

HP OpenView Operations Smart Plug-in for SAP

Configuration Guide

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For the MS Windows® Operating System



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Introduction

This section gives an overview of the Smart Plug-in for SAP (SPI for SAP), describes how it is integrated with other HP OpenView products, and shows how easy it is to customize.



Some of the information in this chapter refers to both the SPI for SAP for OVO for Unix and OVO for Windows. In some cases the terminology might not always be entirely appropriate for both OVO management platforms.

What is the Smart Plug-in for SAP?

The HP OpenView Smart Plug-in for SAP is a software package linking SAP R/3 to HP OpenView Operations and, in addition, to the OpenView Performance Manager via the OpenView Performance Agent. The union offers a complimentary and consolidated view of SAP R/3 performance information and overall resource characteristics.



References to both the new and (occasionally) the old product names appear in this book. For example, HP OpenView Operations (OVO) was previously known as IT/Operations (ITO). PerfView is now the OpenView Performance Manager. The OpenView Performance Agent was formerly the MeasureWare Agent.

This integration allows correlation of SAP R/3 performance data with the performance data of the operating system, the database, and the network—all from one common tool and in one central management system. Integration of SAP R/3 performance data into PerfView/MeasureWare helps to detect and eliminate bottlenecks in a distributed environment. In addition, the integration allows for system optimization as well as service level monitoring. The HP OpenView Smart Plug-in for SAP offers the following key benefits:

- centralized problem management using OVO for Windows agents on the SAP R/3 managed nodes. The use of the central OVO for Windows management server avoids the duplication of administrative effort.
- real-time event and configuration information—including useful on-line instructions—for fast problem resolution.
- powerful monitors for the detection of potential problem areas and keep track of system and R/3 events.
- performance data collectors to ensure system throughput and notify of any performance bottlenecks.
- direct, context-sensitive access to the SAP front-end.
- complements SAP R/3 Computing Center Management System (CCMS).
- performance data collection, monitoring, and reporting.
- central data repository for the storage of event and action records for all SAP R/3 managed nodes.
- utilities for running routine SAP R/3 management tasks.
- SAP service discovery and integration of SAP R/3 environments with the OVO for Windows Service Map—the SPI for SAP includes a policy that will automatically generate service views of the SAP R/3 systems installed on your managed nodes.

What Does the SPI for SAP Provide?

The SPI for SAP provides the following capabilities for managing your SAP R/3 system:

- [“Availability Management” on page 11.](#)

- “Performance Management” on page 13
- “Remote Monitoring with the Smart Plug-in for SAP” on page 14
- “Monitoring ITS” on page 15
- “Service Reporting” on page 16
- “Combined Availability and Performance Management” on page 16
- “Integration with OVO for Windows” on page 17

Availability Management

Availability management is a feature which warns you when something in your R/3 environment is going wrong. Maybe a disk is too full, or a key process has either stopped prematurely or failed to start at the appropriate time. The combination of the SPI for SAP and OVO for Windows alerts SAP administrators to such conditions. When the alert is given, the following additional assistance may be provided:

- Advice on corrective action that should be taken.
- A pre-defined action that the administrator can initiate.
- An automatic action, such as an e-mail message to a manager if a critical condition occurs.

The SPI for SAP provides an easy-to-use interface with CCMS, which monitors availability issues with R/3. This interface allows the SPI for SAP to be made aware of any availability problems identified by CCMS. In addition, the SPI for SAP monitors over 70 R/3-related conditions in the overall SAP R/3 System. When problems occur, the SPI for SAP can call on a wide range of UNIX®, MS Windows®, and SAP management tools to fix the problems it encounters both quickly and efficiently.

Availability-management monitoring includes:

- CCMS alert monitoring, including:
 - ABAP/4 database events
 - R/3 instance buffer problems
 - Tracing information

- Enqueue server messages
- R/3 general messages
- Rolling and paging activities
- Internal R/3 database events
- Configuration status information
- Syslog messages
- Syslog monitoring
 - Either via CCMS syslog alerts or by direct monitoring of the SAP syslog via the XMI API.
- Batch job monitoring
 - Aborted jobs
 - Long-time running jobs
 - Jobs that failed to start
- Process monitoring
 - Monitoring of all processes and conditions associated with an instance
- File monitoring
 - Monitoring relevant external files for SAP R/3 (log files, trace files)
- Monitoring SAP R/3 status and events via SPI ABAP modules. Status and events include:
 - Change of system operating mode
 - SAP locks
 - ABAP/4 dumps
 - Work process availability
 - Work processes modes (debug, private, no restart)
 - System change options
 - TemSe consistency
 - ALE monitoring
 - RFC-destination monitoring

- Solution-Manager integration
 - Write OVO for Windows messages to CCMS
 - Assign alerts to Solution-manager process steps and use OVO for Windows to monitor the alerts

Managing from a Business Perspective

In HP OpenView Operations for MS Windows, you can use the Service Map to view the impact of the events, which trigger the messages displayed in the OVO for Windows Console. The Service Map displays the problem in a graphical format that makes you immediately aware of the business impact of lower-level component failures or performance degradations.

Using the Service Map, you can navigate quickly to the root cause of a service failure and, by simple point-and-click navigation, browse to faulty components for further diagnosis and problem resolution.

The SPI for SAP can also perform service discovery and, with the information it collects, automatically generate a service view, which shows your SAP R/3 environments from a service perspective. You can use the components of this service view and other OVO for Windows service views as building blocks to create line-of-business views that reflect the impact which the events that occur in SAP R/3 and the supporting infrastructure have on your business.

Performance Management

Performance management tells you about problems and bottlenecks that are or could be lowering end-user productivity within your SAP R/3 environment. The combination of the SPI for SAP, the Performance Agent, and the OpenView Performance Manager allows you to collect, analyze, and view metrics which you can then use to generate alerts that the SAP administrators can use to monitor the SAP landscape.

These fully integrated HP OpenView products allow correlation of SAP R/3 performance metrics with a variety of other performance data such as metrics for operating systems, databases, and networks. The integration offers a complementary and consolidated view of SAP R/3 performance and overall system-resource characteristics.

The integration allows you to optimize SAP System performance and, in addition, monitor agreed service levels, which results in improved user productivity and maximum return on investment.

The SPI for SAP monitors the following SAP R/3 metrics:

- Dialog task frequency, response time, and wait time.
- Update task frequency, response time, and wait time.
- Batch task frequency response time, and wait time.
- Spool task frequency, response time, and wait time.
- Work-process number, type, and status.
- Job statistics and state.
- End-to-end transaction times (with SAP R/3 4.6 and higher).
- Spool and print jobs.

Remote Monitoring with the Smart Plug-in for SAP

The current version of the SPI for SAP includes a feature which allows you to extend the scope of the SPI for SAP so that it can monitor the status of SAP on remote SAP servers, which are *not* OVO for Windows managed nodes and where the SPI for SAP is *not* installed. You set up and perform the remote monitoring from an OVO for Windows managed node, where the SPI for SAP software is installed, correctly configured, and running.



Although the remote host is not an OVO for Windows managed node, it must nonetheless be present in the OVO for Windows Console. If you do not add the remote host to the OVO for Windows Console, OVO for Windows cannot resolve the host name associated with the remote host and, as a consequence, will not be able to display any messages from the remote host in the Console window.

You can use the remote-monitoring feature provided by the SPI for SAP to monitor an SAP System running in an environment that is not supported by the SPI for SAP, for example; a mainframe in an otherwise locally supported environment.

Note that you can use the Alert-classes section at the end of the monitor-configuration file to associate an instance of a monitor with a specific host, SAP instance, or processes on the remote server in the same way as you can with a normal (local) managed node.

Monitoring ITS

The SPI for SAP now includes a dedicated SAP ITS (Internet Transaction Server) monitor, which allows you to monitor the following areas:

- **Status and availability**
Check the availability of the various components of the ITS server, including; AGate, WGate, and Web Server
- **Multi-instance Environments**
Pinpoint communication problems between the ITS components even in an environment with multiple ITS instances and complex load sharing
- **Performance Metrics**
Collect important SAP R/3 performance metrics, which can be used in conjunction with other system or application performance data to identify bottlenecks and long term performance trends
- **Agate host-name routing**
Support for Agate-host-name routing, so that you can use an “Alias” for an Agate host-name in order to route requests to a given ITS server instance using a machine-name alias.
- **SAP message-server support**
The SPI for SAP ITS monitor now supports the SAP message-server functionality, which is often used in a load-balancing environment, where one Agate instance can be associated with several SAP Application Servers.

The collected data can then be used with OpenView performance tools such as the OpenView Reporter or OpenView Performance Agent to investigate problems and general performance issues.

Service Reporting

The SPI for SAP includes a pre-defined set of service reports. Service reports are web-based reports that are produced by OpenView Reporter (Reporter) using Crystal Reports templates and viewed using a web browser. Reporter allows you to request both scheduled and on-demand versions of reports.



OpenView Reporter lite, which comes bundled with HP OpenView Operations for MS Windows, does not offer the same functionality as the full OpenView Reporter product: there are a number of restrictions, particularly in the area of supported performance agents. We recommend you install and use the *full* version of the OpenView Reporter in order to ensure compatibility with the installed performance agent and with the full range of performance metrics used in the SPI for SAP reports.

SPI for SAP service reports correlate the data extracted from either the OVO Embedded Performance Component (CODA) or the OpenView Performance Agent (formerly MeasureWare). You can use the correlated data to generate reports which display short-, medium-, or long-term views of your IT environment and supplement the detailed, real-time graphs available with the Performance Manager.

Combined Availability and Performance Management

When using both the availability- and the performance-management capabilities, performance alarms can be automatically forwarded to an SAP administrator. The SAP administrator can then start OpenView Performance Manager to view the performance problem directly. This consolidated approach allows availability and performance problems to be managed in a consistent, fast, and efficient way.

Integration with OVO for Windows

At the heart of the SPI for SAP is a set of monitors (data collectors) which are designed to make checks on different aspects of SAP R/3 system health. The SPI for SAP includes the following monitors:

CCMS ALERT	collects alerts from the SAP R/3 internal monitor, the CCMS alert monitor
Syslog	collects messages from the SAP R/3 syslog
Jobs	identifies SAP R/3 batch jobs that are in an abnormal state; for example, aborted jobs
Processes	reports on the availability of SAP R/3 work processes and database processes at operating system level
Files	reports on errors in the SAP R/3 trace and log files
SPI ABAP	modules that carry out monitoring tasks within SAP R/3, for example; checks on SAP operation modes, SAP dumps, and the availability of work (and other) processes

The SPI for SAP monitors are completely integrated into OVO for Windows, both in their configuration and distribution, as well as in the day-to-day tasks of receiving messages and taking actions to resolve problems. This section also discusses the following topics:

- [“Configuration and Deployment Concepts” on page 17](#)
- [“Messages and Actions” on page 18](#)

Configuration and Deployment Concepts

The SPI for SAP handles the process of configuring and deploying monitors automatically by means of the configuration-file policy type. For more information about the configuration-file policy type, see [“Configuring the Smart Plug-in for SAP Monitors” on page 69](#).

Messages and Actions

The day-to-day monitoring of the SAP R/3 systems by the SPI for SAP monitors is completely integrated with the features and functionality offered by OVO for Windows.

The conditions identified by the monitors are passed to the OVO for Windows agent on the managed node. Conditions are compared to conditions defined in the message-source policies, and matching conditions are forwarded to the management server. Messages from the monitors are assigned to SAP-specific OVO for Windows message groups, which are added to OVO for Windows when the SPI for SAP is installed.

Messages that are sent to the management server are displayed in the OVO for Windows Console. The full range of OVO for Windows message facilities are available for SPI for SAP messages, including the differentiation of messages according to severity, a detailed description of the condition together with advice on problem resolution, and pre-defined operator-initiated and automatic actions.

The sequence of events within the OVO for Windows message flow is as follows:

- 1** An event occurs on an object that is being monitored by one of the Alert Monitors, and a message is created as a result, for example; a batch job aborts.
- 2** The OVO for Windows agent on the managed node receives the message.
- 3** The message is compared to filters. Messages matching suppress conditions or duplicate messages are suppressed. Other messages are forwarded.
- 4** Messages matching filters are converted to the OVO for Windows message format, and forwarded to the management server.
- 5** The active message is stored in the database.
- 6** The message is displayed in the OVO for Windows Console.
- 7** The message can now be selected and, if available, any operator-initiated actions can be started. An operator-initiated action can be:

- a Remote Function Call, which starts an ABAP program to solve the problem or to gather information about the environment. The information is appended to the message as an annotation.
 - a request to open the SAP GUI if, for example, a job aborts. The related message could have an operator-initiated action which calls the job-overview transaction and displays it in the SAP GUI.
- 8 When the message is acknowledged, it is removed from the active database and put into the history database for better statistics or other analysis.

Easy Customization

This section explains how you can customize the flow of messages from SAP R/3 to OVO for Windows in both the SAP R/3 environment and OVO for Windows, as described in the following two sections:

- “Customization on the SAP R/3 Side” on page 19.
- “Customization on the OVO for Windows Side” on page 20.

Customization on the SAP R/3 Side

- Enable or disable SAP R/3 client groups so that these are tracked or not tracked in the CCMS alert monitor. This method is discussed in the *HP OpenView Smart Plug-in for SAP Online Help*.
 - Enabled messages cause a CCMS alert to be created, which can then be identified by the SPI for SAP CCMS alert monitor and forwarded to the OVO for Windows management server.
 - If a message is disabled in the CCMS alert monitor, there will be no internal SAP R/3 CCMS alert, so there will also be no OVO for Windows message.
- Set thresholds for the inclusion of alert messages in the SAP R/3 CCMS alert monitor. This method is discussed in the *HP OpenView Smart Plug-in for SAP Online Help*.

- Set up selected alert messages so that they are included in the SAP R/3 system log file. This method is discussed in the *HP OpenView Smart Plug-in for SAP Online Help*.

Customization on the OVO for Windows Side

- Use powerful monitors to tune the control of your distributed SAP R/3 environment. For details see the *HP OpenView Smart Plug-in for SAP Online Help*.
- Apply filters to display only the relevant types of messages. This method is documented in the *HP OpenView Smart Plug-in for SAP Online Help*.
- Change the severity of messages in accordance with your specific requirements. This method is documented in the *HP OpenView Smart Plug-in for SAP Online Help*.

