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

Adding a Microsoft Exchange Domain Controller

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 another using the host name and the fully-qualified domain name.

The user name you provide could be either the Windows logon name or Common Name (CN) of the Active Directory User for accessing the Microsoft Exchange server. If the CN is provided, make sure that the user resides under the default Users Organization Unit (UO). If the Windows logon name is provided, it should be in the format: **Domain\Username** and the corresponding user could be in any OU.

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

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

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

3. 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 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 Windows logon name or 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 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.

5. Click **OK**.

Deleting a Microsoft Exchange Domain Controller

To delete all the domain controllers of a particular domain:

1. Select **Discovery** > **Setup** and 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** and 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 Microsoft Exchange user mailboxes and public folders. After you configure Application Viewer, HP Storage Essentials uses the following to collect information from the Microsoft Exchange server:

- **Windows Powershell.** The product defaults to Windows Powershell for Microsoft Exchange 2007 servers.

- **Windows Management Instrumentation (WMI).** The product default to WMI for Microsoft Exchange 2003 servers.

- **Messaging Application Programming Interface (MAPI)**. The product defaults to MAPI for Microsoft Exchange 2000 servers.

To enable the product to collect information from the Microsoft Exchange server:

1. On the Exchange server host, change the logon account for the `AppStorWin32Agent` service to a Domain Administrator account or Exchange View Only Administrator privileges account that has 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 or Exchange View Only Admin user, *as well as* Local Admin or Domain Admin (instead of a Local System account).

   f. Type the password for the user account in **Password** and in **Confirm password**, and then click **OK**.

   g. 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. For instructions on using the Collector's tab, see the *User Guide*.

Viewing Events for a Microsoft Exchange Instance

To view events pertaining to a Microsoft Exchange instance and its dependent elements, such as switches and storage systems:

1. Click **Application Viewer** ( ).

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 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.

- **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

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 Manager.

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.

All users query the same database, so this name is displayed to others using the software. To make them aware of the name:

1. Access the Custom Name box by doing one of the following:

   - Double-click a Microsoft Exchange instance in System Manager, and then click the **Properties** tab.

     Or

   - Click a Microsoft Exchange instance under the Microsoft Exchange node in Application Viewer, and then click the **Properties** tab.

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

   - 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 Viewer by clicking **Application Viewer** ( ).

2. Access the Properties tab by doing one of the following:

   - Click the Microsoft Exchange instance under the Microsoft Exchange node in Application Viewer.

     Or

   - Double-click the application icon for the Microsoft Exchange instance in System Manager.

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. All users query the same database, so this name is displayed to others using the software. Therefore, you might want to make them aware of the name. For more information, see "Assigning a Custom Name" on the previous page.

   - **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 Viewer by clicking **Application Viewer** ( ).

2. Access the Properties tab by doing one of the following:

   - Click the Microsoft Exchange instance under the Microsoft Exchange node in Application Viewer.

     Or

   - Double-click the application icon for the Microsoft Exchange instance in System Manager.

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 Viewer by clicking **Application Viewer** ( ).
2. Access the Properties tab by doing one of the following:

    - Click the Microsoft Exchange instance under the Microsoft Exchange node in Application Viewer.

        Or

    - Double-click the application icon for the Microsoft Exchange instance in System Manager.

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

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 Viewer by clicking **Application Viewer** ( ).
2. Access the Properties tab by doing one of the following:

- Click the Microsoft Exchange instance under the Microsoft Exchange node in Application Viewer.

  Or

- Double-click the application icon for the Microsoft Exchange instance in System Manager.

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 Nam**e (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:

1. Access Application Viewer by clicking **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 **Application Viewer** ( ).

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

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, to find out which storage group contains the mailbox store, use the Topology tab.

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.

You can also obtain information about a Microsoft Exchange LCR, and a Microsoft Exchange CCR cluster. The Exchange CCR cluster replicates the database and transaction logs for each storage group on an alternate path. This alternate path is called as the replication path.

You can view the replication paths for the Exchange cluster from the topology tab.

When you first access the Topology tab, you are told that the mount points were filtered. In the following example, only the first storage group is displayed.
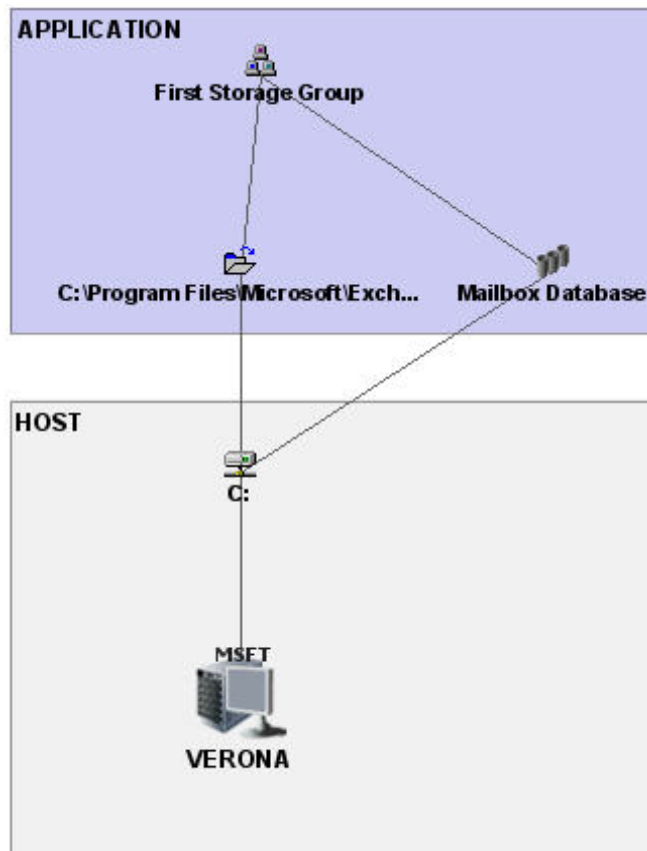
You can view the mount points in either of the following ways:

- Click the **Filter** (⬛) button in the upper-right corner of the screen. To view the **Filter** button, close the left pane. Select the mount points you want to view by clicking the appropriate check boxes, as shown in the following example.
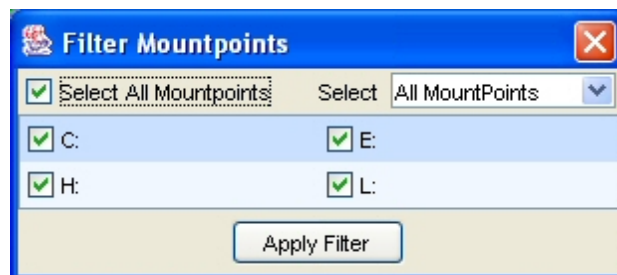
- You can also select the mount points from the **Select** menu.
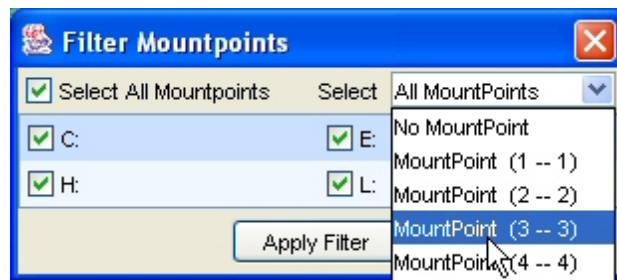
When you are done selecting mount points, click **Apply Filter**. In the following example, all of the mount points are selected. All of the storage groups are now displayed, as well as the connecting switch and storage system.

SWITCH

DomainId 1 : Port 15 (F)   DomainId 2 : Port 15 (F)

RRCD   RRCD

bluebird   athena

DomainId 1 : Port 22 (F)
DomainId 2 : Port 22 (F)

DomainId 1 : Port 23 (F)   DomainId 2 : Port 23 (F)

SUBSYSTEM

hostport1 (N)   hostport2 (N)   hostport1 (N)   hostport2 (N)

HP

neo

standalone_exch_server_sdas\ver...   standalone_exch_server_sdas\ver...

Disk 003
Disk 009

Disk 014   Disk 010   Disk 001   Disk 008   Disk 002   Disk 004   Disk 005   Disk 006   Disk 012   Disk 011   Disk 013   Disk 007

The dotted lines show the replication path of each database and storage groups against the passive node.

Accessing the Topology Tab

Access the Topology tab by doing one of the following:

- Click a Microsoft Exchange instance under the Microsoft Exchange node in Application Viewer, and then click the **Topology** button.

  Or

- Double-click a Microsoft Exchange instance in System Manager, and then click 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

To view elements in the Microsoft Exchange path:

1. Access Application Viewer by clicking **Application Viewer** ( ).

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

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.

Viewing Exchange Reports

To view chargeback reports:

1. Click the **Reporter** button and 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 click **Run Report**.

For information on e-mailing reports, see "Sending a report by E-mail" in the *User Guide*.

Chapter 4

Monitoring Oracle

Depending on your license, monitoring Oracle instances might 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 section consists of the following topics:

- "Monitoring Oracle Overview" below

- "Changing the Oracle TNS Listener Port" on the next page

- "Enabling the Autoscan Feature" on page 38

- "Viewing Oracle ASM Information" on page 38

- "Viewing Events for an Oracle Instance" on page 38

- "Viewing Properties of an Oracle Instance" on page 39

- "Viewing Topology for Oracle" on page 46

Monitoring Oracle Overview

Before you can monitor the Oracle Database, you must do the following:

- 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.

For more information, see the *Installation Guide*.

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.

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 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

Autoscan allows Oracle instances to be discovered automatically without having to enter the application setup information. By default, discovery of Oracle through autoscan is disabled.

To enable autoscan:

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

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

   ```
   oracleautoscan=true
   ```

3. Click **Save**.

4. Restart the AppStorManager service for your changes to take effect.

Auto scans are supported for both Oracle standalone instances and RACs. However Oracle instances configured as failover cluster resources should always be discovered by explicitly specifying the instance configuration. For details, see the Monitoring Oracle section of the Discovering Applications, Backup Hosts and Hosts chapter of the user guide.

Autoscan is supported for Oracle 11g R1 on HP-UX, AIX, Solaris, and Linux platforms. The Autoscan feature is not supported on Oracle 11g R2.

