

# **HP OpenView VantagePoint Operations for UNIX Software Release Notes**

## **Management Server on Sun Solaris**



**Manufacturing Part Number: B7491-90008**

**Version A.06.00**

**June 2000**

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# **1 Announcements**

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## In this Chapter

This chapter summarizes the new functionality and features in the A.06.00 version of HP OpenView VantagePoint Operations for UNIX.

HP OpenView IT/Operations (ITO), along with some associated products, has become part of the new OpenView product family **VantagePoint**. This change involved a name change which has, however, not yet been fully implemented. You will therefore encounter references to the former product names in the VantagePoint software and documentation.

Table 1-1 on page 10 gives an overview over the product name changes:

Table 1-1

**HP OpenView VantagePoint**

Former Product Name	New Product Name
Advanced Network Security (ANS)	VantagePoint Advanced Security
ECS Designer for NNM and ITO	VantagePoint ECS Designer for NNM and ITO
IT/Operations (ITO)	VantagePoint Operations for UNIX
MeasureWare	VantagePoint Performance Agent
PerfView	VantagePoint Performance Manager
ServiceNavigator	VantagePoint Navigator
ServiceReporter	VantagePoint Reporter

## Executive Summary of New Features in ITO A.06.00

ITO release A.06.00 introduces:

☐ VantagePoint interoperability

VantagePoint Operations for UNIX and VantagePoint for Windows use the same agent software core on Windows NT/2000 as well as on HP-UX and Solaris.

☐ Smart message correlation

- Message counter in the message browser for suppressed duplicate messages.
- Duplicate message suppression both on the managed node and on the management server.
- State-based browser through bad/good message acknowledgment.

☐ VantagePointNavigator enhancements

- XML-based service model definition
- Status change API for the Developer's Toolkit
- Service logging and reporting

☐ VantagePoint Performance Agent deployment

Centrally deployable VantagePoint Performance agents for HP-UX and Solaris are now available with VantagePoint Operations for UNIX.

☐ VantagePoint Advanced Security enhancements:

- Open Security Model
- Public Key Infrastructure support
- Secure Java-based GUI

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### NOTE

HP OpenView VantagePoint Advanced Security is a separate product and will be available at a later date. Please contact your local HP Representative for details.

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- ITO Java-based GUI enhancements:
  - Printing of messages, message details, and application output.
  - New application launch concept.
  - Colored message lines in browser.
  - Tight integration of NNM.
  - Save browser layout.
  - Java GUI installation wizard for PCs.
- New agent platforms, including:
  - AIX 4.3.3
  - DYNIX/ptx 4.4.6, 4.4.7, and 4.5.0 (management server on HP-UX only; will be delivered as patch)
  - Linux 2.2 (RedHat 6.0, 6.1, and 6.2)
  - MPE/iX 6.5 (management server on HP-UX only)
  - Novell NetWare 5.1
  - Sun Solaris 8
  - Tru64 UNIX 5.0A (will be delivered as patch)
  - Windows 2000
- Enhanced support of Sun Solaris:
  - ITO management server on Sun Solaris 7 and 8.
  - Additional managed nodes: SGI IRIX and DEC/Compac Tru64 UNIX (English environments only).
  - New security features through VantagePoint Advanced Security.
  - Sun Enterprise Cluster.
- Out-of-the-box instrumentation:
  - Wide range of SMART Plug-Ins available as separate products.
  - MS Terminal Server and Citrix MetaFrame.
  - Sun UE 10000 management.
  - Sun Management Center version 2.1 and 2.1.1.
- Other features:
  - Includes the latest version of NNM (version 6.1).
  - Buffer-file size limitation on agents.
  - Selective history download.
  - Enable/disable templates on managed nodes.
  - Upload templates from files (with command line interface).
  - Message buffering in Manager-of-Manager environments.
  - New variables for message source templates and application calls.

- Improved processing of Windows EventLog templates.
- `opcsvinfo` variable to switch off lexicographical sorting of objects in the ITO administrator GUI.
- X resource to set width of columns in Motif GUI message browsers.
- Man pages in HTML format.
- ITO home page with many useful links available in Help menu.
- On HP-UX 10.20 and 11.0 managed nodes, ISO8859-15 (support for Euro) is now supported as external character set.

## **Executive Summary of New Features in the ITO Developer's Toolkit**

The ITO A.06.00 Developer's Toolkit includes all of the above, plus:

- ❑ New C++ APIs for VantagePoint Navigator.
- ❑ New `opcversion()` API.

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## **2      What's in this Version?**

This chapter gives a more detailed description of the main new features and enhancements provided by ITO version A.06.00. It also describes what has been fixed since ITO A.05.30, and where to find more information about ITO and related products.

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**NOTE**

HP recommends a prompt upgrade to ITO version A.06.00 to take advantage of its defect fixes and extensive new features.

Customers who want to use the latest versions of Network Node Manager (NNM B.06.10), or require the newly supported platforms and features, also need to upgrade to version A.06.00 of ITO.

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## **New Features with A.06.00**

HP OpenView IT/Operations version A.06.00 introduces the following new features and functionality.

### **VantagePoint Interoperability**

VantagePoint Operations for UNIX and VantagePoint for Windows use the same agent software core on Windows NT/2000 as well as on HP-UX and Solaris. See the *VP Operations Administrator's Reference Volume I* for details on interoperability topics.

### **Smart message correlation**

See the *VP Operations Concepts Guide* for more information about the following features:

- ☐ **Message Counter**

Duplicate messages can now be suppressed on the management server; to keep track of suppressed messages, a counter is shown in the browser windows.

- ☐ **Duplicate Message Suppression**

The duplicate message suppression techniques on the managed node have been extended and enhanced to further reduce the number of messages and network traffic, and as a result make the user interface more scalable and simplify event management.

- ☐ **State-based Browser**

Messages can now be automatically acknowledged by succeeding messages based on the state of the original message. The correlation of messages gives the operator the current state of the IT environment.

### **VantagePointNavigator Enhancements**

VantagePoint Navigator (formerly known as HP OpenView ServiceNavigator) has been changed to include the following new features. For more information about VantagePoint Navigator, see the *VP Navigator Concepts and Configuration Guide*.

❑ XML-based Service Model Definition

The definition of service configuration files is now done using XML syntax. Previous configuration files are migrated automatically.

❑ Service Logging and Reporting

The service status is now persistently logged in the ITO database. Out-of-the-box reports will be available with the next version of HP OpenView VantagePoint Reporter (formerly known as HP OpenView Service Reporter).

❑ Status Change API

VantagePoint Navigator now comes with a new service engine which handles requests dynamically and asynchronously. In addition, registration interfaces are now available to register for status changes. This interface allows you to manage your business top down: hook in and register for severity changes of services. This enables you to implement business views that can, for example, be exported to a Web site. APIs are available with the ITO Developer's Toolkit to implement service-state dependent actions.

## VantagePoint Performance Deployment

Centrally deployable VantagePoint Performance agents for HP-UX and Solaris are now available with VantagePoint Operations for UNIX. Note that these are the former MeasureWare Agents for HP-UX and Solaris. More information about the VP Performance Agent is available in the *VP Operations Administrator's Reference Volume II*.

## VantagePoint Advanced Security Enhancements

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**NOTE**

HP OpenView VantagePoint Advanced Security will be available at a later date. Please contact your local HP Representative for details.

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ANS (now VantagePoint Advanced Security) has been extended to include the following new features. See the *VP Advanced Security Installation and Concepts Guide* for detailed information.

❑ Open Security Model

The Generic Security Service (GSS) API version 2 (as defined in RFC 2078) is now supported by VantagePoint Advanced Security.

❑ Public Key Infrastructure support

The open and flexible security solution supports a variety of security policies and allows plug-in of third party or customer-specific security solutions.

❑ Secure Java-based GUI

This feature secures the communication between the management server and the Java-based GUI client by way of a Secure Socket Layer (SSL).

❑ VantagePoint Advanced Security is now also supported by ITO for Sun Solaris, except for the secret-key based solution (formerly ANS).

## ITO Java-based GUI Enhancements

See the online documentation of the Java-based GUI for detailed information about the following features:

❑ Printing of Messages and Application Output

It is now possible to print messages, message details, and application output from the Java-based GUI. This requires Java 2 to be installed on the GUI client system.

❑ Easier Application Launch

Applications can now be launched from the main menu bar. In addition, a “Start Customized Application” wizard has been introduced.

❑ Colored Message Lines in Browser

The message browser can be configured to color the entire message line according to the severity of the message it contains. This setting is also available for the Motif GUI. See also *opc(1)*.

❑ Tight Integration of NNM

The integration with NNM has been further enhanced to include the ability to display the NNM Motif GUI (by way of an X Window System), the ability to highlight nodes in the IP map of NNM systems, and the ability to use OV applications in the ITO Java-based GUI.

❑ Save Browser Layout

It is now possible to save the layout of the message browser. The saved setting includes the order, sort order, and width of the columns as well as the size of the browser window.

❑ Installation Wizard for PCs for the Java-based GUI

Installing the Java-based GUI on a PC is now even easier: a new installation wizard guides you through the installation procedure.

## **New Agent Platform Versions**

ITO A.06.00 now supports the following new versions of agent platforms:

❑ AIX 4.3.3

❑ DYNIX/ptx 4.4.6, 4.4.7, and 4.5.0 (management server on HP-UX only; will be delivered as patch)

❑ Linux 2.2 (RedHat 6.0, 6.1, and 6.2)

❑ MPE/iX 6.5 (management server on HP-UX only)

❑ Novell NetWare 5.1

The ITO version A.05.33 agent has received the Novell NetWare certification. The ITO A.06.00 agent for Novell NetWare will be certified in the near future.

❑ Sun Solaris 8

❑ Tru64 UNIX 5.0A (will be delivered as patch)

❑ Windows 2000

## ITO for Sun Solaris Features

- ❑ The ITO management server is now supported on Sun Solaris 8 in addition to Sun Solaris 7
- ❑ Additional Managed Node Platforms:  
SGI IRIX and Digital UNIX/Tru64 UNIX (English environments only).
- ❑ Sun Enterprise Cluster  
ITO can now operate in Sun Enterprise Cluster environments. Sun Enterprise Cluster version 2.2 is supported on both the management server and the managed nodes. The ITO management server is implemented as a data service which enables failover capabilities. The ITO agents run on each physical host to permanently monitor the health of each cluster node (failover of ITO agents is not desired).

## Out-of-the-box Instrumentation

The following features are part of the ITO standard product:

- ❑ MS Terminal Server and Citrix MetaFrame  
MS Terminal Server and Citrix MetaFrame are now supported. Default templates and applications help you manage this software effectively
- ❑ Sun UE 10000 Management  
Out-of-the-box instrumentation to monitor the Sun UE 10000 architecture and to launch UE 10000 applications.
- ❑ Sun Management Center Version 2.1 and 2.1.1.  
SunMC version 2.1 and 2.1.1 is now supported with the ITO integration.

In addition, many SMART Plug-Ins will be provided for VantagePoint: VantagePoint SMART Plug-Ins are a natural extension of HP OpenView and are fully integrated with the HP OpenView VantagePoint environment. The SPIs are fully integrated, out-of-the-box solutions which “plug into” HP OpenView, extending the managed domain to the industry leading business, internet, database and management applications. SPIs are available as separate products. See also <http://www.openview.hp.com/>.

## Other Features

- ❑ ITO now includes NNM version 6.1.

- ❑ Buffer-file Size Limitation

The ITO agents can now be configured to discard messages that are below a specified severity level once the predefined maximum size of the buffer file has been reached.

- ❑ Selective History Download

The tool `opchistdown` has been enhanced to let the user specify different selection criteria based on message attributes. This can be used to keep important information, for example for long-term reporting purposes, while removing less important data. See the man page `opchistdown(1M)` for more information.

- ❑ Enable/disable Templates

The command line tool `opctemplate(1M)` lets you enable and disable templates on the managed node without having to redistribute the templates.

- ❑ Upload Templates from Files

The command line tool `opctempl(1M)` helps you maintain templates in flat files. You can add or delete templates from other configurations, for example HP OpenView VantagePoint for Windows.

- ❑ Message Buffering in Flexible-management Environments

The new `opcsvinfo` variable `OPC_MSGFORW_BUFFERING` causes ITO to buffer messages, if management servers on the message distribution list are unknown or temporarily unreachable.

- ❑ New Variables:

The following new variables can be used in message source templates:

- `<$MSG_GEN_NODE>`
- `<$MSG_GEN_NODE_NAME>`
- `<$MSG_NODE_ID>`
- `<$MSG_TIME_CREATED>`

The following new variables can be used in application calls:

- \$OPC\_MSG\_NODES
- \$OPC\_MSG\_GEN\_NODES
- \$OPC\_MSG\_IDS

See the *VP Operations Administrator's Reference Volume I* for more information about these variables.