Software Installation

This section provides the information you need to install the Smart Plug-in for SAP (SPI for SAP) software. This section covers the following high-level topics:

- “Before You Begin” on page 21
- “Installation Requirements” on page 22
- “Changes and Modifications to the SPI for SAP” on page 27
- “Configuration Overview” on page 43
- “Installing the SPI for SAP Software” on page 44
- “Verifying the Installation of the SPI for SAP Software” on page 45
- “Installing the SAP R/3 GUI” on page 47

Before You Begin

Before starting to install the SPI for SAP:

- Ensure that your system meets all requirements, as detailed in the following sections:
 - “Hardware, OS, and Disk Space Requirements” on page 23.
 - “Compatible Software Versions” on page 24.

- For each SAP R/3 instance, note:
 - which SAP R/3 version is installed
 - whether SAP R/3 is installed on a central instance or an application server
- Create a list of all the SAP clients to monitor. For each client, list the following data:
 - Hostname of the SAP application server
 - SAP system ID
 - SAP Instance number
 - SAP client number
 - Operating system platform (UNIX or NT)
 - User name/password to be used for monitoring

You will use this information to set up the environment configuration file for the Smart Plug-in for SAP.

Installation Requirements

This section lists the system requirements for the installation of the SPI for SAP and comprises the following sections:

- “Hardware, OS, and Disk Space Requirements” on page 23
- “Compatible Software Versions” on page 24
- “Obsoleted Software Versions” on page 27

Hardware, OS, and Disk Space Requirements

Before you install the SPI for SAP, use the information provided in [Table 1](#) to ensure that your systems (management server and managed nodes) meet the hardware, operating system, and disk space requirements. For information about which managed node platforms are supported by the Smart Plug-in for SAP, see [Table 3](#).

Table 1: Hardware, OS, and Disk Space Requirements

Product	Hardware	OS	Minimum Disk Space
Smart Plug-in for SAP on the management server	Intel	Windows 2000/Server/Advanced Server Edition	2 GB
		Windows Server 2003	
Smart Plug-in for SAP on managed nodes	HP 9000 Series 800 running:	HP-UX 11.0/11; ^a	50-110MB
	IBM RS/6000	AIX	
	Intel	Windows NT ^b	
		Windows 2000	
		Windows 2003	
Sun SPARC	Solaris		

^a In this manual, HP-UX 11i (Rev 1.0) is commonly used as a synonym for HP-UX 11.11.

^b The correct version of the MSVCRT.d11 file must be installed on Microsoft Windows NT managed nodes to ensure the successful deployment of SPI for SAP configuration files. To upgrade the MSVCRT.d11 file, download and run the VC6RedistSetup_enu.exe self-extracting executable file from the following URL:

<http://support.microsoft.com/default.aspx?scid=kb;EN-US;q259403>

Compatible Software Versions

Before you configure (or upgrade) the SPI for SAP, use the information provided in [Table 2:](#) and [Table 3:](#) to ensure that you are using a version of OpenView Operations for Windows (OVO for Windows) which is compatible with the current version of the Smart Plug-in for SAP. In addition, you will need to ensure that:

- OVO for Windows server and agent software are installed on the OVO for Windows management server
- the standard OVO for Windows management-server policies are deployed to the OVO for Windows management server
- OpenView Reporter is available in order to be able to view service reports for SAP R/3, SAP R/3 performance, and ITS Performance Monitor data



OpenView Reporter Lite is installed by default with OVO for Windows and can only collect performance data from systems where the OVO for Windows Embedded Performance Component has been installed as the performance subagent. You have to install (or upgrade to) the full Reporter product if you want to generate service reports for systems running the OpenView Performance Agent (formerly MeasureWare).

- For Performance Agent functionality (see also the *HP OpenView Smart Plug-in for SAP Online Help*):
 - OpenView Performance Manager/Performance Agent is installed on the management server.
 - OpenView Performance Agent software is installed on all the SAP application servers you wish to monitor.

Table 2: lists the software version for the OVO for Windows management server that is supported by the current version of the Smart Plug-in for SAP.

Table 2: Supported OVO Management-Server Platforms

Product Name	Product Version	OS Platform
OpenView Operations for Windows	B.07.10 ^a , B.07.20	Windows 2000 Professional Server Edition
		Windows Server 2003

a. Installed systems should be patched to the latest required level

Table 3: shows which combinations of the SAP R/3 kernel and (in brackets) the SAP R/3 Basis versions of SAP R/3 are supported by the SPI for SAP. For example, 4.6D (4.6C) indicates support for the combination of version 4.6D of the SAP R/3 *kernel* (and 4.6C *basis*) version. Note that the last two columns of **Table 3:** reflect a change to the SAP R/3 version-numbering system and show the SAP R/3 *basis* version and (in brackets) the SAP R/3 *kernel* version. For example, 6.20 (6.20) means SAP R/3 *basis* 6.20 (SAP R/3 *kernel* 6.20)



The SPI for SAP supports full SAP R/3 versions, Business Warehouse (B/W), and APO systems. It does not support specific B/W and APO functionality. In addition, the SPI for SAP does not support specific SAP technology-components. The only exception to this rule is the Internet Transaction Server (ITS), which the SPI for SAP monitors with a dedicated tool.

For information about the versions of other related software supported by the SPI for SAP, see the *HP OpenView Smart Plug-in for SAP Software README..*

Table 3: Supported Managed-node Platforms and SAP R/3 Versions

Managed Node Operating System	SAP R/3 Kernel (Basis) Version						SAP R/3 Basis (Kernel) ^a	
	3.1I ^b (3.1H/I)	4.0B (4.0B)	4.5B (4.5B)	4.6B (4.6B)	4.6C (4.6C)	4.6D ^b (4.6D)	6.10 (6.10/ 6.20)	6.20 (6.20)
AIX 4.3.3	• ^c	•	•	•	•	•	•	•
AIX 5.1					•	•	•	•
AIX 5.2					•	•	•	•
HP-UX 11.00	• ^c	•	•	•	•	•	•	•
HP-UX 11i ^d	• ^c	•	•	•	•	•	•	•
Solaris 7	• ^c	•	•	•	•	•		
Solaris 8	• ^c	•	•	•	•	•	•	•
Solaris 9		•	•	•	•	•	•	•
Win NT4 ^e	•	•	•	•	•	•	•	•
Win 2000	•	•	•	•	•	•	•	•
Win 2003					•	•	•	•

a. Changed version-numbering system: SAP R/3 *Basis* version (*kernel* version), for example; SAP R/3 *basis* 6.20 (SAP R/3 *kernel* 6.20)

b. According to SAP, 4.6D is not a complete SAP R/3 release, but a downward-compatible kernel, which is intended for use with other components of SPI for SAP. The 4.6D kernel is shipped with the R/3 4.6C Service Release 1.

c. 32-bit only

d. In this manual, HP-UX 11i refers to HP-UX 11i Revision 1.0 and is commonly used as a synonym for HP-UX 11.11.

e. Service Pack 4 (or higher).

Obsoleted Software Versions

The following, features, software, or operating systems are no longer supported with this version of the SPI for SAP:

- HP-UX 10.20
- AIX 4.3.2

Support for the following features, software, or operating systems will be dropped from future versions of the SPI for SAP:

- SAP Shared-memory Interface
- AIX 4.3.3
- MS Windows NT 4
- Sun Solaris 7
- 32 bit OS runtime for all UX operating systems

Changes and Modifications to the SPI for SAP

This section provides information that is designed to help you complete the post-installation phase of the upgrade process by listing the changes and additions, which are introduced with the latest version of the SPI for SAP. This section covers the following topics:

- “General Changes” on page 28
- “Messages and Message Groups” on page 28
- “Tools and Tool Groups” on page 29
- “Policies and Policy Groups” on page 29
- “Message-source Policies” on page 31
- “Alert Monitors and Alert Collectors” on page 37
- “Performance Monitors” on page 38
- “The ITS Monitor” on page 40
- “Reports and Graphs” on page 40

- “Service IDs” on page 42
- “Service Views” on page 43

For more detailed information about the topics covered in this section, see the section about customizing the SPI for SAP in the *HP OpenView Smart Plug-in for SAP Online Help*.

General Changes

The current release of the SPI for SAP does not have any Japanese localized policies: Japanese localized policies will be provided in a subsequent, separate release.

The SPI for SAP supports the new "system account" feature of OVO for Windows 7.20. For more details see the Online Help for OVO for Windows 7.20.

Messages and Message Groups

The current release of the SPI for SAP contains the following changes and additions to messages generated by the SPI for SAP. SPI for SAP messages now contain the following information:

- the name of the monitor which sent the message
- the hostname of the server where the monitor which sent the message is running or, in the case of a remotely monitored node, the hostname of the server where the problem was discovered
- improved mapping between the message and the service tree

The current release of the SPI for SAP contains the following changes and additions to the SPI for SAP message groups:

- R3_CCMS

the new message group R3_CCMS is intended for messages relating to alerts reported by `r3monal`, the CCMS monitor, when it is configured to use the XMI/XAL interface. For more information about the `r3monal` monitor and how to configure it to use the XMI/XAL interface, see the *HP OpenView Smart Plug-in for SAP Online Help*.

- R3_RFC

the new message group R3_RFC is intended for messages relating to alerts reported by `r3monrfc`, the RFC-destination monitor. For more information about the `r3monrfc` monitor and how to configure it, see the *HP OpenView Smart Plug-in for SAP Online Help*. Note that a new OVO object, `RFC_Destination`, is associated with the new message group, R3_RFC.

Tools and Tool Groups

The current release of the SPI for SAP contains the following changes and additions to the SPI for SAP tools and tools groups:

- `r3ovo2ccms`

The `r3ovo2ccms` command allows you to write OVO for Windows messages directly into the CCMS tree, where they can be viewed and used by the SAP Solution Manager in the same way as any other SAP message alert. For more information, see the *HP OpenView Smart Plug-in for SAP Online Help*.

Policies and Policy Groups

The current release of the SPI for SAP provides the following *new* policies and policy groups:

- `r3status`

a new policy to monitor the status of SAP R/3 Systems. This new policy appears in the following policy groups:

- SAP R/3 3.1I CentralInstance
- SAP R/3 4.0/4.5 CentralInstance
- SAP R/3 4.6/6.x CentralInstance

- `r3monrfc`

The RFC-destination monitor `r3monrfc` is an application-server independent monitor, which checks RFC destinations in an SAP 4.6x (and higher) environment. SAP uses RFC destinations to execute remotely

function modules, which reside on other SAP Systems. This new policy appears *only* in the policy group: "SAP R/3 4.6/6.x CentralInstance".

- r3mondev31, r3monpro31, and r3monxmi31

The new policies r3mondev31, r3monpro31, and r3monxmi31 are intended to be used to monitor trace files, processes, and system logs respectively on SAP 3.1 systems. These new monitors are similar to the existing SAP 4.x monitors r3monxmi, r3mondev, and r3monpro, but use different binaries and appear in *both* the following policy groups:

- SAP R/3 3.1I AppServer
- SAP R/3 3.1I CentralInstance

The current release of the SPI for SAP makes *changes* to the following policies and policy groups:

- SAP R/3 4.0/4.5 AppServer

Name change for the policy group for SAP R/3 4.0 and 4.5 Application Servers

- SAP R/3 4.0/4.5 CentralInstance

Name change for the policy group for SAP R/3 4.0 and 4.5 Central Instances

- SAP R/3 4.6/6.x AppServer

New policy group for SAP R/3 Kernel Version 4.6 (Base ABAP 6.x) Application Servers

Note that the CCMS alert monitor, r3monal, has been removed from the SAP R/3 4.6/6.x AppServer policy group and now appears only in the SAP R/3 4.6/6.x CentralInstance policy group. From SAP 4.6, the r3monal monitor runs only on the Central Instance.

- SAP R/3 4.6/6.x CentralInstance

New policy group for SAP R/3 Kernel Version 4.6 (Base ABAP 6.x) Central Instances.

Message-source Policies

Upgrading the SPI for SAP adds a number of new message conditions and, in addition, modifies and improves some of the existing template conditions. You can use the information in the following tables to help you migrate to the new environment any customizations you made to the old SPI for SAP installation.

- [Table 4 on page 32](#)

lists *new* conditions made available in the latest SPI for SAP software

- [Table 5 on page 34](#)

shows which conditions have been modified and indicates (by means of double underlines) what the changes are

The condition numbers indicated in the tables in this section are the default values which are valid immediately after the installation of the new SPI for SAP software. Since condition numbers for a given template may be changed at any time by the OVO for Windows administrator, the numbers are provided here only to ease the task of finding one specific

condition name in the list of many conditions displayed. If you change the order of the conditions after installing the SPI for SAP, the numbers in your list of conditions will clearly not match the default numbers listed here. In this case, you will have to search for the condition using the condition name.

Table 4: New SPI for SAP Policy Conditions

Condition Number	Condition Name	Comment
43	CCMS_PROBLEM_001	New conditions for enhanced CCMS-monitoring configuration
44	CCMS_ALERT_016	
45	CCMS_ALERT_015	
46	CCMS_ALERT_014	
47	CCMS_ALERT_013	
48	CCMS_ALERT_012	
49	CCMS_ALERT_011	
50	CCMS_ALERT_010	
51	CCMS_ALERT_009	
52	CCMS_ALERT_008	
53	CCMS_ALERT_007	
54	CCMS_ALERT_006	
55	CCMS_ALERT_005	
56	CCMS_ALERT_004	
57	CCMS_ALERT_003	New conditions for enhanced CCMS-monitoring configuration
58	CCMS_ALERT_002	
59	CCMS_ALERT_001	

Table 4: New SPI for SAP Policy Conditions

Condition Number	Condition Name	Comment
75	LOGON_FAILURE_001	New for the r3status monitor. Failed login now produces a new message: "... user login failure" instead of the old: "SAP sys down"
110	CONFIGURATION_003	Gives the name of the monitor which fails to find required configuration files
113	MONITOR_RUN_ERROR_003	New for r3monoms monitor: "No operation mode configured ..."
114	MONITOR_RUN_ERROR_002	New for r3monoms monitor: "Cannot get current operation mode ..."
123	R3PERFAGENT_001	Checks if the performance-agent scheduler is out of synchronization
127	ENQUEUE_002	Improved error handling in r3monlck, the lock monitor, which now sends a message when the SAP lock table is not accessible for more than 3 monitor runs. Information about the SAP system (SID) and client has been added to the message text: SAP_SPI:<sid>:<inst>:Enqueue@@<MSG_NODE_NAME>
128	RFC_EXCEPTION_001	new condition on RFC exception error and used by <i>all</i> alert collector related monitors
129	RFC_DESTINATION_001	new communication-error condition for new "RFC destination" monitor r3monrfc

For more information about the new policies and policy conditions as well as their default configuration, see the *HP OpenView Smart Plug-in for SAP Online Help*.

