

# Veritas<sup>™</sup> Enterprise Administrator User's Guide

VEA Series

5.0

# Veritas Enterprise Administrator User's Guide

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Veritas Enterprise Administrator

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# Introducing the VEA console

The Veritas Enterprise Administrator (VEA) Console displays data about application objects and connectivity in graphical form and provides a user interface for the many tools and functions.

Before using the VEA GUI, you should familiarize yourself with the following introductory topics:

- [VEA features](#)
- [VEA home page](#)
- [Main window](#)

## VEA features

You use the VEA to administer disks, volumes, and file systems on local or remote machines.

VEA consists of a server and a client. The server runs on a machine that is running the application to be monitored, such as VxVM. The client runs on Windows, HP, Linux, Solaris, and AIX machines that support the Java Runtime Environment.

VEA provides the following features:

- **Accessibility - Using the Mouse and Keyboard**  
Accelerators and mnemonics are provided as alternatives to using the mouse (refer to the VEA online help for more information).
- **Ease of Use**  
The task-based user interface provides access to tasks through menus or a task list. Administrators can easily navigate and configure their systems,

and browse through all of the objects on the system or view detailed information about a specific object.

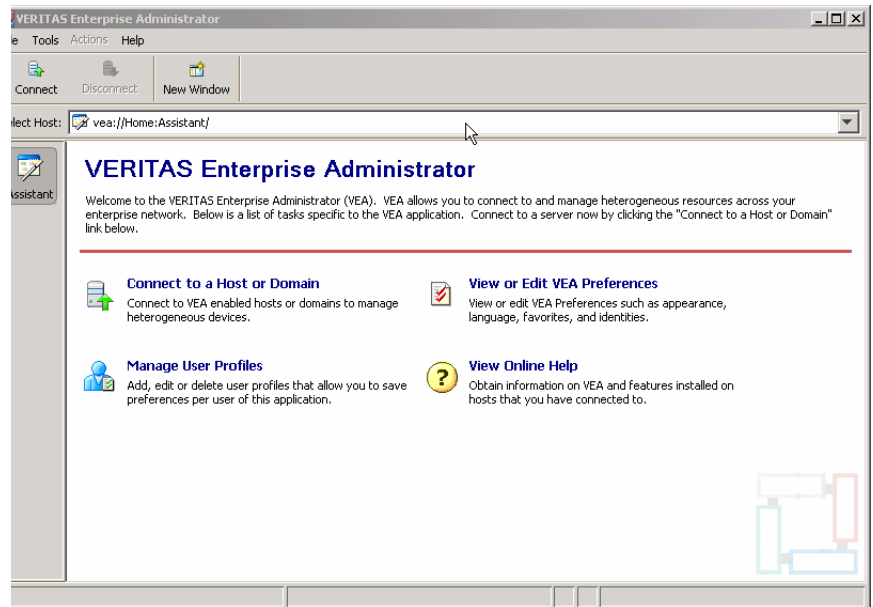
- **Remote Administration**  
Administrators can perform administration remotely or locally. The VEA client runs on UNIX, Linux, or Windows machines.
- **Java-based Interface**  
A pure Java-based interface is used. Administrators can run VEA as a Java application.
- **Scalability**
- **VEA can handle systems containing large numbers of disks.** Administrators can view all of the objects on the system, or focus on a specific object or set of objects.
- **Security**  
Please refer to the VEA online help for information on communication between the client and server across a firewall.
- **Multiple VEA Support**  
The VEA client can provide simultaneous access to multiple host machines. The administrator can use a single client session to connect to multiple hosts, view the objects on each host, and perform administrative tasks on each host. Each host machine must be running the VEA server.
- **Multiple Views of Objects**  
VEA provides multiple views of objects:
  - The main window tree and grid view lists objects on the system. Other views are application dependent. For example, when running VxVM:
    - The Disk View window displays a graphical view of volumes, disks, and other objects in a disk group.
    - The Volume View window displays a graphical view of the volumes on a host.
    - The Volume to Disk Mapping window shows the relationships between volumes and their underlying disks.



# VEA home page

The VEA home page is the first screen displayed when you invoke the VEA.

**Figure 1-1** VEA home page and Assistant



The toolbar shows icons:

- **Connect** - to make a connection to a VEA-enabled host.
- **Disconnect** - to disconnect from a host.
- **New Window** - to open a new window

Using **Assistant**, you can browse the most significant and important tasks:

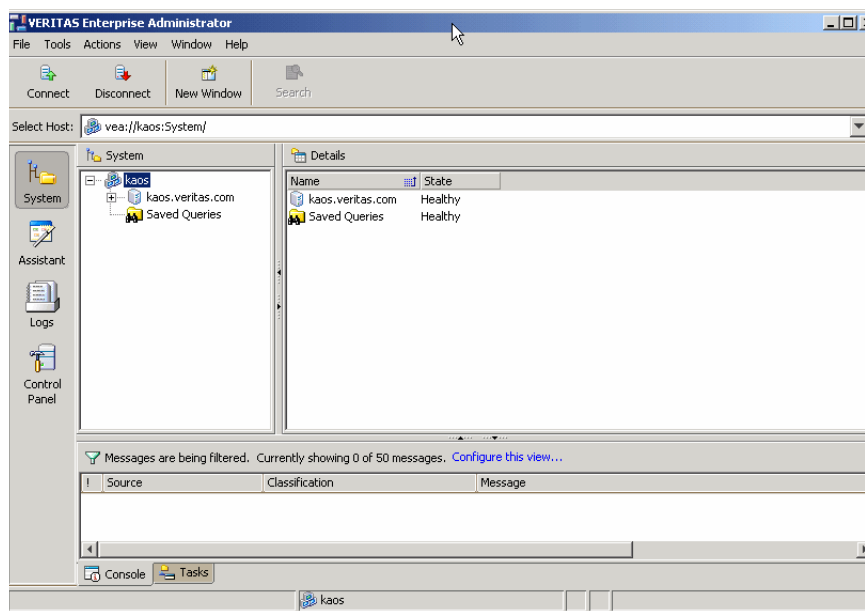
- **Connect to a Host or Domain** - see “[Connecting and disconnecting hosts and domains](#)” on page 28
- **View or Edit VEA Preferences** - see “[Setting VEA preferences](#)” on page 19
- **Manage User Profiles** - see “[Managing user profiles](#)” on page 34
- **View Online Help**

## Main window

Once you are connected to a host, the VEA Main Window is displayed. This consists of:

- Quick access bar
- Object tree and grid
- Menu bar
- Toolbar
- Status area

Figure 1-2 Main window



The toolbar can be separated from, and reattached to, the main window (this is known as *docking*). The grid can be replicated in a separate window.

## Quick access bar

The quick access bar provides quick access to perspectives using the following icons:

- System
- Assistant

- Logs
- Control Panel

## Object tree and grid

The VEA main window is divided into two main panes:

- Left Pane (Object Tree)
- Right Pane (Grid)

### Object Tree

Any host machines connected to the current VEA client session typically appear as nodes in the object tree..

### Grid

The right pane contains a *grid*, which is a tabular display of objects and their properties. The grid displays objects that belong to the group icon that is currently selected in the object tree (left pane).

The *splitter* is the vertical bar that separates the object tree from the grid. You can resize the left and right panes by pressing and holding the mouse button over the splitter and dragging the splitter to the left or right.

