

HP OpenView Service Assurance for Communication Networks

Operator Online Help

HP-UX, Solaris, Windows NT®



i n v e n t

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1

Introduction to the Topology GUI

HP OpenView Service Assurance for Communication Networks (OVSACN) is an integrated solution for managing IP devices, telecom equipment, system information, and software applications. It consists of three purchasable products: HP OpenView Operations (OVO), OV Telecom Extensions for OV Operations, and OV Topology Server. Online help for the OVO GUI is available from the `Actions:Telco iNOC->Launch iNOC Help` menu item.

The topology GUI is a component of the OV Topology Server product. The OV Topology Server manages events from multi-vendor telecom equipment using a variety of network transport protocols including ASCII, CMIP, SNMP, and TL/1. The OV Topology Server translates events into problems and presents them in a single problem report format. The topology GUI shows the network health in graphical and tabular displays.

The OV Topology Server extends fault management by integrating third-party applications, such as performance management and inventory systems. The OV Topology Server is based on Telecommunication Management Network (TMN) standards, allowing TMN and non-TMN applications to be easily integrated.

See also:

- “OV Topology Server Components” on page 12
- “OV Topology Server Problems” on page 13
- “Topology GUI Presenters” on page 15
- “Managed Object Names” on page 16
- “Job Functions” on page 18
- “Operation Profiles” on page 20
- “Online Documentation” on page 21

OV Topology Server Components

The primary components of the OV Topology Server product are:

- **Topology server**—The topology server receives messages from the telecom subagent (part of the OV Telecom Extensions for OV Operations) and correlates them into problems. The topology server updates the problems and status information displayed in the topology GUI.
- **Topology GUI**—The topology graphical user interface (GUI) consists of several presenters, including the map presenter and the problems presenter. The map presenter displays a hierarchical view (server maps, display containment) or logical view (e.g., service map) of the telecom network objects in the map presenter. The problems presenter displays formatted problems. These problems are also displayed in the OVO operator GUI's message browser.

The network operators interact with the information displayed in the topology GUI to monitor the condition of the managed objects for which they are responsible and to set priorities for their work day.

OV Topology Server Problems

Network elements in the managed network emit messages to indicate their current state.

The OV Topology Server displays the topology of the telecom devices in the topology GUI. It receives all incoming messages generated by equipment included in the lower topology and associates each message with a particular managed object instance. The OV Topology Server sets the status for each managed object instance according to the statuses contained in the received messages. It formats all received messages into problems and displays them in a problems presenter in the topology GUI.

Operators use the problems presenter to own, disown, and discharge (acknowledge) problems. A problem includes (but is not limited to) the following attributes:

- Problem owner.
- Managed object ID of the object that owns the problem.
- Problem severity.
- Creation and update times.
- Annotations.
- Trouble ticket ID.
- Probable cause of the problem.
- Specific problem.

The OV Topology Server consolidates a new alarm into an existing problem when the values of these four attributes of the new alarm and the existing problem match:

- Managed object instance.
- Event type.
- Probable cause.
- Specific problem.

The perceived severity of problems (new and updated) affects the propagated alarm status of the managed objects via status propagation. By default, the icons in the map presenter reflect the propagated status

Introduction to the Topology GUI

OV Topology Server Problems

states of the managed objects they represent.

When the OV Topology Server receives a known message type from an unknown network object, the resulting problem displays in the problems presenter and the resulting status displays on an unknown object in the unknown_managed_object domain in the map presenter. Unknown objects are rectangular with dotted borders.

Before adding information about the unknown object to the topology, delete the problems associated with the unknown object from the problems presenter. See “Problem State” on page 150.

To see the new object, log off of the OV Topology Server and start a new OV Topology Server session.

Topology GUI Presenters

The topology GUI problems presenters provide a way to view and manage the OV Topology Server data:

- “Map Presenter” on page 33—Displays the network elements, their topological connections, and the status of the network.
- “Problems Presenter” on page 139—Displays problems in a tabular form. Each row of the table describes a problem, and each column represents a problem attribute.
- “Outages Presenter” on page 167—Displays the outage plans for selected network elements. Use this presenter to create and modify outage plans and to restore network elements to active status.
- “OM Events Presenter” on page 179—Displays OM events generated by management applications in tabular form. Each row of the table describes an OM event, and each column represents an OM event attribute.
- “Chart Presenter” on page 187—Generates and displays dynamic trend frequency graphs of problems based on the parameters for the network, network element, and component. The chart is specific to the login session.

Managed Object Names

The managed objects in OV Topology Server are classified into five types called classes. The administrator uses these managed object classes to model the network in the topology.

The managed object classes are:

- **Network**—A logical class that is the highest class of managed objects. All other objects are contained under a network object. Network class objects may be embedded within other network class objects. Managed objects of network, network element, and connection classes may be contained directly under network class objects.
- **Network Element**—A class of devices that emit messages. Managed objects of component, termination point, and connection classes are contained under network element class objects.
- **Component**—A class of objects that are contained under network element, termination point, and/or component class managed objects. Component class objects may emit messages.
- **Termination Point**—A class of objects that form the ends of the connections between managed object classes.
- **Connection**—A class of objects that indicate physical links between the end points of two managed objects. A connection class object can be contained under any of the other four managed object classes and must be contained under the lowest common parent class object of the two objects it connects.

Managed Object Instance Names

A containment tree is a structure of actual device information (object instances). Each device included in the topology represents one instance of a managed object class. The managed object instance is uniquely identified by its fully distinguished name (FDN), a name that includes each level in the containment tree from the top through the object instance. The FDN is formed by concatenating all relative distinguished names (RDNs) for each object instance in the containment path to the managed object instance.

Managed Object Shortname Uniqueness Specification

The **installation** comprises all of the machines that host one or more OVSACN components. For management purposes, the installation is subdivided into locations.

A **location** is a cluster containing one or more machines offering OV Topology Server services.

The shortname is a user-specified name for the managed object. It is commonly a subset of the FDN. The administrator specifies the level to which shortnames must be unique. The possible specifications are:

- Non-unique—The same shortname can be used by different managed object instances anywhere in the OVSACN installation.
- Unique within a location—The same shortname can be used in different locations (subsets of the installation), but not within a location.
- Unique across all locations—The same shortname cannot be used within the installation.

If shortname uniqueness is not required across all locations, some managed object instances could have the same shortname yet represent different objects.

Job Functions

Administrator

The administrator handles installing, starting, setting up, and maintaining the OV Topology Server. This job function includes:

- **Configuring the system** distribution rules, managed object classes, mediation devices, and event correlation rules.
- **Configuring topology GUI preferences** such as the actions that GUI buttons invoke, the display format including colors and fonts, and the available menu commands.
- **Setting up operator access rights** (in operation profiles) to the data and tasks operators require to maintain their assigned sections of the network.
- **Creating the default network maps** and managing the network topology.
- **Defining and configuring a Topology Service**, including service hierarchy, templates, message groups, node groups, applications, and application groups.
- **Maintaining the databases**, including backing up the data regularly and restoring the data when necessary.

Operator

The operator uses the topology GUI to monitor and maintain an assigned section of the network. The operator:

- Monitors network function.
- Checks for problem occurrences and manages outage plans.
- Triggers remedial action when necessary.

Some typical operator tasks are:

- **Launching a presenter** to monitor the managed objects of the network or to display the properties related to a specific object.
- **Interacting with the presenters** to invoke the predefined

presenter functions and layout services.

- **Customizing the presenters** to change display settings, set data filtering or sorting, and set interaction preferences.

Operation Profiles

The administrator configures operation profiles to assign operators access to the OV Topology Server information and services. An operation profile specifies the following information:

- **User**—A valid user login name.
- **Work Schedule**—A schedule of allowable login times for the user.
- **Filters**—Expressions that define the user's access to problems.
- **Applications and Tasksets**—The topology GUI functions that are available to the user.
- **Management Domains**—The assigned subset of the network to manage.

Each operator may be assigned one or more operation profiles. Many operators may use the same operation profile. During the login process, the operator selects one operation profile for the session.

Online Documentation

Online help for the topology GUI is available for both UNIX systems and the Windows NT operating system. The supported browsers include Internet Explorer version 4.x or higher and Netscape Navigator version 4.x or higher. For UNIX GUI Client systems, contact your administrator to register the browser in the external application registration file.

If the Online Documentation is Not Installed

If the online documentation has not been installed on a particular system, you may find it installed on other systems, or you can install the documentation from the original product CD-ROM. For more information about installing the online documentation, see your product's *Installation Guide*.

If You Prefer Hardcopy Documentation

The online help information is available in a single PDF file for printing and searching.

To access documentation in Adobe Acrobat (PDF) form, use a standard Adobe Acrobat Reader. If you do not have Adobe Acrobat Reader, or your Reader is not compatible with the files provided, you can download the latest Acrobat Reader free of charge from Adobe's website at: <http://www.adobe.com>

Contact Information

Technical Support and Training

Technical support and training information can be found on the HP OpenView World Wide Web site at:

<http://openview.hp.com/>

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Online Documentation

- via e-mail to: ovdoc@fc.hp.com, or
- via the HP documentation site at: <http://www.docs.hp.com>

If you encounter *serious errors* in the documentation that impair your ability to use the product, please contact the HP Response Center or your support representative so that your feedback can be entered into CHARTS (the HP Change Request Tracking System).

An OV Topology Server session is one running instance of the topology GUI. Each session requires a user account and an operation profile that specifies your access right to the OV Topology Server system.

When the OV Topology Server is installed in multiple locations, one user login ID can log in to multiple sessions at different locations. If a map is updated from more than one of the sessions at the same time or within minutes of another update, the database information may become inconsistent.

See also:

- “Starting the Topology GUI” on page 24
- “Troubleshooting the Login” on page 26
- “Getting Started with the Topology GUI” on page 27
- “Troubleshooting a Presenter Core Dump” on page 28
- “Setting Your Home Session” on page 29
- “Changing Your Password” on page 30
- “Using the Message Browser” on page 31
- “Exiting the Topology GUI” on page 32

Starting the Topology GUI

You can initiate a topology GUI session in one of two ways:

- From the OVSACN interface.
- As a standalone application.

From HP OpenView Operations

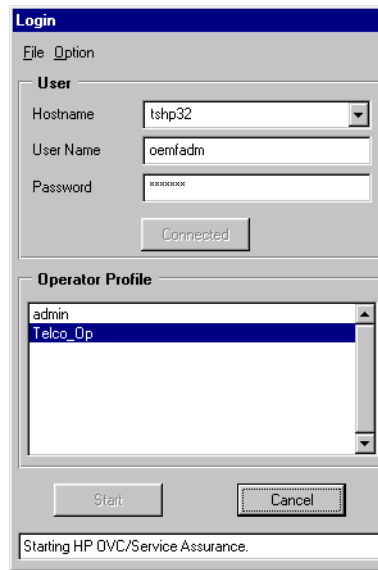
To initiate a session from the HP OpenView Operations interface:

1. From the **Actions** menu or from the **Applications** area of the **Scoping** pane, select one of the following:
 - For UNIX operating systems, select **Telco iNOC:Launch UX GUI**
 - For the Windows NT operating system, select **Telco iNOC:Launch NT GUI**.

As a Standalone Application

Although launching the topology GUI from the HP OpenView Operations interface is the preferred method, you can also initiate a session as a standalone application:

1. Open the **Login** panel by starting the topology GUI:
 - For UNIX operating systems, at the command prompt type:
`/opt/OEMF/V5.0/GUIC/oemf/util/guicstart`
 - For the Windows NT operating system, select **GUICstart** from the **Start** menu:
`Start:Programs->HP OVC-Assurance 1.02->GUICstart`



2. Enter user login information in the Login panel:
 - a. Hostname of the machine running the OV Topology Server. Either type the hostname into the text box or choose a hostname from the list.
 - b. Username and password obtained from the administrator.
3. Click [Connect].
4. Select the appropriate operation profile from Operation Profile list, and click [Start].

A status message appears in the white rectangle at the bottom of the Login panel. Many panels in the topology GUI provide similar status information.

Troubleshooting the Login

When necessary, follow the instructions under the specific error condition to resolve your login situation.

- Server disconnected.
 - Verify that your username and password are correct and attempt to log in again.
 - Wait two minutes to allow some processes on the server to complete and attempt to log in again.
 - Consult your administrator to determine whether the host machine is running properly.
- Portmapper failed.

This error can usually be ignored. It indicates that another portmapper is already running. On Windows NT systems, use the Task Manager to see if there is more than one instance of the process `ilbpmapi.exe`. If so, you can terminate one of the processes.
- Centralized login requires hostname.

This error appears when launching the topology GUI from the OVO GUI and the topology server hostname is not specified in the file `hostfile.dat`, located in `product_directory/config`. Edit this file to include the topology server hostname.
- `ilblmap error:communication layer 3: <hostname> is not registered.`

If this error appears, make sure that the hostname of the OV Topology Server exists and is entered correctly in the file `hostfile.dat`, located in `product_directory/config`.

See also:

- “Troubleshooting a Presenter Core Dump” on page 28

Getting Started with the Topology GUI

At startup, the topology GUI displays one or more presenters as configured by the administrator during system configuration or the operator during a previous session. (See “Setting Your Home Session” on page 29.)

To open a “Map Presenter” on page 33, “Problems Presenter” on page 139, “Outages Presenter” on page 167, “OM Events Presenter” on page 179, or “Chart Presenter” on page 187, select the desired presenter from the Presenters menu.

Troubleshooting a Presenter Core Dump

If a presenter core dumps, check the following:

- If Netscape Navigator is running, close Netscape and restart the topology GUI. See “Starting the Topology GUI” on page 24.

Setting Your Home Session

By default, each time you log in to the OV Topology Server, you could open and customize the Presenters to match your needs. You can create a home session configuration that includes the presenters that you use most often customized in the way that is most useful for you. Future OV Topology Server sessions start with your home session configuration so you can focus on network management instead of product configuration.

Setting your home session saves the following presentation information:

- Open presenters.
- Order, size, and visibility of columns.
- Applied filters.
- Options applied from the “Options Panel” on page 109.

To save the current state and customized features of your OV Topology Server session, click `Session:Set home session`.

NOTE: If this menu command is not available with your operation profile, contact your administrator.

WARNING: Wait at least two minutes for the OV Topology Server databases to synchronize. Do NOT exit the topology GUI immediately after setting your home session.

Changing Your Password

To change the password used to log in to the topology GUI:

1. Complete steps 2-4 of the procedure for “As a Standalone Application” on page 24.
2. Select `Option:Change Password`. The `Authorization` panel appears. The exact format of this panel depends on the authorization configuration. The default panel is shown here.

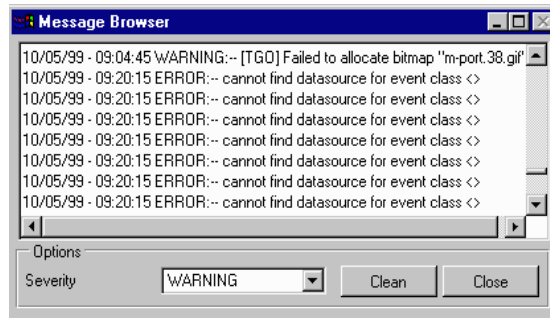


The screenshot shows a dialog box titled "Authentication". The text inside reads: "Changing password for oemfadm". There are three input fields, each containing "*****". The first is labeled "Old password:", the second "New password:", and the third "Re-enter new password:". Below these fields is the text "They don't match; try again." followed by a fourth input field labeled "New password:". At the bottom of the dialog are two buttons: "OK" and "Cancel".

3. Enter the requested login information and click [OK].

Using the Message Browser

The topology GUI logs and displays messages for the user in the Message Browser.



To view these messages:

1. Click View:Error log. The Message Browser displays.
2. In the Severity list, specify the lowest severity level of messages to display.

To complete your use of the Message Browser:

1. Click [Clean] to remove all messages from the Message Browser.
2. Click [Close] to exit the Message Browser.

Exiting the Topology GUI

To close one presenter window, click `File:Close`. This action closes only that presenter window.

To exit from the topology GUI, click `File:Exit`. This action closes all presenter windows. To save presenter settings, see “Setting Your Home Session” on page 29.

The map presenter receives updates from the OV Topology Server regarding the state and status of managed objects and the network topology and displays maps. A map consists of a set of map node objects, link objects, and states superimposed on an optional background. A map location is attached to each map object to specify where on the screen it appears. Additional graphic displays indicate the status of the network elements.

You can change the layout of objects on the map. This layout is NOT required to reflect the real-world location of objects. Nodes represent a network, network equipment, or component. Links represent connection circuits.

The map provides information for monitoring your network. When events are emitted by network elements, the map displays visual cues that indicate the most severe state (and, optionally, the count) of the problems associated with each managed object node. By default, the managed object severity status is propagated to higher levels in the containment hierarchy. The status of a node that has child objects is the most severe state of its associated problems and the propagated status.

Submaps are maps that show more detail for an object on another map. The hierarchical relationship of submaps creates a parent-child relationship between them and enables you to view the map from a distance or at a detailed level. Double-clicking a map object with an associated submap opens a submap that displays a more detailed view.

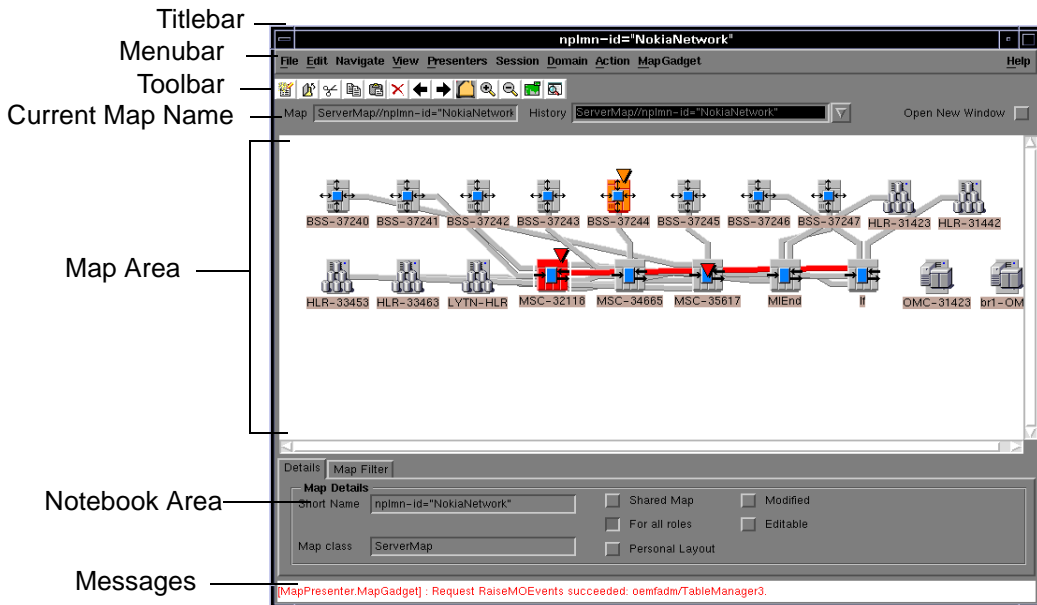
A map node may have more than one submap associated with it. One submap is defined to be the default submap. The default submap appears when you double-click the node. Additional submaps can be displayed using the right-click `Show Submap` menu command.

Map information is divided into two classifications:

- Object placement in the topological containment hierarchy.
- Layout of the nodes and links defined by the map. This layout information includes the X- and Y-coordinates on the map, shape, model object, and related submaps.

Map Presenter

The shortname of the open map appears in the Map Presenter titlebar.



The Details tab in the Notebook Area displays information about the map including:

- Short Name of the map.
- Class of the map (ClientMap, ServerMap, or FilterMap) that was assigned when the map was created.
- Check boxes to describe properties of the displayed map:
 - Shared Map—Check box indicates whether the map is visible to multiple users (selected) or not (cleared). See “Shared Maps” on page 40 for more information. Toggle this property from the MapGadget menu.
 - For all roles—Check box indicating whether the map is visible to all users (selected) or is restricted to only certain roles (cleared). See “Setting Map Visibility” on page 70 for more information.
 - Personal Layout—Check box indicating whether you have applied a custom layout for viewing the map (selected) or not (cleared). See “Creating a Personal Layout” on page 71 for more

information.

- `Modified`—Check box indicating that the map has been modified since it was last loaded or saved (selected).
- `Editable`—Check box indicating that the displayed map is editable (selected). Server maps are generally not editable. Before changing any map information, the map must be marked as editable. Toggle this property from the `MapGadget` menu.

The topology GUI supports the following map types:

- “Server-Defined Maps” on page 36
- “Client-Defined Maps” on page 37
- “Filter-Based Maps” on page 38
- “Domain Maps” on page 39

See also:

- “Shared Maps” on page 40
- “Map Attributes” on page 41
- “Map Objects” on page 43
- “Map Symbols” on page 44
- “Using the Map Presenter” on page 48

The `Filters` tab in the Notebook area allows you to set a filter to view the problem conditions of particular networks, network element types, network element instances, specified severity, or ownership. For more information on using filters, see:

- “Using Filters” on page 123

Server-Defined Maps

Server-defined maps (also called server maps) contain only server objects that exist in the network model, and are based on the topological hierarchy among managed object instances. One managed object instance is the root node for the map. The nodes and links are displayed based on the containment relationship of the network model. These maps are determined by the network topology and can be very large.

A server object is a topology object that was added to the topology via the map GUI, and represents a real, physical entity in the network. Each server object has a fully distinguished name (FDN) to specify its placement in the containment hierarchy. Its map symbol reflects the status of the managed object.

If a managed object is deleted from the topology database, the map object on the server-defined map is deleted.

Objects on a server-defined map with default layout are regularly spaced. The map layout can be modified manually. See “Creating a Personal Layout” on page 71.

All objects on a server-defined map are updated with respect to map attributes and status. Server objects may be set to propagate the status of an attached submap.

Server-based maps are named by the FDN of the managed object. When a submap is named with an FDN that is a managed object in the topology database, the map is a Server map. The rules for FDN normalization are described in the *HP OpenView Service Assurance for Communication Networks Customization and Maintenance Guide*.

Client-Defined Maps

Client-defined maps (also called client maps) may contain both server objects and logical client objects. The client objects do not exist in the network model, are not related to anything in the underlying network topology, and are not included in the topology database. There is no restriction on the objects that can be put together on the same map. The map can even display objects that are not linked to managed object instances. The client-defined map is a logical view rather than a containment view of the network.

The user can create map objects and associate them with network objects by assigning an FDN. However, this FDN information is not propagated to the network level. The map object is created, but the network object is not created in the topology database.

The user can create client objects that are not linked to managed objects. The status of these client objects is not updated via network information. The objects can be set to propagate status from a submap attached to the object.

All map objects that are tied via an FDN to an object in the network model are updated with respect to attributes and status. Client-defined maps may not accurately reflect the actual network topology.

When a client-defined map is opened after a server object on the map has been deleted (or is missing), a shell displaying the deleted server object remains. The shell is gray without 3D shape (or relief). To confirm that an icon is a shell, right-click the icon and click *Show Model Node*; confirm that no details are displayed.

When a server object is deleted, the server objects on the client map may not be deleted. You must delete the server object explicitly. To view the most updated information on a client map, click *File:Revert*. The display is synchronized with the object data in the database.

Role-specific client maps are named by the operation profile (role) that uses the map.

See also:

- “Creating a Client-Defined Map” on page 73

Filter-Based Maps

Filter-based maps contain a filtered subset of the server objects. The filter is a logical combination of user-defined criteria. You can change the filter criteria to add or remove objects to or from these maps, but you cannot directly edit the map.

Maps can be generated based on filters that show only those objects that are in exception. The exception state is indicated by the presence of one or more events that match a specified set of criteria.

All map objects that are tied to a model object via an FDN are updated with respect to attributes and status.