If you are discovering an Oracle 11g R1 instance, LISTENER.ORA should be located in one of the following directories:

- `<Oracle_Home>/network/admin`

- `/etc`

- `/var/opt/oracle`

If LISTENER.ORA is not located in one of these directories, use the TNS_LOC parameter in the cim.extension.parameters file to specify where the file is stored.

Viewing Oracle ASM Information

The Oracle ASM diskgroups are displayed on the Host Navigation page when you click the Volume Management button.

The Volume Management Software property for ASM diskgroups is set to Oracle Automatic Storage Management and the Version of Software is set to the Oracle ASM software version. Click the **+Disks** link to list the Disk Drives that form the ASM diskgroup.

Viewing Events for an Oracle Instance

To view events pertaining to an Oracle instance and its dependent elements, such as switches and storage systems:

1. Access Application Viewer by clicking **Application Viewer** ().

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

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 Manager.

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.

All users query the same database, so this name is displayed to others using the software. To make them aware of the name:

1. Access the Custom Name box by doing one of the following:

   - Double-click an Oracle instance in System Manager, and then click the **Properties** tab.

     Or

   - Click an Oracle instance under the Oracle node in Application Viewer, and then click the **Properties** tab.

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

   - 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

To view detailed properties of an Oracle instance:

1. Access Application Viewer by clicking **Application Viewer** ( ).

2. Click the Oracle instance in Application Viewer.

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**

   - **Automatic Storage Management (ASM)** – Displays a value of Yes or No based on whether that particular database is using ASM for storage.

   - **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

To view detailed properties of a control group for an Oracle instance:

1. Access Application Viewer by clicking **Application Viewer** ( ).
2. Click the Oracle instance in Application Viewer.
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

To find the properties of a database control file for an Oracle instance:

1. Access Application Viewer by clicking **Application Viewer** ( ).
2. Click the Oracle instance in Application Viewer.

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

To find the properties of a database control file for an Oracle instance:

1. Access Application Viewer by clicking **Application Viewer** ( ).

2. Click the Oracle instance in Application Viewer.

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

To find the properties of a database redo group for an Oracle instance:

1. Access Application Viewer by clicking **Application Viewer** (   ).

2. Click the Oracle instance in Application Viewer.

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

To find the properties of a database redo file for an Oracle instance:

1. Access Application Viewer by clicking **Application Viewer** ( ).

2. Click the Oracle instance in Application Viewer.

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

To view detailed properties of a tablespace:

1. Access Application Viewer by clicking **Application Viewer** (   ).

2. Click the Oracle instance in Application Viewer.

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

To view detailed properties of a tablespace file:

1. Access Application Viewer by clicking **Application Viewer** (   ).

2. Click the Oracle instance in Application Viewer.

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

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 were filtered. In the following example, only one database file is displayed.
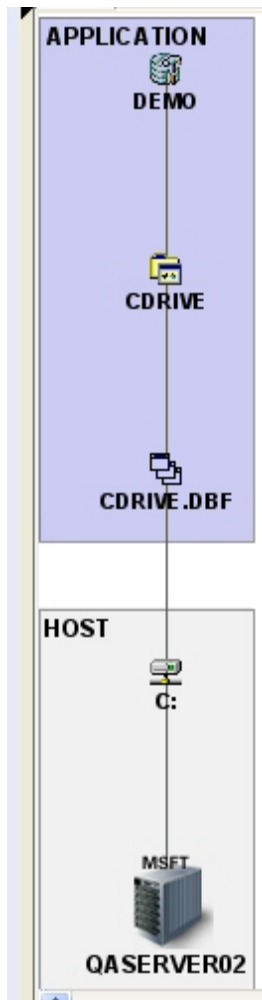
You can view the mount points in either of the following ways:

- Click the **Filter** (⊞) button in the upper-right corner of the screen. To view the **Filter** button, close the left pane. Select the mount points you want to view by clicking the appropriate check boxes, as shown in the following example.
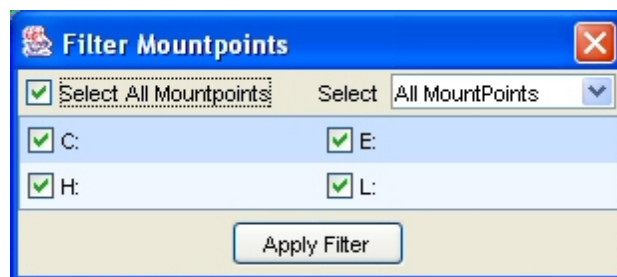
- You can also select the mount points from the **Select** menu.
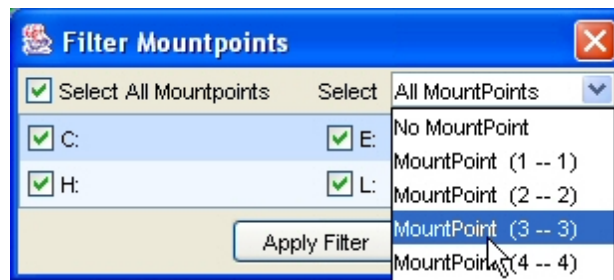
When you are done selecting mount points, click **Apply Filter**. In the following example, all of the mount points are selected. All of the database control files are now displayed.
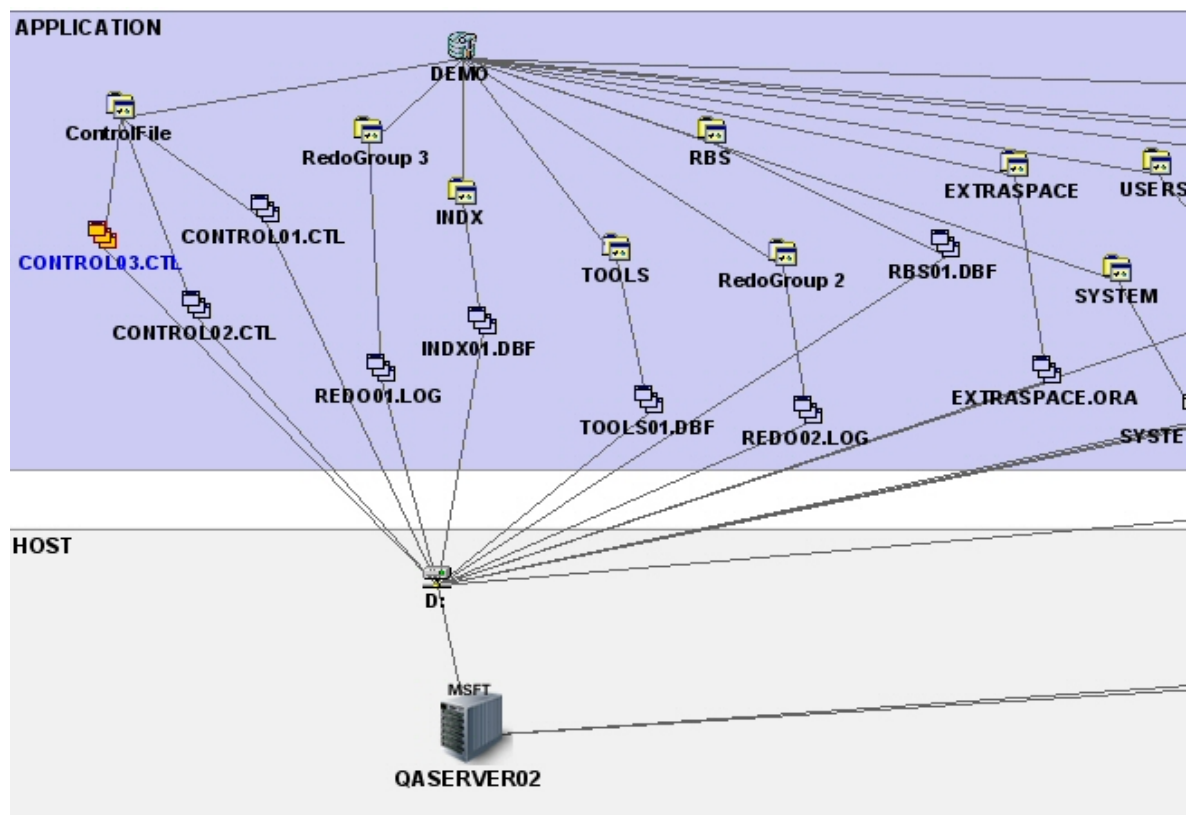
The example topology is arranged so that as many components as possible could be visible; however, not all components could fit in the figure.

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

Topology for Oracle RAC

The following example shows a topology for Oracle RAC.
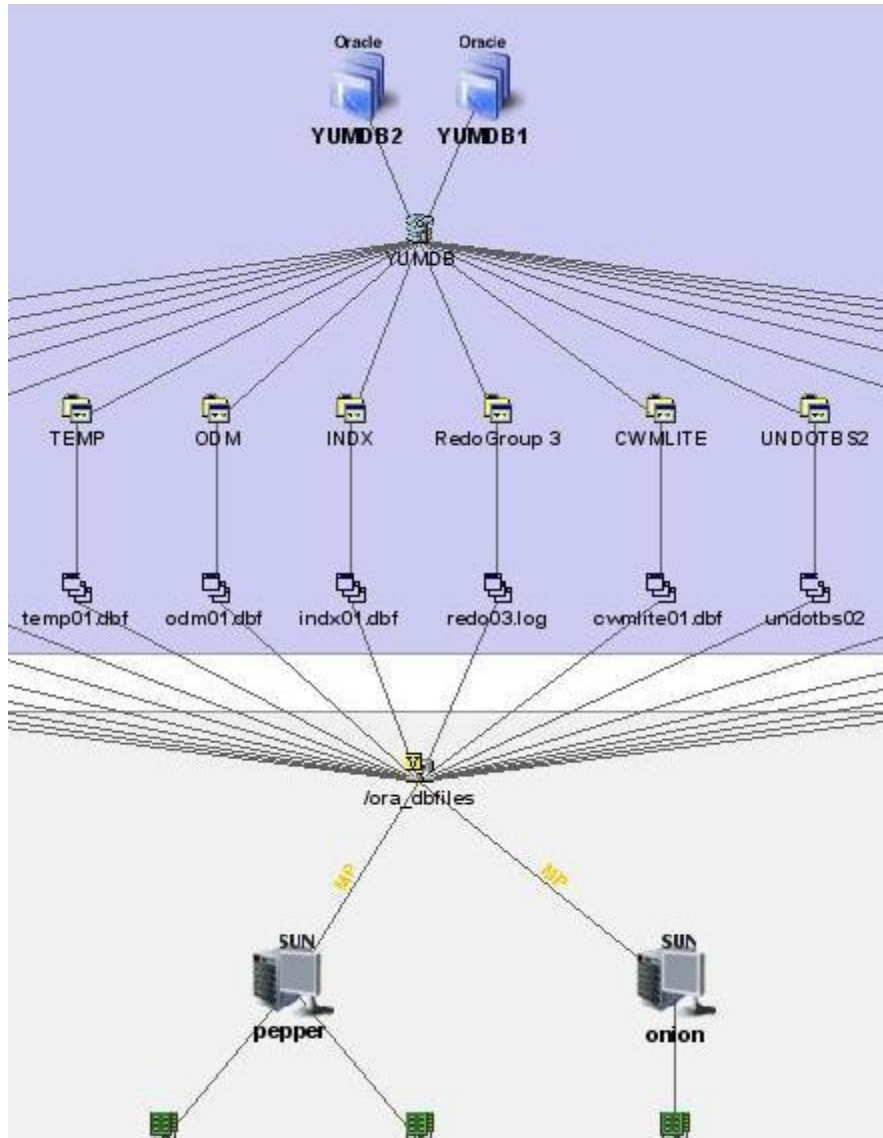
Topology for Oracle RAC Showing an ASM Diskgroup as a Volume