## Menu bar

The menu bar at the top of the main window contains the following menus:

- **File**

The **File** menu establishes new host connections, disconnects current host sessions, provides access to an object Properties window, handles page setup, executes print and print preview functions, or exits VEA.
- **Tools**

The **Tools** menu allows you to:

  - Initiate the setting Preferences dialog
  - Manage User Profiles
  - Maintain the VEA Error Console
- **Actions**

The **Actions** menu is a context-sensitive menu that launches tasks on a selected object. It is inactive until you connect to a host. When an object is selected, the **Actions** menu provides access to tasks appropriate for the selected object.

---

**Note:** If any DCUI operations are performed, in order for the changes to be reflected in the GUI, an **Actions->Rescan** operation must be performed.

---

- **View**

The **View** menu enables you to select the view displayed on the VEA console:

- Select **Connection** to switch between connected hosts.
- Selecting **Perspective** allows you to choose the display mode (**System**, **Assistant**, and so on).
- Select **Home** to return to the Home page.

- **Window**

The **Window** menu gives you access to the Tear off feature. This allows you to copy views displayed by the VEA Client into new windows. You can then view details of several different object types at the same time, and to correlate relationships between them.

Then select the view to be displayed in a new window from the drop-down menu.

- **Help**

The **Help** menu provides access to online help for VEA.

## Toolbar

The toolbar provides quick access for performing some of the program's most common tasks.

The *toolbar handle* is the thin bar next to the toolbar. You can use the toolbar handle to separate the toolbar from the main window or move the toolbar to the bottom, side, or top of the main window. To reposition the toolbar, press and hold the mouse button over the toolbar handle and drag the toolbar to its new location.

---

**Note:** The toolbar handle is not visible when running on UNIX clients.

---

## Status area

The status area is at the bottom of the main window. It includes the Console View and Task View.

## Console View

When a host is selected, you can click on **Console** to bring up the Console View. This displays the most recent messages for the host. When a message is selected, additional information about that message is displayed.

You can also double-click on a selected message to display message properties in the Console Message Details dialog.

Select Configure this view to bring up the Preferences dialog, if you want to change the buffer and filter settings.

## Tasks View

Click on **Tasks** to bring up the Task View. This displays information about the current tasks.

# Multiple selections

You can select more than one object from a list (for example, when you need to add several disks into a disk group) using the SHIFT and CONTROL keys in conjunction with the left mouse button.

Use the SHIFT key to select a range of objects.

Use the CONTROL key to select individual objects.

# Accessing tasks

Most VEA tasks are performed by selecting objects and/or tasks and then completing the resulting dialog boxes. With VEA, you can access tasks from the menu bar and from a context-sensitive popup menu.

For a selected task, you can use the popup menu options: **Abort Task** to cancel the task; **Pause Task** to temporarily stop a task, **Resume Task** to continue the task; and **Throttle Task** to throttle a task.

## Task throttling

Task Throttling causes an operation to pause for the allowed amount of time whenever a disk I/O is performed, allowing the CPU and disks to perform other tasks.

Select the popup menu option **Throttle Task** to change the task priority. You can change the priority for a single task, or select **Throttle All Tasks** to apply the priority to all Volume Manager Tasks. Click **Ok** to complete your selection.

## Clearing finished tasks

Tasks are persistent in the Tasks console. To remove completed tasks from the window, select **Clear All Finished Tasks** from the popup menu.

## Viewing task properties

To view task properties and the low-level commands used to perform a task, select the task and choose **Properties** from the popup menu.

## Opening a new window

At any time, you can open a new window and replicate the window currently displayed by selecting the **New Window** icon.

Alternatively, you can select:

**File > New Window**

# Using the VEA

The Veritas Enterprise Administrator (VEA) enables you to access all hosts on your network. It also provides task and setup functions that allow you to tailor your VEA environment prior to performing storage management procedures on those hosts.

This chapter introduces you to:

- [Setting up your system](#)
- [Starting VEA](#)
- [Managing user profiles](#)
- [Setting VEA preferences](#)
- [Viewing objects and object properties](#)
- [Performing tasks](#)
  - [Running tasks from the menu bar](#)
  - [Running tasks from a popup menu](#)
  - [Running tasks from the Task Assistant](#)
- [Using the Control Panel](#)
- [Viewing the Alert Log](#)
- [Viewing the Task Log](#)
- [Connecting and disconnecting hosts and domains](#)
- [Viewing different products](#)
- [Printing views](#)
- [Exiting the VEA client](#)

## Setting up your system

VEA consists of a server (`vxsvc`) and a client (`vea`). You must install and run the VEA server on a UNIX machine running VxVM. You can install and run the VEA client on any Windows, HP, Linux, Solaris, or AIX machine that supports the Java Runtime Environment.

Before you can use VEA, you need to:

- 1 Install VxVM on the machine to be administered.
- 2 Install the VEA server and client on the machine to be administered.
- 3 If users other than root need to access VEA, set up security to specify which users can run VEA.
- 4 If you plan to run the VEA client from a machine other than the machine to be administered, install the VEA client on the machine where the client will run.
- 5 Start the VEA server on the machine to be administered.
- 6 Start the VEA client.

Refer to the Installation manuals for your products for details on how to install and set up your products and VEA.

## Starting VEA

Only users with appropriate privileges can run VEA. (Refer to the Installation manuals for your products for information on security and access permissions.)

You can use VEA to administer the local machine or a remote machine. The VxVM daemon (`vxconfigd`) and the VEA server (`vxsvc`) must be running on the machine to be administered. Once VEA is installed, the VEA server starts up automatically at system startup.

You can start the VEA console from a Windows or UNIX client.

## From a Windows client

From a Windows client, you can start VEA from the Start menu, or from the command line.

### Using the Start menu

To invoke VEA from the Start menu, click on:

```
Start > Programs > Veritas Enterprise Administrator >  
Veritas Enterprise Administrator Console
```



## Using the command line

To invoke VEA from the command line:

- 1 Go to the directory where the VEA client is installed, for example:

```
Object Bus\bin
```

- 2 Start the VEA client by running the batch file `vea.bat` from this location. When starting the VEA client from the command line, the following options are available

<code>-v</code>	Shows the version of client console.
<code>-c</code>	Specifies the configuration file for advanced settings.
<code>-host</code>	Specifies the host to connect to. If the username and password for the host is already stored, these will be used; otherwise, you will be prompted for your username and password.

## From a UNIX client

To invoke VEA from the command line:

- 1 Go to the directory where VEA client is installed, for example:

```
/opt/VRTSob/bin
```

- 2 Start the VEA client by running the script `vea` from this location. When starting the VEA client from the command line, the following options are available

<code>-v</code>	Shows the version of client console.
<code>-c</code>	Specifies the configuration file for advanced settings.
<code>-host</code>	Specifies the host to connect to. If the username and password for the host is already stored, these will be used; otherwise, you will be prompted for your username and password.

## Startup profile

If you have selected a password protected profile as your startup profile, you are prompted to enter the password when VEA starts up.

Enter your password and click **OK** to continue, or click **Select Profile** to bring up the Select Profile dialog, which enables you to select an alternative profile.

(Clicking **Cancel** will end the application.)

## Selecting an alternate profile

Select one of the profiles from the list, and enter the password, if necessary.

Click **OK** to log in.

You can also select **Tools > Manage Profiles** to bring up the Manage Profiles dialog (refer to [Managing user profiles](#)).

## If no profiles exist

If no profiles exist when you start VEA, the following message appears:

```
No profiles exist on this system. A new default profile has been
created. If you want to create additional profiles, you may
create using the "Tools" -> "Manage Profiles..." menu item
```

Click **OK** to continue.

You can also select **Tools > Manage Profiles** to bring up the Manage Profiles dialog (refer to [Managing user profiles](#)).

## Setting VEA preferences

You can set up your own individual preferences for running VEA using the VEA preferences feature. This offers the following selections:

- **Connection** - “[Setting connection preferences](#)” on page 19
- **Advanced** - “[Setting advanced preferences](#)” on page 21
- **General** - “[Setting general preferences](#)” on page 20
- **Language** - “[Setting language preference](#)” on page 21
- **Security** - “[Setting user accounts](#)” on page 22
- **Console View** - “[Setting the console view](#)” on page 21

To set preferences, you can either:

- Select **Tools > Preferences**.
- or
- Use the VEA Assistant feature, **View or Edit VEA Preferences**.

The Preferences window appears. Select your preferences, then, when you have made your selection:

- Press **Apply** to apply the selection.
- Press **Reset** to revert back to the original settings in effect before you opened the Preferences window.
- Press **OK** to apply and close the Preference Window.
- Press **Cancel** to discard the changes and close the Preference Window.

---

**Note:** You need to restart the GUI for the change to take effect.

---

## Setting connection preferences

The **Connection** tab allows you to set connection preferences.

### Adding and removing favorite hosts

**Favorites** displays a list of hosts that will be connected to by default at the startup of VEA if the username/password is saved for them. If the username / password is not saved for a particular host, then this information will be prompted for at the time of connection

Use the following procedure to add a host to **Favorite Hosts**:

- 1 Right click on any of the connected host nodes

- 2 Choose **Add to Favorites** from the popup menu.

## Removing a host from favorite hosts

Use the following procedure to remove a host from **Favorites**:

- 1 In the **Preferences Favorites** window, highlight the host to be removed.
- 2 Click on **Remove**.

## Reconnecting hosts

By default, hosts under the **Favorites** are reconnected when logging on. (**Reconnect At Logon** is set to **Yes**).

You can avoid a host being reconnected at startup by setting **Reconnect At Logon** to **No**.

## Adjusting the history settings

To adjust the history settings, type the number of servers (hosts) for which information can be stored in the history file under **Maximum Connections** (default value is 10)

The maximum limit for the number of hosts for which information can be stored is 99.

Press **Apply** to apply the changes, **Reset** to revert back the changes, **OK** to apply and close the Preference window, **Cancel** to discard and close the Preference window.

## Setting general preferences

The **General** tab allows you to set display and connection properties.

### Setting display properties

You can set the display properties for the Toolbar and Perspective Bar icons.

Icon text properties can be set to:

- No text - select **Icons**.
- Text displayed above, below, to the right, or left - select **Icons with Text**, then, select the position using the drop-down menu.

### Setting connection properties

You can use the **Switch focus to new host on connection** checkbox to enable or disable changing perspective when connecting to a new host.

## Setting advanced preferences

The **Advanced** tab displays the allows you to set the action for temporary files, and to reset preference settings.

### Deleting temporary files on exit

You can delete all temporary files when you leave VEA by selecting the checkbox **Delete temporary files on exit**.

If you want to delete the temporary files immediately, click the button **Delete Now**.

### Restoring default values

Select **Restore Defaults** to restore application and system default values.

## Setting language preference

To set your language preference, select the **Language** tab. You can then set your preferred language to one of the languages supported by VEA and available on your machine. Selections may include:

- **English (United Kingdom)**
- **French (France)**
- **Japanese (Japan)**
- **Korean (South Korea)**
- **Chinese (China)**
- **Chinese (Taiwan)**
- **English (United States)**

## Setting the console view

The **Console View** tab allows you to set:

- Maximum number of unfiltered messages
- Filters

### Number of unfiltered messages

The **Message Buffer** value enables you to set a limit on the number of unfiltered messages held in the Console View buffer. By default, the number of unfiltered messages held in the buffer is set to 50. Use **Enter Limit** to modify the limit.

When the limit is reached, messages are discarded, starting at the oldest message.

## Filter messages

You can filter messages in the Console View by selecting the **Activate Filter** checkbox. Only messages that meet all the defined criteria (**Severity**, **Source**, and **Classification**) will be displayed. Criteria can be defined as:

- **Severity** - Select one or more of:
  - **Critical** - Indicating an event of high importance, such as system crash, or irrecoverable loss of data.
  - **Warning** - Indicating a recoverable error, with no data loss
  - **Error** - Indicating loss of functionality of data.
  - **Information** - Indicating an informational event.
- **Source** - Defines the host, or hosts, providing the source of the messages. (Host names must be separated by commas.)
- **Classification** - The type, or types, of message. (Types be separated by commas.)

## Setting user accounts

User account information includes details about user ids., domains, and passwords. You can remove a user account, or set it to be the default account to be used for all connections.

Security settings allow you to validate authentication brokers.

## Viewing objects and object properties

Objects in the system are displayed in the Main Window and Tabular View shown in “[Main window](#)” on page 10 . The tree is a hierarchical display of object groups. The Tabular View displays a table of objects and a limited set of properties.

In the VEA client, objects typically represent entities in the product domain. For example, in the case of Veritas Volume Manager, the object might be a disk. You can use the views to browse objects and guide the operation of the client console.

There are four main views:

- Navigation View, at the left, which uses the tree structure
- Detailed View, at the right, which used table structure

- Console View, at the bottom
- Tasks View, at the bottom

The following functions are provided for simplifying viewing objects in the tree and Tabular View:

- To expand or collapse the hierarchy under a particular object group node in the tree:  
Click on the plus sign (+) or minus sign (-) icon next to that node.
- To display the objects in an object group listed in the object tree:  
Click on the object group. All objects that belong to the selected object group appear in Tabular View.
- To display the objects in an object group listed in Tabular View:  
Double-click on the object group. All objects that belong to the object group appear in Tabular View.  
(Double-clicking on an object that does not contain other objects (children) displays the Properties window for the object instead of its children.)
- To sort the objects in Tabular View by a specific property:  
Click on the appropriate property column heading. To reverse the sort order, click on the column heading again.
- To resize a grid column:  
Place the pointer over the line that divides the column headings, then press and hold the mouse button to drag the column divider to the desired position.
- To resize the left pane (tree) and right pane (Tabular View):  
Place the pointer over the vertical splitter, then press and hold the mouse button to drag the splitter to the desired position.

## Selecting objects

You can select Tabular View objects in most VEA windows using the following procedures:

- To select a single object:  
Click on the object.
- To select multiple objects:  
Hold down the Control key while selecting the objects. The objects that you select in this way do not have to be adjacent.
- To select a range of adjacent objects:  
Select the first object, then hold down the Shift key while selecting the last object in the range. You can also select multiple adjacent objects by pressing

and holding the mouse button while dragging the pointer over the desired objects.

## Navigational View

Navigational View supports object browsing and operations on those objects in a tree structure. The following nodes typically appear in this view:

- System nodes: representing the connected and disconnected computer systems, these are distinguished by icons.
- Network nodes: listing the systems that are currently running on the given domain.
- History nodes: listing the most recently connected servers.
- Favorite Hosts nodes: listing hosts that will be connected by default at start up.