See also:

- “Creating a Filter-Based Map” on page 74

Domain Maps

Each object in the topology is assigned to one or more domains. Each domain can be assigned to one or more “Operation Profiles” on page 20 for management of the domain objects. The domain map shows the contents of the domain. The client map `home_map` contains all accessible domain maps for the current username and operation profile.

Domain-specific maps are named by the management domain that contains managed objects in the map.

Shared Maps

A map can belong to an individual operator, or it can be shared by multiple operation profiles. Shared maps are created by the administrator. If the administrator modifies the contents of a shared map, such as adding or removing objects for a client-defined map, or changes the filter for a filter-based map, these map changes are reflected for all users of the map. Similarly, modifications to the layout are seen by all users with this map in their operation profile who have not applied a personal layout to the map.

Shared maps are indicated by a check mark in the `Shared Map` check box. Because the shared map is accessible to many users, it cannot be modified. If you unshare the map, a copy of the map is created as your personal map. Any subsequent changes you make to the layout of the map are applied to only your copy, and layout changes applied to the shared map are NOT applied to your personal copy.

See also:

- “Creating a Personal Layout” on page 71

Map Attributes

The map attributes are:

Table 3-1 Description of Map and Model Details

Map Attribute	Description
Map Name	The name of the map as listed in the map presenter.
Map Class	The map type: ServerMap, FilterMap, or ClientMap.
ShortName	The short name of the map displayed in the map presenter.
Background	The filename for the background graphic.
Label	The name of the node.
MO FDN	Fully Distinguished Name of the managed object a symbol represents.
X	Location of the node expressed as the number of pixels in the x-direction.
Y	Location of the node expressed as the number of pixels in the y-direction.
Class	Type of node, such as OffPageConnectorClass or TransportClass.
From	One of the two nodes that the link connects. This field does not indicate direction.
To	One of the two nodes that the link connects. This field does not indicate direction.
Type	Type of link, also distinguished by the small icon on the link display. For example, fiber or electrical.
State	Active or inactive.
FromState	The current connection state at the end of the link terminating at the From node.

Table 3-1 Description of Map and Model Details

Map Attribute	Description
ToState	The current connection state at the end of the link terminating at the To node.
defaultSubmap	Name of the default submap associated with the selected node or link if a submap exists.
Propagate Type	If status propagation is on (default case), the propagation can be obtained either from the managed object instance or from the submap.
Update Time	Time of the last change to the managed object instance attributes.
Layout	1 for true. True indicates a valid layout for the map.
State Display	Show Alarm Status indicates that the map object is displaying alarm status (balloons) for the node or link. Show Propagation Status indicates that the map object is displaying propagated alarm status for the node or link.
Status Values:	
Admin State	Locked, Unlocked, Shutting down.
Alarm Propagation	PropStatusUnknown, PropStatusCritical, PropStatusMajor, PropStatusMinor, PropStatusWarning, or PropStatusNormal.
<i>other status fields</i>	The other status fields displayed on the Node Details and Link Details panels are not supported by OV Topology Server, but other applications integrated with OV Topology Server may provide these values.

Map Objects

Map objects are either Nodes or Links.

Nodes

Nodes are displayed as base elements. Each node has primary and secondary states as well as alarms. Graphic features of the node are changed to indicate the state and statuses of the node:

- The design of the base element indicates the primary state.
- The color of the element represents the most severe state of alarms for the object.
- Nodes with dotted borders are transient or unknown objects, created when an alarm is sent from an unknown object. The transient object is deleted when the alarm is cleared or discharged. (Because transient objects are not in the containment hierarchy, the unknown object does not show status propagation.)

See also:

- “Add Map Node Panel” on page 85
- “Edit Map Node Panel” on page 90

Links

A link is a graphic representation of the connection between two nodes. Links are displayed as lines that can have graphic features, such as icons, indicating states. Multiple links between the same two nodes can be grouped together as a bundle. Bundles are displayed as a set of parallel lines between two nodes, where each line can have different graphic features.

See also:

- “Add Map Link Panel” on page 88
- “Edit Map Link Panel” on page 93

Map Symbols

The map presenter displays map elements with different graphic representations for different statuses. The graphic representations include:

- Color of the base object.
- Shape of the base object.
- Icons that appear in the lower left corner of the base object.
- Standard Telecom symbols.

Map symbols are divided into the following categories:

- Node Function Icons
- Link Type Icons
- Node Status Icons

Node Function Icons

The symbolic icon that appears in the lower left corner of the node indicates the function of the node. The predefined icons used for standard nodes are shown below. The administrator may define additional symbols on your system.

Table 3-2 Node Function Icons and Node Pictures



Function	Icon	Equipment Function
Transport		Transport equipment
ADM		Transport Add-drop Mux

Table 3-2 Node Function Icons and Node Pictures













Function	Icon	Equipment Function
TransportCrossConnect		Transport Cross Connect
Regenerator		Transport Regenerator
LTE		Transport LTE
Switch		Switch Equipment
SwitchCrossConnect		Switch Cross Connect
Access		Access Equipment
Unknown		Unknown Product
MD		Mediation Device

Table 3-2 Node Function Icons and Node Pictures

Function	Icon	Equipment Function
NMW		Network Management Workstations
BTS		Base Transceiver Station
BSC		Base Station Controller
MSC		Mobile Switching Center

Link Type Icons

The icon on a link identifies its type. The predefined link type icons are shown below. The administrator may define additional symbols on your system.

Table 3-3 Link Type Icons




Link Type	Icon	Resource Name
CNET		Communication network
Fiber		Fiber

Table 3-3 Link Type Icons

Link Type	Icon	Resource Name
Electrical		Electrical

Node Status Icons

The OSI status state dictionary is based on the OSI SMF 10164-2 standard, which defines the primary state of a telecom object as a combination of three values and two statuses. The supported propagation states are Indeterminate, Critical, Major, Minor, Warning, Cleared, and Normal. The supported administrative states are locked, unlocked, and shuttingdown.

Using the Map Presenter

The functionality of the map presenter is described in:

- “Map Presenter Menu Commands” on page 50
- “Map Presenter Data Operations Menu Commands” on page 53
- “Map Presenter Toolbar Buttons” on page 56
- “Displaying a Map” on page 57
- “Customizing the Map View” on page 58
- “Selecting Objects on the Map” on page 59
- “Moving Map Objects” on page 60
- “Copying Map Objects” on page 61
- “Deleting Map Objects” on page 62
- “Obtaining Status Information” on page 63
- “Example Problem Status Representations” on page 66
- “Blinking Map Objects” on page 68
- “Using the Overview Map” on page 69
- “Setting Map Visibility” on page 70
- “Creating a Personal Layout” on page 71
- “Saving Map Modifications” on page 72
- “Creating a Client-Defined Map” on page 73
- “Creating a Filter-Based Map” on page 74
- “Creating a Submap” on page 75
- “Grouping Objects in the Map View” on page 76
- “Map Inspector Panel” on page 78
- “Node Details Panel” on page 81
- “Link Details Panel” on page 83
- “Working With Multiple Links” on page 84
- “Add Map Node Panel” on page 85

- “Add Map Link Panel” on page 88
- “Edit Map Node Panel” on page 90
- “Edit Map Link Panel” on page 93
- “Network Element History Panel” on page 95

Map Presenter Menu Commands

The map presenter menu commands are context-sensitive. The available menu commands depend on the current selection. All possible map presenter menu commands are listed here:

Table 3-4 Map Presenter Menu Commands

Menubar	Menu Command	Description
File	New	Displays the New Map panel for creating a new, empty map.
	Open	Displays the Select Map panel for selecting a map to open.
	Delete Map	Deletes the current map.
	Revert	Disregards all map edits since the last save. Rereads the map data in the database and displays the most updated information.
	Save	Saves the current map including map objects and their layout.
	Save As	Saves the current map with a new name.
	Close	Closes a single presenter view.
	Exit	Exits the topology GUI and closes all open presenter views.
Edit	Cut	Cuts the selected objects from the map.
	Copy	Copies the selected objects from the map.
	Paste	Pastes cut or copied objects to the map.
	Delete	Deletes selected objects.
	SelectAll	Selects all map objects.

Table 3-4 **Map Presenter Menu Commands**

Menubar	Menu Command	Description
Navigate	Previous Map	Displays the most recent previously-viewed map (like the [Back] button in a browser).
	Next Map	Displays the map viewed after the current map (like the [Forward] button in a browser).
	Home Map	Displays the home map.
View	Zoom	Enlarges map content in the middle of the current view.
	Unzoom	Reduces the size of the map objects and enlarges the area that can be viewed.
	Reset Zoom	Returns to the original map size.
	Fit Content	Displays the entire map in the window.
	Map Palette	Displays the Map Palette panel for adding new nodes.
	Overview	Displays the Overview panel for moving around within a map that does not fit in the window.
	Error log	Displays the message browser with a list of messages for requests carried out on the GUI client. Messages can be sorted by severity.
Presenters	Map	Opens a map presenter window.
	Problems	Opens a problems presenter window.
	Outages	Opens an outage presenter window.
	OM Events	Opens an OM events presenter window.
	Chart	Opens a chart presenter window.

Map Presenter
Map Presenter Menu Commands

Table 3-4 **Map Presenter Menu Commands**

Menubar	Menu Command	Description
Session	Set home session	Saves changes to the presentation of data. See “Setting Your Home Session” on page 29.
Domain	Add to Domain	Adds the selected object to the current domain.
	Remove from Domain	Removes the selected object from the current domain.
Action	Shows information about the selected object as described in “Map Presenter Data Operations Menu Commands” on page 53.	
MapGadget	Provides access to much of the functionality described in “Map Presenter Data Operations Menu Commands” on page 53.	
Help	About this panel	Opens topology GUI help to the information about this panel.
	About User	Displays the current user, role, and topology GUI server names.
	About HP OVC/Service Assurance	Displays product information.

Map Presenter Data Operations Menu Commands

To access the map presenter data operations menu, right-click the mouse in the map presenter. The data operations menu commands are context-sensitive. The available menu commands depend on which element types are selected on the map. Some menu items are available only from the pop-up menu. All possible map presenter data operations menu commands are listed here:

Table 3-5 Map Data Operations Menu Selections

Menu Command	Description
Map Inspector	Displays detailed tables for map, node, and link attributes.
For all roles	Toggles between allowing access to the map from all roles or only this role.
Editable	Toggles the map between editable and not editable.
Unshare Map	Specifies that the current map is no longer shared. Subsequent changes that are made to the personal layout copy of the map are only reflected in the personal layout copy. See “Shared Maps” on page 40.
Reload Model Objects	Updates the display with new network information. The map data is refreshed. This process is not normally required, but can be used in the case where an inconsistency develops between the network data and the displayed data.
Reduce All Nodes	Displays small icons for the nodes.
Enlarge All Nodes	Displays large icons for the nodes.
Set Background	Launches a panel in which you can select a file to be used as a map background (GIF or BMP file). Select the background graphic from the <code>/opt/OEMF/V5.0/GUIC/oemf/data/gif</code> directory.
Add Map Node	Displays the Map Palette for adding a new map node. This selection is only available if the map is editable.

Table 3-5 Map Data Operations Menu Selections

Menu Command	Description
Add Map Link	Displays the panel for defining the attributes of the new map link. This selection is only available if the map is editable and two nodes are selected.
Remove Map Objects	Removes the selected objects. This selection is only available if the map is editable.
Toggle Node Size	Toggles between the two node sizes displayed on the map. This selection is only available if the map is editable.
Display Map Node details	Displays the panel that describes the map node attributes as a read-only panel. This selection is only available if the map is not editable.
Edit Map Node	Displays the Edit Map Node panel for viewing and modifying the map node attributes. This selection is only available if the map is editable.
Display Map Link details	Displays the panel that describes the map link attributes as a read-only panel. This selection is only available if the map is not editable.
Edit Map Link	Displays the Edit Map Link panel for viewing and changing attributes of the selected link. This selection is only available if the map is editable.
Show Model Node	Displays the panel that shows the node model attributes. Attributes are described in “Map Attributes” on page 41.
Show Model Link	Displays the panel that shows the link model attributes. Attributes are described in “Map Attributes” on page 41.
Show Submap	Displays the default submap. Equivalent to double-clicking an object symbol.
Show NE History	Opens an NE History panel with the selected object as the data origin.
Show Problems	Opens a problems presenter with the selected object as the data origin.

Map Presenter Data Operations Menu Commands**Table 3-5 Map Data Operations Menu Selections**

Menu Command	Description
Show Outages	Opens an outage presenter with the selected object as the data origin.
Show OM Events	Opens an OM events presenter with the selected object as the data origin.
Submap	If more than one submap is associated with the selected node, a list of associated submaps is displayed for selection.
Bundle Links	Combines multiple links between two nodes into a single graphic “ribbon.” This selection is only available if the map is editable and the links can be bundled.
Unbundle Links	Replaces the bundle with individual links. This selection is only available if the map is editable.
Reshape	Displays the selected area with drag handles for changing the shape of the selected area.

Map Presenter Toolbar Buttons

Toolbar buttons provide shortcuts to frequently used menu commands. The map presenter toolbar buttons are *not* context-sensitive. They are always available. When an operator clicks on a toolbar button whose function does not apply to the current context, the topology GUI does nothing. The map presenter toolbar buttons (in order from left to right) and their functions are listed here:

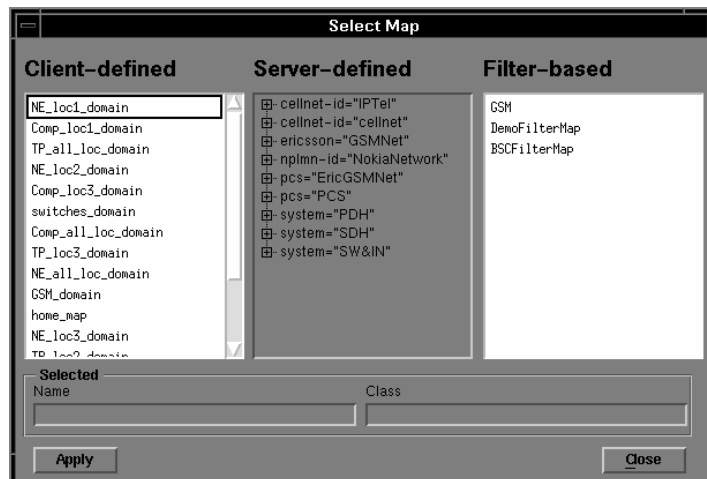
Table 3-6 **Map Presenter Toolbar Buttons**

Toolbar Button	Description
New Map	Displays the New Map panel to allow you to create a new, empty map.
Open Map	Displays the Select Map panel to allow you to select a map to open.
Cut	Cuts the selected objects from the map.
Copy	Copies the selected objects from the map.
Paste	Pastes cut or copied objects to a map.
Delete	Deletes selected objects.
Back to Previous Map	Displays the most recent previously-viewed map (like the [Back] button in a browser).
Forward to Next Map	Displays the map viewed after the current map (like the [Forward] button in a browser).
Home Map	Displays the home map.
Zoom	Enlarges map content in the middle of the current view.
Unzoom	Reduces the size of the map objects and enlarges the area that can be viewed.
Show/Hide Overview Map	Displays the Overview panel to allow you to move around within a map that does not fit in the window.
Show Map Inspector	Displays detailed tables for map, node, and link attributes.

Displaying a Map

To view a map and its associated attributes, use any of the following methods:

- In the Map box, enter the name of the map.
- If you have already opened the desired map during the current session, select the map name in the History box. (If necessary, resize the History box to view the map names.)
- Double-click a node on the currently displayed map.
- Click File:Open, and select a map name from the Select Map panel. Then click [Apply].



Customizing the Map View

The map presenter provides several choices for customizing your view of the map:

- **Open Multiple Maps.** To open another map in a different window, select the `Open New Window` check box. Otherwise, opening another map replaces the current map with the newly selected map.
- **Zoom/Unzoom.** To zoom in on a part of the map, use the scroll bars to move the map segment of interest to the middle of the map presenter and click `View:Zoom`.
 - To reduce the size of the map objects, click `View:Unzoom`, or use the `Unzoom` toolbar button.
 - To return to the original map size, click `View:Reset Zoom`, or use the `Zoom` toolbar button.
- **View Entire Map.** To view the entire map in the window, click `View:Fit Content`.
- **View Submap.** To view a submap associated with a map node, double-click the map icon. To view additional submaps associated with the node, right-click and click `Submap`. A list of associated submaps appears.
- **Set Background.** To set the background for the map, click `MapGadget:Set Background`. The supported bitmap graphic formats are GIF and BMP. If the background image does not appear when you open the map, ask your administrator to set the background image for the map.
- **Filter Objects.** A filter limits the managed objects in the map view. See “Using Filters” on page 123.

Selecting Objects on the Map

To select objects on a map, use any of the following methods:

- To select a node, click the node.
- To select a link, click the link.
- To select a block of objects, click one corner of the area containing the objects, hold down and drag the cursor to enclose a rectangle around all the desired objects.
- To select multiple objects, Ctrl-click the desired nodes and links.

WARNING: If you use the Shift key instead of the Ctrl key to select multiple map objects and the mouse moves by even a single pixel while the Shift key is down, the selected objects are copied as they should for Shift-left-click drags. To avoid unexpected behavior, do not use the Shift key. Use the Ctrl key to make multiple selections without the danger of creating new objects.

- To select the entire map, click `Edit:Select All`.
- To deselect an object, ctrl-click the object.
- To deselect the entire selection, click in the map presenter.

The selected nodes are surrounded by a white border.

You can view information about selected objects:

- To view the associated problems, click `Action:Show Problems` or drag and drop the selected objects onto the problems presenter.
- To view information about the associated outages, click `Action:Show Outages` or drag and drop the selected objects onto the outage presenter.
- To view information about the associated OM events, click `Action:Show OM Events` or drag and drop the selected objects onto the OM events presenter.
- To view information about the associated alarms, see “Network Element History Panel” on page 95.

Moving Map Objects

To move map objects to a new location on the same editable map:

1. Select the node, link, or multiple map objects to be moved.
2. Drag the selection to the new location.

Copying Map Objects

To copy map objects to an editable map:

1. Select the map objects to duplicate.
2. Shift-drag the selection to the new location.

Deleting Map Objects

Links and nodes can only be removed from client-defined maps and server-defined maps. If you remove an object from a server-defined map, the topology associated with the object is also removed. If you remove an object from a client-defined map, only the map object is removed. To remove nodes or links from the map:

1. Select the map objects. The selected objects appear in white.
2. Right-click and click `Remove Map Objects` or click `Edit:Delete` from the menu bar.
3. Click `[OK]` to respond to the prompt about deleting the nodes and links.

Obtaining Status Information

The OV Topology Server provides updates regarding the actual state of the objects displayed. The status of objects is updated dynamically. As alarms are received, the status of each of the managed objects is calculated and distributed to the map in real time. The status calculation is governed by a set of status propagation rules configured by the administrator. The status calculation propagates the status of a network element or component upward in the containment tree.

If no status rules are configured by the administrator, the default status propagation rules are applied. The default status propagation rules set the managed object status to the most severe status of its child class statuses. If multiple rules are configured for the status calculation of an managed object, the most severe status from all of the status propagation rules is set for the managed object.

The type of status propagation is specified as one of the node's attributes. The status propagation types are:

- **Propagate from submap**—The state of a client object, a logical and not a real object, is the propagated state of the objects in its primary submap. The state is the most critical state from the primary submap.
- **Propagate from managed object instance**—The state of a server object is the state of the real object itself or the propagated state of its child objects.
- **No propagation of status**—The state of the object itself without regard to status propagation.

In the map presenter, objects with associated problems are shown with several graphical cues. The graphical representation of a telecom object condition shows the highest severity (and, optionally, the number) of new problems and the number and highest severity of outstanding problems.

The State Display for an object can be set to either:

- Show Propagation State is the default value and provides values on the map object that indicate the propagated alarm status.
- Show Alarm Status only shows the alarm status for the object, not its propagated state.

The term **outstanding problems** refers to both new and acknowledged

Obtaining Status Information

problem conditions. A client object has the same state as the most critical object in its primary submap. The server object has the state of the object itself. When the events are discharged, they are no longer included in the event count.

The graphical representation of a telecom object problem condition shows the highest severity of outstanding problems.

The graphical cues for Show Alarm Status are:

- **Color of Base Element**—Indicates the severity of the most severe outstanding problem.
- **Color of Problem Balloon**—Indicates the severity of the most severe new problem.
- **Color of Base Outline**—Indicates the severity of the most severe outstanding problem.
- **Count in Base Element**—Indicates the number of outstanding (both new and acknowledged) problems of highest severity.
- **Count in Problem Balloon**—Indicates the number of new problems of highest severity.

The problem count has three symbols:

- A number indicating the number of most severe problems in the category.
- A letter indicating the highest severity of problems in the category.
- A plus sign if there are also less severe problems in the category.

The default color mappings for problem severity are:

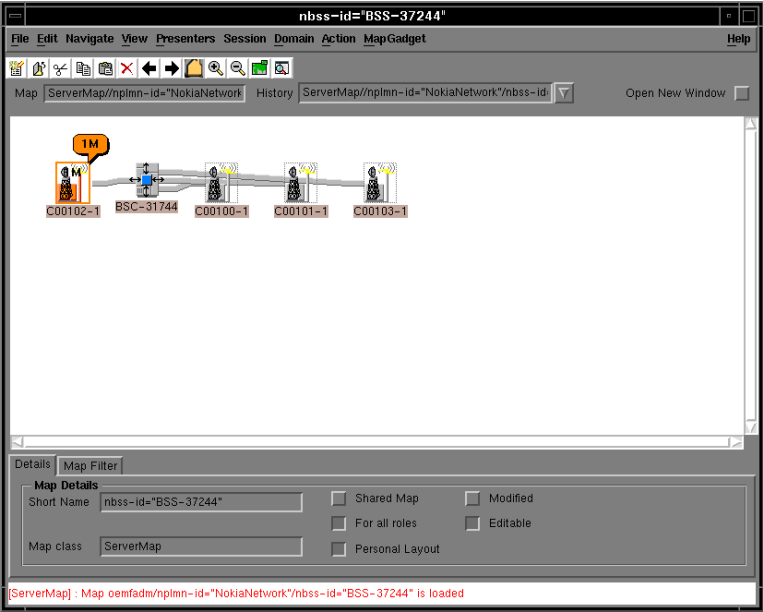
Table 3-7 Alarm Coding Color Map

Severity	Color	Letter/ Number	Description
Critical	Red	C/1	Non-functional.
Major	Orange	M/2	Serious problem. Likely to impede normal use of the object.
Minor	Yellow	m/3	Partially functional.

Table 3-7 Alarm Coding Color Map

Severity	Color	Letter/ Number	Description
Warning	Cyan	W/4	Potential problem.
Indeterminate	Sky Blue	0	Status information unavailable.
Cleared	Gray	5	Normal status, fully functional.

The map below shows outstanding problem conditions on some nodes. To show the problem counts in the balloons, set the selected state display in the “Edit Map Node Panel” on page 90 or “Edit Map Link Panel” on page 93 to Show Alarm Status. In the Edit Map Node Panel select Show Propagation State to view the propagated status of the node.



See also:

- “Example Problem Status Representations” on page 66
- “Blinking Map Objects” on page 68

Example Problem Status Representations

This table shows some examples of problem statuses and their associated visual representations. These icons only appear for objects with state display set to Show Alarm Status.

Table 3-8 Problem Status Graphical Examples

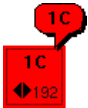
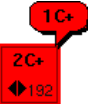
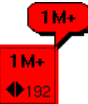
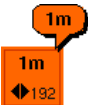


Alarm Status	Visual	Comment
New Critical		The resource has one new critical problem as indicated in the balloon.
Outstanding Critical		The resource has one new critical problem, one or more less severe new problems (indicated by the +), and one acknowledged critical problem.
New Major		The resource has one new major problem (as indicated by the balloon) and one or more less severe new problems (as indicated by the +).
New Minor		The resource has one new minor problem.
Acknowledged Minor		The resource has 2 acknowledged minor problems and one or more acknowledged less severe problems.