Oracle ASM disk groups are represented as Volume Manager volumes. The following example shows a topology for Oracle RAC with an ASM diskgroup (DATA1) as a volume.
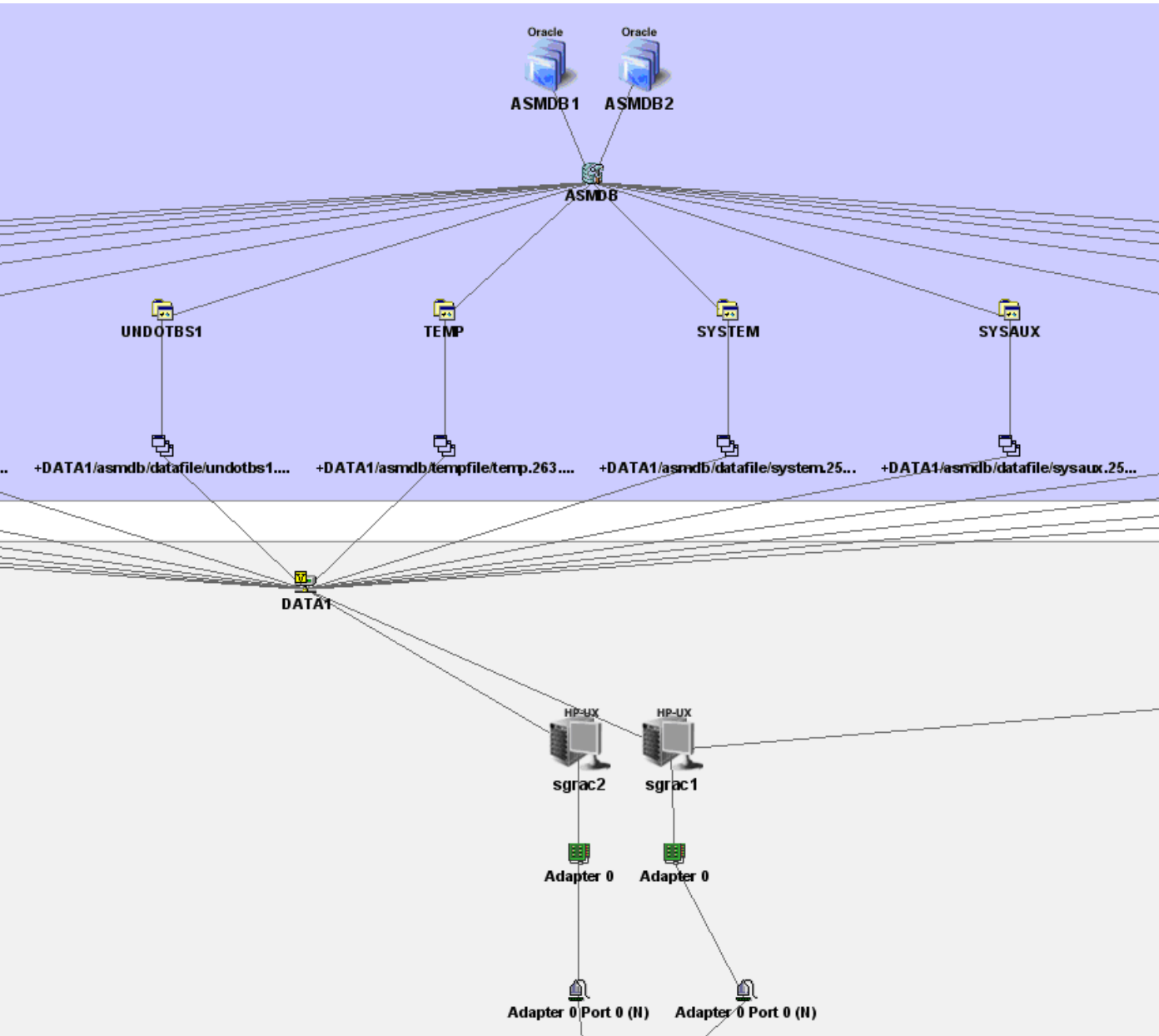
Accessing the Topology Tab

Access the Topology tab by doing one of the following:

- Click an Oracle instance under the Oracle node in Application Viewer, and then click the **Topology** tab.

  Or

- Double-click an Oracle instance in System Manager, and then click the **Topology** tab.

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

For more information, see "About the Topology Tab" in the *User Guide*.

Viewing Elements in the Oracle Instance's Path

To view elements in the Oracle instance's path:

1. Access Application Viewer by clicking **Application Viewer** ( ).

2. Click the Oracle instance in Application Viewer.

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**.

Chapter 5

Monitoring Sybase

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 section consists of the following topics:

- "Monitoring Sybase Overview " below

- "Viewing Events for Sybase" on the next page

- "Viewing Properties for Sybase" on page 54

- "Viewing Topology for Sybase" on page 56

Monitoring Sybase Overview

Before you can monitor Sybase Adaptive Server Enterprise, you must do the following:

- 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.

For more information, see the *Installation Guide*.

The management software for Sybase is a CIM-based application storage management solution that lets you realize the benefits of storage in a network 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

To view events pertaining to a Sybase database and its dependent elements, such as storage systems:

1. Access Application Viewer by clicking **Application Viewer** ( ).

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.

For more information, see "Managing Events" in the *User Guide*.

Viewing Properties for Sybase

Properties of a Sybase Instance

To view the properties of a Sybase instance on a host:

1. Access Application Viewer by clicking **Application Viewer** ( ).

2. Click the Sybase instance in Application Viewer.

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 enables you to 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.

- **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

To view the properties of a Sybase database:

1. Access Application Viewer by clicking **Application Viewer** ( ).

2. Click the Sybase instance in Application Viewer.

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

To view the properties of a Sybase database file:

1. Access Application Viewer by clicking **Application Viewer** ( ).

2. Click the Sybase instance in Application Viewer.

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

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 were filtered. In the following example, only one logical drive is displayed. One of the database instances, sybsystemprocs, is shown disconnected, because its logical drive is not displayed.
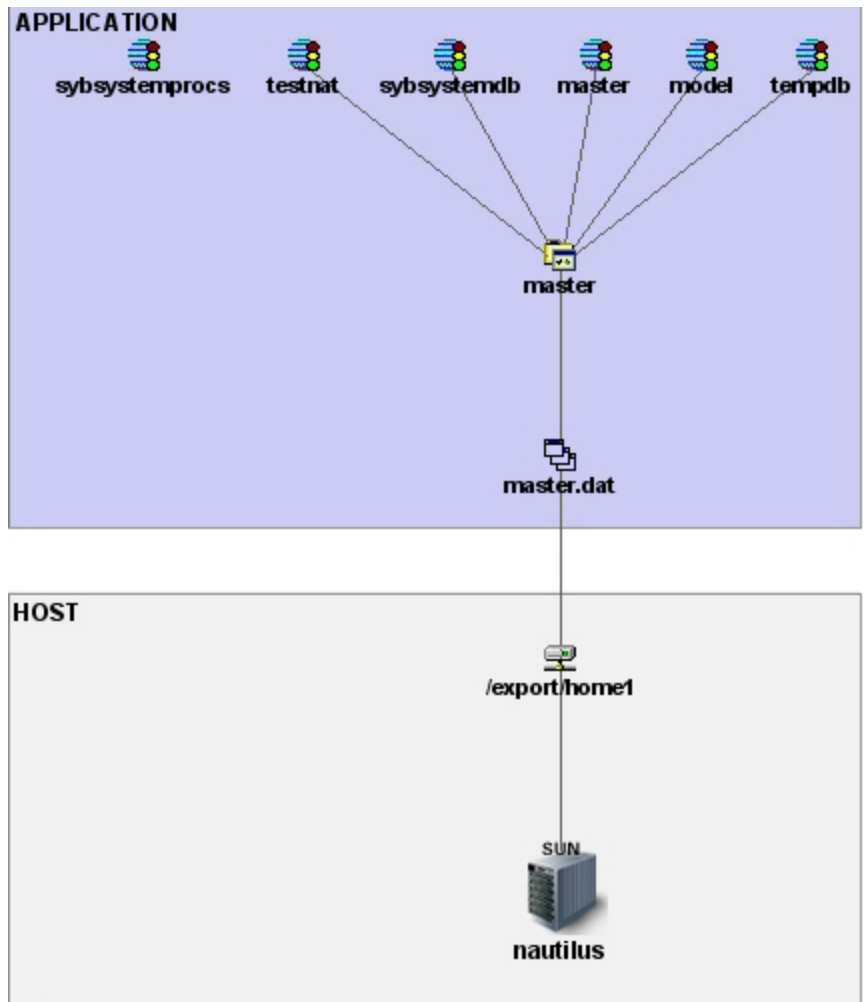
You can view the mount points in either of the following ways:

- Click the **Filter** (⬚) button in the upper-right corner of the screen. To view the **Filter** button, close the left pane. Select the mount points you want to view by clicking the appropriate check boxes, as shown in the following figure.
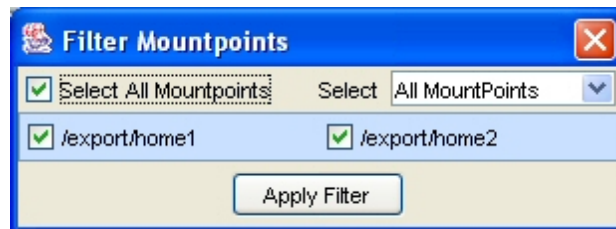
- You can also select the mount points from the **Select** menu.
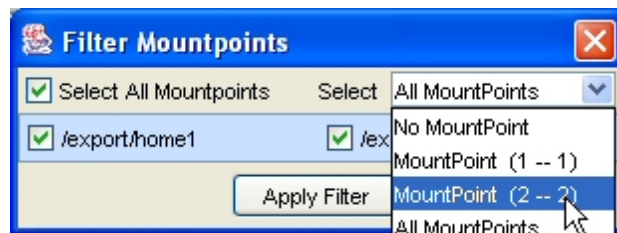
When you are done selecting mount points, click **Apply Filter**. In the following example, all of the mount points are selected. All of the database control files are now displayed, and the database instance sybsystemprocs is shown connected to its logical drive.
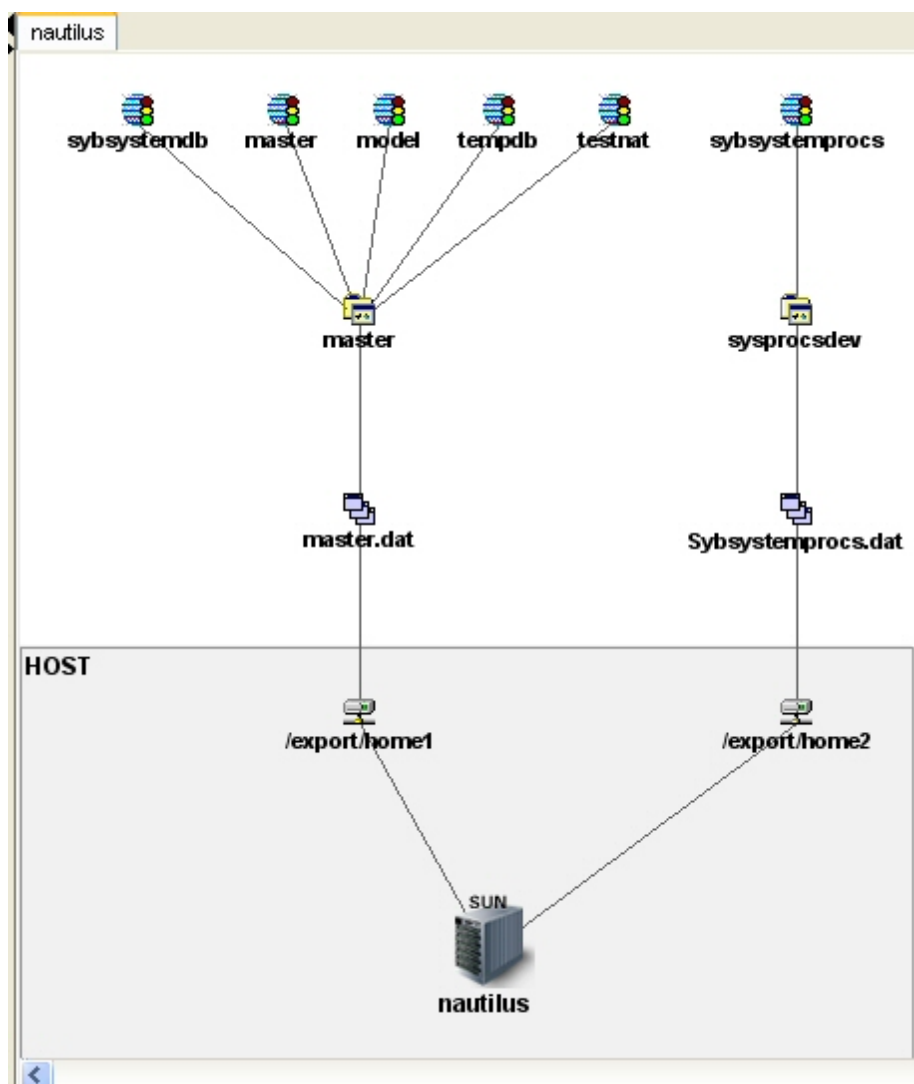
You can obtain property information about each component by double-clicking it.

Accessing the Topology Tab

Access the Topology tab by doing one of the following:

- Click a Sybase instance under the Sybase node in Application Viewer, and then click the **Topology** button.

  Or

- Double-click a Sybase instance in System Manager, and then click the **Topology** tab.

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

Chapter 6

Monitoring Microsoft SQL Server

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 section consists of the following topics:

- "Monitoring Microsoft SQL Server Overview " below

- "Viewing Events for SQL Server" on the next page

- "Viewing Properties of a SQL Server" on the next page

- "Viewing Topology for a SQL Server" on page 63

Monitoring Microsoft SQL Server Overview

Before you can monitor Microsoft SQL Server you must do the following:

- 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.

For more information, see the *Installation Guide*.

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

To view events pertaining to a SQL Server database and its dependent elements, such as storage systems:

1. Access Application Viewer by clicking **Application Viewer** ( ).
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.

For more information, see "Managing Events" in the *User Guide*.

Viewing Properties of a SQL Server

Properties of a SQL Server Instance

To view the properties of a SQL Server instance on a host:

1. Access Application Viewer by clicking **Application Viewer** ( ).
2. Click the SQL Server instance in Application Viewer.
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 enables you to 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

To view the properties of a SQL Server database:

1. Access Application Viewer by clicking **Application Viewer** ( ).
2. Click the Microsoft SQL Server instance in Application Viewer.
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

To view the properties of a SQL Server database file:

1. Access System Manager.

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

3. Click the **Topology** tab.

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

Viewing Topology for a SQL Server

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. The following figure only shows one logical drive.
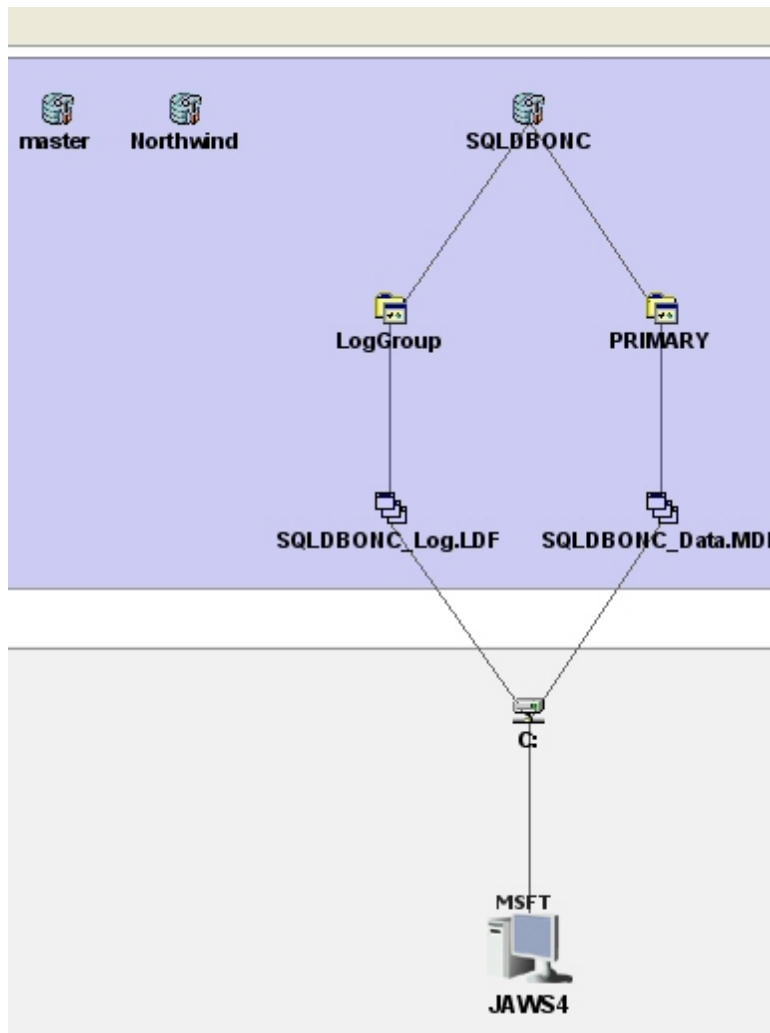
You can view the mount points in either of the following ways:

- Click the **Filter** (⊞) button in the upper-right corner of the screen. To view the **Filter** button, close the left pane. Select the mount points you want to view by clicking the appropriate check boxes, as follows:
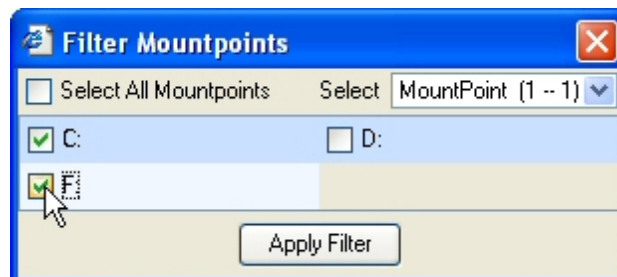
- You can also select the mount points from the Select menu. You can only select one mount point at a time when you select a mount point from the Select menu. For example, assume you have mount points C and F selected. If you select a mount point from the Select menu, only one

mount point is selected.
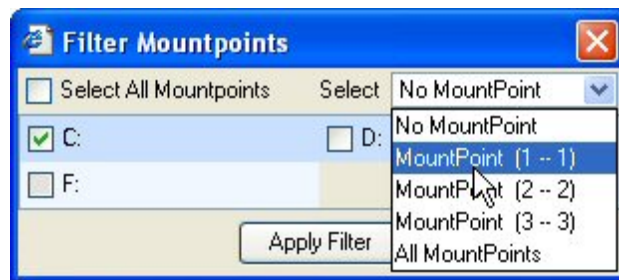
When you are done selecting mount points, click **Apply Filter**.