Table 5: Modified SPI for SAP Policy Conditions

Condition Number	Condition Name	Changes and Additions
ALL	ALL_CONDITIONS	<ul style="list-style-type: none"> removed: "NODE IP 0.0.0.0 <host>" <p>host information is now added directly through <code>opcmsg</code> call with <code>-node</code> parameter</p> <ul style="list-style-type: none"> replaced: "host" with "\$MSG_NODE_NAME"
1-34, 72, 74, 110, 113-115, 124	conditions related to <code>r3moncol</code> , the Alert-collector monitor	<p>The name of the Alert-collector monitor which sent the message is now specified at the end of the message text, e.g. <code>r3mondmp</code>.</p> <p><OPTION(MONITOR)></p>
8	JOB_MAX_RUN_TIME_001	<p>Information about the SAP system (SID) and client where the job occurred has been added to the message text:</p> <p>SAP_SPI:<sid>:<inst>:Batch@@<\$MSG_NODE_NAME></p>
9	JOB_MIN_RUN_TIME_001	
10	JOB_START_PASSED_001	
11	JOB_ABORTED_001	
12	ENQUEUE_001	<p>Information about the SAP system (SID) and client has been added to the message text:</p> <p>SAP_SPI:<sid>:<inst>:Enqueue@@<\$MSG_NODE_NAME></p>

Table 5: Modified SPI for SAP Policy Conditions

Condition Number	Condition Name	Changes and Additions
13	OM_SWITCH_TEST_001	Improved mapping between messages and service tree: SAP_SPI:<sid>:<inst>:Dispatch@@<MSG_NODE_NAME>
14	OM_SWITCH_LATE_001	
15	OM_SWITCH_INACTIVE_001	
16	SPOOL_ERROR_RANGE_001	Improved mapping between messages and service tree: SAP_SPI:<sid>:<inst>:Spool@@<MSG_NODE_NAME>
17	PRINT_ERROR_EXISTS_001	
18	SPOOL_ENTRIES_RANGE_001	
23	UPDATE_ACTIVE_001	Improved mapping between messages and service tree: SAP_SPI:<sid>:<inst>:Update@@<MSG_NODE_NAME>
24	UPDATE_ERROR_EXISTS_001	
25	USER_LOGGEDIN_MAX_001	Now has a new operator-initiated action associated with it.
29	WP_STATUS_DEBUG_001	Improved mapping between messages and service tree: SAP_SPI:<sid>:<inst>:Processes@@<MSG_NODE_NAME>
30	WP_STATUS_PRIVATE_001	
31	WP_STATUS_RESTART_001	
32	WP_CHECK_CONFIGURED_001	
33	WP_IDLE_001	
34	WP_AVAILABLE_001	
42	R3MONAL_PROBLEM_001	changed duplicate suppression to "SUPP_DUPL_IDENT_OUTPUT_MSG"
58	CCMS_ALERT_002	removed duplicate suppression "SUPP_DUPL_IDENT"

Table 5: Modified SPI for SAP Policy Conditions

Condition Number	Condition Name	Changes and Additions
59	CCMS_ALERT_001	Changed pattern matching in message text: name=<@.name> has been replaced with <u>name=<* .name></u>
71	SAPSYSUP_001	<ul style="list-style-type: none"> • <u><instance></u> has been removed from the Set-message text string • <u>SAPUp</u> replaces SAPsysUp in the Set-object attribute field • <u>SAPDown</u> replaces SAPsysDown in the Set-object attribute field • Added for SAPSYS*_002: SAP_SPI : <sid> : <nr>@@<\$MSG_NODE_NAME>
72	SAPSYSUP_002	
73	SAPSYSDOWN_001	
74	SAPSYSDOWN_002	
76	XMISYSLOGID_TA_001	<p>Added user and date information to both the "condition" and "set" message texts. Duplicate message suppression can now either include or exclude these attributes according to whether you want to suppress messages or display them.</p>
77	XMISYSLOGID_SD_001	
78	XMISYSLOGID_KO_001	
79	XMISYSLOGID_KM_001	
80	XMISYSLOGID_BI_001	
81	XMISYSLOGID_AW_001	
82	XMISYSLOGID_BP_001	
83	XMISYSLOGID_BS_001	
84	XMISYSLOGID_BB_001	
85	XMISYSLOGID_BV_001	
86	XMISYSLOGID_SH_001	

Alert Monitors and Alert Collectors

The following changes and additions have been made to the SPI for SAP alert, and alert-collector monitors:

- SAP Status and Availability

The SPI for SAP has a new alert-collector monitor, `r3status`, which monitors the status and availability of all the SAP Systems defined in the `r3itosap` configuration file. For more information about the `r3status` monitor, see the *HP OpenView Smart Plug-in for SAP Online Help*.

- RFC-Destination Monitor

The new monitor, `r3monrfc`, is application-server independent and checks RFC destinations in an SAP environment. SAP uses RFC destination to execute remotely function modules, which reside on other SAP Systems.

- SAP R/3 3.1 Systems

The new monitors `r3mondev31`, `r3monpro31`, and `r3monxmi31` are intended to be used to monitor trace files, processes, and system logs respectively on SAP 3.1 systems. These new monitors are similar to the existing SAP 4.x monitors `r3monxmi`, `r3mondev`, and `r3monpro`, but use different binaries.

- Remote Monitoring

This version of the SPI for SAP includes a feature which allows you to extend the scope of all the Alert, Alert-collector, and Performance Monitors to monitor the status of SAP on remote SAP servers, which are not OVO for Windows managed nodes and where the SPI for SAP is not installed. You set up and perform the remote monitoring from an OVO for Windows managed node, where the SPI for SAP software is installed, correctly configured, and running:

```
RemoteMonitoring  =<local_server_name> =<remote_server_name>
```

Note that the `RemoteMonitoring` keyword in the monitor-configuration file can be used with all the SPI for SAP monitors *except* the trace-file monitor (`r3mondev`) and the process monitor (`r3monpro`). Some monitors also require additional information about the SAP System and SAP Number, which you want to monitor on the remote node. For more information, see the description of the SPI for SAP monitor-configuration file in the *HP OpenView Smart Plug-in for SAP Online Help*.

- **CCMS Alert Monitor**
The default polling interval for `r3monal`, the CCMS Alert monitor, has been reduced from ten (10) minutes to five (5) minutes.
- **Correction & Transport System Monitor**
The default monitoring interval of `r3moncts`, the Correction & Transport System monitor, has been increased from one (1) minute to one (1) hour.
- `r3mondmp`, `r3monsap`, and `r3monwpa`
The monitoring interval of the ABAP Dump monitor (`r3mondmp`), the CCMS 3.x Alert monitor (`r3monsap`), and the Work-process monitor (`r3monwpa`) has been increased from two (2) minutes to five (5) minutes.

Performance Monitors

The following performance monitors have been made obsolete with the current version of the SPI for SAP:

- **MIB_PERF**
Data which was previously collected by the MIB_PERF Monitor can now be collected with the new WLSUM_PERF performance monitor.
- **SYSBUF_PERF**
Data which was previously collected by the SYSBUF_PERF Monitor can now be collected with the new SAPBUFFER_PERF and SAPMEMORY_PERF performance monitors.

The current version of the SPI for SAP provides the following new performance monitors:

- **SAP Buffer Performance**
The new SAPBUFFER_PERF performance monitor collects performance data relating to SAP buffers, hit ratios, swap activity, buffer allocation, and so on.
- **SAP Memory Performance**
The new SAPMEMORY_PERF performance monitor collects performance data relating to roll and paging areas, extended memory and so on.

- SAP User Performance

The USER_PERF monitor collects information about the number of users and user sessions per SAP client for a given SAP application server.

- Internet Communication Manager Performance

The ICMSTAT_PERF monitor collects performance statistics for the Internet-Communication Manager.

The current version of the SPI for SAP provides the following changed performance monitors:

- SAP System Up-time

The SYSUP_PERF performance monitor now reports on the following new SAP System statuses:

— 0 = SAPSYSTEM_AVAILABLE

The SAP System is up, running, and available.

— 1 = SAPSYSTEM_LOGON_FAILURE

The SAP System is up, running, and available, but there was a problem with the SAP-user login.

— 2 = SAPSYSTEM_COMMUNICATION_PROBLEM

The SAP System could not be contacted, and the problem was not due to a login failure.

For more information about the SYSUP_PERF performance monitor, see the section on Performance Monitors in the *HP OpenView Smart Plug-in for SAP Online Help*.

Performance Monitor Schedules

The Performance Monitor now uses a scheduler to ensure that the performance agent binary, `r3perfagent`, runs at the defined interval. The scheduler keeps track of time and the number of runs that have been completed and uses this information to ensure that the Performance Monitor runs at the correct time and collects the appropriate performance-related data. You can control the resetting of the scheduler and any messages that it generates by using either or both of two new keywords, `SyncBack` and `BehindSyncMessage`, which have been added to the

`r3perfagent.cfg` file. For more information, see the *HP OpenView Smart Plug-in for SAP Online Help*.

Remote Performance Monitoring

The current version of the SPI for SAP introduces a new keyword, which can be used in the performance-monitor configuration file `r3perfagent.cfg` to specify the names of SAP servers, whose performance you want to monitor remotely:

```
RemoteMonitoring =<local_server_name> =<remote_server_name>
```

For more information about how to configure the SPI for SAP Performance Monitor to monitor the health of other SAP servers remotely, see the section about performance monitors in the *HP OpenView Smart Plug-in for SAP Online Help*.

The ITS Monitor

The current version of the SPI for SAP provides an ITS monitor with extended functionality and improved features.

- Agate hostname routing
new entry in the `r3itsperfmon.cfg` file to handle Agate hostname routing, so that you can use an “Alias” for an AGATE hostname in order to route requests to a given ITS server instance using a machine-name alias.
- SAP message-server support
The SPI for SAP ITS monitor now supports the SAP message-server functionality, which is often used in a load-balancing environment, where one Agate instance can be associated with several SAP Application Servers.

Reports and Graphs

There are a number of changes to the reports and reports metrics provided with the current version of the SPI for SAP, namely:

- New Reports include information and analysis of the following new areas:

— ICM Statistics - Overview

An overview of the status of the Internet Communication Manager (ICM)

— ICM Statistics - Details

A much more detailed view of the status and performance of the Internet Communication Manager including; up- and down-time periods plus statistics for queues, threads, and connections.

— SAP R/3 Memory

Information about memory use for SAP R/3 including extended memory and the roll-and-paging area.

— SAP R/3 Users - Overview

Information about the number of SAP R/3 users (and user sessions) per SAP client for a given SAP application server.

— SAP R/3 Users - Workload

Correlated information about the workload of the SAP R/3 users (batch, dialog, spool steps etc.) per SAP client for a given SAP application server

— SAP R/3 Users - Document Statistics

Correlated information about SAP R/3 users and document statistics per SAP module (BW, FA, SD, etc.) for all or any SAP clients in a given SAP application server.

— SAP R/3 Buffer Performance - Overview

General information about the quality and use of the SAP R/3 buffers.

— SAP R/3 Buffer Performance - Detailed Analysis

More detailed reports about the quality and use of the SAP R/3 buffers.

• MIB_PERF and SYSBUF_PERF performance monitors

All the metrics lists and reports associated with the MIB_PERF and SYSBUF_PERF performance monitors have disappeared along with the monitors themselves. Introduced with this version of the SPI for SAP, the new performance monitors SAPBUFFER_PERF and SAPMEMORY_PERF will have their own new metrics lists. For more information, see the section

on Service Reports in the *HP OpenView Smart Plug-in for SAP Online Help*.



A logical consequence of the disappearance of the MIB_PERF performance monitor is that all the reports that were based on MIB values have changed. The MIB reports included information about batch and dialog response times, event rates, the number and kind of events, as well as spool and update performance data.

- SAP System Uptime

The SAP “System Uptime” report has been modified to reflect the changes in the SYSUP_PERF Monitor. This means that the monitor can assess much more accurately the reason why an SAP System is not available.

- Remote monitoring

You can use the SPI for SAP performance-integration package to generate reports about machines and SAP Systems, which you are monitoring remotely using the new remote-monitoring feature described in [“Remote Performance Monitoring” on page 40](#).

Service IDs

The SPI for SAP CCMS alert monitors `r3monal`, `r3monsap`, and `r3monxmi` are required to monitor multiple areas of the SAP landscape concurrently. In order to be able to distinguish more easily between messages coming from different areas, the current version of the SPI for SAP assigns a unique service ID to each message generated by the SPI for SAP. All the message conditions associated with the messages generated by the SPI for SAP monitors have been modified to reflect this. For more information about the changes to the SPI for SAP message-source policy conditions, see [“Message-source Policies” on page 31](#).

Service Views

The new SPI for SAP service-discovery no longer uses the SAP shared memory interface: now, service discovery for the SPI for SAP uses SAP profiles to determine which SAP Systems are available for monitoring. Note that the service discovery needs access to the information stored in the `r3itosap.cfg` file to complete its task successfully. For more information about service discovery, see *HP OpenView Smart Plug-in for SAP Online Help*.

Configuration Overview

The complete configuration of the SPI for SAP comprises three distinct phases, performed in the following sequence:

Configuration	Description...
Phase 1:	<p>“Installing the SPI for SAP Software” on page 44</p> <p>The InstallShield Wizard installs the SPI for SAP software on the OVO for Windows management server. The next step is to configure and set up the SAP R/3 GUI for windows.</p>
Phase 2:	<p>“Configuration: SAP-Specific Tasks” on page 49</p> <p>You set up an SAP user and the SAP transport for the SPI for SAP and configure the SPI monitors according to the monitoring requirements of your environment.</p>
Phase 3:	<p>“Configuration: OVO Administration Tasks” on page 65</p> <p>You integrate the SPI for SAP with OVO for Windows and bring all SAP application servers under OVO for Windows management.</p>

The software configuration phase described in detail in this chapter includes the following tasks:

- 1 “Installing the SPI for SAP Software” on page 44.
- 2 “Verifying the Installation of the SPI for SAP Software” on page 45.
- 3 “Installing the SAP R/3 GUI” on page 47.

Installing the SPI for SAP Software

Before you install and configure the SPI for SAP, you must make sure that HP OpenView Operations for Windows 7.x (OVO for Windows) is already installed and patched to the latest required level. Once OVO for Windows has been installed, you can use the *hp OpenView operations for Windows - SMART plug-ins* CD-ROM to install the SPI for SAP.

For more information about installing *hp OpenView operations for Windows - SMART plug-ins* CD-ROM, see the *HP OpenView Operations for Windows Installation Guide*.