Table 3-8 Problem Status Graphical Examples

Alarm Status	Visual	Comment
Outstanding Warning	 A yellow warning icon consisting of a speech bubble containing '3W' and a square containing '5W' and a diamond with '192'.	The resource has 3 new warning problems and 2 acknowledged warning problems.

Blinking Map Objects

If blinking objects are configured by the administrator, map objects blink when the blinking criteria set by the administrator are met.

For example, if blinking is configured for major severity, when the unowned problems associated with an object are of major or critical severity, the map object begins to blink. The object stops blinking when all associated problems of major and critical severity are owned or the blink time expires.

The default blink expiry time is one hour. The expiry timer resets when a new problem that meets the configured severity threshold enters the system.

Blinking is also triggered if the status display is changed for a map object. The status display indicates whether to display object alarm status or propagated alarm status.

Logical map objects that are not associated with real managed object instances in the network do not blink.

The configuration of blinking objects may slow performance in some cases.

Using the Overview Map

The Overview map is a view of the entire map shown in a supplementary window to the map in the map presenter. The Overview map allows you to select and view any portion of the Overview map in the main viewing window.

To view an Overview map, click `View:Overview` or use the Show/Hide Overview Map toolbar button. (The Overview command toggles between show or hide the Overview window.)

To view any portion of the Overview map in more detail, move the detail rectangle using the mouse. You can control the view shown in the map area of the map presenter using the following selections:

- **Move the map area**—Use the mouse to drag the detail rectangle over the Overview map. As you move the detail rectangle, the map view continuously changes.
- **Reposition the area**—Click outside the detail rectangle to reposition it. The new position for the detail rectangle is centered on the new cursor position.
- **Change the area size**—Move the cursor to the perimeter of the rectangle, then the icon changes to a double-arrow. Drag the double-arrow to change the size of the rectangle. The map view changes as the detail rectangle size is changed.

Changes that you make to the map view are echoed in the Overview map.

To close the Overview map, close the Overview window.

Setting Map Visibility

Maps can be specified **For all roles**. If the map is for all roles, it is visible to a user regardless of the operation profile. If the map is not specified for all roles, it is only visible to a user when the operation profile including the map is selected.

To make a new copy of a map that is no longer visible to all users:

1. Click `MapGadget:For all roles`.
2. Respond to the system prompt.

Creating a Personal Layout

You may want to reorganize the layout of the maps you use frequently to suit your needs. Before you can edit a map, you must create a personal layout copy of that map. In your personal layout, you can change features of the map such as repositioning links and nodes or changing the map object classes (symbols) associated with map objects. You cannot change the map content.

The personal layout map maintains a link to the original shared map. Therefore, the content of the personal layout map is current with the shared map, but the layout is arranged according to the personal layout settings. If the administrator modifies the layout of the shared map, this change is not reflected on your personal layout map because the personal layout takes precedence.

Updates to server objects on the shared map content ARE reflected in the personal layout copy of the map.

Updates to the shared map layout are NOT reflected in the personal layout copy of the map.

While you have a personal layout map, there is no way to see the shared map under your current session conditions. (If you start a different topology GUI session with a different username and/or role, you may see the shared map, depending on that configuration.)

When you delete the personal layout copy of the map, the shared map becomes visible again.

To create a personal layout of a server-defined map:

1. Click `MapGadget:Unshare Map`.
2. Respond to the system prompt.

To create a personal layout of a client-defined map:

1. Click `MapGadget:Editable`.
2. Respond to the system prompt.

Saving Map Modifications

After creating or modifying a map, choose one of the following:

- Click `File:Save` to save the map with the same name.
- Save this map to your home session. See “Setting Your Home Session” on page 29.
- Click `File:Revert` to abandon changes to the map.

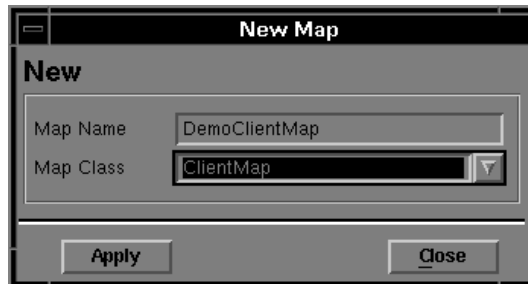
Creating a Client-Defined Map

“Server-Defined Maps” on page 36 are created by the administrator, but you can create client-defined maps for your exclusive use.

“Client-Defined Maps” on page 37 are not updated with changes as server objects are added to or removed from the topology. Nor are they updated with changes that affect presentation, such as layout or background graphic changes.

To create a new client map:

1. In the map presenter, click `File:New`. The New Map panel appears:



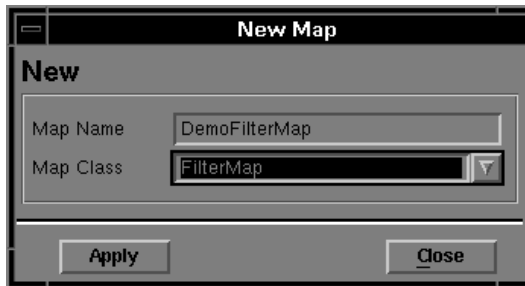
2. Complete the details about the new map:
 - In the Map Name box, enter the name of the new map.
 - In the Map Class list, select the map class (ClientMap).
3. Click [Apply]. The map presenter displays a blank map window.
4. Save the map before populating it. Click `File:Save`.
5. Be sure that no objects are selected on the map, then add a node on the map. See “Add Map Node Panel” on page 85.
6. Add links between nodes as necessary. See “Add Map Link Panel” on page 88.
7. Optionally, create submaps for the newly added nodes and links. See “Creating a Submap” on page 75.

Creating a Filter-Based Map

“Filter-Based Maps” on page 38 contain the filtered contents of the network at the time the map is created or opened.

To create a filter-based map:

1. In the map presenter, click `File:New`. The New Map panel appears:



2. Complete the details about the new map:
 - In the Map Name box, enter the name of the new map.
 - In the Map Class dropdown list, select the map class (FilterMap).
3. Click [Apply]. The map presenter displays a blank map window.
4. Click `MapGadget:Map Inspector`. (You cannot create a filter map using the Filter expressions in the Notebook area of the map presenter.)
5. Click the Filter-based tab.
6. Specify the filter for the new map. See “Using Filters” on page 123.
7. Specify the origin of the objects that meet the filter criteria. For example, in the text entry area, enter `cellnet-id="cellnet"`, and click [Add].
8. The objects that pass the filter in the specified origin are displayed.
9. Save the map. Click `File:Save`.

Creating a Submap

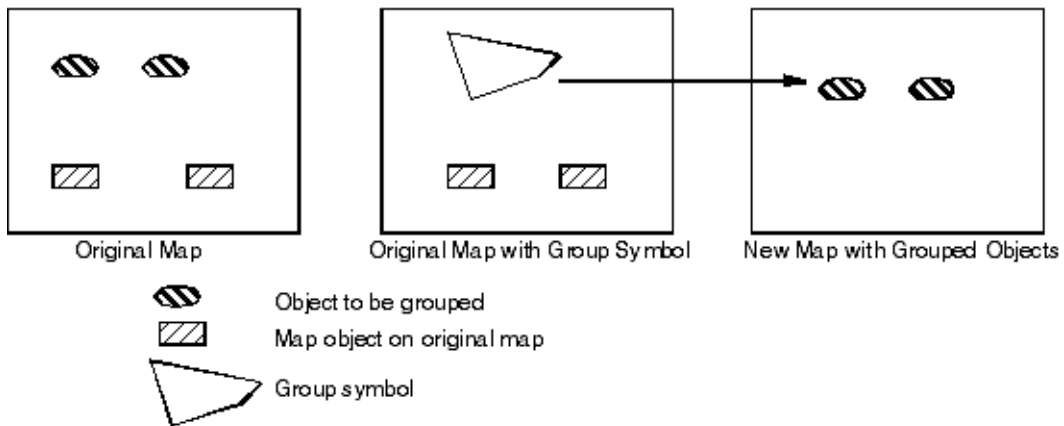
A submap is a map that is associated with an object on another map. Any object symbol on the map can have an associated submap.

To create a submap for a map object:

1. Double-click the map symbol to open the submap.
2. Be sure the submap is `Editable`. (If necessary, click `MapGadget:Editable`.)
3. Populate the new submap with nodes and links. See “Add Map Node Panel” on page 85 and “Add Map Link Panel” on page 88.
4. Save the submap. Click `File:Save As`.

Grouping Objects in the Map View

To improve the readability of maps, groups of objects can be represented with a single graphic. For example, a rectangular shape can replace a number of map objects to simplify the map display. The removed map objects are viewed in a submap of the group object symbol.



Grouping map objects together under one map symbol is similar to creating a new node with a submap. In “Server-Defined Maps” on page 36, each group must have an FDN.

To group map objects:

1. Create a new map to receive the grouped objects. (The `Open New Window` check box in the upper right corner of the map presenter must be selected to open another map presenter window.) See “Creating a Client-Defined Map” on page 73.
2. Move the map objects that should be grouped together onto the new map. See “Moving Map Objects” on page 60.
3. On the existing map, click `View:Map Palette`. The `Map Palette` panel appears.
4. From the `Map Palette` panel, select a group symbol, such as a polygon, and drag it onto the new map. The “Add Map Node Panel” on

page 85 appears. Complete fields as desired.

5. Associate the new map containing the grouped map objects as a submap to the new group symbol on the existing map. See “Edit Map Node Panel” on page 90.
6. Double-click the group symbol to open its submap in a new map presenter. (The `Open New Window` check box in the upper right corner of the map presenter must be selected to open another map presenter window.) The original submap contains the group symbol, and the new submap contains the grouped objects.

Map Inspector Panel

Map information includes both the contents of the nodes and links, and layout information for the nodes and links. The map content is defined by the actual managed object information retrieved from the topology. The map layout information is defined on the map.

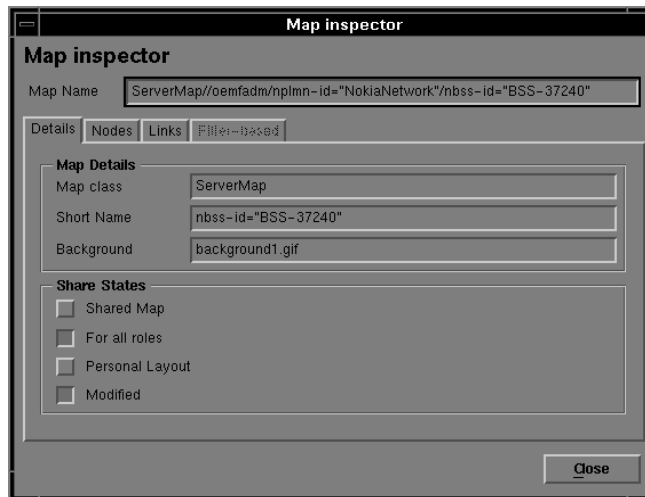
Use the Map Inspector panel to view map information.

To open the Map Inspector, do one of the following:

- Right-click and click Map Inspector.
- Click `MapGadget:Map Inspector`.

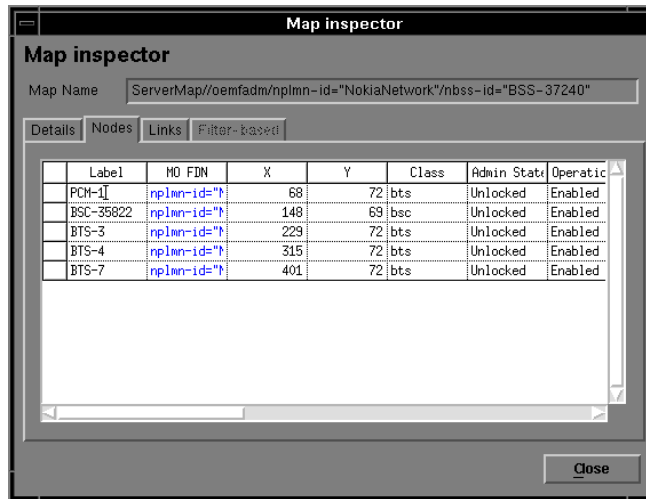
The tabs in the Map Inspector are:

- Details—Displays information about the map and its share states.

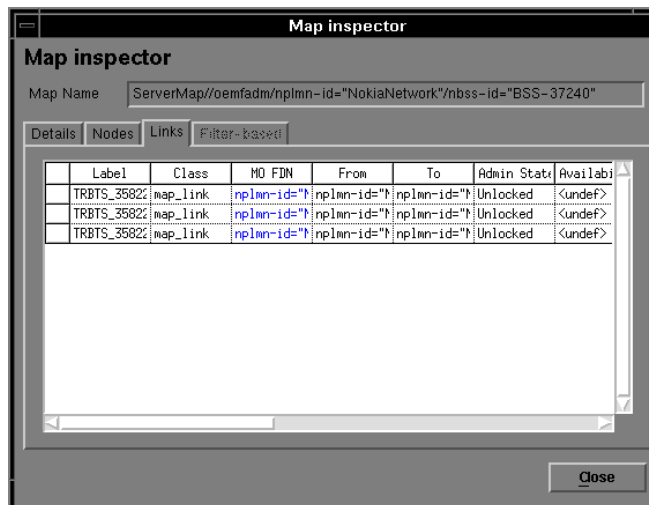


- Nodes—Displays a table of information about the nodes in the map. For information on the node attributes, see “Map Attributes” on

page 41.



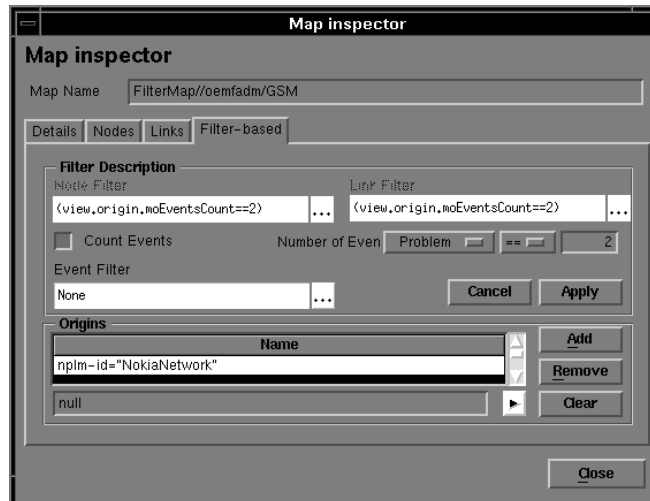
- **Links**—Displays a table of information about the links in the map. For information on the link attributes, see “Map Attributes” on page 41.



- **Filter-based**—Displays information about the filters that have been applied to the map objects. The *Filter-based* tab is only available for filter-based maps. Use this tab to define the root FDN and the filters to display a map of objects that meet the criteria. See “Creating

Map Presenter Map Inspector Panel

a Filter-Based Map” on page 74.



Node Details Panel

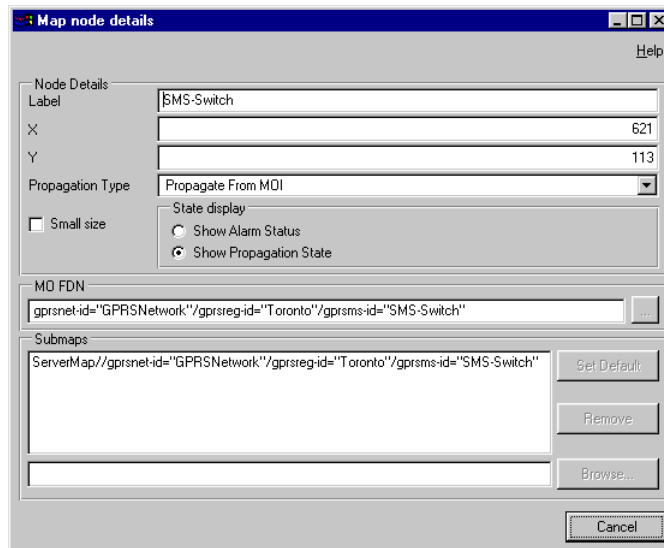
To view detailed information about a map node object, right-click a node and click Show Model Node. The Node Details panel appears.

The screenshot shows a window titled "Node Details" with a blue title bar. The main content area is titled "Node Details" and contains a "Basic Information" section with three text input fields: "MOC Name" (containing "GPRSSN"), "Short Name" (containing "ServerSupportNode"), and "MO Fully Distinguished Name" (containing "gprsnet-id='GPRSNetwork'/gprsreg-id='Toronto'/gprssn-id='ServerSupportNode'"). Below this is a "Status" section with a grid of fields: "Procedural" (empty), "Usage" (containing "Active"), "AlarmPropagation" (containing "PropStatusNormal"), "Alarm" (empty), "Admin" (containing "Unlocked"), "Availability" (empty), "Operational" (containing "Enabled"), "Control" (empty), "StandBy" (containing "HotStandby"), and "unknown" (containing "false"). At the bottom, there are two buttons labeled "Owned Links" and "Owned Nodes", and a "Close" button on the right.

For information on the node attributes, see “Map Attributes” on page 41.

Map Node Details Panel

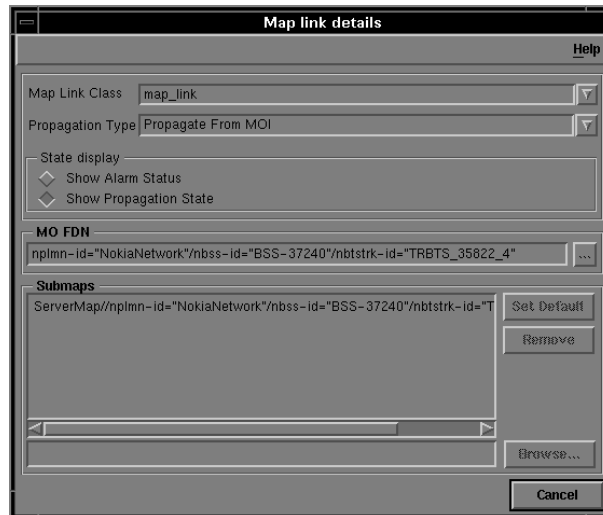
To view detailed information about a map node object on a non-editable map, right-click a node and click **Display Map Node Details**. The Map Node Details panel appears.



For information on the node attributes, see “Map Attributes” on page 41.

Link Details Panel

To view detailed information about a link map object, right-click a link and click Show Model Link. The Link Details panel appears.



For information on the link attributes, see “Map Attributes” on page 41.

Working With Multiple Links

Multiple links between the same two nodes can be grouped together as a bundle. Bundles appear as a set of parallel lines between two nodes. Each line can have different graphic features. Alternatively, a bundle can appear as a single, specially marked link.

Both links and bundles must have at least one end-point on the map. If two end-points are displayed on the map, the link or bundle is connected to both. If only one end-point is displayed and the second end-point is off the map, the loose end of the link or bundle connects to a special symbol, **off-page connector**. This connector is a small symbol without any decoration or indication of state:



To bundle links:

1. Select multiple links.
2. Right-click on the links and click `Bundle Links`.

To unbundle links:

1. Right-click the bundle and click `Expand Bundles` (if necessary).
2. Right-click the bundle and click `Unbundle Links`.

To view the connected map, double-click the off-page connector.

Add Map Node Panel

You may add nodes to client-defined and server-defined maps.

Node attributes that pertain to map presentation are specified in the Add Map Node panel. Node attributes that are defined by the object model are specified by the administrator and cannot be changed in the topology GUI. The managed object class for new nodes is defined in the Map Palette panel.

There are two ways to add nodes to a map. See:

- Copying an Existing Node
- Creating a New Node Using the Map Palette

Copying an Existing Node

To copy a node from one map to an editable client map:

1. Select the `Open New Window` check box on the map presenter to allow multiple map presenters. Operator profiles only permit the creation of new client maps while administrator profiles permit the creation of new client or server maps.
2. Open both the existing map and the new map.
3. Verify that the `Editable` check box is selected indicating that the new map is editable. If the `Editable` check box is cleared, click `MapGadget:Editable`.
4. Copy objects from the existing map, then paste those objects onto the new map OR shift-click the objects, then drag and drop onto the new map. The objects are copied to the new map with the same attributes as in the existing map.

Creating a New Node Using the Map Palette

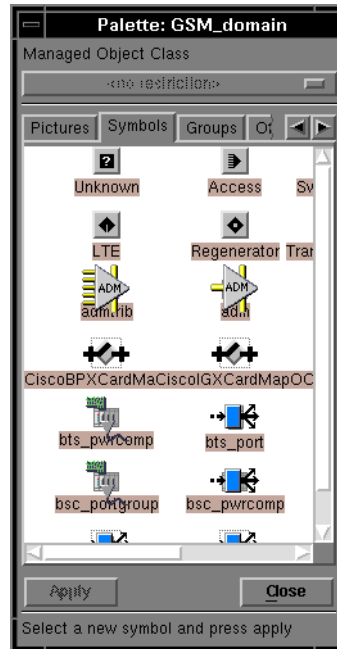
To add a new node to an editable map:

1. Click `View:Map Palette` OR right-click and click `Add Map Node`. The

Map Presenter

Add Map Node Panel

Map Palette panel appears.



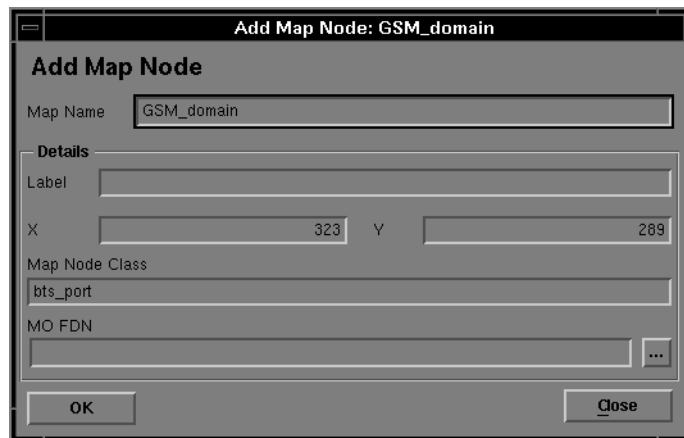
2. If you are modifying a Server-defined map, select the managed object class of the new node from the Managed Object Class list.
3. Select the appropriate map symbol for the new node, and drag that symbol onto the map.

NOTE: Only the symbol assigned to the specified managed object class can be dragged onto the map. When you select a symbol in the palette, a dark box appears over the symbol if it is part of the specified managed object class.

The map symbol categories are:

- Shapes—Represented by a shape that can hold an icon.
- Pictures—Vector drawings denoting telecommunications equipment.
- Symbols—Predefined symbols recommended by ITU-ANSI.
- Groups—Represented by container objects with one of four types of visual representation:

- Linear, bendable pipe-like container that holds a group of network elements, links, or backbone transport systems.
 - Rectangular, resizable container that holds network elements in the same location.
 - Polygonal, flexible container that represents network elements at the regional level.
 - CellNetPoly, container defined by OVSACN, derived from the polygonal group.
- OffPage nodes represent managed objects that exist on another client map. OffPage connectors indicate that the link continues on another map.
4. The Add Map Node panel appears with the X and Y positions, map name, and map node class filled in.



5. Enter the additional node information as required:
 - Enter the Label for the object name displayed on the network map for the node.
 - Change the X and Y pixel coordinates if desired.
 - Enter the MO FDN or click [. . .] to display a list of FDNs. (For Server-defined maps, there is no browse button because the parent FDN is already known.)
6. Click [OK]. The panel closes, and the object appears on the map.

Add Map Link Panel

You may add links to client-defined and server-defined maps.

For client-defined maps, if the name of the link corresponds to the name of an object that exists in the topology, the link is updated with available topology information.

In server-defined maps, if the binding of a new link to a physical network object is successful, the link is updated with information from the network.