The following figure shows mount points C and F elected, but not D because the Northwind database is connected to D.
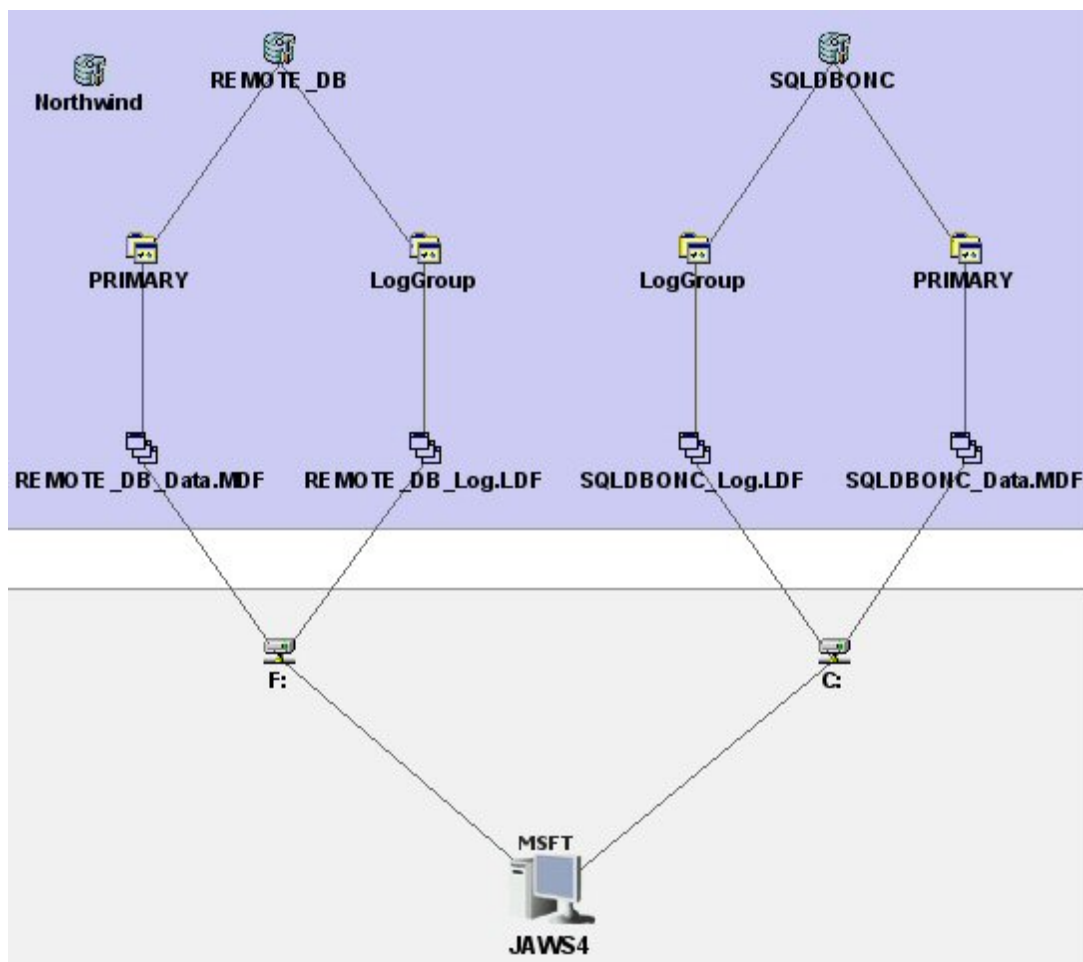
You can obtain property information about each component by double-clicking it.

Accessing the Topology Tab

Access the Topology tab by doing one of the following:

- Click a SQL Server instance under the SQLSERVER node in Application Viewer, and then click the **Topology** button.

  Or

- Double-click a SQL Server instance in System Manager, and then click the **Topology** tab.

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

Chapter 7

Monitoring InterSystems Caché

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

This section consists of the following topics:

- "Monitoring Caché Overview" below

- "Viewing Events for a Caché Instance" on the next page

- "Viewing Properties of a Caché Instance" on the next page

- "Viewing Topology for Caché" on page 74

Monitoring Caché Overview

Before you can monitor Caché, you must do the following. For more information, see the *Installation Guide*.

- Have the license for monitoring Caché. To determine if your license supports the monitoring of Caché, see the List of Features.

- Import the wrapper class definitions into the Caché instance.

- Create APPIQ_USER account on the Caché instance.

- Provide the database server name and port number.

- Discover the application.

Key Benefits

- Improved Caché database performance

- Increased Caché database availability and reliability

- Maximized return on Caché 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 Caché storage

- Web-based global management console

- Ease of installation, deployment, and manageability

Viewing Events for a Caché Instance

To view events pertaining to a Caché instance and its dependent elements, such as switches and storage systems:

1. Access Application Viewer by clicking **Application Viewer** ( ).

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

3. Click **Path Events**.

The events for that Caché 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 a Caché Instance

Properties of a Caché Application

To view the properties of a Caché instance:

1. Access Application Viewer by clicking **Application Viewer** ( ).

2. Click the Caché instance in Application Viewer.

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 enables you to 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*.

- **Name Detected**

- **Vendor**

- **Discovery Status**

- **Record Created**

- **Contacted**

- **Description**

- **Product Name**

- **Identification Code**

- **Target Operating System**

- **Host** – To learn more about the host, click its link.

- **Serial Number**

- **Build Number**

- **Version**

- **Type**

- **Port**

- **Cluster** – Whether the application is part of an application cluster.

- **Databases** – To learn more about a database, click its link.

- **Application Clusters**

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 Caché Instance

To view the properties of a Caché instance:

1. Access Application Viewer by clicking **Application Viewer** (   ).

2. Click the Caché instance in Application Viewer.

3. Click the **Properties** tab.

4. In the Databases table, click a Caché instance that you want to learn more about.

   The following properties are displayed:

   - **Discovery Status**

   - **Record Created**

- **Contacted**

- **Description**

- **Type**

- **Database** – To learn more about the application, click its link.

- **Database Logical Elements** – Databases and Journals are listed under the database logical elements. To learn more about a database logical element, click its link. Unmounted databases are not listed here.

- **Virtual Elements** – Namespaces are listed under the database virtual elements. To learn more about a database virtual element, click its link.

Properties of a Caché Namespace

To find the properties of a namespace for a Caché instance:

1. Access Application Viewer by clicking **Application Viewer** ( ).
2. Click the Caché instance in Application Viewer.
3. Click the **Properties** tab.
4. Scroll to the bottom of the page, and click the Caché instance.
5. When you are shown the properties of the Caché instance, scroll to the bottom of the page to the Database Virtual Elements table, and click the namespace that you want to learn more about.

   The following properties for the namespace are displayed:

   - **Discovery Status**

   - **Record Created**

   - **Contacted**

   - **Description**

   - **Database** – To learn more about the application, click its link.

   - **Instance Element** – To learn more about the instance, click its link.

   - **Database Logical Elements** – All the databases associated with the namespace are listed under this table. To learn more about a database, click its link.

Properties of a Caché Database

To find the properties of a database for a Caché instance:

1. Access Application Viewer by clicking **Application Viewer** ( ).
2. Click the Caché instance in Application Viewer.

3. Click the **Properties** tab.

4. Scroll to the bottom of the page, and click the Caché instance.

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

   The following properties for the database are displayed:

   - **Discovery Status**

   - **Record Created**

   - **Contacted**

   - **Description**

   - **Type**

   - **Expansion Size**

   - **Resource**

   - **Last Expansion Time**

   - **Reason**

   - **Database** – To learn more about the application, click its link.

   - **Database Physical Elements** – All the files constituting this database are listed under this table. To learn more about a database file, click its link.

     You can also access Database properties by clicking on the database listed under Database Logical Elements in the Namespace properties page.

Properties of a Caché Database File

To find the properties of a database for a Caché instance:

1. Access Application Viewer by clicking **Application Viewer** ( ).

2. Click the Caché instance in Application Viewer.

3. Click the **Properties** tab.

4. Scroll to the bottom of the page, and click the Caché instance.

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

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

   The following properties for the database file are displayed:

- **Discovery Status**

- **Record Created**

- **Contacted**

- **Description**

- **File Path**

- **Status**

- **Data File Path**

- **Type**

- **Database Logical Element** – To learn more about the database containing the database file, click its link.

- **Logical Disk** – To learn more about the logical disk on which the file is located, click its link.

- **Database** – To learn more about the application, click its link.

Properties of a Caché Journal

To find the properties of a journal for a Caché instance:

1. Access Application Viewer by clicking **Application Viewer** ( ).

2. Click the Caché instance in Application Viewer.

3. Click the **Properties** tab.

4. Scroll to the bottom of the page, and click the Caché instance.

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

   The following properties for the journal are displayed:

- **Discovery Status**

- **Record Created**

- **Contacted**

- **Description**

- **Type**

- **Expansion Size**

- **Resource**

- **Last Expansion Time**

- **Reason**

- **Database** – To learn more about the application, click its link.

- **Database Physical Elements** – To learn more about a journal, click its link.

Properties of a Caché Journal File

To find the properties of a journal file for a Caché instance:

1. Access Application Viewer by clicking **Application Viewer** (   ).

2. Click the Caché instance in Application Viewer.

3. Click the **Properties** tab.

4. Scroll to the bottom of the page, and click the Caché instance.

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

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

   The following properties for the journal file are displayed:

   - **Discovery Status**

   - **Record Created**

   - **Contacted**

   - **Description**

   - **File Path**

   - **Status**

   - **Data File Path**

   - **Type**

   - **Database Logical Element** – To learn more about the journal containing the journal file, click its link.

   - **Logical Disk** – To learn more about the logical disk on which this file is located, click its link.

   - **Database** – To learn more about the application, click its link.