To Install the SPI for SAP software

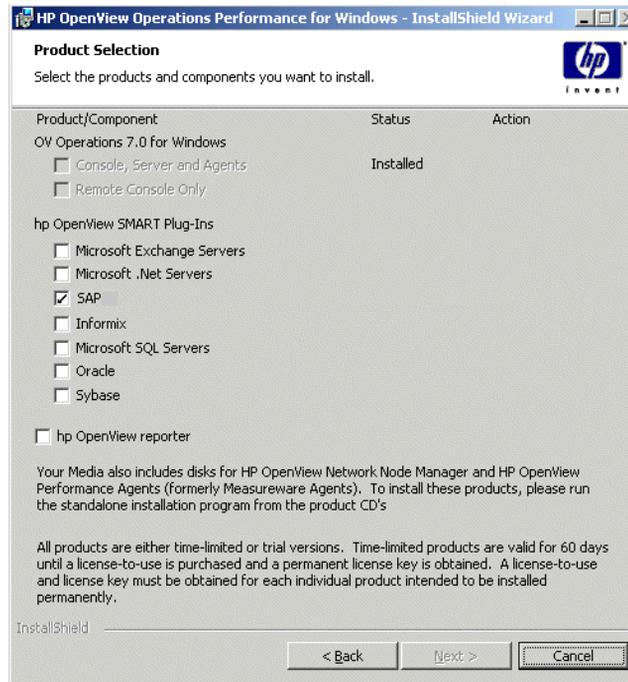


If you installed the SPI for SAP software at the same time as you installed the HP OpenView Operations for Windows software, you can proceed directly to “[Verifying the Installation of the SPI for SAP Software](#)” on page 45.

- 1 From the Windows Start menu browse to the following:
Settings > Control Panel > Add/Remove Programs
- 2 Select: HP OpenView Operations Performance for Windows
- 3 Select: Change
- 4 Select: Install products
- 5 When the InstallShield Wizard dialog box displays, select SAP by placing a check mark in the box as illustrated in [Figure 1](#).
- 6 From the Product Selection Install Wizard dialog box, follow the on-screen instructions.

- 7 Before continuing with the configuration of the SPI for SAP software ensure the installation process completed correctly by following the instructions listed in “Verifying the Installation of the SPI for SAP Software” on page 45.

Figure 1: InstallShield Wizard Dialog Box



Verifying the Installation of the SPI for SAP Software

It is recommended that you carry out a number of simple checks to verify that the installation of the SPI for SAP software has completed successfully.

To Verify the Installation of the SPI for SAP Software

1 In the OVO for Windows Console, browse to the following item:

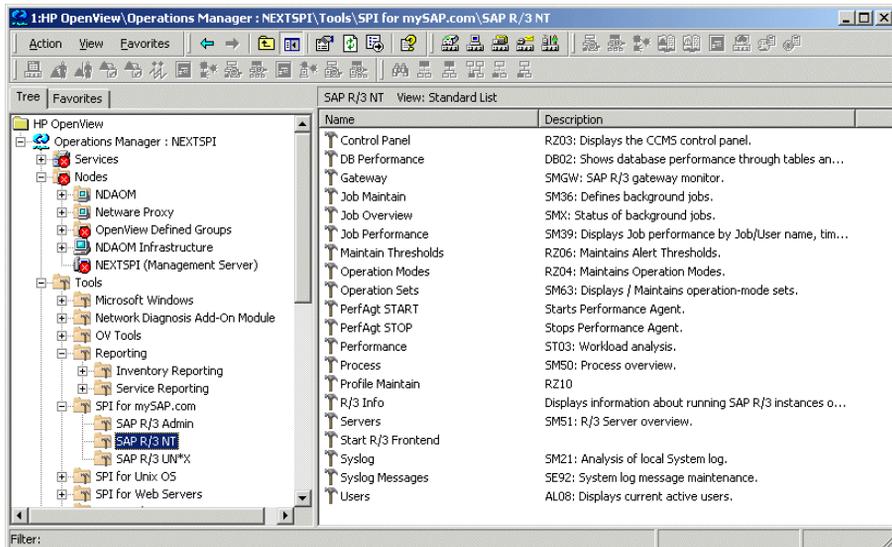
Tools > SPI for SAP

Check that the following sub-directories are present:

- SAP R/3 Admin
- SAP R/3 NT
- SAP R/3 UN*X

2 Clicking each sub-directory in turn to confirm tools are present as illustrated in [Figure 2](#).

Figure 2: SPI for SAP tools sub-directory

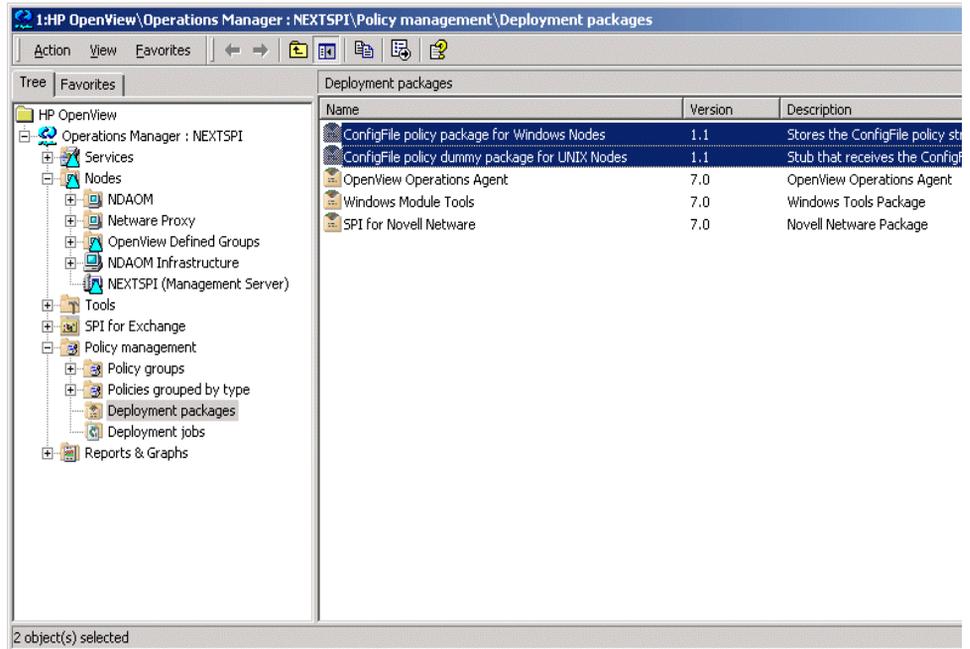


3 In the OVO for Windows console tree, browse to the following item:

Policy management > Deployment packages

a The following items (belonging to the ConfigFile policy type) should be present as illustrated in [Figure 3](#).

- ConfigFile policy package for Windows Nodes
- ConfigFile policy dummy package for UNIX Nodes

Figure 3: Checking the Installed Packages

Installing the SAP R/3 GUI

Next, you need to install the SAP GUI on the OVO for Windows management server as well as on the machines where you want to run a OVO for Windows Console. You should use your SAP installation CD to install the most recent version of the SAP GUI available in your environment. Note that most of the operator-initiated actions and tools included in the Smart Plug-in for SAP have to start the SAP GUI. For this reason, a SAP GUI *must* be installed on the OVO for Windows management server and, in addition, on any system where you want to run a remote OVO for Windows console. For more information about installing the Native GUI for SAP R/3, see the appropriate SAP documentation.

Configuration: SAP-Specific Tasks

This section describes how to complete the SAP-specific part of the installation of the Smart Plug-in for SAP (SPI for SAP). The tasks in this phase require knowledge of SAP transactions and specific monitoring requirements. You will be working with the OVO for Windows GUI as well as on the SAP system application servers and will need to log in to OVO for Windows as an operator and to the SAP clients as a user with authority to perform the SAP tasks included in this phase.

Overview

The tasks in this section may be summarized as follows:

- 1 “Applying the SAP Transport” on page 50.

In this step, you copy the Smart Plug-in for SAP transport files to the SAP transport directories on each SAP R/3 central instance and apply them.

- 2 “Setting Up the XMI Authorization Profile” on page 55.

➤ This step is only required for SAP version 3.1I or earlier. Later versions of SAP R/3 provide this authorization profile.

If you are working with SAP R/3 version 3.1I and want to use the `r3monxmi` Syslog monitor, which uses the XMI API in SAP R/3, you need to set up an XMI authorization profile

3 [“Setting Up an SAP User for OVO for Windows” on page 56.](#)

This step is necessary so that an SAP R/3 log on can be made whenever OVO for Windows tools, monitors, or actions need to access SAP.

4 [“The OVO Agent User Account” on page 58.](#)

Without access to the shared memory, service views will not work and the Smart Plug-in for SAP monitors cannot determine if an SAP system is up or down.

5 [“Setting Up Configuration Values for the SPI for SAP Monitors” on page 61.](#)

In this step, you set up initial configuration values for the Smart Plug-in for SAP monitors. You have to complete this task *before* you deploy the monitor-specific configuration files to the managed nodes. This topic is covered in much greater detail in the section on monitor customization in the *HP OpenView Smart Plug-in for SAP Online Help*.

6 [“Creating Configuration File Policies” on page 63.](#)

In this step, you use the configuration-file policy editor to create global configuration-file policies. This topic is covered in much greater detail in the section on monitor customization in the *HP OpenView Smart Plug-in for SAP Online Help*.



After you have set up and deployed the configuration-file policies, the corresponding Smart Plug-in for SAP policies must also be deployed to the SAP R/3 managed nodes. See [“Deploying SPI for SAP Policies to Managed Nodes” on page 71.](#)

Applying the SAP Transport

In this step, you copy the transport files that are delivered with the Smart Plug-in for SAP to the SAP transport directories on each OVO for Windows managed node that is an SAP R/3 central instance. This section covers the following topics:

- [“SAP Transport Naming Conventions” on page 51](#)

- “To Copy the Smart Plug-in for SAP Transport Files to the OVO for Windows Managed Nodes” on page 52
- “To Import the Transport Files via the Command Line” on page 52
- “To Import the Transport Files from the SAP R/3 GUI” on page 53

SAP Transport Naming Conventions

Release B.08.70 is the first version of the SPI for SAP to provide transports for SAP versions over 4.5x that include SPI for SAP functionality in the SAP name space "/HPOV/".

One obvious consequence of this new naming convention is that administrators will now have to use the *new* SPI for SAP name-space transports if they want to use the current version of the SPI for SAP to monitor SAP Systems higher than 4.5x.

In addition, new functionality for the SPI for SAP is available for SAP Systems 4.6 and higher only when using name space "/HPOV/". It is possible to import the new SPI for SAP name space transport into an SAP System where previous versions of SPI for SAP transports have already been imported.

The naming conventions used for the transport objects are as follows:

Transport Objects in Smart Plug-in for SAP

Development Class:	/HPOV/SAPSPI
Function Groups:	/HPOV/ZLPO /HPOV/ZSPB /HPOV/ZSPA
Function modules:	/HPOV/OV_*
Programs:	/HPOV/YSPI* /HPOV/ZHPSPI*
Roles:	/HPOV/Z_SAPSPI_MONITORING

To Copy the Smart Plug-in for SAP Transport Files to the OVO for Windows Managed Nodes

- 1 Use the Windows Explorer tool to locate the SAP R/3 transport packages, which by default reside in the following directory on the OVO for Windows management server:

```
%OvInstallDir%\Packages\SAPTransports
```

The SAP transport package is stored in the SAP-specific `.car` format and is accompanied by a `readme` file explaining which SAP transports must be imported into each SAP R/3 version.

- 2 Use the `ftp` tool to transfer the package to each of the SAP R/3 central instances you want to manage with OVO for Windows.



The following procedure requires the `CAR/SAPCAR` command, which you can find on any SAP Kernel CD. The `SAPCAR` command appears with SAP 4.6 or later.

- 3 On each of the managed nodes, as SAP administrator (`<SID>adm`) use the `CAR` (or `SAPCAR`) command to unpack the transport files to `/usr/sap/trans`. Enter:

```
CAR -xvf R3Trans.car
```

- 4 Continue importing the SAP transport files either via command line or via SAP R/3 GUI following the instructions given below.

To Import the Transport Files via the Command Line

- 1 Import the Smart Plug-in for SAP transport to your SAP R/3 central instance. For example, enter the following commands as SAP administrator on the appropriate OVO for Windows managed node:

```
cd \usr\sap\trans\bin  
tp addtobuffer <transport_file_name> <SID>  
tp import <transport_file_name> <SID> client=<client_number>
```

In this example, `<SID>` is the SAP system ID and `<transport_file_name>` is the name of the transport file, which corresponds to the version of SAP R/3 running on the OVO for Windows managed node, for example:

```
tp addtobuffer SPIK900132 CIA
```



The transport file name, SPIK900132, and the SAP System ID, CIA, are used here only to illustrate the correct syntax for the `tp` command. For more information about transport numbers and SAP R/3 versions, see the *HP OpenView Smart Plug-in for SAP Software README* or the file: `%OvInstallDir%\Packages\SAPTransports\readme`.

If, when running versions of SAP R/3 up to and including SAP 4.5, the `tp` command indicates that it cannot find files or required information, you can use the `pf=<path>\TPPARAM` option to tell it the location of the `tp`-parameters file. In the following examples, we are assuming that SAP R/3 has been installed in the `e:\` partition.

```
pf=e:\usr\sap\trans\bin\TPPARAM
```

The `TPPARAM` file contains the configuration parameters, which the `tp` command uses. The configuration parameters include such things as the `SAPSID`, the database host name, and the database configuration paths. Note that, from SAP R/3 4.6 onwards, the name and format of the `TPPARAM` file has been changed as follows:

```
pf=e:\usr\sap\trans\bin\TP_DOMAIN_<SID>.PFL
```

If for any reason an error occurs, you can clean the buffer using the following command:

```
tp cleanbuffer <SID>
```

- 2 Repeat this procedure on each SAP R/3 system you want to manage with OVO for Windows.

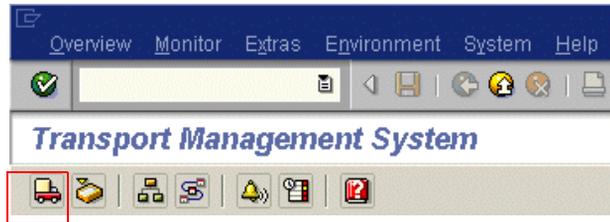
To Import the Transport Files from the SAP R/3 GUI



This procedure is *only* valid for SAP R/3 versions 4.x and higher.

- 1 Log into all SAP systems where you wish to apply the transport file.
 - ▶ Transports *must* be applied to *each* SAP system.

- 2 From the SAP R/3 GUI enter the following transaction ID: **/nstmms** :
- 3 From the SAP Transport Management System login, click the **Transport** icon (or **F5**) as illustrated below.



