HP OpenView Operations

Service Navigator
Automatic Service Actions Whitepaper

Software Version: A.08.xx

For the HP-UX and Sun Solaris Operating Systems

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Conventions

The following typographical conventions are used in this manual.

Table 1   **Typographical Conventions**

Font	Meaning	Example
Italic	Book or manual titles, and man page names	Refer to the *OVO Administrator's Reference* and the *opc(1M)* manpage for more information.
	Emphasis	You *must* follow these steps.
	Variable that you must supply when entering a command	At the prompt, enter **rlogin** ***username***.
	Parameters to a function	The *oper_name* parameter returns an integer response.
Bold	New terms	The **HTTPS agent** observes...
`Computer`	Text and other items on the computer screen	The following system message displays: `Are you sure you want to remove current group?`
	Command names	Use the `grep` command ...
	Function names	Use the `opc_connect()` function to connect ...
	File and directory names	`/opt/OV/bin/OpC/`
	Process names	Check to see if `opcmona` is running.
	Window/dialog-box names	In the `Add Logfile` window ...
	Menu name followed by a colon (`:`) means that you select the menu, then the item. When the item is followed by an arrow (`->`), a cascading menu follows.	Select `Actions: Filtering -> All Active Messages` from the menu bar.

Table 1   Typographical Conventions (Continued)

Font	Meaning	Example
Computer Bold	Text that you enter	At the prompt, enter **ls -l**
Keycap	Keyboard keys	Press **Return**.
[Button]	Buttons in the user interface	Click [OK].

Support

You can visit the HP OpenView support web site at:

http://www.hp.com/managementsoftware/support

This web site provides contact information and details about the products, services, and support that HP OpenView offers.

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passport-registration.html**

In This Document

The purpose of this document is to introduce to you the HP OpenView Operations support for the Service Navigator automatic actions on service state changes.

Service Navigator Automatic Service Actions

About Automatic Service Actions

Up to now, HP OpenView Operations Java GUI offered a possibility to perform a scope of service actions predefined for the particular services in the service configuration file. These service actions are always triggered by the Java GUI operator, and are used for faster navigation in the Java GUI. Refer to the *Service Navigator Concepts and Configuration Guide* for more information on how these service actions are defined.

However, now you can configure **automatic** service actions which are performed when the service status changes, for example, if the service severity changes to critical. These actions can be associated with each of the possible severity levels, and are defined as commands executed on the OVO management server, see "Defining Automatic Service Actions" on page 20 for more information.

Services, which have automatic action(s) associated with them, are referred to as **automated** in the remainder of the document.

See "How Automatic Service Actions Work" on page 13 for details on how to implement these kind of service actions.

How Automatic Service Actions Work

Automatic service actions are based on the **OVO Service Navigator Action Manager (opcsvcam)** utility that communicates with the OVO service engine (see Figure 1-1 for graphical presentation of service engine interfaces).

Figure 1-1   **Service Engine Interfaces**
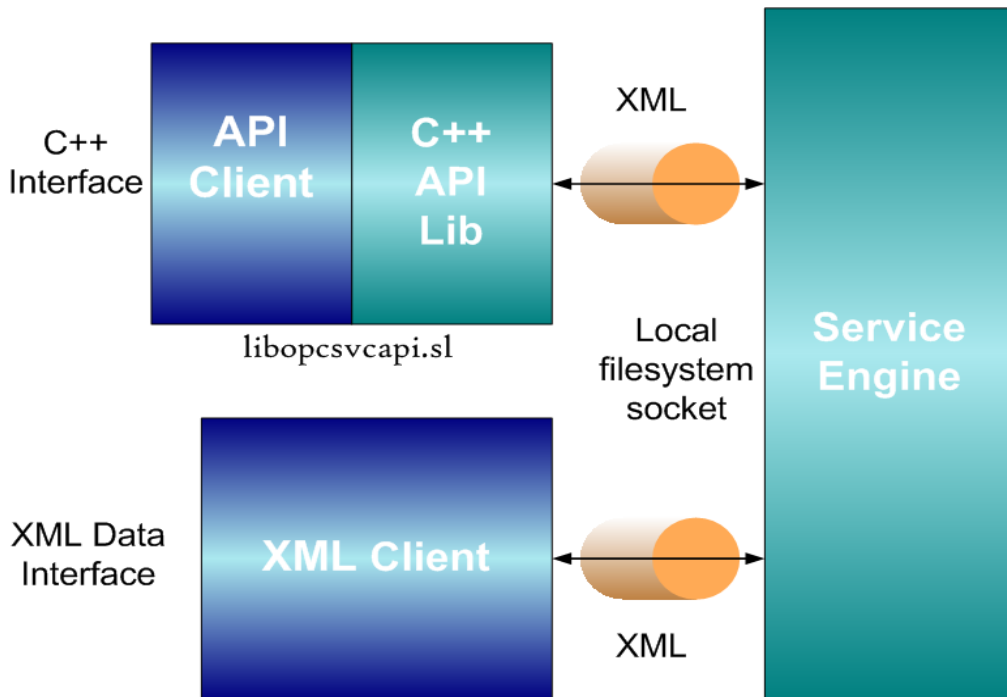
The opcsvcam is a service engine listener program, designed using C++ and the service engine APIs (see Figure 1-2 on page 14 for the presentation of the opcsvcam design).

To learn more about service engine APIs and the XML data interface, refer to the *OVO Developer's Reference* guide.

Example API programs are available on the OVO management server at the following location:

```
/opt/OV/OpC/examples/progs/svcapi
```

Figure 1-2   **opcsvcam Design**
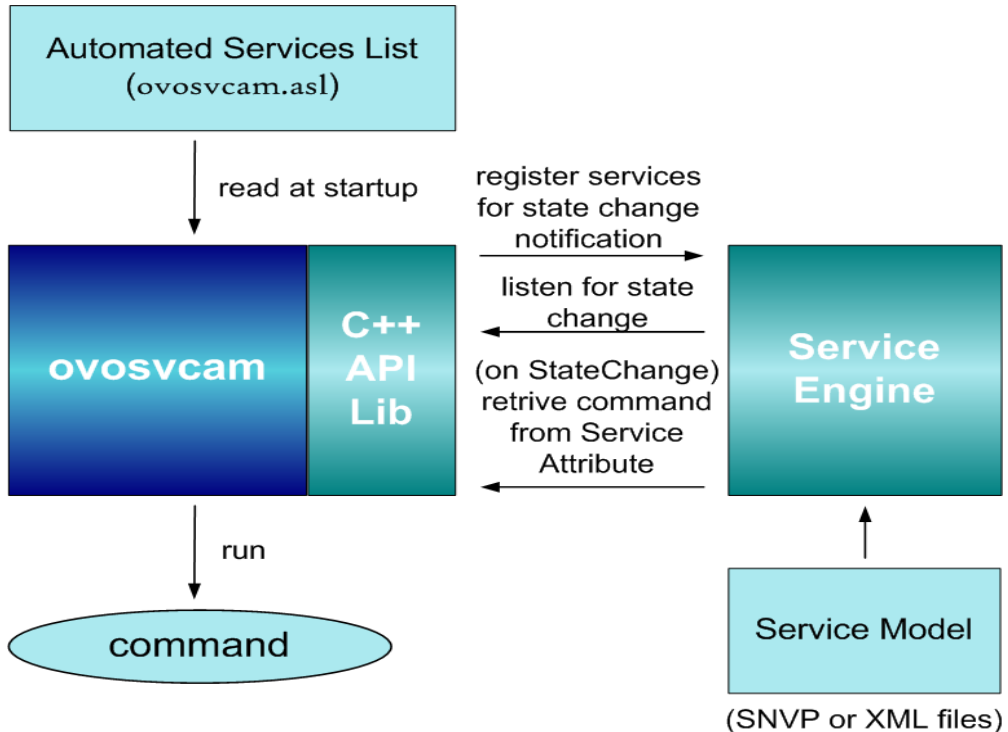
The opcsvcam runs continually on the OVO management server and listens for status changes of the services listed in the automated services list (see "Automated Services List" on page 19 for more information), and triggers the appropriate automatic action upon the specified status change.

Specifying automatic actions and associating them with the status changes is detailed in the "Defining Automatic Service Actions" on page 20.

Starting opcsvcam

The opcsvcam utility is started together with other OVO processes by the control manager if the configuration variable OPC_OPCCTLM_START_OPCSVCAM is set to TRUE.

To start opcsvcam do the following:

1. Set OPC_OPCCTLM_START_OPCSVCAM to TRUE. Enter the following:

   ```
   ovconfchg -ovrg server -ns opc -set \
   OPC_OPCCTLM_START_OPCSVCAM TRUE
   ```

2. Restart OVO management server processes. Enter the following:

   ```
   opcsv -start
   ```

Automatic Actions Configuration Files Locations

The opcsvcam utility and useful examples for automatic actions configuration are installed on the OVO management server.

The installed files and their locations are listed below:

Filename	Description
opcsvcam	Executable binary Service Navigator automatic action, located at /opt/OV/bin/OpC/
email_svcam.xml	Example service definition file with defined actions, located at /opt/OV/OpC/examples/services/
opcsvcam.asl	Example configuration file - configures services with defined actions in email_svcam.xml manager, located at /opt/OV/OpC/examples/services/

Enabling Automatic Actions

Before Enabling Automatic Actions

Before you start with enabling automatic actions, you should determine the following:

❏ **Automated services subset**

Decide for which services the automatic service actions will be performed. Clear up which services would require automatic actions the most, do not include each service in the service hierarchy. Consult the "Best Practices and Recommendations" on page 18 before making the decision.

❏ **Automatic action details**

For each automated service, decide which severity level will trigger the automatic action, and define the command which will be executed.

To Enable Automatic Actions

1. **Create automated services list**.

   Include services that you have chosen for monitoring in the automated services list. See "Automated Services List" on page 19 for details about this list.

2. **Define automatic actions for each automated service.**

   Automatic actions should be defined as commands that are executed on severity change to a specified level for each automated service. For more information, see "Defining Automatic Service Actions" on page 20.

3. **Activate/upload the modified Service Navigator configuration.**

   For more information, refer to the *Service Navigator Concepts and Configuration Guide*.

4. **Install and start OVO Service Navigator Action Manager (`opcsvcam`).**

   See "Starting opcsvcam" on page 15 for instructions.

Best Practices and Recommendations

Follow the best practices and recommendations listed below when planning to set automatic service actions in your Service Navigator environment:

❏ It is not appropriate to set the automatic service actions for *each* service in the service hierarchy. For example, a message with severity critical would result in changing the severity level for a number of services. If you set the automatic service action to, for example, 'Send a notification' for each service which severity status changes to critical, this could trigger too many notifications for just one event.

Also, setting automatic actions for each severity level would rather result in confusion than in enhanced monitoring of services. Setting automatic service actions for the severity critical and/or major would be sufficient.

❏ Identify which services would require automatic actions upon service state changes, some good examples are the following:

• *Application service*

Example of an action: send an e-mail to the application owner

• *LOB service*

Example of an action: send an e-mail or a report to the LOB owner

• *Database service*

Example of an action: notify the Database Administrator

Automated Services List

Services with their severity status monitored for automatic actions (automated services) are organized in an **automated services list (opcsvcam.asl)**, which is read at OVO startup by the opcsvcam utility (see "How Automatic Service Actions Work" on page 13 to learn more about the opcsvcam).

Automated services list is a simple ASCII file, placed on the OVO management server at the following location:

/etc/opt/OV/share/conf/OpC/mgmt_sv/

NOTE   Each automated service name requires one line in a list. Make sure you specify the service name, not the label.

The following is an example of the opcsvcam.asl file where two services, email and america, are associated with the automatic service actions as described in the "Defining Automatic Service Actions" on page 20:

Example 1-1   Automated Services List

```
# File:  opcsvcam.asl
# Last Update:27-March-2006
#
# This file contains a list of service names of services that will be
# monitored by the OVO Service Navigator Action Manager (opcsvcam).  When the status
# of any of these services changes, opcsvcam will execute an auto-action
# command (if defined).
#
# Service names follow below.
email
america
```

Defining Automatic Service Actions

Automatic service actions are defined with special service attributes on
the automated services. These attributes contain the following
parameters:

Parameter	Description
<name>	Associated with a severity which, when reached by a service, triggers the automatic action. It can be one of the following: SevNormal, SevWarning, SevMinor, SevMajor and SevCritical.
<value>	Automatic action (command).

The following are some examples of commands executed as automatic
actions:

❑ **To send e-mail:**

```
echo "Subject: Database Svc Alert\nSAP Database is in
Critical State" | sendmail dba@xyzcorp.com
```

❑ **To create a trouble-ticket in help-desk system:**

```
sd_event -f config.sd_event -v event_id=1234
description="SAP Database has changed to CRITICAL state"
information="Operations is working the issue…"
```

❑ **To forward a message to target MoM server to update MoM
service hierarchy:**

```
opcmsg a=opcsvcam o=database_ins msg_grp="SFM"
msg_t="StateChange on service" severity=major
```

You can define automatic service actions as described in the following
sections:

❑ Defining Actions in Service Navigator

❑ Defining Actions in Service Navigator Value Pack

Defining Actions in Service Navigator

Automatic service actions can be defined in Service Navigator in the service configuration file. For example, for the `opcsvcam.asl` file presented in the "Automated Services List" on page 19, the corresponding service configuration file could contain actions defined in Example 1-2 on page 22. This example is an excerpt from the `email_svcam.xml` example file provided with the installation. For a list of all installed files and their location, see "Automatic Actions Configuration Files Locations" on page 16.

In the example, the `<Attribute>` tag is used for defining the following automatic service action: When the severity of service `america` changes to critical (*<Name>* tag: `SevCritical`) the following OVO message is sent: `Severity on service america changed to CRITICAL` (*<Value>* tag: `opcmsg a=a o=opcsvcam msg_t="Severity on service america changed to CRITICAL"`)

Likewise, similar OVO messages are sent when the severity of the service `email` reaches values - major or critical.

To learn more about the service configuration file and its syntax, refer to the *Service Navigator Concepts and Configuration Guide*.

Example 1-2 **Defining Automatic Service Actions in the Service Configuration File**

```
<?xml version="1.0"?>
<Services xmlns="http://www.hp.com/OV/opcsvc"
        xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
        xsi:schemaLocation="http://www.hp.com/OV/opcsvc
/etc/opt/OV/share/conf/OpC/mgmt_sv/dtds/service.xsd">

    <Service>
        <Name>america</Name>
        <Label>america</Label>
        <CalcRuleRef>america_1</CalcRuleRef>
<Attribute>
    <Name>SevCritical</Name>
    <Value>opcmsg a=a o=opcsvcam msg_t="Severity on service america
changed to CRITICAL"</Value>
</Attribute>
        <Source>
            <Composition/>
            <ServiceRef>email_node1</ServiceRef>
        </Source>
        <Source>
            <Composition/>
            <ServiceRef>email_node2</ServiceRef>
        </Source>
    </Service>
    <Service>
        <Name>email</Name>
        <Label>E-Mail</Label>
<Attribute>
            <Name>SevMajor</Name>
    <Value>opcmsg a=a o=opcsvcam msg_t="Severity on service email
changed to MAJOR"</Value>
        </Attribute>
<Attribute>
    <Name>SevCritical</Name>
            <Value>opcmsg a=a o=opcsvcam msg_t="Severity on service email
changed to CRITICAL"</Value>
</Attribute>
        <Source>
            <Composition/>
            <ServiceRef>america</ServiceRef>
        </Source>
        <Source>
            <Composition/>
            <ServiceRef>europe</ServiceRef>
        </Source>
    </Service>

</Services>
```

Figure 1-3 shows service attributes for defining an automatic service action in Service Navigator.

Figure 1-3   **Service Attributes in the Service Navigator GUI**
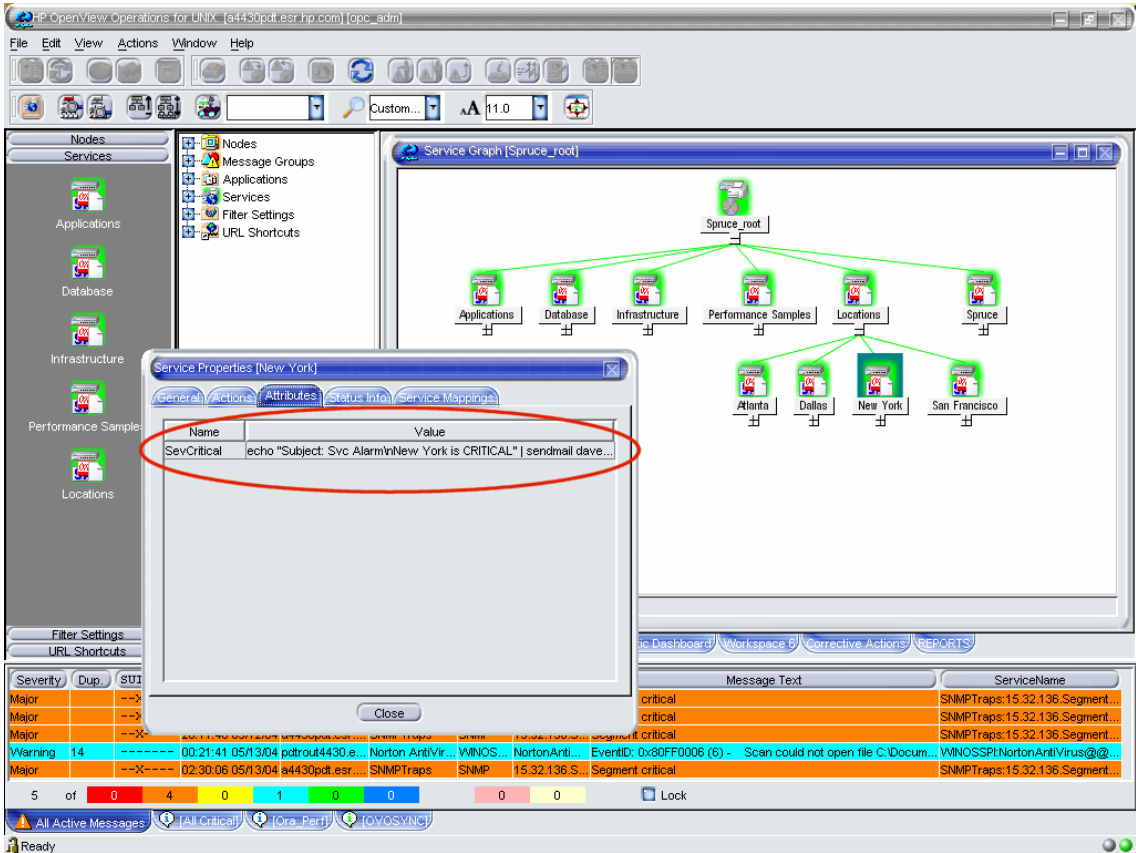
Defining Actions in Service Navigator Value Pack

Service Navigator Value Pack (SNVP) simplifies the procedure for defining automatic service actions: it allows you to quickly specify your preferences using an easy graphical approach and also to maintain multiple versions of service hierarchy, which is especially useful for development and testing.

For example, to define an automatic action which would be executed when the service San Francisco (see Figure 1-4) reaches severity critical, you should edit the User-defined attributes in the Properties window (accessible from the popup menu on the service San Francisco).

Figure 1-4   Defining Service Attributes in the SNVP GUI (1)
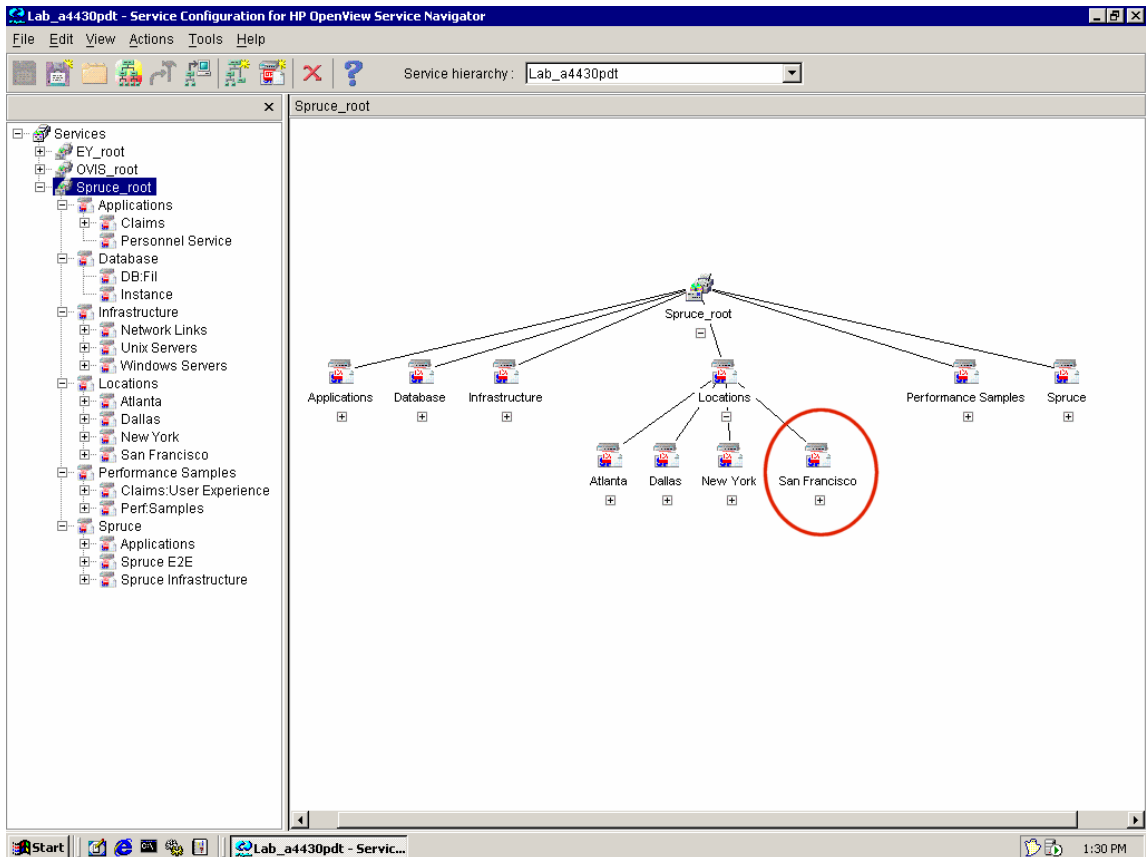
In the `User-defined attributes` window, you can add new, or edit existing attributes, as presented in the Figure 1-5.

Figure 1-5   **Defining Service Attributes in the SNVP GUI (2)**
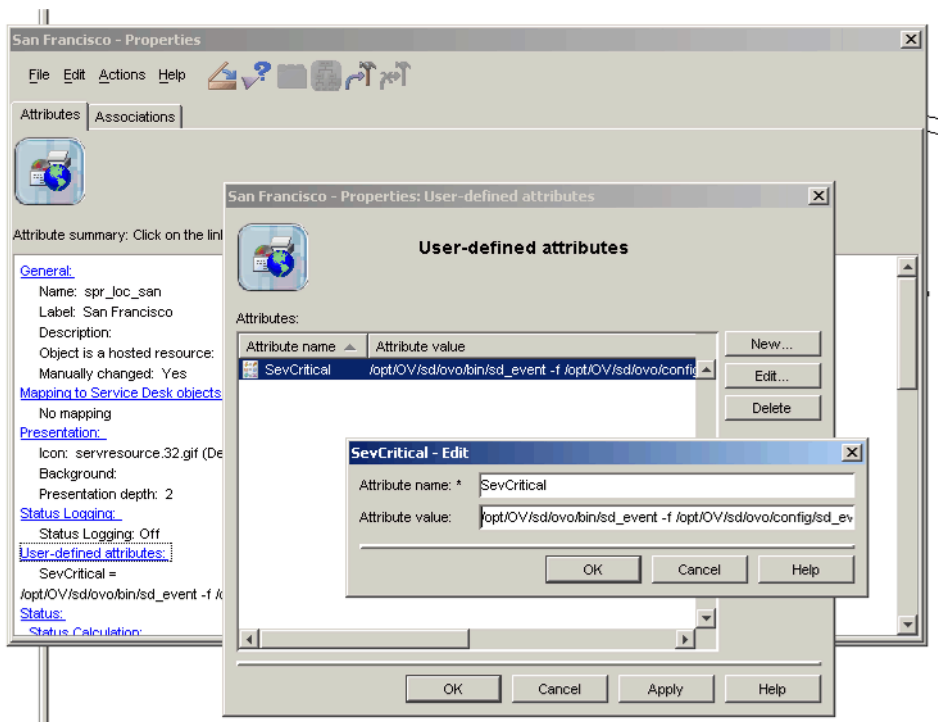
Service attributes defined in the SNVP console are listed in the properties of an appropriate service (for which the attributes are set) in Service Navigator after the hierarchy configuration with these attributes specified is deployed to the OVO management server.

See "Deploying from Service Navigator Value Pack" on page 26 for more information about the deployment process. See also Figure 1-3 on page 23 for a presentation of these attributes in Service Navigator.

For more details about the SNVP usage, refer to the *Service Navigator Value Pack User's Guide*.

Deploying from Service Navigator Value Pack

All service attributes specified in the SNVP console can be used in Service Navigator only after you deploy the hierarchy configuration to the OVO management server where the Service Navigator service engine is running.

You can choose to have Service Configuration deploy the hierarchy automatically, or manually using the cadm_Deploy command line tool. See the *cadm_deploy.1m* man page for more information about this tool.

For more information about the deployment process, refer to the *Service Configuration for Service Navigator User's Guide*.