# Viewing Topology for Caché

About the Topology Tab

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

- **Left pane** – Provides a path view of the Caché application. 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, Caché application, Caché instance, database files, and journal 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. In the following example, only one mount point is displayed.
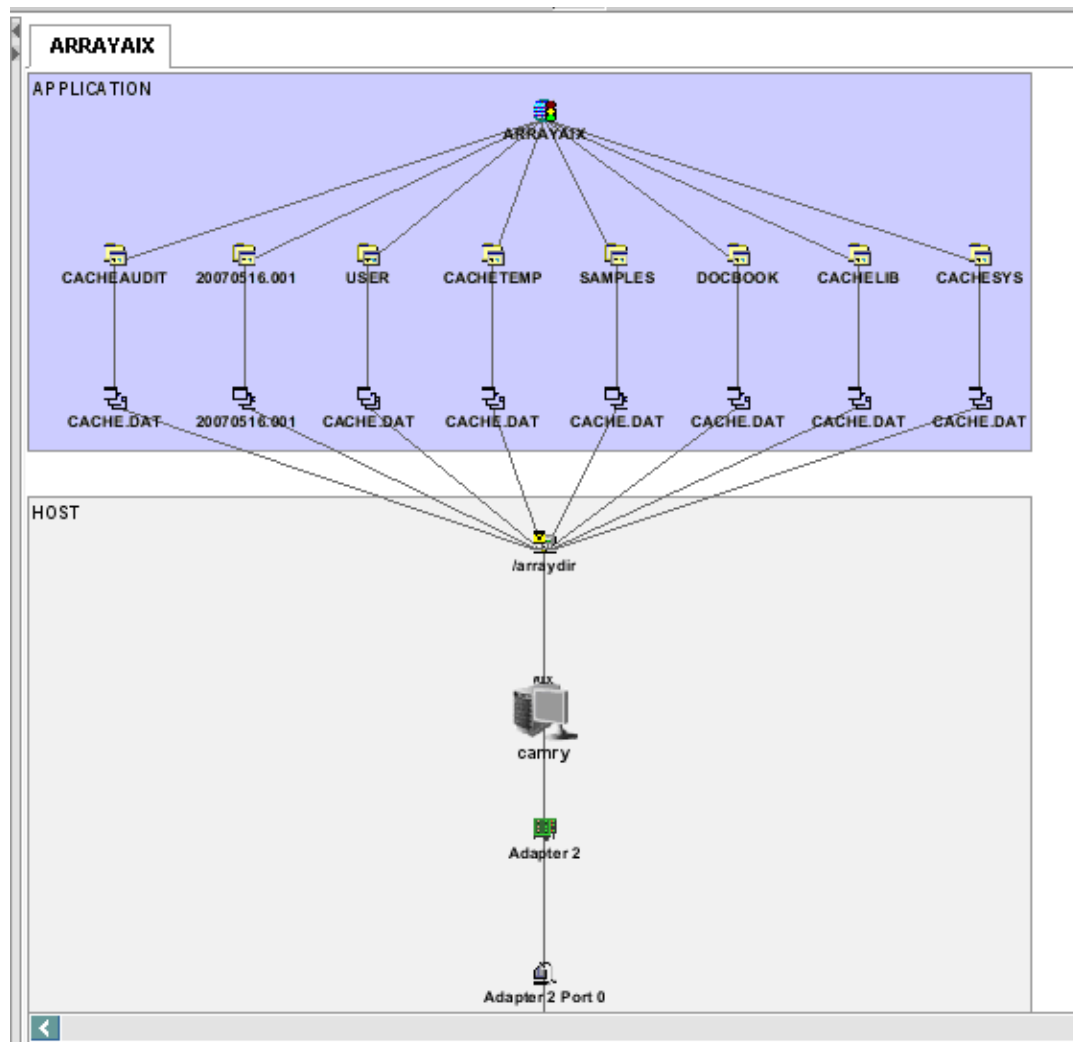
To view mount points, click the **Filter** (⬚) button in the upper-right corner of the screen. To view the **Filter** button, you need to close the left pane. Select the mount points you want to view by clicking the appropriate check boxes, as shown in the following example:
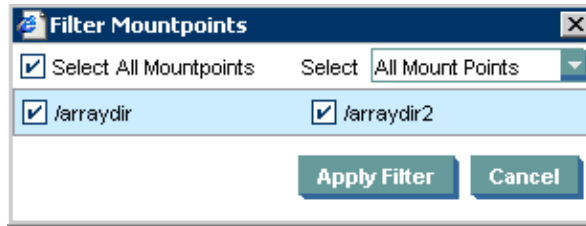
You can also select the mount points from the **Select** menu.
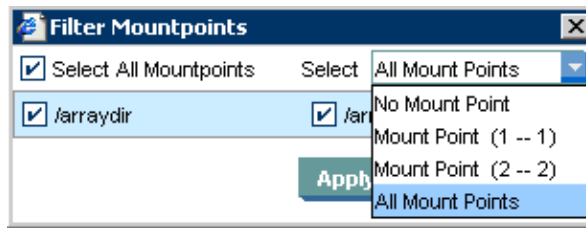
When you are done selecting mount points, click **Apply Filter**. In the following example, all of the mount points are selected. All database files are now displayed.
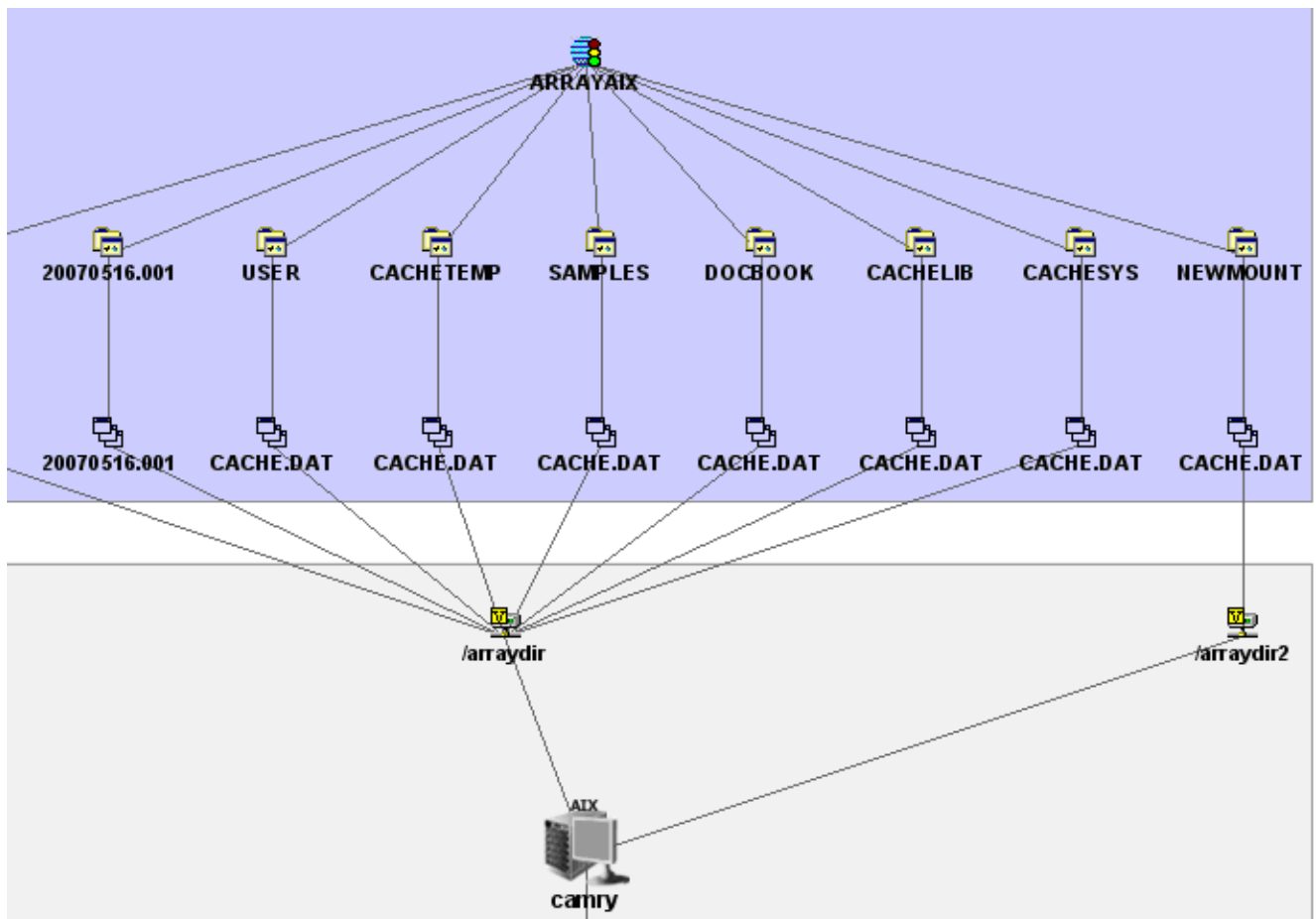
The topology in the example is arranged so that as many components as possible are displayed; however, not all components could fit.

You can obtain property information by double-clicking a component.

Accessing the Topology Tab

Access the Topology tab by doing one of the following:

- Click a Caché instance under the Caché node in Application Viewer, and then click the **Topology** tab.

  Or

- Double-click a Caché instance in System Manager, and then click the **Topology** tab.

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

For more information, see "About the Topology Tab" in the *User Guide*.

Viewing Elements in the Caché Instance's Path

To view elements in the Caché instance's path:

1. Access Application Viewer by clicking **Application Viewer** ( ).

2. Click the Caché instance in Application Viewer.

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**.

Chapter 8

Monitoring Informix

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

This section consists of the following topics:

- "Monitoring Informix Overview" below

- "Viewing Events for an Informix Instance" on the next page

- "Viewing Properties of an Informix Instance" on page 80

- "Viewing Topology for Informix" on page 83

Monitoring Informix Overview

Before you can monitor Informix Dynamic Server, you must do the following:

- Have the license for monitoring Informix Dynamic Server. To determine if your license supports the monitoring of Informix Dynamic Server, see the List of Features.

- Create a Managed Database User in HP Storage Essentials.

- Provide the database server name and port number.