- 4 Select the SID of the SAP System, to which you want to import the transport.
- 5 From the file menu select
Extras > Other requests > Add
- 6 From the Transport Request to Import queue, enter the following:
 - a **<Transport_file_name>**
Transport file names are located in the `readme` file on the OVO for Windows management server in:
`%OvInstallDir%\Packages\SAPTransports`
 - b Enter the target client number (000 is the default client number).
 - c Select the **Check [✓]** icon or use the **Enter** key to add transaction requests.
- 7 Highlight the desired transport.
 - ▶ If no transport is selected, all transports in the list will be selected automatically.
- 8 Select **Request > Import**. The Import Request dialog box appears.
- 9 Check items in the Option tab that are appropriate for your system.
- 10 Click the **Check [✓]** icon or press **Enter**.

Setting Up the XMI Authorization Profile

If, and only if, you are working with SAP R/3 version 3.1I and want to use the `r3monxmi` Syslog monitor, which uses the XMI API in SAP R/3, you need to set up an XMI authorization profile. If you are working with more recent versions of the SAP software, you do not need to perform this step.

Setting up an XMI authorization profile for SAP R/3 3.1x

- 1 Log on to SAP R/3 3.1x.
- 2 Call the following transaction: `/nsu02`.
- 3 Create a new profile called: **SAP_XMI_ALL**.
The *profile* name defined here is not to be confused with the name of the *authorization* objects which you use to define the profile later.
- 4 In the Profile List window, double-click the profile:
SAP_XMI_ALL
- 5 Click the **Insert authorization** button
- 6 Scroll down the list of object classes and double-click the following item:
Basis:Administration
- 7 In the Class Basis: Administration window, scroll down the authorization list and select the following authorizations to assign them to the SAP_XMI_ALL profile.

Authorization...	Object...
S_XMI_ADMIN	Auth. for external management...
S_XMI_ALL	CCMS...

- 8 Click the **Check** button to add the authorizations. The authorizations you have added appear in the Consisting of Authorizations field.
- 9 Activate the new profile using the following menu sequence:
Profile:Activate...

Setting Up an SAP User for OVO for Windows

For each SID where you want to allow automated logon of OVO for Windows users:

- 1 Log on to SAP R/3
- 2 Call the following transaction: `/nsu01`
- 3 Create a new user named ITOUSER. Specify the following parameters:

User type: **DIALOG**

If you do *not* set the User type to DIALOG and do *not* define a corresponding password, the SAP GUI will *not* work and many of the operator-initiated actions and applications within OVO for Windows will *not* be available. However, performance and event monitoring do work with the CPIC/SYSTEM user.

Initial password:

Any SAP-admissible value except **HPSAP_30**

When you first log in to SAP (as ITOUSER) after completing setup, SAP prompts you to change ITOUSER's initial password and *expects* you to change the password to: HPSAP_30.

Authorization profiles: The SAP Authorization Profiles you select depend on the version of SAP R/3 installed, for example:

- **SAP R/3 3.1x:**

SAP_XMI_ALL and S_A.ADMIN

For more information about SAP_XMI_ALL, see “[Setting Up the XMI Authorization Profile](#)” on page 55.

- **SAP R/3 4.0/4.5:**

S_XMI_ALL and S_A.ADMIN

- **SAP R/3 4.6/6.x:**

None required, see User Roles in the next step.

User roles: ^a

SAP_ALL_DISPLAY (4.6C and higher)

SAP User Roles need to be defined from SAP version 4.6 onwards. Use transaction /nsu01, as shown in [Figure 4](#). The User Role(s) you select depend on the version of SAP R/3 installed, for example:

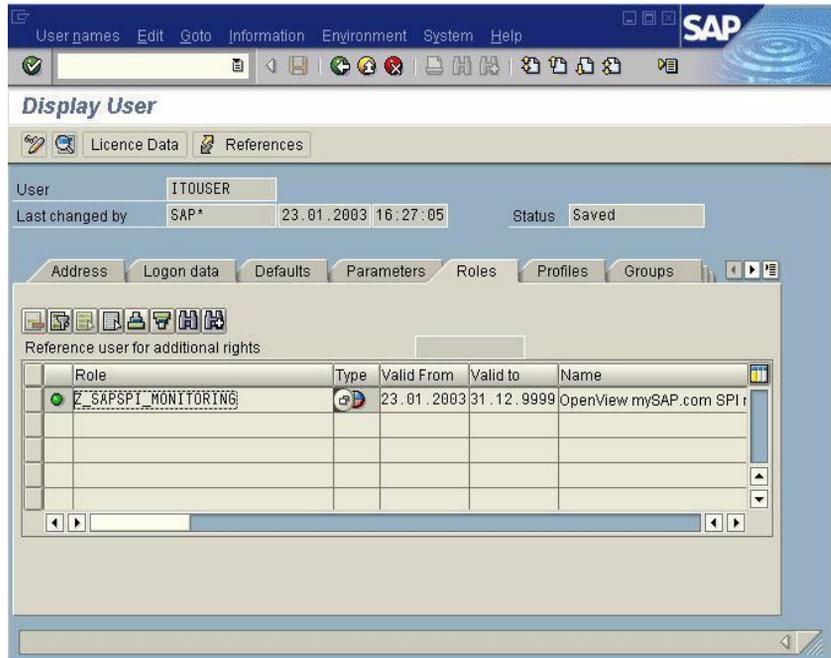
- SAP R/3 4.6/6.10, and 6.20:

/HPOV/_SAPSPI_MONITORING

a.ITOUSER requires this authorization to be able to execute SPI for SAP ABAP functions.

- 4 Activate the profile and assign it to the SAP user “ITOUSER”, which you have already created.
- 5 Log on to SAP R/3 as user ITOUSER.
- 6 SAP R/3 prompts you to change the password initially defined for ITOUSER. Enter the following, new password: **HPSAP_30**

Figure 4: SAP R/3 4.6C User Roles for ITOUSER



The OVO Agent User Account

The information in this section applies only if you are intending to set up the Alert Monitors to use the SAP shared-memory check, which you trigger with the SAPSHMCheck keyword in the Alert-monitor configuration file. Note that only the following Alert Monitors can make use of the SAPSHMCheck keyword: r3mona1, r3mondev, r3monpro, r3monsap, and r3monxmi.

The HP ITO user account on MS Windows managed nodes is used by the OVO for Windows agent and must be member of the group SAP_<SID>_LocalAdmin in order to access the SAP R/3 shared memory. This section covers the following topics:

- “Configuring the HP ITO account on a Windows NT system” on page 59

- “Configuring the HP ITO Account on a Windows 2000 System” on page 60



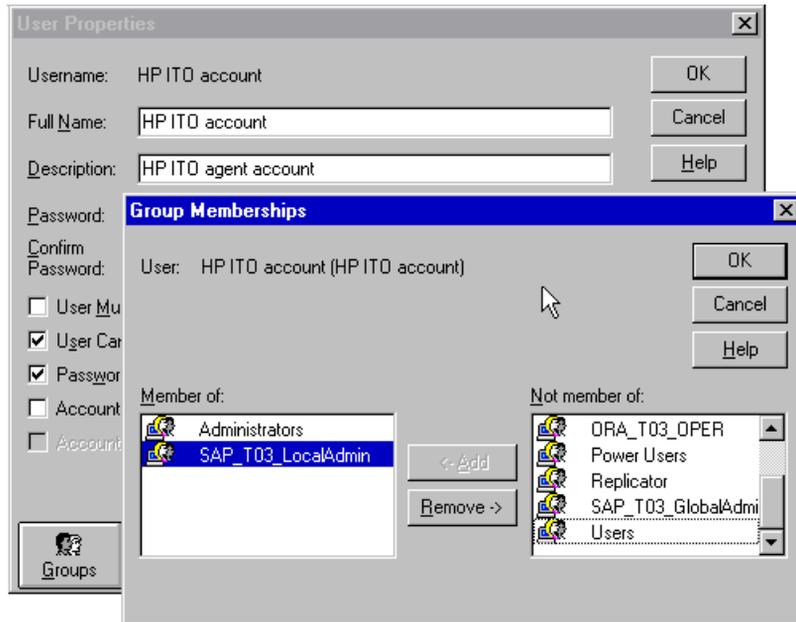
The OVO for Windows agent is now installed by default under the *System* account on an MS Windows machine. If you accept the default settings and install the OVO for Windows agent under the *System* account, you do *not* need to perform the steps described in this section. If you choose to override the default settings and install the OVO for Windows agent under the HP ITO account on an MS Windows machine, you will have to perform the steps described in this section.

Configuring the HP ITO account on a Windows NT system

To check and, if necessary, change the configuration of the HP ITO account on a Windows NT system:

- 1 Start the User Manager by using the following menu sequence:
Start:Programs > Administrative Tools (Common) > User Manager for Domains
- 2 Locate and double click the user name: HP ITO account. The User Properties window appears.
- 3 In the User Properties window, click the **Groups** button. The Group Memberships window appears as illustrated in [Figure 5](#).
- 4 In the Group Memberships window, make sure that group SAP_<SID>_LocalAdmin appears in the Member of: list. If it does not, then locate and select the SAP_<SID>_LocalAdmin group in the Not Member of: list and use the **<-Add** button to include it in the Member of: list.
- 5 Click **OK** to save the changes.

Figure 5: The Group-Memberships Window



Configuring the HP ITO Account on a Windows 2000 System

To check and, if necessary, change the configuration of the HP ITO account on a Windows 2000 system:

- 1 Start the Computer Management feature by using the following menu sequence:
Start:Programs > Administrative Tools > Computer Management
- 2 Locate and double click the user name: HP ITO Account. The Local Users and Groups window appears.
- 3 In the right-hand pane of the Computer Management window, double click the **Users** button.
- 4 The HP ITO account properties window appears.
- 5 Click the Member of: tab.
- 6 Locate the Users item and click the **Add** button. The Select Group window appears.

- 7 Locate and select the HP ITO Account and click the **Add** button.
- 8 Click **OK** to save the changes. The new group appears in the lower left-hand pane.

Setting Up Configuration Values for the SPI for SAP Monitors

To conclude the SAP-specific tasks, you have to set up initial configuration values in monitor-specific configuration files for each of the Smart Plug-in for SAP monitors *before* you deploy the configuration files to the managed nodes. The Smart Plug-in for SAP includes the monitors listed in [Table 6](#): below.

Table 6: Smart Plug-in for SAP Monitors

Monitor Name	Description
r3monaco	Alert collector for TemSe calls
r3monale	ALE monitor
r3monal	CCMS monitor
r3monchg	System change monitor
r3moncts	Correction and Transport system monitor
r3mondev	Trace monitor of the SAP logfile: <SID>/<INSTANCE>/work/dev*)
r3mondmp	ABAP/4 Dump monitor
r3monjob	Job monitor
r3monlck	Lock check monitor
r3monoms	Operation mode switch monitor
r3monpro	Operating system process monitor
r3monrfc	SAP RFC destination monitor

Table 6: Smart Plug-in for SAP Monitors (Continued)

Monitor Name	Description
r3monsap	Alert monitor
r3monspl	Spool monitor
r3montra	Transport monitor
r3monupd	Update monitor
r3monusr	User monitor
r3monwpa	Work-process availability monitor
r3monxmi	XMI syslog monitor
r3status	SAP R/3 status monitor

The Smart Plug-in for SAP also includes two sets of configuration and distribution tools as follows:

Global tools which can be applied to *all* managed nodes

Local tools which apply only to a *specified* managed node

For more information about (and instructions for) configuring monitors see the *HP OpenView Smart Plug-in for SAP Online Help*.

Creating Configuration File Policies

In this step you use the configuration-file policy editor to create global configuration files (from the default files) for each of the SPI for SAP R/3 monitors which run on the SAP R/3 servers.



The SPI for SAP provides a default configfile policy for each configuration file. Although you can use the default configuration for initial deployment, you will need to modify the configuration to suit the needs of your SAP environment.

To create a configuration-file policy for the SPI for SAP monitors

- 1 From the OVO for Windows console tree, browse to the following directory:
Policy Management > Policy Group > SPI for SAP
- 2 In the details pane, select right click the policy group that matches the version of SAP R/3 which is installed in your environment and the type of instance: Central or Application Server. Then add a new configuration file by using the following menu sequence:
New > ConfigFile
- 3 Click the General tab and use the pull-down menus provided to enter the following values in the appropriate fields, as illustrated in [Figure 6](#) below.

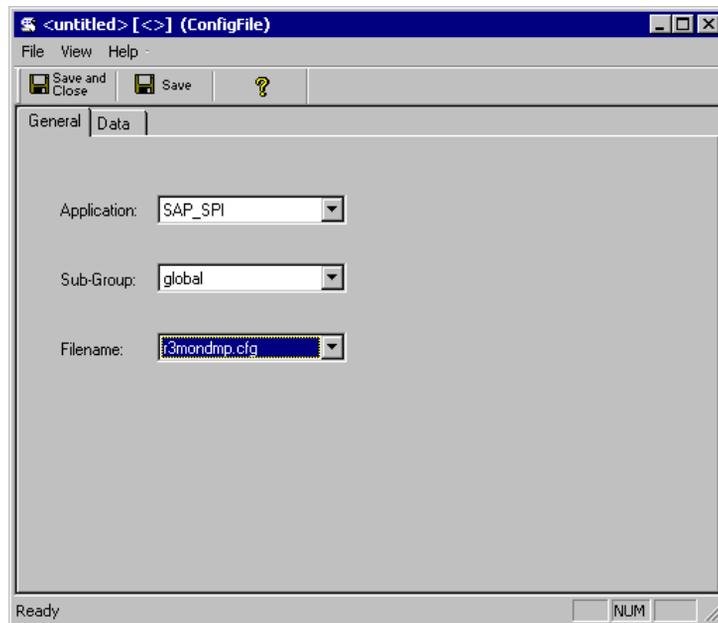
Application	SAP_SPI
Sub-Group	Global
Filename	r3mondmp.cfg



The filename `r3mondmp.cfg` is used here only as an example. If you want to modify the default configuration files, edit the global configuration file which corresponds to each of the Smart Plug-in for SAP monitors you want to deploy to (and run on) the SAP R/3 managed nodes.

- 4 Select the Data tab and click **Load Template** button. The monitor name file you selected is displayed.
- 5 Scroll down to the bottom of the configuration-file policy and make the appropriate modifications for your environment.
- 6 Save your configuration-file policy and exit the editor.
 - ▶ When saving your policy, we recommend you use the configuration-file policy-type naming conventions, for example: `global_r3mondmp.cfg` or `local_r3mondmp.cfg`. The newly created configuration policy for the SPI for SAP R/3 monitor appears in the list of policies in the details pane.
- 7 Deploy the newly created configuration-file policies to the SAP R/3 managed nodes as described in “[Deploying SPI for SAP Policies to Managed Nodes](#)” on page 71.

Figure 6: Configfile dialog box.



Configuration: OVO Administration Tasks

In this phase of the SPI for SAP configuration, you use the OVO for Windows Console to integrate the SPI for SAP with OVO for Windows and bring all the SAP servers that you want to monitor under OVO for Windows management. In this section, you complete the following tasks:

- 1 “Specifying SAP R/3 Systems to Monitor” on page 66.
- 2 “Configuring the Smart Plug-in for SAP Monitors” on page 69.
- 3 “Deploying SPI for SAP Policies to Managed Nodes” on page 71.
- 4 “Deploying OVO for Windows Components to SAP R/3 Nodes” on page 75.



The tasks in this section assume that the SAP R/3 systems you want to monitor with the SPI for SAP are *already* OVO for Windows managed nodes. If this is not the case, see the OVO for Windows on-line help for instructions that explain how to add managed nodes to OVO for Windows.

Specifying SAP R/3 Systems to Monitor

This section describes how to use the configuration-file policy editor to define which SAP R/3 Systems the Smart Plug-in for SAP should monitor. The SAP R/3 Systems monitored by the Smart Plug-in for SAP are defined in the `r3itosap.cfg` configuration file.

Telling the SPI for SAP which SAP R/3 Clients to Monitor

- 1 In the OVO for Windows Console, browse to the following directory:

Policy management > Policy groups > SPI for SAP

-  You have to set up SAP R/3 users for each SAP R/3 client. The list of SAP R/3 clients you made in [“Before You Begin” on page 21](#) includes the information you need for each configuration line. For more information about how to set up SAP users for OVO for Windows, see [“Setting Up an SAP User for OVO for Windows” on page 56](#).
- 2 In the OVO for Windows Console, locate and double-click the `global_r3itosap` file. The configuration-file policy editor displays the selected file as illustrated in [Figure 7: on page 69](#).
- 3 Using the format of the examples in the `r3itosap.cfg` configuration file, add an entry for each SAP R/3 instance, which you want to monitor with the SPI for SAP.
- 4 If the hosts you add to the `r3itosap.cfg` file are configured in a high-availability cluster, you need to add an extra entry to the host-mapping section of the `r3itosap.cfg` file: the information in the host-mapping section maps the names of the physical nodes in the high-availability cluster to the name of the node defined in the SAP variable, `SAPLOCALHOST` and, in addition, to the host name you want to associate with any messages from the cluster when they appear in the OVO for Windows Console or the Service Map.



See the *HP OpenView Smart Plug-in for SAP Software README* for more information about the required patch level for OVO for Windows and its components when configured to use the host-mapping feature in a high-availability cluster.

The host names specified in the `r3itosap.cfg` file *must* be known to OVO for Windows and be resolvable. Whether you choose to use long or short host names depends on how you have set up name resolution in your network.

The cluster host-names appear in the HostMapping entry in the form of a comma-separated list. The last item in the HostMapping entry defines the name of the host with which you want to associate any messages that are generated by nodes in the high-availability cluster. For example;

```
=ClusterHostA,ClusterHostB,SAPLOCALHOST =<OVO_Msg_Node>
```



Short host names are not allowed in the host-mapping section of the `r3itosap.cfg` file. Make sure you use fully qualified host names for all the host names you specify in the host-mapping section of the `r3itosap.cfg` file.

Example 1 on page 67 shows the entry you would add to the HostMapping section if you want to use the SPI for SAP to monitor a high-availability cluster in which the names of the two physical nodes are “True” and “False”, the SAP variable SAPLOCALHOST is defined as "maybe", and the name of the host with which to associate messages from the cluster is “mezcal”.

Example 1: Mapping SAP hosts in a cluster

```
# cluster host mapping
HostMapping =EP7 =78 =true.com,false.com,maybe.com =mezcal.com
```

In a high-availability cluster, the name of the host with which you associate OVO for Windows messages `<OVO_Msg_Node>` in the example above) is usually (but does not *have* to be) the same as the host defined in SAPLOCALHOST. Whether SAPLOCALHOST is (or is not) the same as `<OVO_Msg_Node>` has an impact on what you need to include in the host-mapping section, as follows:

- If SAPLOCALHOST and `<OVO_Msg_Node>` are the same host:

No entry for SAPLOCALHOST is required in the list of physical cluster nodes, for example:

```
=ClusterHostA,ClusterHostB =<OVO_Msg_Node>
```

- If SAPLOCALHOST and `<OVO_Msg_Node>` are *not* the same host:
An entry for SAPLOCALHOST is required at the end of the list of physical cluster nodes, for example;
`=ClusterHostA,ClusterHostB,SAPLOCALHOST =<OVO_Msg_Node>`



All physical nodes in the high-availability cluster must appear in the OVO for Windows Console. You also need to add to the OVO for Windows Console as node type "Other" (Message only) the host which you define in `<OVO_Msg_Node>` in the example above. For more information about setting up the SPI for SAP in a high-availability environment, see [“Configuring the SPI for SAP in a Cluster Environment” on page 87](#).

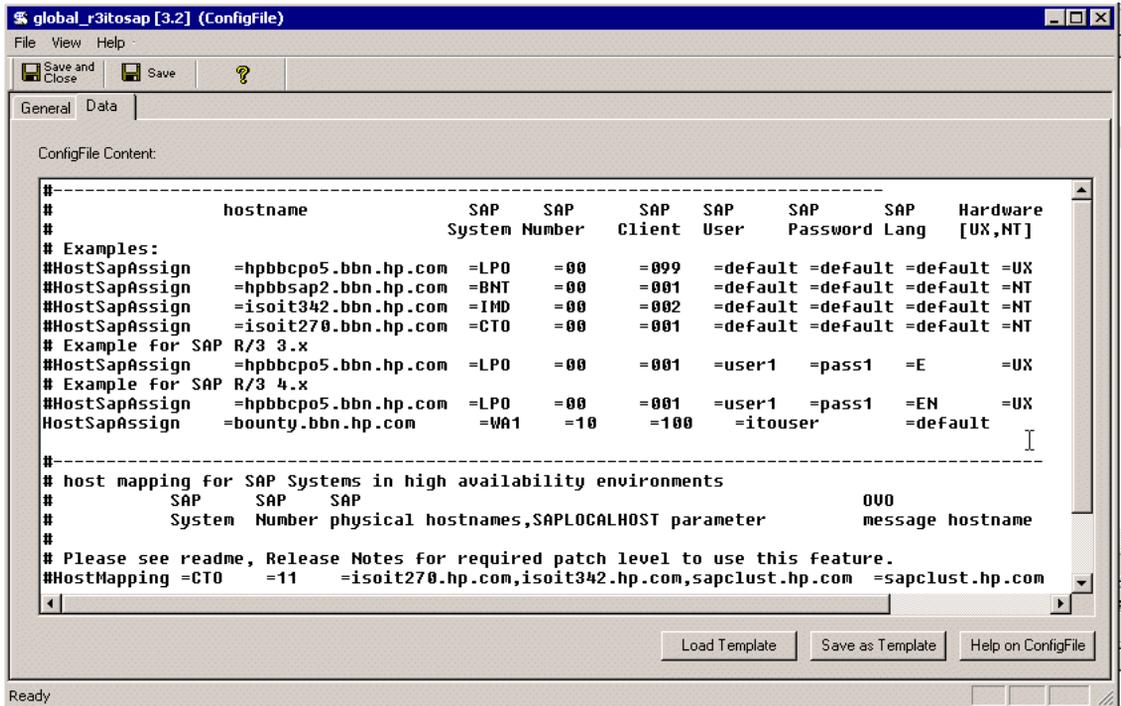
- 5 Save your changes and exit the text editor. When saving the policy, we recommend you use the configuration-file policy type naming conventions, for example: `global_r3itosap`.
- 6 Deploy the `r3itosap.cfg` policy to the managed nodes you want to monitor with the SPI for SAP. Right click the `r3itosap.cfg` policy you modified and use the following menu option:

All Tasks > Deploy on...



The information in the `r3itosap.cfg` policy is used by the service auto-discovery policy, `r3disc`, to generate a service view of your SAP Landscape. If you intend to use the service-views feature, make sure that you deploy the `r3itosap.cfg` policy to the managed node(s) for which you want to generate service views before you run the service auto-discovery. For more information about running service discovery and setting up service views, see the *HP OpenView Smart Plug-in for SAP Online Help*.

Figure 7: Editing the r3itosap.cfg File



Configuring the Smart Plug-in for SAP Monitors

The SPI for SAP monitors which you deploy to the SAP R/3 servers that are managed by OVO for Windows require information about what to monitor and how. The monitors obtain this information from default configuration files, which are installed by the Smart Plug-in for SAP. Each of the SPI for SAP monitors has its *own* default configuration file.

In this step you use the configuration-file policy editor to edit global configuration files (from the default files) for *each* of the SPI for SAP monitors which runs on the SAP R/3 servers. Once you have edited the configuration files, you deploy them to the SAP R/3 servers using the standard OVO for Windows policy-deployment mechanism.

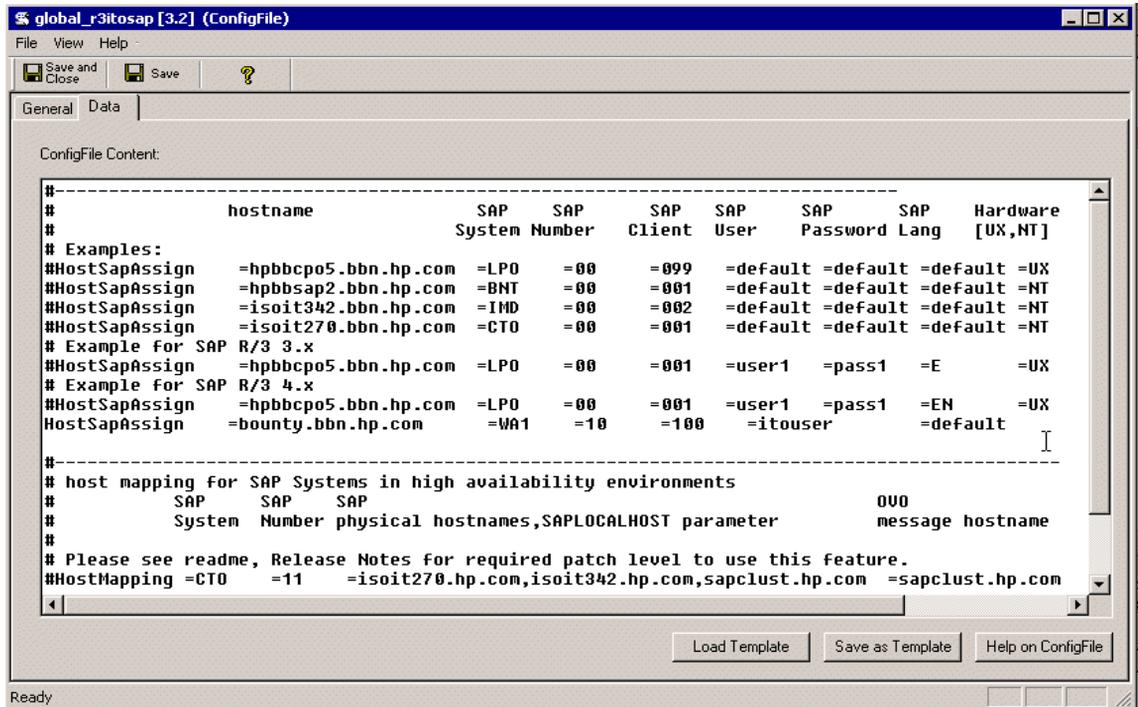
To modify an existing configuration-file policy for the Smart Plug-in for SAP monitors

- 1 In the OVO for Windows console tree, browse to the following directory:
Policy Management > Policy Groups > SPI for SAP
- 2 In the details pane, locate and double-click the configuration file associated with the monitor you want to configure, for example; the `global_r3itosap` file. The configuration-file policy editor displays the selected file as illustrated in [Figure 8: on page 71](#).
 - ▶ The `r3itosap.cfg` file contains the SAP login information that suits the requirements of your SAP R/3 environment, this is the *only global* configuration file that *must* be edited.
- 3 Although all other *global* configuration files can be used in their default state, they generate a large number of messages, some of which you might not at first need. If you want to modify a configuration file, for example to ensure you only receive the messages you *do* need, scroll down to the end of the Configuration File content box, where you will find the alert definitions and can make any changes as required. For more information about the contents and syntax of the SPI for SAP monitors, see the *HP OpenView Smart Plug-in for SAP Online Help*
 - ▶ You should make any changes to a *copy* of the configuration file so that you can retain the original unchanged configuration files as a safety backup. For more information, see [“To Avoid Receiving Unnecessary or Unwanted Messages” on page 72](#).
- 4 Save your policy and exit the ConfigFile policy editor. When saving the policy, we recommend you use the configuration-file policy type naming conventions, for example: `global_r3mondmp`. For *local* configurations, we recommend you replace *global* with the name of the SAP R/3 server for which the local configuration is intended, for example;
`<SAP_server_name>_r3mondmp`

The modified configuration-file policy for the SPI for SAP `r3mondmp` monitor appears in the list of policies in the details pane.

- 5 Deploy the modified configuration-file policies to the SAP R/3 managed nodes as described in “Deploying SPI for SAP Policies to Managed Nodes” on page 71.

Figure 8: Editing the r3itosap.cfg File



Deploying SPI for SAP Policies to Managed Nodes

The SPI for SAP policies are organized into seven default groups, all of which are part of the policy group SPI for SAP. The SPI for SAP policy groups are:

- SAP ITS
- SAP R/3 3.1I AppServer
- SAP R/3 3.1I Central Instance
- SAP R/3 4.0/4.5 AppServer
- SAP R/3 4.0/4.5 Central Instance
- SAP R/3 4.6/6.x AppServer
- SAP R/3 4.6/6.x Central Instance

Only *one* policy group should be assigned to any *one* managed node. Which policy group you assign is determined by the version of SAP R/3 running on the managed node and whether the node is a central instance or an application server.



Remember to deploy an alert monitor's configuration-file policy before deploying the corresponding alert monitor itself. The alert monitors read these configuration files on startup. For example, you need to deploy the `r3moncts` configuration-file policy before you deploy the corresponding alert monitor, `r3moncts`. For more information, see [“Configuring the Smart Plug-in for SAP Monitors” on page 69](#).

The SPI for SAP default policy groups contain all the SAP R/3 monitors supplied with the Smart Plug-in for SAP. Deploying a policy group automatically activates the monitors, which the group contains.