There are two ways to add links to a map. See:

- Copying an Existing Link
- Creating a New Link

Copying an Existing Link

To copy a link from one map to an editable client map:

1. Open the map that contains the link to copy.
2. Open the map to receive the link.
3. Shift-click the two nodes at the ends of the link and the link itself.
4. Shift-click and drag the link. Drop the link onto the new map.

Creating a New Link

To create a new link on an open map:

1. Select the two nodes to be linked. Follow one of the procedures below:
 - Shift-click each of the two nodes and click `MapGadget:Add Map Link`.
 - Right-click and hold the first node. Drag the cursor to the other node, then release the mouse button.
 - Right-click one of the nodes and click `Add Map Link`.
2. The `Add Map Link` panel appears with the `Map Name` and the `From`

and To fields filled in.

The screenshot shows a dialog box titled "Add Map Link". Inside the dialog, there is a section for "Map Name" with the text "GSM_domain". Below that is a "Node Details" section containing "From" (bscport-1) and "To" (bscport-2) fields. Further down is a "Map Link Class" dropdown menu and an "MO FDN" field with a "Browse..." button. At the bottom of the dialog are "OK" and "Close" buttons.

3. Enter the additional link information as required (Note that the fields may be different if you are adding a map link on a server-defined map):
 - Select the Map Link Class from the list.
 - Enter the MO FDN and its path or click [Browse] to find the managed object FDN. (For Server-defined maps, there is no [Browse] button because the FDN is already known.)
4. Click [OK].

Edit Map Node Panel

On a Server-defined map, the node symbol must correspond with the managed object class of the node.

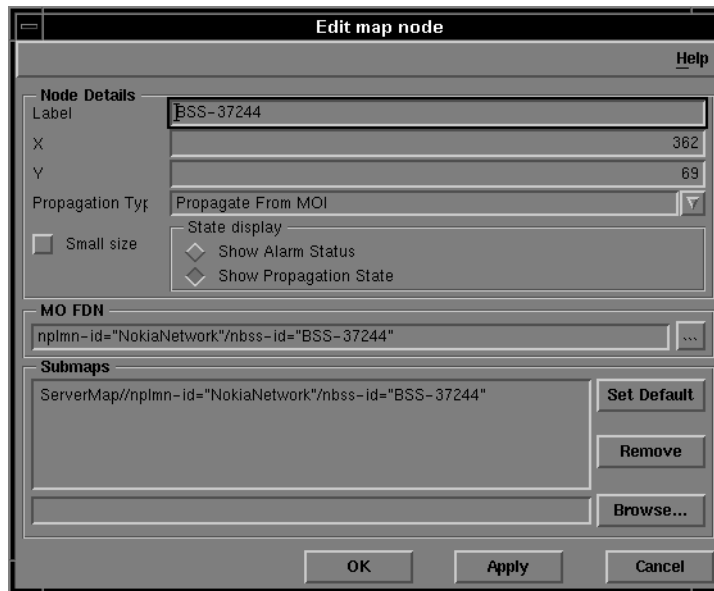
On a Client-defined map, the node symbol may be any of the available symbols.

To change the symbol shown for a node on an editable client map:

1. Select the node on the map.
2. Click View:Map Palette. The Map Palette appears.
3. Select a different symbol in the Map Palette and click [Apply].

To modify other attributes of a node:

1. Select the node on the map. The selected node is outlined in white.
2. Right-click the node and click Edit Map Node. The Edit Map Node panel appears with the current attribute settings.



3. Change the node information as required:

- Enter the `Label` for the object name displayed on the network map for the node. You may want to shorten labels that do not display properly.
- Change the `X` and `Y` pixel coordinates if desired.

`Propagation Type` specifies how the status of the link is determined.

NOTE: Regardless of the propagation type, the home map object does not display status propagation from child objects.

The propagation type options are:

- `No Propagation`
- `Propagate From MOI` determines status from the status of the real management object instance. (The lowest level nodes commonly propagate from the management object instance.)
- `Propagate From Submap` determines status from the submap. The status propagates up according to the status propagation rules. (The network- or region-type map objects commonly propagate from submap.)
- The `State display` specifies which status to show for the link. Options are:
 - `Show Propagation State` displays the propagated alarm state on the link symbols. Clear this check box to remove the propagation state display. This is the preferred display state because it adds fewer status decorations than the alarm status state and results in a more readable display.
 - `Show Alarm Status` displays all alarm status decorations on the map including the problem balloons. Clear this check box to remove the alarm status symbols.
- `Small size` toggles the size of the node icon between small and standard size. The small size node display only shows node function and name while the standard size node display shows node function, name, and capacity.
- Enter the `MO FDN` or click [. . .] to display a list of FDNs. (For Server-defined maps, there is no browse button because the FDN is already known.)

Edit Map Node Panel

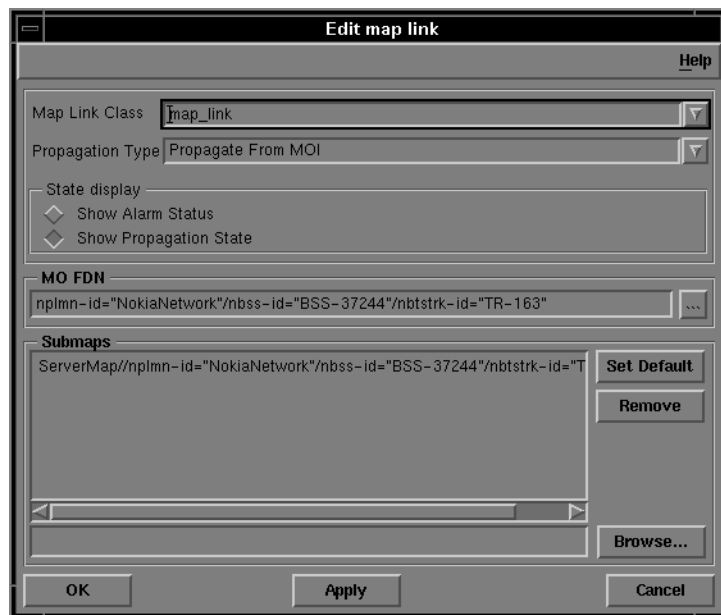
- The Submaps list shows all submaps associated with this node.
 - To add a submap to the list, click [Browse] to display a list of maps and select a map.
 - To set the default submap that opens when the link is double-clicked, select a submap and click [Set Default].
 - To remove a submap from the list, select the submap and click [Remove].
4. Click [Apply].

Edit Map Link Panel

Modify the location of a link by dragging the link to a new location.

To modify other attributes of a link:

1. Select the link on the map. The selected link is outlined in white.
2. Right-click the link and click **Edit Map Link**. The **Edit Map Link** panel appears with the current link attributes.



3. Change the link information as required.
 - Propagation Type specifies how the status of the link is determined. Options are:
 - No Propagation
 - Propagate From MOI determines status from the status of the actual link management object instance. (The lowest level nodes commonly propagate from the management object instance.)
 - Propagate From Submap determines status from the

Edit Map Link Panel

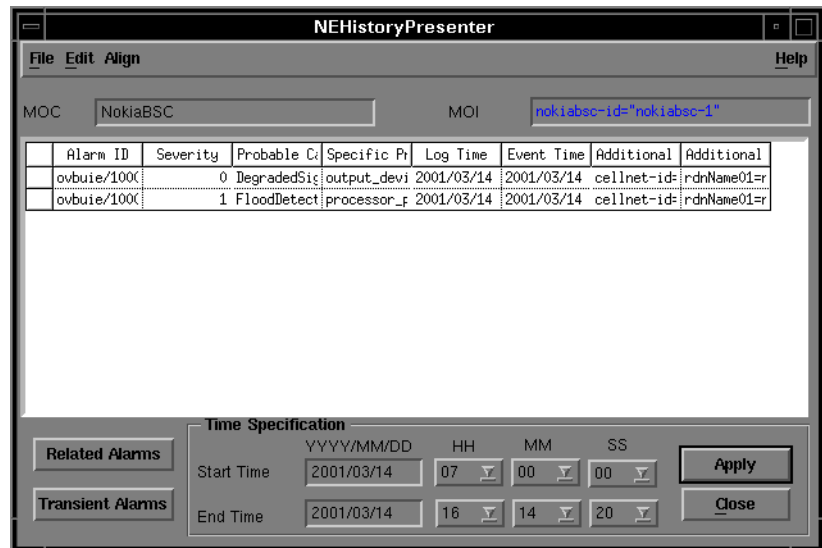
submap. If you want to attach a submap to the link and have the status of the link reflect the submap status, choose this option. The status propagates up according to the status propagation rules. (The network- or region-type map objects commonly propagate from submap.)

- The `State display` specifies which status to show for the link. Options are:
 - `Show Propagation State` displays the propagated alarm state on the link symbols. Clear this check box to remove the propagation state display. This is the preferred display state because it adds fewer status decorations than the alarm status state and results in a more readable display.
 - `Show Alarm Status` displays all alarm status decorations on the map including the problem balloons. Clear this check box to remove the alarm status symbols.
 - `MO FDN` displays the managed object name.
 - The `Submaps list` shows all submaps associated with this link.
 - To add a submap to the list, click `[Browse]` to display a list of maps and select a map.
 - To set the default submap that opens when the link is double-clicked, select a submap and click `[Set Default]`.
 - To remove a submap from the list, select the submap and click `[Remove]`.
4. Click `[Apply]`.

Network Element History Panel

The Network Element History panel displays all current and discharged problems for given time period for the managed object selected in the map presenter.

For information on the fields in the Network Element History panel, see “Problem Attributes” on page 140.



To view the alarm history of a single map object:

1. Select an object in the map presenter.
2. Click Action:Show NE History. The Network Element History panel appears.
3. Enter values for Start Time and End Time to specify the time window for which to view alarms associated with the selected network element.
4. Click [Apply].

See also:

- “Related Alarms Panel” on page 159

Map Presenter

Network Element History Panel

- “Transient Alarms Panel” on page 161

Working with Table Presenter Data

The “Problems Presenter” on page 139, “Outages Presenter” on page 167, and “OM Events Presenter” on page 179 display data in a standard format of rows and columns.

Each column of a table presenter contains only one type of data. The valid data types are:

- **Number** (Int, Float, Boolean)—A specified numeric type.
- **Date**—A date. To set the date format, right-click in a date column header to display the data operations menu and click `Format`.
- **String**—Any text string, including numeric strings.
- **HyperRef**—A hyper-reference, indicated by blue text. To access the linked object, double-click the hyper-reference. For example, double-click a hyper-reference managed object instance to view the `Node Details` panel.

The columns and rows of a table presenter can be configured according to user preferences. The column and row attributes are:

- **Label**—Displays cell values for a column as text labels corresponding to the set of numbers (or other values) in the column. For example, you can display problem severity labels as words (Indeterminate, Critical, Major, Minor, Warning, Cleared) or numeric values (0-5). The administrator configures the available label name mappings.
- **Bitmap**—Displays cell values for a column as images. The supported image formats are GIF and BMP.
- **Foreground**—Sets the foreground color for a table column or row according to the assigned mapping.
- **Background**—Sets the background color for a table column or row according to the assigned mapping.
- **Font**—Sets the font for a table column or row.
- **Pattern**—Sets the pattern for a table column or row.

Working with Table Presenter Data

Use the “Options Panel” on page 109 to configure table column and row attributes.

Table Presenter Menu Commands

The table presenter menu commands are context-sensitive. The available menu commands depend on the current selection and the particular presenter. All possible table presenter menu commands are listed here.

Table 4-1 Table Presenter Menu Commands

Menubar	Menu Command	Description
File	Print:Selected Rows to File	Copies the data from the selected rows to a file.
	Close	Closes the presenter window.
	Exit	Exits the topology GUI and closes all presenter windows.
Edit	Select All	Selects all rows in the table.
	DeSelect All	Deselects all rows in the table.
	Alarm Alerts	Opens the Alarm Alerts Setup panel.
View	Show Summary	Displays the Summary Scoreboard with a summary of the number of problems of each severity that are owned, disowned, or discharged. See “Viewing Summary Information” on page 163.
	Error log	Displays the message browser with a list of messages for requests carried out on the GUI client. Messages can be sorted by severity.
	Problem Filter List	Displays a list of saved problems filters that you can apply to the rows in the problems presenter.

Working with Table Presenter Data
Table Presenter Menu Commands

Table 4-1 Table Presenter Menu Commands

Menubar	Menu Command	Description
Align	Left	Left-justifies the column data.
	Center	Centers the data in the column.
	Right	Right-justifies the column data.
Presenters	Map	Opens a map presenter window.
	Problem	Opens a problems presenter window.
	Outage Plan	Opens an outage plan presenter window.
	OM Events	Opens an OM events presenter window.
	Chart	Opens a chart presenter window.
Session	Set home session	Saves changes made to the presentation of the table. See “Setting Your Home Session” on page 29.
Layout	Set as default	Saves the current problems presenter layout and applies that layout to any subsequent problems presenters launched during the login session.
Action	Shows information about the selected object as described in “Table Presenter Data Operations Menu Commands” on page 101.	
MapGadget	Provides access to much of the functionality described in “Table Presenter Data Operations Menu Commands” on page 101.	
Help	About this panel	Opens online help to the information about this panel.
	About User	Displays the current user, role, and topology GUI server names.
	About OVSACN	Displays product information.

Table Presenter Data Operations Menu Commands

To access the table presenter data operations menu, right-click in the table area of a table presenter. The data operations menu commands are context-sensitive. The available menu commands depend on the current selection. All possible table presenter data operation menu commands are listed here.

Table 4-2 **Table Presenter Data Operations Menu Commands**

Data Operation	Description
Print	Displays the Print panel. See “Printing the Entire Table” on page 119.
Ascii Dump	Displays the Ascii Dump to File panel. See “Exporting ASCII File Output” on page 120.
Options Panel	Displays the Options panel. See “Options Panel” on page 109.
Show All Columns	Makes all columns, including hidden columns, in the table presenter visible. See “Hiding and Displaying Table Elements” on page 105.
Hide Column	Removes the display of the column from the table. See “Hiding and Displaying Table Elements” on page 105.
Sort Ascending	Sorts the selected column in ascending order. See “Sorting Data” on page 115.
Sort Descending	Sorts the selected column in descending order. See “Sorting Data” on page 115.
Remove Sorting	Removes the sorting of the selected column. See “Sorting Data” on page 115.
Format	Displays a submenu for selecting the date format of the column. The default format for dates is YYYY/MM/DD. Time is in the local timezone.

Table Presenter Data Operations Menu Commands**Table 4-2 Table Presenter Data Operations Menu Commands**

Data Operation	Description
Automatic Sorting	Toggles the automatic sorting of new entries added to the table. See “Sorting Data” on page 115.
Freeze Table	The table displayed in the Presenter does NOT update when new information arrives.
Unfreeze Table	Returns the table displayed in the Presenter to auto-update when new information arrives.
Own	Assigns ownership for the selected problems to your operator username.
Disown	Removes ownership for the selected problems.
Discharge	Discharges the selected problems from the presenter.
Create TT	Creates a trouble ticket for the selected problem.
Locate	Locates the map object for the object in the selected problem or outage plan in the map presenter.
Restore	Restores the outage for the selected outage plan to the Unlocked administrative state.
Modify	Opens the <code>Modify Outage</code> panel for changing the selected outage plan.
Submit	Opens the <code>Submit Outage</code> panel for creating an outage plan for the selected object.

Selecting Table Data

You can select any part of the data table for subsequent operations. The selected part of the table is displayed in inverse video.

- To select a single row, click the row select button on the left side of the row.
- To select a single column, click the column header.
- To select a block of rows, click and hold while moving through multiple row select buttons. The rows must be adjacent.
- To select a block of columns, click and hold while moving through multiple column headers. The columns must be adjacent.
- To select multiple rows, ctrl-click each desired row select button. The rows do not need to be adjacent.
- To select multiple columns, ctrl-click each desired column header. The columns do not need to be adjacent.
- To select the entire table, click the table select button located in at the upper left corner of the table or click `Edit:Select All`.

To **deselect** the selected data, click anywhere in the table other than the selected items or click `Edit:Deselect All`.

The figure below shows the active regions in the table:

Column Header:
Click to select a column.

Table Select Button:
Click to select entire table.

Row Select Button:
Click to select a row.

	Problem Cor	Create Time	Severity	Owned by	Probable C	Acknowledge	MOI	MOC
	ovbuie/100	2001/03/14	1	No Owner	FramingErr	0	nplmn-id="N	NMSCPort
	ovbuie/100	2001/03/14	2	No Owner	OutOfMemor	0	nplmn-id="N	NHLRPort
	ovbuie/100	2001/03/14	2	No Owner	Multiplexer	0	nplmn-id="N	NBTS
	ovbuie/100	2001/03/14	3	No Owner	PowerProble	0	nplmn-id="N	NBTSTrunk
	ovbuie/100	2001/03/14	4	No Owner	Multiplexer	0	nplmn-id="N	NBSCPort
	ovbuie/100	2001/03/14	2	No Owner	LossOffFrame	0	nplmn-id="N	NBSC
	ovbuie/100	2001/03/14	5	No Owner	ProcessorPr	0	nplmn-id="N	NBSC
	ovbuie/100	2001/03/14	1	oemfadn	Communicati	1	nplmn-id="N	NBTS
	ovbuie/100	2001/03/14	0	No Owner	Communicati	0	nplmn-id="N	NBTS
	ovbuie/100	2001/03/14	3	No Owner	BandwidthRe	0	nplmn-id="N	NBTS

Customizing the Table Presenter Layout

The table presenter displays are highly customizable.

To preserve custom settings for future login sessions, see “Setting Your Home Session” on page 29.

See also:

- “Hiding and Displaying Table Elements” on page 105
- “Resizing Table Elements” on page 106
- “Moving Table Elements” on page 107
- “Setting Fonts” on page 110
- “Setting Data Mappings” on page 111
- “Sorting Data” on page 115

Hiding and Displaying Table Elements

You can hide and subsequently redisplay any columns. These operations are accessed through the right-click data operations menu.

To view a longer display list, resize the window.

To hide a column:

1. Position the cursor on the column header.
2. Right-click and click one of the following:
 - Hide Column
 - Options Panel. In the Columns list, select the column to be hidden and clear the Visibility check box. See “Options Panel” on page 109.

To display a single hidden column:

1. Right-click and click Options Panel. See “Options Panel” on page 109.
2. In the Columns list, select the column to be displayed and select the Visibility check box.

To display all hidden columns, right-click and click Show All Columns.

Resizing Table Elements

To change the height of all data rows:

1. Move the cursor to the bottom of the first row select button. The cursor changes to a vertical double-arrow.
2. Click and hold while moving the mouse to adjust the row height either up or down. The height of all rows changes.

To change the height of the column header row:

1. Move the cursor to the bottom of the table select button in the upper left corner of the table. The cursor changes to a vertical double-arrow.
2. Click and hold while moving the mouse to adjust the header row height either up or down. The height of the header row changes.

To change the width of a column:

1. Move the cursor to the column delimiter (the vertical line) on the right side of the column. The cursor changes to a horizontal double-arrow.
2. Click and hold while moving the mouse either left or right to adjust the column width. All columns to the right are moved to accommodate the new column width.

Moving Table Elements

You can move any selected portion of the data table using click-and-drag.

1. Select the row, column, or contiguous block to be moved, then release the mouse button. (Multiple rows or columns must be together in one contiguous block to move as a group.)
2. Click and hold while moving the cursor to the new location. The selected data is “dragged” into the new location. The columns retain their display characteristics and attached actions.

Justifying Column Data

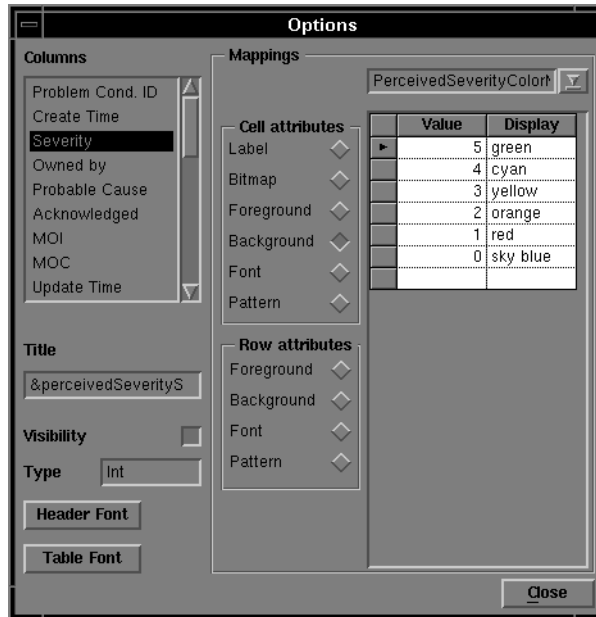
You can align the text in a table column on the left or right side of the column, or you can justify the text in the center of the table column.

To justify the text in a column:

- Click on the column header.
- Click the appropriate `Align` menu command.

Options Panel

To invoke the options panel, right-click anywhere in the presenter and click Options Panel.



Use the Options panel to:

- Make a column visible or hidden (with `Visibility` check box).
- Determine the data type for the values in a column (with the read-only `Type` field).
- Select the font for the table headings and rows. See “Setting Fonts” on page 110.
- Set up mappings for column and cell attributes. See “Setting Data Mappings” on page 111.

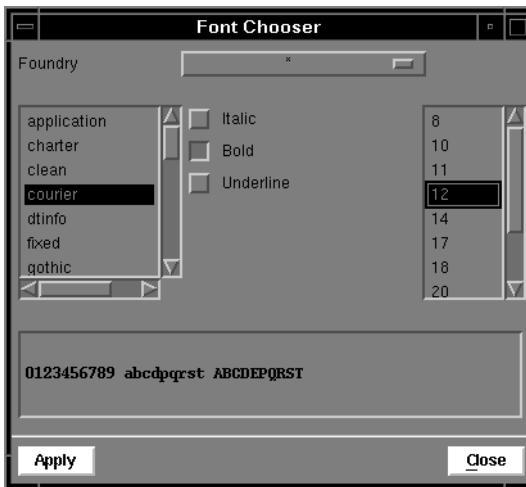
Changes made in the Options panel are immediately reflected in the table display of the Presenter window.

Setting Fonts

The fonts for the table header and table rows can be set separately to distinguish regions of the table.

To set the font for the table header or table rows:

1. In the “Options Panel” on page 109, click [Header Font] or [Table Font] as appropriate. The Font Chooser appears.



2. Select a font class from the Foundry list.
3. Select a font name from the available fonts list.
4. Select the appropriate check boxes for italic, bold, and underline. The box at the bottom of the Font Chooser panel displays a sample of the selected font.
5. Click [Apply] to invoke your selected font.

Setting Data Mappings

Data can be mapped to the tables in the Problems, Outages, and OM Events Presenters using several different characteristics of the data. The mapping of attributes to columns and data types to display types can be saved for use in future sessions.

The data displayed in the table has a number of attributes, but not all of the attributes must be displayed in the table. You can specify which attributes to display and in which columns to display them. Some attributes may not be displayed at all.

Each attribute has one of the basic data types. You define the mapping of data types to display types. The column can display the data in several different formats, such as a bitmap, a specified background color, or a string. For example:

- If the attribute contains integer values of 0 to 3, the corresponding display column may contain cells with a background colors of green, yellow, orange, and red. See “Example: Mapping Severity Level to Color in the Problems Presenter” on page 111.
- If the attribute contains strings “NokiaMSC,” “EricssonMSC,” and “NortelMSC,” the display column may contain icons `NokiaMSC.gif`, `EricssonMSC.gif`, and `NortelMSC.gif`. See “Example: Mapping the Acknowledged Value to an Icon” on page 113.