#### ❑ Processing of Windows EventLog Templates

The processing of Windows EventLog templates has been enhanced: the event ID of the Windows event can now be matched through the new variable `<$EVENT_ID>` which simplifies the processing of multi-line EventLog messages. Note that you need the event's Source field *and* `<$EVENT_ID>` to identify the event uniquely. In addition, the parameters of the Windows event are available through the new variables `<$1>`, `<$2>`, `<$3>`, and so on.

- ❑ Lexicographical sorting of objects in the ITO administrator GUI can now be switched off by setting the `opcsvinfo` variable `ADMIN_GUI_ORDERING` to `FALSE`. By default the variable is set to `TRUE`.
- ❑ Set width of columns in Motif GUI message browsers

New X resources to customize the width of the browser columns:

- Number of Duplicates: `Opc.browserDuplColumnWidth`
- Node: `Opc.browserNodeColumnWidth`
- Application: `Opc.browserApplColumnWidth`
- Message Group: `Opc.browserMsgGrpColumnWidth`
- Object: `Opc.browserObjectColumnWidth`

See also the man page *opc(1)* for more information.

#### ❑ Man pages in HTML format

All ITO man pages are now also available in HTML format; open your Internet browser at the following URL:

`http://<management_server>:8880/ITO_MAN`

where `<management_server>` is the fully qualified hostname of your management server.

❑ ITO home page.

Select **Home Page** from the **Help** menu of any main ITO window. An Internet browser will start and display the ITO home page with many links to useful OpenView web locations.

❑ ISO8859-15 on HP-UX managed nodes.

On HP-UX 10.20 and 11.0 managed nodes, ISO8859-15 (support for Euro) is now supported as external character set. This means that the logfile encapsulator is now capable of monitoring files with ISO8859-15 as character set. In addition, it can be set as locale before starting ITO processes.



## What's Not Supported by ITO for Sun Solaris?

- ❑ HP OpenView VantagePoint Advanced Security Secret Key-based Solution (formerly known as ITO Advanced Network Security).
- ❑ DCE security.
- ❑ The following agent platforms are *not* supported by ITO for Sun Solaris:
  - DEC Alpha NT
  - DYNIX/ptx
  - MPE/iX
  - NCR UNIX SVR4
  - SCO UnixWare
  - SINIX/Reliant

The following agent platforms are *only* supported by the English version of ITO for Sun Solaris:

- AIX
- Digital UNIX/Tru64 UNIX

## What has Changed with ITO?

This section describes the major differences between ITO version A.05.30 and ITO version A.06.00. See also “Compatibility and Installation Information” on page 61 for more information about obsolete management server and managed node platforms, as well as upgrade and compatibility information.

Changes in the ITO database schema are documented in the *VP Operations Reporting and Database Schema*; changes to the APIs of the ITO Developer's Toolkit are documented in the *VP Operations Developer's Reference*.

## What has Changed with ITO A.06.00?

The following areas of ITO version A.05.30 have undergone changes with ITO version A.06.00:

### ❑ Directory Changes on Windows Nodes (Intel and Alpha)

The subdirectories `intel`, `alpha`, and `<node>` were removed from the installation directories. This affects, for example, the location of the `opcagt` executable, the location of DLLs, the location of actions, commands, and monitors, and the location of the `opcerror` file:

- The directory for actions, commands, and monitors on Windows managed nodes, changed from  
`\usr\OV\bin\OpC\{intel,alpha}\{cmds,actions,monitor}` to  
`\usr\OV\bin\OpC\{cmds,actions,monitor}`.
- The path of the ITO error logfile `opcerror` has changed from  
`\usr\OV\log\OpC<node>\opcerror` to  
`\usr\OV\log\OpC\opcerror`.

See “Windows NT/2000 Agent” on page 83 for information about tools and recommendations provided by ITO.

### ❑ ITO for HP-UX only: Olivetti UNIX, Pyramid DataCenter/OSx, and SCO OpenServer Managed Nodes

ITO A.06.00 for HP-UX no longer supports Olivetti UNIX, Pyramid DataCenter/OSx, and SCO OpenServer managed node platforms. However, it is still possible to install the A.05.xx agent software for these platforms on the managed nodes, if the following steps are

performed on the management server before the agent installation is started:

Locate the file `opcrinst` on the management server:

```
/var/opt/OV/share/databases/OpC/mgd_node/vendor\  
/sco/intel/unix/<ito_version>/RPC_NCS\  
/install/opcrinst
```

```
/var/opt/OV/share/databases/OpC/mgd_node/vendor\  
/olivetti/intel/unix/<ito_version>/RPC_NCS\  
/install/opcrinst
```

```
/var/opt/OV/share/databases/OpC/mgd_node/vendor\  
/pyramid/mips/unix/<ito_version>/RPC_NCS\  
/install/opcrinst
```

where `<ito_version>` is a version of A.05.xx.

1. Change the following line ...

```
COPY_OPCNETLS=inst_copy_opcnetls  
  
to  
  
COPY_OPCNETLS=inst_void
```

2. Install the agent software on the managed nodes as usual.

❑ Message-selection Behavior in Message Browsers

Selecting a message in a browser (without holding down the **Shift** or **Ctrl** key), clears the selection of messages in other browsers. In previous releases of ITO, messages could be selected in all browsers without holding down the **Shift** or **Ctrl** key.

❑ Changes with `opc_backup` and `opc_recover`

The HP-UX backup tool used by `opc_backup` and `opc_recover` has been changed: `opc_backup` now uses `fbackup`, and `opc_recover` uses `frecover`. This allows ITO to store more than 2GB of data in the backup. These changes, however, require you to perform additional steps when restoring an A.05.xx backup with the A.06.00 version of `opc_recover`. See “Restoring an A.05.xx Backup with `opc_recover`” on page 89 for more information.

❑ Tools Moved from `/opt/OV/bin/OpC/utls`

Some ITO tools were moved from `/opt/OV/bin/OpC/utls` to `/opt/OV/contrib/OpC`, for example `opcchgaddr`, `opcqchk`, or

opcrpcp. See the following URL for more information about each tool: [http://<management\\_server>:8880/ITO/contrib.html](http://<management_server>:8880/ITO/contrib.html)

- ❑ **ITO for HP-UX only: libopcora.sl Replaced with libclntsh.sl.1.0**

The library `libopcora.sl` is obsolete with A.06.00. ITO now links `$ORACLE_HOME/lib/libclntsh.sl` to `libclntsh.sl.1.0`. However, for compatibility reasons, ITO creates a compatibility link from `libopcora.sl` to `$ORACLE_HOME/lib/libclntsh.sl`. This compatibility link will be removed with the next major release of ITO.

- ❑ **Unresolved ITO Variables Now Displayed**

ITO now displays ITO variables “as is” in messages, if the ITO agents were unable to resolve them. This only applies to variables used in message source templates. In previous releases, unresolvable variables were replaced with an empty string. The new behavior is advantageous for troubleshooting purposes because it is now immediately visible which variables could not be resolved.

- ❑ **Heartbeat Polling Messages Now Automatically Acknowledged**

“Node down”/“node up” messages generated by the ITO heartbeat polling mechanism are now correlated automatically. This means that a “node down” message is acknowledged automatically by the corresponding “node up” message.

- ❑ **Monitor Agent Now Generates Messages When Monitored Value Rises/Falls Again**

The monitor agent now generates messages when the monitored value falls below the last reported value (for threshold monitors of the type maximum). For example, if the threshold monitor template was configured such that a threshold of 60 generates a warning message, and a threshold of 90 generates a critical message, the values 65, 95, and 65 of the monitored value will generate a warning message for 65, a critical message for 95, and another warning message for 65. In previous releases of ITO, no message would have been generated for the third value. Note that the same behavior applies to threshold monitors of the type minimum: a message is generated when the value exceeds the last reported value.

- ❑ **The HP OpenView VantagePoint SMART Plug-In for Internet Servers (formerly known as HP OpenView SMART Plug-In for Internet Servers, IS-SPI, and distributed with the ITO product) is no longer provided with ITO.**

Preconfigured internet services templates and applications for ITO A.06.00 are now provided as part of the HP VantagePoint Internet Services product. The templates and applications will be made available shortly after ITO A.06.00 becomes generally available.

These templates and applications enable you to manage the operations of your internet services on Windows NT/2000 and UNIX nodes.

❑ ITO on HP-UX only: Execution of MPE/iX Jobs

When tasks are executed in a job, for example scheduled actions, broadcast commands, or X-applications, the spool files generated from these tasks are now automatically deleted. If you want to return to the pre-A.06.00 behavior and retain the spool files, set the following variable in the file `OPCINFO.BIN.OVOPC`:

```
OPC_MPE_CREATE_SPOOL_FILE TRUE
```

To define the outence for spool files, set the following variable additionally:

```
OPC_MPE_OUTCLASS_STRING <outcalls_string>
```

For example: `OPC_MPE_OUTCLASS_STRING ,1,1`

❑ In the Install / Update ITO Software and Configuration window, the cursor default selection has changed from the [All nodes requiring update] to the [Nodes in list requiring update] button.

## What has Changed with VantagePoint Navigator?

The following areas of VantagePoint Navigator version A.05.30 have undergone changes with version A.06.00:

❑ Comma-separated Service Names in ITO

With previous releases of VantagePoint Navigator, the Service Name field could contain multiple service names separated by commas. This has been changed with VantagePoint Navigator A.06.00; comma-separated service names are no longer supported. To help you identify templates and conditions with comma-separated service names, VantagePoint Navigator comes with a tool that generates a template report:

```
/opt/OV/contrib/OpC/opcsvctemplchk
```

If your templates or conditions contain comma-separated service names, you must modify them accordingly; VantagePoint Navigator version A.06.00 can *not* understand comma-separated service names and therefore does not propagate severity changes to these services.

There are basically two methods for adjusting your configuration to the new rules:

- Split your templates and/or conditions into multiple conditions.

For example, if you have a condition that contains the services A and B as A,B, duplicate the condition into one for service A and one for service B.

- Create a new service that propagates to the comma-separated services.

For example, if you have a condition that contains the services A and B, define a new service C that propagates to services A and B; that is, services A and B depend on the new service C. Replace A,B with C in your condition.

#### ❑ Propagation Rules “setto” for Severity Normal

With version A.05.xx, a setto propagation rule did not propagate, if the service status was normal. This behavior changed with A.06.00: a setto propagation rule now always propagates. To recreate the previous behavior, set up a propagation rule similar to the following:

```
<PropRule>
  <Name>prop_setto_no_normal</Name>
  <Prop><!-- default rule -->
    <SetTo>Warning</SetTo>
  </Prop>
  <Prop><!-- for normal not to propagate -->
    <Normal/>
    <Unchanged/>
  </Prop>
</PropRule>
```

#### ❑ Relative Threshold Values for Calculation Rules

Calculation rules now use values between 0 and 1 for relative threshold values; for example, 0.34 (used with A.06.00) instead of 34.0 (used with A.05.xx). Note that the tool `opcsvconv` automatically converts calculation rules to the XML syntax used with ITO version A.06.00. This is done automatically during the

VantagePoint Navigator upgrade process.

---

## What's Fixed with ITO A.06.00?

This section describes the fixes and enhancements that have been incorporated into ITO version A.06.00, see Table 2-1 and Table 2-2 respectively.

**Table 2-1**      **Fixes in ITO Version A.06.00**

<b>Identifier</b>	<b>Description</b>
JAGab73136	opc_backup corrupts the backup if it gets larger than 2GB.
JAGad06171	opcdbsetup greps on old compatible parameter.
JAGad05814	Node not visible in node hierarchies after opccfgupld.
JAGab82557	Message storm causes message browser not to start.
JAGab71368	AIX: invalid shutdown message in message browser.
JAGac68548	The ability to enable/disable the own message functionality is broken.
JAGad02000	ITO 5.33 Solaris agent communicating via firewall hangs at reboot.
JAGab76617	Agt software install process uses bad check in finding dce/ncs process.
JAGab78543	Need support agent patch for AIX 4.3 running HACMP 4.3.
JAGac39999	NCR install fails - uname -s does not return OS type on NCR.
JAGab71372	AIX: confusing error message if LANG not set.
JAGac07209	If opcinfo has length 0, problems during agent re-installation.
JAGac86327	egold - OS check fails preventing managed agent install - uname.
JAGac12371	ITO 5.30 Installation Guide: Upgrade instructions misleading.
JAGac84456	No note in Admin Ref about license if IP address of manager changes.
JAGab71913	ITO agent install using NIS+.
JAGab82148	ITO 5.3 Installation Guide change page 193.
JAGab73071	Invalid return values for opc_connect() listed in the Developer's Ref.
JAGac88610	Wrong/incomplete msg browser refresh after changing msg details.



