

HP OpenView Windows User's Guide

**HP 9000 Series and
Sun SPARCstation**



**Manual Part Number: J2311-90002
Printed in U.S.A., December 1993**

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Hewlett-Packard Co.
3404 E. Harmony Rd.
Fort Collins, CO 80525 U.S.A..

Printing History

First Edition

December 1993

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Introduction

This chapter discusses the following:

- The purpose of this guide and the audience for this guide.
- The organization of this guide.
- Conventions of the HP OpenView Windows graphical user interface.
- Provides a list of additional references for HP OpenView Windows.

Purpose

This User's Guide contains an introduction and brief overview of HP OpenView Windows. It discusses the key concepts used in HP OpenView Windows.

Audience

This guide is addressed to end users who want to learn how to use the HP OpenView Windows Graphical User Interface. This guide is also provided to application developers who may want to include the concepts in this guide and use them for end users of their integrated applications.

Manual Organization

The HP OpenView Windows User's Guide contains the following chapters:

Chapter	Description
Introduction	Introduces conventions for the user interface, using the mouse, dialog boxes and buttons.
Overview and Concepts	Discusses the graphical map, and the how you use HP OpenView Windows (the object-action model).
Getting Started	Discusses how to start and stop HP OpenView Windows, discusses the parts of the submap window, and introduces the HP OpenView Windows Online Help system.
Objects and Symbols	Discusses objects and symbols, and the main components of these concepts.
Maps and Submaps	Discusses the usefulness of multiple maps, how map applications work with a map to manage objects, and map access control. This chapter also discusses how submaps display different views of a map, introduces the hierarchical relationship of submaps, and discusses how to navigate from submap to submap. This chapter also introduces map snapshots.
Menu Reference	Discusses how the HP OpenView Windows menu bar is organized and briefly describes the functionality of all menu items provided by OVW.

Additional References

- *HP OpenView Network Node Manager User's Guide*
- *HP SNMP Management Platform Administrator's Reference*
- *HP OpenView Windows Application Design and Style Guide*
- *HP OpenView Windows Programmer's Guide*

Overview and Concepts

Introduction

This chapter discusses the main concepts you need to understand to be able to use HP OpenView Windows (hereafter referred to as OVW) effectively. It introduces the HP OpenView Windows product and discusses how the various parts of the map work together. The four main concepts that OVW uses are shown below:

- Objects
- Symbols
- Submaps
- Maps

HP OpenView Windows

HP OpenView Windows is an advanced graphical user interface designed to integrate the presentation of network management and systems management applications. OVW provides a common user interface for developers and for end users. Users access network management functionality through pull-down menus and dialog boxes.

HP OpenView Windows combines management of both systems and networks in a multi-vendor, distributed computing environment. This approach has some distinct advantages:

- It enables end users to use third-party network-management applications that are specific to their needs.
- It integrates those diverse applications to provide a consolidated view of what is happening on the network.
- It is an open system. It can manage an OSI or TCP/IP network no matter whose systems are attached.

HP OpenView Windows creates and displays a graphical map that represents the actual topology of your network. The display of a graphical, or network, map is interactive. Status changes in the network are displayed through changing colors on the network map. OVW updates the status of your network in real-time, which displays the condition of systems and the network as they change.

For each map, OVW creates an environment of interactive windows called Submaps. A Submap is a schematic representation of all or part of the network map. Each submap is a different view of the same network map. The submaps allow you to vary your view of the network map from something as small as the software components on a single system to something as large as a worldwide network.

The map gives you overall control over a collection of submaps. It allows you to address issues for the entire collection of submaps such as:

- How status is recognized and treated.
- How applications manage objects on the map.
- How the submaps are hierarchically arranged.

The submap's schematic representation of the network is created from symbols that represent network segments and connections. Symbols can represent a variety of entities on the network such as: a PC-board, a computer, a printer, a group of computers or printers, a subnet, a connection between two computers, the interface or an entire network. You can choose how to organize the display of your network. You can include or exclude any entities you want, and you can group them to suit your needs.

Application Integration

OVW creates an operating environment for applications. Developers can create applications that manage systems or connections on your network and integrate their application with HP OpenView Windows. HP includes an application with OVW, called the Internet Protocol Map Application (IPMap).

Concepts Overview

Objects, maps, submaps, and symbols are closely related in Open View. A description of one concept often involves a discussion of one or more of the other concepts. This sections summarizes the relationship between these concepts.

Objects and Symbols

An object represents a particular entity or resource in a networked systems environment. An object consists of a set of attributes stored in the OVW object database.

A symbol is a graphical representation of an object. An object exists on a map by virtue of being represented by a symbol on a submap in a map. Multiple symbols can represent the same object. Multiple symbols for the same object can exist on the same submap, on multiple submaps of the same map, or on submaps of different maps.

Maps and Submaps

A map is a set of related objects, symbols, and submaps that provides a graphical and hierarchical presentation of your network and its systems. A map contains a subset of all the objects in the OVW database. You can create multiple maps, but only one map is open at a time for any given session of OVW. Different maps can be used for defining different management regions or for different presentations of the same management region. Different maps can be tailored to the needs of individual users. You do not view a map directly; instead, you always view the submaps that comprise the map. You can display multiple submaps at any given time. Submaps are typically organized hierarchically to show an increasing level of detail.

You can think of the relationship between maps and submaps much like an atlas. In an atlas, you may view a page of the entire world, or by turning a page, you may view a particular continent, a country, a state, a city, or even specific parts of a city. When viewing the entire world, your perspective is distant. If you turn to a city map, you get a much closer view. In OVW, when you view your network, you are actually viewing a part of your network. The view may be presented in a high-level submap, one that represents your entire network, spanning the world, or a more detailed view any portion of the network.

OVW Concepts

The following section discusses in more detail the fundamental concepts that HP OpenView Windows uses to display information about systems and devices on your network.

Objects

In HP OpenView Windows, an Object is an internal representation of a logical or physical entity or resource that exists somewhere on your network. The object is stored internally in the OVW database. The object represents the resource by modeling the characteristics of the resource.

In OVW, you can create objects, delete objects, or modify the characteristics of objects. An object might represent a physical piece of equipment on the network, the components of a node on the network, or parts of the network itself. Examples of objects include:

- A network
- A computer
- An interface
- All computers in a department
- All gateways on your network
- A software process on a computer.

In OVW, objects are not limited to computer resources. You can create objects that represent non-computer items such as places and geographical locations. Possible examples include:

- A building
- A city
- A state
- A region
- A country

An object can be anything for which a set of characteristics can be defined.

Object Attributes

An OVW object contains a set of attributes that specify the characteristics of the object. An object attribute is a single characteristic of an object. In OVW, an object is defined by its attributes. OVW and applications integrated with OVW manage objects by managing certain attributes of objects. The attributes that comprise an object are determined by OVW and the integrated applications that manage the object. Some object attributes are set by OVW. For example, OVW requires that each object have a selection name so OVW can identify the object. Some object attributes are set and monitored by specific applications. For example, the IP Map application (shipped with OVW) manages objects that support the Internet Protocol (IP). IP Map assigns an IP address attribute to each object that it manages. If another application is interested in managing this object, the application may add other attributes to the object. Such an object would then contain attributes assigned by OVW, IP Map, and the other application.

Objects and attribute information are stored in the OVW data base. A single OVW database stores information that multiple users and multiple maps may access. You cannot view objects directly through the OVW interface, but you can view the attributes of the object. For each object, you can display an Object Description dialog box, which lists the integrated applications that may be managing certain attributes of the object. For each application, you can view the attributes that the application manages. You can create objects, delete objects, or change the attributes of objects.

Attribute Values

An important distinction exists between an attribute and an attribute value. Object attributes are fields in which you or applications may store values. It is the values of the attributes that OVW and integrated applications use to monitor and manage objects. For example, as stated in the previous paragraph, OVW assigns each object an attribute called a selection name. The value of the selection name of any one object is the textual name of the object. As another example, IP Map assigns an IP address attribute to each object that it manages. The attribute value is the actual IP address. An object may be given new attributes, and it may have values of assigned attributes changed.

Symbol

In OVW, symbols are closely related to objects. A symbol is a graphical representation of an object that is displayed on a submap. OVW uses a symbol to represent the defined object that is stored in the OVW database. In OVW, when you create an object, you do so by placing a symbol on a submap of a map. An object may be represented by multiple symbols. This enables multiple users on different maps to view a symbol of the same object at the same time. In fact, even the same map or submap can display multiple symbols of the same object. While multiple symbols may represent the same object, any one symbol can represent only one object. A symbol never represents more than one object at a time.

The following figure shows how symbols and objects are related. This figure contains two submaps that contains different symbols. Object Y is represented by a single symbol in the root submap, while object X is represented by symbols in both the root submap and submap 2. Changes made to object X, such as a change in status, can be displayed in both symbols in the two submaps.

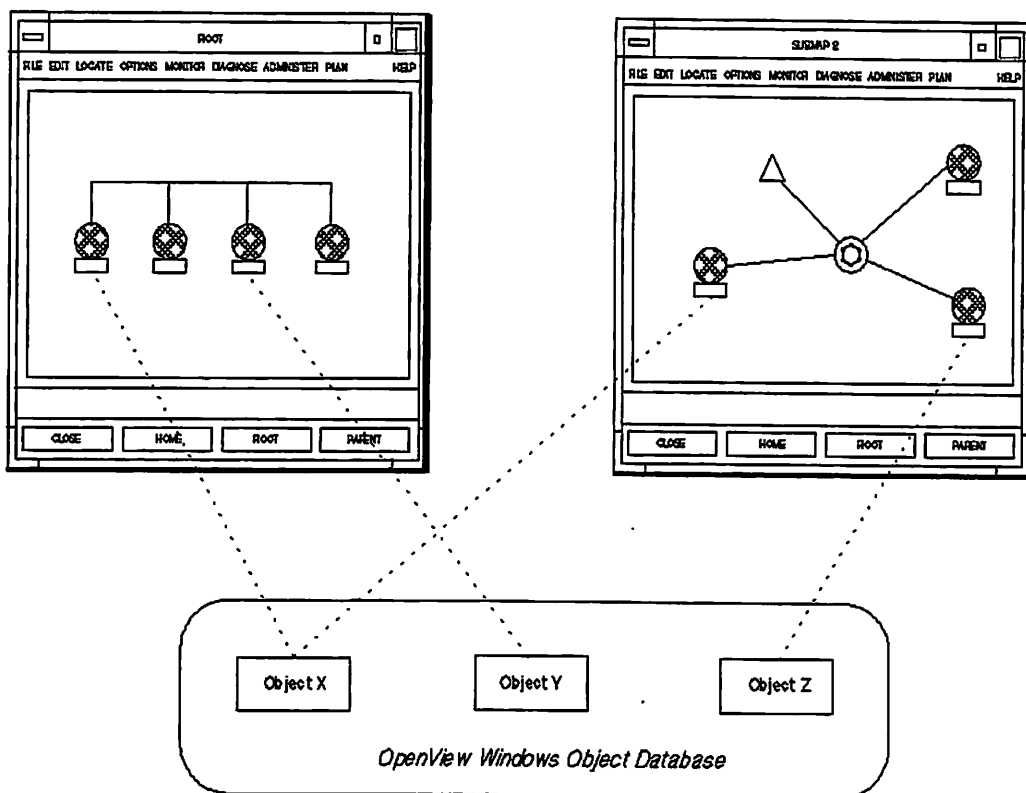


Figure 2-1. Object-Symbol Relationships

Although a symbol represents an object, a symbol has its own characteristics that are apart from the object. A few symbol characteristics are introduced in the following list:

- **Symbol Type.** The symbol type determines the visual appearance of the symbol. You can choose a symbol type to graphically represent the object. OVW provides a wide variety of symbol types from which you can choose. Also, applications may create additional symbols to display resources of a specific type.
- **Symbol Status.** Symbols can display status information through the use of color. When a resource that an object represents is functioning normally, the symbol conveys that status by a certain color. If the resource fails in some way, the symbol changes color to convey the existence of a problem.

- **Symbol Behavior.** A symbol can have either explodable or executable behavior. You can configure a symbol to open a submap that shows a more detailed view of the components of the object. Alternately, you can configure a symbol to perform an action on an object, or set of objects. This gives you quick access to tools that you may use frequently.



Map

A map is a set of related submaps that provides a graphical and hierarchical presentation of your network and its systems. You do not view a map directly; instead, you always view the submaps that comprise the map.

You can create multiple maps and customize how information about objects is displayed on each map. Multiple maps can display information about the same object because maps obtain their information from the same source, the OVW object database. In OVW, you can create new maps, delete maps, and choose the map to display from existing maps.

When you run OVW, a specified map is automatically open. The map that is open for display is called the open map. Network and system management applications update the contents of the open map. Maps other than the open map do not actively receive updated information until they are opened. When another map is opened, OVW and integrated applications update that map.



Although you can create multiple maps, in OVW, only one map can be opened on a single session at any given time. Different users can open the same map (at the same time) through different OVW sessions.

The first user that opens a map may have read-write access to the map. Read-write access enables the user to edit the map by creating, deleting, and modifying object attributes, and symbol, submap, and map characteristics. Subsequent users who open the same map are given read-only access to the map. With a read-only map, users can monitor the map for status and other changes, but they cannot edit the map.

Submap

A submap is a particular view of the network environment. It consists of related symbols that are displayed in a single window. Each submap displays a different perspective of your map. OVW creates a Root submap for each map. The root submap provides a standard, top-level submap for every map. Submaps are often organized in a hierarchical fashion for a given map, with the root submap at the top. You can also create independent submaps.



You can open and display multiple submaps of the open map at any given time, either by listing all the submaps of the open map and selecting the submaps to open, or by navigating from one submap to another. You can navigate among the submaps of the open map, by double-clicking the mouse on explodable symbols. Double-clicking on an explodable symbol opens a submap that displays a more detailed view.

In OVW, the hierarchical relationship of submaps creates a parent-child relationship between them. A submap may have several child submaps. The hierarchical relationship of submaps enables you to view your network from a distance, or to choose a more detailed view. For example, consider a submap could contains a single symbol that represents an entire organization. From this high-level view of the map, you can double-click on the symbol that opens a child submap. The child submap may display a view of your network map from the perspective of a particular location. From there, you can select a specific department, then a specific node. You can customize the organization of submaps in a map to suit your purposes, for example, to reflect the organization of your company.

The following figure shows how symbols and submaps can be used to graphically display network or system management information in a network map.

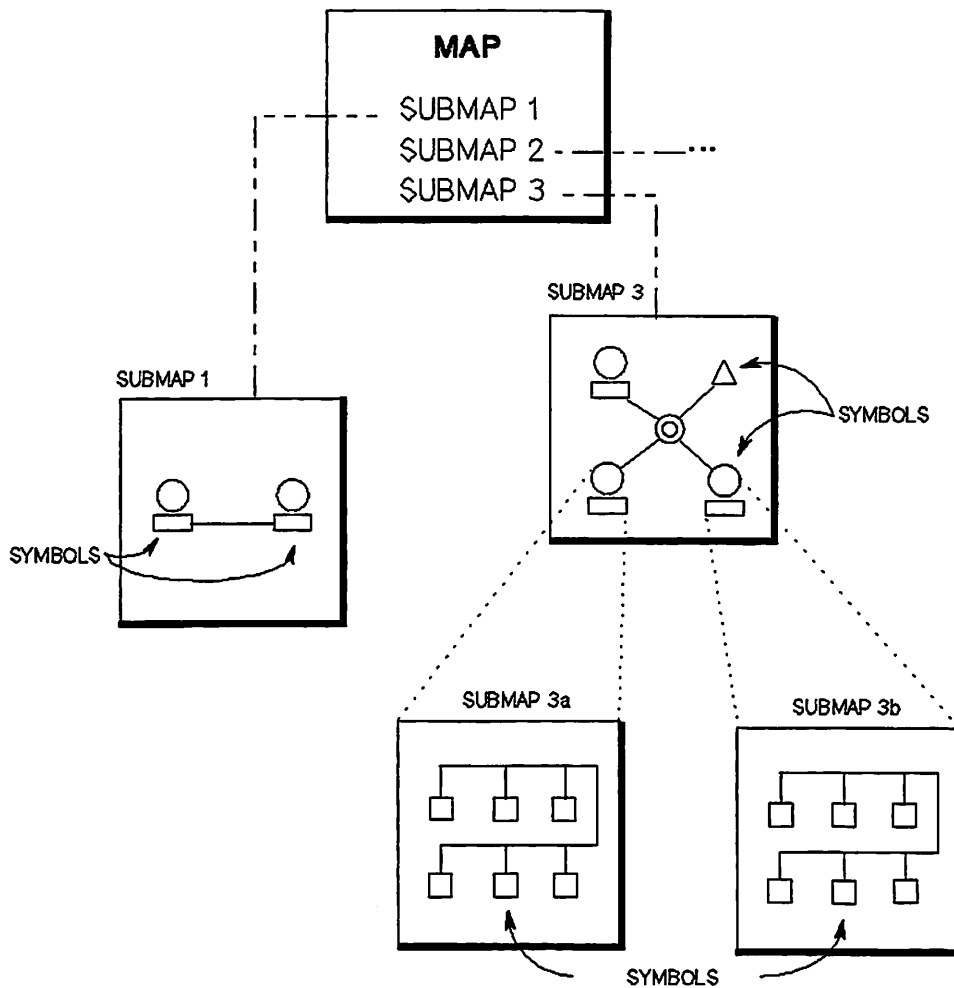


Figure 2-2. Symbols and Submaps in a Map

In summary, a symbol represents an object and appears on a submap. A submap is a particular view of a map. Together, symbols, submaps, and maps make up the presentation of OpenView.

User Interaction Model

OVW is based on an Object-Action Model. Most of the tasks that you perform in OVW involve selecting one or more objects and choosing an action to perform on them. You can choose actions available from OVW or from network and system management applications that are integrated with OVW.

Selection

An object is selected when a user clicks on any symbol of the object. You can select multiple objects. Selection is useful for determining which objects are used as input to an operation or action. For example, you may want to perform an operation that displays the CPU usage of workstations on the network. You can choose multiple workstation objects on which to perform this operation. Before you perform the operation, select the desired objects.

Highlighting

Objects are highlighted as a result of an operation by OVW or an application. Highlighting is a common way for applications to represent the output of some operation. For example, the locate operation identifies located objects by highlighting the symbols of the object. The object, not the symbols, are considered highlighted. Highlighting is indicated by displaying inverse video in the label of all the icon symbols of the highlighted object. Highlighted connection symbols are white.

Highlighting can be contrasted with selection in that highlighting is performed by OVW and by applications, not by the user. It shows the output of an operation. By contrast, selection is performed by a user as a means of providing input for an operation. For example, you may select ten printer objects for input into an operation that checks to see if a printer is on line. When you invoke the operation on those ten objects, the operation highlights the objects that adhere to the criteria, in this case, printers that are on line.

Getting Started

Introduction

This chapter discusses topics useful for your first few sessions with HP OpenView Windows (OVW). It includes:

- How to start OVW.
- A description of the submap window.
- How to use the OVW on-line help system.
- How to exit OVW.

Starting HP OpenView Windows

To start HP OpenView Windows, use the `ovw` command. HP OpenView Windows automatically starts the applications that are installed and registered. Starting OVW is a simple, one-step procedure.

Purpose of this Task

Starts the HP OpenView Windows graphical user interface.

Prerequisites for this Task

- The network management processes that work with OVW must be running. If the network management processes are not running, you can start them by executing the `/usr/ov/bin/ovstart` command. These processes run in background mode. You can check the status of these processes by typing `ovstatus`.
- The workstation must be running X Window, or HP VUE (which runs on X Window) to run OpenView Windows. You can start X Window by typing `x11start`.
- The `/usr/ov/bin` directory must be in your PATH. If not, you must type `/usr/ov/bin/ovw` to start HP OpenView Windows.

Procedure

1. To run OpenView Windows, type `ovw` and press [Return].

The first time you run OVW, a default map is created and opened. When OVW is running, one map is always open. After you run OVW, you can create additional maps and specify any of them as the map that OVW opens during startup in the OVW Graphical User Interface. When a map is opened, OVW displays a submap window of the map. You never need to close a map (in fact, no Close Map operation is displayed) because OVW closes a map automatically when you open another map or exit OVW.

The `ovw` Command

Most of the time, typing `ovw` is all you need to do to start a session of HP OpenView Windows. This section discusses details of the `ovw` command that you may use if desired. If you are new to OVW, you may skip this section for now.

When you run HP OpenView Windows on your workstation (also referred to as your network management station), you start an OVW session. The OVW session continues to run until you exit HP OpenView Windows or shutdown your workstation. You can start a new OVW session by running OVW again. You can vary how OVW starts up a session. This section discusses the `ovw` command and gives you examples of how to use it.

Options

The `ovw` command contains the following options:

```
ovw [-ro | -rw] [-map map_name]
```

Option	Meaning
<code>-ro</code>	Open all maps as read-only.
<code>-rw</code>	Open all maps as read-write if possible. This is the default. It is necessary only if the X-Resources specify read-only as a default behavior.
<code>-map map_name</code>	Open map <code>map_name</code> . Create the map, <code>map_name</code> , if it does not exist.

Examples

The table provides examples that show you various ways you can use the `ovw` command to start HP OpenView Windows.

Command Entered	Effects
<code>ovw</code>	Runs OVW and opens the map assigned as the user default map.
<code>ovw -map Admin Map 1</code>	Runs OVW and opens the map, <code>Admin Map 1</code> . <code>Admin Map 1</code> does not need to be the user default map.
<code>ovw -ro</code>	Runs HP OpenView Windows and opens the map assigned as the user default map. The user default map, and all maps subsequently opened during this session, are opened with read-only access.
<code>ovw -ro -map Europe2</code>	Runs HP OpenView Windows and opens the map called <code>Europe2</code> . All maps during this session of OVW are opened with read-only access.
<code>ovw -rw</code>	Runs HP OpenView Windows and opens the map assigned as the user default map. Maps can be opened with read-write access if permissions allow. The <code>-rw</code> option is the default and is necessary only if X-Resources specify read-only as the default behavior.

The Submap Window

Each time a map is opened, OVW displays a single submap. You can open additional submap windows to view multiple submaps at the same time. Each submap is displayed in its own submap window. A submap window consists of the following physical parts.

- The menu bar
- The viewing area
- The status line
- The button box

The following figure displays the Root submap of a network map. In this figure, the Root submap contains a single symbol that represents an IP Internet.

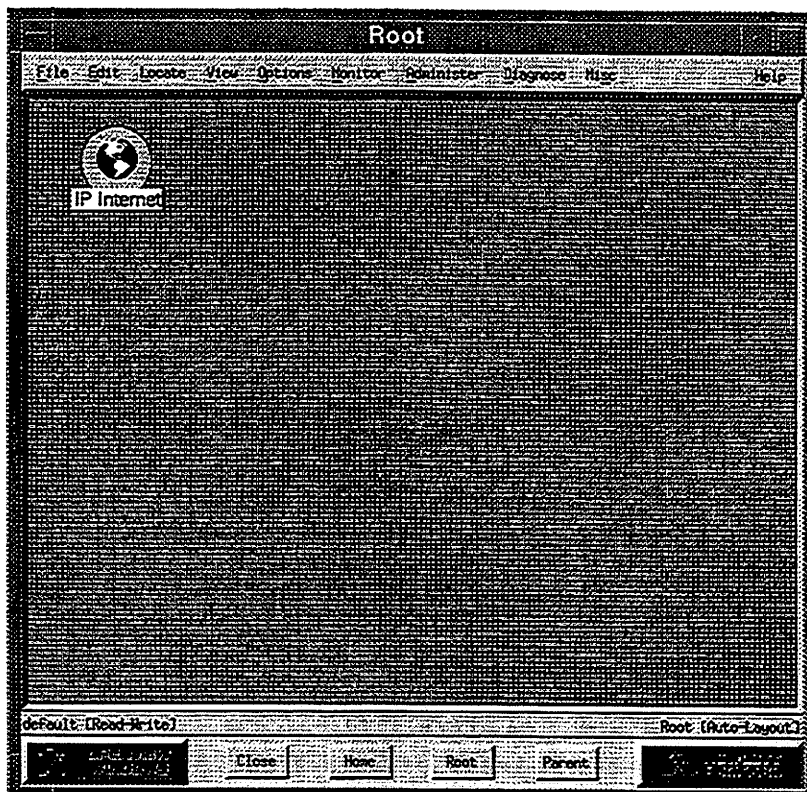


Figure 3-1. The Root Submap

If an IP Internet, or any other symbol, appears on the submap, you can take a closer look at your network map.

Using a mouse, double-click on the IP Internet symbol. Another submap may be displayed. The following graphic shows you its child submap. You can also open a child submap from the symbol popup menu by pressing button 3 of the mouse (or button 1 and 2 simultaneously of a 2 button mouse) on the IP Internet symbol and selecting the **Open Symbol** menu item. The symbol popup menu is discussed in more detail in the Objects and Symbols chapter in this guide.

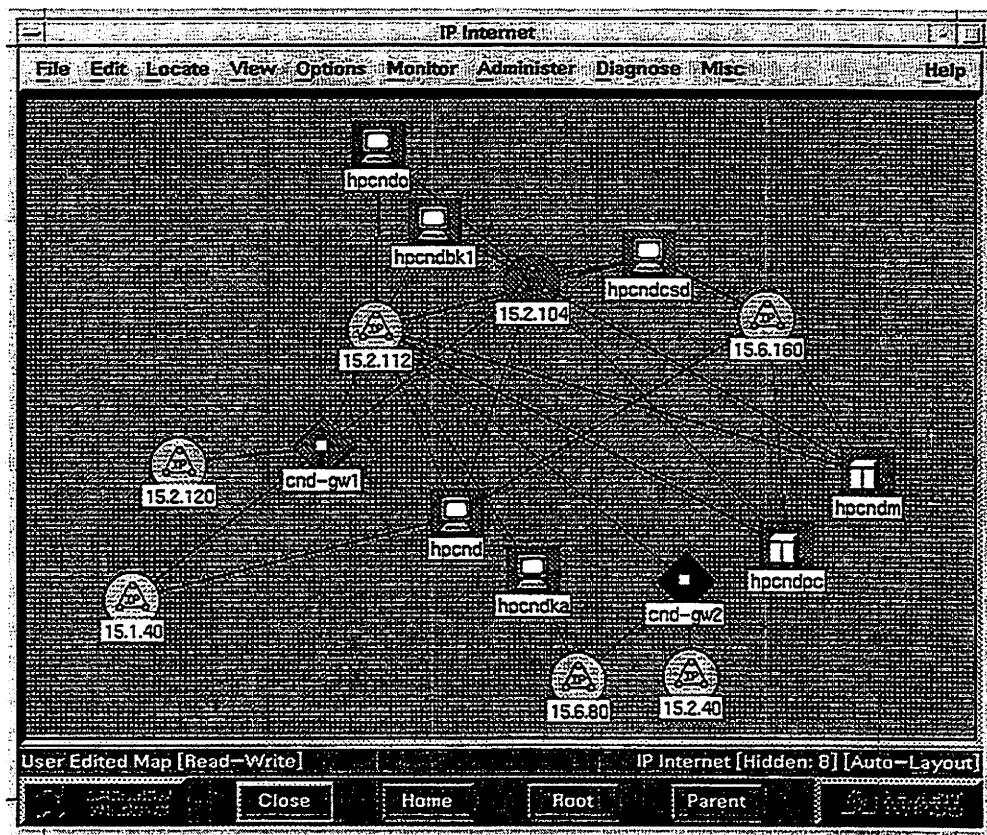


Figure 3-2. A Submap Window

You can create submaps that display geographic regions of the world in which you have resources that you want to manage.

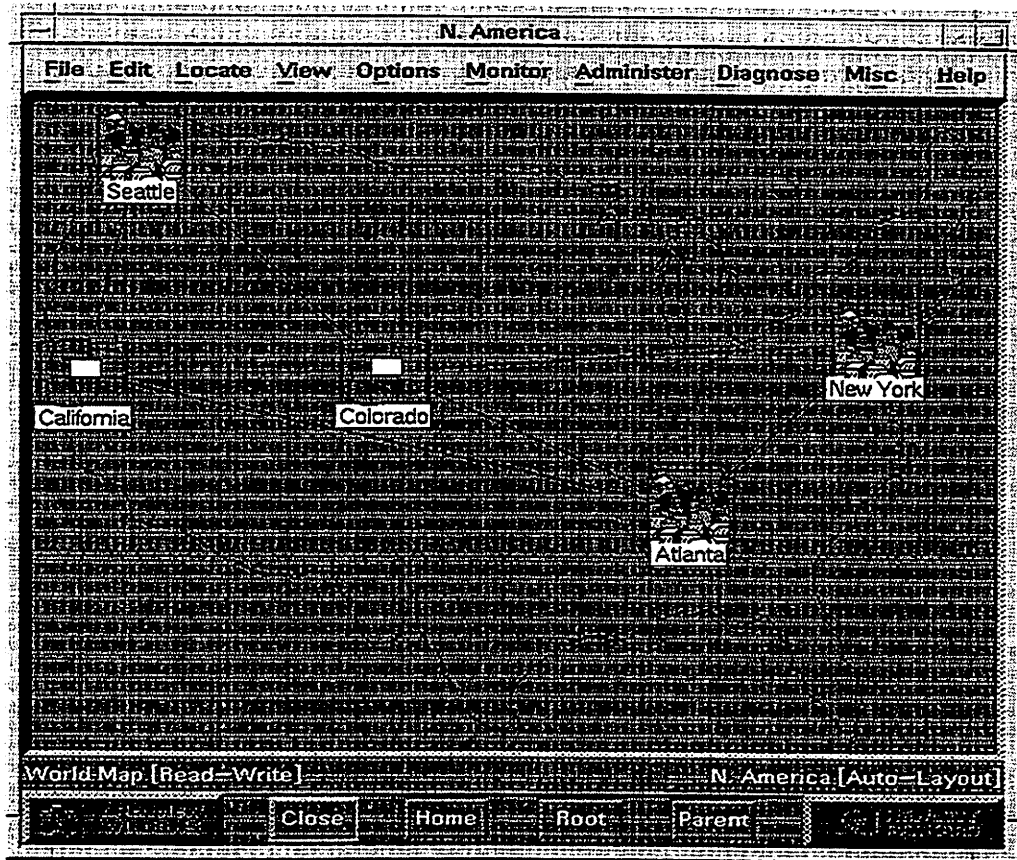


Figure 3-3. U.S.A. Submap

Double-clicking on the symbol labeled, **california**, may open a submap that displays resources in the state of California.

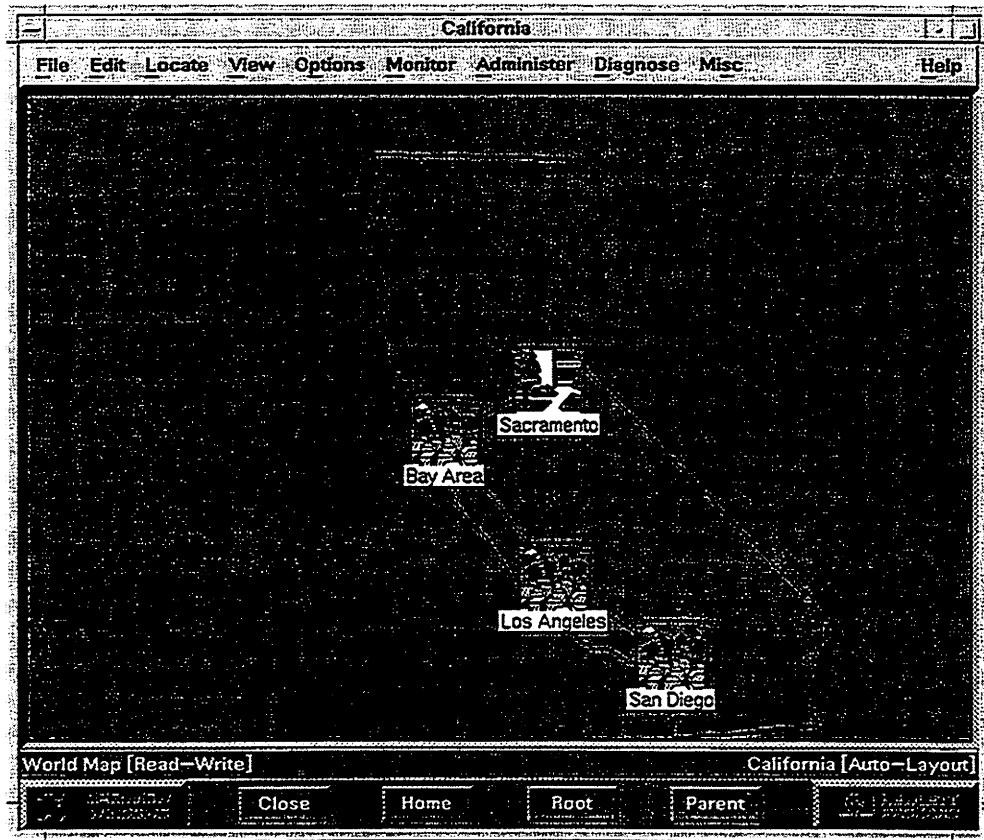


Figure 3-4. California Submap

This manual will discuss the contents and behavior of maps, submaps, symbols, and objects in later chapters. The following sections discuss the physical parts of a submap window.

The Menu Bar

The menu bar appears near the top of the submap window, and it contains OVW menu items that allow you to access and control the operation of your network management station. Items in the menu bar are organized according to the type of functionality provided. Because applications can register new menu items on the menu bar, the specific items on your menu bar may vary.

Explore the menu bar on the submap window. From the menu bar, pull down a menu. A pull-down menu contains menu items of similar functionality. For an explanation of menu items in the pull-down menus and the cascade menus, refer to Appendix A, Menu Reference. Notice the letters of menu items that are underlined. These are called mnemonics. You can use mnemonics to perform OVW tasks from the keyboard. Pull down the File menu with the mouse. List the available maps on your OVW system by pressing the [O] on your keyboard. This opens the **Available Maps** dialog box.

In addition to mnemonics, OVW displays special characters, which enable you to perform tasks from the keyboard. These characters appear on the menu bar, and on pull-down menus. The following table lists the types of symbols that OVW displays and explains the functionality of these symbols.

Symbol on Menu Item	Functionality
Menu item followed by an ellipsis: ...	Selecting this menu item brings up a dialog box.
Menu item followed by right arrow: ->	Selecting this menu item brings up cascade of more specific menu items.
A mnemonic. (An underlined character on the menu bar or a pull-down menu.)	Pressing this key when the menu is displayed initiates the selection for items on the menu bar or pull-down menus. A pull-down menu must be selected to activate a mnemonic on the menu bar.
An accelerator.	A key or sequence of keys to the right of the menu item that provides a shortcut for accessing a function.

The following table provides a brief description of the default items on the menu bar.

Menu Item	Description
File	Items under the File menu are generally associated with the manipulation of files (maps are stored as files). For example, in this menu you can open a map, list available maps, copy a map (using Save Map As...), delete a Map, describe a map, perform actions related to the snapshots of a map, and exit OpenView Windows.
Edit	Items under the Edit menu enable you to edit symbols, objects, and submaps in the open map. Editing includes tasks such as add, delete, copy, and cut and paste.
Locate	Items under the Locate menu provide tools for locating objects and submaps within the open map. Also, you can display a list of all selected objects.
View	Items under the View menu enable you to change the amount and/or appearance of the data that is displayed in the submap window or in the open map.
Options	Items under the Options menu are associated with the configuration and customization of your network map. For example, you can specify which objects to manage or unmanage.
Monitor	Items under the Monitor menu allow access to applications that present information relevant to the selected objects. The information can consist of items such as node name and description, status, or amount of usage.
Diagnose	Items under the Diagnose menu enable you to test system connectivity.
Misc	Items under the Misc menu consist of a variety of functionality that is not directly associated with the other menu categories.
Help	Items under the Help menu contain various methods for you to access detailed help information on HP OpenView Windows and general information about applications that are integrated with OVW.

The Viewing Area

The area where OVW displays the submap. The submap displays symbols and graphics that convey information about systems, connections, and other parts of your network.

The Status Bar

The Status Bar is under the viewing area. The status bar displays information about the network map and certain status conditions from OVW and integrated applications. Observe the status bar in the submap window, either while running OVW or by looking at the figures of submap windows on one of the previous pages. Note the name of the map on the left. Also note the access with which the map is open, displayed in brackets []. To the right edge, the status bar displays the name of the submap.

The following sections discuss some of the status conditions that are displayed on the status bar. Messages on the status bar may indicate the status of OVW or of integrated applications.

OVW Status

OVW displays the following kinds of information on the status bar:

- The name of the open map.
- The access that is allowed on the open map, read-only or read-write.
- The name of the submap.
- Whether an OVW feature called automatic layout is enabled for the submap. The [Auto-Layout] message pertains to the individual submap, not the entire map. OVW displays [Auto-Layout] when automatic layout is enabled for the submap.

Application Status

OVW displays status conditions that pertain to integrated applications if the application informs OVW about its status. For example, IP Map is an integrated application that HP ships with OVW. The following section discusses a status message that indicates a status condition of IP Map.

IP Map Status.

When a map is opened, IP Map starts its synchronization phase, if IP Map is enabled for that map. While IP Map is synchronizing, OVW displays [Synchronizing] on the status bar of all displayed submaps. During this phase, IP Map searches the OpenView Topology Manager Database (ovtopmd), and looks for changes since the map was last opened. If new objects are discovered, IP Map brings the map up to date by drawing new symbols.

While IP Map is synchronizing, the following functionality is not available:

- OVW restricts users from adding or deleting symbols, objects, or submaps
- IP Map will not appear in the **Configurable Applications** list in the **Add Object** or **Object Description** dialog box until it has completed synchronization.
- You can perform the manage object and unmanage object operations, but they will not take effect until synchronization is complete.

When the synchronization phase is over, IP Map returns to full configured functionality.

The Button Box

OVW displays a button box directly below the status bar on each submap window. The button box contains several buttons that enable you to close the displayed submap, or display a different submap in the open map. The buttons are briefly described below:

Button	Action
Close	Close this submap.
Home	Display the home submap.
Root	Display the root submap.
Parent	Display the primary parent of this submap.

The submaps listed in this table are discussed in detail in later chapters.

Mouse Conventions

The mouse enables you to quickly perform a variety of tasks in OVW. Any mouse, 3-button, 2-button, or 1-button can be used. There are three general operations that you can perform with a mouse.

- **Selection:** used to select items on a map or menu.
- **Dragging:** used to move symbols within submaps
- **Custom Purposes:** used to activate the symbol pop-up menu

The specific buttons you click depend on the number of buttons you have with your mouse.

Mouse Type	Meaning
3-button	Button 1 is used for selection. Button 2 is used for dragging. Button 3 is used for custom purposes.
2-button	Button 1 is used for selection. Button 2 is used for dragging. Buttons 1 & 2 are used for custom purposes.

The mouse helps you perform tasks in submap windows.

- **Selecting one or more objects.** Clicking button 1 on a symbol selects an object. . For detailed information on how to select and deselect objects in OVW, refer to the Objects and Symbols chapter in this guide.
- **Moving a symbol in a window.** To move a symbol in a window, press button 2 on the symbol and drag it to a new location. If using a two-button mouse, click buttons 1 and 2 together on the symbol and drag it to a new location.
- **Opening a child submap.** To open a child submap from a symbol, double-click button 1 on an explodable symbol. Explodable symbols are discussed in detail in the Objects and Symbols chapter of this guide.

Dialog Boxes

A dialog box permits you to obtain information or change operational parameters. You can view and modify this information with the fields, lists, and buttons that appear in a dialog box. You can modify data in a dialog box with the mouse. If the use of a particular item is not permitted, that control is visually obscured. That is, the item is greyed. The following figure shows you the **Map Description** dialog box, which is displayed when you select **Edit: Describe/Modify Map...** from the OVW menu bar.

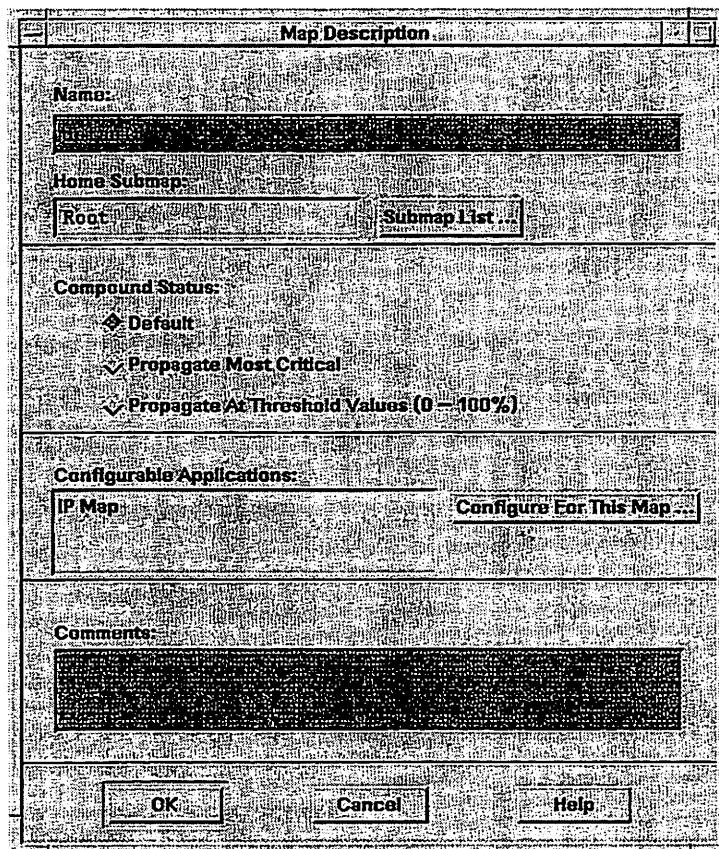


Figure 3-5. Map Description Dialog Box

The following sections discuss the lists that appear in many dialog boxes and the types of buttons that may appear.

Lists

Many dialog boxes display lists that contain items you can select. Push buttons often appears to the right of the list. These push buttons pertain to the list. In the previous figure, a list appears under the **configurable Applications** label. In this example, you can select an item in the list by clicking on the item with button 1 of the mouse. This action highlights the item. Then, you can click on a button to the right of the list to perform an operation on that list item. Scroll Bars are used in lists if more items exist than can be displayed at one time. Use the scroll bars to scroll through all items in the list.

Buttons

HP OpenView Windows uses several types of buttons that may appear in dialog boxes, in submap windows, or in application tools from applications. All button types are defined by OSF/Motif.

- **Push Buttons** (rectangular shaped) appear in dialog boxes for all executable operations associated with the dialog box.
- **Radio Buttons** (diamond shaped) are used to select one of several options. Radio buttons usually display state information associated with a small number of mutually exclusive states (two to four). Radio Buttons often occur in pairs, such as yes/no or on/off options.
- **Check Buttons** (square shaped) are used to select several options simultaneously. Check boxes can be checked in any combination, including all boxes at the same time.
- **Option Buttons**, when clicked on, produce an option menu from which you can choose a single item. Option Buttons are used when a list of items is mutually exclusive.

Using Online Help

The HP OpenView Windows Online Help System enables you to display information on the features of OpenView Windows, how to perform tasks with OpenView Windows, and conceptual information about how OpenView Windows works. Help entries are available from three general locations:

- OVW Help menu
- Help button on dialog boxes
- Help menu on the menu bar of some applications

OVW Help Menu

On Help

Describes the HP OpenView Windows Online help system, including the information available from the help menu, from the Help button on dialog boxes, and from the menu bar of integrated applications. This menu item also discusses how to use the online help system.

Display Legend

Enables you to view a legend of the available symbols for OpenView Windows. As more symbol types are added to your HP OpenView Windows system, the Display Legend displays the new symbol types when you restart OVW. The Display Legend also shows you how the following special states are displayed:

- Status colors.
- Symbols on the user plane and application plane.
- Highlighted and selected symbols.
- Executable symbols.

Connection symbols also display status, and indicate highlighted and selected objects. For information about how connection symbols display status, highlighting, and selection, see the "Connection Symbol" section in the "Objects and Symbols" chapter of this guide.

Glossary

Enables you to get an index of terms associated with the OVW graphical user interface. Clicking on a term causes OVW to display a function of it.

Index

Displays a cascade menu of menu items that provide an index to online help entries about OVW and integrated applications. The menu items display an index of the following topics:

- Applications that are integrated with OVW.
- Tasks you can perform with OVW and integrated applications.
- Functionality of OVW and integrated applications.

Applications Index

Provides you with a list of applications available on your OVW system. Click on an application name to view information about that application.

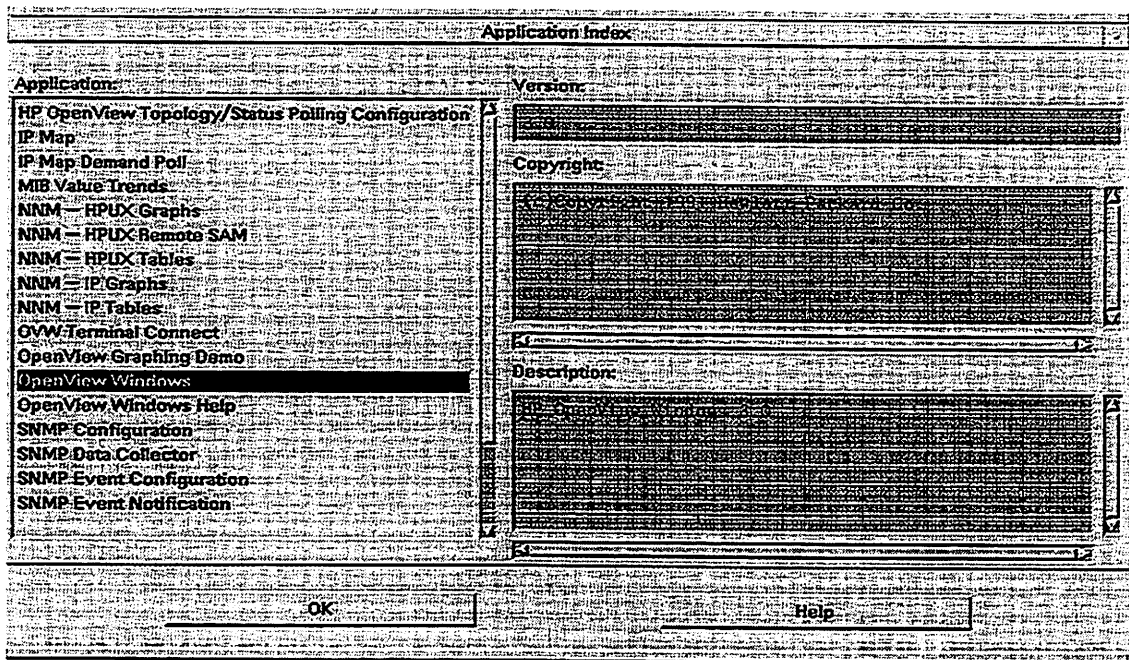


Figure 3-6. Index of Registered Applications

Tasks Index

Enables you to get online help entries which show you how to perform a variety of tasks using HP OpenView Windows and integrated applications. You access the Task Index through the help menu on the HP OpenView Windows menu bar, by selecting **Help: Index -> Tasks**. Entries in the task index include conceptual information that you should understand to perform desired tasks. Select a task entry and click **Open Topic** to display the help entry.

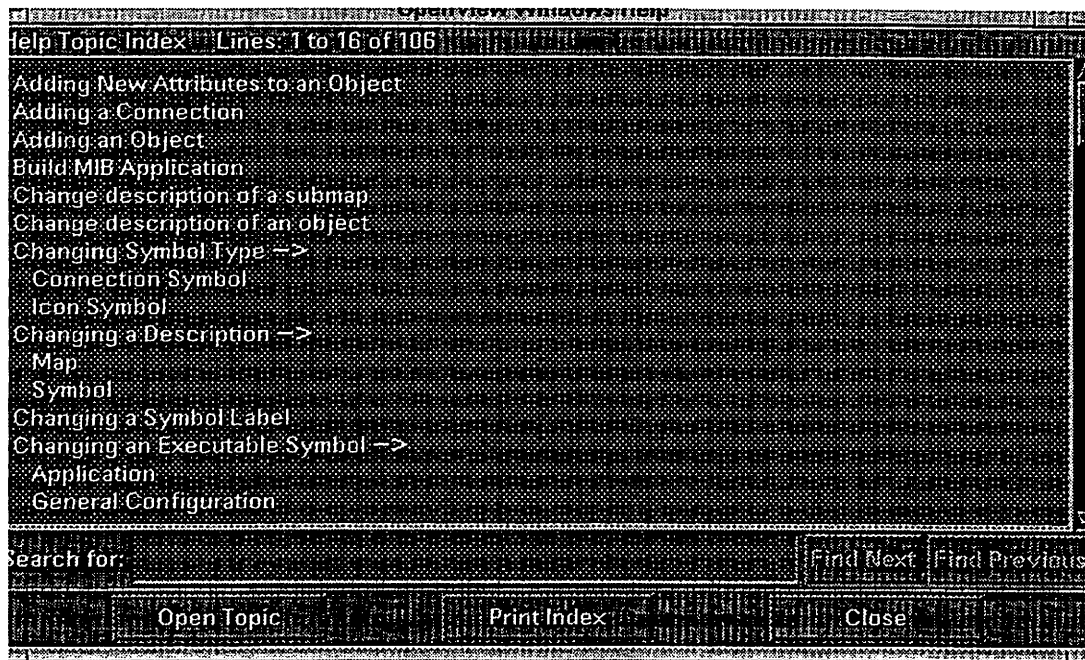


Figure 3-7. Index of Help for Tasks

Function Index

Enables you to view an alphabetical list of help entries associated with the capabilities of the OVW graphical user interface. Each help entry in this index discusses detailed functionality of OVW, shows you what it does, and how it works.

Entries in the function index include help on each menu item from the OVW menu bar, as well as major dialog boxes and capabilities. The function index is organized according to the structure of OpenView Windows, and it contains some information also found in the Tasks index.

You access the function index through the help menu on the HP OpenView Windows menu bar, by selecting **Help: Index -> Functions**. Entries in the Function Index include a description of all functionality available from the OVW menu bar and the symbol popup menu. Select a function entry and click **Open Topic** to display the help entry.

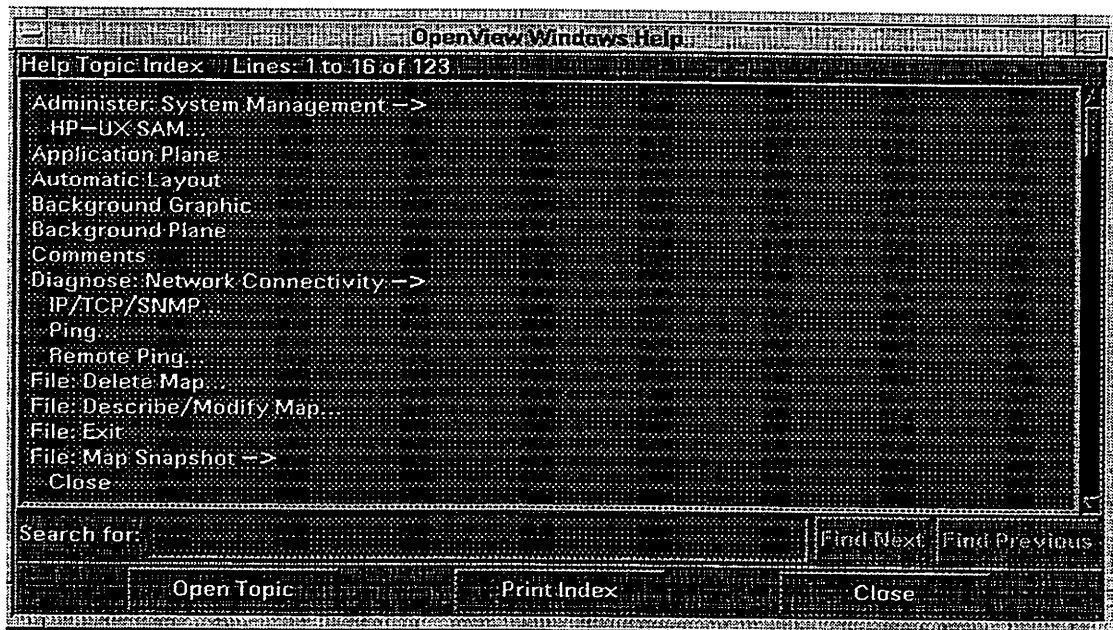


Figure 3-8. Index of Help for Functions

Dialog Box Help

Conveys the purpose of the dialog box, and the tasks you can perform in the dialog box. Displays help on all fields, buttons, and list boxes of the dialog box.

Application Help Menu

Some applications integrate online help into the OVW online help menu. They may also have a menu bar with their own help menu. IP Map does not have a separate menu bar. All help entries that discuss tasks and functionality of IP Map are integrated with the OVW index.

Exiting HP OpenView Windows

To exit OpenView Windows, select **File: Exit** from the menu bar of any of submap window. The open map is saved, all the submap windows and dialog boxes of the map are closed, and HP OpenView Windows exits.

Changing Colors with X Window

The colors of submap windows, submaps, and symbols in HP OpenView Windows are determined by X Window. You can change the colors that HP OpenView Windows displays by changing your X Window's environment.

Procedure

To change the colors that are used by HP OpenView Windows:

1. Make sure X Window is running. You can start X Window by typing:

```
x11start
```

2. You can modify the colors of your X Window environment by editing the `.Xdefaults` file. This file is usually stored in your home directory.

Note

Changing the `.Xdefaults` file may affect other applications that use X Window.

Changing Colors with HP VUE

If you are running OVW from the HP Visual User Environment (HP VUE), the colors of submap windows, submaps, and symbols in HP OpenView Windows are determined by HP VUE. You can change the colors that HP OpenView Windows displays by changing your HP VUE environment. Refer to the HP Visual User Environment User's Guide for more information.

Objects and Symbols

Introduction

This chapter defines, discusses, and provides procedures for the following OVW concepts:

- Objects
- Symbols

Objects

An object represents a logical or physical entity or resource, or a group of such physical entities or resources that exist in a network environment. In OVW, an object usually represents any particular thing of interest for the purpose of doing network or systems management. An object can represent a physical item (such as a PC, a workstation, a gateway, a router, an interface card, an RS232 connection), or it can represent a logical item (such as a group of PCs, all 386 PCs, all nodes in a single department.) Examples of objects are listed below:

- An ARPA Network
- A LAN segment.
- A particular Ethernet cable.
- The second software interface on a workstation.
- The logical IP connection of a gateway to a network.
- The second disk drive on a workstation or PC.
- An RS-232 line.
- A software application on a computer.
- A running process on a computer.
- A specific soft-drink machine next to your department.

Object Attributes

Each object stored in the map database contains attributes that define the object. Objects can be created by end users or by applications integrated with OVW. When an object is created, attributes are assigned to the object. An object attribute is a characteristic of an object. The full description of an object is a combination of the object attributes assigned to the object by OVW, by applications, and by the end user.

OVW Attributes

OVW assigns certain attributes to each object. For example, OVW assigned a selection name attribute to each object when the object is created. OVW uses the selection name to identify each object in the database. Every object must have a selection name. Also, OVW assigns a Comments attribute to each object. The Comments attribute enables you to assign comments to any object.

Application-Specific Attributes

A network or system management application that is integrated with OVW can manage an object by assigning attributes to that object. Applications may create objects to manage or may assign additional attributes to an object that already exists. The application actually is managing certain attributes of the object. For example, IP Map is an application that is shipped with HP OpenView Windows. If you configure an object to be managed by IP Map, then IP Map assigns certain attributes to that object. For example, to manage a node object (a workstation), IP Map assigns the following attributes to the node object in addition to those assigned by OVW:

- Hostname
- IP Address
- IP Status
- Description
- Owner

Attribute Values

An attribute is a characteristic of an object to which values can be assigned. You can think of an attribute as a place holder in which a specific value is added. In an application dialog box that displays certain attributes of an object, the labeled fields represent the object's attributes, and the data in the fields are the object's attribute values. The attribute values provide information about the values and states of the object. Consider examples of the selection name and comments in the following sections:

Selection Name

OVW assigns each object an attribute called a selection name. The value of the selection name attribute for an object is the text name assigned to that attribute, perhaps the name `Router1`.

Comments

OVW assigns each object an attribute called Comments. You can add or change the data in the comments attribute by entering text in the object's **Object Description** dialog box, in the **Comments** field. If the **comments** field is empty, the Comments attribute is still assigned to the attribute. If a user adds text to the **comments** field, the text becomes the value (or data) of the Comments attribute.

IP Address

IP Map assigns an attribute called IP address to each object that it manages. The value of the object's IP address attribute is the actual address, perhaps the address `126.92.14.155`.

Object Description

The attributes of an object are displayed via the **Object Description** dialog box. This dialog box displays the selection name of the object and displays any comments that you, or another user, may have entered about this object.

The **Object Description** dialog box also acts as a platform for integrated applications to display the attributes of the object in which they have an interest. The **Object Attributes** list displays integrated applications that may be managing or monitoring certain attributes about the object. You can select an application and view/modify the object attributes managed by that application.

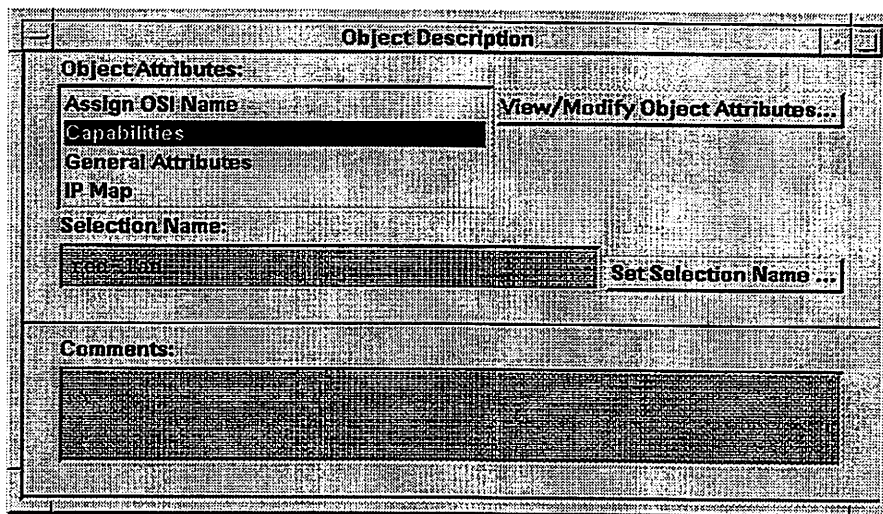


Figure 4-1. Object Description

To display the **Object Description** dialog box:

- for a specific object, display the symbol pop-up menu by clicking button 3 (or buttons 1 and 2 together on a 2-button mouse) on a symbol of the desired object. When the symbol pop-up menu appears, select the **Describe/Modify Object...** menu item.
- for one or more objects, select the object(s) of interest, and then select **Monitor: Description** -> **Selected Objects** from the menu bar. An **Object Description** dialog box appears for each selected object. Multiple dialog boxes may be displayed over each other. Move the top dialog box to view what is under it.

You can also view the list of applications that have an interest in the object from the Add Object dialog box. This enables you to assign attribute values to an object during creation. HP OpenView Windows is shipped with the following applications: capabilities, general attributes, and IP map. These applications are displayed in the Object Attributes list if the application has an interest in one or more attributes of the object. The following sections discuss each of these applications.

General Attributes

The **General Attributes** dialog box provides a place for applications and users to display attributes in one common location. The **General Attributes** dialog box may display attributes of an object from multiple applications. These fields may also be displayed in application specific dialog boxes. The specific fields that are displayed in this dialog box depend on the applications that register a field for this dialog box. To open this dialog box, display the **Object Description** dialog box for the desired object. Select the General Attributes entry in the Object Attributes list, and click the **view/Modify Object Attributes...** button. The **General Attributes** dialog box is displayed. OVW displays the following fields in this dialog box.

Table 4-1: General Attributes Dialog Box

Field	Meaning
Vendor Name	Name of the manufacturer of the resource on the network.
is SNMP Proxied	When isSNMPProxied is True, the object is proxied by another node. All SNMP requests will go to the proxy mode rather than directly to the object.
is SNMP Supported	When isSNMPSupported is True, the object supports SNMP.

You can set the values of these attributes from the dialog box. However, values set in this dialog box are not verified. Applications or users may add additional fields to this dialog box by setting a general flag for the field in the field registration file. The following figure displays the **General Attributes** dialog box.

Attributes for Object hpcndjad.cnd.hp.com

General Attributes

IsSNMPSupported
☒ True ☐ False

IsSNMPProxied
☒ True ☐ False

SNMPAgent
HP8000/HP-UX

Vendor
Hewlett-Packard

Messages:
Values for these attributes are not verified. If you want to save a modified value, press OK; otherwise press Cancel. Changes take effect when you OK the Object.

OK Verify Cancel Help

Figure 4-2. General Attributes

Capabilities

Capabilities are the object attributes that determine menu greying. The capabilities of the objects on the current selection list determine which menu items are enabled or disabled. All attributes displayed in the **capabilities** dialog box are read-only. The following figure displays the **capabilities** dialog box.

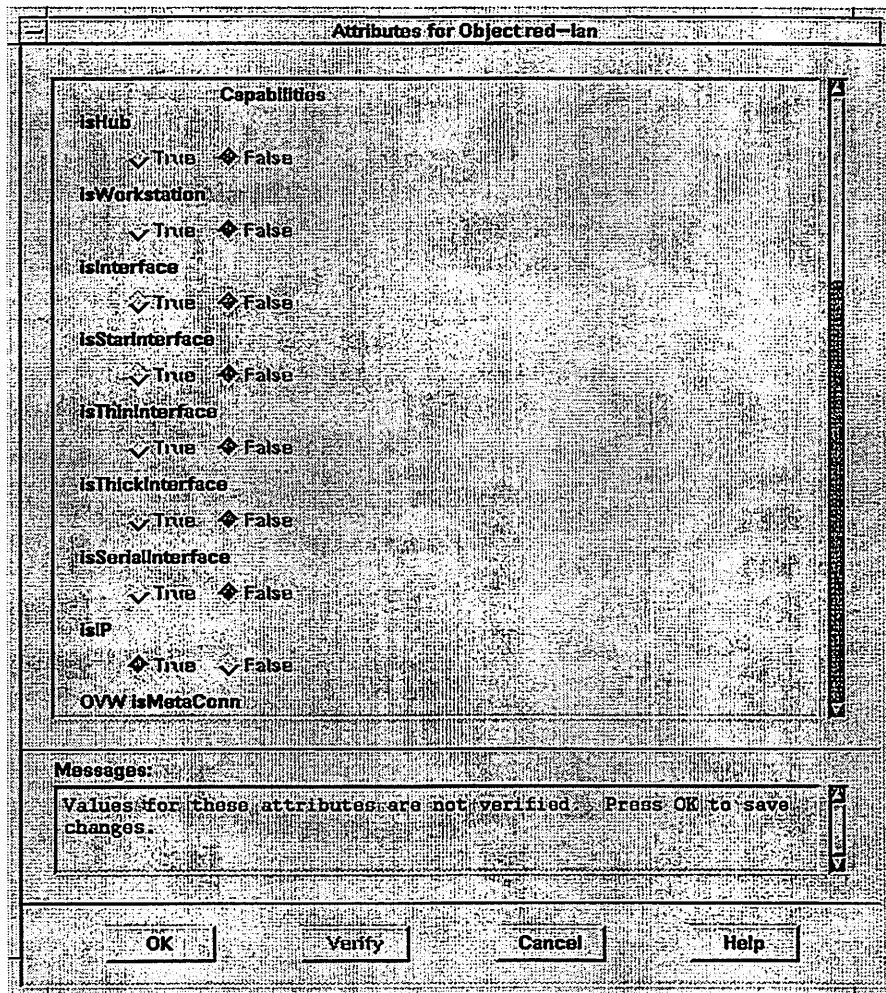


Figure 4-3. Capabilities

IP Map

IP Map is an application that is installed and registered with the HP OpenView Windows (OVW) platform. When you start HP OpenView Windows, IP Map is started automatically. IP Map discovers all IP addressable nodes on your network, and creates an object for each discovered node. It creates and displays symbols on your network map to represent those objects.

IP Map Object Descriptions

IP Map is listed in the **object Attributes** list in the **object Description** dialog box if the object contains attributes of interest to IP Map. That is, if IP Map is managing certain attributes of the object.

You can display the **Attributes** dialog box for such an object by selecting IP Map and clicking the **view/Modify Object Attributes...** button. The specific fields that are displayed in the **Attributes** dialog box depend on the attributes of the selected object.

IP Map Submaps

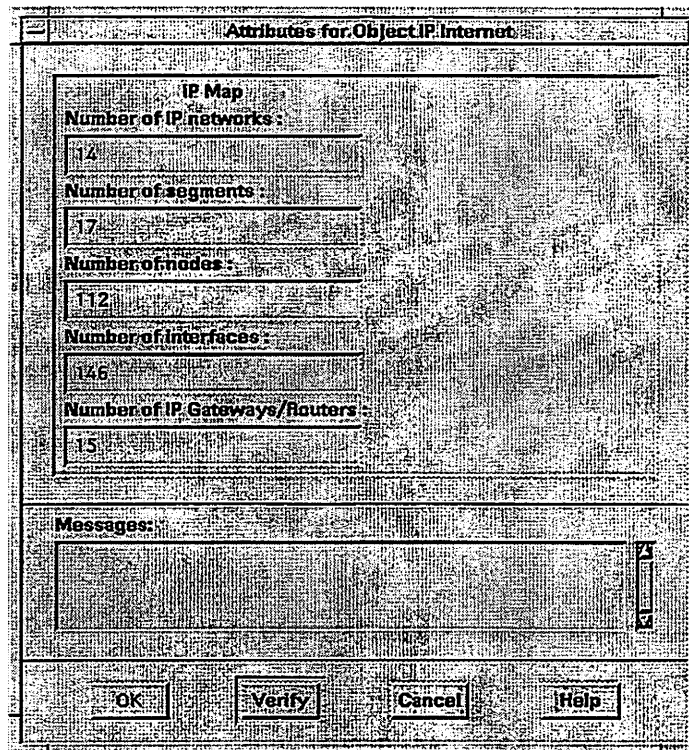
When a map is created, IP Map creates a hierarchy of submaps that displays your network in increasing detail. From the Internet symbol on the root submap, you can open and display the Internet submap. You can change and enhance the hierarchy of submaps. IP Map initially creates the following submap hierarchy:

- Internet Submap
- Network Submaps
- Segment Submaps
- Node Submaps

IP Map enables you to create Internet Partitioned submaps between the Internet submap and the Network submaps. The Internet Partitioned submaps enable you to expand and reorganize your network map.

Detailed information about IP Map, its functionality, and how to perform tasks with IP Map are located in the OVW online help system and the *HP OpenView Windows Network Node Manager User's Guide*.

The following figure displays the **Attributes** dialog box for the IP Internet object that IP displays on the **root** submap.



The image shows a dialog box titled "Attributes for Object IP Internet". It contains several input fields for configuration parameters. The "IP Map" section includes fields for "Number of IP networks" (14), "Number of segments" (17), "Number of nodes" (12), "Number of interfaces" (146), and "Number of IP Gateways/routers" (15). Below these is a "Messages:" section with a scrollable text area. At the bottom are buttons for "OK", "Verify", "Cancel", and "Help".

IP Map	
Number of IP networks:	14
Number of segments:	17
Number of nodes:	12
Number of interfaces:	146
Number of IP Gateways/routers:	15

Messages:

OK Verify Cancel Help

Figure 4-4. IP Internet Description

Operations on Objects

The following sections provide step-by-step procedures for some of the operation you may commonly perform on objects, such as:

- Adding an object
- Selecting one or more objects
- Locating objects

Selecting Objects

Selecting objects is a common way to group, manipulate, and perform actions on objects in OVW. Before you perform an operation in OVW, select the desired objects. You can select multiple objects from different submaps.

Purpose of this Task

Determine which objects to use as input to an operation or action.

Procedures

The mouse helps you select and deselect objects in submaps:

- **Selecting one or more objects**
 - To select one object, click button 1 on the a symbol of the object. This method deselects all other selected objects.
 - To select one object and retain all other selections, press [Ctrl] and click button 1 on a symbol of the object.
 - To select a range of objects, press button 1 in an empty area and drag the pointer to draw a box around the symbols of the objects you want selected. This method deselects all other selected objects that are outside the range.
 - To select a range of objects and retain all other selections, press [Ctrl] and drag the pointer to draw a box around the symbols of the objects you want selected.
- **Deselecting one or more objects**
 - To deselect one object, press [Ctrl] and click button 1 on a symbol of a selected object.
 - To deselect all objects, drag the pointer to draw an empty box.

- **Toggling selections on and off**

- To toggle the selection of one object on or off, press [Ctrl] and click button 1 on a symbol of the object. This method does not affect the objects outside the region.
- To toggle the selection of all objects in a specific region, press [Ctrl] and button 1 while dragging the pointer to draw a box around the symbols of the objects you want toggled. This method does not affect the objects outside the region.

Identifying Selected Objects

You can see which objects are selected in an open submap via the shading used by OVW. You can view a list of all selected objects by displaying the selection list.

Shading

All icon symbols of a selected object are surrounded by a shaded rectangle. All connection symbols of a selected object are surrounded by shading along the length of the connection symbol.

The Selection List

The selection list is a real-time list of selected objects. As you select and deselect objects, the selection list is updated. Objects are listed by their selection names. You can display the selection list from the OVW menu bar by selecting **Locate: Selected Objects List...** The selection list includes all selected objects, independent of whether any symbols of the object are displayed in open submaps.

When you are performing tasks on objects in OVW, it is useful to keep the selection list displayed so that you know what objects are selected at any given moment.

Adding an Object

Adding an object requires use of the **Add Object** palette and the **Add Object** dialog box. Adding an object can be summarized in two main steps:

- Select the symbol type from the **Add Object** palette to represent the object, and drag the symbol to the submap.
- Enter a selection name for the object in the **Add Object** dialog box, and click **OK**. Also, you can optionally enter data for symbol characteristics and object attributes in the **Add Object** dialog box.

Purpose of this Task

- Add an object to the database, or create a new symbol for an existing object.

Prerequisites for this Task

- The map must be open with read-write access.

Procedure

To select the symbol type you want to represent the object on a submap:

1. Select **Edit: Add Object...** The symbol palette appears, which contains symbol classes, subclasses, and instructions for use.
2. Select a class. The subclasses available for that class appear.
3. Press button 2 of the mouse on the symbol you want to add in the **Symbol Subclasses** area. While holding down button 2, drag the symbol to the submap, and release the mouse button, dropping the symbol onto the submap. The **Add Object** dialog box appears.
4. You may assign values to the following fields. They are optional.
 - a. Enter a label for the symbol. If you enter text in this field, you can leave the **Selection Name** field blank, and OVW assigns the text in the label field as the selection name when you click **OK**.
 - b. If desired, change the behavior of the symbol from explodable to executable. Detailed information on symbol behavior is discussed in the *Symbol* section, later in this chapter.
 - c. If the application of interest does not manage the object by default, you can configure the object so that certain attributes are managed by an application:
 - i. Select an application in the **Object Attributes** list, and click **Set Object Attributes...** The **Attributes** dialog box for the selected application appears. This dialog box enables you to set attribute values for the object.
 - ii. When you have assigned values to attributes, click the **Verify** button. The values are verified by the application.
 - iii. Click **OK** in the **Attributes** dialog box.
 - d. Enter comments about the object by entering text in the **Comments** field.

5. Enter a selection name for the object. OVW identifies objects by their selection name. If a selection name is not provided, OVW generates an error message. Each object must have a selection name. The length of a Selection Name is limited by the maximum number of characters allowed for filenames by the operating system, or by 256 characters, whichever is lower. There are three ways to set a Selection Name:
 - Enter text for the selection name in the `selection Name` field.
 - Click `Set Selection Name` to display the `Set Selection Name` dialog box. This box lists all of the names that have been set for the object. Select a selection name from any of the names already assigned to the object, or enter text for the selection name of the object.
 - If no text is provided, OVW uses the name entered in the `Label` field as the selection name of the object (provided you entered text for the symbol label).
6. Click `OK` in the `Add Object` dialog box. The object is added to the database, and the `Add Object` dialog box closes. The symbol on the submap represents the object.

The **add object** Palette enables you to choose from a variety of symbol classes and symbol subclasses. The following figure shows you the **add object** Palette. The **Network** class is selected, and the symbol subclasses of the network class are displayed. You can select any symbol subclass and drag it to the submap using button 2 of the mouse.

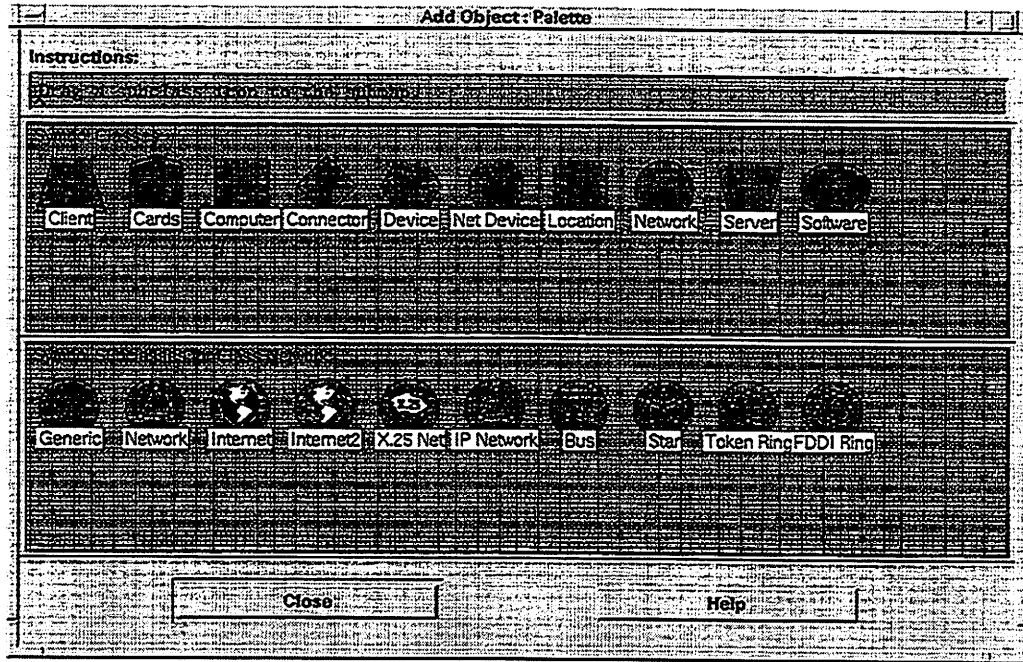


Figure 4-5. The Add Object Palette

The **add object** dialog box enables you to enter information about the symbol and the object. The following fields pertain to the symbol:

- Symbol Type
- Label (and whether to display the label)
- Behavior

The following fields pertain to the object.

- The Object Attributes list, which contains applications that may manage attributes of the object.
- Selection Name
- Comments

The following figure displays the Add Object dialog box.

Add Object

Symbol Type:
Connector: Gateway

Label:
[Text Field]

Display Label:
☐ Yes ☐ No

Behavior:
☐ Explode ☐ Execute

If you wish to create a child submap, double-click on the new symbol after you OK this box.

Object Attributes:
Capabilities: [Dropdown]
General Attributes: IP Map
[Text Field] Set Object Attributes...

Selection Name:
[Text Field] Set Selection Name...

Comments:
[Text Area]

OK Cancel Help

Figure 4-6. The Add Object Dialog Box

Locating Objects

HP OpenView Windows enables you to search for objects that contain a common characteristic. You can locate objects based on the following object and symbol characteristics:

- Attributes
- Comments
- Selection Name
- Symbol Label
- Symbol Status
- Symbol Type

Purpose of Locating Objects

- Locate objects in either the open map or a snapshot based on a value of a specific attribute.
- Create a selection list of objects with particular characteristics.
- Open the submap(s) of located objects.

Entering Strings in Locate Operations

Some locate operations requires input in the form of a string value. For several of these operations, OVW offers a choice between two types of searches: Exact Match and Pattern Matching.

Exact Match.

Exact match locates only those objects whose attribute value exactly matches the string entered. To switch to the exact match search, click on the **Exact Match** radio button. You must enter the complete string in this mode.

Pattern Matching.

Pattern matching enables you to enter a substring or regular expression for the attribute value. The following section, Regular Expressions, discusses some of the special characters you can use in regular expressions.

Regular Expressions

When pattern matching is used, you may enter a simple substring or a regular expression. A valid regular expression may consist completely of printable characters. However, in a regular expression the following symbols have special meaning:

Special Character	Meaning	Examples
<code>.</code> (period)	Matches any printable or nonprintable character except <newline> (unless it is used inside brackets).	<code>node.in</code> matches: <code>node3interface</code> <code>nodeXinterface</code>
<code>*</code> (asterisk)	Means zero or more occurrences of the preceding character.	<code>node*</code> matches: <code>nod</code> <code>node</code> <code>nodeTwo</code> <code>nodee</code>
<code>^</code> Caret	If the caret is the first symbol, then the following character is the first character in the string.	<code>^Box</code> matches the string: <code>Box</code> but does not match the string: <code>Big Box</code> .
<code>\$</code> (dollar).	If dollar is the last symbol, then the preceding character is the last character in the string.	<code>long\$</code> Matches the string: <code>long</code> but does not match the string: <code>longer</code> .

Refer to the `regex(5)` man page for a discussion of Extended Regular Expressions.

Note

Note `regex(5)` is not available on the Sun SPARCstation.

The following sections show you how to locate objects using the criteria provided by OVW: locate by attribute, comment, selection name, symbol status, symbol type, or symbol label. A detailed discussion of the results of all locate operations follows these sections.

Locating Objects by Attribute

The **Locate by Attribute** operation enables you to search for objects based on the values of chosen attributes.

To locate objects with a certain attribute value:

1. Select **Locate: Objects -> By Attribute...**
The **Locate by Attribute** dialog box appears.
2. Select an attribute from the **Object Attributes** list in the dialog box. When you select an attribute, fields appear that enable you to enter values for the chosen attribute. This field changes according to the data type of the attribute selected from the list. You may see one of the following:
 - A text field for strings and integers.
 - An option list for enumerated types. (A list of choices.)
 - Radio buttons for boolean entries (such as yes/no, on/off, true/false).
3. When the field for the desired attribute appears, enter or select a value.
4. Click **Apply**.

Locating Objects by Comments

The **Locate by Comment** operation enables you to search for all objects that have a specific comment or portion of a comment. You may establish conventions for embedded keywords and use these in the **Locate By Comment** operation. In this manner, you can locate objects based on a key that is not a supported attribute.

To locate objects with a given string or substring in their comments:

1. Select **Locate: Objects -> By Comment...**
The **Locate By Comment** dialog box appears.
2. Enter substring or regular expression in the **Comments** field.
3. Click **Apply** to locate the objects containing comments that match the entered substring or regular expression.

Locating Objects by Selection Name

Enables you to locate objects based on a selection name or part of a selection name.

1. Select **Locate: Objects -> By Selection Name...** The **Locate By Selection Name** dialog box appears.
2. Choose the type of search. You can leave the setting on pattern matching or change the setting to exact match by clicking the **Exact Match** button.
3. Enter the selection name or substring you want to search.
4. Click **Apply**.

Locating Objects by Symbol Status

Enables you to locate all objects that are represented by a symbol with the given status. Each located symbol is listed separately.

To locate objects containing symbols with a certain status state:

1. Select **Locate: Objects -> By Symbol Status...** The **Locate By Symbol Status** dialog box appears.
2. Select the status state that you want to search. The status state appears shaded.
3. Click **Apply**.

Locating Objects by Symbol Type

You can locate all objects that have a symbol of a given type (class and subclass).

1. Select **Locate: Objects -> By Symbol Type...** The **Locate by Symbol Type** dialog box appears. The **classes** area displays all registered symbol classes.
2. Select the class that you want to locate. The subclasses for that class appear in the **Subclasses** area of the dialog box.
3. Select the subclass you want to locate.
4. Click **Apply**.

Results of the Locate Operation

HP OpenView Windows reports all located object to you in the dialog box. The **Message** area reports the results of the search. It will display:

- The number of objects found.
- Errors.
- Further instructions.

Symbols of located objects are listed by selection name in the **Located** and **Highlighted** area. If a located object is represented by multiple symbols, each symbol is displayed on a separate line. Each line contains the following format:

Selection Name [Submap Name : Symbol Label]

Parameter	Meaning
Selection Name	The selection name of the object.
Submap Name	The name of the submap that displays a symbol of a located object.
Symbol Label	The symbol label as it appears on the submap.

The following three example entries display one located object and three symbols that represent the object in three different submaps:

NodeBob [Company : Bob]

NodeBob [Division : Bob_Serial Link]

NodeBob [Department : Bob_NFS]

The symbols of located and highlighted objects are highlighted on open submaps. You can perform several operations with the located (highlighted) objects.

Opening Submaps

Double-click on a list entry in the **Located and Highlighted** area, or select one or more submap name entries, and click **open** . The submaps containing the symbols are opened. The symbols of all highlighted objects appear highlighted in the displayed submaps.

Selecting Located Objects

You can select highlighted objects for use in other operations.

1. HP OpenView Windows replaces objects in the selection list with located objects when you click the **select** button.
2. HP OpenView Windows adds located objects to objects in the selection list when you press the [Ctrl] key and click the **select** button.

Symbols

A symbol is a graphical representation of a particular object. HP OpenView Windows uses symbol color to indicate the status state of an object. An object may be represented by symbols in several submaps, or even multiple symbols in the same submap.

Symbol Characteristics

The following list discusses characteristics of symbols in OVW. Each characteristic is discussed in more detail later in this chapter.

- **Symbol Variety.** In OVW, symbols come in two varieties: the icon symbol and the connection symbol.
- **Symbol Type.** Symbol type consists of the symbol class and subclass.
 - **Class.** You can distinguish the symbol class by the outer shape of the symbol. For example, a circle, square, diamond, etc.
 - **Subclass.** A subclass is a further definition of the class. Each symbol class has a unique set of subclasses.
- **Status.** Symbols can display status information through the use of color. The ten status states are categorized as either administrative or operational. (More information about these ten states and two types appear later in the "Symbol Status" section.)
- **Label.** You can label each symbol that appears on your network map. The label appears below the symbol. You can choose whether or not to display the label of a symbol.
- **Location.** A symbol can reside on one of two planes, the application plane or the user plane. If an object is managed by one or more applications in a particular submap, then symbols of that object reside on the application plane of that submap. This enables you to visually distinguish between objects that are being managed by applications, and objects that are being managed only by OVW.
- **Behavior.** Behavior defines how the symbol behaves when you double-click on the symbol. A symbol may behave in one of two ways. It may open a child submap (explode the child submap), or it may execute an application.
- **Status Source.** A symbol may present status information from one of three sources. This characteristic enables applications to have more control over the presentation of status. In general, you do not need to change these settings.

Symbol Varieties

OVW uses two varieties of symbols for display on the map. A icon symbol, usually referred to as simply a symbol. An icon symbol consists of a geometric shape. A symbol graphic, or icon, usually appears inside the shape. A connection symbol connects two icon symbols or an icon symbol and a backbone. On a submap, connection symbols appear as lines. However, connection symbols are not merely lines. They represent objects and can display status. OVW uses connection symbols to show the current state of connections between resources on your network.

Icon Symbols

Icon symbols include many symbol types. A symbol type consists of the symbol class and symbol subclass. The symbol class is indicated by the outside shape of the symbol. Each symbol class is further divided into subclasses. The following figure displays the **add object** Palette as it appears when you select the **Location** class. The subclasses of the symbol class are displayed in the lower portion of the palette. Note that all symbol subclasses have the same outside shape.

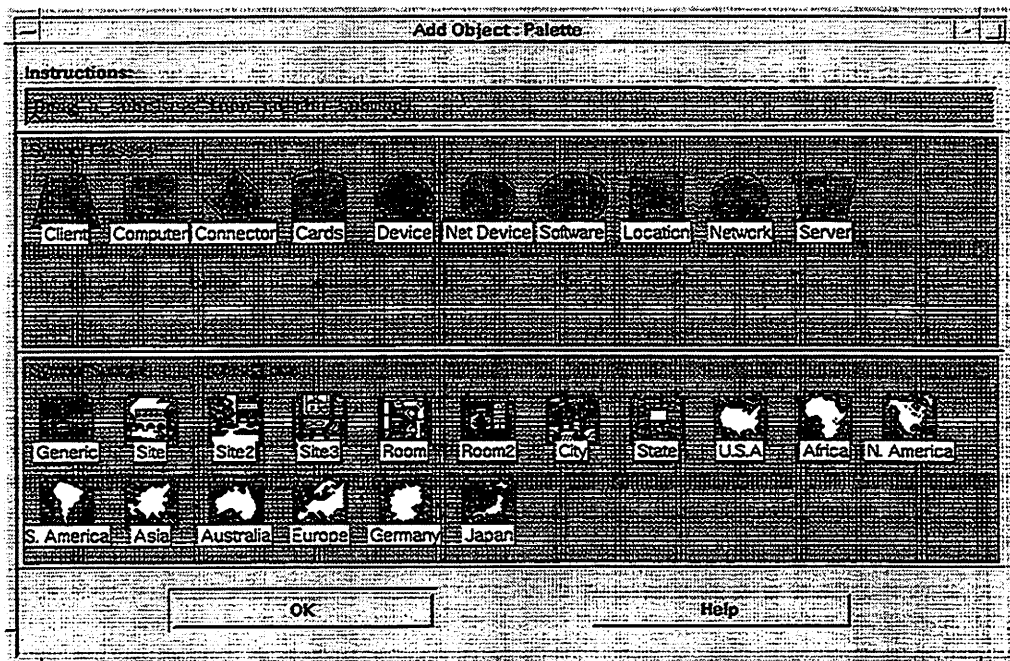


Figure 4-7. Subclasses in the Location Class

Take a moment to explore the other classes. You can do so by selecting a different class in the **Symbol classes** area of the Palette.

OpenView contains a variety of predefined symbols. Applications that are integrated with OVW may provide even more. You can view the available symbols by browsing through the **Add Object** Palette or by looking at the Display Legend. To view the Display Legend, select **Help: Display Legend** from the OVW menu bar. The classes and respective subclasses that are registered by OVW are listed in the following table.

Table 4-2: HP OpenView Windows Symbol Classes and Subclasses

Class	Subclass			
Client Class	Generic Applic. Compute	FAX File System Help	License Mail Name	Oper System Printer Swap
Computer Class	Generic Main Frame	Mini PC	Workstation	
Connector Class	Generic Bridge	Gateway Multiport	Repeater	
Cards Class	Generic Accelerator Audio FAX	HP-IB IP MUX MUXNet Net Parallel	Parallel SCSI Serial Star LAN	Thick LAN Thin LAN Video X.25 Net
Device Class	Generic CD Flexible Disk	Hard Disk Monitor Plotter	Printer Tape Terminal	Video Disk
Net Device Class	Generic Analyzer	Modem PBX	X.25	
Software Class	Generic Applic. Directory	Driver File File System	License Mail Oper System	Process Users
Location Class	Generic Africa Asia Australia City	Europe Germany Japan N. America Room	Room2 Site Site2 Site3 S. America	State USA

Table 4-2: HP OpenView Windows Symbol Classes and Subclasses

Class	Subclass			
Network Class	Generic Bus FDDI Ring	Internet IP Network Network	Star Token Ring X.25 Net	
Server Class	Generic Applic. Computer FAX	File System Help License Mail	Name Oper System Printer Software Dist	Swap Terminal
Connection Class	Generic	Dashed	Dot Dash	Dotted
Domain Class	Generic			
Logo Class	Generic	HP	HP OpenView	

Connection Symbols

A connection symbol is a line that graphically connects two icon symbols or an icon symbol and a backbone (a bus or a ring backbone) on a submap. The connection symbol displays the status of a connection between two objects. Connection symbols behave like icon symbols in the following ways:

- A connection symbol represents an object, just like an icon symbol.
- Connection symbols may reside on the application plane or the user plane.
- You can display a symbol pop-up menu for the connection, and open the Symbol Description dialog box to view symbol characteristics.
- You can assign a label to the connection symbol.
- The connection symbol is either explodable or executable.

Symbol Status

Status is displayed by a symbol on a submap. As mentioned earlier, there are two categories of status conditions: administrative and operational. These two categories are important because they interact with the HP OpenView status propagation schemes in very different ways. (In the status propagation schemes, rules are used to determine how the status of a symbol in a child submap is transmitted to the symbols of objects in parent submaps.) Administrative status conditions are ignored by the propagation schemes, which means that status information from a child submap is not transferred to a parent submap. Operational status conditions, on the other hand, may indicate problems that must be propagated through the use of the schemes.

OVW recognizes ten status conditions, shown :

Table 4-3: Default Status Conditions

Category	Status Condition	Meaning of Status
Administrative	Unmanaged	Users can set this value, which indicates that the object should not be monitored and that the operational status should be ignored.
Administrative	Testing	An application sets the status to "testing" when an object is undergoing temporary diagnostic or maintenance procedures.
Administrative	Restricted	An application sets the status to "restricted" when an object is functioning normally, but it may not be available to all users.
Administrative	Disabled	An application sets the status to "disabled" when an object is inactive (although there may not be anything necessarily wrong with the object),
Operational	Unknown	An application sets the status to "unknown" when the status of an object cannot be determined.
Operational	Normal	An application sets the status to "normal" when the object is in a normal operational state.
Operational	Warning	An application sets the status to "warning" when an object may face a potential problem.
Operational	Minor/Marginal	An application sets the status to "minor/marginal" when an object has a minor problem; this status should not, however, impede the normal use of the object.

Table 4-3: Default Status Conditions

Category	Status Condition	Meaning of Status
Operational	Major	An application sets the status to "major" when an object has serious problems; and these problems are likely to impede the normal use of the object.
Operational	Critical	An application sets the status to "critical" when an object is not functioning.

The status displayed by the symbol stems from the state of certain characteristics of the object that the symbol represents. These characteristics may be represented by object attributes that are stored with the object in the data base. The status of a particular symbol represents the status of certain object attributes, or characteristics, as defined by the application.

For example, the IP Map application determines the status of a node object based on the operational status of IP Interfaces installed in the node. If all of its IP interfaces are down, then IP Map determines that the node's state is critical. From the perspective of IP Map, the node is nonfunctional. However, another application may consider the same node up and running because that application monitors a different protocol, and it finds that the interfaces for that protocol are fully functional. Multiple symbols for the node object could be used to represent these status states separately.

Status Colors

HP OpenView Windows displays status conditions via the colors of the symbols. Because color can be hard to describe through words, table 4-2 lists both the RGB values and approximate colors for the default colors that OVW uses to display status for both icon symbols and connection symbols. You can change the colors used by OVW in its app-defaults file, `/usr/lib/X11/app-defaults/ovw`.

Table 4-4: Default Status Colors

Status Condition	Symbols: RGB Values (color)	Connections: RGB Values (color)
Unmanaged	245 231 209 (Off-white)	0 0 0 (Black)
Testing	233 150 122 (Salmon)	233 150 122 (Salmon)
Restricted	141 96 87 (Tan)	141 96 87 (Tan)
Disabled	90 35 34 (Dark Brown)	90 35 34 (Dark Brown)

Table 4-4: Default Status Colors

Status Condition	Symbols: RGB Values (color)	Connections: RGB Values (color)
Unknown	114 124 255 (Blue)	0 0 0 (Black)
Normal	0 230 38 (Green)	0 0 0 (Black)
Warning	65 255 255 (Cyan)	65 255 255 (Cyan)
Minor/Marginal	255 255 41 (Yellow)	255 255 41 (Yellow)
Major	255 133 0 (Orange)	255 133 0 (Orange)
Critical	255 0 0 (Red)	255 0 0 (Red)

Status Source

In OVW, status can be set from three possible sources. This feature is mainly used by applications so that they can set the status of specific symbols. In general, Hewlett-Packard recommends that you do not change the status source of a symbol. The status source of a symbol is automatically set depending on the application that manages the object. The following sections discuss the significance of each status source.

Symbol Status Source

This source of status is used by applications that may want to set status on a particular symbol of the object. This allows other applications to set states for other symbols of the object.

Object Status Source

This source of status is used by applications that want to set and display the same status state among all the symbols of a particular object.

Compound (Propagated) Status Source

HP OpenView Windows determines the status state of the symbol based on compound status rules. Compound status determines how status propagates from symbols in child submaps to symbols of objects in parent submaps.

Symbol Behavior

The setting for a symbol's behavior defines how the symbol behaves when you double-click on it. A symbol may behave in one of two ways. It may explode into a submap, or it may execute an application.

Explodable Symbols

If a symbol's behavior is set as Explodable, the symbol enables you to view the components of an object. When you double-click on an explodable symbol, OVW opens another submap, called a child submap. The contents of this child submap may be determined by you or an application. For example, the IP Map application creates a child submap for a node which contains the IP interfaces installed in the node. If you double-click on a computer workstation managed by IP Map, a **node** submap is opened that displays symbols of the node's IP interfaces. If no child submap has been created for the object, then double-clicking on the symbol presents you with the option of creating a child submap. The default behavior for symbols is explodable.

Executable Symbols

If a symbol's behavior is set as executable, the symbol enables you to associate the double-click with an action other than opening a child submap. You may find it convenient to initiate execution of an application, for example, a management tool, by double-clicking on a particular symbol. You can choose an action from among the actions presented in the option menu associated with the **Executable** setting in the **Add Object** dialog box or the **Symbol Description** dialog box. You can choose one or more objects as the target objects of the action from among the objects represented on the map. The chosen target objects must be appropriate for the action selected. When the executable symbol is double-clicked, it executes an application that performs an action on the set of target objects. For example, you can configure a symbol so that when it is double-clicked, a window for remote login is opened.

The Symbol Pop-up Menu

Most operations on single symbols are accessed using the symbol pop-up menu. Every icon and connection symbol has its own pop-up menu. The symbol pop-up menu, presents the following options:

Table 4-5: Symbol Pop-Up Menu

Pop-Up Menu Item	Description
Open Symbol...	Causes the same behavior as double-clicking on the symbol. For an explodable symbol, it opens a child submap. For an executable symbol, it runs an application.

Table 4-5: Symbol Pop-Up Menu

Pop-Up Menu Item	Description
Change Symbol Type...	Enables you to change the appearance of an icon symbol by choosing a new subclass (or new class and subclass).
Describe/Modify Symbol...	Displays the Symbol Description dialog box for the symbol.
Delete Symbol	Deletes the current symbol. The object represented by the symbol is also deleted if no other symbol represents the object in a map.
Hide Symbol	Enables you to hide the symbol so that it is not displayed on the submap. The status bar displays the number of hidden symbols in the submap.
Set Star Center	This action applies only to a symbol in a submap that has a star layout. In such a submap, this feature enables you to set the chosen symbol as the center of the star.
Describe/Modify Object	Displays the Object Description dialog box for the chosen symbol. From this dialog box, you can modify the attribute values of the object.

Symbol Operations

The following sections provide step by step procedures for some of the operations you may commonly perform on symbols. Many symbol operations can be performed from the symbol pop-up menu. The following sections provide procedures for the following operations:

- Change a symbol label
- Change a symbol type
- Cut and paste symbols
- Change symbol behavior
- Add an icon symbol
- Add a connection symbol

Changing the Symbol Label

A symbol label is simply a name to help you identify a specific symbol. A label is very useful if a submap contains more than one symbol of the same type. You can add, remove, or modify the label for each icon symbol and connection symbol on the submap, using the **Symbol Description** dialog box. You can display the **Symbol Description** dialog box from the symbol pop-up menu

Purpose of this Task

Assign a label to an icon symbol and connection symbol that appears on your network map, and choose whether or not to display the label below the symbol. This procedure assumes a symbol already exists on a submap. You can also assign a symbol label during creation in the **Add Object** dialog box.

Prerequisites for this Task

The map must be open with read-write access.

Procedure

1. Click button 2 of your mouse on the symbol whose label you want to change. A pop-up menu is displayed for the symbol.
2. From the pop-up menu, click button 2 on **Describe/Modify Symbol...** The **Symbol Description** dialog box appears.

3. Add a symbol label by entering text in the **Label** field, or change the label by replacing existing text in the field.
4. To display the symbol label, make sure the **Yes** button is selected to the right of the **Display Label** field.
5. Click **ok**.
6. Verify that the new label appears below the symbol.

Changing the Symbol Type

You can change the appearance of an icon symbol by choosing a new subclass (or new class and subclass). You change the symbol type from the **Change Symbol Type** dialog box, which is displayed from the symbol pop-up menu.

Purpose of this Task

Change the type of icon symbol that is displayed on the submap.

Prerequisites for this Task

The map must be open with read-write access.

1. Click button 2 on the symbol whose type you want to change. A pop-up menu is displayed for the symbol.
2. From the pop-up menu, click button 2 on **Change Symbol Type...**
The **Change Symbol Type** dialog box appears.
3. Select a new symbol type from the dialog box:
 - a. Select a new symbol class (if desired). Selecting a new symbol class displays a new set of symbol subclasses.
 - b. Select a new symbol subclass.
4. Click **ok**. The dialog box closes and the symbol is changed to the chosen symbol type. The symbol keeps the same label.

While the object that the symbol represents does not change, some object attributes may be affected. For example, changing a symbol of type `Computer:Workstation` to one of type `Server:Mail` automatically sets to `True` the value of the `isServer` attribute for the object. This is known as "assignment of default capabilities." The attributes, and values associated with each symbol type, are determined when symbol types are defined in the symbol registration files.

Cutting and Pasting Symbols

Cutting and pasting is a convenient way to edit your network map. The cut and paste operation is the means for changing a symbol's location from one submap to another. You can cut and paste multiple symbols simultaneously.

Sometimes the cut (or delete) operation applies only to a symbol or set of symbols, without affecting the object or objects represented by the symbols. Sometimes the cut operation applies to the object as well as the symbol. When you cut a symbol, if the object that the symbol represents is represented by another symbol, in any map, the symbol is cut, but the object is not deleted from the database. If the symbol is the only symbol that represents the object, the object is cut (or deleted) along with the symbol.

Purpose of this Task

Edit your network map by cutting symbols from a submap and pasting them onto other submaps.

Prerequisites for this Task

The map must be open with read-write access.

Cutting a Symbol from a Submap.

To cut a symbol or object from a single submap of the open map:

1. Click on the the symbol you want to cut. This action selects the object that the symbol represents. All symbols of the object appear selected.
2. To cut all symbols of the selected object from the current submap, select **Edit: Cut -> From This Submap**. A confirmation box appears, stating that you are about to delete or cut selected objects.
3. Click **OK**. OVW places all symbols of the selected object that are located in the current submap into the cut buffer. Symbols of the selected object that are located on other submaps are not affected by this operation.
4. Display the submap where you want to paste the symbols from the cut buffer.

5. Select **edit: Paste** from the menu bar of the chosen submap. The symbol in the cut buffer is pasted onto the submap. You can paste symbols and objects that are in the cut buffer into any submap in the map.

Cutting Symbols from all Submaps of the Map.

To cut a symbol or object from all submaps of the open map:

1. Click on the the symbol you want to cut. This action selects the object that the symbol represents. All symbols of the object appear selected.
2. To cut symbols of the selected object from all submaps of the open map, select **edit: Cut - > From All Submaps**. A confirmation box appears, stating that you are about to delete or cut selected objects.
3. Click **OK**. OVW places all symbols of the selected object in the open map into the cut buffer.
4. Display the submap where you want to paste the symbols from the cut buffer.
5. Select **edit: Paste** from the menu bar of the chosen submap. All symbols in the cut buffer are pasted onto the submap. You can cut symbols from multiple submaps, but you can paste symbols onto one submap at a time.

Changing Symbol Behavior

When a new object is created, the symbol behavior is set to explodable. You can change the behavior of an existing symbol from explodable to executable. You can distinguish executable symbols from explodable symbols by the square box that appears around each executable symbol.

Purpose of this Task

Change a symbol's behavior so that it opens a remote login window when double-clicked.

Prerequisites for this Task

The map must be open with read-write access.

Procedure

In this exercise, you will configure a symbol of a workstation so that a double-click, or the **Open Symbol** menu item in the symbol pop-up menu will open a remote login to that computer workstation.

1. Bring up the symbol pop-up menu for the symbol of type **computer:workstation** by clicking button 2 on the desired symbol. You can identify the appearance of this type of symbol from the **Add Object Palette** or the **Display Legend**.
2. Select **Describe/Modify Symbol...**
The **Symbol Description** dialog box appears.
3. In the **Symbol Description** dialog box, click the **Execute** radio button. The dialog box changes to include:
 - The **Application:Action** list, which displays an alphabetical list of each registered application and its registered actions.
 - A **Selection** field, which displays the application and action you have chosen.
 - The **Target Objects...** button.

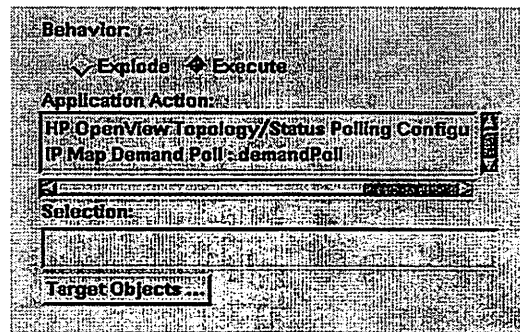


Figure 4-8. Executable Symbol Configuration

4. From the **Application:Action** list, select **OpenView Windows Terminal Connect: XTerm Telnet**.
5. To make the workstation object the target of the action, click **Target Objects...**. The **Target objects** dialog box appears. The workstation object's selection name should appear next to the **Add** button, and the list of target objects should be empty.

6. Click the **add** button to put the workstation object's name into the list.
7. Click **ok** in the **Target Objects** dialog box.
8. Click **ok** in the **Symbol Description** dialog box.

If OVW displays an error message stating that the object is not appropriate for the action, check the **object Description** dialog box to make sure the workstation object has an IP hostname. This is required by **xTerm Telnet** application. If the operation is successful, a square appears around the symbol indicating that it is executable. Double-click on the executable symbol and verify that a remote login window is opened.

The same object may be represented by both an explodable and an executable symbol. When you change an existing explodable symbol to executable, you must open the child submap from the **Available Submaps** dialog box, or from another explodable symbol of the parent object.

Adding an Icon Symbol

You can add an icon symbol to a submap, without adding an object, by associating the symbol with an existing object. You perform this task the same way that you add an object. However, you must enter the selection name of an existing object in the **selection Name** field of the **add object** dialog box.

Purpose of this Task

- Add a symbol to a submap that represents an existing object.

Prerequisites for this Task

- The map must be open with read-write access.

Procedure

To add a new symbol that represents an existing object to a submap:

1. Select **edit: add object...** The symbol palette appears.
2. Select a class. The subclasses available for that class appear.
3. Press button 2 of the mouse on the symbol you want to add in the **symbol Subclasses** area. While holding down button 2, drag the symbol to the submap, and release the mouse button, dropping the symbol onto the submap. The **add object** dialog box appears.

4. You may assign values to the following fields. They are optional.
 - a. Enter a label for the symbol.
 - b. If desired, change the behavior of the symbol from explodable to executable.
5. Choose the object that the symbol will represent by entering the selection name of the existing object.
6. Click **OK** in the **Add Object** dialog box. OVW informs you that the selection name already exists.
7. Click **OK** to confirm.

The symbol on the submap represents the object.

Adding a Connection

You can add a connection between two icon symbols or an icon symbol and a backbone.

Purpose of this Task

Add a connection symbol to a submap of the open map.

Prerequisites for this Task

- The map must be open with read-write access.
- You must have two symbols, or a symbol and a backbone, on a submap to connect.

Procedure

To add a connection between two symbols in a submap:

1. Select **Edit: Add Connection...** The **Add Connection** Palette appears.
2. Select the connection symbol type that is displayed in the **Add Connection** Palette.
3. Select a symbol you want to connect.

4. Select the other symbol you want to connect. The connection symbol appears between the symbols on the submap, and the **add object** dialog box appears.
5. You may assign values or change the default settings for the following fields. They are optional.
 - a. Enter a label for the connection symbol.
 - b. To display the label under the symbol in the submap, click the **yes** radio button. The **No** button is initially set on connection symbols.
 - c. Symbol behavior is set at **Explode**. You can change the symbol behavior to executable if desired.
 - d. If you want to change the default settings for an application managing the object, select an application in the **object Attributes** list, and click **Set Object Attributes...** Enter data for the fields in the selected application's dialog box.
6. Enter a selection name for the object. Every object must have a selection name. OVW identifies objects by their selection name. The length of a Selection Name is limited by the maximum number of characters allowed for filenames by the operating system, or by 256 characters, whichever is lower. There are three ways to set a selection name:
 - a. Enter text for the selection name in the **Selection Name** field.
 - b. If you assigned a label to the symbol, it will be used as the selection name if no other name is provided.
 - c. Click **Set Selection Name** to display the **Set Selection Name** dialog box. This dialog box lists all of the names that have been set for the object. Select a selection name from any of the name values already assigned to the object, or enter a unique selection name for the new object.
7. Click **OK** in the **add object** dialog box. Verify that the connection exists between the chosen symbols on the submap.

Maps, Submaps and Snapshots

Introduction

This chapter defines, discusses, and provides procedures for the following OVW concepts:

- Maps
- Submaps
- Map Snapshots.

Maps

Recall from the chapter 2, "Overview and Concepts", a map is a set of related objects, symbols, and submaps that provides a graphical and hierarchical presentation of your network and its systems. When you open a map in HP OpenView Windows (OVW), all submaps of the map are available for display. A map also includes the set of map objects that are represented by symbols on the map. Because a map is defined by the collection of submaps that make it up, you do not view the map directly; you view the submaps of the map. This section discusses the following topics about maps:

- The open map.
- The uses for a map and the advantages of creating multiple maps.
- Configuring applications for a map.
- User access to maps.
- The Default Map and the User Default Map
- Compound Status
- Operations you may perform involving maps.

The Open Map

In OpenView Windows, you can create several maps. Once created, you can open a map. The open map is the active map that is currently opened and displayed. The open map can be updated by applications and users. Only one map can be open at a time for a given session of OVW. One map is always open.

Uses for a Map

You may choose to create several maps of your network. The following table discusses various reasons why you may want to create multiple maps of your network.

Sphere of influence	In large or complex networks, it may become impractical for one map to display information about systems on your network. You can create maps that focus on a specific set of system or nodal capabilities. You can have different maps for different areas of responsibility on your network. For example, one map may be concerned with software maintenance, another map with bridge management.
Management Region	A map can manage a specific physical portion of your network, or partition information about your network. Maps can have specific constraints and characteristics, run different applications, cover different geographic areas, and/or set compound status differently. You can have multiple maps of the same network, each map focusing on different things.

Security	Using operating system permissions, you can create a map of your network that cannot be edited, and another map that is identical to the first map except that it can be edited. This enables you to provide various levels of access to information about your network for security purposes.
Troubleshooting	Saving a map so you can restore the map later. Useful for keeping a "good" copy of a map before making certain changes of which you are not certain of the outcome.
Customized Maps	You can combine the sphere of influence and management region to create a customized map of your network. Users can share the same map. However, you can also create a map for each user that combines specific management regions and specific spheres of influence. Perhaps one user may want multiple maps of the same network, focusing on a different domain or organization. You can customize a map so that it is a projection of your responsibility for systems on your network. You can customize each map to show you what you want to see about your network, and avoid sifting through data you do not need. You can use different background graphics.
Map Applications	An application that is integrated with HP OpenView Windows provides specific information about systems on your network. The type of information depends on the application. Applications can monitor and control different aspects of the objects on your network. For example: - o Nodes on your network with an IP address. - o Remote file servers and their clients. - o Specific systems on your network.
System Specific Maps	You can have separate maps for different kinds of systems on your network. For example, you may want to have one map for your IP systems, one for OSI based systems, one for Apollo Domain systems, one for NFS, and one for diskless systems. Alternately, all these can be displayed on the same map.

Map Applications

Your OVW map may contain several map applications that you can configure for the map. The map applications you have available depend on the applications that have been installed on your system. Once installed, applications are registered with OVW. The application is available on the system for all users and all maps. When you create a new map, you can configure the map applications that are available on your system for that map.

The following figure displays the **Configurable Applications** list that appears in the **New Map** and **Map Description** dialog boxes.

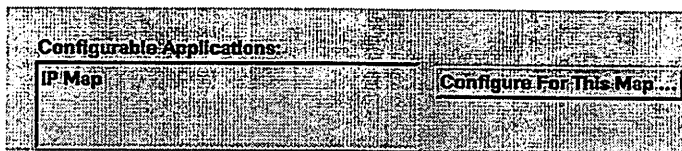


Figure 5-1. Configurable Applications List

IP Map

Selecting the IP Map application and clicking the **Configure For This Map** button displays the **Configuration** dialog box for IP Map.

- IP Map is enabled when you create a new map. To change this setting, select the **false** radio button. This disables IP Map for the new map. This turns IP Map off only for the map you are creating. Each map can have its own setting.
- IP Map displays the status of IP objects. To change this setting, select the **false** radio button. If you change this setting to false, IP Map still discovers SNMP objects on the network, but it does not convey IP status of these objects.
- IP Map displays the status of interface objects on connection symbols. When enabled, this displays the status of interface objects on connections, in a higher level submap, in addition to the interface objects.
- Display IP Status for Node objects. When enabled, this setting means that only IP interfaces in a **node** submap contribute to the status of the node object. Change this setting by selecting the **false** radio button. Selecting false causes IP Map to allow OVW to propagate the status of all symbols in the **node** submap to the Node object.

The following figure displays the default configuration settings for IP Map when a new map is created.

The image shows a 'Configuration' dialog box for 'IP Map'. It contains four configuration options, each with a 'True' and 'False' radio button. The 'True' button for each option is selected. Below these options is a 'Messages' section with a text area and a 'Show/Hide' button. At the bottom are 'OK', 'Verify', 'Cancel', and 'Help' buttons.

Configuration	
IP Map	
IPMap enabled for this map?	
☒ True	☐ False
Should IP status be shown on this map?	
☒ True	☐ False
Should status of interfaces be shown on connections?	
☒ True	☐ False
Should status of nodes be IP only?	
☒ True	☐ False
Messages:	
Show/Hide	
OK Verify Cancel Help	

Figure 5-2. IP Map Configuration

Access to Maps

You can open a map with read-write access or with read-only access. Two factors determine the map access when a map is opened:

- Whether another user already has the map opened with read-write permission. Only one user can have a specific map opened with read-write access. If you want several users to have simultaneous read-write access, create a map for each user.
- The Command Line. You can use the command line to purposely allow specific users read-write or read-only access to a map by setting permission to the file. To change map permissions, use the `ovwperms` command. This command is describe in the *HP OpenView Windows Administrator's Reference*. Do not use the file permission commands from your operating system.

Read-write Access

A map opened with read-write access is completely editable. You can add objects, add connections, create submaps, and change object attribute values. Only one user can have a specific map open with read-write access at any one time. If another user has the map open with read-write access, when you open the same map, you have read-only access to it. This is the case even if you have read-write permission from the operating system.

Read-only Access

A map opened with read-only access is not editable by the user, although the map still can receive status from applications. In a map open with read-only access, you can view status changes, perform locate operations on objects, and update topological changes with using the **File: Refresh Map** menu item. However, you cannot add, delete, or modify items in the map, including symbols, objects, and submaps.

No Access

You cannot open a map set with No Access.

The Default Map

When you initially start HP Openview Windows, it automatically creates and opens a default map. This map is named `default`. The purpose of the default map is to display a map of your network when you first run OVW, without needing to configure anything. Once you become familiar with how OVW works, you can create new maps or create copies of the default map.

The default map has the following settings:

- The name of map is `default`.
- The home submap is the root submap.
- The root submap layout is row/column.
- Applications integrated with OVW are configured with their default settings.

The default configuration values can be changed later, except the row/column layout algorithm for the root submap. The layout algorithm for the root submap of a map is set at the time the map is created.

The User Default Map

The user default map is the map that OpenView Windows first displays when a HP OpenView Windows is started. You can choose which map is the User Default Map by selecting **Options: Map Configuration** -> **Set User Default** or by selecting **Edit: Open/List Maps...**

Compound Status

Compound status is how OpenView propagates the status of a symbol in a low-level submap, up to parent submaps, so you can be alerted to a problem. Remember, however, that status propagation occurs only when a symbol is given one of the six operational status conditions (unknown, normal, warning, minor/marginal, major, or critical). The administrative status conditions (unmanaged, testing, restricted, and disabled) are not propagated.

From the perspective of a compound status scheme, a symbol is either unknown, normal, or abnormal.

- unknown: a symbol's current status has not yet been determined by an application.
- normal: a symbol is functioning as intended and responding appropriately when contacted by an application.
- abnormal: a symbol is given one of the four abnormal status conditions (warning, minor/marginal, major, or critical), and is either potentially or currently having problems.

The mapping of the compound status categories to the operational status conditions is as follows:

Table 5-1: Compound Mapping

This Compound	Maps to This Operational Status Condition
Unknown	= Unknown
Normal	= Normal
Abnormal	= Warning or Minor/Marginal or Major or Critical

The following figure shows you the compound status section of the **Map Description** dialog box. You can choose from three compound status schemes:

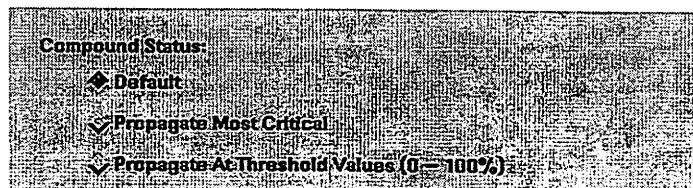


Figure 5-3. OVW Default Compound Status

The following sections discuss each compound status scheme.

Default

Selecting the **Default** button causes OVW to propagate status according to the algorithms described in the following table:

Condition of Symbols in Child Submap	Status of Symbols of Parent Object
No symbols are normal and no symbols are abnormal.	Unknown
All symbols are normal.	Normal
One symbol is abnormal; all other symbols are normal.	Warning
More than one symbol is abnormal and more than one other symbol is normal.	Minor/Marginal
One symbol is normal; all other symbols are abnormal.	Major
All symbols are abnormal.	Critical

Propagate Most Critical

Clicking this button causes OVW to propagate the status of the most critical symbol in the child submap to the symbols of the parent object.

Propagate At Threshold Value (0 - 100%)

Clicking this button displays four fields that enable you to set threshold values that determine when OVW propagates status. The number shown for each field is its default value.

% warning	30
% minor	20
% major	10
% critical	5

The specified value indicates the minimum percentage of symbols that must be in that status state in order for that status state to be propagated. If the percentage is met or exceeded in more than one status state, then the most severe of those states is propagated.

Map Operations

The following sections discuss tasks that you may want to perform that involve maps. Procedures for the following tasks are discussed:

- Copy a map.
- Create a new map.
- List the maps that are available.
- Open a map.
- Delete a map.

Copying a map

Copying a map enables you to make a copy of the open map and save it under a new name.

Purpose of this Task

- Create multiple maps with similar characteristics.
- Create a specific map for each user with similar or identical characteristics.

Prerequisites for this Task

You can copy the open map only.

Procedure

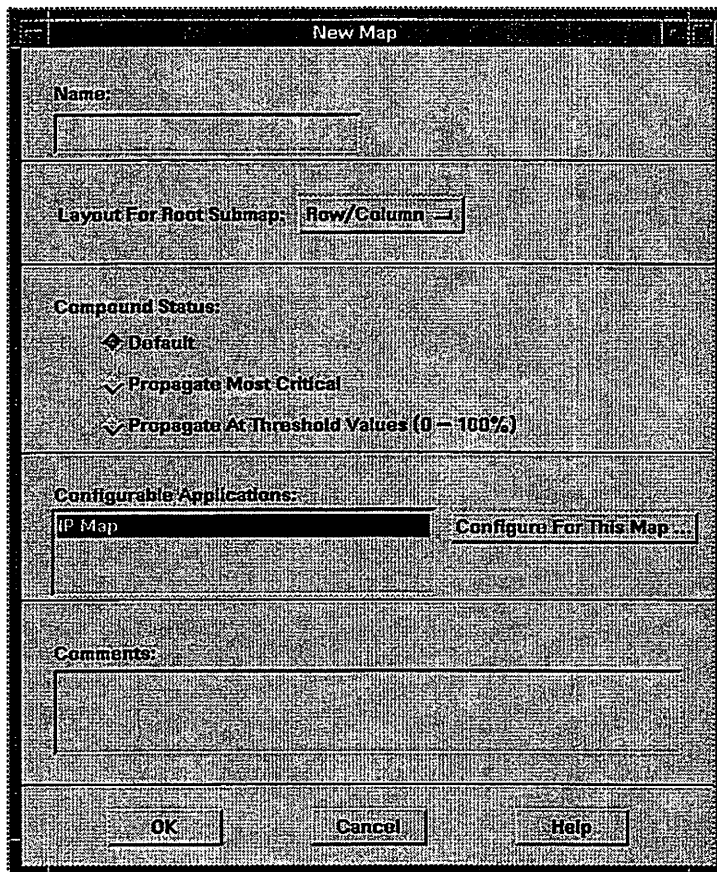
Copying a map consists of saving the open map under a new name.

1. Select **File: Save Map As...** The **Save Map As** dialog box appears. The name of the open map appears in the **Name of Open Map** field.
2. Enter a name for the new map in the **Name of Saved Map** field. The name for the new map must be unique to other map names.
3. You may add comments for the new map. Optional.
4. Click **OK**.

A copy of the open map is saved under the new map name. The new map is not opened. You can open the new map by selecting **File: Open/List Maps...**

Creating a New Map

When you create a new map, you can assign map characteristics and configure applications for the map. You create a new map by entering information in the **New Map** dialog box. The following figure shows you the **New Map** dialog box.



The image shows a screenshot of a software dialog box titled "New Map". The dialog box is divided into several sections. The first section is labeled "Name:" and contains a text input field. The second section is labeled "Layout For Root Submap:" and contains a dropdown menu with "Row/Column" selected. The third section is labeled "Compound Status:" and contains three radio buttons: "Default" (selected), "Propagate Most Critical", and "Propagate At Threshold Values (0 - 100%)". The fourth section is labeled "Configurable Applications:" and contains a list box with "IP Map" selected and a button labeled "Configure For This Map...". The fifth section is labeled "Comments:" and contains a text area. At the bottom of the dialog box are three buttons: "OK", "Cancel", and "Help".

Figure 5-4. New Map Dialog Box

Purpose of this Task

Creating a new map enables you to build a map from scratch. It is best to create a new map if the configuration settings (such as Compound Status) are not what you want. If you want a different layout for a root submap, or if you want the enable or disable specific applications, you must create a new map.

Procedure

To create a new map:

1. Select **File: New Map...** The **New Map** dialog box appears.
2. Assign a name to the new map by entering text in the **Name** field. Every map must have a unique name.
3. Complete any of the following steps. They are optional:
 - a. Change the layout for the root submap. The default layout algorithm for a root submap is Row/Column. You can change the layout for the root submap only during map creation. To change the layout:
 - i. Click the button to the right of the field, **Layout For Root Submap**. An option menu of layout algorithms is displayed.
 - ii. Select the desired layout for the root submap. The chosen layout algorithm appears on the option button.
 - b. Change the compound status scheme. The compound status scheme determines how OVW propagates status from symbols in child submaps to symbols of the parent object.
 - c. Configure network or system management applications that are listed in the **Configurable Applications** list. You can configure each application differently for each map. To configure an application:
 - i. Select an application from the list and click **Configure For This Map...** A **Configuration** dialog box for the application is displayed. The **Configuration** dialog box contains fields that are specific to that application. Applications may have a default configuration that does not require modification. For example, the application, IP Map, is configured for full functionality each time a new map is created.
 - ii. Click **verify** to validate all selections.
 - iii. Click **ok** to assign the configuration to the application.
 - d. Assign comments. Record comments for the map such as notes, or keywords.

4. Click **OK**. A message box appears stating that the map has been created. You can open the new map or leave the current map open.
5. Select one of the following:
 - To open the new map, click **OK**.
 - To remain in the current map, click, **Cancel**.

Listing Maps

Each OVW network management station may store multiple maps that users on different workstations can open. You can list the maps that are available.

Purpose of this Task

Identify the maps that are stored on the system running OVW.

Procedure

Select **File: Open/List Maps...** The **Available Maps** dialog box appears. The name of each map is displayed alongside the permissions assigned to each map and comments assigned to the map.

From this dialog box, you can:

- Open a selected map.
- Assign any map as the User Default Map. The map that is opened when you start OVW is the User Default Map.
- Delete a selected map.

Opening a Map

Purpose of this Task

OVW saves and closes the currently open map before opening the new map.

Prerequisites for this Task

The map must be have read-only or read-write permission. Map permissions are listed alongside the map names.

Procedure

To open a map:

1. Select **File: Open/List Map...** The **Available Maps** dialog box appears.
2. Select the name of the map you want to open and click **Open Map**. A confirmation box appears.
3. Click **OK**. OVW closes all submap windows and dialog boxes of the open map, and opens the selected map. When OVW opens a map, the home submap appears in a single submap window.

If you open a map that is listed with read-write access, and it opens with read-only access, then another user has the map open with read-write permission. Only one user can open a given map with read-write access at a time.

Updating a Map Open with Read-only Access

Maps open with read-only access do not automatically receive updates on topological events such as the addition or deletion of symbols, objects, or submaps, or the relocation of symbols by applications or other users. You can update the topology of a map open with read-only access by selecting **File: Refresh Map**.

Purpose of this Task

- Update the topology of a map open with read-only access.
- If another user has the map open with read-write access, you can obtain read-write access to a map, if you have permission, after the user closes the map.

Prerequisites for this Task

The map must be open with read-only access.

Procedure

1. Make sure the map is open with read-only access by observing the access message on the status bar of a submap window.
2. To update a read-only map, select **File: Refresh Map**. OVW updates the topology of the open map.

You may have read-only access to a map because another user already has the map open with read-write access. If the user with read-write access to the map closes the map, selecting the **File: Refresh Map** menu item closes, and then reopens, the map with read-write access, provided the operating system allows you read-write permission.

Assigning a User Default Map

Purpose of this Task

The user default map is a map that is opened each time you start OVW. You can assign a map as the user default map.

Prerequisites for this Task

The map must be open with read-write access.

Procedure

1. Select **File: Open/List Maps...**
2. In the maps list, select the name of the map you want to assign as the user default map.
3. Click **Set As Default**. The name of the map is displayed in the **User Default Map** field.

Getting a Description of a Map

You can view a description of the following characteristics of a map:

- A name.
- A home submap. This attribute lets you determine which submap is displayed when the map is opened. For more information, refer to the "Home Submap" section later in this chapter.
- A compound status setting. This setting determines how status of symbols from a subordinated submap affects the status of a symbol in a parent submap. For more information, refer the "Compound Status" section earlier in this chapter.
- Configuration for map applications.
- Comments.

You can set and change each of these settings in the **New Map** dialog box or in the **Map Description** dialog box.

Configuring an Application

In this procedure, you will create a new map and disable the IP Map application.

Purpose for This Task

- Customize a network map so that IP Map functionality is disabled.
- You may want to create a network map in which another application creates all the submaps, or you may want to create all submaps manually. Disabling IP Map means that it will not create any submaps for that map. It will essentially remain dormant.

Procedure

To change the configuration of IP Map, follow these steps:

1. Select **File: New Map ...** The **New Map** dialog box appears.
2. Select IP Map in the **Configurable Applications** list.
3. Click the **Configure For This Map...** button. The **Configuration** dialog box for IP Map appears.
4. Disable IP Map by clicking **False** on the question, **Should IP Map be enabled for the map?**
5. Click **verify**, then click **ok**.
6. Assign the following name to the new map, **IPMapDisabled**, by entering that name in the **Name** field.
7. Click **ok**. OVW displays a message that asks whether you want to open the new map.
8. Click **ok**. All submap windows of the currently open map are closed and the new map is opened. Since IP Map is disabled, no symbols appear in the root submap.

Deleting a Map

Purpose of this Task

Delete a map including all the submaps, snapshots, and symbols in the map.

Prerequisites for this Task

- You must have read-write permission from the operating system to delete a map.
- If another user has the map open with read-write access, you cannot delete it until the user closes the map.

Procedure

To delete a map:

1. Select **File: Open/List Maps...** The **Available Maps** dialog box appears.
2. Select the name of the map that you want to delete, and click **Delete Map**. A confirmation box appears.
3. Click **OK**. OVW deletes the map along with the symbols, submaps, and snapshots in that map.

Effects on Objects

If a symbol in the deleted map is the last symbol representing its object in the data base, then that object is deleted. If a symbol in the deleted map is one of multiple symbols that represent the same object in other maps, the object is not deleted.

Deleting the Open Map

If you delete the open map, OpenView Windows closes all submap windows and dialog boxes of the open map, and opens the User Default Map.

Deleting the User Default Map

If you delete the User Default Map, the system default map, called Default, is assigned as the User Default Map.

Deleting the Default Map

If you delete the map called Default, a new default map is created.

Submaps

When you open a map, you actually view submaps of the map. A submap is a collection of symbols that appear in a single submap window. These symbols may be related in any way that is useful for managing systems on your network. Submaps can be related in an hierarchical manner. You can display multiple submap windows on your screen. This section discusses the following topics about submaps:

- Submap characteristics.
- The home submap and the root submap.
- Submap creation

Root Submap

The root submap is a system-created submap that allows for the placement of very high-level compound objects by multiple applications. The root submap is the default home submap. The root submap is the highest-level submap of the map. The root submap cannot be deleted. The first time a map is opened, the root submap is set as the home submap.

Home Submap

The home submap is the submap that appears first in a submap window when you open a map. It is analogous to a home directory. You can assign any submap of the map as the home submap.

Submap Traversal

You can obtain a more detailed view of systems on your network by double-clicking on an explodable symbol which has a child submap. This causes the symbol to explode into a more detailed view of your network. This more detailed view is a child submap of the root submap. You can continue to view an increasingly detailed view of your network in this manner. When you create a child submap, the object that the explodable symbol represents is called the parent object of the child submap. If several submaps contain an explodable symbol of the parent object, you can assign one of those submaps as the parent submap. You can return to the parent submap by clicking the **Parent** button on the submap you are viewing. In this fashion you can return back to the root submap.

For example, a high-level submap could contain a symbol for an entire organization. From this high-level view of the map, you can select a submap that contains a view of your network map from the perspective of a particular location. From there, you can select a specific department, then a specific node. Each of these submaps graphically display a different perspective of your map.

Application Plane and User Plane

Submaps contain two layers or planes on which symbols are presented, the application plane and the user plane. The two planes are conceptual. Symbols on the application plane represent objects that are managed by at least one network or system management application. Symbols on the user plane represent objects that are not managed by any applications.

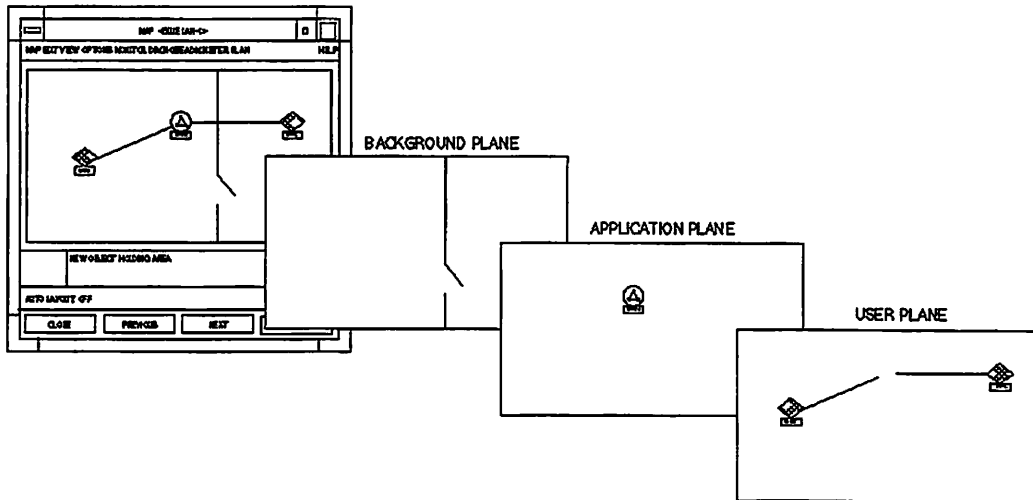


Figure 5-5. Planes and the Submap Window

If one or more applications manage an object, one or more symbols of that object are displayed on the application plane. The symbols of that object appear to be presented flat against the submap background. If no applications are managing the object, all symbols of that object appear on the user plane. OVW distinguishes symbols on the user plane by providing shading for symbols that makes them appear raised above the submap background.

The Background Plane

The background plane allows you to add a graphic to your network map. Symbols on the application plane and the user plane appear on top of the graphic. The background plane is an inactive plane that can be used to display a background graphic in the background of a submap presentation. The background plane may be empty.

Background Graphics

A background graphic is a graphic, such as a map or picture, that may be displayed in the background plane on a submap window. The background graphic may be different for each submap.

You can specify what the background should look like in a given Submap window. OVW supports the following file formats for background graphics:

- GIF(tm) - CompuServe Graphics Interchange Format
- XBM - X11 monochrome bitmap format.

Submap Ownership

A submap may be created as an Exclusive Submap or a Shared submap.

Exclusive Submaps

An Exclusive submap is a submap that is created by an application which has exclusive rights of control over the submap. If an application creates a submap as an exclusive submap, only that application can determine what happens in the application plane of the submap. The owning application must approve the placing of a symbol on the application plane.

Shared Submaps

A shared submap is completely accessible by all applications. If any application is interested in one or more attributes of the object, the symbol of the object resides on the application plane. Shared submaps are intended for use where cooperation between applications is required. All submaps created by a user are shared submaps.

Submap Creation

Both applications and users can create submaps. An application may create and open submaps that display symbols of objects that the application manages. Applications may automatically generate submaps of systems on your network. Once submaps are generated, you navigate to the submap with the mouse or by using the **available Submaps** dialog box.

You can create submaps that show a particular view of a some aspect of your network. For example, one submap may show all the nodes on a particular network segment, another submap may show all the software subsystems of a particular node.

The method you use to create a new submap determines whether the submap is a child submap or an independent submap. A child submap contains a parent object. To create a child submap, you double-click on an explodable symbol that has no child submap. You can navigate to the child submap from an explodable symbol of the parent object. An independent submap is created from the **Edit: Submap -> New...** menu item. An independent submap has no parent object. To display an independent submap, you select a submap entry in the **Submaps in Map** dialog box and click **Open Submap**.

Layout Algorithms

Each submap has a layout algorithm assigned that determines how symbols are displayed in the submap. The layout algorithms are based on common network topologies. You can choose from the following layout algorithms:

- **Row/Column.** Symbols are arranged in rows and columns.
- **Point To Point.** Symbols are arranged as an arbitrarily inter-connected set of nodes and connections.
- **Bus.** Symbols are arranged along a snake-like backbone representing the linear array of nodes on a segment.
- **Star.** Symbols are arranged in a star consisting of a circle and a center symbol. You can set the star center using the symbol pop-up menu.
- **Ring.** Symbols are arranged in a circle.
- **No Layout.** Symbols are arranged by the user or are left in the **New Object Holding Area**.

You can set the layout algorithm for a submap when the submap is created. The layout algorithm cannot be changed for that submap afterwards. If an application creates a submap, it may specify a layout algorithm. If no layout algorithm is specified when the map is created, a default layout algorithm is selected. The default layout algorithm for a submap is based on the symbol type of the parent object.

Automatic Layout

Automatic layout either enables or disables enforcement of the layout algorithm of a submap. You can enable or disable the autolayout algorithm for a single submap or for all submaps in the open map at the same time. After enabling/disabling autolayout for all submaps in the open map, you can subsequently change the autolayout setting for any particular submap.

To enable or disable automatic layout for all submaps of the open map, select **View: Automatic Layout -> For All Submaps**. A cascade menu enables you to choose **On For All Submaps** or **Off For All Submaps**.

To enable or disable Automatic Layout for an individual submap, select **View: Automatic Layout -> For This Submap** from the menu bar of the submap you want to change. A cascade menu enables you to choose **On For This Submap** or **Off For This Submap**.

If automatic layout is enabled:

- **[Auto-Layout]** appears on the right side of the status bar.
- When a new symbol is added to the submap, OVW places the symbol on the submap according to the assigned layout algorithm.
- You cannot move the symbols in the submap. All symbols in the submap snap back to their original position when you try to move them around with the mouse.

If automatic layout is disabled:

- A **New Object Holding Area** is created in the lower portion of the submap.
- Symbols added to the submap are placed in the **New Object Holding Area**. You can move symbols from the **New Object Holding Area** to the submap.
- You can move symbols in the submap around with the mouse. You cannot move a symbol from the submap to the **New Object Holding Area**.
- You can arrange symbols in the submap according the assigned layout algorithm by selecting **view: Redo Layout**.

New Object Holding Area

A **New Object Holding Area** appears on the lower portion of each submap window if the submap has no layout algorithm or if the assigned layout algorithm is disabled (automatic layout is off). Symbols in the **New Object Holding Area** are shown without their connections.

Submap Presentation

Submap presentation enables you to choose how each submap presents symbols and background graphics. You can choose between scaling and zooming for each specific submap from the **New Submap** dialog box (during submap creation) or from the **Submap Description** dialog box.

Scaling

Scaling enables the submap to match the size of the submap window when it is increased or decreased. All displayed symbols and the background graphic scale to the size of the submap window. Scaling is the default setting when a submap is created.

Zooming

Zooming enables you to display a closeup of the submap. Scroll bar appears when when only a portion of the submap fits into the viewing area. You can set the zoom factor, which determines the extent to which you zoom into the view of the submap. The default zoom factor is one.

Meta-Connection Submap

A Meta-Connection is a symbol that represents multiple connections between two symbols on a submap. You cannot view each individual connection between the two symbols on the submap in which the meta-connection symbol is displayed. A meta-connection symbol looks the same as a regular connection symbol. However, you can display each individual connection between the two symbols, by double clicking on the meta-connection to open a meta-connection submap.

A meta-connection submap displays multiple connections between two symbols or a symbol and a backbone. OVW creates a meta-connection submap when you or an application adds a connection symbol between two symbols in a regular submap that already have a connection. Multiple connections may exist between two symbols or a symbol and a backbone. The meta-connection submap displays the status of each connection between the two symbols. You can add an unlimited number of connections between two symbols in a regular submap. Each of these connections is automatically added to the meta-connection submap with the two symbols as endpoints.

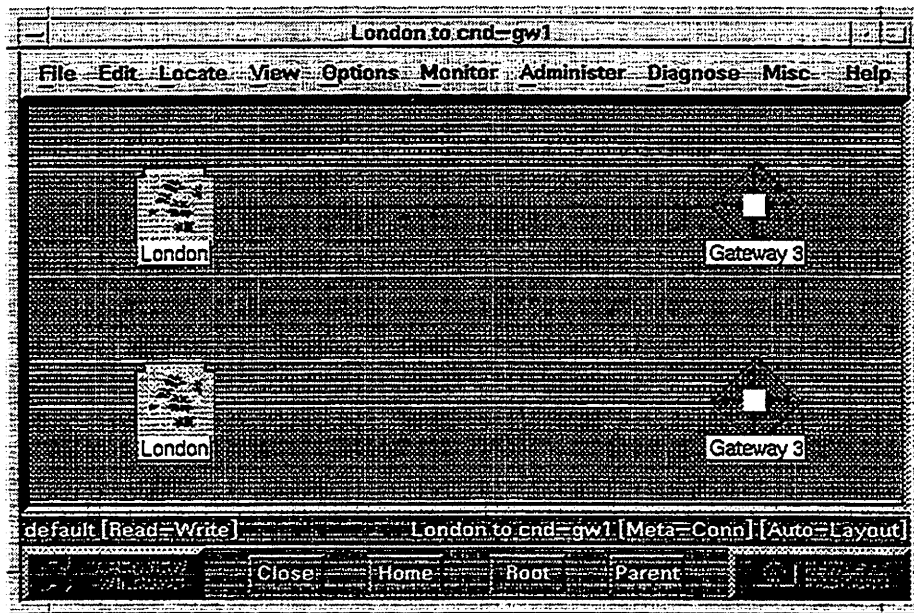


Figure 5-6. Meta-Connection Submap

Characteristics of a Meta-Connection Submap

You can open the meta-connection submap by double-clicking on the connection symbol. A meta-connection submap:

- Displays all the connections represented by the meta-connection symbol.
- For each connection in the submap, the two endpoints of the connection are displayed with each connection in the meta-connection submap.

Meta-Connection Submaps and Regular Submaps

A meta-connection submap behaves the same as a regular submap in the following ways:

- You can create a child submap from a meta-connection submap by double-clicking on any of the objects in the meta-connection submap. Therefore, the meta-connection submap can be a parent of other regular submaps.
- You can select objects in the meta-connection submap.
- You can add unconnected objects to a meta-connection submap.

A meta-connection submap behaves differently from regular submaps in the following ways:

- You cannot add connections to a meta-connection submap.
- Deleting the last object from the submap (whether it represents a connection or not) will cause the meta-connection and meta-connection submap to be deleted. A confirmation box appears before the deletion occurs.
- Compound Status works differently in meta-connection submaps. The meta-connection symbol displays the compound status of the multiple connections in the meta-connection submap. Any unconnected objects in the meta-connection submap also contribute to compound status. However, the connected icon symbols in a meta-connection submap do not propagate their status. Their status is maintained by the symbols in the parent submap above the meta-connection submap.

Submap Operations

The following sections discuss tasks that you may want to perform that involve submaps. Procedures for the following tasks are discussed:

- Create a child submap.
- Assign a parent submap.
- Create an independent submap.
- Assign a home submap.
- Use Redo Layout.
- Add a background graphic

Creating a Child Submap

If you create a submap by double clicking on an explodable symbol that does not already contain a submap, the object represented by explodable symbol is the submap's parent object. You can open the submap from any explodable symbol of the parent object. The submap is a part of a hierarchy of submaps in the map.

Prerequisites for this Task

The map must be open with read-write access.

Procedure

To create a child submap:

1. Double click on an explodable symbol that does not contain a child submap. An OVW Question box appears, telling you the symbol currently has no child submap. You can create a child submap with default settings or you can modify the submap settings.
2. To create a child submap with default settings, click **OK**. The new submap is created and displayed. When you double click on an explodable symbol of the parent object, the submap is opened. When you click **Parent** in the button box of the submap, the parent submap is opened.

The default settings of the child submap are as follows:

- The name of the submap is the same as the selection name of the object from which the submap was created.
- The presentation is scaling.
- The submap contains no background graphic.
- The submap contains no comments.

To modify the setting of the child submap:

1. To modify the setting of the submap, click **modify**. The New Submap dialog box appears. The name of the parent object appears in the Parent Object field. The button to the right of Parent Submap displays the name of the parent submap.
2. The following steps are optional. You may choose to modify the settings:
 - a. Change the name of the parent submap, by entering text for the new name.
 - b. Change the layout algorithm by clicking on the button to the right of **Layout**: . Each submap has its own layout algorithm that is set when the submap is created and cannot be changed afterwards.
 - c. Change Submap Presentation. Scaling is the default setting for submaps. In scaling, the submap scales to the size of the submap window when the window is resized. Background graphics also scale to size.
In zooming, you can set a zoom factor to display a close-up view of the submap. The default zoom factor is 1 (normal view).
 - d. Enter the filename for a background graphic.
 - e. Enter comments.
3. Click **ok**. The new submap is created and displayed. When you double click on an explodable symbol of the parent object, the submap is opened. When you click **parent** in the button box of the submap, the parent submap is opened.

You can modify most of these settings in the Submap Description dialog box by selecting **edit: Submap**
-> **Description...**

Possible Parent Submaps

The possible parent submaps of a submap are all the submaps in which a symbol representing the parent object of the current submap exist. These are all the submaps through which a user might have arrived at the current submap. One of these submaps is chosen as the parent submap that will be opened when the **parent** button of the submap is selected.

Assigning a Parent Submap

Purpose of this Task

Change the parent submap of the open submap. The parent submap is the submap that is displayed when you select the Parent button on the button panel of the submap window.

Prerequisites for this Task

The possible parent submaps are the submaps that contain an explodable symbol of the submap's parent object. That is, any submap with an explodable symbols that opens this submap is listed in the Parent Submap option list.

Procedure

1. Select **Edit: Submap -> Description...** The Submap Description dialog box appears.
2. The option button to the right of **Parent Submap:** displays the name of the parent submap for this submap. You may be able to display a list of all possible parent submaps of this submap by pressing on that button.
 - a. If a list is displayed, select the name of the submap you want to assign as the parent. The name of the parent submap appears on the option button.
 - b. If no list is displayed, the current parent submap is the only choice at this time. You can create other choices by placing an explodable symbol of the parent object on another submap.

Creating an Independent Submap

If you create a submap using the **New Submap** menu operation, the submap will have no associated parent object and the submap is independent of any existing hierarchy of submaps. You can open a submap created without a parent object through the **Available Submaps** dialog box, but you cannot open this submap by double-clicking on a symbol.

An independent submap can be used as the beginning of a new submap hierarchy. You can create child submaps from this submap and build an additional submap hierarchy in the map.

Prerequisites for this Task

The map must be open with read-write access.

Procedure

To create an independent submap:

1. Select **Edit: Submap -> New...** An OVW question box appears, stating that you are about to create a submap with no parent object. You can create the submap with default settings or you can modify the submap settings.
2. To create a submap with default settings, click **OK**. The new submap is created and displayed.

The default settings of the child submap are as follows:

- The name of the submap is the same as the selection name of the object from which the submap was created.
- The presentation is scaling.
- The submap contains no background graphic.
- The submap contains no comments.

It is possible to make the independent submap a parent for an existing submap or submap hierarchy. To do so, choose the submap that is to become the child submap, and identify its parent object. Then, copy a symbol of the parent object, and paste it onto the independent submap.

Assigning a Home Submap

Purpose of this Task

Change the submap that is displayed when the map is opened.

Prerequisites for this Task

The map must be open with read-write access.

Procedure

To assign a submap to be the home submap:

1. Select **Edit: Submap -> Open/List...** The Submaps in Map dialog box appears.
2. Select the submap you want to be the Home Submap. You can use the **Find Submap** field to find a specific submap by matching a string or substring with a submap entry.

3. Click **Set As Home**. The selected submap name appears in the **Home Submap** field.
4. Click **OK**. The **Submaps in Map** dialog box closes and the selected submap is the first submap displayed when this map is opened.

Using Redo Layout

Redo layout enables you to arrange the symbols in a submap according to the assigned layout algorithm. Redo Layout works regardless whether automatic layout is enabled or disabled.

To redo the layout for a submap, select **View: Redo Layout**.

Adding a Background Graphic

Add a graphic to the background of a submap, or replace a graphic with a new graphic.

Purpose of this Task

A graphic serves as a background for the symbols in a submap. A graphic provides contextual information such as a floor plan for systems, a map of geographically diverse sites, etc. Both users and applications can specify a background graphic for a submap.

Prerequisites for this Task

The map must be open with read-write access.

Procedure

You can modify submap characteristics from the **Submap Description** dialog box.

1. Select **Edit: Submap -> Description...** The **Submap Description** dialog box appears.
2. Enter the name of a graphic in the **Background Graphic** field. You must enter the full pathname of the graphic file.
3. Click **OK**.

OVW displays the graphic in the submap.

Map Snapshots

A snapshot is a particular map frozen in time. A snapshot displays the state of your network at the time you took the snapshot. A snapshot may be useful for comparing versions of your network and systems map or for troubleshooting. A snapshot preserves the status and location of all symbols, and contains all the submaps that existed in the map.

Creating and Opening a Snapshot

You can create multiple snapshots of a map, giving you a record of the state of your network at different times.

Purpose of this Task

Create a record of the state of your network.

Prerequisites for this Task

The map must be open with read-write access.

Procedure

To create and open a snapshot:

1. Choose **File: Map Snapshot -> Create...** The **Create Snapshot** dialog box appears.
2. Enter a name for the snapshot, if desired, or leave the default name. Enter comments if desired.
3. Select **OK**. OVW creates the snapshot.
4. Open the snapshot by selecting **File: Map Snapshot -> Open/List...** The **Available Snapshots** dialog box appears.
5. Select the name of the snapshot you have just created and click **Open Snapshot**. The home submap for the selected snapshot appears. The open map is still displayed.

The status bar indicates the name of the snapshot on all submap windows of an open snapshot. Snapshots are read-only. You cannot edit a snapshot. However, you can traverse submaps, locate objects, and keep an updated selection list for each submap. Only one snapshot may be open at a time. If a snapshot is already opened when you choose to open another snapshot, the previously opened snapshot is closed.



Menu Reference

Introduction

This appendix provides you with a reference of the menu items of the HP OpenView Windows menu bar.

File Menu

Contains items that enable you to perform operations on maps and snapshots. By convention, the File menu contains items that are generally associated with files. Maps and snapshots are stored as files. The File menu also enables you to exit OVW. You can perform operations such as the following:

- Create a new map.
- List available maps and open a map.
- Delete a map.
- Describe or modify the characteristics of the open map.
- Create, open, list, describe, and delete snapshots of the open map.
- Exit HP OpenView Windows.
-

File

New Map...

Displays the **New Map** dialog box, which allows you to create and configure a new map. You must enter the name for the new map in the **Name** field. You can change the layout of the root submap from the default, row/column, to another layout during map creation only. You can change the compound status scheme for the map. You can configure applications for the new map. The **Configurable Applications** list displays applications that are registered for use with OVW. Selecting an application and clicking on the **Configure For This Map** button opens a **Configuration** dialog box that allows you to display and change configuration settings for the application. You can configure applications on each map differently. You can enter appropriate comments to describe the purpose of this map or other useful information for people who will use the map.

File

Open/List Maps...

Displays the **Available Maps** dialog box, which permits you to access all available maps. The names of all maps are displayed, including map permissions and the first few words of comments that may have been assigned to the map. From this dialog box, you can open a map, assign a map as the user default map, or delete a map. To open a map, select a map entry from the list and click on the **Open Map** button. OVW displays a box requesting confirmation from you before OVW closes the currently open map and opens the new map.

File

Save Map As...

Displays the **Save Map As** dialog box, which permits you to save a copy of the open map under a new name. You can enter text for the name of the new map in the **Name of Saved Map** field. Enter appropriate comments if desired.

File

Delete Map...

Displays the **Available Maps** dialog box, which is described above under **File: Open/List Maps...** To delete a map, select a map entry from the list and click on the **Delete** button. OVW displays a box requesting confirmation from you before the selected map is deleted.

File

Describe/Modify Map...

Displays the **Map Description** dialog box, which enables you to view or modify the characteristics of the open map.

File

Refresh Map

Causes OVW to update the open map to show current map topology. This menu item is needed for Read-only maps and is greyed on submap windows of maps opened with Read-Write access. Maps opened with read-write access are updated automatically.

File

Map Snapshot ->

Open/List...

Displays the **Available Maps** dialog box, from which you can access the snapshots that have been created for the open map. Snapshots are listed by the date and time of creation, followed by the snapshot name. From this dialog box, you can open a snapshot or delete a snapshot. To open a snapshot, select a snapshot entry and click **Open Snapshot**. Submap windows of the open snapshot contain the **[Snapshot]** message in the status bar to distinguish them from submap windows of the open map.

File

Map Snapshot ->

Create...

Displays the **create snapshot** dialog box, from which you can create a snapshot of the current state of the open map. A suggested snapshot name appears in the **Name** field. You can change it if you wish. Select **OK** to initiate the snapshot creation.

File

Map Snapshot ->

Delete...

Displays the **available snapshots** dialog box, which is described above under **File: Map Snapshot -> Open/List...** To delete a snapshot, select the snapshot entry and click the **Delete** button. OVW displays a box requesting confirmation from you before the selected map is deleted.

File

Map Snapshot ->

Description...

Displays the **snapshot description** dialog box, which describes basic characteristics for the snapshot such as the name, creation date and time, and the compound status scheme for the snapshot. All fields in this dialog box are read-only. This menu item is greyed on submap windows of the open map.

File

Map Snapshot ->

Close

Closes all windows associated with the current snapshot. This menu selection is only available on submap windows of a snapshot.

File

Exit

Allows you to exit HP OpenView Windows.

Edit Menu

Contains items for editing symbols and objects in submaps of the open map. You can also perform tasks on submaps. Tasks such as the following are available:

- Add objects and connections to submaps of the open map.
- Cut (or copy) and paste symbols between submaps of the open map.
- Delete symbols or objects.
- Hide symbols so they do not appear on the submap or all submaps of the open map.
- Show the hidden symbols on a submap or all submaps of the open map. This action unhides the symbols.
- Create, describe, list, open, or delete submaps of the open map.

Edit

Add Object...

Displays a Symbol Palette containing Icon Symbol classes, subclasses, and instructions for use.

Edit

Add Connection...

Displays a Symbol Palette containing Connection Symbols and instructions for use.

Edit

Cut ->

From This Submap

Removes the selected symbol(s) from the current submap and stores it in the "cut buffer." There is no dialog box associated with this action.

Edit

Cut ->

From All Submaps

Removes the selected symbol(s) from all submaps and stores them in the "cut buffer." There is no dialog box associated with this action.

Edit

Copy ->

From This Submap

Copies the selected symbol(s) from the submap to the "cut buffer." There is no dialog box associated with this action.

Edit

Copy ->

From All Submaps

Copies the selected symbol(s) from all submaps of the map to the "cut buffer." There is no dialog box associated with this action. You can paste all symbols in the cut buffer onto a single submap only.

Edit

Paste

Pastes symbol(s) from the "cut buffer" into the current submap. There is no dialog box associated with this action.

Edit

Delete ->

From This Submap

Deletes the selected symbol from the current submap after user confirmation.

Edit

Delete ->

From All Submaps

Deletes the selected symbol(s) from all submaps and maps after user confirmation.

Edit

Hide ->

From This Submap

Hides selected symbols from a single submap. The symbols still exist, but they are not displayed in the submap. Hidden symbols do not contribute to compound status and do not receive status updates. However, locate operations will search for and list objects of hidden symbols. If a submap contains hidden symbols, the status bar of that submap displays the number of hidden symbols. You can unhide all hidden symbols in a particular submap by selecting one of the menu items under **Edit: Show Hidden Objects**.

Edit

Hide ->

From All Submaps

Hides selected symbols from all submaps of the open map. The symbols still exist, but they are not displayed in the submap. Hidden symbols do not contribute to compound status and do not receive status updates. However, locate operations will search for and list objects of hidden symbols. If a submap contains hidden symbols, the status bar of that submap displays the number of hidden symbols. You can unhide all hidden symbols in a particular submap by selecting one of the menu items under **Edit: Show Hidden Objects**.

Edit

Shown Hidden Objects ->

For This Submap

Unhides all previously hidden symbols for the current submap. If autolayout is enabled for the submap, OVW places all unhidden symbols in the submap according to the submap's layout algorithm. If autolayout is disabled (or if no algorithm is selected), OVW places the unhidden symbols in the submap's New Object Holding Area.

Edit

Show Hidden Objects ->

For All Submaps

Unhides all previously hidden symbols for all submaps in the map. Symbols are placed on the submaps from which they were hidden. If autolayout is enabled for a submap, OVW places all unhidden symbols according to the submap's layout algorithm. If autolayout is disabled (or if no algorithm is selected) for a submap, OVW places the unhidden symbols in the submap's New Object Holding Area.

Edit

Submap ->

New...

Displays the New Submap dialog box, from which you can create a new submap by assigning a name to the submap in the Name field and clicking OK. If you create a map from the Edit:Submap - New menu item, the submap is created without a parent object and a parent submap. To open this submap, you must use the Submaps in Map dialog box.

Edit

Submap ->

Open/List...

Displays the Submaps in Map dialog box, which displays a list of all submaps of the open map. You can select a submap for opening. The Find Submap field allows you to search for specific submaps.

Edit

Submap ->

Delete...

Displays the Submaps in Map dialog box, which displays a list of all submaps of the open map. You can select a submap for deleting. Deleting a submap deletes all symbols in the submap, and deletes all child submaps under the deleted submap. All symbols in each deleted submap are deleted. All symbols of the submap's parent object are deleted. The parent object is deleted unless it is represented by symbols in another map. Objects represented by the deleted symbols are deleted unless they are represented by another symbol in another submap or map. The Find Submap field allows you to search for specific submaps.

Edit

Submap ->

Description...

Displays the Submap Description dialog box, which allows you to view and modify the characteristics of the current submap.

Edit

Submap ->

Delete This Submap

Selecting this menu item deletes the current submap and deletes all symbols in the submap. This operation is recursive for all child submaps under the deleted submap. That is, all child submaps under the deleted submap (and their child submaps) are also deleted. All symbols in each deleted submap are deleted. The parent object is deleted unless it is represented by symbols in another map. Objects represented by the deleted symbols are deleted unless they are represented by another symbol in another submap or map.

Locate Menu

Contains menu items that enable you to locate items in the open map.

- You can list all selected objects in the object selection list.
- You can locate specific submaps by displaying the **Submaps in Map** dialog box and searching for submaps by name.
- You can locate objects based on the following object and symbol characteristics:
 - Selection Name
 - Attributes
 - Comments
 - Symbol Status
 - Symbol Type
 - Symbol Label

Locate

Selected Objects List...

Displays a list of selected objects on the open map or open snapshot. The selection list displays objects by their selection name. The selection list enables you, and applications, to perform tasks on multiple objects.

The selection list for a snapshot has the same functionality as that of a map selection list. This enables you to obtain data about the network map at the time you created the snapshot. You can display both map and snapshot selection lists at the same time.

Each map and snapshot contains its own selection list. Each time a map is opened, the selection list is empty. Modifying the contents of the selection list for the open map does not affect the selection list of other maps or snapshots. Another user displaying the same map may have a different selection list at any time. The contents of the selection list are specific to the current presentation.

Locate

Objects ->

By Selection Name...

Displays a dialog box that allows you to search for objects by selection name in the open map or open snapshot. You can search for an exact selection name or a substring or regular expression. For each symbol of a located object in the map or snapshot, OVW displays the selection name of the object, the name of the submap on which a symbol of the object is located, and the symbol label.

Locate

Objects ->

By Attribute...

Displays a dialog box that allows you to search for objects by attribute value in the open map or open snapshot. You can select from the list of registered attributes. When you select an attribute, fields appear that enable you to enter values for the chosen attribute. This field changes according to the data type of the attribute selected from the list. For each symbol of a located object in the map or snapshot, OVW displays the selection name of the object, the name of the submap on which a symbol of the object exists, and the symbol label.

Locate

Objects ->

By Comment...

Displays a dialog box that allows you to locate objects with a particular comment substring. **Locate By Comment** enables you to search for objects based on a key that is not a supported attribute. You may establish conventions for embedded keywords. For each symbol of a located object in the map or snapshot, OVW displays the selection name of the object, the name of the submap on which a symbol of the object exists, and the symbol label.

Locate

Objects ->

By Symbol Status...

Displays a dialog box that allows you to find objects represented by symbols with a particular status state. For each symbol, OVW displays the selection name of the object, the name of the submap on which a symbol of the object exists, and the symbol label.

Locate

Objects ->

By Symbol Type...

Displays a dialog box that allows you to find all symbols of a particular type. For each symbol, OVW displays the selection name of the object, the name of the submap on which a symbol of the object exists, and the symbol label.

Locate

Objects ->

By Symbol Label...

Displays a dialog box that allows you to search for objects by symbol label. For each symbol, OVW displays the selection name of the object, the name of the submap on which a symbol of the object exists, and the symbol label.

Locate

Submaps...

Displays the **submaps in map** dialog box, which lists all submaps of the open map.

View Menu

Contains items that allow you to change the amount and/or appearance of the data being viewed in the submap window.

View

Highlights ->

Select Highlighted

Places the selection names of highlighted objects in the selection list.

View

Highlights ->

Clear Highlights

Removes highlighting from all highlighted objects. This clears the highlighting of all symbols of previously highlighted objects.

View

User Plane ->

For This Submap -> Shadow On / Shadow Off

Enables you to choose whether symbols in the user plane are displayed with or without shadowing for the current submap. Shadowing distinguishes symbols in the user plane from symbols in the application plane.

View

User Plane ->

For All Submaps -> Shadow On / Shadow Off

Enables you to choose whether symbols in the user plane are displayed with or without shadowing for all submaps in the map. Shadowing distinguishes symbols in the user plane from symbols in the application plane.

View

Automatic Layout ->

For This Submap -> On For This Submap / Off For This Submap

Allows you to turn automatic layout on or off for the current submap. If automatic layout is on, OVW displays symbols in the submap according to the submap's layout algorithm.

View

Automatic Layout ->

For All Submaps -> On For This Submap / Off For This Submap

Allows you to turn automatic layout on or off for all submaps in the open map. If automatic layout is on, OVW displays symbols in the submap according to the submap's layout algorithm. When it is turned off for all submaps, you can turn it on for selected submaps using the previously described menu item.

View

Redo Layout

Repositions all symbols in the current submap according to the submap's assigned layout algorithm. **Redo Layout** works even if automatic layout is disabled for the submap.

Options Menu

Items in this menu are associated with the configuration and customization of the general HP OpenView Windows environment.

Options

Manage Objects

Enables you to activate the management capabilities of OVW and applications on one or more objects. You can set an object as managed or unmanaged. An object that is being managed is monitored by applications for topology, status, and configuration changes. Symbols of a managed object display status on the map. The manage/unmanage state is recursive. That is, if you manage an object, all objects in child submaps of that object are also managed. The manage/unmanage state affects the objects within the open map.

Options

Unmanage Objects

Enables you to inactivate the management capabilities of OVW and applications on one or more objects. Unmanaging objects is useful for reducing the load of system resources on areas of your network that are not of interest. Symbols of an unmanaged object do not display status nor do they contribute to compound status. The manage/unmanage state is recursive. That is, if you unmanage an object, all objects in child submaps of that object are also unmanaged. The manage/unmanage state affects the objects within the open map.

Options

Map Configuration ->

Modify Map...

Displays the **Map Description** dialog box, which allows you to view or modify the characteristics of the open map.

Options

Map Configuration ->

Set User Default...

Displays the **Available Maps** dialog box, which permits you to assign a map as the user default map.

Monitor Menu

Items in this menu allow access to application tools that present information relevant to the selected objects. The information can be state information that is permanent or slow to change, such as Description, or it can be information that continually changes as a function of time or use, such as the amount of LAN traffic, CPU load, etc.

Monitor

Description ->

Selected Objects

Displays an **object description** dialog box for all objects in the selection list, one dialog box for each selected object.

Monitor

Description ->

This Submap...

Displays the **map description** dialog box, which allows you to view or modify the characteristics of the submap.

Monitor

Description ->

This Map...

Displays the **map description** dialog box, which allows you to view or modify the characteristics of the open map.

Monitor

Description ->

This Snapshot...

Displays the **snapshot description** dialog box, which allows you to view the characteristics for the open snapshot. This menu item is greyed on submap windows of the open map.

Diagnose Menu

Items in this menu allow access to applications for troubleshooting, testing, and diagnosing problems with systems on the network.

Diagnose

Network Connectivity ->

Demand Poll

updates the open map with information about selected objects. The Demand Poll operation is performed automatically at preset intervals. You can perform the Demand Poll at any time. The Demand Poll displays any status changes, lists any exceeded thresholds for the selected node objects, and displays any newly-discovered nodes on the map.

Misc Menu

Items in this menu allow access to applications for whose functionality does not fit under the other OVW menus. OVW provides the following items:

Misc

Terminal Connect ->

Telnet (hpterm)

Enables you to create a terminal emulator on a local system that is connected to a remote system via a network virtual terminal protocol. Telnet (hpterm) connects an hpterm terminal emulator to a remote system that supports the Telnet network protocol and HP terminals.

Misc

Terminal Connect ->

Telnet (xterm)

Enables you to create a terminal emulator on a local system that is connected to a remote system via a network virtual terminal protocol. Telnet (xterm) connects an xterm terminal emulator to a remote system that supports the Telnet network protocol and DEC VT102 terminals.

Misc

Terminal Connect -L>

Vt3k (hp3000) -> Block Mode.../Type Ahead...

Enables you to create a terminal emulator on a local system that is connected to a remote system via a network virtual terminal protocol. vt3k (HP3000) connects an HP NS virtual terminal to a remote HP3000 system running NS virtual terminal services. The remote HP3000 system must support the vt3K network protocol.

Help Menu

A menu that enables you to get detailed help information on HP OpenView Windows and general information about registered applications that are integrated with HP OpenView Windows. The OVW Online Help System is designed so that online help for integrated applications can be merged with OVW online help. OVW automatically rebuilds the help system for you when you install new applications that include online help.

- An index of help entries on the following:
 - Applications registered with HP OpenView Windows.
 - The functionality of HP OpenView Windows and registered applications.
 - The tasks you can perform with HP OpenView Windows and registered applications.
- A glossary of terms and concepts used by OVW and applications integrated with OVW.
- The version of OVW on your system and the version of applications registered with OVW.

Help

On Help

Describes the OpenView online help system, including the information available from the help menu, from the Help button on dialog boxes, and from the menu bar of integrated applications (optional).

Help

Display Legend

The Display Legend illustrates symbol types and visual cues used in the OVW graphical user interface.

Help

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Applications

Displays a list of registered applications and information about each application.

Help

Index ->

Tasks

Displays a list of help entries that show you how to perform tasks using OVW and integrated applications.

Help

Index ->

Functions

Displays a list of help entries that describe the functions available with OVW and integrated applications.

Help

Glossary

Displays a list of terms and concepts related to the operation of OVW and integrated applications.

Help

On Version

Displays the software versions currently being used.

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