- Discover the application.

For more information, see the *Installation Guide*.

The management software for Informix is a CIM-based application storage management solution that lets you realize the benefits of storage in a network by more effectively managing your end-to-end Informix 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 Informix can improve your application's performance, availability, and reliability and maximize your return on the application's storage assets. To help simplify the management of your Informix storage, the management software for Informix provides comprehensive topology visualization from the Informix 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 Informix provides deep visibility into each component that makes up the Informix application, including Informix configuration, host configuration, switch configuration, and storage system configuration. This detailed information is provided at every level.

The management software for Informix 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 Informix to support all your heterogeneous storage needs and ensures that your investments in infrastructure can be leveraged in the future.

Key Benefits

- Improved Informix database performance

- Increased Informix database availability and reliability

- Maximized return on Informix 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 Informix storage

- Web-based global management console

- Ease of installation, deployment, and manageability

Viewing Events for an Informix Instance

To view events pertaining to an Informix instance and its dependent elements, such as switches and storage systems:

1. Access Application Viewer by clicking **Application Viewer** ( ).
2. Expand the node for the Informix instance from which you want to obtain event information.
3. Click **Path Events**.

The events for that Informix 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 Informix Instance

Properties of an Informix Instance

To view the properties of an Informix instance:

1. Access Application Viewer by clicking **Application Viewer** ( ).

2. Click the Informix instance in Application Viewer.

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 enables you to 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**

- **Contacted**

- **Record Created**

- **Cluster**

- **Target Operating System**

- **Serial Number**

- **Build Number**

- **Product Name**

- **Version**

- **Discovery Status**

- **Identification Code**

- **Description**

- **Port**

- **Vendor**

- **Name Detected**

- **Host** – To learn more about the host, click its link.

- **Database** – To learn more about a database, click its link in the Databases table.

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 Informix Database

To find the properties of a database for an Informix instance:

1. Access Application Viewer by clicking **Application Viewer** ( ).

2. Click the Informix instance in Application Viewer.

3. Click the **Properties** tab.

4. Scroll to the bottom of the page, and click the Informix instance.

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

   The following properties for the database are displayed:

   - **Description**

   - **Type**

   - **Contacted**

   - **Record Created**

   - **Discovery Status**

   - **Database**

   - **Database Logical Elements** – To learn more about a logical element, click its link.

Properties of Informix Database Logical Elements

To view the properties of an Informix database logical elements:

1. Access Application Viewer by clicking **Application Viewer** ( ).

2. Click the Informix instance in Application Viewer.

3. Click the **Properties** tab.

4. In the Databases table, click a database.

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

   The following properties are displayed:

- **Description**

- **Type**

- **Contacted**

- **Record Created**

- **Chunk Names** – The names of the chunks used by the dbspace, sbspace or blobspace.

- **Discovery Status**

- **Database**

- **Database Physical Elements** – To learn more about an Informix database physical element, click its link.

Properties of an Informix Database File

To find the properties of a database for an Informix instance:

1. Access Application Viewer by clicking **Application Viewer** ( ).
2. Click the Informix instance in Application Viewer.
3. Click the **Properties** tab.
4. Scroll to the bottom of the page, and click the Informix instance.
5. When you are shown the properties of the Informix instance, scroll to the bottom of the page to the Database Logical Elements table, and click the database that you want to learn more about.
6. In the Database Physical Elements table, click a database file.

   The following properties for the database file are displayed:

   - **Type**

   - **Contacted**

   - **Record Created**

   - **Data File Path**

   - **Discovery Status**

   - **Description**

   - **File Path**

   - **Database Logical Element** – To learn more about the database containing the database file, click its link.

   - **Database** – To learn more about the application, click its link.

   - **Logical Disk**

Viewing Topology for Informix

About the Topology Tab

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

- **Left pane** – Provides a path view of the Informix application. 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, Informix application, Informix instance, database files, and journal files by double-clicking the appropriate icon in the topology.

When you first access the Topology tab, you are told that the mount points were filtered.

In the following example, only one storage volume is displayed. One of the database instances, sportage_db2, is shown disconnected because its logical drive is not displayed.
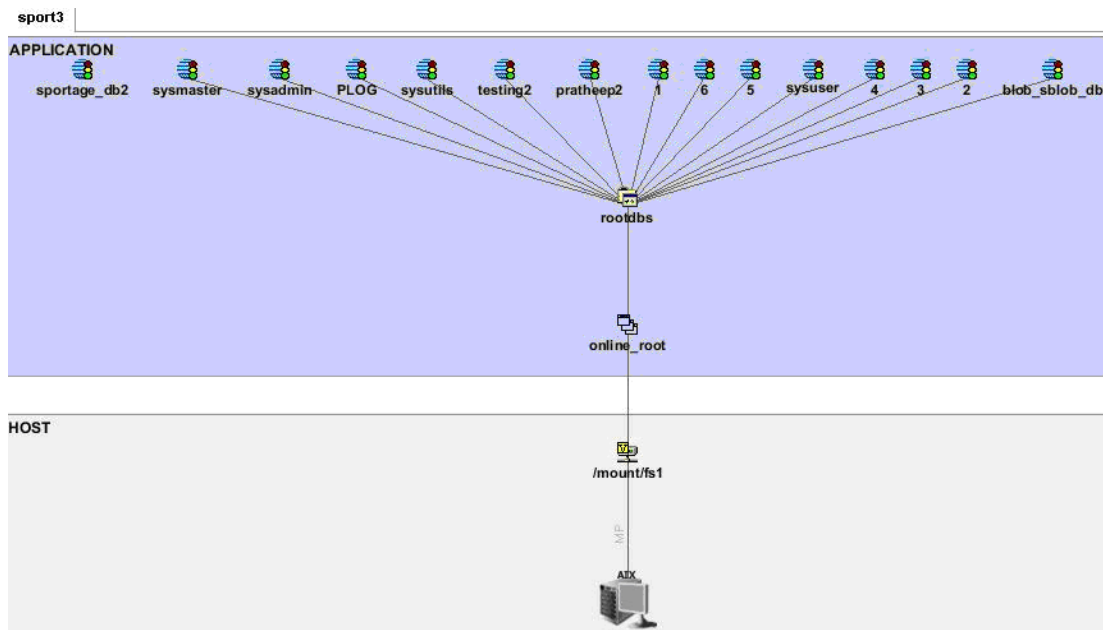
To view mount points, click the **Filter** (image) button in the upper-right corner of the screen. To view the **Filter** button, close the left pane. Select the mount points you want to view by clicking the appropriate check boxes, as shown in the following example:
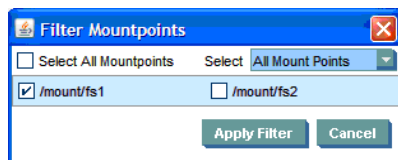
You can also select the mount points from the **Select** menu.
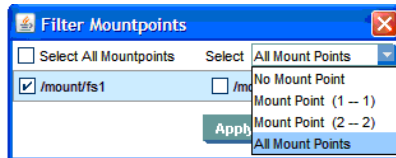
When you are done selecting mount points, click **Apply Filter**. In the following example, all of the mount points were selected. All of the database files are now displayed, and the database instance sportage_db2 is shown connected to its logical drive.
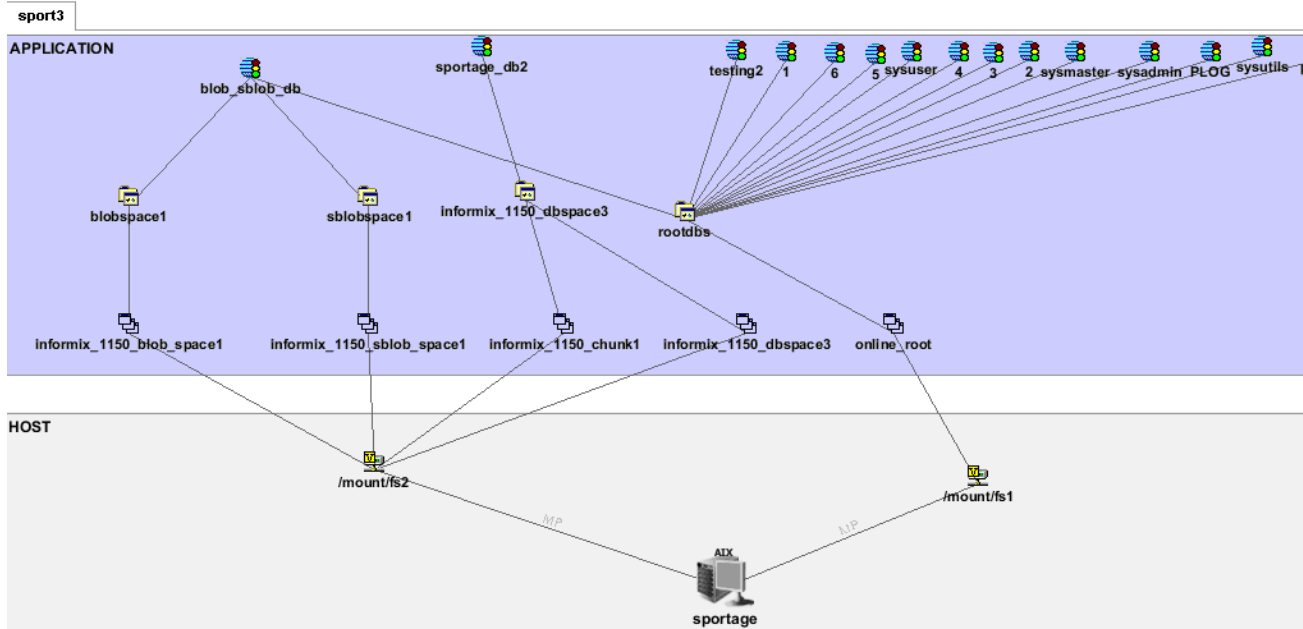

You can obtain property information by double-clicking a component.

Accessing the Topology Tab

Access the Topology tab by doing one of the following:

- Click an Informix instance under the Informix node in Application Viewer, and then click the **Topology** tab.

    Or

- Double-click an Informix instance in System Manager, and then click the **Topology** tab.

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

For more information, see "About the Topology Tab" in the *User Guide*.