To Avoid Receiving Unnecessary or Unwanted Messages

- 1 Make copies of the default policy groups and modify the *copies* to create your own policy groups containing only those monitors and policies you need.
- 2 Tune the *copies* of the policies and monitors to suit the requirements of your environment before deploying them to the nodes you want to manage with the Smart Plug-in for SAP. This will help prevent additional unwanted messages.

To Create Policy Groups

As OVO for Windows administrator, make your own policy group from which you should remove those policies and monitors you *do not* need, as follows:

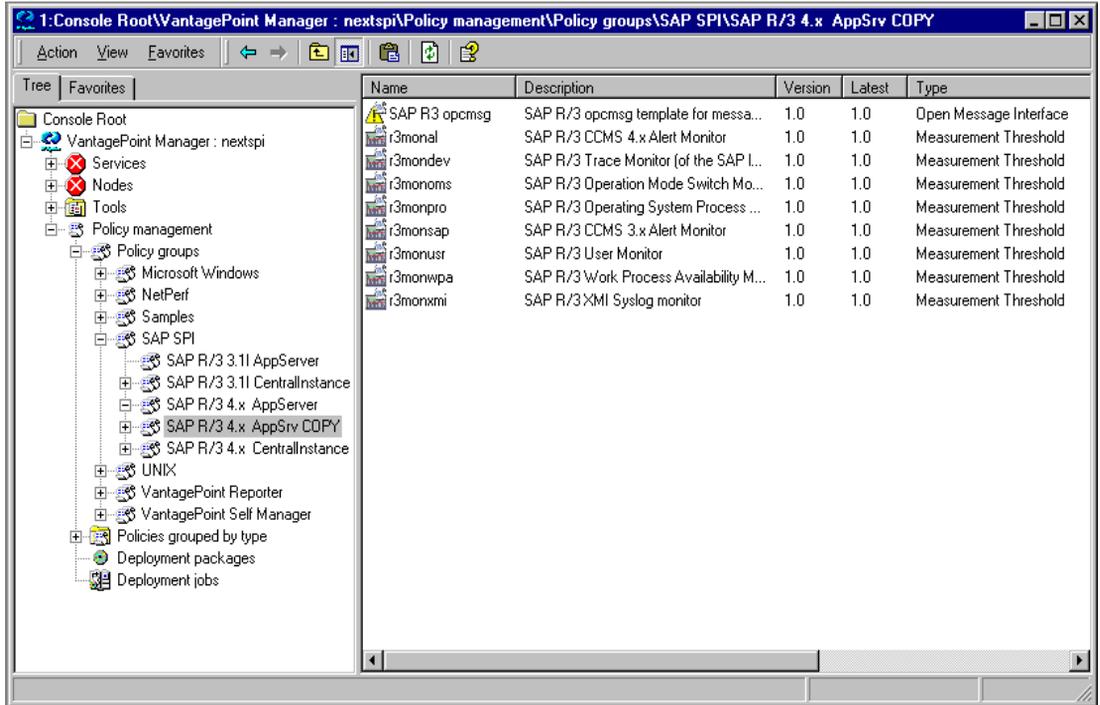
- 1 Expand the `Policy Groups` item and select and expand `SPI for SAP` to display all the default policy groups for the Smart Plug-in for SAP.
- 2 Create a new policy group by selecting and right-clicking `SPI for SAP` and selecting the following menu:
New > Policy Group
- 3 Enter a name for the new policy group in the fields provided and click **OK**.
- 4 In the left pane, select the existing policy group from which you want to copy policies and, in the details pane, drag the policies you want to place in the new policy group over and drop them on to the policy group you have just created.

To Deploy Policy Groups

Deploy the new policy group to the SAP R/3 nodes by following the instructions below. Which policies and policy groups you deploy depends on which SAP R/3 version is installed on the managed nodes and whether the nodes host a central instance or an application server.

- 1 In the console tree, select and right click the new policy group or groups you have created (containing the monitors you need) and use the following menu option:
All Tasks > Deploy on...
- 2 Use the `Deploy Policies on...` window to select the managed nodes to which you want to deploy the new policy group
- 3 Click **OK** to finish deploying policies.
 - ▶ You can use this opportunity to deploy any other policies not present in the SAP R/3-specific policy groups.

Figure 9: Removing Policies from a Policy Group



- 4 You can check the successful deployment of policies by right clicking a managed node and selecting the following menu option from the drop-down menu that is displayed:

Policy Inventory > Deployment jobs



Some of the monitors may require SAP configuration. See [“Configuration: OVO Administration Tasks”](#) beginning on page 65 for additional information on SAP-Specific tasks.

Deploying OVO for Windows Components to SAP R/3 Nodes

You use the deploy-instrumentation tool to deploy the contents of the actions, commands, and monitors directories on the OVO for Windows management server to the selected OVO for Windows managed nodes. If the actions, commands, and monitors are not deployed, the SPI for SAP features and functionality will not work as expected. The directories containing the actions, commands, and monitors usually reside in the following location on the OVO for Windows management server, where *<OS Name>* is the name of the operating system running on the OVO managed node:

```
%OvInstallDir%\Instrumentation\<OS Name>\<OS Version>\
```



If the SAP R/3 systems to which you want to deploy the SPI for SAP components do not appear in the OVO for Windows console, see the OVO for Windows on-line HELP for instructions about adding managed nodes to OVO for Windows.

To deploy the OVO instrumentation:

- 1 In the OVO for Windows console, select and right-click the SAP R/3 system you want to deploy the SPI for SAP components on.
- 2 From the drop-down menu, select the following menu option:

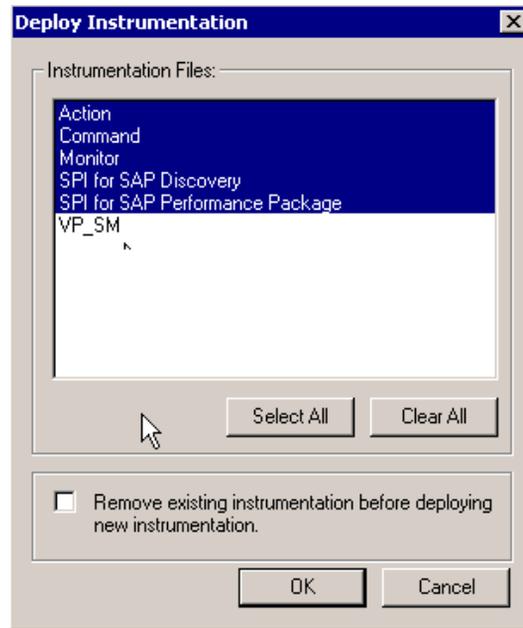
All Tasks > Deploy Instrumentation

- a When the Deploy Instrumentation box appears, select the following components as illustrated in [Figure 10](#) below:
 - Action
 - Command
 - Monitor
 - SPI for SAP Discovery
 - SPI for SAP Performance Package

3 Click **OK**

- ▶ You can monitor the deployment action as it happens in the Deployment Jobs window.

Figure 10: Deploy Instrumentation Dialog Box



For more information about the options for installing and updating software, see the *HP OpenView Smart Plug-in for SAP Online Help*.

The SPI for SAP in a High-availability Environment

The information in this section helps you to understand the process of installing and configuring the SPI for SAP in a high-availability environment such as MC/ServiceGuard or Microsoft cluster. Although the information provided in this section concentrates on example configurations, the basic concepts are the same for any high-availability environment as far as the SPI for SAP is concerned. This section covers the following topics:

- [“Cluster Configurations” on page 78](#)

A short description of the most common implementations of high-availability software in an SAP R/3 landscape

- [“Before You Begin” on page 82](#)

A check list of points to be aware of before you install and configure the SPI for SAP in an cluster environment

- [“Installing the SPI for SAP in a Cluster Environment” on page 84](#)

Instructions which help you through the process of installing the SPI for SAP in a cluster environment

- [“Configuring the SPI for SAP in a Cluster Environment” on page 87](#)

Helpful tips and tricks to use when configuring the SPI for SAP in a cluster environment

- [“Performance Tools in a Cluster Environment” on page 97](#)
How to set up and use the OpenView Performance Agent tools to best effect with the SPI for SAP in a cluster environment
- [“Service Reports and Performance Graphs in a Cluster Environment” on page 98](#)
How to generate SPI for SAP Service Reports and Performance Graphs for managed nodes in a cluster environment
- [“Service Views in a Cluster Environment” on page 99](#)
Using tools provided by the SPI for SAP, you can generate Service Views of the SAP environment automatically.
- [“Removing the SPI for SAP Software in a Cluster Environment” on page 99](#)
Instructions to take you through the process of removing the SPI for SAP from managed nodes in a cluster environment

Cluster Configurations

The most common implementations of high-availability software in an SAP R/3 landscape involve configuring the Central-Instance server and the database server in a cluster and installing either one *combined* high-availability package on the Central-Instance server or, alternatively, two *separate* high-availability packages on the Central-Instance server and the database server, respectively. Typically, Application Servers are not configured as part of the high-availability cluster. The two configurations which we describe in more detail in this section are as follows:

- the single-package configuration
In the single-package configuration, the SAP database and central instance are located on the *same* server and included in the same high-availability package. The combined package can be switched temporarily to the adoptive node in the event of problems.
- the twin-package configuration
In the twin-package configuration, the SAP database and central instance are located on *different* servers. Either package can be switched

temporarily to the alternative node in the event of a problem on the host or adoptive node.

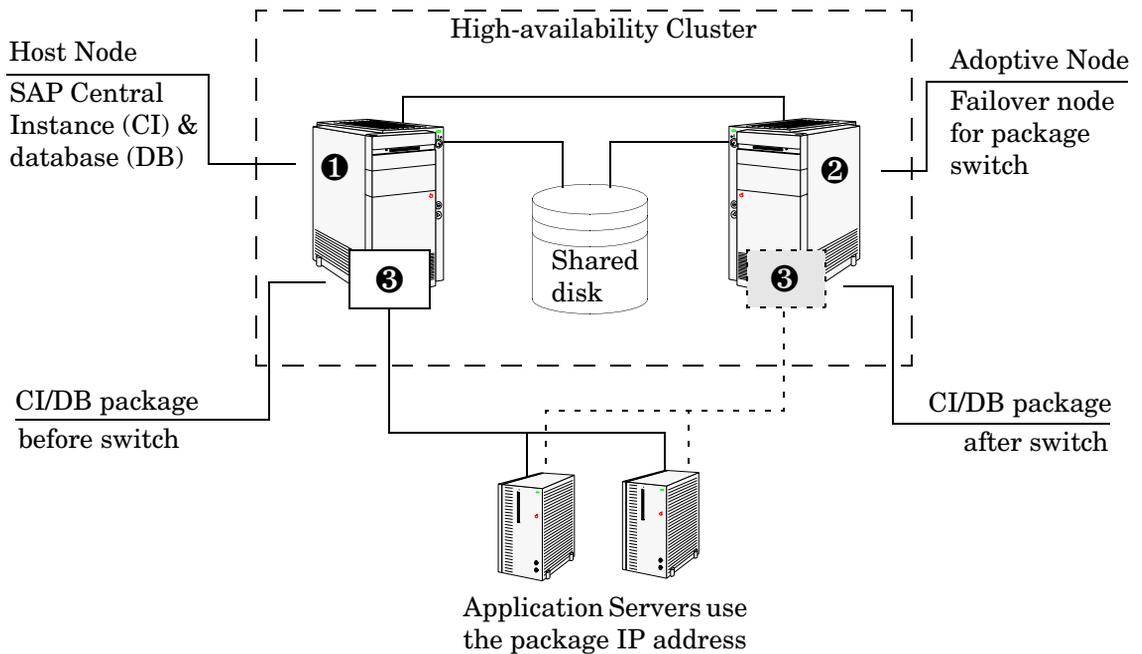
The Single-Package Configuration

In the single package concept, the server where the database and central instance normally run is included in a cluster with another server, which will act as the adoptive node in the event of a package switch. The adoptive node can perform any one of the following roles:

- SAP application server
- SAP R/3 test or development system
- Stand-by

In [Figure 11: on page 80](#), the application servers, which are not included in the cluster, reference the cluster package (Ⓢ) by means of its relocatable IP address, not by reference to the fixed IP dress of the node on which the cluster package is running. If a problem occurs, the central instance and database are taken down on the *host* node (cluster node ①), and then brought up again on the *adoptive* node (cluster node ②). At the same time, the shared disks are deactivated on the host node and reactivated on the adoptive node.

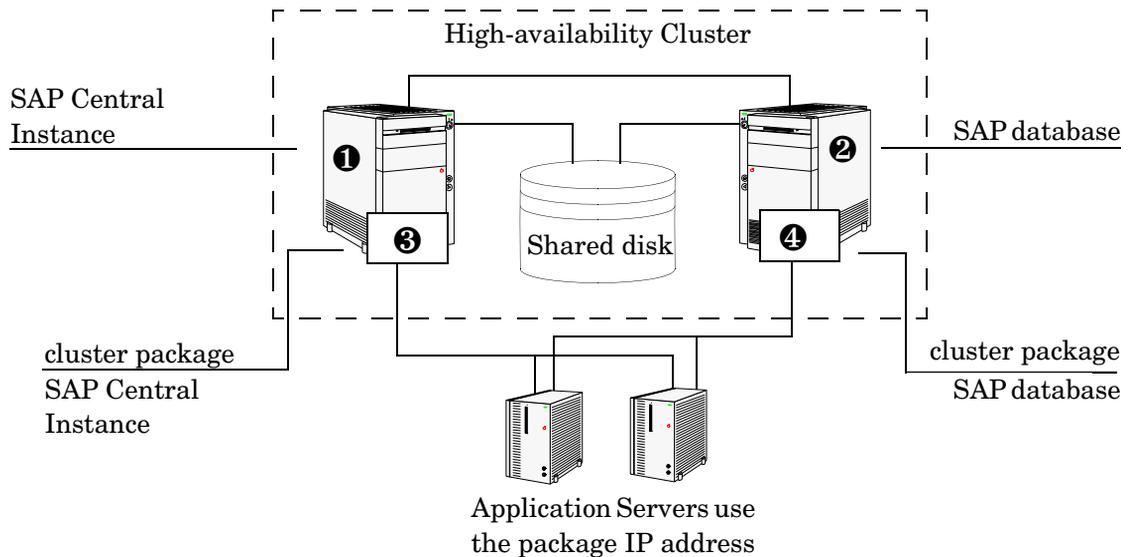
Figure 11: The Single-Package Configuration



Once these actions have been completed by the cluster software, the application servers can reconnect to the central instance and database (⑤ in [Figure 11: on page 80](#)) using the same relocatable IP address, which, as the name suggests, moves with the package.

