

HP OpenView Service Oriented Architecture Manager

OVO for Unix Plug-in User Guide

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HP-UX, Solaris



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Introduction

This chapter contains overview information about the integration between HP OpenView Service Oriented Architecture (SOA) Manager and OpenView Operations for UNIX (OVO-U). High level architectural and contextual information of the integration is also provided.

Document Overview

The User Guide provides detailed information for setting up, configuring, and using the SOA Manager OVO-U Plug-in to manage SOA Manager service models within OVO-U.

The instructions for using OVO-U, the OVO Console, and SOA Manager are only specific to the integration and are not meant as a comprehensive reference. For documentation specific to these products, follow the link provided in the “Related Documents” section below.

Audience

This User Guide is intended for anyone who is responsible for operating and administering OVO. In particular, the guide is for OVO Administrators, OVO Operators, System Administrators, IT Operators, and SOA Manager Administrators. It is expected that SOA Manager Administrators will work as OVO Operators and will use the JavaConsole to manage the SOA Manager.

Prerequisites

Users of this guide should have basic knowledge in the following areas:

- OpenView Operations for UNIX
- SOA Manager
- OVO Management Console for Windows
- OpenView management solutions
- Java
- HP-UX

Chapters Summary

- **Chapter 1 – Introduction:** Contains overview and contextual information about the SOA Manager OVO-U Integration.
- **Chapter 2 – Installation and Configuration:** Contains detailed steps needed to install and operate the SOA Manager OVO-U Plug-in.
- **Chapter 3 – Performing Standard Management Functions:** Contains instructions that are used to perform basic management tasks.
- **Chapter 4 – Troubleshooting:** Contains general procedures used to troubleshoot the SOA Manager OVO-U Integration and also provides solutions to common errors.
- **Appendix A – Configuration Reference:** Contains a reference of all configuration parameters used to configure the OVO components of the SOA Manager OVO-U Integration.

Related Documents

The SOA Manager OVO-U Integration contains integrations with several OV components. OpenView product guides can be downloaded from the [product manuals](#) page on the OpenView Web site.

Integration Overview

The HP OVO-U software provides a fully integrated management solution for networks, systems, databases, and applications found in heterogeneous distributed IT environments. This comprehensive product suite represents a complete set of tools enabling IT organizations to improve overall availability and reliability, maintain the highest degree of management flexibility, and establish management control over virtually all aspects of an enterprise environment.

The SOA Manager software is a distributed management solution that is used to manage enterprise applications that are deployed in SOA-based environments. These applications utilize SOA principals as well as Web services standards. A unique feature of the SOA Manager software is the ability to represent the manageability of assets in a virtual management model called a business service model and expose that management model through Web services-based interfaces.

The SOA Manager OVO-U integration gives OVO-U the ability to manage the SOA Manager's management information together with other enterprise management data. The integration provides a means of improving the availability of enterprise resources as well as a comprehensive and centralized view of the health and well being of the resources.

The integration includes:

- The ability to view an SOA Manager service model using the OVO Service Navigator
- The ability to view service model alert messages in the OVO Message Browser
- The ability to acknowledge service model alerts using the OVO Message Browser

Conceptual Architecture

The SOA Manager OVO-U Plug-in is the main component of the integration. The Plug-in is installed on the OVO Management Server and communicates with the SOA Manager's Network Services server using a standard Web services based management protocol.

Figure 1-1 shows a conceptual overview of the plug-in.