Chapter 9

Monitoring DB2

This section consists of the following topics:

- "Monitoring DB2 Overview" below

- "Viewing Events for DB2" on the next page

- "Viewing Properties for DB2" on page 88

- "Viewing Topology for DB2" on page 91

Monitoring DB2 Overview

Before you can monitor IBM DB2 Server, you must do the following:

- Have the license for monitoring IBM DB2 Server. To determine if your license supports the monitoring of IBM DB2 Server, see the List of Features.

- Download IBM JDBC driver for DB2 onto <HP Storage EssentialsInstallation Directory>\JbossAndJetty\server\appiq\lib folder in Windows SE CMS & <HP Storage EssentialsInstallation Directory>/JbossAndJetty/server/appiq/lib folder in Unix SE CMS.

- Create Managed Database User in HP Storage Essentials.

- Provide the application instance name, port number, database names and corresponding user names.

- Discover the application.

For more information, see the *Installation Guide*.

The management software for DB2 is a CIM-based application storage management solution that lets you realize the benefits of storage in a network by more effectively managing your end-to-end DB2 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 DB2 can improve your application's performance, availability, and reliability maximizing your return on the applications storage assets. To help simplify the management of your DB2 storage, the management software for DB2 provides comprehensive topology visualization from the DB2 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 DB2 provides deep visibility into each component that makes up the DB2 application, including DB2 configuration, host configuration, switch configuration, and storage system configuration. This detailed information is provided at every level.

The management software for DB2 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 DB2 to support all your heterogeneous storage needs and ensures that your investments in infrastructure can be leveraged in the future.

Key Benefits

- Improved DB2 database performance

- Increased DB2 database availability and reliability

- Maximized return on DB2 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 DB2 storage

- Web-based global management console

- Ease of installation, deployment, and manageability

Viewing Events for DB2

To view events pertaining to an DB2 database and its dependent elements, such as storage systems:

1. Access Application Viewer by clicking **Application Viewer** ( ).
2. Expand the node for the DB2 instance database from which you want to obtain event information.
3. Click **Path Events**.

The events for the DB2 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.

For more information, see "Managing Events" in the *User Guide*.

Viewing Properties for DB2

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 Capacity Manager.

All users query the same database, so this name is displayed to others using the software. To make them aware of the name:

1. Access the **Custom Name** box by doing one of the following:

   - Double-click an DB2 instance in System Manager, and then click the **Properties** tab.

     Or

   - Click an DB2 instance under the DB2 node in Application Viewer, and then click the **Properties** tab.

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

   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.

   - 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 a DB2 Instance

To view the properties of an DB2 instance on a host:

1. Access Application Viewer by clicking **Application Viewer**.

2. Click the DB2 instance in Application Viewer.

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.

- **Type**

- **Contacted**

- **Record Created**

- **Cluster**

- **Target Operating System**

- **Serial Number**

- **Build Number**

- **Product Name**

- **Version**

- **Discovery Status**

- **Identification Code**

- **Description**

- **Port**

- **Vendor**

- **Name Detected**

- **Host** - To learn more about the host, click its link.

- **Database** – 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 DB2 Database

To view the properties of a DB2 database:

1. Access Application Viewer by clicking **Application Viewer**.

2. Click on the DB2 instance in Application Viewer.

3. Click the **Properties** tab.

4. In the Databases table, click a database you want to learn more about.
   The following properties are displayed:

- **Description**

- **Type**

- **Contacted**

- **Record Created**

- **Buffer Size (Pages)**

- **Default Extent Size (Pages)**

- **Page Size (Bytes)**

- **Log Secondary**

- **Status**

- **Discovery Status**

- **Database** - This is database instance name

- **Database Logical Elements** - To learn more about an DB2 database logical element, click its link.

Properties of DB2 Tablespaces and Primary Logs

To view the properties of a DB2 database logical elements:

1. Access Application Viewer by clicking **Application Viewer** ( ).

2. Click the DB2 instance in Application Viewer.

3. Click the **Properties** tab.

4. In the Databases table, click a database.

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

    The following properties are displayed:

    - **Description**

    - **Type**

    - **Contacted**

    - **Record Created**

    - **Content type**

    - **Page Size (bytes)**

    - **Extent Size (bytes)**

    - **Max Size (bytes)**

- **Increase Size (bytes)**

- **Status**

- **Chunk Names**

- **Discovery Status**

- **Database**

- **Database Physical Elements**

Properties of DB2 Database File

To view the properties of DB2 database files:

1. Access Application Viewer by clicking **Application Viewer** ( ).

2. Click the DB2 instance in Application Viewer.

3. Click the **Properties** tab.

4. In the Databases table, click a database.

5. In the Database Logical Elements table, click **Database Physical Elements** to learn more about.
   The following properties are displayed:

   - **Type**

   - **Contacted**

   - **Record Created**

   - **Data File Path**

   - **Discovery Status**

   - **Description**

   - **File Path**

   - **Status**

   - **Database Logical Element**

   - **Database**

   - **Logical Disk**

Viewing Topology for DB2

About the Topology Tab

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

- **Left pane** – Provides a path view of the DB2 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 were filtered, in case of multiple mount points.
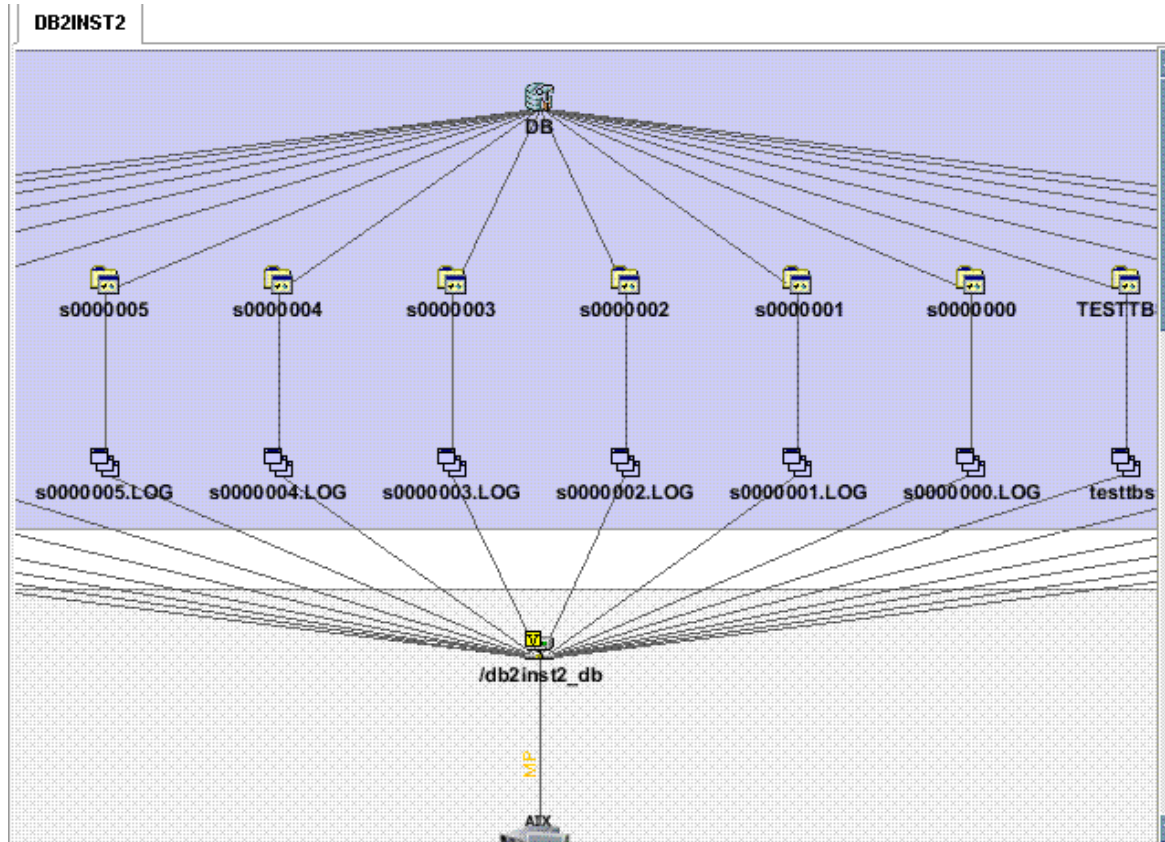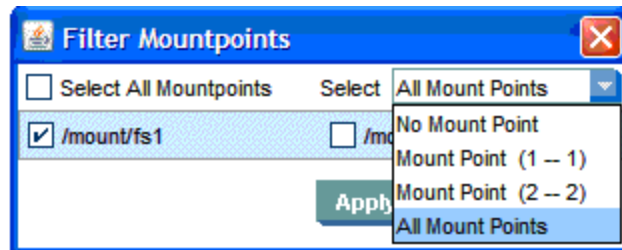

You can view the mount points in either of the following ways:

- Click the **Filter** (🖻) button in the upper-right corner of the screen. To view the Filter button, close the left pane. Select the mount points you want to view by clicking the appropriate check boxes, as shown in the following example.
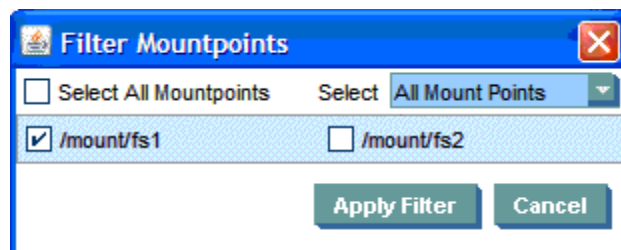
- You can also select the mount points from the **Select** menu.

When you are done selecting mount points, click **Apply Filter**.

Accessing the Topology Tab

Access the Topology tab by doing one of the following:

- Click an DB2 instance under the DB2 node in Application Viewer, and then click the **Topology** menu.

    Or

- Double-click a DB2 instance in System Manager, and then click the **Topology** tab.

We appreciate your feedback!

If an email client is configured on this system, by default an email window opens when you click here.

If no email client is available, copy the information below to a new message in a web mail client, and then send this message to docfeedback@hp.com.

Product name and version: HP Storage Essentials, 9.70

Document title: Application Guide

Feedback: