

VERITAS Enterprise Administrator (VEA 500 Series)

Getting Started

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Preface

This guide gives basic information about on using the VERITAS Enterprise Administrator (VEA) Series 500 product to configure and run storage applications such as VERITAS Volume Manager.

How This Guide Is Organized

This guide is organized as follows:

- ◆ Chapter 1, “[Introducing the VEA Console](#)” on page 1, provides an introduction to VEA components.
- ◆ Chapter 2, “[Using the VEA](#)” on page 9, explains how to use VEA.
- ◆ Chapter 3, “[Accessibility](#)” on page 37, explains the use of keyboard shortcuts and dialog boxes.
- ◆ “[Glossary](#)” on page 43.



Conventions

The following table describes the typographic conventions used in this guide.

Typeface	Usage	Examples
<code>Courier</code>	Computer output, file contents, files, directories, software elements such as command options, function names, and parameters	Read tunables from the <code>/etc/vx/tunefstab</code> file. See the <code>ls(1)</code> manual page for more information.
<i>Italic</i>	New terms, book titles, emphasis, variables to be replaced by a name or value	See the User's Guide for details. The variable <i>ncsize</i> determines the value of...
Courier bold	User input; the “#” symbol indicates a command prompt.	#mount -F vxfs /h/filesys
Helvetica Bold	Menu choices; anything that the user actually selects, presses, or clicks	Click Create Disk Group
<i>Helvetica (bold and italic)</i>	<i>Variables to be replaced by a name or value in user input</i>	#mount -F <i>fstype</i> <i>mount_point</i>

Symbol	Usage	Examples
>	Indicates a submenu	Start>Run>SAN Volume Manager Management Console
▼	Introduces a procedure	
❖	Indicates single-step procedures	
◆	Indicates a list	
Note	Emphasizes important information	
%	C shell prompt	
\$	Bourne/Korn/Bash shell prompt	
#	Superuser prompt (all shells)	
\	Continued input on the following line	# mount -F vxfs \ /h/filesys
[]	In a command synopsis, brackets indicate an optional argument	<code>ls [-a]</code>
	In a command synopsis, a vertical bar separates mutually exclusive arguments	<code>mount [suid nosuid]</code>



Getting Help

For technical assistance, visit <http://support.veritas.com> and select phone or email support. This site also provides access to resources such as TechNotes, product alerts, software downloads, hardware compatibility lists, and the VERITAS customer email notification service. Use the Knowledge Base Search feature to access additional product information, including current and past releases of product documentation.

Diagnostic tools are also available to assist in troubleshooting problems associated with the product. These tools are available on disc or can be downloaded from the VERITAS FTP site. See the `README.VRTSspt` file in the `/support` directory for details.

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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 VERITAS Volume Manager VEA GUI, you should familiarize yourself with the following introductory topics:

- ◆ [VEA Features](#)
- ◆ [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 VxVM administration remotely or locally. The VEA client runs on UNIX 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.

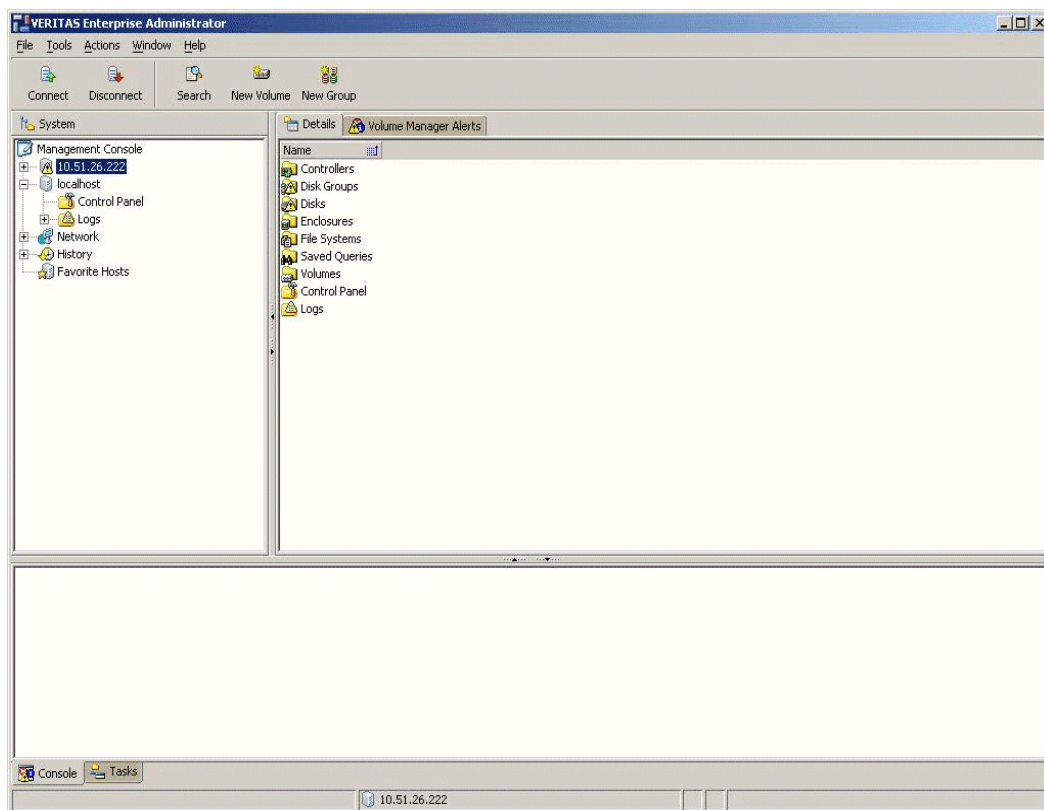
Main Window

The VEA [Main Window and Tabular View](#) consists of:

- ◆ [Object Tree and Grid](#)
- ◆ [Menu Bar](#)
- ◆ [Toolbar](#)
- ◆ [Status Area](#)



Main Window and Tabular View



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.

Object Tree and Grid

The VEA main window is divided into two main panes:

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

Object Tree

The following object groups typically appear as nodes in the object tree:

- ◆ **Bridges/Routers**
- ◆ **Fabrics**



- ◆ **Groups**
- ◆ **Hosts** – Any host machines connected to the current VEA client session.
- ◆ **Hubs**
- ◆ **Storage**, including enclosures and unenclosed storage
- ◆ **Unidentified Adapters**

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. The **Actions** menu is dynamic and changes its options based on the type of object that is selected. When an object is selected, the **Actions** menu provides access to tasks appropriate for the selected object.

- ◆ **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.

Window -> Tear off

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. When an object fails or experiences an error, an alert (error) icon appears in the status area. The Alert Monitor window provides details about the error. You can access the Alert Monitor window by double-clicking on the alert icon in the status area.

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.

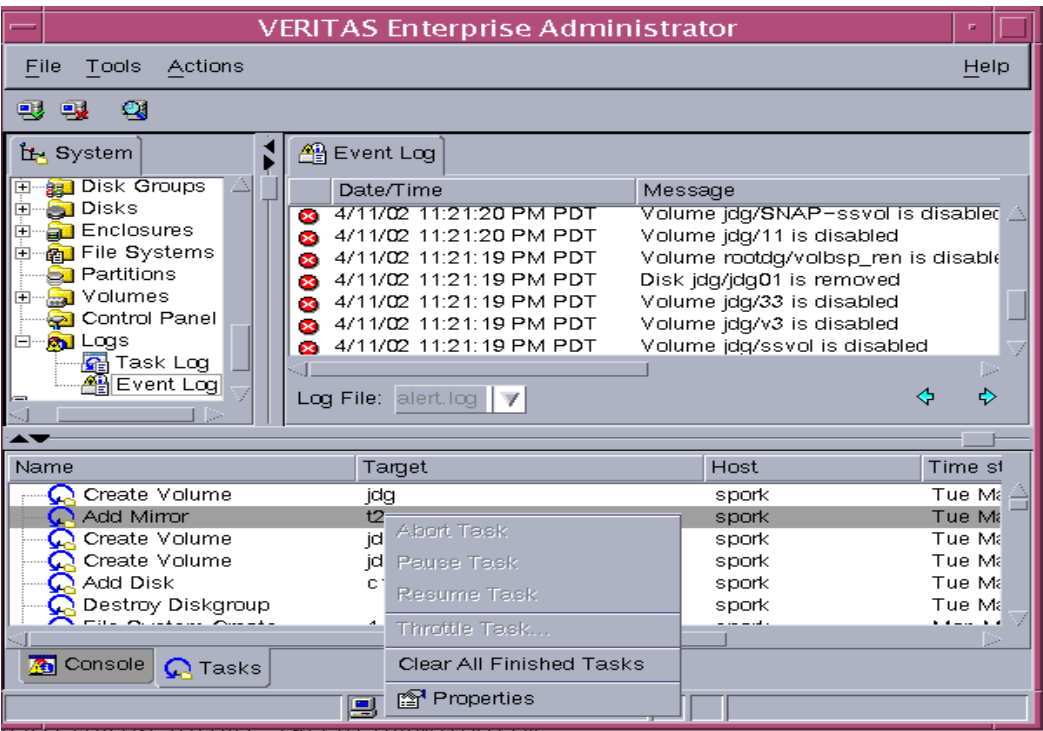
Viewing Task History

VEA logs all task requests. You can view the task history (including tasks in progress) using the Task History window, or the [Command Log](#) file.

The Task History window displays a history of tasks performed in the current session (and any other sessions running on the machine). Each task is listed with properties such as task name, task status, and start time.

To display the Task History window, click on **Tasks** at the bottom of the main window.

Task History Window



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.

Command Log

The command log file (veacmdlog) contains a history of tasks performed in the current session and previous sessions. It contains a description of each task, along with properties such as the start/finish times and the low-level commands used to perform the task. For failed tasks, the command log includes any relevant error messages. The command log file resides, and can be viewed, at `/var/adm/vx/veacmdlog`.

The following example shows a sample command log file entry:

```
Description: Add Log to Volume
Date: Wed April 17 4:36:11 2002
Command: /usr/sbin/vxassist -g datadg addlog data vol
Output: vxvm:vxassist: ERROR: Volume datavol-L01: Volume's logging
type not supported
Exit Code: 20
```





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](#)
- ◆ [Viewing Objects and Object Properties](#)
- ◆ [Performing Tasks](#)
 - ◆ [Running Tasks From the Menu Bar](#)
 - ◆ [Running Tasks From a Popup Menu](#)
- ◆ [Setting Layout Preferences](#)
- ◆ [Setting General Preferences](#)
- ◆ [Using the Control Panel](#)
- ◆ [Viewing the Event Log](#)
- ◆ [Viewing the Task Log](#)
- ◆ [Connecting and Disconnecting a Host](#)
- ◆ [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

-v : Shows the version of client console.

-c : Specifies the configuration file for advanced settings.

-host : 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

-v : Shows the version of client console.

-c : Specifies the configuration file for advanced settings.

-host : 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 Alternative 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](#)).

Viewing Objects and Object Properties

Objects in the system are displayed in the "[Main Window and Tabular View](#)."

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 three main views:

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

Details View

VERITAS Enterprise Administrator

File Tools Actions Window Help

Connect Disconnect New Volume New Group Annotate D... Search

System

Management Console

- 10.51.26.222
 - Controllers
 - Disk Groups
 - Disk Groups
 - Disk Groups
 - Enclosures
 - File Systems
 - Saved Queries
 - Volumes
 - Control Panel
 - Logs
 - localhost
 - Network
 - History
 - Favorite Hosts

Disks

10.51.26.222 - Disks

Device	Internal name	Group name	Pool name	Status	Size	CDS	% Used	Spare	Reserved
c0t0d0s2	-	-	-	Not Initialized	0	No	0%	No	No
ct0d0s2	disk01	rootdg	-	Imported	1008.500 MB	No	100%	No	No
Failed: ct1d0s2 disk02	-	rootdg	-	Disconnected	0	No	N/A	No	No
ct1d0s2	-	-	-	Not Initialized	0	No	0%	No	No
ct12d0s2	disk03	rootdg	-	Imported	1008.500 MB	No	1%	No	No
ct13d0s2	disk04	rootdg	-	Imported	1008.500 MB	No	0%	No	No

Normal usage High usage Critical usage

Console Tasks

10.51.26.222



Status View

The Status View occupies the bottom part of the VEA client window. It has a Console View and a Task 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.

Click on **Tasks** to display task information. Information is displayed in the context of the object being browsed. For example, if hosts A and B are connected, then browsing any object in host A displays only tasks from host A; similarly, browsing any object in host B displays only tasks from host B to be displayed.

Note You can use the arrows to obtain the previous or next set of events.

Properties of an Object

Each property has the following attributes:

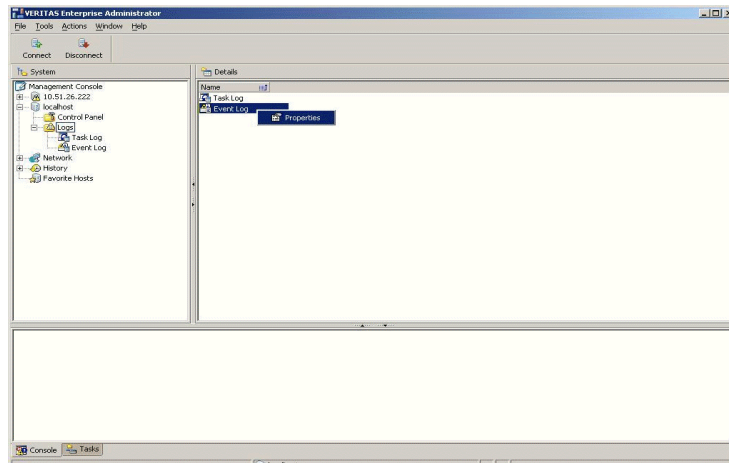
Property Attributes

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.

Tabular View



Upon double clicking the property in the table, VEA pops up a dialog box to display the array and property set.

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

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.

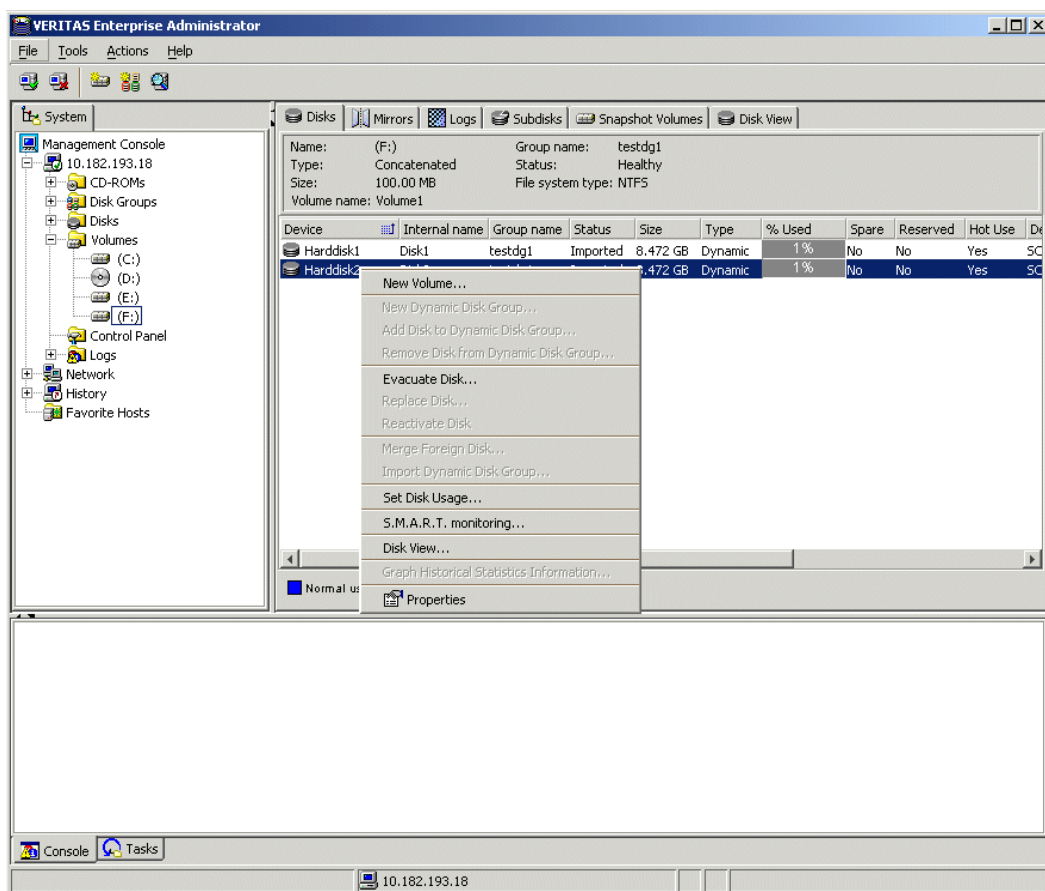


To perform a task on an object with the **Actions** menu, select the object and choose the appropriate task from the **Actions** menu. If this launches a dialog box or wizard, complete the dialog box (or wizard).

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, as shown in “[Context-Sensitive Popup Menu](#).” 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.

Context-Sensitive Popup Menu



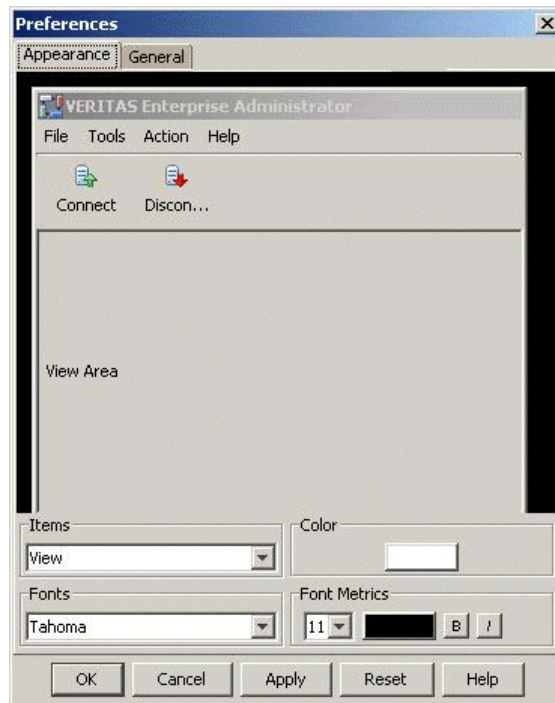
- ❖ To perform a task on an object with the popup menu, right-click on the object and choose the appropriate task in the popup menu. If this launches a dialog box or wizard, complete the dialog box (or wizard).

Setting Layout Preferences

To set layout preferences, select **Tools > Preferences** then select the **Appearance** tab. The Preferences Appearance Window appears. When you have made your changes:

- ◆ Press **Apply** to apply the changes.
- ◆ Press **Reset** to revert back the changes.
- ◆ Press **OK** to apply and close the Preference Appearance Window.
- ◆ Press **Cancel** to discard the changes and close the Preference Appearance Window.

Preferences Appearance Window



Customizing the View Area

Select **View** under **Items**. Choose your color setting and click **OK**. Select your font settings.



Customizing the Background and Foreground

Select **Background** (or **Foreground**) under **Items**. Choose your color settings and click **OK**. The new settings are displayed.

Customizing the Menu

Select **View** under **Items**. Choose your color setting and click **OK**. Select your font settings.

Customizing the Selection Color

Select **Appearance** then **Selection** under **Items**. Choose your color setting and click **OK**.

Customizing the System Font

Select **System Font** under **Items**. Choose your font settings.

Customizing the Toolbar

Select **Toolbar** under **Items**. Set the following preferences for the toolbar:

Placement	Place the docked toolbar at the top, bottom, or (either) side of the main window.
Icons/Icons and text	Display icons and/or labels on the buttons in the toolbar.

Customizing the Tooltip

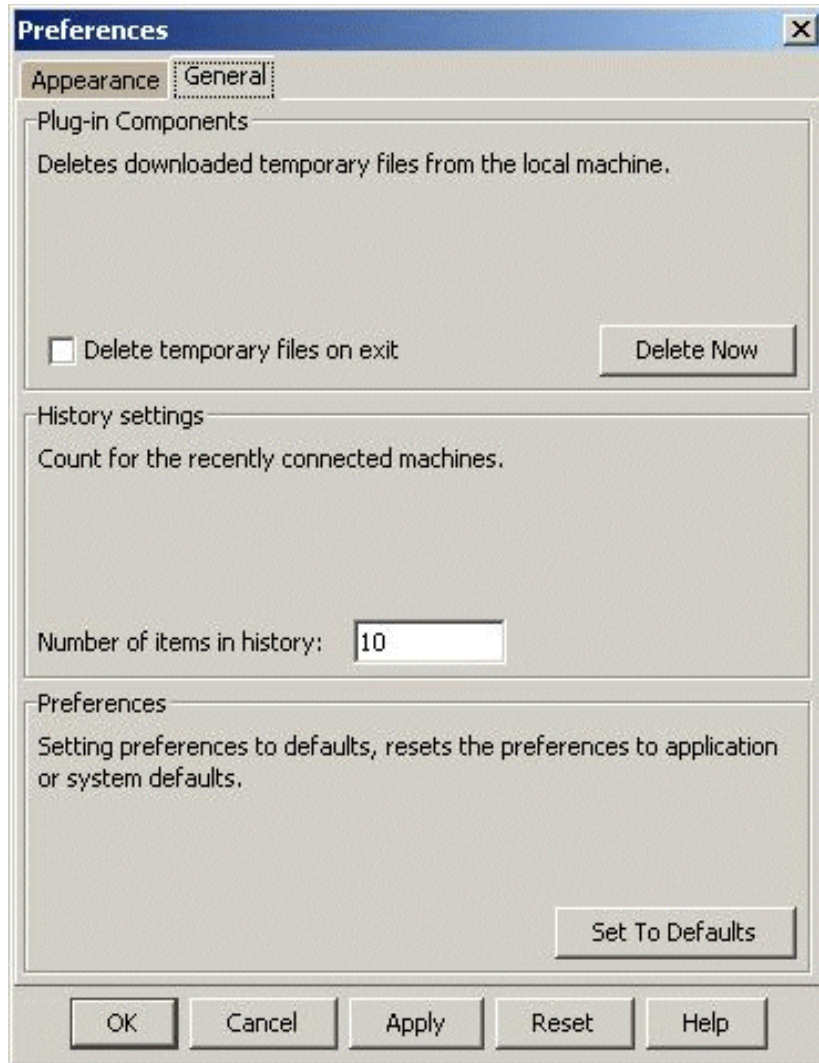
Select **Tooltip** under **Items**. Choose your color and click **OK**. Select your font settings.

Setting General Preferences

The General Tab, provided in the Preferences Appearance Window allows plug-in components to be retrieved whenever a connection is made to an server. You can configure the number of hosts for which the host information is stored.



General Tab



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**.



Adjusting the History Settings

To adjust the history settings, go to the **General** Tab and type the number of servers (hosts) for which information can be stored in the history file.

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 Appearance Window, **Cancel** to discard and close the Preference window.

Connecting and Disconnecting a Host

The system host typically has multiple VERITAS 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](#)
- ◆ [Logon Authentication](#)
- ◆ [Disconnecting from a Host](#)
- ◆ [Reconnecting Hosts at Startup](#)
- ◆ [Using History to View Recent Connections](#)
- ◆ [Adding Favorite Hosts](#)
- ◆ [Add Host in the Favorites Folder](#)
- ◆ [Remove a Host from Favorites Folder](#)

Connecting to a Host

You can connect to a system host in the following ways:

- ◆ Clicking on **File --> Connect**
- ◆ Clicking on the Connect tool bar icon
- ◆ Expanding **History** node and selecting a host, then right clicking the mouse to open up the popup menu showing **Connect As**
- ◆ Expanding **History** node and double clicking on system node.

Complete the Connection dialog box as follows:

Hostname:	Enter the name of the machine to be administered. (For VxVM, both VxVM and the VEA service must be running on this machine.)
Username:	Enter your login name. Only users with appropriate privileges can access VEA on the specified machine. (The service is already running on the host.)
Password:	Enter your password for the machine to be administered. Select the "Remember Password" box to save the password on your computer.

When you have provided all necessary information in the dialog box, click **OK**. The new host appears in the object tree in the main window.

After you have started VEA on one host, you can connect to additional hosts from the same session. Each host machine must be running the VEA service.

Notes:

- ◆ This task requires a host machine name, user name, and password.
- ◆ Only users with appropriate privileges can run VEA.
- ◆ 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 where VERITAS products are installed.

- ◆ 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.

Reconnecting Hosts at Startup

By default, hosts in the **Favorite Hosts** folder are reconnected at startup.

You can disable the default by disabling the 'Reconnect at Logon' option:

- ◆ Right click on the host
- ◆ Select (uncheck) the **Reconnect At Startup** check box

A host in the favorite hosts folder will not be reconnected at startup if the **Reconnect At Startup** checkbox is not set.

Using History to View Recent Connections

VEA uses the History folder in the tree view to list the computers that were connected to recently. When you connect to a remote computer for the first time, an icon representing the remote computer appears in the History folder.

Adding Favorite Hosts

The **Favorite Hosts** node contains 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

Add Host in the Favorites Folder

Use the following procedure to add a host to the Favorites folder:

1. Right click on any of the connected host nodes
2. Choose the menu item **Add to Favorites** from the popup menu.

You can also add any node under History node to the Favorites folder by a right clicking that node under **History**.

1. Under **History**, right click on the node to be added.
2. Choose the menu item **Add to Favorites**.

Remove a Host from Favorites Folder

Use the following procedure to remove a host from the **Favorite Hosts** folder:

- ◆ Right click on the node to be removed.
- ◆ Click on the **Remove From Favorites** menu item.

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.

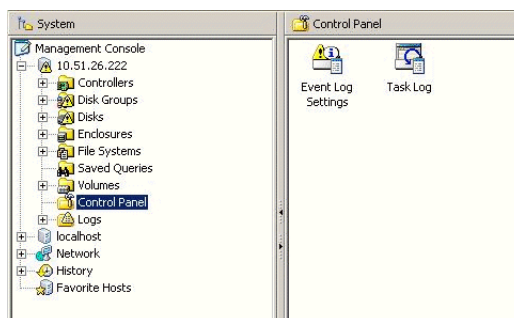


For example, if you connect from a VEA client, displaying French text, to VERITAS Volume Manager running on a remote Solaris system also displaying French, you will see French text in the VEA client window. If you now connect the same VEA client (displaying French text) to SAN Appliance running on a 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. After connecting to a host, the control panel node can be found directly under the host node in the tree or as a child of the host node in the detailed view. Selecting the control panel will bring up the control panel view in the right hand pane.

Control Panel



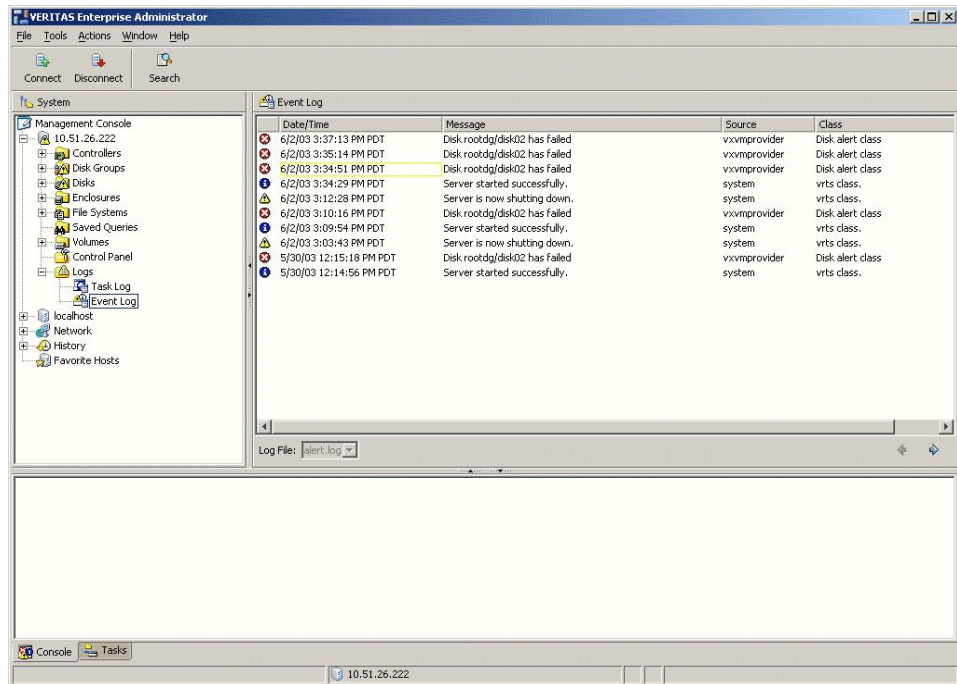
Viewing the Event Log

The event log resides on the server, and records event information, such as alerts raised, about the server. You can display a snapshot of the log information on the client.

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

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

Event 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 clicking on “Details.” A new window opens up to show the alert details.



Alert Details

The screenshot shows a window titled "Details - VEA" with a close button (X) in the top right corner. The window contains the following fields:

Date: 6/2/03	Class: wrts class.	...
Source: system	Severity: Information 	
Time: 3:34:29 PM PDT	ID: V-40-16674-4	

Below the table are four expandable sections:

- Message:** Server started successfully.
- Description:** Server start alert.
- Recommended Action:** None
- User Defined Properties:** (Empty field)

At the bottom of the window are three buttons: "Previous" (disabled), "Next", and "Close".

Event Log Settings

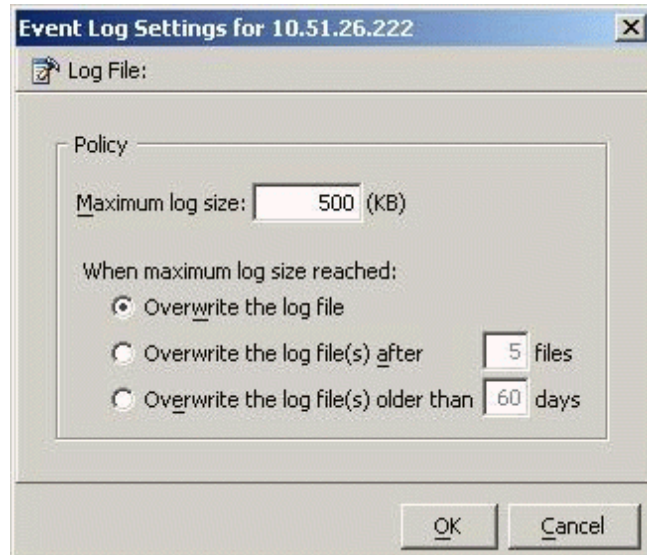
The settings for the Event Log are accessed by double-clicking on the Event Log Settings icon in the Control Panel view.

Configuring the Event Log

You can configure the server event log 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 “Event Log Settings” configuration application by double clicking on it.

Event Log Settings



Note Whenever you change the event log policy, the old files are deleted and a new event log file is created. So it is advisable to take a backup or save the old log file, before changing the policy.

Setting the Maximum Log Size

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

Using a Single Log File

Select “Overwrite the log file” to define a single log file. When the log file reaches its maximum size, the file is then overwritten, starting at the oldest alert.



Overwriting After a Number of files

Select “Overwrite the log file(s) after” to define the number of files after which the oldest file is overwritten. When a log file reaches its maximum size, a new file is created until the specified number of files is reached. You can specify from one to ten files (default is 5 files).

Overwriting After a Number of Days

Select “Overwrite the log file(s) older than” to define the number of days after which the oldest file is overwritten. When the log file reaches its maximum size, a new file is created until the specified number of days is reached. You can specify from one to 100 days (default is 60 days). The number of days is counted from the day when the first alert log file gets created.

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.

Task Log Settings

The settings for the Task Log are accessed by double-clicking on the Task Log icon in the Control Panel view.

Configuring the Task Log

You can configure the server task log 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 “Task Log” configuration application by double clicking on it.

Note Whenever you change the task log policy, the old files are deleted and a new task log file is created. So it is advisable to take a backup or save the old log file, before changing the policy.

Setting the Maximum Log Size

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

Using a Single Log File

Select “Overwrite the log file” to define a single log file. When the log file reaches its maximum size, the file is then overwritten, starting at the oldest alert.

Overwriting After a Number of files

Select “Overwrite the log file(s) after” to define the number of files after which the oldest file is overwritten. When a log file reaches its maximum size, a new file is created until the specified number of files is reached. You can specify from one to ten files (default is 5 files).



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.

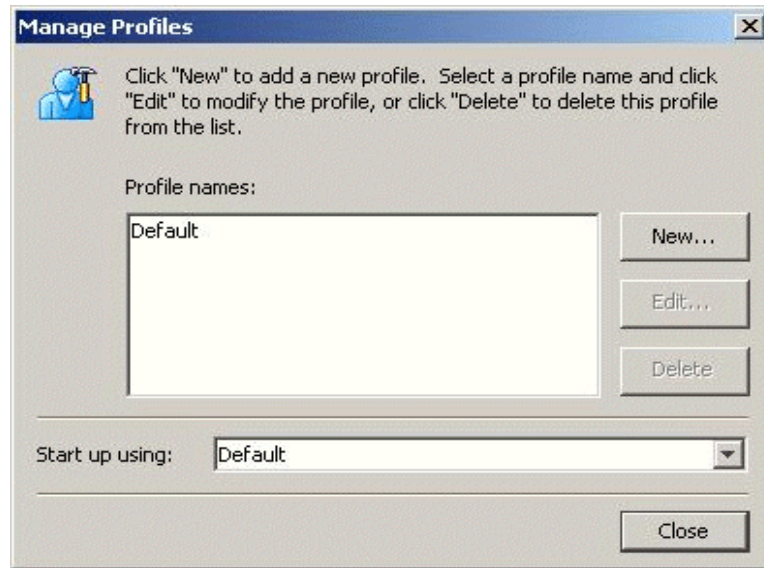
Managing User Profiles

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](#))

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 tunneling 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 and/or B (depending which one to manage)

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

The table, “[VEA Exceptions to Microsoft Keyboard Conventions](#),” summarizes the keyboard differences between the VERITAS implementation of mnemonics and accelerators, and the Microsoft keyboard convention:

VEA Exceptions to Microsoft Keyboard Conventions

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



VEA Additions to Microsoft Keyboard Conventions

The table, “[VEA Additions to Microsoft Keyboard Conventions](#),” summarizes the keyboard additions to the Microsoft keyboard conventions in the VERITAS implementation of mnemonics and accelerators:

VEA Additions to Microsoft Keyboard Conventions

Convention	Mnemonic	Accelerator
A 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.
A dd category	A	None
A dd	D	Alt D
C onnect	C	None
C ontents	C	None
Delete Now	None	None
D e lete Temporary files on Exit	E	Alt E
D isconnect	D	None
N umber of items in history	N	Alt N
P assword	P	Alt P
P revious	P	Alt P
Over w rite the log file	W	Alt W
Overwrite the log file (s) a fter	A	Alt A
O verwrite the log file (s) older than	O	Alt O
R emove	E	Alt E
Re s can	S	None
R eset	R	Alt R
S et to Defaults	S	AltS
R emember Password	R	Alt R
U sername	U	Alt U



VEA Help Additions to Microsoft Keyboard Conventions

The table, “[VEA/Applications Help Additions to Microsoft Keyboard Conventions](#),” summarizes the keyboard additions to the Microsoft keyboard conventions in the VERITAS implementation of mnemonics and accelerators:

VEA/Applications Help Additions to Microsoft Keyboard Conventions

Convention	Mnemonic	Accelerator
F ind in Topic...	F	Ctrl + F
Find N ext	N	F3
Find P revious	P	None
H ide Navigation Tabs	H	None
I ndex	I	None
P rint	P	None
S earch	S	None
Synchron I ze	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 The **OK** button carries 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.

The table, “[Tabbed Pages](#),” summarizes the actions for the keys in tabbed pages:

Tabbed Pages

Keys:	Action:
CTRL+PAGE DOWN OR CTRL+TAB	Switches to the next tab and displays the page.
CTRL+PAGE UP	Switches to the previous tab and displays the page.
DOWN ARROW or UP ARROW	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.

The table, “[Combo Boxes and Drop-Down Combo Boxes](#),” summarizes the actions for keys in combo boxes:

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 SHIFT to select additional items and add CTRL 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 SHIFT to select additional items and add CTRL 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

- ◆ to grow a storage pool to accommodate additional storage
- ◆ to use templates not currently associated with it.

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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