Table 2-1

Fixes in ITO Version A.06.00

Identifier	Description
JAGad06503	Message counting in View Message Browser does not work correctly.
JAGad02820	Install Guide for ITO 5.0 & 5.30 confusing on DCE requirements.
JAGac40547	Selection mechanism in msg browsers doesn't conform to standard.
JAGad03149	ITO Japanese Java GUI installer and uninstaller are not working.
JAGac07219	Java GUI displays SNMP community string in original message.
JAGab78408	opcchgaddr -force can corrupt database but cannot fix it again.
JAGad05331	Automatic alphabetical sorting in Node Bank severely affects usage.
JAGad03883	Report on Selected Message(s) not working properly.
JAGad05316	Map Properties Compound Status.
JAGac40706	opc_backup fails to start opctrapi on the agent.
JAGab77668	Output of ps -e insufficient for ITO monitor vp_chck.sh.
JAGac86314	Documentation error: Required Service Packs for Windows NT.
JAGac56825	Permissions of opcagt binary lead to ITO errors.
JAGac68549	Some of the MPE/iX agent files are not secured when installed.
JAGad01639	SHLIB_PATH env variable left out of ovoracle (ITO 5.3/Oracle 8.0.5).
JAGac59528	The seconds are truncated from a message when saved to a file.
JAGad01816	Scheduled actions with MPE/iX ITO agent create spoolfiles each time.
JAGab84576	opcconfig doesn't work correctly on Japanese MC/SG environment.
JAGac56663	Two opcerror files on NT managed node.
1653300277	De-install of ITOINST does not remove all files.
1653300251	ITOSTOP stops each time at Netware agent installation.
1653300301	Proper functioning of Netware agent only with OPC_RESOLVE_IP.
1653303875	Use of input parameters in action.

**Table 2-1**                      **Fixes in ITO Version A.06.00**

<b>Identifier</b>	<b>Description</b>
JAGad01197	ServiceNavigator ITO 5.30/Solaris crashes on "GetImpacted Service".
B555005226	opcuiadm exits when application added to Application Bank.

**Table 2-2**                      **Enhancements in ITO Version A.06.00**

<b>Identifier</b>	<b>Description</b>
JAGab76951	Java GUI: Acknowledge All in Current View does not give warning.
JAGad07089	Would like to generate ITO messages when a service changes status.
JAGab73678	Need support for LINUX RedHat 6.
JAGab72388	Looking for flexibility to archive history messages.
JAGab57644	Want default changed from all nodes requiring update to selected.
JAGab76414	Too many applications in popup-menu -> out of window.
JAGac86609	ITO 5.x, utility opcpwcrpt (password encryption) for Windows NT.
5003470419	Request to support AIX/NCS with ITO 5.x.
5003434506	opcbbackup doesn't backup NNM sparse files.
D500430165	Date and time fields off for messages outside of PST8PDT timezone.

---

## Related ITO Products

- ❑ **HP OpenView VantagePoint Navigator** (formerly HP OpenView ServiceNavigator) helps IT operators to easily focus on the business services they provide. The overall view of the IT environment that it provides allows operators to analyze an event in terms of the impact on the overall business service. Operators can see at a glance the operational status of the service environment. The HP OpenView VantagePoint Navigator is available as an add-on product to ITO and runs as part of the Java-based ITO operator user interface.
- ❑ **HP OpenView VantagePoint Advanced Security** (formerly HP OpenView IT/Operations Advanced Network Security) features:
  - Secure communications for managing business-critical and business-sensitive systems, databases, and applications over insecure network infrastructures.
  - An open security model, based on the GSS API, that supports plug-in of other security solutions, in particular the Entrust PKI.
  - Secure communication between the ITO management server and the Java-based operator GUI.
- ❑ **HP OpenView VantagePoint Event Correlation Services (ECS) Designer 3.0 for NNM and ITO:** the GUI-based designer enables development of new event correlation rules.
- ❑ **HP OpenView VantagePoint Developer's Toolkit** (formerly HP OpenView IT/Operations Developer's Toolkit) A devkit for tightly integrating management applications for SNMP devices, systems, databases, and sophisticated business applications into ITO.
- ❑ **HP OpenView VantagePoint SMART Plug-Ins** (formerly HP OpenView SMART Plug-Ins) For detailed information about the OpenView SMART Plug-Ins, please consult your local HP sales representative or see <http://www.openview.hp.com/>.

### Managing Databases

- HP OpenView VantagePoint SMART Plug-In for Informix Dynamic Server
- HP OpenView VantagePoint SMART Plug-In for Oracle Database Servers

- HP OpenView VantagePoint SMART Plug-In for Sybase Adaptive Server
- HP OpenView VantagePoint SMART Plug-In for Microsoft SQL Server

### **Managing Enterprise Resource Planning**

- HP OpenView VantagePoint SMART Plug-In for PeopleSoft
- HP OpenView VantagePoint SMART Plug-In for SAP R/3
- HP OpenView VantagePoint SMART Plug-In for Remedy

### **Managing Microsoft Environments**

- HP OpenView VantagePoint SMART Plug-In for MS Exchange
- HP OpenView VantagePoint SMART Plug-In for Windows+

Additional SMART Plug-Ins for ITO will be announced in the future.

- ❑ The **HP OpenView VantagePoint Reporter** (formerly HP OpenView Service Reporter) provides an affordable, flexible and easy-to-use management reporting solution for the distributed IT environment.
- ❑ The **HP OpenView VantagePoint Performance** products deliver a powerful end-to-end resource and performance management solution. Whether your environment consists of a single system or a large network of systems, the fundamental goal is the same - to offer the best possible level of service in a cost-effective manner.

The HP OpenView VantagePoint Performance Manager and Agents help you achieve this goal by providing a single interface for centrally monitoring, analyzing and forecasting resource utilization for distributed and multi-vendor environments. Furthermore, the VantagePoint Performance Manager seamlessly integrates with HP OpenView VantagePoint Operations.

- ❑ **HP OpenView IT/Operations Special Edition (ITO-SE)** is a single system version of the IT/Operations enterprise solution, enabling OEMs to incorporate customized policy templates for their product, and therefore providing end customers a turnkey management system. ITO-SE is the systems management component for the HP OpenView Ready program.

ITO-SE is also used by the OpenView SMART Plug-Ins to provide a single systems management solution, for example, for Oracle database management. And, it is part of the GlancePlusPak 2000, an integrated product for managing a system's availability and

performance. Note that ITO-SE is not available as a stand-alone product.

- ❑ **Oracle8 for OpenView 8.0.6 (OfO):** OfO is a bundle of the Oracle(R) RDBMS and tools created to serve as a data repository for HP OpenView products. It is assembled to meet the specific configuration requirements of HP OpenView, and is available from HP.

## Information on the HP OpenView Web Pages

- ❑ For more information on ITO and other HP OpenView products check out the HP OpenView web site found at:

<http://openview.hp.com>

- ❑ To access product information on ITO and the ITO-related products, click on Products.

- ❑ For ITO Developer's Toolkit certification requirements, click on Partners, then on Developers and Third Party Applications, and then select Application Certification Program.

For information about the HP OpenView Developer Support program, click on Partners, then on Developers and Third Party Applications, and then select Developer Support Program.

- ❑ For patch information access the following HP OpenView web site:

<http://ovweb.external.hp.com:80/cpe/patches/>

## ITO Certified Products

For a detailed list of NNM and ITO certified products, take a look at the HP OpenView web page at <http://openview.hp.com>, and click on Partners. Then select Solutions Catalog. Please bear in mind that this comprehensive list is frequently updated, and will therefore not be documented in these Release Notes.

In addition, the following HP OpenView products are tightly integrated with ITO:

- ☐ VantagePoint Performance (performance monitoring)
- ☐ ClusterView (MC/ServiceGuard management)
- ☐ IT/Administration (configuration and change)
- ☐ IT Service Manager (service management)
- ☐ OmniBack II (backup and recovery)
- ☐ OmniStorage (storage management)
- ☐ OpenSpool (print management)

---

### NOTE

These products have been integrated with HP OpenView IT/Operations but not necessarily with version A.06.00.

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Note that all HP OpenView Premier and Solution Partner products integrated and certified for use with HP OpenView Network Node Manager also work with ITO.

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# 3

## Known Problems and Workarounds

This section describes any problems with the ITO software that are already known and that could not be fixed for version A.06.00, and where necessary, provides recommended workarounds. The problems are grouped in the following categories:

### ❑ Known Problems in ITO A.06.00

- General ITO A.06.00 Problems
- ITO for Sun Solaris Management Server Problems
- HP-UX Agent Problems
- Linux Agent Problems
- Windows NT/2000 Agent Problems
- ITO Motif-based GUI Problems
- ITO Java-based GUI Problems
- Upgrade and Configuration Upload Problems
- Known Problems with HP OpenView VantagePoint Navigator
- Known Problems with HP OpenView VantagePoint SMART Plug-In for SureStore E Disk Array 256

### ❑ Last Minute Changes to Documentation

- VP Operations Installation Guide for the Management Server on Sun Solaris
- VP Operations Administrator's Reference Volume II
- Man Page opctmpldwn(1M)
- XP256-SPI Administrator's Reference

See the following URL for information about NNM-related problems:

```
file:/opt/OV/www/htdocs/C/ReleaseNotes/\
ReadmeKnownProblems_NNMGR.html
```



## Known Problems in ITO A.06.00

### General ITO A.06.00 Problems

#### 1. Symptom

When switching the internal codeset of a managed node while templates in the old codeset are distributed on the node, the conversion of the old templates to the new codeset may fail.

#### Solution

Redistribute the assigned templates to the managed nodes with the [Force Update] option enabled in the Install/Update ITO Software and Configuration window.

#### 2. Symptom

The state-based browser functionality may not work correctly, if you have duplicate message suppression enabled on the management server, and, at the same time, unacknowledge already acknowledged messages: in this case, both the previously acknowledged and the acknowledging message appear in the browser. Subsequent duplicate messages are then counted as duplicates of either the acknowledged or the acknowledging message.

#### Solution

Check the Time Last Received on Mgmt. Server field in the Message Details window and acknowledge the older message.

#### 3. Symptom

The message manager (opcmsgm) aborts with segmentation violation when using case-insensitive pattern matching within the relation definition of bad/good message correlation.

#### Solution

Don't uncheck the Case Sensitive Check checkbox in the Message Correlation window.

#### 4. Symptom

When starting the management server processes, opccerror may report problems like:

Cannot open pipe .../svcengmsgadptp. ... Or,  
opcsvcm(1506) [dispmapi.c:341]: Can't connect to ...

#### Solution

These errors can be safely ignored. The connections will be established correctly.

#### 5. Symptom

The ITO license forms in  
/etc/opt/OV/share/conf/OVLICENSE/forms/opc do not contain  
all available licenses for ITO.

#### Solution

The missing licenses are:

VantagePoint:

B7442AA "OV VP Multi-Vendor Mgmt. LTU"

VantagePoint Operations:

B7443AA "OV VP Oper. Multi-Vendor Mgmt. LTU"

VantagePoint and VantagePoint Operations:

B7488AA "OV VP Multi-Vendor Upg from ITO/MW Agent LTU"

B7433AA "OV VP Upg from ITO/MW Agent Tier 3 LTU"

B7434AA "OV VP Upg from ITO/MW Agent Tier 2 LTU"

B7435AA "OV VP Upg from ITO/MW Agent Tier 1 LTU"

B7436AA "OV VP Upg from ITO/MW Agent Desktop LTU"

The product numbers are the same for HP-UX and Sun Solaris.

#### 6. Symptom

Operator-initiated actions from conditions of the opccmsg for VP Performance template that call the pv.sh script (PerfView), indicate that they finished successfully but the PerfView GUI never comes up. (Note that PerfView has to be installed on the system as a prerequisite for this to work at all.)

- a. On the management server, locate the `pv.sh` script in the appropriate directory for your platform:

```
/var/opt/OV/share/databases/OpC/mgd_node/customer/
```

- b. Insert the following line:

```
exec 1>/dev/null
```

before the line calling `PerfView`:

```
$PV $GRAPH $OPTIONS -system $NODE_NAME
```

- c. Redistribute the actions. After the distribution, the actions are located in `/var/opt/OV/bin/OpC/actions` on the managed node.

### **Solution**

Manually edit the `pv.sh` script:

## **ITO for Sun Solaris Management Server Problems**

### **1. Symptom**

After rebooting the system, you cannot start the ITO GUI.

### **Solution**

After rebooting the system, the CDE desktop manager is started before the ITO processes. You can log in to the system (at the time) when the ITO processes are still starting. The CDE desktop starts too early by default (at the end of run level 2, while ITO starts in run level 3).

Therefore, you must either:

- a. Check if all ITO processes are started before you start the ITO GUI:

```
/opt/OV/bin/OpC/opcsv -status
```

or

- b. Ask your system administrator to adjust the CDE desktop run level. The ITO run level can not be altered because of various external factors.

Your system administrator must move the  
`/etc/rc2.d/S99dtlogin` file to `/etc/rc3.d/S99dtlogin`.

## 2. Symptom

Japanese text is not correctly displayed in a terminal emulator window (for example in `dtterm`).

### Solution

When starting a new terminal emulator, ITO sets the `LANG` variable according to the character set specified for a particular node. Once the virtual terminal is started in, for example `SJIS` codeset, the terminal is not able to correctly display text in `EUC` codeset and vice versa. The problem is a terminal emulator limitation and no workaround is available.

## 3. Symptom

The installation of ITO A.06.00 on Sun Solaris fails. The `install` script reports incomplete Oracle shared library and aborts.

### Solution

The Oracle 8.0.6 library includes unresolved symbols. To solve the problem you will have to:

- a. Edit `$ORACLE_HOME/bin/genclntsh` and add a hash (#) to the following line (normally line 145):

```
# ar d $LIBCOMMON sorapt.o
```

- b. Run

```
$ORACLE_HOME/bin/genclntsh
```

## 4. Symptom

Error message in `/var/adm/sw/swagent.log` file:

```
inetd: couldn't find ISTATE environment variable.  
Try -s flag.
```

When removing and unconfiguring the  
`OVOPC-WWW.OVOPC-WWW-ORA` filesset, the Internet services daemon  
(`inetd`) failed to reread its configuration file modified during the

execution of the `unconfigure` script for this fileset.

### **Solution**

Force the Internet services daemon (`inetd`) to reread its configuration file by sending it the `SIGHUP` signal. As user `root`, do the following:

- a. Find out the process id (pid) of the `inetd` process:

```
ps -eaf | grep inetd
```

- b. Send the `inetd` process a `SIGHUP` signal:

```
kill -s HUP <pid>
```

where `<pid>` is the `inetd`'s process id obtained in step a.

## **5. Symptom**

When upgrading the NNM installation, the following errors are written to the `/var/adm/sw/swagent.log` file:

```
ERROR: The swpackage command will not convert a target depot with a layout_version of 1.0 into 0.8 even if the layout_version option has been set to 0.8.
```

### **Solution**

You may safely ignore these error messages. You can also edit the file `/var/adm/sw/defaults` and remove the line `layout_version=0.8`. This prevents the error messages from being written to the file.

## **6. Symptom**

`opccnfig` reports the following error message, if Oracle user has `csh` set as user's shell:

```
ERROR: Error occurred calling svrmgrl.  
ERROR: Cannot connect to database opview8.  
/var/opt/OV/log/sqlldb_log  
Output of svrmgrl:  
@/tmp/connect_test.sql\nexit: Command not found
```

`opcdbsetup` reports the following error message, if Oracle user has set `csh` as user's shell:

```
SVRMGR> MGR-01507: unable to open file
/tmp/connect_test.sqlnexit
SVRMGR>
```

### **Solution**

At least during `opccnfig`, `csh` must not be used as Oracle's login shell. To avoid the problem, modify user's Oracle account to use `sh` or `ksh` as a login shell.

## **7. Symptom**

In Sun Cluster High Availability Environments, at least one of the network interfaces can be migrated - the one that is configured for a logical host. If the interface cannot be migrated and the interface moves to another system during the logical host reconfiguration, `netmon` interprets this as the interface being physically changed. It will merge the nodes and re-poll each. This implies that after the switchover, the old node is deleted, and even if the node is re-added, its location on maps will be affected. If an `Ovw` map has been built and if cluster nodes have multiple IP addresses (excluding the logical IP address), the nodes will be placed at the Internet level. After the switchover, the node from which the switchover started will be deleted

### **Solution**

The node can be re-added after the switchover or failover, but even then the problem exists that its location on maps will be affected. If containers are used, then the node is re-added at the highest level. An NNM patch may solve this problem in the future.

## **8. Symptom**

SNMP agent installation fails to copy `naa.cnf` file to the `/etc/SnmpAgent.d` directory which may cause slow responsiveness of the SNMP agent.

### **Solution**

Copy the file manually from  
`/opt/OV/newconfig/SUBAGT-NAA/naa.cnf` to  
`/etc/SnmpAgent.d:`

```
cp /opt/OV/newconfig/SUBAGT-NAA/naa.cnf \  
/etc/SnmpAgent.d/naa.cnf
```

This may also be solved with a future SNMP Agent patch.

## 9. Symptom

netmon is not started during opccconfig; ovstart reports the following error:

```
WARNING: Following services are not running: netmon  
ERROR: HP OpenView Platform couldn't start correctly.  
Check all your previous steps and start this script  
again.  
Do you want to continue the configuration (y/n) ? y
```

## Solution

Start netmon manually and continue with the configuration:

```
ovstart netmon
```

## 10. Symptom

Some ECS circuit templates with ASCII character encoding produce a warning message on Japanese management servers:

```
WARNING: Circuit with character encoding ASCII may have  
unpredictable results in the current locale.
```

## Solution

This warning can be ignored because ECS circuit is loaded without problems and the template verification is successful.

## 11. Symptom

Some scripts in the directory /opt/OV/OpC/examples/services do not work correctly and report awk syntax errors.

## Solution

Before executing any of these scripts, set and export the PATH variable to include /usr/xpg4/bin as the first entry in the search path:

```
export PATH=/usr/xpg4/bin:$PATH
```

## General Agent Problems

### 1. Symptom

When using a port range restriction for Digital UNIX/Tru64 UNIX agents, opcagt might abort.

#### Solution

Modify the script `/opt/OV/bin/OpC/opcagt`, and change the line:

```
export RPC_RESTRICTED_PORTS=ncacn_ip_tcp  
[ $RANGE ] :ncadg_ip_udp[ $RANGE ]
```

to:

```
RPC_RESTRICTED_PORTS=ncacn_ip_tcp[ $RANGE ] :  
ncadg_ip_udp[ $RANGE ]  
  
export RPC_RESTRICTED_PORTS
```

## HP-UX Agent Problems

### 1. Symptom

The agent software installation fails on HP-UX 11.0 managed nodes because of lack of disk space, although the installation script verified that enough space is available.

#### Solution

Make sure that at least 35MB of disk space is available on the managed node. Note that the numbers given in the *VP Operations Administrator's Reference Volume II* are incorrect.

## Linux Agent Problems

### 1. Symptom

The makefile `/opt/OV/OpC/examples/progs/Makef.linux` states that the environment variable `LD_LIBRARY_PATH` should be set to `/opt/OV/lib` at runtime.

#### Solution

This is incorrect. The environment variable `LD_LIBRARY_PATH`



should be set to `/opt/OV/lib` at compile time in order to compile example API programs on Linux managed nodes.

## 2. Symptom

When upgrading an ITO Linux agent from version A.05.xx to A.06.00, the A.05.xx agent configuration is removed.

## Solution

The A.05.xx configuration has been removed from the node. Distribute the templates, monitors, commands, and actions when installing the agent software.

# Windows NT/2000 Agent Problems

## 1. Symptom

On Windows 2000 systems running NNM 6.1, the ITO event interceptor aborts when an SNMPv2 trap comes in.

## Solution

Restart the agent.

## 2. Symptom

On Windows NT/2000 systems, when upgrading an ITO agent from version A.05.xx to A.06.00, the A.05.xx agent configuration is removed.

## Solution

The A.05.xx configuration has been removed from the node. Distribute the templates, monitors, commands, and actions when installing the agent software.

# ITO Motif-based GUI Problems

## 1. Symptom

Starting the MIB Application Builder from the ITO administrator or the Motif-based operator GUI does not work; an error message is displayed.

### **Solution**

To build MIB applications, start `/opt/OV/bin/ovw` directly from the command line.

## **ITO Java-based GUI Problems**

### **1. Symptom**

When owning or disowning a message in the Java-based operator GUI, the following message is displayed:

```
There was a problem own/disown message(s) after the
communications link was established.
```

### **Solution**

The operator is not allowed to own/disown messages. If the operator should have this capability, modify the user using the ITO administrator GUI.

### **2. Symptom**

When using the Java-based GUI on HP-UX, the Time column in the Message Browser may display the incorrect time for the messages.

### **Solution**

This happens when your locale is set to a time zone different from your HP-UX system time. The problem is caused by JRE version 1.1.8 on HP-UX 10.20 which uses the time zone set by the locale. The problem is fixed with JRE version 1.2 for HP-UX 11.0. In the meantime, use the Java-based GUI on another supported platform or use the Motif GUI. Note that the messages in the ITO database have the correct time.

### **3. Symptom**

On Windows 95 and 98, you receive an error message in your web browser when trying to start the online documentation supplied with the Java-based GUI or when starting web applications.

### **Solution**

The browser path in the Preferences screen contains double backslashes (`\\`). Remove one of the backslashes and restart the

online documentation or the web application.

#### 4. Symptom

Help: Contents is selected but no Internet browser can be started; the path to the online documentation in the open information box is incorrect.

#### Solution

The correct URL is:

```
http://<mgmt_sv>:8880/ITO_OP/help/<lang>/index.htm
```

where <mgmt\_sv> has to be replaced with the name of your management server and <lang> with the desired language.

If you specify the path to your web browser in the Edit: Preferences dialog, your web browser will be started and the information box will not be displayed.

#### 5. Symptom

The opcuwww process is killed, then the ITO: Working... boxes pop up every few seconds.

#### Solution

Close all open Java-based GUIs *before* stopping opcuwww. Or, increase the refresh interval of the Java-based GUI. The box pops up only once when running the Java-based GUI on Windows NT.

## Upgrade and Configuration Upload Problems

#### 1. Symptom

When running opccfgupld, you receive the following error:

```
+ uploading operators
Database: ORA-02292: integrity constraint
(OPC_OP.OPC_OP_SERVICES_1_FK) violated - child record
found (OpC50-15)
```

#### Solution

There are old entries in the table `opc_op_services` that have a foreign key reference to the operator table.

- a. Remove these entries with the `svrmgrl` tool as user `oracle`:

```
# su - oracle
$ svrmgrl
SVRMGR> connect internal
SVRMGR> truncate table opc_op.opc_op_services;
SVRMGR> exit
```

b. Restart the configuration upload.

## 2. Symptom

After the upgrade from A.05.xx to A.06.00, the ITO administrator does not have the new application group X-OVw assigned.

### Solution

Manually assign the application group X-OVw to the ITO administrator after the upgrade is complete.

## 3. Symptom

opccfgupld has an internal problem when started in the locale C.iso88591, for example, when setting LANG=C.iso88591.

### Solution

Set LANG=C and make sure that no other LC variable such as LC\_MESSAGES is set to C.iso88591, export the variables and then start opccfgupld.

## 4. Symptom

When uploading the ITO A.05.xx configuration into ITO A.06.00 you may see errors similar to the following:

```
06/28/00 03:35:14 opccfgupld ITO Configuration
Upload(26949) [node_lset.scp:236]:
Node found in database with different IP address.
(OpC54-516)
```

### Solution

The warnings have no effect and can be happily ignored.

## 5. Symptom

New agent platforms can not be used after uploading data from a previous version of ITO with  
opccfgupld -replace.

## **Solution**

`opccfgupld -replace` removes node defaults that are not in the download data.

To avoid this problem, use `opccfgupld -replace -subentity` to upload data from previous ITO versions.

If you have already performed the upload and experienced the problem, you can use the following steps to reload the definition of the new agent platforms:

```
opcagtdbcfg -p linux/intel/linux -d -f
```

```
opcagtdbcfg -p linux/intel/linux22 -d -f
```

## **Known Problems with HP OpenView VantagePoint Navigator**

### **1. Symptom**

The first assignment of a service to an operator who does not yet exist in the service engine, is not performed correctly. The operator is notified of the configuration changes by the Java-based GUI, but the same configuration as before is displayed.

## **Solution**

This happens only if the operator is logged into the Java-based GUI while the service is assigned. To work around this problem:

- a. Make sure that the operator is logged out of the Java-based operator GUI.
- b. Use `opcservice` to assign the service to the operator.
- c. Once the service has been assigned, log into the Java-based operator GUI and verify that all assigned services are displayed.

### **2. Symptom**

After having replaced a service that was assigned to an operator, the assignment no longer exists. Assignments of subservices are not removed.

### **Solution**

Reassign the service after the replace operation.

### **3. Symptom**

VantagePoint Navigator uses UTF8/Unicode internally as codeset to represent the service data. If non-English (codeset ISO8859-1) service data is loaded into the service engine, `opcservice` does not correctly output this data with `-list` operations. In addition, when `opcservice` is started in locales that do not use ISO8859-1, for example, `ja_JP.SJIS` for Japanese, the output is unreadable in standard terminals.

### **Solution**

Convert the output of `opcservice` with the `iconv` program. The data is converted from UTF8 to the codeset of the locale `opcservice` is started in, for example, Shift-JIS for Japanese:

```
opcservice -list ... | iconv -f utf8 -t sjis
```

### **4. Symptom**

Default propagation rules are not correctly written to the service engine's service repository, if the propagation rule has both a default rule and severity-specific rules. Propagation rules with only a default rule are not impacted.

### **Solution**

Don't mix default rules with severity-specific rules. Use either the default rule only, or severity-specific rules only.

### **5. Symptom**

When a service for which logging has been enabled is removed and the service engine is restarted, the engine crashes and is not able to restart.

### **Solution**

Manually remove the service log registrations for which services no longer exist:

- a. Open the following file in an editor:

```
/etc/opt/OV/share/conf/OpC/mgmt_sv/opcsvcm/loggings
```

- b. Locate the registrations and remove them. Make sure to remove complete `<Logging>...</Logging>` blocks.

This is an internal file and any wrong modification may stop the service engine from restarting. If you are unsure, remove the entire file, restart the service engine, and re-enable logging for services.

## **Known Problems with HP OpenView VantagePoint SMART Plug-In for SureStore E Disk Array 256**

### **1. Symptom**

XP256-SPI service tree is not visible in VantagePoint Navigator. Operators lose their XP256-SPI service assignment after running the service discovery.

#### **Solution**

Assign your operators manually:

- a. Open the script `/opt/OV/XP-SPI/etc/xpspidiscovery` in your favorite editor.
- b. Locate the line `# Add here your operators and add your operators`. Save your modifications.
- c. Start the application `Discover XP`.

### **2. Symptom**

Messages of the XP256-SPI do not appear in the message browser after the installation.

#### **Solution**

The installation uploads an external node `All XP256` during the installation. The management server processes must be restarted to get the new configuration, enter:

```
opcsv -start
```

### **3. Symptom**

The initial service discovery fails during the installation.

### **Solution**

The management server processes must be running during the installation of the XP256-SPI, because the installation performs the initial service discovery:

- a. Start the management server processes, enter:

```
opcsv -start
```

- b. Start the initial discovery, enter:

```
/opt/OV/XP-SPI/etc/xpspidiscovery -main
```

### **4. Symptom**

When starting the Start RC Service or Stop RC Service application, you may receive the following error message:

```
ERROR: Could not start/stop service: RMC_SRV!  
Reason: The system could not find the environment option  
that was entered.
```

### **Solution**

The error message is misleading. Use the application RC Status to verify that the Remote Console Service is running.



## **Last Minute Changes to Documentation**

The following changes could not be included in the manuals or online help of ITO version A.06.00.

### **VP Operations Installation Guide for the Management Server on Sun Solaris**

#### **Prerequisites for Installation of the Management Server on Sun Solaris**

The following change could not be included in Chapter 1, Table 1-10 Required Solaris OS Patches.

The patches:

Solaris Version: Solaris 7

Patch No: 106327-08 or later

Description: Shared library patch for C++

and

Solaris Version: Solaris 8

Patch No: 108714-01 or later

Description: CDE 1.4: libDtWidget patch

should be added to a list of Required Solaris OS Patches (documented in Chapter 1, Table 1-10 Required Solaris OS Patches).

#### **Installing and Checking an Oracle Database**

The text in Chapter 2, section “Preparing for an Oracle Database Installation” step 2 e) should be replaced by the following:

Recommended login shell for the Oracle user’s account is Korn shell (`ksh`).

---

**NOTE**

When running `opcconfig` or `opcdbsetup` to configure the ITO database, the C shell must not be used for Oracle user's account. At least temporarily, the Korn shell (`ksh`) or Bourne shell (`sh`) must be used.

---

## VP Operations Administrator's Reference Volume II

"Linux Managed Nodes" chapter on page 145: step 2 in the section "Manual De-installation of the ITO Software from Linux Managed Nodes" is not required.

### Man Page `opctmpldown(1M)`

The man page `opctmpldown(1M)` is incomplete. Use the following instructions to encrypt ITO templates:

1. Create an encryption key for the templates on the target node:

```
opcsvskm -create -t  
<fully_qualified_hostname_of_mgd_node>
```

2. Create the templates:

```
opctmpldown <fully_qualified_hostname_of_mgd_node>
```

3. Export the key to be transferred to target node:

```
opcsvskm -export -t  
<fully_qualified_hostname_of_mgd_node> > <keyfile>
```

4. Change to the directory where the data is stored on the management server:

```
cd /var/opt/OV/share/tmp/OpC/  
<fully_qualified_hostname_of_mgd_node>
```

This directory contains the encrypted template files.

5. Install the templates on the managed node:

- a. Stop the ITO agents on the node.
- b. Copy the encrypted template files to the target location; for example to `/var/opt/OV/conf/OpC` on UNIX platforms.
- c. Copy `<keyfile>` to the target node and install the key:

```
opcskm -import -t  
<full_qualified_hostname_of_mgd_node> < <keyfile>
```

- d. Restart the ITO agents on the node.

opctmpldwn lets you encrypt ITO message source templates on the management server and copy them to their target location on the managed nodes. This is useful if you can not or do not want to use the standard ITO template distribution mechanism.

## **XP256-SPI Administrator's Reference**

Table 2-1 on page 23 of the *XP256-SPI Administrator's Reference* contains an error: the HP-UX version in the OS column should read 10.20 instead of 11.20.



---

## **4      Compatibility and Installation Information**

This chapter describes:

- ❑ Management Server Platforms and OS Supported with ITO
- ❑ Database Versions Supported with ITO
- ❑ Agent Platforms and OS Supported by ITO A.06.00
- ❑ Obsolescence with ITO A.06.00 for Sun Solaris
- ❑ Obsolescence Announcements for the Next Major ITO Release
- ❑ Required Software and Patches
- ❑ Installing ITO A.06.00 for Sun Solaris
- ❑ Supported Upgrades to ITO A.06.00
- ❑ Compatibility

**Management Server Platforms and OS  
Supported with ITO A.06.00 for Sun Solaris**

The following platforms and OS are supported with ITO A.06.00 for Sun Solaris.

**Table 4-1** Management Server Platforms and OS supported with ITO A.06.00 for Sun Solaris, English and Japanese Environment

Platform	OS	Supported OS Versions
Sun Ultra Workstations and Sun Ultra Enterprise Servers	Solaris (minimum Developer System Support installation)	7, 8

---

## **Database Versions Supported with ITO A.06.00 for Sun Solaris**

The following database versions are supported with ITO A.06.00 for Sun Solaris:

- ☐ Oracle8 Database 8.0.6 for Sun SPARC Solaris
- ☐ Oracle8 Database 8.1.6 for Sun SPARC Solaris



## Agent Platforms and OS Supported with ITO A.06.00 for Sun Solaris

**Table 4-2**                      **Supported Agent Platforms, English Environment**

<b>Operating System</b>	<b>Platform</b>	<b>Supported OS Versions</b>	<b>Supported Communication Types<sup>a</sup></b>
Solaris	Sun SPARC	2.5.1, 2.6, 7 and 8	DCE/NCS
Windows NT <sup>b</sup>	Intel 486 or higher	4.0 (NT server and workstation)	DCE <sup>c</sup>
Windows 2000 <sup>b</sup>	Intel Pentium	5.0 (Professional and Server Family)	DCE <sup>c</sup>
HP-UX	HP 9000 Technical Workstations and HP 9000 Enterprise Servers <sup>d</sup>	10.20, 11.0	DCE
AIX	IBM RS/6000 BULL DPX/20	4.2, 4.3.1, 4.3.2 and 4.3.3	NCS/DCE
RedHat LINUX	Intel 486 or higher <sup>e</sup>	5.1, 5.2, 6.0, 6.1	DCE
Novell NetWare	Intel 486 or higher	4.1, 4.11, 4.11 SFT III, 5.0 and 5.1	EZRPC <sup>f</sup>
IRIX	SGI	6.2, 6.4, 6.5	NCS

**Table 4-2 Supported Agent Platforms, English Environment**

Operating System	Platform	Supported OS Versions	Supported Communication Types <sup>a</sup>
Digital UNIX Tru64 UNIX	DEC Alpha	4.0D 4.0E, 4.0F, 5.0A	DCE

- a. DCE is not included with the operating system for the following agent platforms:  
 Linux (to be downloaded from a Linux web site)  
 Solaris (supplied with the ITO agent software)  
 Novell NetWare (EZ-RPC supplied with the ITO agent software)  
 DCE is included with the operating system for all other platforms that support DCE (but may have to be installed separately as an optional product).
- b. ITO does not support advanced features or additional software products of the Microsoft Windows NT/2000 operating system; for example Microsoft Cluster Server.
- c. ITO supports the Remote Procedure Calls (RPCs), but not the security features.
- d. ITO uses the same binaries as for HP 9000 Technical Workstations.
- e. See <http://www.redhat.com/support/hardware> for a list of platforms that are compatible with Linux RedHat.
- f. Transport Independent Remote Procedure Call.

**Table 4-3 Supported Agent Platforms, Japanese Environment**

Operating System	Platform	Supported OS Versions	Supported Communication Types <sup>a</sup>
Solaris	Sun SPARC	2.5.1 (EUC), 2.6 (S-JIS and EUC) 7 (S-JIS and EUC) and 8 (S-JIS and EUC)	DCE/NCS
Windows NT <sup>b</sup>	Intel 486 or higher	4.0 (NT server and workstation)	DCE <sup>c</sup>
Windows 2000 <sup>b</sup>	Intel Pentium	5.0 (Professional and Server Family)	DCE <sup>c</sup>

**Table 4-3**                      **Supported Agent Platforms, Japanese Environment**

<b>Operating System</b>	<b>Platform</b>	<b>Supported OS Versions</b>	<b>Supported Communication Types<sup>a</sup></b>
HP-UX	HP 9000 Technical Workstations and HP 9000 Enterprise Servers <sup>d</sup>	10.20, 11.0	DCE

- a. DCE is not included with the operating system for the following agent platforms:  
Solaris (supplied with the ITO agent software)  
DCE is included with the operating system for all other platforms that support DCE (but may have to be installed separately as an optional product).
- b. ITO does not support advanced features or additional software products of the Microsoft Windows NT/2000 operating system; for example Microsoft Cluster Server.
- c. ITO supports the Remote Procedure Calls (RPCs) but not the security features.
- d. ITO uses the same binaries as for HP 9000 Technical Workstations.

---

## Obsolescence with ITO A.06.00 for Sun Solaris

### Obsolete Management Server Platforms

The following management server platform is no longer supported with ITO A.06.00 for Sun Solaris:

- ☐ Sun Solaris 2.6

### Obsolete Database Versions

The following database versions are no longer supported with ITO A.06.00:

- ☐ Oracle 7.3.4
- ☐ Oracle 8.0.5
- ☐ Oracle version 7.3.4 Workgroup Server (supported with the ITO Developer's Toolkit only)

### Obsolete Agent Platforms

Table 4-4                      Obsolete Versions of Agent Platforms with ITO A.06.00 (English)

Platform	Operating System	Obsolete OS Versions
HP 9000 Technical Workstations and HP 9000 Enterprise Servers	HP-UX	10.01, 10.10
Sun Ultra	Solaris	2.5
Intel 486 or higher	Windows NT	3.51 (NT server and workstation)
IBM RS/6000	AIX	4.1

**Table 4-5**                      **Obsolete Versions of Agent Platforms with ITO A.06.00 (Japanese)**

Platform	Operating System	Obsolete OS Versions
HP 9000 Technical Workstations and HP 9000 Enterprise Servers	HP-UX	10.10

## Obsolete VantagePoint Navigator Features

The following features of VantagePoint Navigator are no longer supported with A.06.00:

- ☐ Name spaces.
- ☐ Non-global objects, for example actions or services.
- ☐ Comma-separated service name lists in the Service Name field in the ITO administrator GUI.

## Obsolete Miscellaneous

- ☐ NFS diskless cluster environments
- ☐ Agent library compatibility link from `libopc.sl` to `libopc_r.sl` on HP-UX 10.x.
- ☐ The following API functions have become obsolete with ITO A.06.00:
  - `opcmsg_get_annotations()`  
This API has been replaced with the function `opcanno_get_list()`.
  - `opcmsg_add_annotation()`  
This API has been replaced with the function `opcanno_add()`.
  - `opcapp_start()`  
This API has been replaced with the function `opcappl_start()`.
  - `opcconf_get_nodes()`  
This API has been replaced with the function `opcnode_get_list()`.

## Obsolescence Announcements for the Next Major ITO Release

### Agent Platform Obsolescence Announcement

The following agent platforms and agent platform versions will no longer be supported with the next major release of ITO for Sun Solaris:

- ☐ AIX 4.2
- ☐ Linux RedHat 5.x
- ☐ Solaris 2.5.1

### Database Version Obsolescence Announcements

The following database versions will no longer be supported with the next major ITO release for Sun Solaris:

- ☐ Oracle version 8.0.6 Enterprise Server

### Other

The following will no longer be supported with the next major release of ITO:

- ☐ Motif-based operator GUI.

The Motif-based operator GUI will no longer be further developed and enhanced with the next releases of ITO. This means that new features will only be implemented for the Java-based operator GUI and not for the Motif-based operator GUI. The Motif-based GUI will enter into maintenance mode and may become obsolete with a future release of ITO.

- ☐ The DLLs `libopc.dll` and `opcapi.dll` will no longer be available in the directory `\usr\OV\bin\OpC\{intel,alpha}` with the next major release. With the next release of ITO, the DLLs will only be located in `\usr\OV\bin\OpC`.
- ☐ A.05.xx service configuration file syntax; the syntax has been replaced with an XML-based syntax with A.06.00. A.05.xx

configuration files are converted automatically.

- ❑ Running the Java-based GUI on Windows 95.

---

## Required Patches for Sun Solaris Management Server

The following patches must be installed on the ITO management server in addition to the software requirements documented in the *VP Operations Installation Guide for the Management Server on Sun Solaris*.

---

### TIP

It is also recommended that you install the latest NNM 6.1 patches available from:

<http://ovweb.external.hp.com:80/cpe/patches/nnm/nnm.html>

---

**Table 4-6** Required Solaris OS Patches

Solaris Version	Patch No.	Description
Solaris 7	Year 2000 Compliance Patches	Solaris Year 2000 Compliance patches  Although, not all listed are required for ITO, it is recommended to install all of them in order to make your system fully Year 2000 compliant
	106327-08 or later	Shared library patch for C++
Solaris 8	108949-02 or later	CDE 1.4: libDtHelp/libDtSvc patch.
	108714-01 or later	CDE 1.4: libDtWidget patch.



## Required Patches for the Java-based Operator GUI

It is essential that the following Solaris operating-system patches are installed on the system where the Java-based operator GUI is running:

**Table 4-7** Required Solaris OS Patches for Java GUI

Solaris Version	Patch ID	Description
Solaris 7	106980-10	Libthread Patch.
	107636-03	X Input & Output Method Patch.
Solaris 7	107081-11	Motif 1.2.7 and 2.1.1: Runtime library patch for Solaris 7.
	108376-03	Open Windows 3.6.1 Xsun Patch.
Solaris 8	No patches are required.	

---

### TIP

HP recommends that you also install the latest HP-UX patches for JRE to take advantage of the latest JRE performance improvements. They can be downloaded for free from the following web site:

<http://www.unixsolutions.hp.com/products/java/index.html>

Then click on Download free Java software for HP-UX.

---

## Required Software and Patches for HP-UX Managed Nodes

### ☐ HP-UX 10.20 managed nodes

- PHSS\_19739 (HP DCE/9000 1.5 patch)

### ☐ HP-UX 11.0 managed nodes

- DCE/9000 Kernel Threads Support (DCE-KT-Tools)

DCE-KT-Tools, which is available from the HP-UX Application CDs, contains a runtime library for kernel threads which ITO requires in order to run. To install the product, start the swinstall GUI of SD-UX, change the software view to Start with Products,

and choose DCE-KT-Tools to begin the installation. DCE-KT-Tools is licensed with the HP-UX OS.

## Installing ITO A.06.00 for Sun Solaris

The table below shows where to find installation information if you are installing ITO A.06.00 for the first time. Before installing ITO, make sure that the system you select as ITO management server meets the hardware and software requirements listed in these *VP Operations Software Release Notes* and in the *VP Operations Installation Guide for the Management Server on Sun Solaris*. In particular, make sure that all required patches are installed.

Table 4-8                      Installation of ITO A.06.00 for Sun Solaris

To install:	Refer to:
ITO version A.06.00 (English language)	<i>Installation Guide for the Sun Solaris Management Server</i> Chapters 1 and 2 HP part number: B7491-90006
ITO version A.06.00 (Japanese language)	<i>Installation Guide for the Sun Solaris Management Server</i> Chapters 1 and 2 HP part number: B7491-99006

---

## Supported Upgrades to ITO A.06.00 for Sun Solaris

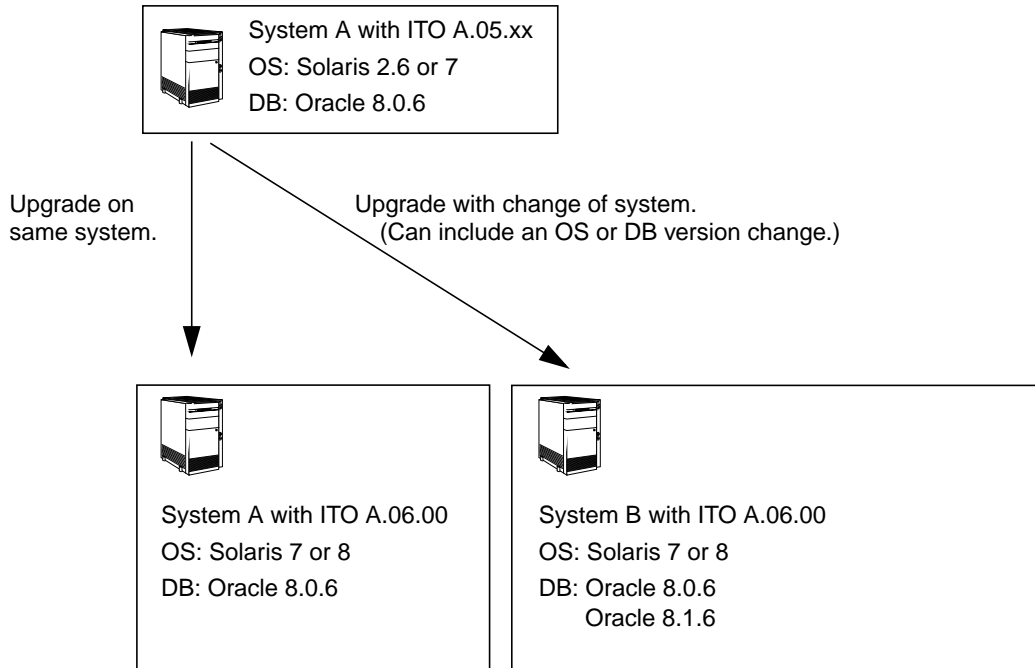
The table below shows where to find upgrade information if you are upgrading from an existing ITO version A.05.xx installation to ITO A.06.00.

**Table 4-9** Upgrading ITO A.05.xx to ITO A.06.00

Upgrading From:	Upgrading To:	Refer To:
ITO A.05.xx (English language)	ITO A.06.00	<i>Installation Guide for the Sun Solaris Management Server</i> , Chapter 7. HP part number: B7491-90006
ITO A.05.xx (Japanese language)	ITO A.06.00	<i>Installation Guide for the Sun Solaris Management Server</i> , Chapter 7. HP part number: B7491-99006

In general, you can upgrade ITO on the same system or you can select a new system for the ITO management server. You should choose the latter upgrade path, if you also want to upgrade the operating system and/or the database version. Figure 4-1 on page 77 shows the supported upgrade paths.

**Figure 4-1**      **Supported Upgrade Paths**



Customers using a version of ITO prior to ITO A.05.xx must first upgrade to ITO A.05.xx before they can upgrade to ITO A.06.00. In addition, you will need to ensure that the correct operating system and the correct version of the database are installed *before* starting the ITO software upgrade process. For more information, see the *VP Operations Installation Guide for the Management Server on Sun Solaris*.

---

**NOTE**

If you have a product installed that is integrating or is certified with ITO A.05.xx, for example HP OpenView IT/Administration or a SMART Plug-In, you must ensure that this product is also compatible with ITO version A.06.00 before starting the ITO upgrade process. See the documentation of the integrating product for information about how to perform the ITO upgrade in this situation

---

## **ITO Management Server Upgrade for NNM**

If you already have NNM version 6.1, you are able to purchase the license-to-use ITO A.06.00 for Sun Solaris management server product. This product provides integration of your NNM product with ITO, which results in a full blown version of ITO A.06.00. Please refer to the *VP Operations Installation Guide for the Management Server on Sun Solaris* for further details.

## Installing XP256 SPI

This section describes the pre-requisites and installation procedure for XP256-SPI.

### Installation Prerequisites

This section describes the prerequisites for the installation of the XP256-SPI. In order to avoid problems during the installation of the XP256-SPI software, it is essential that you read both this section and any other documents that are recommended in this section before you start the installation process. This section covers the following areas:

- ☐ Hardware Requirements
- ☐ Software Requirements

#### Hardware Requirements

For a detailed list of hardware requirements on the:

ITO management server see the *VP Operations Installation Guide for the Sun Solaris Management Server*

ITO managed node see the *VP Operations Administrator's Reference Volume II*

In addition to the requirements listed in these manuals, make sure that the system you select as the ITO management server and managed node meet the disk-space requirements described in Table 4-10.

**Table 4-10** Additional Disk-Space Requirements

Machine	OS	Installation (MB)	Runtime Files (MB)	Total (MB)
ITO Management Server	Solaris 7, 8	10 <sup>a</sup>	1	11
ITO Managed Node	Windows NT 4.0	1	0	1

a. Includes documentation.

---

**NOTE** No additional memory (RAM) is required either on the ITO management server or the managed nodes.

---

**Software Requirements**

See Table 4-11 for an overview of the operating system (OS) platforms supported by XP256-SPI.

**Table 4-11** Supported OS Platforms

	<b>Solaris</b>	<b>HP-UX</b>	<b>Windows NT</b>
ITO Management Server	7, 8	10.20, 11.0	-
ITO Managed Node	-	-	4.0

In addition, the systems on which you want to install the XP256-SPI must have the following software installed:

ITO management server	VantagePoint Operations 6.00 VantagePoint Navigator 6.00
ITO managed node	VantagePoint Operations 6.00 agent Remote Control XP 14.01 or later SVP Microcode v. 52-47-xx or later

---

**NOTE** The ITO agent must be installed and running on the ITO management server *before* you can start the installation of the XP256-SPI. Some XP256-SPI applications are executed via the ITO management server.

In addition, the ITO management server processes must be running *before* you start the installation of the XP256-SPI.

---



## Installing the XP256-SPI Software on Sun Solaris

To install the XP256-SPI software on the ITO A.06.00 management server on Sun Solaris, follow the instructions in this section:

1. Make sure that the management server system where you want to install XP256-SPI meets the hardware and software prerequisites listed in “Installation Prerequisites” on page 79.
2. Ensure that the ITO management server software version A.06.00 has been installed and configured.
3. Log in as user root.
4. Insert the ITO installation CD-ROM into drive. The CD-ROM is mounted automatically on Sun Solaris.
5. Change to the directory on the CD-ROM:  
`cd /cdrom/cdrom0/`
6. Start the ITO installation script, enter:  
`./install`
7. Select whether you want to stop OpenView services. The following information is displayed:  
  
Do you wish to shutdown OpenView ?  
  
Answer **No**.
8. From the terminal window select the bundle `ITOXPSPI`.  
  
In the selection field, enter the number listed beside the software bundle name.
9. After selecting the software bundle enter `i` or `I` to proceed with the installation.
10. Select whether you want to start the analysis part of the installation. The following message is displayed:

You can follow the progress of your installation by viewing the analysis and installation logfiles. This enables you to detect any warnings or errors at an early stage. In a different window, enter:

```
tail -f /var/adm/swagent.log
```

11. Select whether you want to start the ITO XP256-SPI installation. The following information is displayed:

This installation will put the following software on your system:

ITOXPSPI -VantagePoint SMART Plug-In for SureStore E Disk Array 256

Do you want to begin the installation (Y/N)? [Y]

To begin the installation, enter: **y**

## Compatibility

### Agent Version Compatibility

An ITO management server version A.06.00 supports and runs with ITO A.05.xx agents. Note however, that it is strongly recommended to upgrade your managed nodes to ITO version A.06.00 to take advantage of the latest improvements and supported OS versions. You can *not*, however, manage A.06.00 agents with an A.05.xx management server.

As part of a step-by-step migration you can also temporarily install A.06.00 templates, actions, monitors and commands on an A.05.xx managed node if you do not use any of the new features in the new templates; for example, you could assign and distribute A.06.00 templates to an A.05.xx managed node, if you do not use the Message Key field in the templates. You should also ensure that any A.06.00 binaries you are distributing are compatible with the A.05.xx agent. This configuration is only supported as a temporary solution during the ITO migration process.

### Windows NT/2000 Agent

The ITO A.06.00 Windows NT/2000 agent no longer installs the subdirectories `intel`, `alpha`, and `<node>`. This affects, for example, the location of the `opcagt` executable, the location of DLLs, the location of actions, commands, and monitors, and the location of the configuration and `opcerror` files.

#### Arch Directories

The directory for actions, commands, and monitors, for the executables `opcagt.exe` and `opcmon.exe`, and for the DLLs `libopc.dll` and `opcapi.dll` on Windows managed nodes, changed from `\usr\OV\bin\OpC {intel,alpha}\{cmds,actions,monitor}` to `\usr\OV\bin\OpC {cmds,actions,monitor}`

This change could cause problems in the following two areas:

- ❑ Templates, actions, command, monitors, or executables no longer work correctly, if they are using absolute paths. To solve this problem, ITO has provided the following solutions:

- The tool `/opt/OV/contrib/bin/OpC/win_remove_arch` can be used to remove references to the intel or alpha architecture from the ITO database or from scripts. See also

`/opt/OV/contrib/bin/OpC/win_remove_arch -help`.

Note, however, that templates, actions, commands, and monitors can no longer be distributed to an A.05.xx managed node, once `win_remove_arch` has been executed. If you still want to use your existing configuration, use `win_remove_arch` to identify the parts of your configuration that need to be changed and adapt them manually.

- With ITO A.06.00, the current working directory will be set to the path where actions, commands and monitors are found; for example, if the script is found in `\usr\OV\bin\OpC\monitor\mf_service.bat`, the current working directory will be set to `\usr\OV\bin\OpC\monitor`.
- With ITO A.06.00, the directories `\usr\OV\bin\OpC\{cmds,actions,monitor}` are appended to the PATH variable before starting an action, command, or monitor.

- ❑ Executables that load ITO DLLs dynamically by way of APIs will no longer work.

For this release only, the ITO Windows agent duplicates the DLLs `libopc.dll`, `libnsp.dll` and `opcapi.dll` into the directory `\usr\OV\bin\OpC\{intel,alpha}`. Note that this is the case only for this release of ITO; with the next release of ITO, the DLLs will only be located in `\usr\OV\bin\OpC`.

To be compatible with future versions of HP OpenView VantagePoint, for example HP OpenView VantagePoint for Windows, make sure that you use relative paths rather than absolute paths.

## Error Logfile Path

The path of the ITO error logfile `opcerror` has changed from `\usr\OV\log\OpC\<node>\opcerror` to `\usr\OV\log\OpC\opcerror`.

When upgrading Windows managed nodes to A.06.00, it is recommended to use the tool `/opt/OV/contrib/OpC/win_logpath_set` to change the error logfile path in the ITO database. This tool sets the logfile path of Windows managed nodes to `\usr\OV\log\OpC\`; the full hostname of the nodes must be supplied as parameters of the script.

If you are updating a large number of Windows managed nodes, create

an ITO application with the following values:

Application call: `/opt/OV/contrib/OpC/win_logpath_set $OPC_NODES`

Select the option: Start on Management Server

User name: root

## Compatibility in Flexible-management Environments

ITO version A.06.00 is fully compatible in a flexible-management environment that includes version A.05.xx management servers. You can forward and escalate messages between A.06.00 and A.05.xx management servers.

## Application Integration Compatibility

Customer applications using the ITO shared libraries must be linked to ITO using the libraries and link and compile options given in the *VP Operations Administrator's Reference Volume II*. Integration is only supported if this is the case.

## ITO Java-based Operator GUI Compatibility

An ITO version A.06.00 management server is not compatible with a Java-based GUI client whose version is lower than A.06.00; and vice versa. If you are upgrading your ITO management server to version A.06.00, you must also upgrade the Java-based GUI client software. See Chapter 7 of the *VP Operations Installation Guide for the Management Server* for upgrade instructions.

## VantagePoint Interoperability

See the *VP Operations Administrator's Reference Volume I* for more information about:

- ☐ Configuring an agent installed by ITO to be managed by VantagePoint for Windows.
- ☐ Configuring an agent installed by VantagePoint for Windows to be managed by ITO.
- ☐ Configuring the VantagePoint for Windows management server to forward messages to ITO.

- ❑ Importing ITO templates into VantagePoint for Windows.
- ❑ Importing VantagePoint for Windows policies into ITO.

The following VantagePoint for Windows agent features are not supported by ITO:

- ❑ Windows Management Interface policy types.
- ❑ Advanced instance monitoring with Visual Basic Scripting Edition.

## **ITO and ITO-SE Compatibility**

See the *VP Operations Administrator's Reference Volume I* for more information about ITO and ITO-SE compatibility.

Note that a Management Module LTU is required to manage a node from an ITO management server. Please contact your HP Sales Representative for ordering information, or see Chapter 7 of these *Software Release Notes*.

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## **5 Questions and Answers**

This section provides answers to frequently asked questions about ITO, and includes some tips and tricks to make using ITO easier.

### ❑ Tips and Tricks

- Restoring an A.05.xx Backup with `opc_recover`
- Enabling Tracing for the ITO ECS Simulator
- Advanced Usage of the ITO Install Script

### ❑ Things to Watch Out For

- If You Want to Use More Than 20 GUIs at Once ...
- If the X-OVw Applications Don't Work in the Java-based Operator GUI ...
- If the Installation of VantagePoint Performance Agent Fails ...



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## Tips and Tricks

### Restoring an A.05.xx Backup with `opc_recover`

The backup tool used by `opc_backup` and `opc_recover` has changed on HP-UX: `opc_backup` now uses `fbackup`, and `opc_recover` uses `frecover`. This allows ITO to store more than 2GB of data in the backup. These changes, however, require you to perform the following steps when restoring an A.05.xx backup with the new version of `opc_recover`:

1. Drop your A.06.00 ITO database and re-install ITO A.05.xx:
  - a. Stop all running ITO GUIs.
  - b. Stop the OpenView platform and ITO server processes using `ovstop`.
  - c. Drop the ITO database using `opcdbsetup -d`.
  - d. Install the ITO release with which you created the backup, for example A.05.30.
2. Call `opc_recover` to restore the backup.

### Enabling Tracing for the ITO ECS Simulator

The error output for loading input events into the ECS Simulator can be somewhat improved by enabling tracing. To enable tracing, enter the following in a shell before starting the ECS Designer:

```
export ECEVTTRC=/tmp/<input_event_error>
```

where `<input_event_error>` is the name of the trace output file. The trace file stops where an input event causes an error during the loading process.

## Advanced Usage of the ITO Install Script

The ITO Sun Solaris install script can accept and pass special options to the SD `swinstall` command, used by the ITO install script as an installation tool. You can pass the `-x option=value` parameters to alter the behavior of `swinstall`.

For example, if you want to force re-installing a certain bundle, use the following option:

```
install -x reinstall=true -x reinstall_files=true
```

See *swinstall (1)* man page for a description of all available option/value pairs. Use these options with caution, since inappropriate usage can cause various installation problems.

---

## Things to Watch Out For

### If You Want to Use More Than 20 GUIs at Once ...

... you should increase the value of the Oracle parameter `processes`. By default, this parameter is set to 50 which allows up to 50 connections to the Oracle database. Oracle itself uses some of them for its background processes which only leaves enough for up to 20 GUI sessions. If you want to run more than 20 Motif or Java GUI sessions at the same time, carry out the following steps:

1. Exit all ITO GUIs and stop the ITO management server processes:

```
/opt/OV/bin/OpC/opcsv -stop
```

2. Shut down the Oracle database, enter:

```
/sbin/init.d/ovoracle stop
```

3. Change the parameter `processes` in the file `init.ora`. In most cases the name of the file is:

```
$ORACLE_HOME/dbs/initopenview.ora
```

The default location is:

```
$ORACLE_HOME/dbs/init${ORACLE_SID}.ora
```

Set the parameter `processes` as follows:

```
processes = 100
```

4. Manually start the Oracle database and then the ITO management server processes:

```
a. /sbin/init.d/ovoracle start
```

```
b. /opt/OV/bin/ovstart -v -c
```

## If the X-OVw Applications Don't Work in the Java-based Operator GUI ...

... you should make sure that an X server is configured and running properly. If your X server is running, make sure that all `opcctrlovw` processes on the NNM server are killed before trying again:

1. Find out how many `opcctrlovw` processes are running:

```
ps -elf | grep opcctrlovw
```

2. Kill all `opcctrlovw` processes:

```
kill <PID1> <PID2> ...
```

## If the Installation of VantagePoint Performance Agent Fails ...

... check the following:

- ☐ Disk space needed temporarily during file transfer is insufficient?

Make sure that the disk space is sufficient both on the management server and on the agent. For the distribution of VP Performance Agent, the following temporary disk space requirements apply:

ITO management server: 40 MB free disk on the `/var` filesystem.

VP Performance Agent system: 40 MB on the `/tmp` filesystem

- ☐ Corrupt queue files on the management server?

Remove the queue files related to the installation of VP Performance Agent, enter:

1. `ovstop opc ovoacomm`
2. `rm /var/opt/OV/share/tmp/OpC/mgmt_sv/magmgr*`
3. `opcsv -start`

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## **6**

# **What Manuals are Available for this Version?**

In addition to these Software Release Notes, please also read the following documentation for further information:

- ☐ ITO A.06.00 Documentation
- ☐ ITO Developer's Toolkit Documentation
- ☐ HP OpenView VantagePoint Performance Documentation
- ☐ VantagePoint Advanced Security Documentation
- ☐ HP OpenView Network Node Manager (NNM) Documentation
- ☐ HP OpenView Event Correlation Services Documentation
- ☐ Oracle Database Documentation

### Electronic Version of the Manuals

All ITO manuals except for these Software Release Notes are also included as Portable Document Format (PDF) files in the appropriate documentation software bundle. See the *VP Operations Installation Guide for the Management Server* for general installation instructions using `swinstall`. The manuals are installed into the following directory on the management server:

`/opt/OV/doc/<LANG>/OpC/`

Alternatively, you can download the manuals from the following web site:

[http://ovweb.external.hp.com/lpe/doc\\_serv](http://ovweb.external.hp.com/lpe/doc_serv)

Or, view them in HTML format at:

<http://www.docs.hp.com>

### ITO DynaText Library

The ITO DynaText Library is a collection of ITO manuals in online format based on DynaText. DynaText is an application for viewing, searching, printing, and annotating your online library. The browser and the manuals are available in the appropriate ITO documentation software bundle. See the *VP Operations Installation Guide for the Management Server* for general installation instructions using `swinstall`. Once the bundle is installed, you can open the library by selecting **Online Manuals** from the **Help** menu of any primary ITO window.

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## ITO A.06.00 Documentation

Table 6-1 ITO A.06.00 Documentation

Documentation	Part Number (English language)	Part Number (Japanese language)
<i>Administrator's Reference Volume I</i>	B7491-90001	B7491-99001
<i>Administrator's Reference Volume II</i>	B7491-90002	B7491-99002
<i>Concepts Guide</i>	B7491-90000	B7491-99000
<i>Error Message Reference</i>	B7491-90003	B7491-99003
<i>Installation Guide for the Management Server on HP-UX</i>	B7491-90005	B7491-99005
<i>Installation Guide for the Management Server on Sun Solaris</i>	B7491-90006	B7491-99006
<i>Reporting and Database Schema</i>	B7491-90004	B7491-90004
<i>VantagePoint Navigator Concepts and Configuration Guide</i>	B7491-90010	B7491-99010
<i>Software Release Notes (for ITO on HP-UX)</i>	B7491-90007	B7491-99007
<i>Software Release Notes (for ITO on Sun Solaris)</i>	B7491-90008	B7491-99008
<i>Managing Your Network with HP OpenView Network Node Manager</i>	J1240-90035	J1240-90040

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## ITO Developer's Toolkit Documentation

Contact your HP Sales Representative if you are interested in the HP OpenView IT/Operations Developer's Toolkit, Japanese language.

**Table 6-2** ITO Developer's Toolkit Documentation

<b>Documentation</b>	<b>Part Number (English language)</b>
<i>Application Integration Guide</i>	B7492-90000
<i>Developer's Reference</i>	B7492-90001
<i>Administrator's Reference Volume I</i>	B7491-90001
<i>Administrator's Reference Volume II</i>	B7491-90002
<i>Concepts Guide</i>	B7491-90000
<i>Error Message Reference</i>	B7491-90003
<i>Installation Guide for the Management Server on HP-UX</i>	B7491-90005
<i>Installation Guide for the Management Server on Sun Solaris</i>	B7491-90006
<i>Reporting and Database Schema</i>	B7491-90004
<i>VantagePoint Navigator Concepts and Configuration Guide</i>	B7491-90010
<i>Software Release Notes (for ITO on HP-UX)</i>	B7491-90007
<i>Software Release Notes (for ITO for Sun Solaris)</i>	B7491-90008
<i>Managing Your Network with HP OpenView Network Node Manager</i>	J1240-90035



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## VantagePoint Advanced Security Documentation

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**NOTE** HP OpenView VantagePoint Advanced Security will be available at a later date. Please contact your local HP Representative for details.

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**Table 6-3** VantagePoint Advanced Security Documentation

Documentation	Part Number (English language)
<i>VantagePoint Advanced Security Installation and Concepts Guide</i>	B7412-90000

See also the Software Release Notes for Advanced Security under:  
`/opt/OV/ReleaseNotes/<lang>/ITO_ANSE.txt`

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## HP OpenView VantagePoint Performance Documentation

The following document files are provided in the directory  
/opt/OV/doc/<lang>/OpC on the ITO management server.

**Table 6-4**                      **HP OpenView VP Performance Documentation**

<b>Documentation</b>	<b>Part Number (English language)</b>	<b>Part Number (Japanese language)</b>
<i>HP OpenView VantagePoint Performance Agent for HP-UX Installation &amp; Configuration Guide</i>	B4967-90022	B4657-90022
<i>HP OpenView VantagePoint Performance Agent for Sun Solaris Installation &amp; Configuration Guide</i>	B4971-90008	n/a
<i>HP OpenView VantagePoint Performance Agent for UNIX User's Manual</i>	B4967-90023	B4967-90023
<i>HP OpenView VantagePoint Performance Agent for UNIX Data Source Integration Guide</i>	B4967-90024	B4967-90024
<i>HP OpenView VantagePoint Performance Agent for UNIX Tracking Your Transactions</i>	B4967-90020	B4967-90020
<i>Application Response Measurement 2.0 API Guide</i>	n/a	n/a
<i>HP OpenView VantagePoint Performance Agent Dictionary of Operating System Performance Metrics</i>	B4967-90013	n/a

**Table 6-5**                      **HP OpenView NNM Developer's Toolkit Documentation**

<b>Documentation</b>	<b>Part Number (English language)</b>
<i>A Guide to Scalability and Distribution for Network Node Manager</i>	J1240-90034
<i>Reporting and Data Analysis with Network Node Manager</i>	J1240-90015
<i>Creating and Using Registration Files</i>	J1240-90005
<i>HP OpenView Network Node Manager Installation Quick Start for HP-UX</i>	J1240-90039
<i>HP OpenView Network Node Manager Installation Quick Start for Solaris</i>	J1240-90050
<i>Welcome to Network Node Manager</i>	J1240-90048
<i>Managing Your Network with NNM</i>	J1240-90035
<i>Migration Guide</i>	J1240-90036
<i>Performance and Configuration Guide</i>	J1240-90049
<i>Configuring Customer-specific Network Management</i>	J1240-90014
<i>HP OpenView Integration Concepts</i>	J1261-90005
<i>HP OpenView Application Style Guide</i>	J1261-90006
<i>OpenView Windows Developer's Guide</i>	J1261-90007
<i>SNMP Developer's Guide</i>	J1261-90008
<i>OpenView Windows Guide for Java Developers</i>	J1261-90009

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## HP OpenView Network Node Manager (NNM) Documentation

**Table 6-6** HP OpenView Network Node Manager (NNM) Documentation

<b>Documentation</b>	<b>Part Number (English language)</b>	<b>Part Number (Japanese language)</b>
<i>A Guide to Scalability and Distribution for Network Node Manager</i>	J1240-90034	J1240-90042
<i>Reporting and Data Analysis with Network Node Manager</i>	J1240-90015	J1240-90010
<i>Creating and Using Registration Files</i>	J1240-90005	J1240-90011
<i>Welcome to Network Node Manager</i>	J1240-90048	J1240-90012
<i>HP OpenView Network Node Manager Installation Quick Start for HP-UX</i>	J1240-90039	J1240-90039
<i>HP OpenView Network Node Manager Installation Quick Start for Solaris</i>	J1240-90050	J1240-90050
<i>Managing Your Network with NNM</i>	J1240-90035	J1240-90040
<i>Migration Guide</i>	J1240-90036	J1240-90036
<i>Performance and Configuration Guide</i>	J1240-90049	J1240-90049
<i>Configuring Customer-specific Network Management</i>	J1240-90014	J1240-90014

**Table 6-7**                      **HP OpenView NNM Developer's Toolkit Documentation**

<b>Documentation</b>	<b>Part Number (English language)</b>
<i>A Guide to Scalability and Distribution for Network Node Manager</i>	J1240-90034
<i>Reporting and Data Analysis with Network Node Manager</i>	J1240-90015
<i>Creating and Using Registration Files</i>	J1240-90005
<i>HP OpenView Network Node Manager Installation Quick Start for HP-UX</i>	J1240-90039
<i>HP OpenView Network Node Manager Installation Quick Start for Solaris</i>	J1240-90050
<i>Welcome to Network Node Manager</i>	J1240-90048
<i>Managing Your Network with NNM</i>	J1240-90035
<i>Migration Guide</i>	J1240-90036
<i>Performance and Configuration Guide</i>	J1240-90049
<i>Configuring Customer-specific Network Management</i>	J1240-90014
<i>HP OpenView Integration Concepts</i>	J1261-90005
<i>HP OpenView Application Style Guide</i>	J1261-90006
<i>OpenView Windows Developer's Guide</i>	J1261-90007
<i>SNMP Developer's Guide</i>	J1261-90008
<i>OpenView Windows Guide for Java Developers</i>	J1261-90009

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## Miscellaneous Documentation

### HP OpenView Event Correlation Services Documentation

Table 6-8      HP OpenView ECS Designer Documentation

Documentation	Part Number (English language)
<i>ECS Installation Guide</i>	J1095-90301
<i>ECS Administrator's Guide</i>	J1095-90302
<i>ECS Designer's Reference</i>	J1095-90303
<i>ECS Designer's Guide</i>	J1095-90304
<i>ECS Developer's Guide and Reference</i>	J1095-90305
<i>ECS CMIP Module</i>	J1095-90306
<i>ECS SNMP Module</i>	J1095-90307
<i>ECS ASCII Module</i>	J1095-90308
<i>ECS Configuring Circuits for NNM and ITO</i>	J1095-90309

## Oracle Database Documentation

The following Oracle for OpenView (OfO) V.8.0.6 documentation is supplied by HP:

- ❑ *Quick Installation Guide for Oracle for OpenView V8.0.6*, HP-UX 10.20 and 11.0; part number ORA23-90026.

Product number ORA230BB includes the OfO V8.0.6 manuals on CD-ROM (paper copies are not available).

- ❑ *Quick Installation Guide for Oracle for OpenView V8.0.6*, Sun SPARC Solaris; part number ORA43-90005

Product number ORA430BB includes the OfO V8.0.6 manuals on CD-ROM (paper copies are not available).

For information about the documentation supplied for Oracle versions 8.0.6 or 8.1.6, please contact the database vendor.

What Manuals are Available for this Version?

### Miscellaneous Documentation



## 7

This section provides ordering information on ITO version A.06.00, including:

- ☐ ITO version A.06.00
- ☐ ITO Developer's Toolkit
- ☐ Advanced Network Security for ITO
- ☐ OV VantagePoint Navigator
- ☐ OV VantagePoint Reporter
- ☐ ECS Designer version 3.0 for NNM and ITO
- ☐ Oracle8™ for OpenView

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## ITO A.06.00 Ordering Information

Table 7-1 ITO A.06.00 Manager License-to-Use

Item	Product Number for ITO on HP-UX	Product Number for ITO for Sun Solaris
HP OpenView VantagePoint Manager, License-to-use	B7405AA	B7405DA
HP OpenView VantagePoint Operations Manager, License-to-use	B7406AA	B7406DA
HP OpenView VantagePoint Performance Manager, License-to-use	B7407AA	B7407DA
HP OpenView VantagePoint Performance Monitor, License-to-use	B7408AA	B7408DA
HP OpenView VantagePoint Operations Manager Upgrade from NNM, License-to-use	B7409AA	B7409DA

**Table 7-2 ITO A.06.00 Extensions**

<b>Item</b>	<b>Product Number for ITO on HP-UX</b>	<b>Product Number for ITO for Sun Solaris</b>
HP OpenView VantagePoint Advanced Security (License-to-use, Media, Manuals) <sup>a</sup>	B7412AA	B7412DA
HP OpenView VantagePoint Navigator License-to-use	B7413AA	B7413DA
HP OpenView VantagePoint ECS Designer version 3.0 for NNM and ITO (License-to-use, Media, Manuals)	B7414AA	B7414DA
HP OpenView VantagePoint Reporter, License-to-use, Media, English	B7416WA	B7416WA
HP OpenView VantagePoint Reporter, License-to-use, Media, Japanese	B7416WJ	B7416WJ

- a. HP OpenView VantagePoint Advanced Security will be available at a later date.  
Please contact your local HP Representative for details.

**Table 7-3 ITO A.06.00 Agents**

<b>Item</b>	<b>Product Number for ITO on HP-UX</b>	<b>Product Number for ITO for Sun Solaris</b>
HP OpenView VantagePoint Operations Enterprise Server Management, License-to-use <sup>a</sup>	B7423AA	B7423AA
HP OpenView VantagePoint Operations Datacenter Server Management, License-to-use <sup>a</sup>	B7424AA	B7424AA
HP OpenView VantagePoint Operations Advanced Server Management, License-to-use <sup>a</sup>	B7425AA	B7425AA
HP OpenView VantagePoint Operations Server Management, License-to-use <sup>b</sup>	B7426AA	B7426AA
HP OpenView VantagePoint Operations Professional Management, License-to-use <sup>b</sup>	B7427AA	B7427AA
HP OpenView VantagePoint Operations Multivendor Management, License-to-use <sup>c</sup>	B7443AA	B7443AA

- a. For AIX, HP-UX, Linux, Solaris, and Windows only.
- b. For Linux and Windows only.
- c. For all supported agent platforms except for those listed under a) and b) above.

**Table 7-4 VantagePoint Performance Agents**

<b>Item</b>	<b>Product Number for ITO on HP-UX</b>	<b>Product Number for ITO for Sun Solaris</b>
HP OpenView VantagePoint Performance Enterprise Server Management, License-to-use <sup>a</sup>	B7428AA	B7428AA
HP OpenView VantagePoint Performance Datacenter Server Management, License-to-use <sup>a</sup>	B7429AA	B7429AA
HP OpenView VantagePoint Performance Advanced Server Management, License-to-use <sup>a</sup>	B7430AA	B7430AA
HP OpenView VantagePoint Performance Server Management, License-to-use <sup>b</sup>	B7431AA	B7431AA

**Table 7-4 VantagePoint Performance Agents**

<b>Item</b>	<b>Product Number for ITO on HP-UX</b>	<b>Product Number for ITO for Sun Solaris</b>
HP OpenView VantagePoint Performance Professional Management, License-to-use <sup>b</sup>	B7432AA	B7432AA
HP OpenView VantagePoint Performance Multivendor Management, License-to-use <sup>c</sup>	B7442AA	B7442AA

- a. For AIX, HP-UX, Linux, Solaris, and Windows only.
- b. For Linux and Windows only.
- c. For all supported agent platforms except for those listed under a) and b) above.

**Table 7-5 Agent Upgrade from ITO/VantagePoint Performance**

<b>Item</b>	<b>Product Number for ITO on HP-UX</b>	<b>Product Number for ITO for Sun Solaris</b>
HP OpenView VantagePoint Upgrade from Tier 3, License-to-use	B7433AA	B7433AA
HP OpenView VantagePoint Upgrade from Tier 2, License-to-use	B7434AA	B7434AA
HP OpenView VantagePoint Upgrade from Tier 1, License-to-use	B7435AA	B7435AA
HP OpenView VantagePoint Upgrade from Desktop, License-to-use	B7436AA	B74336AA
HP OpenView VantagePoint Multivendor Management Upgrade, License-to-use	B7488AA	B7488AA

**Table 7-6 ITO A.06.00 Media and Manuals**

<b>Item</b>	<b>Product Number for ITO on HP-UX</b>	<b>Product Number for ITO for Sun Solaris</b>
HP OpenView VantagePoint Manager Media	B7490AA	B7490DA
HP OpenView VantagePoint Manager Manuals, English language	B7491AA	B7491DA
HP OpenView VantagePoint Manager Manuals, Japanese language	B7491AJ	B7491DJ

**Table 7-7 ITO A.06.00 Developer's Toolkit**

<b>Item</b>	<b>Product Number for ITO on HP-UX</b>	<b>Product Number for ITO for Sun Solaris</b>
HP OpenView VantagePoint Developer's Toolkit, License-to-use <sup>a</sup>	B7411AA	B7411AA
HP OpenView VantagePoint Developer's Toolkit, Media and Manuals, English language <sup>a</sup>	B7492AA	B7492AA

- a. Contact your HP Sales Representative if you are interested in the HP OpenView IT/Operations Developer's Toolkit on HP-UX, Japanese language. Note that the HP OpenView IT/Operations for Sun Solaris Developer's Toolkit is only supported in English environments.

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## Oracle for OpenView Ordering Information

To purchase Oracle8™ Server Enterprise Edition version 8.0.6 or 8.1.6 for Sun SPARC Solaris contact the vendor. See the Oracle web site at:  
<http://www.oracle.com/>

### Oracle8™ for OpenView Ordering Information

**Table 7-8**      **Oracle8™ for OpenView Ordering Information**

<b>Item</b>	<b>Product Number for HP-UX 10.20 and 11.0</b>	<b>Product Number for Sun Solaris</b>
Oracle8™ for OpenView v. 8.0.6, License-to-use	ORA200BB	ORA400BB
Oracle8™ for OpenView v. 8.0.6, Media	ORA230BB	ORA430BB
Oracle8™ for OpenView v. 8.0.6, Evaluation Kit	ORA240BB	ORA440BB