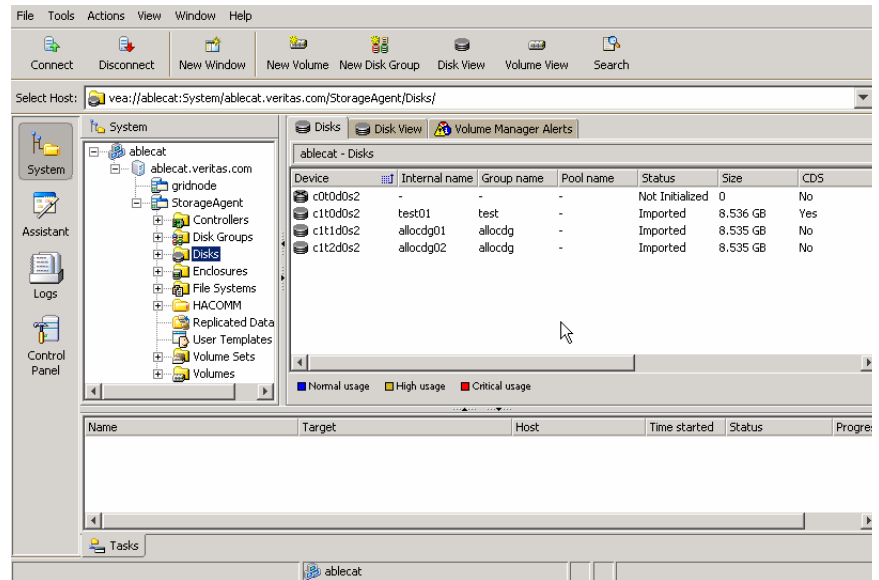
The system objects are arranged in containers called *group nodes*. Group nodes can contain homogenous or heterogeneous types of objects. You can view detailed information about these objects in the Details View by selecting the object in the Navigational View.



## Details View

The Details View (Figure 2-1) gives a tabular representation of the objects in a particular group node, or even a single object, depending upon the selection in the Navigational View.

**Figure 2-1** Details View



## Console View

The Console View displays the active events and alerts for the connected hosts. Click on **Console** to display the events that have been received by the client during the user session. The events for all hosts over the lifetime of the session is displayed.

---

**Note:** Events on the server side are recorded on the server.

---

## Tasks View

The Tasks View displays the start time of the task along with the object name for which the task was fired.

You view the Task Log to obtain historical task information (see “[Viewing the Task Log](#)” on page 33).

## Properties of an object

Each property has the following attributes:

**Table 2-1** Property attributes

Property type	Definition
Type	Defines the property value; for example, boolean, integer with varied size, and string.
Flags	Determines one of the characteristics of the property (for example, <i>Hidden</i> or <i>Displayable</i> ).
Name	Identification given to the property.
Value	Value assigned to property, depending upon the type.

A *property set* is a collection of properties. It can contain an array of properties or even another property set as its element. A property set with one or more property sets contained within it is called a *recursive property set*.

VEA uses Tabular View to display the properties of an object. Each object is represented by a row in the table and the properties are the column cells in it.

## Performing tasks

Most VEA tasks are performed by selecting objects and/or tasks and then completing the resulting dialog boxes. You can run tasks from the following:

- Menu bar
- Context-sensitive popup menu
- VEA Task Assistant

### Running tasks from the menu bar

Once you have connected to a host, you can launch tasks from the **Actions** menu in the main window menu bar. The context-sensitive **Actions** menu launches tasks on a selected object. The **Actions** menu is dynamic and changes its options based on the type of object that is selected in the tree or grid.

To perform a task on an object with the **Actions** menu, select the object and choose the appropriate task from the **Actions** menu. If this launches a dialog box or wizard, complete the dialog box (or wizard).

## Running tasks from a popup menu

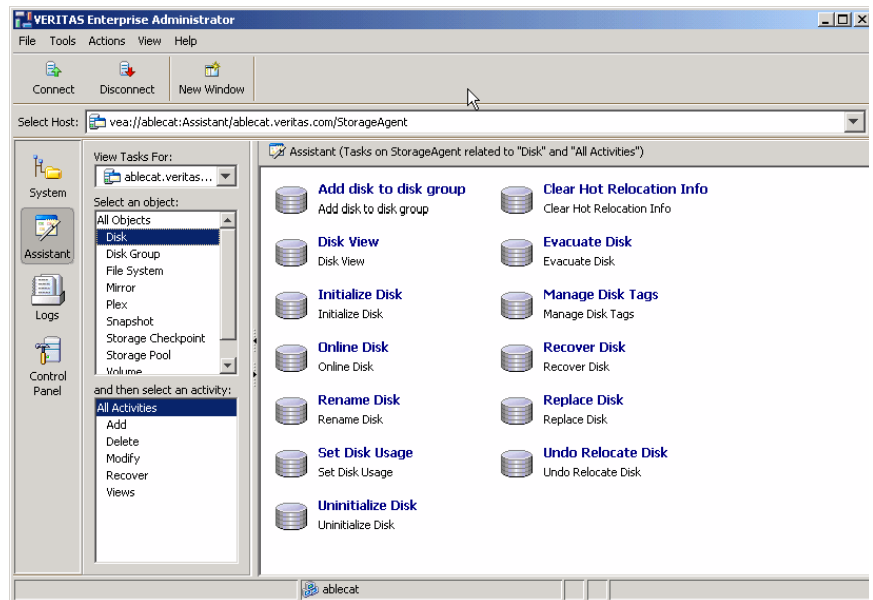
Once you have connected to a host, you can use a context-sensitive popup menu to launch a task on the selected object. A popup menu provides access to tasks or options appropriate for the selected object. Popup menus are available in the main window and most other windows.

- ◆ To perform a task on an object with the popup menu, right-click on the object and choose the appropriate task in the popup menu. If this launches a dialog box or wizard, complete the dialog box (or wizard).

## Running tasks from the Task Assistant

Once you have connected to a host, you can use the VEA Task Assistant to launch a task on a selected object and activity, as shown in [Figure 2-2](#).

Figure 2-2 VEA Task Assistant



## Connecting and disconnecting hosts and domains

The system host typically has multiple Symantec products installed on it. To be able to use the products, client console needs to connect to the system through an authentication channel.

VEA can access and display multiple host machines simultaneously.

- [Connecting to a host or domain](#)
- [Logon authentication](#)
- [Disconnecting from a host](#)
- [Switching between connected hosts'](#)

### Connecting to a host or domain

You can first connect to a system host by:

- Using the VEA Assistant
- Clicking on **File --> Connect**
- Clicking on the Connect tool bar icon

The **Connect** dialog box is then displayed. You can now:

- Click **Browse**, to select a Favorite host
- Supply the data in the following fields and then click **OK**:  
**Hostname—**  
Select from the drop-down list; or type the name, IP address, or qualified domain name for Server host.
- Check one of the following:
  - **Connect Using:**  
Displays the default user account, if one has been set.
  - **Connect using a different user account**

---

**Note:** The login credentials for the host are identical to the Server host root credentials, **root** and its password. See your system administrator for more information.

---

- Supply the password when prompted. Type the password for the `root` account on the Server. Select the **Remember Password** box to save the password on your computer.  
You are now connected to your host.

---

**Note:** Entries for the user name and password must exist in the password file or corresponding Network Information Name Service (NIS) table on the machine to be administered.

---

## Logon authentication

There are three authentication mechanisms by which a connection can be established with the server.

- **Silent Logon** (Windows platforms only): This happens when the server is local; that is, the VEA client and server both are running on the same machine. If the user has logged on with administrator privileges, then username and password are not required. (The basic connection dialog box is used.)
- **Native Logon:** Username and password are required to authenticate the user. (The expanded connection dialog box is used.)
- **DCOM authentication** (Windows platforms only): If the user has logged in as administrator on the domain, then username and password are not required to authenticate the user (the basic connection box is expanded after entering the server name and clicking **OK**), and the user is connected to the server. The server needs to be started with administrator privileges for this type of authentication.

If the user does not have administrator privileges, then the connection takes place using the Native Logon mechanism.

## Disconnecting from a host

The **Disconnect** procedure disconnects a host machine from the current VEA session. When a host machine is disconnected, VEA cannot administer that machine until a new connection is made.

- 1 Right-click the computer icon to be disconnected.
- 2 Select **Disconnect** from the file menu on the menu bar.
- 3 A confirmation dialog will appear, click **Yes** to end the remote connection.
- 4 The computer icon disappears from the left tree view.

If the connection is lost for any other reason, a message appears that indicates the connection has been terminated, and the icon for that computer is removed from the left tree view. You need to click **OK** to close the message box.

To restore access to a disconnected host machine, you must reconnect to the host.

## Switching between connected hosts

You can switch the VEA console display between connected hosts:

- Select **View > Connection**.
- Select the host to be displayed from the list of connected hosts displayed.

The display changes to show information for the selected host.

## Exiting the VEA client

To exit the VEA client, choose **File > Exit**.

It is also possible to close the client by using the close button available at the top right of the window.

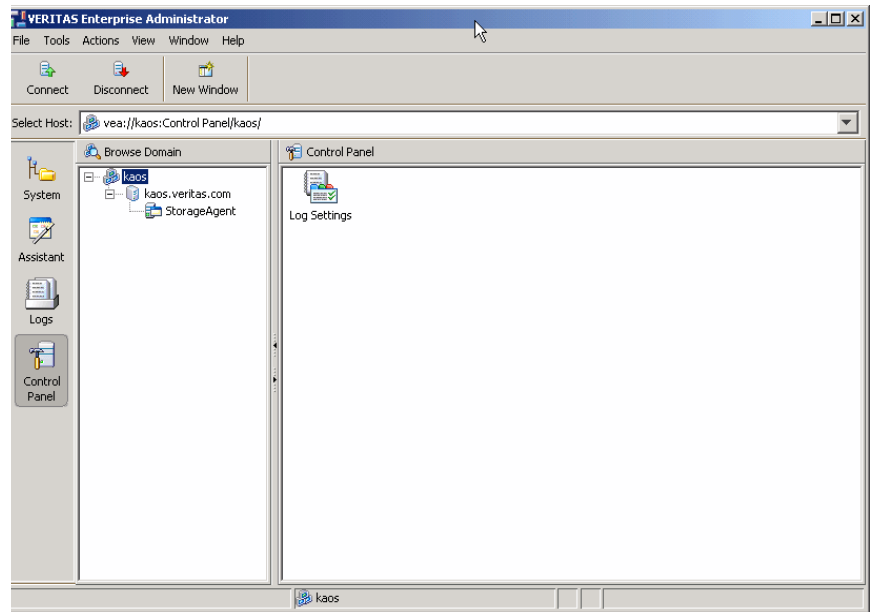
## Viewing different products

VEA allows you to simultaneously access several products on different systems, and to view each product in the language of the VEA client, if available.

For example, if you connect from a VEA client, displaying French text, to Veritas Volume Manager running on a remote Solaris system also displaying French, you will see French text in the VEA client window. If you now connect the same VEA client (displaying French text) to SAN Appliance running on a remote Linux system, displaying English text then, if the SAN Appliance is available in French, the VEA client displays everything in French. If the SAN Appliance is available only in English, then the SAN Appliance information will be displayed in English on the VEA client.

## Using the Control Panel

Use the Control Panel to view and modify application settings. Selecting the Control Panel will bring up the Control Panel view in the right hand pane.

**Figure 2-3** Control Panel

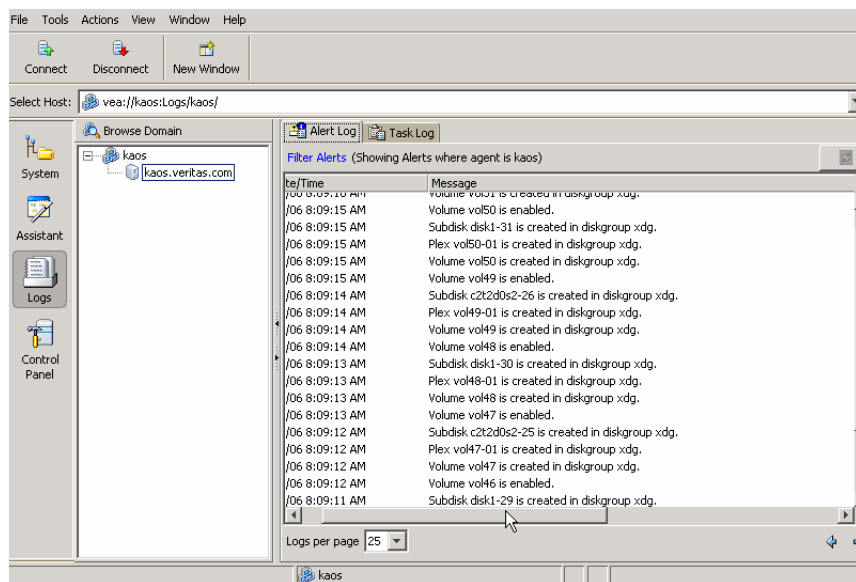
## Viewing the Alert Log

The alert log resides on the server, and records information such as alerts raised, about the server.

After connecting to the host (server), you can display a snapshot of the log information by clicking on **Logs** then the **Alert Log** tab.

The server can have single or multiple alert log files, depending upon the policy. If the server has more than one alert log file, then a drop down box is displayed from which you select the required log file.

The alert information is displayed in the Details View. Up to 25 alerts can be displayed in a set.

**Figure 2-4** Alert Log

## Previous and next alert sets

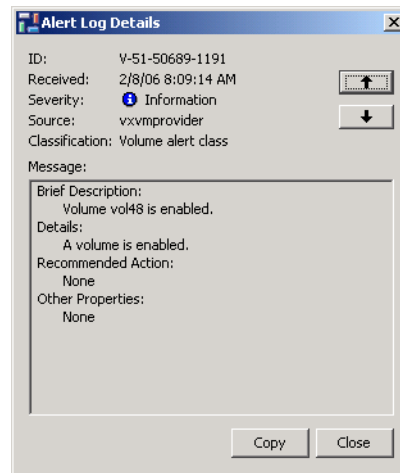
The Previous and Next set of alerts buttons are situated below the Details View. You can display the next set of alerts by clicking the “Next set of Alerts” button. The current set of alerts is then replaced with the next set of alerts. If there are no more alerts in the event log, the current set continues to be shown.

You can display the previous set of alerts by clicking the “Previous set of Alerts” button. The current set of alerts is then replaced with the previous set of alerts. When the first set is reached, and there are no more old alerts, the “Previous set of Alerts” button is disabled.

## Viewing alert details

You can view the details for particular alert by selecting the alert and double-clicking on the alert. A new window opens up to show the alert details.



**Figure 2-5** Alert Details

## Viewing the Task Log

The task log resides on the server, and is similar to the event log; but records information about task objects. You can display a snapshot of the task log information on the client.

After connecting to the host (server), you display the task log of the server by selecting the "TaskLog" node under "Logs" in the tree view. The server can have single or multiple task log files, depending upon the policy. If the server has more than one task log file, then a drop down box is displayed from which you select the required log file.

The client gets the latest *set* of tasks from the log file of the server and displays the information in the Details View. Up to 25 tasks can be displayed in a set.

## Previous and next task sets

The Previous and Next set of tasks buttons are situated below the Details View. You can display the next set of tasks by clicking the "Next set of Tasks" button. The current set of tasks is then replaced with the next set of tasks. If there are no more tasks in the task log, the current set continues to be shown.

You can display the previous set of tasks by clicking the "Previous set of Tasks" button. The current set of tasks is then replaced with the previous set of tasks. When the first set is reached, and there are no more old tasks, the "Previous set of Tasks" button is disabled.

## Task details

You can view the details for particular task. Select the task and click on “Details.” A new window opens up to show the task details.

## Configuring logs

You can configure the server task and alert logs from the client:

- 1 Select the “control panel” node in the tree view. The details view appears, listing all the configuration applications.
- 2 Launch the “Log Settings” configuration application by double clicking on it.

You can set the maximum log size from 10KB to 2MB. The default log size is 500KB.

## Printing views

You can print some of the Views in the right pane by clicking **File >Print**.

Print functionality is determined by the server, which means that the **Print** and **Page Setup** functions appear only when the VEA installed on the server supports printing. This also means that **Page Setup** may be shown as disabled, even when the **Print** function is available.

The complete View is printed, including any information which may be scrolled off the screen. If there is more than one tab for the displayed View, then only information relevant to the displayed tab is printed.

## Managing user profiles

The user profile feature enables individual users running VEA on the same machine to maintain their own preferences, connection history and favorites information.

To use the user profile feature, select **Tools > Manage Profiles**. The Manage Profiles dialog appears. This allows you to:

- Set a profile to be used when starting VEA ([Selecting a startup profile](#))
- Create a new profile ([Creating a new profile](#))
- Change your password ([Changing your password](#))
- Delete a profile ([Deleting a profile](#))

Figure 2-6 User Profiles



## Selecting a startup profile

A default startup profile (Default) is created by VEA when it is invoked by the first time. The Default profile is particularly useful when VEA is being used in a single user environment, in which case, you can use the Default profile rather than creating additional profiles.

You cannot delete or modify the Default profile, and it is not password protected.

You also have the option of selecting your own startup profile (in **Startup using:**). Alternatively, you can choose to be asked at each logon, which profile to use.

## Creating a new profile

Select the **New** button to create a new profile. This brings up the New Profile dialog.

You then enter the desired name for the profile. The following characters are not allowed in the profile name:

```
" ~!@#$$%^&*()=+-[]{}\\|'\" ;:.,<>/?'`"
```

You can also choose to employ a password.

---

**Note:** You must remember this password, for there is no way of retrieving a lost password, and the profile cannot then be deleted at a later stage. (A blank password or a password consisting of spaces alone will not be considered for a password, and the profile will be marked as not having a password.)

---

## Changing your password

Select the profile, and then click **Edit** to change the password for the profile. This brings up the Edit Profile dialog.

You will need to know the current password in order to change your password.

## Deleting a profile

Select the profile, and then click **Delete** to delete a profile. You are then prompted to confirm the deletion of the profile.

If the selected profile is password protected, you are then prompted to enter the password.

## Firewall support

In VEA, the client connects to the server using a specific port number: 2148. In order to connect to the server through a firewall, a port on the firewall is mapped to the 2148 port of the VEA server.

When the client wishes to connect to the server through the firewall, it needs to specify the host and port in the following format.

*Firewallhost:port*

where:

*Firewallhost* is the name or IP address of the firewall.

*port* is the port on the firewall that is internally mapped to the VEA server.

When the client connects to the server, the VEA client displays the host name (server name) that it connected to, and not the firewall-port combination in the list of connected hosts. The host name is also displayed in the history and favorites nodes. The firewall and port information is stored in the user profile (wallet) and is used for subsequent connections to the same server. The firewall-port combination is displayed only in the connection dialog.

## Example 1

If `a.b.c.d` is a firewall machine, then:

Port 1234 on `a.b.c.d` = 2148 on `veaserver1`, and

Port 3456 on `a.b.c.d` = 2148 on `veaserver2`

...

and so on.

Now, if the client wishes to connect to `veaserver1` then, it should specify the following in the connection box:

```
a.b.c.d:1234
```

This then connects to `veaserver1` and displays `veaserver1` in the connected hosts, history and favorites databases. The *firewall:port* combination is stored in the wallet for subsequent connection to the server if requested by the user.

## Example 2

```
client ---> Internet ---> firewall ---> server
```

and

```
client ---> firewall ---> server
```

We need to do the following:

- 1 Allow for an alias of port 2148 on server A to be a particular port on the firewall machine.
- 2 Let Pf be the port on the firewall machine F which is an alias for port 2148 on server A.
- 3 Connect using the GUI to port Pf on F. You are actually managing server A

---

**Note:** VEA uses Anonymous Diffie Hellman key exchange and is therefore vulnerable to the man-in-the-middle attack. Therefore it is recommended that SSH or some kind of tunnelling software be used if going across the internet. If SSH is used set up port forwarding from client to firewall port Pf and use SSH to tunnel.

---

## Example 3

For the case where 2148 is forwarded through the firewall (punch through):

- 1 Let machines `A` and `B` be the servers on the secure side of the firewall.
- 2 Let client be on the internet/intranet side  
`client ---> firewall ---> A|B`
- 3 Configure TCP/IP routing on the client such that packets destined for `A|B` are routed to firewall `F`.
- 4 Add `A` and `B` to `/etc/hosts` (or equivalent) for name resolution if required.
- 5 Connect to `A` or `B` or both machines (depending on which are to be managed).

# Accessibility

Accessibility is enhanced by the use of:

- [Keyboard shortcuts](#)
- [Dialog boxes](#)

## Keyboard shortcuts

Keyboard shortcuts are possible using *accelerators* and *mnemonics*.

### Accelerators

Accelerators are key combinations that provide shortcut access to GUI functions. They allow you to use a computer from the keyboard, rather than using the mouse. Accelerators are sometimes a quicker way of getting to a command, especially for the experienced user or a user who is disabled and is unable to manipulate a mouse or to press more than one key at the same time. Accelerator keys are either a single keystroke or two or more keystrokes that can be pressed in succession (rather than holding them simultaneously). Some users are unable to use a mouse, and some users prefer to use the keyboard rather than a mouse.

## Mnemonics

Mnemonics are single key strokes, used to activate components such as menu items. A single mnemonic is equivalent to a mouse click. A mnemonic can be used to select a menu item by pressing the <Alt> key to go into menu pull-down mode, pressing a single key to open a menu and another key to select a menu item. For example:

- <Alt> to go into menu pull-down mode
- <f> key to access the File menu
- <o> to activate the “open” command

Mnemonics are case insensitive. Keys can be pressed sequentially instead of simultaneously.

## Keyboard mapping conventions

Exceptions and additions to the Microsoft Keyboard Conventions are listed in:

- [VEA exceptions to Microsoft keyboard conventions](#)
- [VEA additions to Microsoft keyboard conventions](#)
- [VEA help additions to Microsoft keyboard conventions](#)

### VEA exceptions to Microsoft keyboard conventions

[Table 3-1](#) summarizes the keyboard differences between the VEA implementation of mnemonics and accelerators, and the Microsoft keyboard convention:

**Table 3-1** VEA exceptions to Microsoft keyboard conventions

Convention	Mnemonic	Accelerator
<u>C</u> ancel	C	Alt C, Escape
<u>O</u> K	O	Alt O
<u>R</u> efresh	E	None
Yes	None	None
No	None	Escape
Shift+F10	A	Alt A



## VEA additions to Microsoft keyboard conventions

Table 3-2 summarizes the keyboard additions to the Microsoft keyboard conventions in the VEA implementation of mnemonics and accelerators:

**Table 3-2** VEA additions to Microsoft keyboard conventions

Convention	Mnemonic	Accelerator
<u>A</u> ctions	A	Alt A. Use this accelerator in place of Shift+F10 with a selected item to bring up the context menu with the Actions menu.
<u>A</u> dd category	A	None
<b>A</b> dd	D	Alt D
<u>C</u> onnect	C	None
<u>C</u> ontents	C	None
Delete Now	None	None
<u>D</u> elete Temporary files on Exit	E	Alt E
<u>D</u> isconnect	D	None
<u>N</u> umber of items in history	N	Alt N
<u>P</u> assword	P	Alt P
<u>P</u> revious	P	Alt P
Over <u>w</u> rite the log file	W	Alt W
Overwrite the log file (s) <u>a</u> fter	A	Alt A
<u>O</u> verwrite the log file (s) older than	O	Alt O
<b>R</b> emove	E	Alt E
Re <u>s</u> can	S	None
<b>R</b> eset	R	Alt R
<b>S</b> et to Defaults	S	AltS
<b>R</b> emember Password	R	Alt R
<u>U</u> sername	U	Alt U

## VEA help additions to Microsoft keyboard conventions

Table 3-3 summarizes the keyboard additions to the Microsoft keyboard conventions in the VEA implementation of mnemonics and accelerators:

**Table 3-3** VEA and applications help additions to Microsoft keyboard conventions

Convention	Mnemonic	Accelerator
<u>F</u> ind in Topic...	F	Ctrl + F
<u>F</u> ind Next	N	F3
Find <u>P</u> revious	P	None
<u>H</u> ide Navigation Tabs	H	None
<u>I</u> ndex	I	None
<u>P</u> rint	P	None
<u>S</u> earch	S	None
Synchron <u>o</u> use	N	None

## Dialog boxes

Dialog boxes often contain groups of controls necessary to set options or settings for programs.

You can select or choose controls that have an underlined letter in their titles by typing ALT + the underlined letter at any time when the dialog box is active. TAB moves the keyboard focus between controls, but which controls are included in the focus sequence, and the order of the sequence, may vary between applications. Typically, items that cannot be changed are not visited by the TAB key. Arrow keys are used to move within a list box, groups of option controls, or groups of page tabs. Arrow keys can move the keyboard focus between other controls but this behavior is not reliable. Options that are unavailable appear dimmed and cannot be selected.

While the controls described here are typically found on dialog boxes, they also can occur in other contexts.

**Command buttons**, such as the **OK** button, carry out the command using the information supplied in the dialog box. Other command buttons let you cancel the command or choose from additional options.

Command buttons marked with an ellipsis (...) open another dialog box so you can provide more information or confirm an action.

A dark border initially indicates the default button. Press `ENTER` at any time to choose the button with a dark border. Use `TAB` to move the keyboard focus to the next control, and add `SHIFT` to reverse the direction. When you move the keyboard focus to a command button it temporarily takes the dark border, but when the keyboard focus is not on a command button the dark border returns to the default button. Press `SPACEBAR` to choose the command button you selected with `TAB`. Use `ESC` to immediately choose the Cancel button if there is one. Typing the access key for a command button will immediately carry out the command.

**Check boxes** Use `TAB` to move between boxes, and `SPACE` to change the check box to the next state. Typing the access key for a check box also will move the focus to the box and change its state.

**Option controls** (also known as radio buttons) are used to select only one option from a group of options. (Like check boxes, option buttons may represent two or three states.) In some applications, you can add `CTRL` to move to the button without selecting it, then use `SPACEBAR` to choose the currently selected option button. Typing the access key for an option control will also move the focus to the control and select it.

**Tabbed pages** are used to fit many options into a single dialog box. They appear visually similar to dividers from a notebook. Each page contains separate groups of controls such as check boxes or option controls. Use `TAB` to move the focus to the tab for the currently visible page. Typing the access key for a page tab also will move the focus to the tab and display its page.

[Table 3-4](#) summarizes the actions for the keys in tabbed pages:

**Table 3-4** Tabbed pages

Keys	Action
<code>CTRL+PAGE DOWN</code> OR <code>CTRL+TAB</code>	Switches to the next tab and displays the page.
<code>CTRL+PAGE UP</code>	Switches to the previous tab and displays the page.
<code>DOWN ARROW</code> OR <code>UP ARROW</code>	Chooses the tab in the next or previous row and displays the page.
right arrow or left arrow	When the focus is on a tab selector, chooses the next or previous tab in the current row and displays the page.

**Sliders** appear as an indicator on a vertical or horizontal gauge. The slider both displays and sets a value from a continuous range, such as speed, brightness, or volume. Use `TAB` or the appropriate access key to move the focus to the slider.

**Spin boxes** appear as a text box with up and down arrows used to select from a list of fixed values. Use `TAB` to move the keyboard focus to the text box, then enter a valid value in the box or use the `UP ARROW` or `DOWN ARROW` keys to select the next higher or lower values.

**List boxes** display a column of available choices. If there are more choices than can fit in the open list box, moving the selection through the list will scroll more choices into view. Use **TAB** or type the appropriate access key to move the focus to the list box.

**Single selection list boxes** allow only one item to be selected from the list at a time. Use the **UP ARROW** or **DOWN ARROW** keys to select items. Moving to a second item will automatically deselect all other items.

**Drop-down list boxes** by default show only the selected item. There is a small button to the right of the control that shows a downward-pointing arrow. You can click the arrow to display more items from the list. You also can show or hide the list using **ALT+DOWN ARROW**, **ALT+UP ARROW**, or **F4**. In all other respects it behaves like a normal single-selection list box.

**Extended selection list boxes** support selecting single items, blocks of items, or combinations of the two. After selecting an item as in a single-selection list box, hold down **SHIFT+Navigation** keys to select or deselect more items.

**Multiple selection list boxes** typically have comparatively long lists and more of these items are expected to be chosen individually (not in blocks). Navigating to items does not automatically select them nor does selecting an item change the status of other selections. Press **SPACEBAR** to select or deselect an item.

**Combo-boxes** and **drop-down combo boxes** are list boxes with attached edit boxes. You can make your selection by either typing in the edit box or using the standard commands to select from the list.

[Table 3-5](#) summarizes the actions for keys in combo boxes:

**Table 3-5** Combo boxes and drop-down combo boxes

Keys	Action
UP ARROW or DOWN ARROW	Selects the previous or next item. In an extended selection list box, add <b>SHIFT</b> to select additional items and add <b>CTRL</b> to move to an item without selecting it. In a multiple selection list box, moves without changing the selection.
PAGE UP or PAGE DOWN	Selects the item up or down one screen. In an extended selection list box, add <b>SHIFT</b> to select additional items and add <b>CTRL</b> to move to an item without selecting it. In a multiple selection list box, moves without changing the selection.

**Edit controls** are rectangular boxes used for displaying or editing text. Use **TAB** or the appropriate access key to move the focus to the edit control and select the text.

# Glossary

## **Action menu**

A context-sensitive menu that changes its menu options to match the type of object that is selected. By default, the **Action** menu is greyed out. When an object is selected, the **Action** menu provides access to tasks appropriate for the selected object.

## **alert**

An indication that an error or failure has occurred on an object on the system. When an object fails or experiences an error, an alert icon appears.

## **alert icon**

An icon that indicates that an error or failure has occurred on an object on the system. Alert icons usually appear in the status area of the main window and on the group icon of the affected object.

## **Alert Monitor**

A window that provides information about objects that have failed or experienced errors.

## **Array Support Library**

See ASL.