Example: Mapping Severity Level to Color in the Problems Presenter

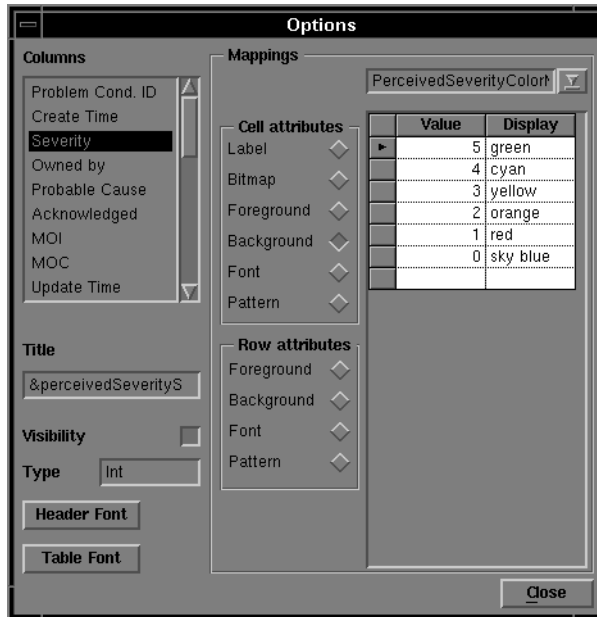
To use colors to represent the different severity levels in a column:

1. In the “Options Panel” on page 109, click `Severity` in the Columns list.
2. In the Mappings area, select the cell attribute `Background`.
3. In the upper right side of the Options panel, click the triangle to view a drop-down list of labels.

Working with Table Presenter Data

Setting Data Mappings

4. Select `PerceivedSeverityColorMap` from the list of labels.



5. Click [Close].

The default colors for the `PerceivedSeverityColorMap` are:

Table 4-3 **Default Labels for
PerceivedSeverityColorMap**

Display Color	Severity	PerceivedSeverityEnum
Sky Blue	Indeterminate	0
Red	Critical	1
Orange	Major	2
Yellow	Minor	3
Cyan	Warning	4
Green	Cleared	5

In this example, the background colors in the `Severity` cells represent

the severity levels of the problem.

Problem Cor	Create Time	Severity
ovbuie/100	2001/03/14	2
ovbuie/100	2001/03/14	2
ovbuie/100	2001/03/14	4
ovbuie/100	2001/03/14	3
ovbuie/100	2001/03/14	4
ovbuie/100	2001/03/14	1
ovbuie/100	2001/03/14	1
ovbuie/100	2001/03/14	2
ovbuie/100	2001/03/14	4
ovbuie/100	2001/03/14	0

Example: Mapping the Acknowledged Value to an Icon

To use icons to represent the values in the problem acknowledgment field:

1. In the “Options Panel” on page 109, click Acknowledged in the Columns list.
2. In the Mappings area, select the cell attribute Bitmap.
3. In the upper right side of the Options panel, click the triangle to view a drop-down list of labels.
4. Select OwnershipImageMap from the list of labels. The value 0 is mapped to Unowned.gif; the value 1 is mapped to Owned.gif.
5. Click [Close].

The default filenames for the OwnershipImageMap are:

Table 4-4 Default Filenames for OwnershipImageMap

Image Filename	Acknowledged State	OwnershipImageEnum
Unowned.gif	Unowned	0
Owned.gif	Owned	1

In this example, the bitmaps in the Acknowledged cells represent the

Setting Data Mappings

ownership of the problem as shown below.

Owned by	Probable Cause	Acknowledged
No Owner	OutOfMemory	✗
No Owner	PumpFailure	✗
No Owner	DegradedSignal	✗
No Owner	DegradedSignal	✗
No Owner	Multiplexer	✗
oemfadm	DegradedSignal	✓
oemfadm	OutOfMemory	✓
No Owner	FloodDetect	✗
No Owner	Configuration	✗
No Owner	OutOfMemory	✗

Sorting Data

You can sort the table data on the value of one to three attributes. The last sort applied has the highest priority. You can add or remove sorts at any time.

To sort a column, Shift-right-click (or Shift-left-click) on the column header to toggle among:

- Sort all rows by the attribute in that column in ascending order.
- Sort all rows by the attribute in that column in descending order.
- Remove the sort.

Triangles representing the sorts are shown in the column headers.

- The indicator for a sort in ascending order is:



- The indicator for a sort in descending order is:



The shading of the triangles indicates the sort priority. The deepest shading (most three-dimensional look) indicates the highest priority sort column. As sorts are added and removed, the display triangles change to indicate the priority and order of the sorts.

Sort Rules

Sorting is applied according to the following rules:

- Numbers are sorted in numeric sequence.
- Text is sorted by ASCII character sequence.
- Dates are sorted in chronological sequence, even if the display format begins with text. For example, “Monday 12 January 1998 12:59” is sorted the same way as “1/12/98 12:59.”
- Identical entries remain in the same order.

Sorting Data

Sort Example

To sort by both severity and owner in the problems presenter:

1. Apply a sort on the Owner ID column. (Shift + right-click on the Owner ID column header.)
Each owner's rows are grouped together for all severity levels.
2. Apply a reverse sort on the Severity column. (Shift + right-click twice on the Severity column header.)

The five severity levels are displayed in order for each owner. Each owner's problems are grouped together.

Automatic Sorting

When automatic sorting is selected, new entries in the table are inserted according to the sort order.

If automatic sorting is deselected, new entries in the table are added to the end of the table. You may want to deselect automatic sorting:

- To add new entries as a block. When automatic sorting is ON, the new table entries are added in the sorted order. However, when automatic sorting is OFF, the new table entries are added to the bottom of the table.
- To avoid sorting time interruptions when the table is large.

If automatic sorting is turned off, all unsorted entries are sorted when you reselect automatic sorting.

To select automatic sorting, right-click anywhere in the presenter and click `Automatic Sorting`.

To turn off sorting, right-click in a table column and click `Remove Sorting`.

Viewing the Contents

In the Scope Area at the bottom of the Problems, Outage Plan, and OM Events Presenters, the Contents tab displays a table listing the origins of the problems, outage plans, or OM events in the table. The specifications in the Contents tab set the top level of data to show in the presenter.

For example, with the data origin equal to `cellnet-id="cellnet"`, the presenter shows all problems, outage plans, or OM events for objects whose managed object instance begins with `cellnet-id = "cellnet"`.

Contents	FDN	RDN	MOC	
Filter	<code>nplmn-id="NokiaNetwork"</code>	<code>nplmn-id="NokiaNetwork"</code>	NPLMN	Add
	<code>cellnet-id="IPTel"</code>	<code>cellnet-id="IPTel"</code>	Cellnet	Remove
	<code>pcs="PCS"</code>	<code>pcs="PCS"</code>	PCS	Clear
	<code>custom="SDH"</code>	<code>custom="SDH"</code>	SVSYSTEM	ShowAll <input type="checkbox"/>
	<code>nplmn-id="NokiaNetwork"</code>			

The data displayed in the table is defined by the column headers:

- FDN, Fully Distinguished Name
- RDN, Relative Distinguished Name
- MOC, Managed Object Class

Four options are provided to adjust the data origins:

- Click [Clear] to clear the origins table for subsequently accessing a different data set.
- Click [Remove] to remove the selected origin.
- Click [Add] to add an entry to the origin table.
- Select the Show All check box to set the origin as the entire accessible portion of the network.

Locating a Map Object from a Table Presenter

To locate an object on the map from a table presenter:

1. Select one event from the table. (Select a problem in the “Problems Presenter” on page 139, an outage in the “Outages Presenter” on page 167, or an OM event in the “OM Events Presenter” on page 179.)
2. Click [Locate].

The “Map Presenter” on page 33 opens with a map displaying the objects associated with the selected problem, outage, or OM event.

Outputting Presenter Data

The methods of outputting data from the table presenters are:

- Printing Selected Rows to a File
- Printing the Entire Table
- Exporting ASCII File Output

Printing Selected Rows to a File

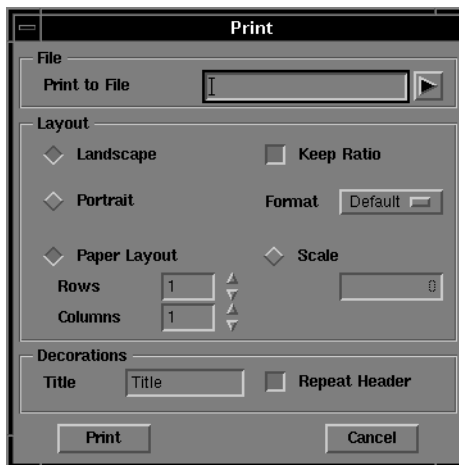
To print one or more rows of table data to an ASCII file:

1. Select the desired rows.
2. Click `File:Print->Selected Rows to File`. The `Print Selected Rows to File` panel appears.
3. Enter a filename and click `[OK]`. The OV Topology Server writes the data for the selected rows to an ASCII file of the assigned name.

Printing the Entire Table

To print the entire table, right-click and click `Print`.

The `Print` panel appears:



The `Print` panel options are:

Outputting Presenter Data

- **Print to a file.**
Enter the filename in the `Print to File` box. The file is a PostScript format file.
- **Layout options:**
 - `Landscape or Portrait`—Sets the page orientation.
 - `Keep Ratio`—Maintains the length-to-width ratio of the table dimensions.
 - `Format`—Provides a list of standard paper sizes.
 - `Paper Layout`—Sets the number of `Rows` and `Columns` to print. Enter “*” in the `Rows` and `Columns` boxes to print the table over as many pages as necessary. Enter “1” in the `Columns` box to print all columns on the same page.
 - `Scale`—Sets the size of the printed table by a specified fraction. For example, a scale of 0.50 requests printing at half scale. A scale of “0” is equivalent to setting both `Rows` and `Columns` to “*”.
- **Output decorations:**
 - `Title box`—Specifies the title to be printed in the lower left corner of each page.
 - `Repeat Header`—Prints the column headers at the top of every page.

To print the entire table on a single page using all page space:

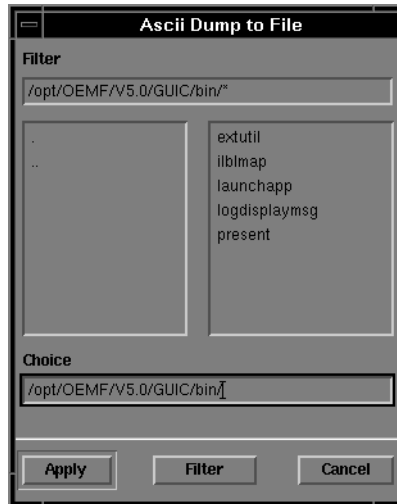
1. Clear the `Keep Ratio` check box.
2. Set the `Paper Layout` value to “1” for both `Rows` and `Columns`.
3. Click `[Print]` to complete the printing process.

Exporting ASCII File Output

To output the entire table as a comma-delimited ASCII file:

1. Right-click in the presenter and click `Ascii Dump`. The `Ascii Dump`

to File panel appears.



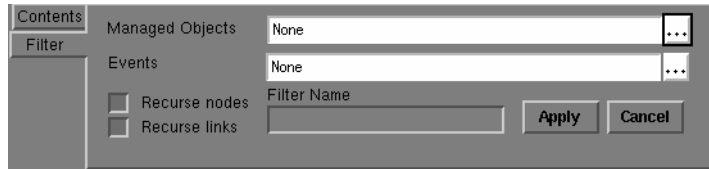
2. Specify the filename and click [Apply].

5

Using Filters

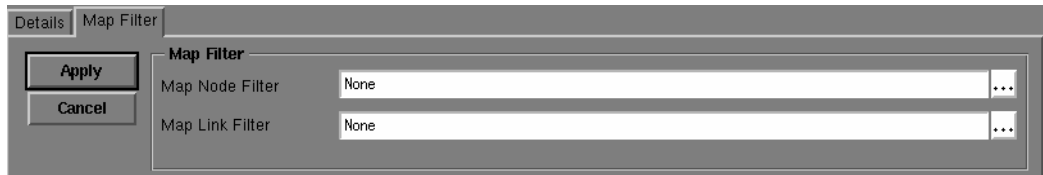
In the Map, Problems, Outages, and OM Events Presenters, you can use a filter to limit the information displayed. You can set a filter to view specific problems based on, for example, ownership, severity, or managed object class of MOI that owns the problem. (Use the Contents tab to view the problem conditions of particular networks, network element types, or network element instances.)

The **Filter** tab in the Scope Area of the table presenters displays the filtering options for table data:



A filter that recurses nodes and/or links includes the problems, outage plans, or OM events that belong all levels of the child objects of the managed object in the map that matched the filter criteria. Otherwise, only the problems associated with the managed object instances specified in the contents that matches the filter criteria are displayed.

The **Filter** tab in the Scope Area of the map presenter provides a way to further filter the objects that exist in the map. You can filter objects based on the map node and on the map link.



See also:

- “Applying and Removing Filters” on page 124

Applying and Removing Filters

Presenter data is stored in its entirety in the OV Topology Server databases. If you apply a filter to the data to see a specific view of the information, you can remove that filter to return to a view including all of the data for the defined scope content.

To apply a filter, use one of the following filter mechanisms:

- “Saved Filters” on page 125
- “Direct Filter” on page 126
- “Filter Panel” on page 128

To remove the filter criteria:

1. In the text box on the `Filter` tab of the Presenter, delete all filter criteria and enter `None`.
2. Click `[Apply]`.
3. If desired, select or deselect the check boxes for `Show All`, `Recurse Nodes`, and/or `Recurse Links`.

NOTE: `None` and `true` are the only valid values for clearing a filter.

Saved Filters

The administrator may create saved filters for use in the problems presenter only. To access a saved filter:

1. Display the data that requires filtering, and click `View:Problem Filter List`.

The `Saved Filters` panel appears.

2. In the `Available Filters` list, do one of the following to apply the filter:
 - Double-click a filter name.
 - Select a filter name, and click `[OK]`.
3. The filter name appears in the `Filter` tab in the `Scope Area` of the problems presenter.
Click `[Apply]` in the `Filter` tab.

Direct Filter

The filter area contains two text boxes that can be used to enter a filter expression directly. If you know the parameter names and values to use, you can enter a filter directly into the appropriate text box. For the syntax to use, see Direct Filter Example.

Termination Points are a subclass of the Components class. Therefore, when the managed objects filter of a table presenter is set to `isComponent` and then applied, the problems, outage plans, or OM events for all Termination Points and Components appear in the presenter windows. If `isTerminationPoint` is applied, the problems, outage plans, or OM events for only the Termination Points appear.

In the map presenter, when the Map Node filter is set to `isComponent` and then applied, all Termination Points and Components appear on the presenters.

Direct Filter Example

To view only problems with either the severity level Critical or a Probable Cause of 90:

1. Enter the following expression in the filter text area:
`or (Severity == __Critical, Probable Cause == 90)`

NOTE: Including empty parentheses () anywhere in the filter causes the topology GUI to crash. Always include content between parentheses before applying a filter.

2. Click [Apply].
The list displays only those problems that have a severity level of Critical or a probable cause of 90.

See also:

- “Syntax of Managed Object Instance Names in Filters” on page 137

Pattern-Matching Filters

To perform substring and pattern matching on fields, use the `match` function in any of the filter expressions. The syntax of the `match` function

is:

```
match(reg_exp, Field)
```

Where:

- ***reg_exp*** is a quoted regular expression. For detailed information on regular expressions, see the `regexp(5)` reference page. The regular expression defines the pattern to be matched in the given field.
- ***Field*** is a valid filter field name that displays character data. To see a list of valid field names, double-click on an `_undefined_` operand in the Filter Panel.

NOTE: Pattern-matching filters must be entered directly into the filter text box. The Filter panel does not support pattern-matching filters.

For example:

- To see all problems in the current view that contain the string `port-id` in the MOI name, enter the following in the Event Filter:
`match("port-id",MOI)`
- To see all problem conditions with a probable cause containing `Frame` (the string `Frame` is part of the probable cause attribute), enter:
`match("Frame", ProbableCause)`
This filter selects rows containing the `LossOfFrame` probable cause.

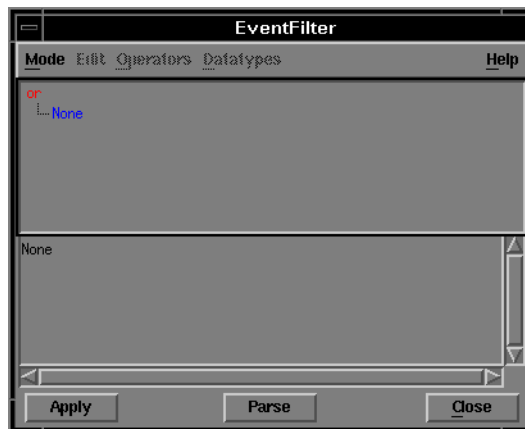
Filter Panel

Use the `Filter` panel to define a filter as a structured set of expressions linked by logical or comparison operators.

To invoke the `Filter` panel from a presenter `Filter` tab, click the button:



The `Filter` panel appears.



NOTE: Always click [Apply] before leaving the `Filter` panel. If you click outside of the `Filter` panel before you apply the filter, the data in the `Filter` panel may be lost.

See also:

- “Filter Panel Menus” on page 128
- “Example of Filtering Problems by Event” on page 131

Filter Panel Menus

The `Filter` panel menus are:

- “Mode Menu” on page 129
- “Edit Menu” on page 129

- “Operators Menu” on page 130

See also:

- “Syntax of Managed Object Instance Names in Filters” on page 137
- “Navigation within the Filter Panel” on page 131
- “Example of Filtering Problems by Event” on page 131

Mode Menu

The mode determines the options available for creating or modifying filters.

- **Basic mode** is used for filters using the OR and AND logical connectors and expressions using the unary and binary operators. (Unary expressions consist of a single operator and an operand. Binary expressions consist of two operands connected by an operator.)
- **Advanced mode** is used for more complex filters including nested conditions.

Edit Menu

The Edit menu commands are:

Table 5-1 Edit Menu Commands

Command	Description
Undo, Cut, Copy, Paste	Standard edit operations
Pop	Replace an expression with one of its operands.
Up	Move an item up to a different location.
Down	Move an item down to a different location.
Insert	Add an item.
Remove	Remove the selected item.

Operators Menu

The Operators menu commands are:

Table 5-2 Operator Menu Commands

Operator Group	Operator	Description
Logical	or	Logical OR
	and	Logical AND
Unary	-	Unary minus
	!	Logical negation
	Insert	Insert unary operand
Binary	-, +, /, *	Subtract, add, divide, multiply
	^	Exclusive OR
	%	Remainder
	&&,	Logical AND, Logical OR
	==	Equal
	!=	Not equal
	>	Greater than
	<	Less than
	>=	Greater than or equal
	<=	Less than or equal
	Insert	Insert 2 binary operands
?:	?:	(Advanced mode only) Allows an If test to select the first case (if true) or the second case (if false). For example: a==12?yes:no

Table 5-2 Operator Menu Commands

Operator Group	Operator	Description
Parentheses	()	Encloses the selected expression in parentheses for readability. This item is a toggle that adds or removes an existing set of parentheses.

Navigation within the Filter Panel

Use the arrow keys on your keyboard to move through a filter.

- The up arrow moves the cursor up one line.
- The down arrow moves the cursor down one line.
- The right arrow on an operand displays a list of possible values.
- The right arrow on an operator expands the line expression to a tree expression. (If there is already a tree expression, the cursor moves to the first operand.)
- The left arrow on an operand moves the cursor up to the operator.
- The left arrow on an operator closes the tree expression and replaces it with a line expression.

The mouse can be used similarly. Double-click on an operand to display a list of possible values. Double-click on an operator to toggle the expression between tree and line display.

Example of Filtering Problems by Event

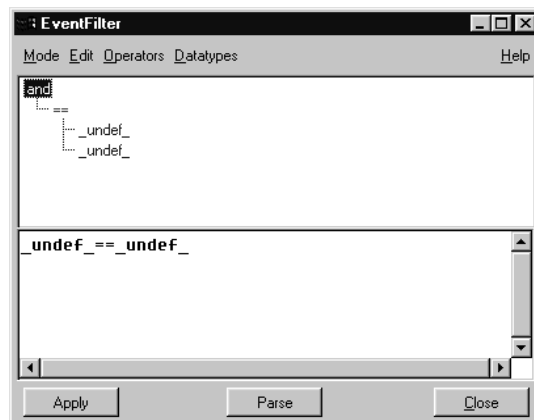
A table in the problems presenter contains several problems with differing severities as shown below:

Filter Panel

	Problem Cor	Create Time	Severity
	ovbuie/100	2001/03/14	4
	ovbuie/100	2001/03/14	1
	ovbuie/100	2001/03/14	2
	ovbuie/100	2001/03/14	3
	ovbuie/100	2001/03/14	3
	ovbuie/100	2001/03/14	1
	ovbuie/100	2001/03/14	3
	ovbuie/100	2001/03/14	4
	ovbuie/100	2001/03/14	5
	ovbuie/100	2001/03/14	1

To filter the table entries to display only the problems with a severity of minor (a value of 3), complete the following steps to create and apply a filter using the Filter panel:

1. Select the Filter tab in the problems presenter.
2. Select the ... button next to the Events field. The Filter panel opens.
3. In the Filter panel, select the text None in the tree structure.
4. Click Operators:Binary, then ==. The Filter panel displays the == operator with two undefined operands.
5. Select or and click Operators:Logical, then and. The Filter panel now looks like:



6. Double-click the first undefined operand to display a list of options.
7. Click `Severity` in the list.
8. Double-click the second undefined operand and click `_Minor` in the list. The Filter panel displays the tree structure for the simple filter.
9. Click [Parse] to convert the tree formula to its line equivalent.



10. Click [Apply] and [Close] on the Filter panel to return to the presenter.
11. Click [Apply] in the presenter window. The problems presenter displays only the problems with a severity of minor:

	Problem Cor	Create Time	Severity
	ovbuie/100	2001/03/14	3
	ovbuie/100	2001/03/14	3
	ovbuie/100	2001/03/14	3

Example of Filtering Problems by Managed Object

Following is an example of using a managed object filter in the problems presenter to get all problems related to components.

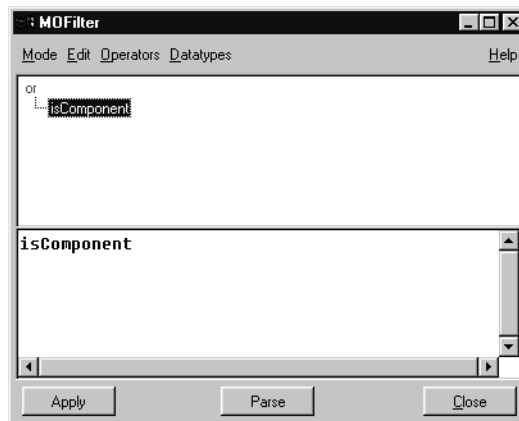
1. Select the `Contents` tab in the problems presenter.
2. Click the `ShowAll` box to list all of the problems in the problems presenter.

Using Filters

Filter Panel

3. Select the `Filter` tab.
4. Select the `...` button next to the `Managed Objects` field. The `Filter` panel opens.
5. In the `Filter` panel, double-click the text `None` in the tree structure.
6. In the drop-down list, select `isComponent`.

The `Filter` panel now looks like:



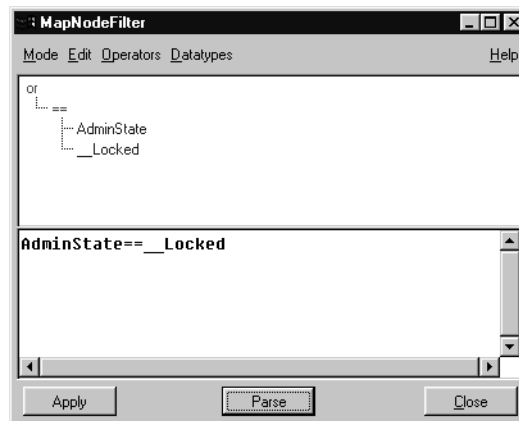
7. Click `[Parse]` to convert the tree formula to its line equivalent.
8. Click `[Apply]` and `[Close]` on the `Filter` panel to return to the presenter.
9. Click `[Apply]` in the presenter window. The problems presenter displays only the problems for managed objects that have the attribute `isComponent`.