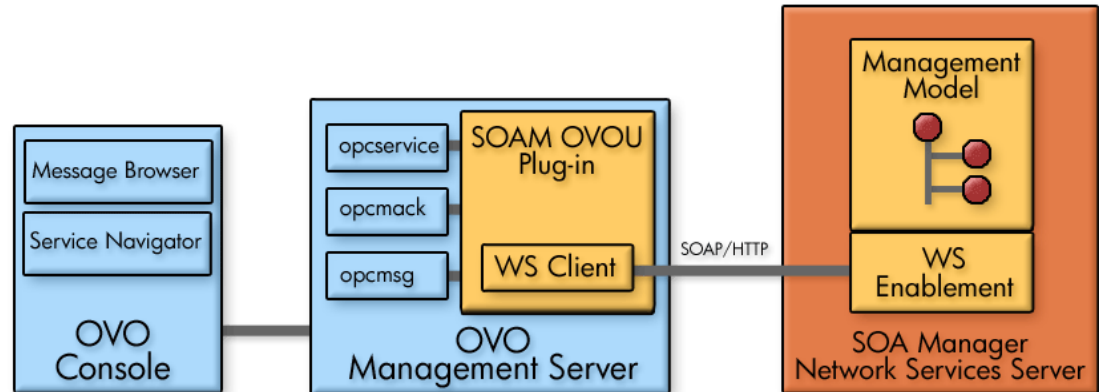


Figure 1-1: Conceptual Overview

The Plug-in contains a Web service client that is used to get management information from the Network Services server. This information includes the service model (i.e., business services, IT services, etc...) and also includes any service model alerts.

In particular, two Web services are published by the Network Services server and used by the plug-in:

- `RDFModelPublisher` – This Web service is used to get the SOA Manager's service model that is published as an RDF-based (Resource Description Framework) model.
- `AlertService` – This Web service is used to get and acknowledge alert messages.

The Plug-in then transforms the management information into an OVO-U format so that it can be viewed using the OVO Console. The Plug-in utilizes several OVO tools to present the management information. These tools include:

- `opcservice` – This tool is used to update the Service Navigator's service map.
- `opcmsg` – This tool is used to update the Message Browser to include all alert messages.
- `opcmsg` – This tool is used to synchronize messages that have been acknowledged in either the SOA Manager's Business Service Explorer or the OVO Message Browser.

Installation and Configuration

This chapter provides instructions for installing and configuring the SOA Manager OVO-U Plug-in. If you are not familiar with OVO, you should consult the OVO documentation when completing the instructions in this chapter. In addition, it is recommended that a development-time installation of OVO be used to test the SOA Manager OVO-U Integration before installing and running on a production installation of OVO.

Requirements

This section details the hardware and software requirements for installing and running the SOA Manager OVO-U Plug-in. Make sure the requirements are met before beginning the installation.



Before installing the SOA Manager OVO-U Plug-in, make sure SOA Manager is installed and operational.

Software Requirements

The following table provides a list of software that is required to install and run the SOA Manager OVO-U Plug-in.

Table 2-1: SOA Manager OVO-U Integration Required Software

Products	Platforms
SOA Manager 2.1	Windows: Microsoft Windows 2003 Server Unix: HP-UX PA-RISC 11.11i, HP-UX Itanium 11.23 and Red Hat Linux Advanced Server 3.0
OVO-U 8.0 or above	HP-UX 11.23, Solaris 2.9/5.9/9.0, Solaris 2.8/5.8/8.0

Products	Platforms
JavaConsole A.08.00 (UNIX version included with OVO)	HP-UX 11.x, Windows 2K / NT
JDK 1.4.x	HP-UX 11.23, Solaris 2.9/5.9/9.0, Solaris 2.8/5.8/8.0

Hardware Requirements

The following minimum hardware is required to install and run the SOA Manager OVO-U Plug-in.

Table 2-2: Hardware Requirements

Requirement	Minimum
RAM	512 MB
Disk Space	50 MB

Patches

It's important that all recommended patches for OVO-U and Java are installed prior to running the SOA Manager OVO-U Plug-in. To find the recommended OVO patches, go to <http://support.openview.hp.com/patches>. In the browse by product version section, select **operations for UNIX** and click the >> button. To find the recommended Java patches for HP-UX, go to <http://www.hp.com/products1/unix/java>. From the left side of the screen, click **Patches**. To find the recommended Java patches for Solaris, go to <http://sunsolve.sun.com/pubpatch> for the latest J2SE patch cluster.



Check for updated patches every few months.

Kernel Parameters

Verify that the kernel parameters meet the recommended settings to run a Java program. You can use the HPjconfig tool to determine the recommended kernel parameter settings. To download the HPjconfig tool, go to <http://www.hp.com/products1/unix/java/java2/hpjconfig>.

Installing the Plug-in

This section includes steps for installing the SOA Manager OVO-U Plug-in on HP-UX and Solaris. The installation is performed on an OVO-U management server. In addition, you must be logged onto the management server as `root` when completing the instructions in this section.

To install the SOA Manager OVO-U plug-in:

- 1 From the SOA Manager distribution, copy `Addons/ovo/soam-ovou-hpux.depot`, `Addons/ovo/soam-ovou-hpux-itanium.depot` or `Addons/ovo/soam-ovou-solaris.depot` to a location on the management server.
- 2 From a command prompt, run:

```
swinstall -x reinstall=true -s <depot_file> \*
```

The depot is installed to `/opt/soam-ovou`. This location is referred to as `plugin_install_dir` throughout this documentation.

Setting Environment Variables

The Plug-in requires the following environment variables to be set on the OVO management server:

- `JAVA_HOME`: Set this variable to the JDK 1.4.x installation directory.
- For HP-UX PA-RISC, set `SHLIB_PATH` to `/opt/OV/lib` or wherever `libopcdb.sl` and `libopcsv_r.sl` are located.
- For HP-UX Itanium, set `SHLIB_PATH` to `/opt/OV/lib/hpux32` or wherever `libopcdb.so` and `libopcsv_r.so` are located.
- For Solaris, set `LD_LIBRARY_PATH` to `/opt/OV/lib` or wherever `libopcdb.so` and `libopcsv_r.so` are located.

Configuring the Plug-in

This section includes instructions for configuring the Plug-in. The Plug-in is configured using the `<plugin_install_dir>/soam-ovou.properties` file. The properties file is a text file and can be edited using a text editor.

The properties file contains default values which may or may not be valid for your OVO and SOA Manager installation. The default values must be changed before starting the Plug-in.

To configure the Plug-in:

- 1 Using a text editor, open `<plugin_install_dir>/soam-ovou.properties`.
- 2 Configure the following properties:

- **NS_BASE_URL:** Enter the URL of the SOA Manager Network Services server. The Plug-in uses this URL to connect to the Network Services server. For example:

```
http://<host>:5002
```

Replace *<host>* with either the IP address or the fully qualified DNS name of the computer where the Network Services server is installed. Port 5002 is the default port used to connect to the Network Services server. Change the port number if a different port is being used.

- **OVO_ACK_OPERATOR:** Enter a valid OVO operator username. This user name is used to connect to the OVO server in order to synchronize acknowledged messages between the SOA Manager and OVO Message Browser.
- **OVO_ACK_PASSWORD:** Run the *<plugin_install_dir>/encrypt-pwd.sh* script to encrypt the OVO operator password. The script prompts for the password and returns an encrypted password. Enter the returned encrypted password as the value of this property.
- **SERVICE_MAP_OPERATORS:** Enter a comma separated list of valid OVO operator user names that are to be granted access to the service map.
- **OPCSERVICE:** Enter the path to the OVO *opcservice* command line tool. The default path where this tool is located is typically */opt/OV/bin/*. This tool is required to run the Plug-in.
- **OPCMACK:** Enter the path to the OVO *opcmack* command line tool. The default path where this tool is located is typically */opt/OV/bin/*. This tool is required to run the Plug-in.
- **OPCMSG:** Enter the path to the OVO *opcmsg* command line tool. The default path where this tool is located is typically */opt/OV/bin/*. This tool is required to run the Plug-in.
- **LISTENER_PORT:** Enter a port that is currently not being used. The port is used to listen for model change events.

- 3 Save and close *soam-ovou.properties*.

Creating a SOAM Message Group

The plug-in is configured to group all messages as part of the SOAM message group. This message group must be created. If the SOAM message group is not created and set to a valid operator name, the messages are sent to the Misc (miscellaneous) message group.

The following tasks are used to create a message group.

- Create a Message Group
- Modify the Operator User Profile

Create a Message Group

To create a custom message group:

- 1 From any OVO window, open the Message Group Bank window by selecting **Window | Message Group Bank**. The OVO Message Group Bank window displays.
- 2 From the OVO Message Group Bank window, select **Actions | Message Groups | Add...** The Add Message Group dialog box displays.
- 3 From the Add Message Group dialog box, enter SOAM as the name and enter a description.
- 4 Click **OK**. The OVO Message Group Bank window displays and the new message group is listed.
- 5 Close the Message Group Bank window.

Modify the Operator User Profile

A message group must be assigned to a valid operator profile. In these instructions, the `opc_adm` operator is modified to include the SOAM message group. If you are using a different operator profile, use that operator instead.

To modify the `opc_adm` user profile:

- 1 From any OVO window, open the User Bank window by selecting **Window | User Bank**. The OVO User Bank window displays.
- 2 From the OVO User Bank window, right-click **opc_adm** and select **Modify**. The Modify User: `opc_adm` dialog box displays.
- 3 From the dialog box, select **Responsibilities**. The Responsibilities for Operator [`opc_adm`] dialog box displays.
- 4 From the Message Groups column, scroll to locate the SOAM message group.
- 5 Click the Node Group check boxes to assign the SOAM message group to different node groups.
- 6 Click **Close**.
- 7 From the Modify User: `opc_adm` dialog box, click **OK**.
- 8 Close the OVO User Profile Bank window.

Starting the Plug-in

The Plug-in is started using a shell script. The script is located in the `<plugin_install_dir>`. Before starting the Plug-in, make sure that both the SOA Manager Network Services server and the OVO Management Server are started.

To start the plug-in:

- 1 From a command prompt, change directories to `<plugin_install_dir>`.
- 2 Run `start-soam-ovou.sh`. The Plug-in may take several minutes to start.

Stopping the Plug-in

The Plug-in is stopped using a shell script. The script is located in the `<plugin_install_dir>`.

To stop the plug-in:

- 1 From a command prompt, change directories to `<plugin_install_dir>`.
- 2 Run `stop-soam-ovou.sh`. The shutdown is complete when the following message displays in the output:

```
SOA Manager OVO plugin stopped
```

Installing the Java Console

OVO for UNIX includes a Java-based operator's console that is used to monitor an OVO managed environment. In regards to the SOA Manager OVO-U integration, the Java console is used to:

- View the status of the SOAM services.
- Perform impact analysis and root cause analysis for SOAM services.
- View and acknowledge SOAM messages.

The Java Console can run on any system where a JRE is installed. However, the instructions in this section are specific to installing the Java Console on Windows. See the OVO documentation or the Java Console's Online Help (once you have installed the Java console on Windows) for instructions on additional platform installation instructions.

To install the Java console:

- 1 Ftp `/opt/OV/www/htdocs/ito_op/ITO_JAVA.exe` from the OVO management server to the PC where you are installing the console.
- 2 Execute `ITO_JAVA.exe`. An install shield displays and guides you through the installation process.

Starting the Java Console

To start the Java Console:

- 1 Double-click the Java Console icon on the desktop.
- 2 Enter the following information in the HP OpenView Operations Login dialog box (if a different operator is configured, use that operator name instead of `opc_adm`):
 - **User Name:** `opc_adm`
 - **Password:** `<opc_adm password>` default password is `OpC_adm`
 - **Management Server:** The full DNS name of the OVO management server system

- 3 Click **OK**. The Java Console starts and displays information for your OVO environment.
- 4 From the Object Pane, expand the **Services** node to view SOAM services.
- 5 From the Object Pane, expand the **Message Groups** node to view the SOAM message group.



If you are new to the Java console, see the OVO documentation or the Java Console's Online Help.

Uninstalling the Plug-in

To uninstall the SOA Manager OVO-U Plug-in:

- 1 From a command prompt, run:
`swremove SOAMSPI`
- 2 Delete `<plugin_install_dir>`.
- 3 Delete the `/tmp/soa-map.xml` file.

Performing Standard Management Functions

This chapter provides some tasks that are typically performed when using the SOA Manager OVO-U Integration. In particular, the following sections are included:

- Service Management
- Alert Message Management
- Using XPL Logging

Service Management

Service management is achieved using the Service Navigator that is included in the OVO Java Console. During runtime, the SOA Manager OVO-U Integration automatically discovers SOA Manager managed resources and represents them as a Service Map. Any deployment changes that occur in the SOA Manager environment are dynamically synchronized with the Service Map.

The Service Navigator also allows detailed management of the resources that are presented in the Service Map. The detailed management includes browsing the managed resource hierarchy, their relationships, attributes, metrics, and invocation of methods that are exposed by the resources.

Instructions for installing and starting the Java Console (including the Service Navigator) are located in Chapter 2. In addition, Online Help is available for the Java Console.

To view the service map:

- 1 Start and log in to the Java Console.
- 2 From the Object Pane, expand the **Services** node to view SOAM business services.
- 3 Right-click a business service and select **Show Graph**. The service graph displays and shows the business service model.

Starting the BSE

The BSE can be started from the OVO Java Console and is a convenient way to troubleshoot business services from the console.

To start the BSE console from the OVO Java Console:

- 1 From the Object Pane, expand the **Services** node to view SOAM business services.
- 2 Right-click a business service and select **Start --> SOA Manager GUI**. The BSE is displayed in a new Workspace window.

Alert Message Management

All alert messages generated through SOA Manager are captured and displayed in the Java Console's message browser.

To view SOA Manager alert messages:

- 1 Start and log in to the Java Console.
- 2 From the Object Pane, expand the **Message Groups** node to view the SOAM message group.
- 3 Select the SOAM message group. The message browser displays and lists all SOA Manager alert messages.
- 4 Right-click a message and select **Properties**. The Message Properties dialog box displays and lists additional details about the alert message.

Acknowledging Alert Messages

Alert messages are acknowledged using standard OVO Console procedures and can also be acknowledged in the SOA Manager BSE. Alerts that are acknowledged in the OVO console are automatically removed from the alert list in the BSE console and vice versa.

To acknowledge an alert message in the OVO console, right-click on a message and select **Acknowledge**. The alert message is removed from the list of alert messages. Check the BSE Console to verify that the alert message has been removed from the Network Services server as well.

Changing Message Properties

SOA Manager alert messages are organized in OVO by the message group name (this field is named `MsgGrp`) and the Application name. The default values of these fields are respectively `SOAM` and `SOA Manager`. A custom message group and application name can be configured using the Plug-in property file.

To change message properties:

- 1 Stop the Plug-in if it is currently started.
- 2 Using a text editor, open `<plugin_install_dir>/soam-ovou.properties`.

- 3 Configure the following properties:
 - **MSG_APPLICATION**: Enter an application name. The name displays in the Application field.
 - **MSG_GROUP**: Enter a message group name. The name displays in the MsgGrp field and on the Object pane. The Message group must be a valid OVO message group. See “Creating a Message Group” in Chapter 2. If the name entered is not a valid message group name, the messages are displayed as Misc (miscellaneous) messages.
- 4 Save and close `soam-ovou.properties`.
- 5 Start the Plug-in.
- 6 Start (or refresh) the OVO Console and verify that the Application and MsgGrp fields are updated.

Using XPL Logging

The Plug-in uses HP OpenView Cross Platform (XPL) logging. Log messages are displayed in the terminal window where the Plug-in is started and written to the `log` subdirectory of the HP OpenView data directory (typically `/var/opt/OV`). The log file name has the format:

soam-ovou[unique].sequence.locale

For example:

`soam-ovou0.0.en_US`

This file is the first plug-in log file created for the US English locale.

XPL creates a log file for an English locale and a second file for your system’s locale if it is different from English.

XPL creates up to 10 log files, each file containing up to 1 megabyte of data. The log files will have sequence numbers 0 through 9. When the maximum number of log files is exceeded, the sequence 0 log file is overwritten.

Configuring Log Levels

You can change the log levels using the `<plugin_install_dir>/xpllogging.properties`. Alternatively, you can change the log levels by editing the `logging.properties` file in the `JDK /lib` directory. The log levels are: SEVERE, WARNING, INFO, FINE, FINER, and FINEST. By default the log level is set to FINE.

Using JRE Properties File

You can change the log level for Plug-in by editing the `logging.properties` file in the `JRE /lib` directory. For example:

```
com.hp.ov.mip.mip.rdf.client.RDFModelClient.level = INFO
```

This sets the log level to `INFO`. You must restart the Plug-in for the change to take effect.

Using the XPL Properties File

You can change the log level for the Plug-in by editing the `<plugin_install_dir>/xpllogging.properties` file. For example:

```
com.hp.ov.mip.mip.rdf.client.RDFModelClient.level = INFO
```

This sets the log level to `INFO`. You must restart the Plug-in for the change to take effect

Troubleshooting

This chapter provides common troubleshooting tasks when using the SOA Manager OVO-U Plug-in. In addition, refer to the *SOA Manager Release Notes* for the latest information about the SOA Manager OVO-U Integration.

Startup Errors

The Plug-in does not start and the following log message displays:

```
Error starting event listener: java.net.BindException: Address
already in use
```

Solution:

This error occurs when either another instance of the Plug-in is currently started or when a different process is already using the port. Use the `<plugin_install_dir>/stop-soam-ovou.sh` to stop the Plug-in and then restart the Plug-in.

If the problem still occurs, use the `ps` command to manually kill the `soam-ovou` process or any other process that is using the port.

The plug-in starts with the following error:

```
Unexpected Exception when trying to fetch model from Network
Services: AxisFault
    faultCode:
    {http://schemas.xmlsoap.org/soap/envelope/}Server.userException
    faultSubcode:
    faultString: java.net.ConnectException: Connection refused
    faultActor:
    faultNode:
```

Solution:

This error occurs when the URL for the Network Service server is invalid or a connection to the server failed.

- 1 Stop the plug-in.

- 2 Open `<plugin_install_dir>/soam-ovou.properties` and verify that the `NS_BASE_URL` is set to a valid host and port.
- 3 Save and close the properties file.
- 4 Start the Plug-in.

Message Errors

SOA Manager messages display in the `Misc` message group in the Java Console Message Browser.

Solution:

- 1 Stop the plug-in.
- 2 Open `<plugin_install_dir>/soam-ovou.properties`
- 3 Verify that the `MSG_GROUP` property is set to a valid OVO message group and that the message group is assigned to the operator. See the “Creating a SOAM Message Group” section in Chapter 2.
- 4 Save and close the properties file.
- 5 Start the Plug-in.



Appendix A: Configuration Reference

This appendix is a reference for the SOA Manager OVO-U Integration configuration parameters. In particular, this appendix focuses on the `soam-ovou.properties` configuration file. The parameters are discussed throughout this guide; however, they are listed here in a reference style so they can be easily accessed.

The `soam-ovou.properties` file is located in `<plugin_install_dir>`. The configuration file is a text-based Java Property file and can be edited using a text editor. Restart the Plug-in whenever making changes to the configuration file.

Plug-in Properties

- **NS_BASE_URL:** Enter the URL of the SOA Manager Network Services server. The Plug-in uses this URL to connect to the Network Services server. For example:

```
http://<host>:5002
```

Replace `<host>` with either the IP address or the fully qualified DNS name of the computer where the Network Services server is installed. Port 5002 is the default port used to connect to the Network Services server. Change the port number if a different port is being used.

- **OVO_ACK_OPERATOR:** Enter a valid OVO operator username. This user name is used to connect to the OVO server in order to synchronize acknowledged messages between the SOA Manager and OVO Message Browser.
- **OVO_ACK_PASSWORD:** Run the `<plugin_install_dir>/encrypt-pwd.sh` script to encrypt the OVO operator password. The script prompts for the password and returns an encrypted password. Enter the returned encrypted password as the value of this property.
- **SERVICE_MAP_OPERATORS:** Enter a comma separated list of valid OVO operator user names that are to be granted access to the service map.
- **OPCSERVICE:** Enter the path to the OVO `opcservice` command line tool. The default path where this tool is located is typically `/opt/OV/bin/`. This tool is required to run the Plug-in.

- **OPCMACK:** Enter the path to the OVO `opcmack` command line tool. The default path where this tool is located is typically `/opt/OV/bin/`. This tool is required to run the Plug-in.
- **OPCMMSG:** Enter the path to the OVO `opcmmsg` command line tool. The default path where this tool is located is typically `/opt/OV/bin/`. This tool is required to run the Plug-in.
- **MSG_APPLICATION:** Enter an application name. The name displays in the Application field of the OVO Message Browser.
- **MSG_GROUP:** Enter a message group name. The name displays in the MsgGrp field of the OVO Message Browser and on the Object pane.
- **LISTENER_PORT:** Enter a port that is currently not in use on the OVO Management server. This listener captures model changed events and updates the OVO console with the most recent model changes.

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