## **ASL**

A dynamically loadable library to discover attributes of a disk array.

## **browse dialog box**

A dialog box that is used to view and/or select existing objects on the system. Most browse dialog boxes consist of a tree and grid.

## **button**

A window control that the user clicks to initiate a task or display another object (such as a window or menu).

## **capability**

You can create volumes having specific capabilities. A capability is a simple name used to indicate what the capability means. Storage is allocated according to your request. For example, you can ask for a volume to be Performant and Reliable. These are capabilities have parameters such as, number of striped columns or number of mirrors.

## **CFS**

Cluster file system. A VxFS file system mounted on a selected volume in cluster (*shared*) mode.

## **check box**

A control button used to select optional settings. A check mark usually indicates that a check box is selected.

**children**

Objects that belong to an object group.

**cluster**

A set of host machines (*nodes*) that shares a set of disks.

**cluster file system**

See CFS.

**command log**

A log file that contains a history of Veritas Volume Manager (VxVM) tasks performed in the current session and previous sessions. Each task is listed with the task originator, the start/finish times, the task status, and the low-level commands used to perform the task.

**DCO Data Change Object**

See DCO.

**DCO**

A Volume Manager object that keeps the Persistent FastResync tracking information

**DDI**

DDI properties are device driver properties primarily used in Solaris OS.

**DDL**

Device Discovery Layer. A facility of VxVM for discovering disk attributes needed for VxVM DMP operation.

**Device Discovery Layer**

See DDL.

**Dirty Region Logging**

See DRL.

**device name**

The physical disk device name (or *disk access name*).

**dialog box**

A window in which the user submits information to VxVM. Dialog boxes can contain selectable buttons and/or fields that accept information.

**disk group**

A set of disks that are under VxVM control and share a common configuration. A disk group configuration is a set of records containing detailed information on existing Veritas Volume Manager objects (such as disk and volume attributes) and their relationships. Each disk group has an administrator-assigned name. Volumes can only be created on disks that belong to disk groups.

**disk name**

The Veritas Volume Manager disk name (or *disk media name*). This is the logical name given to the disk by VxVM or the administrator.

**DMP**

The Veritas Volume Manager Dynamic Multipathing facility.

**dock**

To separate or attach the main window and a subwindow.

**DRL**

A VxVM mechanism that tracks mirror write inconsistency which helps in fast resynchronization of mirrors after system crash. Even though the term *log* is used, internally DRL is implemented as a *map*.

**Dynamic Multipathing**

See DMP.

**enclosure**

A disk array.

**FastResync**

A VxVM feature for fast resynchronizing of stale mirrors at the time of reattach which were earlier split off as a result of snapshot or detach operation.

**gap**

A disk region that does not contain Veritas Volume Manager objects (subdisks).

**graphical view**

A window that displays a graphical view of objects. In VxVM, the graphical views include the Object View window and the Volume Layout Details window.

**grid**

A tabular display of objects and their properties. The grid lists Veritas Volume Manager objects, disks, controllers, or file systems. The grid displays objects that belong to the group icon that is currently selected in the object tree. The grid is dynamic and constantly updates its contents to reflect changes to objects.

**group icon**

The icon that represents a specific object group.

**GUI**

Graphical User Interface.

**host**

A machine or system.

**launch**

To start a task or open a window.

**LUN**

Logical Unit Number. Each disk in an array has a LUN. Disk partitions may also be assigned a LUN.

**main window**

The main VERITAS Volume Manager window. This window contains a tree and grid that display volumes, disks, and other objects on the system. The main window also has a menu bar, a toolbar, and an optional Command Launcher.

**menu**

A list of options or tasks. A menu item is selected by pointing to the item and clicking the mouse.

**menu bar**

A bar that contains a set of menus for the current window. The menu bar is typically placed across the top of a window.

**mirror**

A copy of a volume and its data. There can be several mirrors per volume. The terms *mirror* and *plex* are used synonymously.

**node**

In the VxVM tree, a node is an element attached to the tree.

In a cluster environment, a node is a host machine in a cluster.

**object group**

A group of objects of the same type. Each object group has a group icon and a group name. In VxVM, object groups include disk groups, disks, volumes, controllers, free disk pool disks, uninitialized disks, and file systems.

**object tree**

A dynamic hierarchical display of Veritas Volume Manager objects and other objects on the system. Each node in the tree represents a group of objects of the same type.

**Object View Window**

A window that displays a graphical view of the volumes, disks, and other objects in a particular disk group. The objects displayed in this window are automatically updated when object properties change. This window can display detailed or basic information about volumes and disks.

**Organization principle for disk group**

An organization principle is associated with a disk group. These disk groups have storage pools present on them. Volumes created on such disk groups are maintained by ISP. Traditional volumes cannot be created on these disk groups. You have the option of not associating a organization principle to a disk group.

**plex**

A copy of a volume and its data. There can be several plexes per volume. The terms *mirror* and *plex* are used synonymously.

**popup menu**

A context-sensitive menu that only appears when you click on a specific object or area.

**properties window**

A window that displays detailed information about a selected object.

**radio buttons**

A set of buttons used to select optional settings. Only one radio button in the set can be selected at any given time. These buttons toggle on or off.

**rules**

Rules specify the storage allocation criteria. These define storage selection and storage layout. Rules are simple sentences written in the ISP language.

**scroll bar**

A sliding control that is used to display different portions of the contents of a window.



**Search window**

The VERITAS Volume Manager search tool. The Search window provides a set of search options that can be used to search for objects on the system.

**splitter**

A bar that separates two panes of a window (such as the object tree and the grid). A splitter can be used to adjust the sizes of the panes.

**status area**

An area of the main window that displays an alert icon when an object fails or experiences some other error.

**storage pool - data pool, clone pool**

Storage pools are associated with disk groups. Storage pools are defined by templates, capabilities and policies. Policies governing a storage pool decide whether to grow a storage pool to accommodate additional storage, and whether to use templates that are not currently associated with the storage pool.

There are two types of storage pools: data pools and clone pools. Data pools are created first. All other storage pools that are created within a disk group are clone pools.

**subdisk**

A set of contiguous disk blocks that form a logical disk segment. Subdisks are associated with plexes (mirrors) to form volumes.

**task properties window**

A window that displays detailed information about a task listed in the Task Request Monitor window.

**task request monitor**

A window that displays a history of tasks performed in the current VERITAS Volume Manager session. Each task is listed with the task originator, the task status, and the start/finish times for the task.

**toolbar**

A set of buttons used to access VERITAS Volume Manager windows. These include another main window, a task request monitor, an alert monitor, a search window, and a customize window.

**tree**

A dynamic hierarchical display of objects on the system. Each node in the tree represents a group of objects of the same type.

**uninitialized disks**

Disks that are not under VxVM control.

**user templates**

User templates are a collection of capabilities, templates and rules defined by the user to simplify tasks. You can group the capabilities you want the volume to have, and save these capabilities along with the rules as a user template.

**volume**

A virtual disk or entity that is made up of portions of one or more physical disks.

**Volume Layout Details Window**

A window that displays a graphical view of a volume and its components. The objects displayed in this window are not automatically updated when the volume properties change.

**Volume to Disk Mapping Window**

A window that displays a tabular view of volumes and their underlying disks. This window can also display details such as the subdisks and gaps on each disk.

**volume set**

The volume set feature provides support for the multi-device file system enhancement of Veritas File System (VxFS). A volume set allows several volumes to be treated as a single object with one logical I/O interface.

**VxFS**

Veritas File System.

**VxVM**

Veritas Volume Manager.

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