Example of Filtering a Map by Map Node

Following is an example using a map node filter in the map presenter to display the map nodes in an outage (i.e., admin state is locked).

1. Select the `Map Filter` tab in the map presenter.
2. Select the `...` button next to the `Map Node Filter` field. The `Filter` panel opens.
3. In the `Filter` panel, select the text `None` in the tree structure.
4. Click `Operators:Binary`, then `==`. The `Filter` panel displays the `==` operator with two undefined operands.

5. Double-click the first undefined operand to display a list of options.
6. Click `AdminState` in the list.
7. Double-click the second undefined operand and click `_Locked` in the list. The Filter panel displays the tree structure for the simple filter.
8. Click [Parse] to convert the tree formula to its line equivalent.



9. Click [Apply] and [Close] on the Filter panel to return to the presenter.
10. Click [Apply] in the map presenter. The map now displays only those nodes with an admin state of `Locked`.

Example of Filtering a Map by Map Link

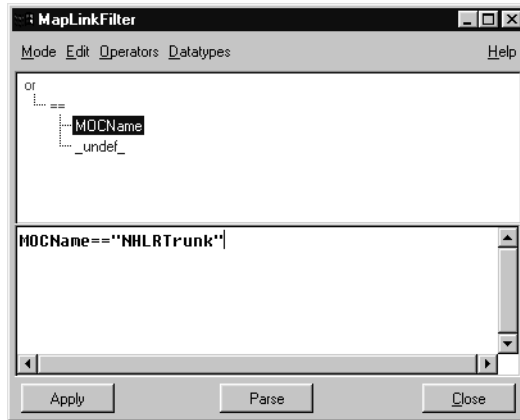
Following is an example using a map link filter in the map presenter to display map links with a managed object class name of `NHLRTrunk`.

1. Select the `Map Filter` tab in the map presenter.
2. Select the `...` button next to the `Map Link Filter` field. The Filter panel opens.
3. In the Filter panel, select the text `None` in the tree structure.
4. Click `Operators:Binary`, then `==`. The Filter panel displays the `==` operator with two undefined operands.
5. Double-click the first undefined operand to display a list of options.

Using Filters

Filter Panel

- Click MOCName in the list.
- In the bottom pane of the Filter panel, select the text `_undef_`.
- Replace the text `_undef_` by typing “NHLRTrunk”. Be sure to include the quotes.
- Click [Parse] to convert the tree formula to its line equivalent.



- Click [Apply] and [Close] on the Filter panel to return to the presenter.
- Click [Apply] in the map presenter. The map now displays only those links with a managed object class name of NHLRTrunk.

Syntax of Managed Object Instance Names in Filters

To enter a managed object instance in a filter, escape each double quote with a preceding backward slash character as shown here.

For example, the FDN:

```
cellnet-id="cellnet"/cell-id="cell-2"/nokiabts-id="nokiabts-21"
```

must be entered in the filter as:

```
"cellnet-id=\"cellnet\"/cell-id=\"cell-2\"/nokiabts-id=\"nokiabts-21\""
```

Using Filters

Syntax of Managed Object Instance Names in Filters

6

Problems Presenter

Objects in the network emit messages that describe their current state. The OV Topology Server maps these messages to a standard alarm format and creates problems, which are supersets of alarms. The problems presenter shows the details of problems associated with objects in the network. Use the problems presenter to receive immediate feedback on the health of the managed network.

The information in the problems presenter is updated dynamically. For example, when one user owns a problem, the problems table updates to reflect the change in problem ownership.

The first origin FDN for the problem data appears in the Problems Presenter titlebar.

The screenshot shows the Problems Presenter window for a specific cellnet. The window title is "[cellnet-id='cellnet']". The menu bar includes File, Edit, View, Align, Presenters, Session, Layout, Actions, and TableGadget. The main area contains a table with the following data:

Problem Co	Create Time	Severity	Owned by	Probable C	Acknowledg	MDI	MOC	Update Tim	Trouble Ti
ovbuie/100	2001/03/14	4	No Owner	FloodDetect	0	cellnet-id: LINK		2001/03/14	<undef>
ovbuie/100	2001/03/14	1	No Owner	FloodDetect	0	cellnet-id: BscPort		2001/03/14	<undef>
ovbuie/100	2001/03/14	4	No Owner	OutOfMemor	0	cellnet-id: BtsPort		2001/03/14	<undef>
ovbuie/100	2001/03/14	1	No Owner	Configuratj	0	cellnet-id: BtsPort		2001/03/14	<undef>
ovbuie/100	2001/03/14	1	No Owner	LossOfFrame	0	cellnet-id: MscPort		2001/03/14	<undef>
ovbuie/100	2001/03/14	0	No Owner	DegradedSig	0	cellnet-id: BscPort		2001/03/14	<undef>
ovbuie/100	2001/03/14	4	No Owner	FramingErrr	0	cellnet-id: MscPortGrou		2001/03/14	<undef>
ovbuie/100	2001/03/14	1	No Owner	Multiplexer	0	cellnet-id: MscPortGrou		2001/03/14	<undef>

Below the table is an operations area with buttons: Own, Locate, Contents, Disown, Details, Discharge, History, Filter, Rows Selected (0), FDN, RDN, MOC, Add, Remove, Clear, ShowAll (checkbox). A status bar at the bottom indicates "This table layout has been saved as the default."

See also:

- “Problem Attributes” on page 140
- “Using the Problems Presenter” on page 144

Problem Attributes

Each problem includes the data listed here. Some data may not appear in the problems table. To change the columns shown in the problems table, see “Hiding and Displaying Table Elements” on page 105. The problem attributes are:

Table 6-1 **Problem Attributes**

Column Heading	Description
Acknowledged	0 if not owned; 1 if owned.
Alarm Admin State	Administrative state of the device sending the problem: unlocked, locked, or shutting down. This state reflects the administrative state of the managed object that emits the current alarm and is associated with this problem when the alarm is logged by the OV Topology Server.
Additional Information	Additional information on the network element with the problem.
Additional Text	Additional text on the network element with the problem.
Alarm Type	Type of alarm such as an Equipment Alarm, Communication Alarm, Quality of Service Alarm, Processing Alarm, Environmental Alarm.
Annotation	Detailed text description of the problem being reported. Contains a hyperlink to the annotation text.
Comp. Class	Component class.
Comp. Shortname	Name of the managed object class name.
Corr. State	Correlation state—related or transient.
Create Time	Date and time at which the OV Topology Server created the problem.
Current Alarm	Most recent alarm associated with a problem.

Table 6-1 Problem Attributes

Column Heading	Description
Event Time	Time that the event was emitted by the managed object.
Event Type	Description of the event: QualityOfService, ProcessingErrorAlarm, CommunicationAlarm, EnvironmentalAlarm, or EquipmentAlarm.
Expiry	Indication that the configured time has expired. The problem has not been dealt with during the configured time interval. This field is a Boolean. Expiry of True indicates that the time has expired.
Last Annotation	An editable field used to add annotations directly into the table. See “Adding and Viewing Problem Annotations” on page 156.
Log Time	Time that the problem was logged in the Fault Management Server.
MO FDN	Fully Distinguished Name for the managed object.
MO Shortname	Mnemonic name for the managed object.
MOC	The managed object class of the object to which the problem is associated. For example, NokiaMSC or BtsPort.
MOI	The managed object instance, also called an FDN, of the object to which the problem is associated. The managed object instance is hyperlinked to the Node Details panel. For example, a managed object instance might be: <code>cellnet-id="cellnet"/erixax-id="nmsc-2"</code> .
NE Class	Class for the network element from which the problem was generated. For example, NokiaMSC.

Problems Presenter
Problem Attributes

Table 6-1 Problem Attributes

Column Heading	Description
NE Shortname	Name of the network element that emitted the alarm. This name uniquely identifies the device within the network. If new devices are added to the network without the device details being added to theOV Topology Server, the problems emitted by these devices result in an “unknown” value for NE shortname.
Number Related	Number of related alarms received and filtered for this problem.
NW Class	Class for the network from which the problem was emitted.
NW Shortname	Name of the network from which the problem was emitted. If new devices are added to the network without the device details being added to theOV Topology Server, the problems emitted by these devices result in an “unknown” value for NW shortname.
Owner	Login name of the operator who currently owns the problem. If the problem is not owned, this column displays no owner.
Own Time	Time when the problem was owned.
Owned By	Username of the operator who owned the problem.
PC History	0 indicates that no other alarms are part of the problem; a value other than 0 indicates that other alarms are included with this problem. The alarms that make up the problem can be viewed as part of Problem History.
Perceived Severity	Perceived severity of the problem corresponding to the X.733 perceived severity listed for the problem type.

Table 6-1 Problem Attributes

Column Heading	Description
Previous Severity	The severity of the problem before the most recent (current) alarm was associated with this problem.
Probable Cause	Probable cause of the problem corresponding to the X.733 probable cause listed for the Alarm Type. For example, <code>CorruptData</code> or <code>ApplicationSubsystemFailure</code> .
Problem Condition ID	A unique key that identifies the problem. This number includes a reference to the host machine where the problem originated. The ID is hyperlinked to additional information about the problem shown on the Problem Details panel.
Problem State	Specifies whether the problem is owned, disowned, or discharged.
Severity	The current severity of the problem such as Critical, Major, Minor, Warning, Indeterminate, or Clear. The severity level can be mapped to a numerical value.
Specific Problem	Specific Problem corresponding to the X.733 specific problem matching this problem. For example, <code>pump_failure</code> or <code>output_device_error</code> .
Trouble Ticket ID	ID returned by the Trouble Ticket application that identifies the trouble ticket.
TT Update Time	Trouble ticket update time.
TT Creator	Username of the operator who created the trouble ticket.
Update Time	Time at which the problem was last updated. If the problem has not been updated, this value is the same as Create Time.

Using the Problems Presenter

The specialized functionality of the problems presenter is described in:

- “Displaying Problems” on page 146
- “Problems Presenter Table Layout” on page 147
- “Setting the Alarm Bell” on page 149
- “Problem State” on page 150
- “Owning a Problem” on page 152
- “Disowning a Problem” on page 153
- “Discharging a Problem” on page 154
- “Problem Details Panel” on page 155
- “Adding and Viewing Problem Annotations” on page 156
- “Problem History Panel” on page 158
- “Related Alarms Panel” on page 159
- “Transient Alarms Panel” on page 161
- “Viewing Summary Information” on page 163
- “Creating, Updating, and Querying Trouble Tickets” on page 164
- “Troubleshooting the Problems Presenter” on page 165

See also:

- “Table Presenter Menu Commands” on page 99
- “Table Presenter Data Operations Menu Commands” on page 101
- “Selecting Table Data” on page 103
- “Customizing the Table Presenter Layout” on page 104
- “Hiding and Displaying Table Elements” on page 105
- “Resizing Table Elements” on page 106
- “Moving Table Elements” on page 107
- “Justifying Column Data” on page 108

- “Options Panel” on page 109
- “Setting Fonts” on page 110
- “Setting Data Mappings” on page 111
- “Sorting Data” on page 115
- “Viewing the Contents” on page 117
- “Locating a Map Object from a Table Presenter” on page 118
- “Outputting Presenter Data” on page 119
- “Setting Your Home Session” on page 29
- “Using Filters” on page 123

Displaying Problems

Problems can be displayed on the problems presenter using any of the following methods:

- Launch the problems presenter from the `Presenters` menu of another presenter. All problems are displayed for the operation profile; both links and nodes are recursed to show the problems associated with child objects.
- Select an object from the map presenter and click `Actions: Show Problems`. Only the problems associated with the selected object are displayed. To display problems associated with child objects, click the `Filter` tab, select the `Recurse Links` and/or `Recurse Nodes` check boxes, and click `[Apply]`.
- Select an object from the map presenter, right-click and click `Show Problems`. Only the problems associated with the selected object are displayed. To display problems associated with child objects, click the `Filter` tab, select the `Recurse Links` and/or `Recurse Nodes` check boxes, and click `[Apply]`.
- Shift-click an object on the map presenter, then drag the object onto a problems presenter. All problems are displayed for the selected object and its child objects.

In a problems presenter, select the `Show All` check box to view all problems associated with objects that exist within the containment tree below the specified content origin.

Also see:

- “Using Filters” on page 123

Problems Presenter Table Layout

The organization and appearance of problem data, and the size and location of the problems presenter window, comprise the problems presenter layout. The layout of the first problems presenter opened in an OV Topology Server session becomes the default problems presenter layout for that session. All subsequent problems presenters opened during that session appear with the default layout. (New problems presenters are located slightly offset relative to the default layout.)

You can modify and save the layout of any open problems presenter as the new default layout. All problems presenters opened after the new default layout has been defined receive that new default layout. This customization applies only during the current OV Topology Server session. To save changes for the next OV Topology Server session, see “Setting Your Home Session” on page 29.

NOTE: It is possible to set the home session to include multiple problems presenters with different layouts. In this case, when the session starts, the layout of the first problems presenter to open determines the default layout for the session. New problems presenters receive the default layout. The other problems presenters that are part of the home session open with their saved layout.

The following procedures use the `Layout` menu commands. If this menu is not available with your operation profile, contact your administrator.

To modify the default problems presenter layout:

1. Set any of the following options:
 - Window size and location.
 - Table header and row heights.
 - Column width and alignment.
 - Column sorting order and sequential order.
 - Background and foreground definitions for the table cells and header.
2. Click `Layout:Set as default`.

NOTE: These layout features can NOT be set as default:

Problems Presenter

Problems Presenter Table Layout

- Font definitions for the table cells and header.
- Mappings of bitmaps, colors, or strings to table cells or rows.
- Column titles.
- Date formats.

To apply the default layout to an open problems presenter, click `Layout:Apply Default`.

Setting the Alarm Bell

The OV Topology Server can be configured to sound the system bell when any of the following changes occurs in the problems presenter:

- A new problem enters the system.
- A problem is updated.
- A problem is updated to reflect an increased severity.

When the alarm alert is set up from a problems presenter, the same alarm alert is applied to all problems presenters opened during the login session.

The alarm alert configuration is lost when the problems presenter from which it was launched is closed. The alarm alert returns to the default OFF configuration.

To set the problems presenter alarm bell:

1. Click `Edit:Alarm Alert`.
The Alarm Alerts Setup panel appears:



2. Select the appropriate check boxes for the desired alarm alerts.
3. Click [OK].

NOTE: The maximum frequency of the bell sounding is once every ten seconds regardless of the number of new or updated problems.

Problem State

New problems that have not yet been acknowledged appear in both the map presenter and the problems presenter as new problems. Generally, new problems are identified by their presence on the map and by a unique color in the problems presenter. Color mappings are specified on the “Options Panel” on page 109 as described in “Setting Data Mappings” on page 111.

When you own a problem, the corresponding alarm is no longer shown in the new problem balloon in the map presenter. (Problem balloons are an optional feature. By default, problem balloons are off.) Problems that are not owned do not expire, but remain active until they are explicitly discharged by an operator.

Discharged problems and the corresponding alarms remain in the problem database and are included in queries that yield the “Network Element History Panel” on page 95. The discharged problems remain in the problem database until the administrator backs up and purges discharged problems from the problem database.

The actions associated with problem state are:

- “Owning a Problem” on page 152
- “Disowning a Problem” on page 153
- “Discharging a Problem” on page 154

You can own, disown, or discharge multiple problems at one time by selecting the desired rows and clicking the appropriate button in the problems presenter. The group of selected rows may include problems that are not currently visible in the Presenter. The problem tally in the Operation Area displays the number of selected problems. This information serves as a reminder of the breadth of your action.

When multiple rows are selected and a problem state action fails, the topology GUI displays a message indicating the specific problems for which the action failed.

When all rows are selected and a problem state action fails, the topology GUI indicates that failure in the message area at the bottom of the Problems Presenter window.

NOTE: When changing the problem state, it is possible for the problem

database to contain the new problem status and have the previous status appear in the problems presenter. To synchronize the information between the problems presenter and the problem database, restart the login session. See “OV Topology Server Sessions” on page 23.

Owning a Problem

You must own a problem before discharging or creating a trouble ticket for that problem. You can only own problems that are not currently owned.

Your operation profile may allow you to disown problems that are owned by another operator. After disowning these problems, you may now own them.

To own a problem:

1. Select a problem in the problems presenter.
2. Click [Own]. The problems presenter updates the Owned By field with your username.

Disowning a Problem

You can disown problems at any time. It is recommended that before leaving your station you disown the problems for which you are listed as the owner.

To disown a problem:

1. Select a problem in the problems presenter.
2. Click [Disown]. The problems presenter updates the Owned By field with No Owner.

Discharging a Problem

Discharging a problem removes the selected problem record from your problems presenter and removes the alarm from the alarm count in the center of the object in the map presenter. The guidelines that determine when a problem can be discharged are specific to your work environment.

You must own a problem before you can discharge the problem.

To discharge a problem:

1. Select a problem that you own in the problems presenter.
2. Click [Discharge]. A message box appears:
 - Click [OK] to confirm the problem discharge.
 - Click [Cancel] to cancel the operation.

After the discharge completes, the table in the problems presenter no longer displays the problem.

Sometimes the discharge operation fails. Possible explanations are:

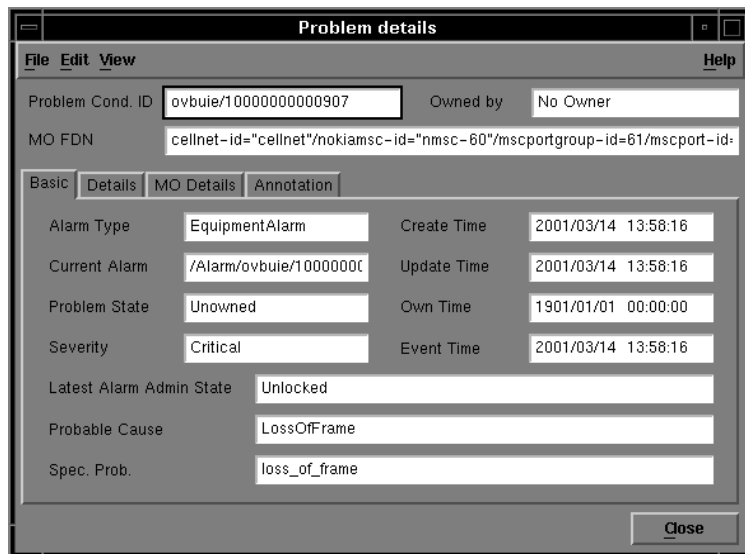
- New information is received for the problem during the discharge process. Review the updated problem and respond to the new information.
- The problem no longer exists in the problem database.

Problem Details Panel

The details of a problem reflect the state of the problem from the most recent related alarm.

The Problem Details panel displays information about the selected problem. The displayed information is determined by event type, which is configured during the OV Topology Server installation. All fields in the Problem Details panel are read-only fields except in the Annotation tab. Information is divided between four tabbed panels—Basic, Details, MO Details, and Annotation.

For information on the fields in the Problem Details panel, see “Problem Attributes” on page 140.



To obtain detailed information about a problem:

1. Select the problems of interest in the problems presenter.
2. Click [Details] or double-click on the Problem Condition ID. A separate Problem Details panel appears for each problem.

Adding and Viewing Problem Annotations

Annotations are notes that you make regarding a specific problem. The topology GUI accepts any keystroke in an annotation. Your administrator may define a specific format for your annotations. The maximum size for the text annotation is 2000 characters.

Annotation information is displayed in two columns in the problems presenter.

- The `Annotation` column displays a “*” if annotations exist for the problem; otherwise, this column is empty.
- The `LastAnnotation` column displays the text for the annotation.

There are two ways to add an annotation to a problem.

To add an annotation to a problem via the Problem Details Panel:

1. Own the problem. (See “Problem State” on page 150.)
2. In the “Problem Details Panel” on page 155, click the `Annotation` tab.
3. Enter the annotation in the text box.
4. Click `[Add]`. If the annotation text is a duplicate entry, a message box appears to ask whether to include the duplicate text entry.
5. Click `[Close]`.

To add an annotation to a problem via the problems presenter:

1. Own the problem. (See “Problem State” on page 150.)
2. Enter the annotation directly in the `Last Annotation` field of the appropriate problem. As new problems come into the problems presenter, the relative position on the screen of the `Last Annotation` field may change. While you are actively entering text, the `Last Annotation` field does not scroll out of view. If the `Last Annotation` does scroll out of view, entering text brings that field back into view.
3. After entering the desired text, press **Enter** or move outside of the `Last Annotation` field. (Press **Tab** or an arrow key or click the mouse elsewhere in the table.) The problem you edited may immediately scroll out of view.

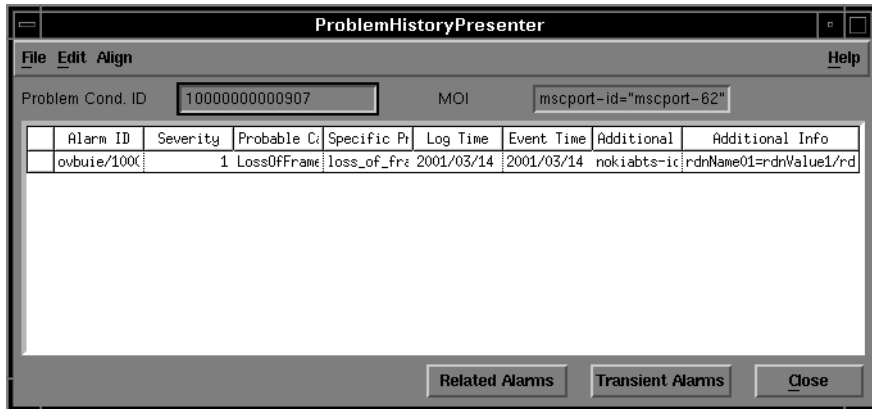
To view the annotation text in the problems presenter without having to

access the Problem Details panel, be sure the `Last Annotation` column is marked as visible. See “Hiding and Displaying Table Elements” on page 105.

Problem History Panel

The history of a problem includes all alarms associated with an active problem. When you own and discharge a problem, the problem is no longer active. Therefore, it is not available for query using this function.

The Problem History panel displays the alarm messages that were generated by the network element of the selected problem. For information on the fields in the Problem History panel, see “Problem Attributes” on page 140.



To view the history of a problem:

1. Select one or more problems in the problems presenter.
2. Click [History].

See also:

- “Related Alarms Panel” on page 159
- “Transient Alarms Panel” on page 161

Related Alarms Panel

Root cause-related alarms are generally correlated by the event correlation system. In the OV Topology Server, if the following conditions are true for two alarms A and B, then the alarms A and B are known as root cause-related alarms and the filter sends the root cause alarm, but does not send the subsequent alarms from child objects caused by the root object's alarm.

- A fault triggers alarm A and causes a fault that triggers alarm B (within a predefined time window).
- The managed object instance for alarm A and the managed object instance for alarm B are connected by a physical or logical connection or have a containment relationship.

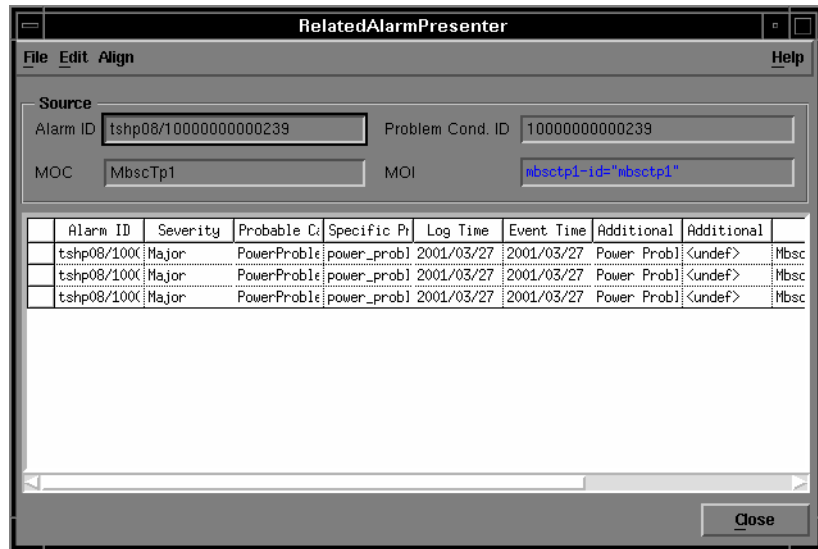
When event correlation occurs at the network element level, the root cause related alarms are not displayed in the `Related Alarms` panel. These filtered alarms are only visible in the raw log file. (Contact the administrator for more information about these alarms.) Because related alarms filtered at the network element level are not visible in the problems presenter, this query may generate an error.

When event correlation occurs at the global network level, the root cause related alarms are displayed in the `Related Alarms` panel.

For information on the fields in the `Related Alarms` panel, see

Problems Presenter Related Alarms Panel

“Problem Attributes” on page 140.



To view the root-cause related alarms associated with a selected alarm, from the map presenter:

1. Open the “Network Element History Panel” on page 95.
2. In the Network Element History panel, select an alarm.
3. Click [Related Alarms]. The Related Alarms panel appears.

To view the root-cause related alarms associated with a selected alarm, from the problems presenter:

1. Open the “Problem History Panel” on page 158.
2. In the Problem History panel, select an alarm.
3. Click [Related Alarms]. The Related Alarms panel appears.

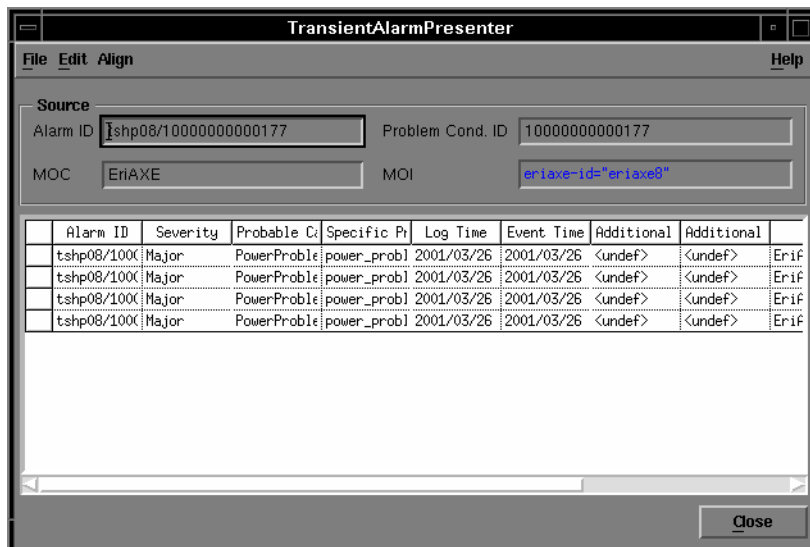
Transient Alarms Panel

Transient alarms indicate contrary conditions (such as a network element being off and then on) or repeated alarms. An alarm is a repeat another alarm when the event type, managed object instance, probable cause, and specific problem values of both alarms are the same. Transient alarm correlation filters out contrary condition and repeated alarms that occur within a specific time window. The time window can either be fixed or sliding.

When event correlation occurs at the network element level, the transient alarms are not displayed in the Transient Alarms panel. These filtered alarms are only visible in the raw log file. (Contact the administrator for more information about these alarms.)

When event correlation occurs at the global network level, the transient alarms are displayed in the Transient Alarms panel.

For information on the fields in the Transient Alarms panel, see “Problem Attributes” on page 140.



To view the transient alarms associated with a selected alarm, from the map presenter:

Problems Presenter
Transient Alarms Panel

1. Open the “Network Element History Panel” on page 95.
2. In the Network Element History panel, select an alarm.
3. Click [Transient Alarms]. The Transient Alarms panel appears.

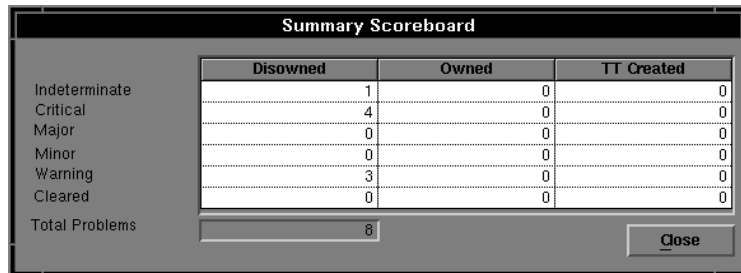
To view the transient alarms associated with a selected alarm, from the problems presenter:

1. Open the “Problem History Panel” on page 158.
2. In the Problem History panel, select an alarm.
3. Click [Transient Alarms]. The Transient Alarms panel appears.

Viewing Summary Information

The Summary Scoreboard panel shows statistics about the problems in a problems presenter, such as the number of problems with a specific severity and status. A separate summary can be launched for each open problems presenter.

The Summary Scoreboard can be used to determine how much work must be completed on the management domain. For example, you can determine how many critical problems are disowned, remain owned, or have trouble tickets created for them. You can determine how many trouble tickets remain active for each severity.



The screenshot shows a window titled "Summary Scoreboard" with a table of data. The table has four columns: "Disowned", "Owned", and "TT Created", and a fifth column for severity levels. The data is as follows:

	Disowned	Owned	TT Created
Indeterminate	1	0	0
Critical	4	0	0
Major	0	0	0
Minor	0	0	0
Warning	3	0	0
Cleared	0	0	0
Total Problems	8		

A "Close" button is located at the bottom right of the window.

To view the Summary Scoreboard, click View>Show Summary in the problems presenter.

Creating, Updating, and Querying Trouble Tickets

If the OV Topology Server Remedy ARS Adapter is installed and integrated with the OV Topology Server, you can create trouble tickets for problems that you own. You can also modify and query trouble tickets. Contact your administrator for specific information about trouble tickets.

See also:

- “Problem State” on page 150

Troubleshooting the Problems Presenter

- **There are no colors in the problems presenter.**
 - The first time you open the problems presenter, you can set up your own color mappings with the “Options Panel” on page 109.
 - To save your color preferences for future sessions, see “Setting Your Home Session” on page 29.
- **The problems presenter is slow to appear.**
 - When multiple problems are generated in a short period of time, the problems presenter display may be slower than usual. To increase performance, turn off automatic sorting. See “Sorting Data” on page 115.
- **The problems are not visible after drag and drop from the map to the problems presenter.**
 - On the `Filter` tab, select the `Recurse Nodes` check box and click `[Apply]`.
- **Problems are not visible on the problems presenter.**
 - On the `Contents` tab, select the `Show All` check box.

Problems Presenter
Troubleshooting the Problems Presenter

Outages Presenter

Managed objects may be taken out of service for reasons such as testing and preventative maintenance. OVSACN supports the management of outage plans in the network environment. The outage plan allows you to tag problems originating from devices that are on outage. The outage plan tracks the outage schedule, but does NOT put the actual network element on outage.

The outage plan is set up based on the outage schedule. The outage plan allows the system to identify problems generated by a network element in outage. Problems generated by a network element in outage can generally be disregarded.

NOTE: Only network objects of type network element, component, termination point, or connection may be placed into outage. You cannot create an outage plan for a network type object.

When the outage begins, the administrative state of the object and its child objects is set to `Locked` or `Shutting Down`. The alarms generated from a managed object in the `Locked` or `Shutting Down` administrative state are not used in determining status propagation.

The outages presenter allows you to create and manage outage plans for the network.

Outages Presenter

The screenshot shows a software window titled "[nplmn-id='NokiaNetwork']" with a menu bar (File, Edit, View, Align, Presenters, Session, TableGadget, Help). The main area contains a table with the following data:

Outage Id	MOI	MOC	RDN	Outage Stat	Start Time	End Time	Created By	Create Time	Upd
10000000000	[nplmn-id='']	NBTS	[nbts-id='B']	Activated	2001/03/15	2001/03/19	oemFadm	2001/03/15	200
10000000000	[nplmn-id='']	NBTS	[nbts-id='P']	Activated	2001/03/15	2001/03/17	oemFadm	2001/03/15	200

Below the table is a control panel with buttons: Submit, Modify, Locate, Restore, Contents, Filter, Add, Remove, Clear, and ShowAll. A status bar at the bottom reads: "FCoOutagePlanView.152] : Successfully load origin named nplmn-id='NokiaNetwork'/nbss-id='BSS-37240'/nbts-id='B'".

See also:

- “Outage Plan States” on page 169
- “Outage Plan Attributes” on page 171
- “Using the Outage Presenter” on page 173

Outage Plan States

Before any outage plans are submitted or modified, the managed object affected by the outage plan must exist in HP OpenView Service Assurance for Communication Networks.

The state of the outage is determined by the current time and the time specified by the outage plan. For example:

- The outage plan state is `Pending` if the outage plan has been created but the start time has not been reached.
- The outage plan state is `Activated` if the outage plan has been created and the start time has been reached.
- The outage plan state is `Expired` if the outage plan end time has been reached and the manual restore option is specified.
- The outage plan state is `Restored` if the outage plan end time has been reached and either the automatic restore option is specified or the operator has manually restored the object.

When the outage plan start time is reached and the outage plan is `Activated`, the administrative state of the managed object is set to `Locked` or `Shutting Down`.

Conversely, when the outage expires *and* the outage plan state is `Restored`, the administrative state of the object is set to `Unlocked`. If the restore policy is automatic, the outage plan state is immediately set to `Restored` after an outage expires.

If the restore policy is manual, the outage plan state is immediately set to `Expired` after an outage expires and remains in the `Expired` outage plan state until the operator who submitted the outage plan restores the outage state manually.

NOTE: To set the administrative state of the managed object to `Unlocked` immediately after the outage expires, use the automatic restore option.

On the map presenter, the lock symbol on the top left corner of the map object indicates that this object is on outage.

On the problems presenter, a value of `Locked` or `ShuttingDown` for the Alarm Admin State indicates that the object of the problem is an outage.

Outages Presenter

Outage Plan States

If an error occurs during the creation, modification, start, or expiration of the outage plan, the following states are set:

- If an error occurs when the outage plan is created or modified, the outage plan cannot be created or modified.
- If an error occurs at the start time of the outage plan, the outage plan remains in its `Pending` state. In this case, the outage plan may not start on time.
- If an error occurs at the end time of the outage plan, the outage plan remains in its `Activated` state. In this case, the outage plan may extend beyond the specified time limit.

Outage Plan Attributes

Each outage includes the data listed here. Some data may not appear in the outage plan table. To change the columns shown in the outage plan table, see “Hiding and Displaying Table Elements” on page 105. The outage plan attributes are:

Table 7-1 Outage Plan Attributes

Column	Description
Outage ID	Unique ID defining this outage.
MOI	Managed Object Instance for the network object.
MOC	Managed Object Class for the network object.
MO Shortname	Abbreviated name for this managed object.
RDN	Relative Distinguished Name for the object.
Outage State	The state of the outage plan for the object such as Pending, Activated, Restored, or Expired.
Start Time	Start time for the period in which the device will be on outage. The time includes date and time in the format YYYY/MM/DD HH:MM:SS. The times are in the local timezone.
End Time	End Time for the period in which the device will be on outage. This time uses the same format as Start Time. If the end time is not specified, it defaults to the same time as the Start Time and the device does not return to the active environment until it is manually restored to in-service status.
Created By	Username of the operator who created the outage plan.
Create Time	The time that the outage plan was created.
Update Time	Time of the last update to the outage plan.
Changed By	Username of the operator who last changed this entry in the outage plan.

Outages Presenter
Outage Plan Attributes

Table 7-1 **Outage Plan Attributes**

Column	Description
Admin State	The Administrative state of the device sending the problem: Unlocked, Locked, or Shutting Down.
Auto Resume	Boolean. True indicates the outage plan is removed from the outages presenter at the expiration time; False indicates the outage plan is set to Expired and remains in the outages presenter until it is restored.

Using the Outage Presenter

The specialized functionality of the outages presenter is described in:

- “Submitting an Outage Plan” on page 174
- “Restoring an Object” on page 176
- “Modifying an Outage Plan” on page 177

See also:

- “Table Presenter Menu Commands” on page 99
- “Table Presenter Data Operations Menu Commands” on page 101
- “Selecting Table Data” on page 103
- “Customizing the Table Presenter Layout” on page 104
- “Hiding and Displaying Table Elements” on page 105
- “Resizing Table Elements” on page 106
- “Moving Table Elements” on page 107
- “Justifying Column Data” on page 108
- “Options Panel” on page 109
- “Setting Fonts” on page 110
- “Setting Data Mappings” on page 111
- “Sorting Data” on page 115
- “Viewing the Contents” on page 117
- “Locating a Map Object from a Table Presenter” on page 118
- “Outputting Presenter Data” on page 119
- “Setting Your Home Session” on page 29
- “Using Filters” on page 123

Submitting an Outage Plan

Outage plans can be specified for a single object or multiple objects.

To create a new outage plan:

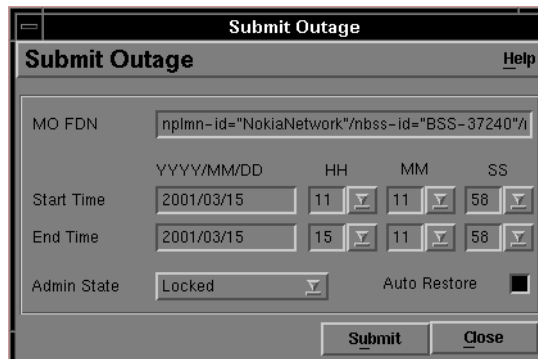
1. Launch both the map presenter and the outages presenter.
2. In the map presenter, select the object to be added to the outage plan.

NOTE: Only network objects of type network element, component, termination point, or connection may be placed into outage.

3. In the map presenter, shift-click the selected object and drag it to the outages presenter.
4. Release the mouse button to drop the object in the outages presenter. In the outages presenter, the dropped object becomes the root for the contents. All outage plans for the selected object appear in the outages presenter.

To view the outages for the child objects of the selected object, on the Filter tab, select the Recurse Nodes and Recurse Links checkboxes and click [Apply].

5. Click [Submit]. The Submit Outage panel appears:



6. Enter the appropriate values:
 - **FDN** for the managed object. OVSACN enters the fully distinguished name for the selected object. Verify that this name is correct.

- **Start Time** of the outage plan. Set the start time before setting the end time.
 - **End Time** of the outage plan. The end time must be later than the start time. If you do not enter the end time, it is set to be the same as the start time, and this outage plan will never expire.
 - **Admin State** for the outage: Locked or Shutting Down.
7. Select a restore policy: Automatic or Manual. The restore policy determines the manner in which the device will be restored after the outage time expires. When the object is restored, its outage plan is removed from the outages presenter.
 - Select the `Auto Restore` check box to have OVSACN restore the device to the active environment automatically at the end of the outage period.
 - Clear the `Auto Restore` check box to set up a manual restore policy.
 8. Click [Submit]. The outage plan for the selected object is complete.

NOTE: If the topology server and the topology GUI are installed on machines that exist in different time zones, the time used for the outage plan must be the appropriate time for the outage in the topology server time zone.

Restoring an Object

You can only restore an object from an outage plan that you submitted.

To manually restore an object's administrative state to unlocked:

1. Select the outage plan of the object to be restored.
2. Click [Restore].
A message box appears asking you to confirm that the selected outage should be restored.
3. Click [OK] to remove the selected outage plan from the list. In the map presenter, the map object turns shows Normal status and no longer displays the lock symbol.

Modifying an Outage Plan

To modify an existing outage plan:

1. Select the outage plan to modify.
2. Click [Modify]. The Modify Outage panel appears:

The screenshot shows a 'Modify Outage' dialog box with the following fields and controls:

- Created By:** oemfadm
- Last Modified By:** (empty)
- Outage ID:** OutagePlan/ovbuie/1000000000001
- Start Time:** 2001/03/15 11:11:58
- End Time:** 2001/03/17 11:11:58
- Admin State:** Locked
- Auto Restore:**
- Buttons:** Modify, Close

3. Make changes to the information in the panel.
To place the selected object on outage immediately, set the Start Time to the current time.

NOTE: If the topology server and the topology GUI are installed on machines that exist in different time zones, the time used for the outage plan must be the appropriate time for the outage in the time zone of topology server machine.

4. Click [Modify]. The modifications are reflected in the selected record in the outages presenter.

Outages Presenter
Modifying an Outage Plan

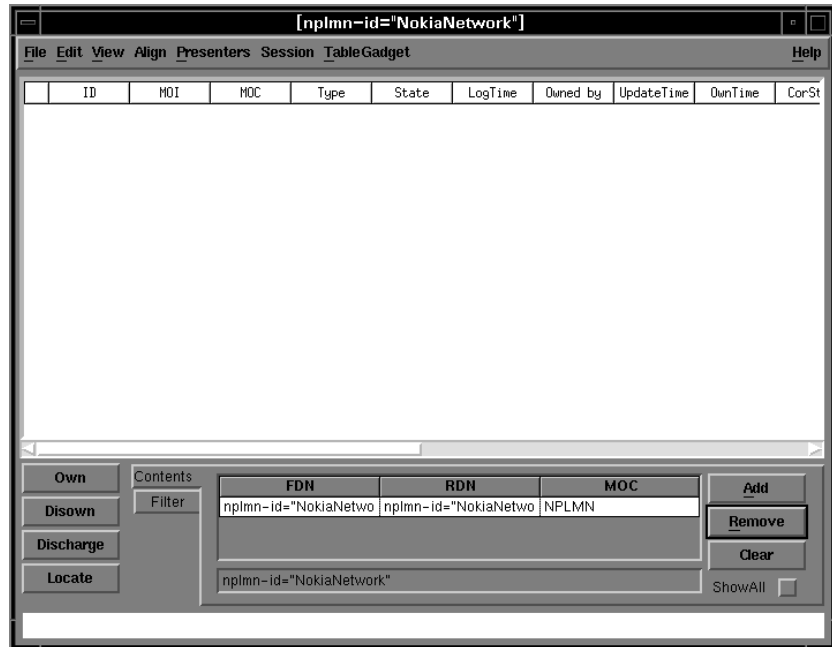
8

OM Events Presenter

OM Events are sent by a management application that is integrated with the OV Topology Server. These events are not problem event messages; they are non-alarm messages sent by external applications. The OM events presenter displays these events in a tabular format.

The OM events presenter displays information about events such as:

- Object creation.
- Object deletion.
- Objects on outage.
- Objects returning to active status.



Use the `Filter` tab in the Scope Area to filter the displayed events. Use the `Contents` tab in the Scope Area to view the scope of the displayed events. Right-click in the table area to view the operations menu.

OM Events Presenter

See also:

- “OM Event Attributes” on page 181
- “Using the OM Events Presenter” on page 183

OM Event Attributes

Each OM event includes the data listed here. Some data may not appear in the OM event table. To change the columns shown in the OM event table, see “Hiding and Displaying Table Elements” on page 105. The attributes of OM events are:

Table 8-1 OM Events Attributes

Column Heading	Description
ID	Unique key used to identify the OM event.
MOI	Managed Object Instance for the object associated with the OM event.
MOC	Managed Object Class for the object associated with the OM event.
Type	The type of the event such as: AttributeValueChange, StateChange, ObjectDeletion, ObjectCreation, RelationshipChange.
State	The state of the event such as Discharge OMEvent or Own OMEvent.
Log Time	The time at which the OM event was received by the OV Topology Server.
Owned by	Username of the operator who currently owns the OM event.
Update Time	Time at which the OM event was last updated. If the OM event has not been updated, this time is the same as the Log Time.
Own Time	Time at which the OM event was owned. If the OM event has not been owned, this column is blank.
Corr State	Correlation state: related, transient.
Additional Text	Additional text about the network element that is associated with the event.

OM Events Presenter
OM Event Attributes

Table 8-1 OM Events Attributes

Column Heading	Description
Additional Info	Additional information about the network element that is associated with the event.
Source Indicator	Indicates the source of the event: Unknown, Management Operation, Resource Operation.
Network MOC	Managed Object Class for the network that is associated with the event.
Network Shortname	Shortname assigned to the network that is associated with the event.
Network Equipment MOC	Managed Object Class for the Network Element that is associated with the event.
Network Equipment Shortname	Shortname assigned to the network equipment that is associated with the event.
Event Time	Time when the event was sent.

Using the OM Events Presenter

The specialized functionality of the OM events presenter is described in:

- “Owning an OM Event” on page 184
- “Disowning an OM Event” on page 185
- “Discharging an OM Event” on page 186

See also:

- “Table Presenter Menu Commands” on page 99
- “Table Presenter Data Operations Menu Commands” on page 101
- “Selecting Table Data” on page 103
- “Customizing the Table Presenter Layout” on page 104
- “Hiding and Displaying Table Elements” on page 105
- “Resizing Table Elements” on page 106
- “Moving Table Elements” on page 107
- “Justifying Column Data” on page 108
- “Options Panel” on page 109
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- “Viewing the Contents” on page 117
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- “Outputting Presenter Data” on page 119
- “Setting Your Home Session” on page 29
- “Using Filters” on page 123

Owning an OM Event

New OM events are identified as unacknowledged and unowned. You can only own OM events that are not currently owned.

You must own an OM event before discharging it.

To own an OM event:

1. Select an OM event in the OM events presenter.
2. Click [Own]. The OM events presenter updates the Owned By field with your username.

Disowning an OM Event

You can only disown OM events that you already own.

To disown an OM event:

1. Select an OM event from the OM events presenter.
2. Click [Disown]. The OM events presenter updates the Owned By field to be empty.

Discharging an OM Event

Discharging an OM event removes the selected event record from your OM events presenter. You must own an OM event before you can discharge the event.

To discharge an OM event:

1. Select an OM event from the OM events presenter.
2. Click [Discharge]. A message box appears:
 - Click [OK] to confirm the OM event discharge.
 - Click [Cancel] to cancel the operation.

After the discharge completes, the table in the OM events presenter no longer displays the OM Event.

The OV Topology Server provides a chart presenter to generate graphs representing the flow and frequency of alarms or problems in the monitored network. The Y-axis is the alarm count, and the X-axis is one of the following parameters:

- Object information: managed object type (network objects, network elements, and components), managed object class, and managed object instance.
- Alarm information based on X.733 fields (ProbableCause or SpecificProblem).
- Other X.733 fields available in alarms (AdditionalText and AdditionalInformation).
- Perceived Severity (Major, Warning, Critical, Minor, Indeterminate, and Cleared).
- Alarm Time.

The chart presenter only performs online charting of non-discharged alarms. The charts are dynamic and include chart information that has entered OVSACN during the login session.

One chart presenter can display one chart or a set of related charts. Multiple chart presenters can run simultaneously.

Chart data can be exported to ASCII files in common separated values format. Delimiters include comma, colon, semicolon, space, and tab. These files can be opened in most standard spreadsheet applications.

The possible chart types are:

- Trend charts plot the number of incoming events against time and summarize the number of events matching a specified filter. The X-axis is the selected time interval. The events are grouped by their arrival time interval. After an event is plotted, subsequent changes to its attributes or its removal are ignored. Trend charts include:
 - Line or bar (stacked and side-by-side) charts in which the Y-axis represents the number of events.
 - Multiple charts on the same axes (provided the charts use the

same time step).

- Cumulative and non-cumulative charts.

Cumulative trend data displays the running total number of alarms over time. Because the number is cumulative, the number of alarms increases over time. The cumulative chart has a steadily increasing line.

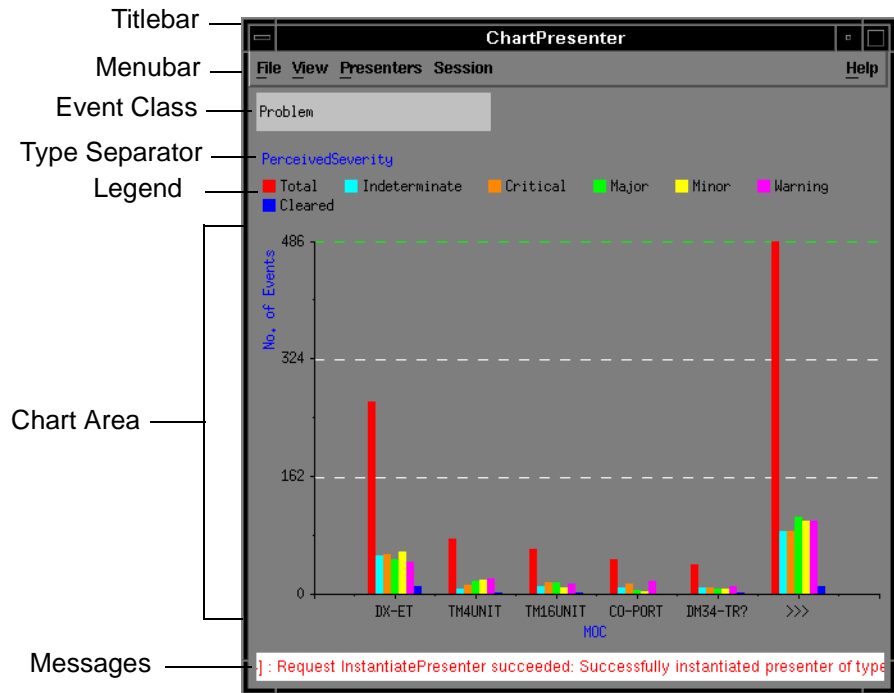
Cumulative data is collected while you are logged into OVSACN. For example, if you are logged in and charting alarms from 9:00AM until 3:00PM, the trend chart shows alarm data for six hours. In contrast, if you log in from 4:00PM until 4:05PM, the trend chart shows alarm data for only five minutes. The trend chart logs only the active login session. Trend data is not extracted from the alarm database.

- **Summary charts** display the cumulative number of events matching a specified filter, plotted against any attribute of the event. Changes to the plotted attributes are reflected immediately on the chart. For example, if the state for an event changes from `SeverityMajor` to `SeverityMinor`, the chart decrements the count for `SeverityMajor` by one and increments the count for `SeverityMinor` by one.

Summary charts include:

- Line and bar charts. For line and bar charts, the Y-axis represents the number of events.
- Pie charts. Pie charts are used for comparing data, such as the percentage of each severity level of alarms received (critical,

major, warning).



See also:

- “Using the Chart Presenter” on page 190

Using the Chart Presenter

The chart presenter menu commands are described in:

- “Chart Presenter Menu Commands” on page 191
- “Chart Presenter Chart Operations Menu Commands” on page 192

The specialized functionality of the chart presenter is described in:

- “Drilling Down in Charts” on page 193
- “Displaying Charts” on page 195
- “Filtering Chart Data” on page 198
- “Setting Chart Colors” on page 199
- “Creating a Chart” on page 200
- “Viewing a Pie Chart” on page 204
- “Outputting Presenter Data” on page 205

See also:

- “Options Panel” on page 109
- “Using Filters” on page 123

Chart Presenter Menu Commands

The chart presenter menu commands are context-sensitive. The available menu commands depend on the current selection. All possible chart presenter menu commands are listed here.

Table 9-1 **Chart Presenter Menu Commands**

Menubar	Menu Command	Description
File	Close	Closes the chart presenter window.
	Exit	Exits the GUI client and closes all presenter windows.
View	Error log	Displays the message browser with a list of messages for requests carried out on the GUI client. Messages can be sorted by severity.
Presenters	Map	Opens a map presenter window.
	Problem	Opens a problems presenter window.
	Outage	Opens an outage presenter window.
	OM Events	Opens an OM events presenter window.
	Chart	Opens a chart presenter window.
Session	Set home session	Saves changes made to the presentation of the chart. See “Setting Your Home Session” on page 29.
Help	About this panel	Opens online help to the information about this panel.

Chart Presenter Chart Operations Menu Commands

To access the chart presenter chart operations menu, right-click in the chart area of the chart presenter. The chart operations menu commands are context-sensitive. The available menu commands depend on the current selection. All possible chart presenter chart operation menu commands are listed here.

Table 9-2 **Chart Presenter Chart Operations Menu Commands**

Data Operation	Description
Show Inspector	Displays the “Chart Inspector” on page 200.
Output	Provides for “Outputting Presenter Data” on page 205.
Visibility	Provides a choice for either Hide or Show All. Toggles the selected data between hidden and visible.
Order	Provides the option to Put In Front or Put Behind when multiple charts are displayed using polygons or polylines.
Color	Displays the “Setting Chart Colors” on page 199.
Drilldown	Provides for “Drilling Down in Charts” on page 193.
Undo Drilldown	Removes the drilldown for the selected chart.
Pie Chart	Plots the chart data in pie chart in a new window. See “Viewing a Pie Chart” on page 204.

Drilling Down in Charts

OVSACN supports the **drilldown** function. High level charts can be drilled down to break up the alarm count in the current chart. The drilldown function provides more specific information about either the object or the alarm.

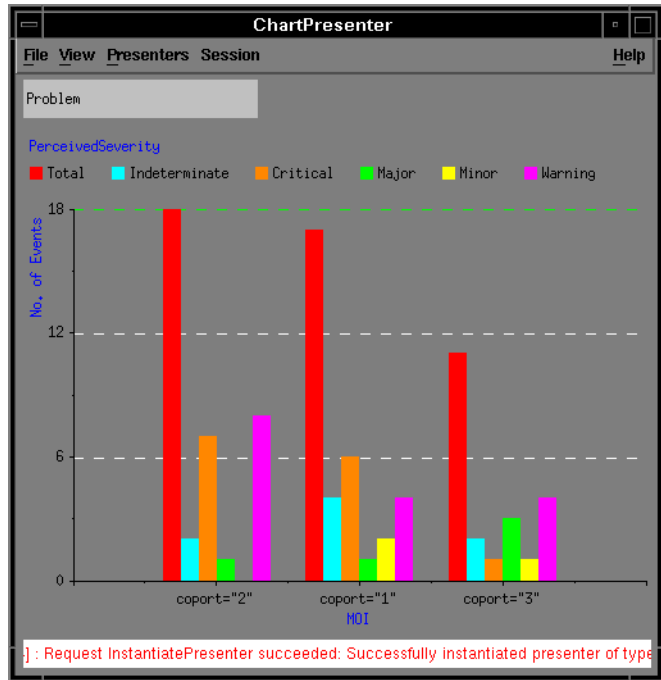
To access the drilldown function, right-click on the chart and click a drilldown command:

- Drilldown by managed object on a problem/severity/managed object class bar chart to view all the alarms for the managed object instances in a selected managed object class.
- Drilldown by object class on a cumulative chart to view the alarm count for each of the individual network class objects.
- Drilldown by severity to view constituents including the number of Indeterminate, Critical, Major, Minor, Warning, or Cleared problems.
- Drilldown by time to view the number of alarms by time. Time parameters include: Update Time, Create Time, Own Time, Discharge Time, TT Data Update Time, Event Time.

Only parameters selected in the current chart definition can be drilled down. If the chart does not specify object instances, you cannot drilldown the chart based on object instances.

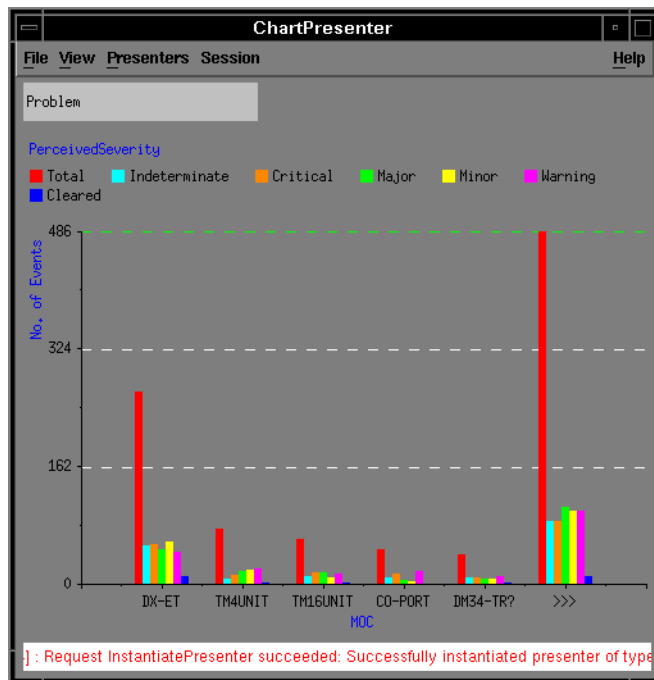
Chart Presenter Drilling Down in Charts

An example drilldown chart is:



Displaying Charts

An example of a Perceived Severity-Managed Object Class non-cumulative trend chart is shown here. Drilling down managed objects displays a chart showing the number of events for each managed object instance within the managed object class.



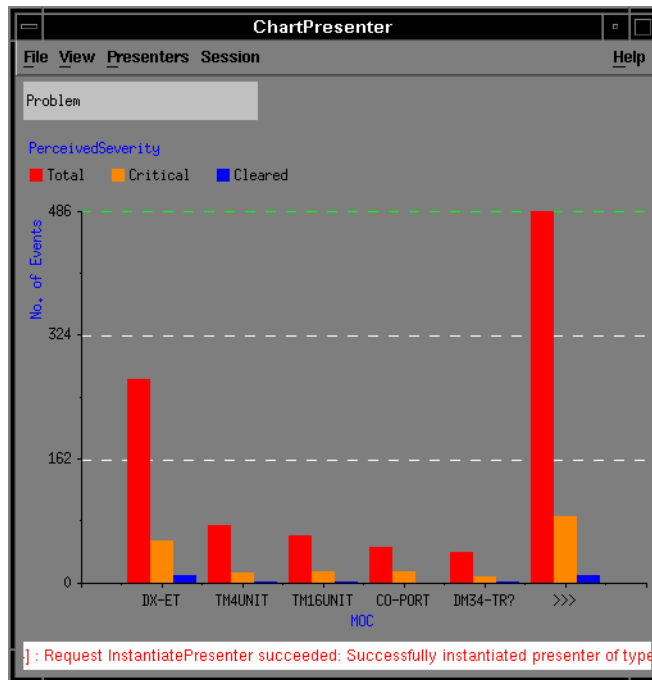
Features of the chart display include:

- **Numeric Y-values**—When you move the cursor over a bar in a bar chart, the Y-value for that bar appears.
- **Show/Hide functions**—If multiple charts are displayed on the same pair of axes, specific data can be hidden. (To control the hide function, right-click the bar to be hidden, then select *Visibility*.) When four bars of data are hidden from the chart displayed above, the resulting

Chart Presenter

Displaying Charts

data appears as shown below:



- **Foreground colors**—You can specify the foreground colors for the charts. For example, you can specify that critical alarms be plotted in red. (To control the color, right-click and click **Color**.)
- **Automatic scaling**—Resizing the chart presenter automatically resizes the scales and charts.
- **Display of axes**—The vertical axis automatically scales to contain the upper limit of the chart; when the horizontal axis represents time, the axis scrolls automatically to display the most current data.
- **Legends**—Each chart can include a legend. The legend provides a text description of the chart.
- **Automatic update**—When new events change status or disappear, charts are automatically notified and updated. In the case of summary charts, when existing events change status or disappear, the chart is updated.
- **Clusters of points**—When the selected plotting options result in too many points on the X-axis, you can select a few points for the plot

display. The remaining data points are grouped in one or two “others” points (one to each side of the normal points, if necessary) that include all events occurring on the remaining points. Selecting the “others” point displays a second set of data points. This type of representation is referred to as a “top-ten chart.”

Filtering Chart Data

Specify charts to be plotted by defining a filter and specifying the attribute to plot. Examples of chart filters are:

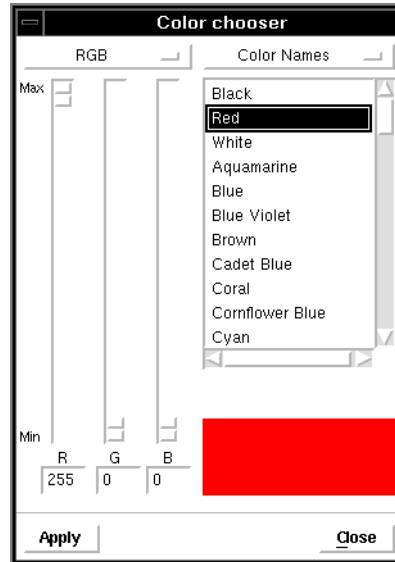
- Chart all alarms with severity greater than Intermediate, affecting the instances of a particular network class, plotted by arrival time in 15 minute intervals.
- Chart all non-discharged alarms owned by the operator that arrived less than two hours ago, plotted by managed object class.
- Chart all alarms affecting MSC, plotted by status (acknowledged/unacknowledged).

Filtered events can be separated into multiple charts displayed on the same pair of axes if the charts are of the same type. Each chart represents a distinct value of a selected attribute. For example, when plotting the alarms that match a filter, a different chart can be drawn for each possible severity. You can dynamically change the filter associated with a chart. For more information on using filters, see:

- “Using Filters” on page 123

Setting Chart Colors

Use the Color Chooser panel to set colors for the selected chart:



1. From the Color Names list, select a color name.
2. Specify the color by moving the R, G, and B sliders to achieve the desired color in the display in the lower right corner.
3. Click [Apply].

Chart Inspector

The Chart Inspector provides four tabs that specify the attributes for a chart. Use the Chart Inspector to create charts.

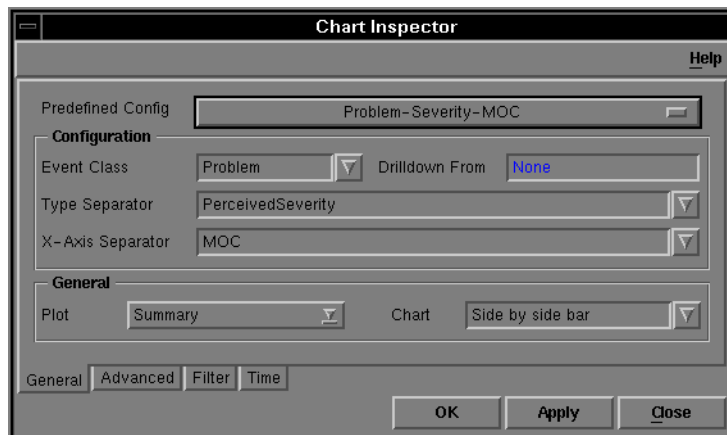
To access the Chart Inspector, right-click and click Chart Inspector.

NOTE: To maintain high performance from the chart presenter, configure the minimum number of chart options.

Creating a Chart

To create a chart:

1. Right-click in the chart presenter panel and click Chart Inspector. The Chart Inspector panel appears.



2. On the General tab, specify the parameters for the chart. Either select one of the predefined configurations OR specify the Event Class, Separators, Plot, and Chart parameters:
 - The predefined configurations include:
 - Problem Severity-MOC
 - Outage-Outage Plan State-MOI
 - OMEvent-OMEventState-MOC

- Problem-Severity-UpdateTime-Trend
 - OMEvent-OMEventState-OwnTime-CumTrend
 - None (This option allows you to configure your own chart.)
 - To configure your own chart (Predefined Configuration is None), specify the following options:
 - From the Event Class list, select: Problem, Outage Plan, or OM Event.
 - From the Type Separator and X-Axis Separator lists, select one of the separators.
 - From the Plot list, select: Summary, Trend, or Cumulative Trend.
 - From the Chart list, select: Polyline, Polygon, Side by side bar, or Stack bar.
3. On the Time tab, set the time for the chart.

NOTE: Choose the Time Unit and Time Interval to plot the region of interest only. A long period of time with a small time interval results in a large database search and may slow the system performance. The interval of time can only include times since the start of the login session.

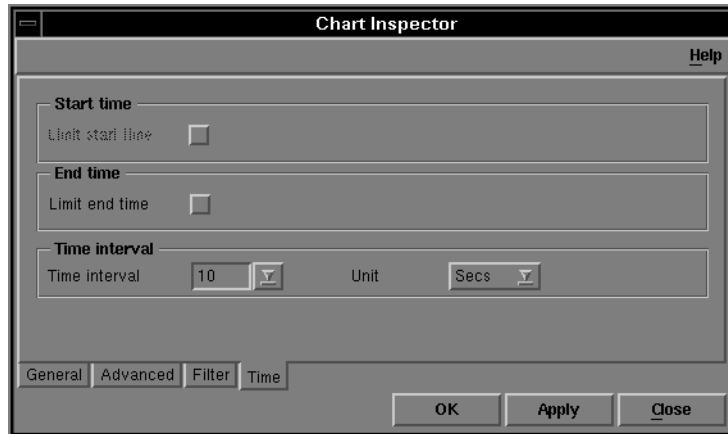
The time parameters are:

- Start time.
- End time.
- Time interval.

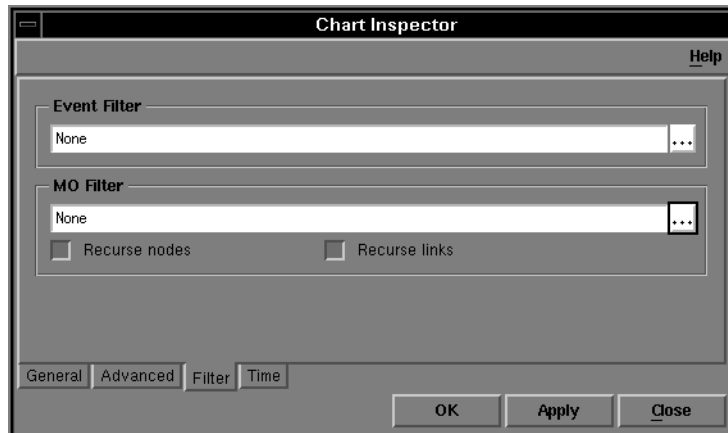
Chart Presenter

Chart Inspector

- Time unit—choose seconds, minutes, hours, or days.

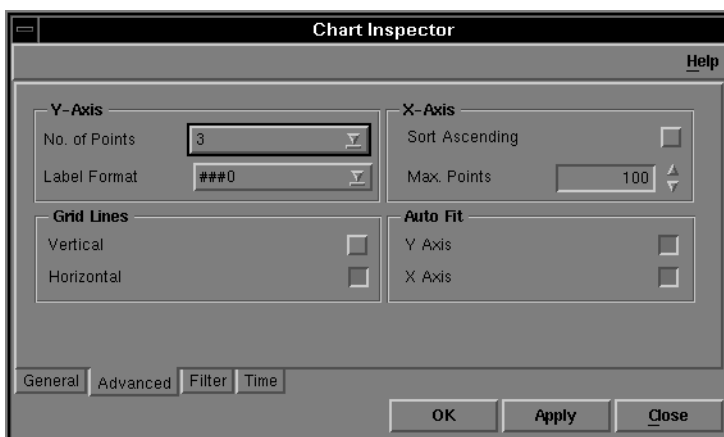


4. On the Filter tab, configure a filter as described in “Using Filters”. For managed object filters, select the check boxes for Recurse Links or Recurse Nodes to display only the owned links or nodes.



5. On the Advanced tab, make selections to format the chart such as specifying the number or points along the Y-axis, adding gridlines, or specifying the maximum number of points along the X-axis in the

chart.



6. Click [Apply]. The chart appears.

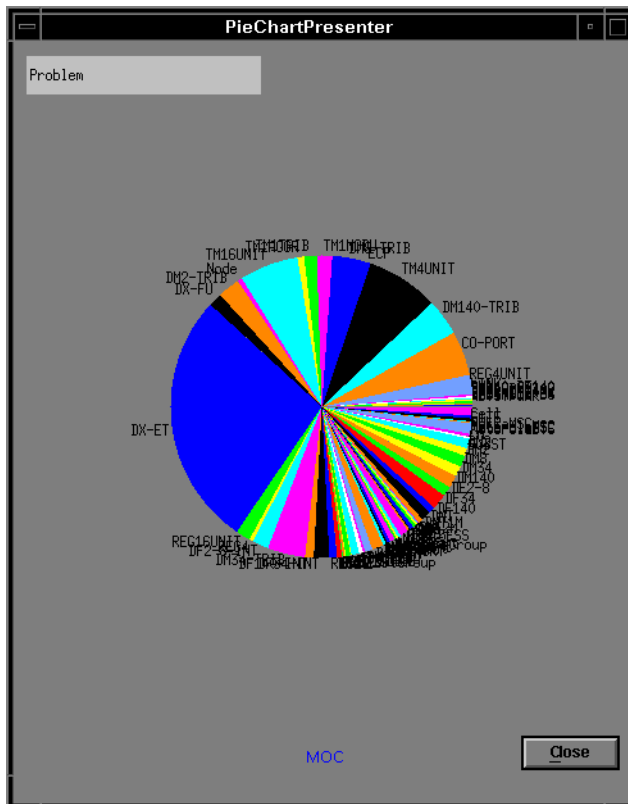
To save these chart parameters for use with another chart, see “Setting Your Home Session” on page 29.

Viewing a Pie Chart

A pie chart can be created from an existing chart to display the proportion of the alarms for a given alarm attribute.

To create a pie chart:

1. Create a chart as described in “Creating a Chart” on page 200.
2. Right-click and click **Pie Chart**.
3. Click **[Close]** to return to the chart presenter.



Outputting Presenter Data

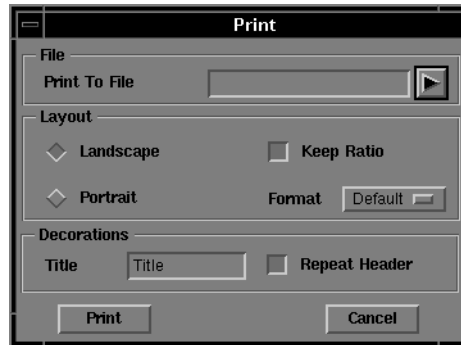
The methods of outputting data from the chart presenter are:

- Printing a Chart
- Exporting ASCII File Output

Printing a Chart

To print the entire chart, right-click and click `Output:Print`.

The `Print` panel appears:



The `Print` panel options are:

- Print to a file.
Enter the filename in the `Print to File` box. The file is a PostScript format file.
- Layout options:
 - `Landscape` or `Portrait`—Sets the page orientation.
 - `Keep Ratio`—Maintains the length-to-width ratio of the chart dimensions.
 - `Format`—Provides a list of standard paper sizes.
- Output decorations:
 - `Title` box—Specifies the title to be printed in the lower left corner of each page.

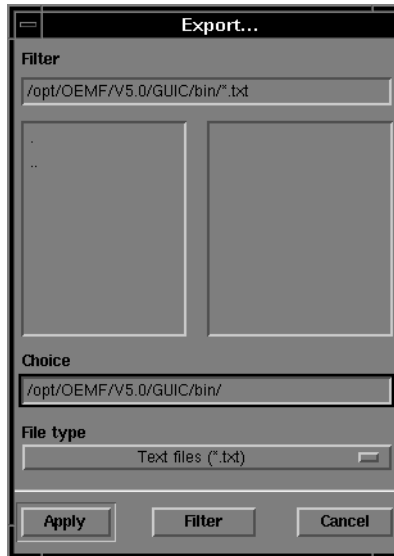
Outputting Presenter Data

— Repeat Header—Prints the chart legend at the top of every page.

Exporting ASCII File Output

To output the entire chart as a comma-delimited ASCII file:

1. Right-click and click **Export**. A Save File dialog box appears.



2. Specify the filename and click [OK].

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