The Twin-Package Configuration

In the twin-package configuration, the central instance and the database are installed on different servers, which for the sake of convenience we can call cluster nodes ① and ② respectively, as illustrated in [Figure 12: on page 81](#). The central-instance server and the database server form a high-availability cluster, where each server can act as the adoptive node for the other in the event of a package switch.

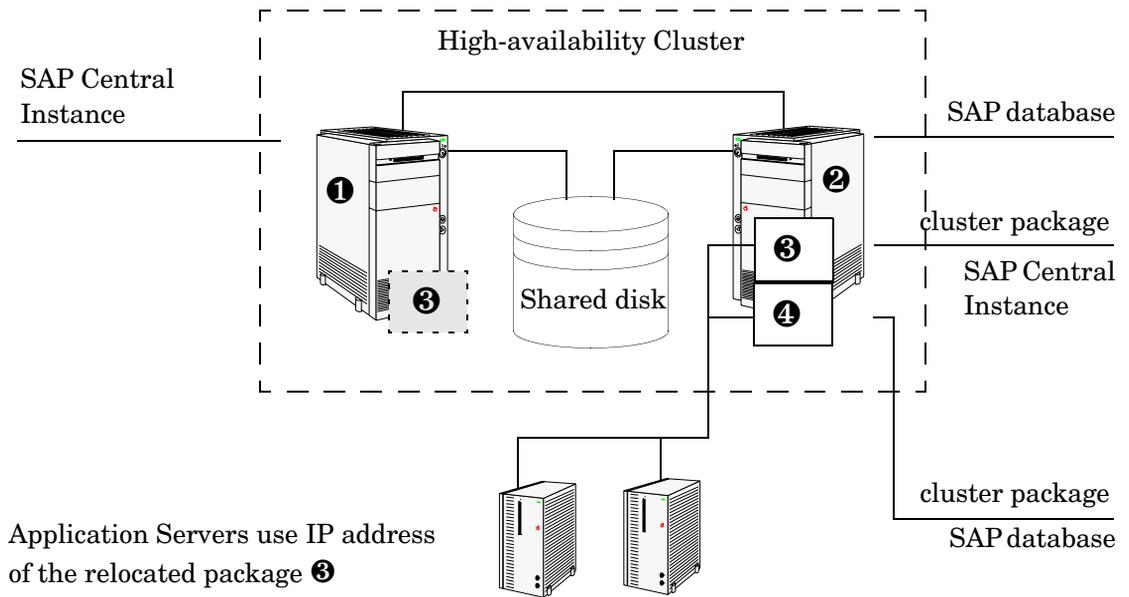
Figure 12: The Twin-Package Configuration before a Package Switch

The application servers are not included in the cluster and, as illustrated in [Figure 12: on page 81](#), reference each package by means of each package’s own relocatable IP address—not the fixed IP addresses of cluster-nodes ❶ and ❷.

If a problem is identified on the central-instance server, the central instance (❸) is taken down on cluster node (❶), and then brought up again on the cluster node (❷). At the same time, the central instance shared disk is deactivated on the host node and reactivated on the adoptive node.

[Figure 13: on page 82](#) shows the situation *after* the switch of the SAP central-instance package (❸). Once the central-instance package is up and running on the cluster node (❷), the application servers can reconnect to the central instance using the same IP address as before the failover, namely; the central-instance package’s relocatable IP address, which moves along with the package at the time the failover occurs.

Figure 13: The Twin-Package Configuration after a Package Switch



Before You Begin

The information in this section is designed to help you install and configure the SPI for SAP in a high-availability environment: it is not intended to explain either how to set up the high-availability software or OVO for Windows. Before you start the process of installing the SPI for SAP in a high-availability environment, please read through and consider the information included in the following sections:

- “Software Requirements” on page 83
- “Configuration Requirements” on page 83
- “Service Reports and Performance Graphs” on page 83
- “Service Views” on page 84

Software Requirements

The cluster software must already be correctly installed and configured in your SAP landscape, and the cluster should function correctly. For example, you have to decide whether to configure one package for the Central Instance and the Database Server or set up separate packages for each part. These decisions become important later in the configuration process.

Configuration Requirements

The SAP servers in the high-availability cluster must already be configured as OVO for Windows managed nodes with the appropriate OVO for Windows agent software and functionality installed and running.



All physical nodes in the high-availability cluster must be added to the OVO for Windows Console. You also need to add to the OVO for Windows Console as node type "Other" (Message only) the host name which you define as the OVO for Windows message host name in the host-mapping section of the `r3it0sap.cfg` file.

Service Reports and Performance Graphs

If you want to generate SPI for SAP service reports and performance graphs for all the nodes in the high-availability cluster, make sure that the following conditions are true:

- The appropriate performance-agent functionality (OVO Embedded Performance Component or the OpenView Performance Agent) must be installed, configured, and available on all the nodes in the cluster
- The appropriate SPI for SAP performance sub-agent functionality must be installed, configured, and available on all the physical nodes in the high-availability cluster. For more information about installing and configuring the SPI for SAP Performance sub-agent, see the *HP OpenView Smart Plug-in for SAP Online Help*.
- Both OpenView Performance Manager and OpenView Reporter must be installed, correctly configured, and available on a machine that can see the

nodes in the high-availability cluster. Note that these services are not usually (and do not need to be) part of the cluster itself.

Service Views

You can use tools provided by the SPI for SAP to generate Service Views automatically. If you want to make use of Service Views with the SPI for SAP, you need to set it up to see the services you want the SPI for SAP monitor in the SAP environment.



The service-discovery process uses information stored in the `r3itosap.cfg` file to determine which SAP Systems are to be monitored. You need to ensure that you have entered in the Host Mapping section of the `r3itosap.cfg` file the names of the nodes in the high-availability cluster. For more information, see [“Configuring the SPI for SAP in a Cluster Environment” on page 87](#).

Installing the SPI for SAP in a Cluster Environment

To use the SPI for SAP in a high-availability environment, you have to install the OVO for Windows agent and SPI for SAP actions, commands, monitors, and policies on *all* nodes in the cluster where the SAP package can run—this means, both the host node and adoptive node(s).



It is always a good idea to make sure that the daily backup of the SAP environment is correctly set up and that there is a valid backup available for restore *before* you start the installation of the SPI for SAP actions, commands, monitors, and policies.

Before you deploy the SPI for SAP to the cluster nodes, you need to deploy the appropriate SPI for SAP policies. For example, you have to deploy a Central-Instance policy group such as `SAP R/3 4.x Central Instance` to all managed nodes, where a package that includes a `SAP R/3 4.x Central Instance` can run.

If no SAP instance is running on the node, the SPI for SAP monitors will work immediately after installation, but will not generate any messages. Note that SPI for SAP tools which open a SAP dialog will return an error if you try to execute them on a stand-by node, where no SAP package is running.

If an application-server instance is already running on the managed cluster-node, the monitors will run and generate messages relating to the Application-server instance. You should configure the monitors that normally only run on a central-instance server in such a way that, when they start after a package switch, they do not generate messages relating to problems with the Application-server instance, too, since this could lead to the generation of duplicate or misleading messages. For more information, see [“Special-Case Scenarios” on page 93](#).

To Install the SPI for SAP Monitors

You install the SPI for SAP monitors in a high-availability environment in the same way as in a normal environment, that is; using the standard OVO for Windows policy-deployment mechanisms. The only difference is that you have to perform the operation once for each physical node in the cluster, as follows:

1 Pre-requisites:

Before you start the installation of the SPI for SAP monitors described in this section, make sure that you have completed *all* the steps described in the section [“Configuration: SAP-Specific Tasks” on page 49](#), which walks you through the process of setting up the appropriate accounts, logins, paths, and permissions required to ensure that SAP and OVO for Windows can communicate efficiently.



If you do not ensure that the appropriate user accounts and permissions have been set up in both SAP and OVO for Windows *before* you start the installation and configuration of the SPI for SAP described in this section, the SPI for SAP action, commands, and monitors will not function correctly. This could lead to the generation of incorrect or duplicate messages and the collection of misleading performance data.

- 2 Set up the `r3itosap.cfg` file to reflect the high-availability cluster.

You need to enter information about the configuration of the high-availability cluster in the Host-mapping section of the `r3itosap.cfg` file: the `r3itosap.cfg` file is the file you use to specify the SAP Systems, which you want to monitor with the SPI for SAP. For more information about the `r3itosap.cfg` file, see [“Specifying SAP R/3 Systems to Monitor” on page 66](#).

- 3 Monitor configuration:

Configure the SPI for SAP monitors, which you want to run on the cluster nodes. The configuration must be identical for all the nodes in the high-availability cluster in order to avoid the generation of confusing messages and potentially misleading performance data after a package switch. For more information, see [“Setting Up Configuration Values for the SPI for SAP Monitors” on page 61](#).



The only exception to this rule is when the adoptive node is already configured as an Application Server. For more information, see [“Special-Case Scenarios” on page 93](#).

- 4 Deploy the SPI for SAP components:

Use the OVO for Windows Console to deploy the appropriate SPI for SAP components to *each* physical node in the cluster. The policies you deploy must match the version of SAP, which is running on the managed node. In addition, you must make sure that you deploy exactly the same components (actions, commands, monitors, and policies) to *all* the nodes in the cluster. In this way, you ensure that the SPI for SAP continues to monitor the same SAP instances in the same way, regardless of where the SAP instance is running.

For more information about deploying SPI for SAP components to OVO for Windows managed nodes, see [“Configuration: OVO Administration Tasks” on page 65](#). You will need to complete all the instructions for *each* node in the high-availability cluster.

- 5 Special Considerations:

On each node in the high-availability cluster, ensure that each monitor can see its history file, `r3<monitor_name>.his`, both before and after a failover package switch by setting the history path in each monitor’s

configuration file, `r3<monitor_name>.cfg`. For more information about the location of SPI for SAP monitor history files and the options you need to set and change, see [“Monitor History Files in a High-availability Cluster”](#) on page 88.

Configuring the SPI for SAP in a Cluster Environment

In a high-availability cluster where the host and adoptive nodes have identical roles, you approach the process of configuring the SPI for SAP in the same way as if you had to configure the SPI for SAP twice, with the following caveats:

1 SAP logins and user accounts for the SPI for SAP

Use the `HostSapAssign` section in the `r3itosap.cfg` file to set up the SAP logins, accounts etc. required by the SPI for SAP on *all* physical nodes in the cluster. For more information, see [“Defining SAP Logins in a High-availability Environment”](#) on page 92.

2 Tell the SPI for SAP about the high-availability cluster nodes, which you want to monitor.

You need to enter information about the configuration of the high-availability cluster in the Host-mapping section of the `r3itosap.cfg` file: the `r3itosap.cfg` file is the file you use to specify the SAP Systems, which you want to monitor with the SPI for SAP. For example, you need to specify the names of the *physical* hosts in the high-availability cluster and the name of the virtual or relocatable host with which you want to associate the messages originating from the cluster when the messages appear in the OVO for Windows Console. You might also need to specify in the list of physical nodes the name of the host defined in `SAPLOCALHOST`, but only if it is different from the host you want to associate with incoming messages. For more information about the `r3itosap.cfg` file, the entries you need to add to the host-mapping section, and the required syntax, see [“Specifying SAP R/3 Systems to Monitor”](#) on page 66.

3 Configure the SPI for SAP Monitors

You have to configure the SPI for SAP monitors in exactly the same way on *all* the physical nodes in the cluster, where the package is configured to run. For more information about configuring the SPI for SAP monitors, see [“Configuring the Smart Plug-in for SAP Monitors” on page 69](#).

4 A local configuration that is specific to one particular node in the cluster is not recommended as it can lead to a situation where different monitoring conditions are applied after a package is switched. [“Special-Case Scenarios” on page 93](#) describes one or two exceptions to this rule.

5 Deploy the SPI for SAP components

In this task, you assign and distribute the appropriate SPI for SAP components to *all* the physical nodes in the high-availability cluster, where the package is configured to run. For more information about deploying the SPI for SAP components, see [“Deploying OVO for Windows Components to SAP R/3 Nodes” on page 75](#) and [“Deploying SPI for SAP Policies to Managed Nodes” on page 71](#).

6 History files for the SPI for SAP Monitors

Make sure that the correct history file is available for each SPI for SAP monitor both before and after a failover package switch. For more information, see [“Monitor History Files in a High-availability Cluster” on page 88](#).

7 Special Requirements in your SAP environment

Make sure that any special requirements in your SAP environment are known to the SPI for SAP monitors. For more information, see [“Special-Case Scenarios” on page 93](#).



If the adoptive node in the cluster has the additional role of Application Server, make sure you read the instructions in [“Special-Case Scenarios” on page 93](#) before you start the configuration process.

Monitor History Files in a High-availability Cluster

The SPI for SAP alert monitors `r3monxmi`, `r3monal`, `r3mondev`, `r3monpro`, `r3monsap` and `r3status` have their own history file with the extension `.his`, for example; `r3monal.his`. Each time one of these SPI for SAP monitors

starts, it relies on the contents of its history file `r3<monitor_name>.his` to determine the last events monitored and, as a result, the point at which the current monitor run should start. This mechanism is designed to avoid the problem of duplicate messages.

Note that `r3monxmi`, `r3monal` and `r3monsap` write new information to their respective history files if, and only if, the SAP System they are monitoring is available and the SPI for SAP monitors can connect. If the SAP System being monitored is *not* available, these monitors only update the time stamp to reflect the time of the latest monitor run. The monitors `r3mondev`, `r3monpro`, and `r3status`, on the other hand, write to their respective history file after each monitor run whether or not the SAP System they are monitoring is available or not.

Example 2: History File `r3monal.his` for the `r3monal` Monitor

```
#-----
# Keyword          SAP      SAP      SAP      Last Scan
#                  System   Number   Instance  Time
LastScannedSystem =SP6      =33      =DVEBMGS33 =1073908785
#-----
```

The history files for the SPI for SAP monitors are usually stored on the managed node where the monitors are running in a directory specified in each monitor's configuration file, `r3<monitor_name>.cfg`. By default, this directory is usually `%OVAGENTDIR%\temp`. However, if the cluster package switches to another node, then the SPI for SAP monitors can no longer access the most recent history files stored on the failed cluster node. This will lead to the generation of duplicate messages concerning problems, which have already been sent to the OVO for Windows Console.



If the SPI for SAP monitor cannot find or read its history file, it does not know when the last monitor run took place and, as a consequence, has no way of determining which alerts need reporting and which it can safely ignore. In this case, the monitors assume they are starting for the first time and, with the exception of the alert monitor `r3moncol` which reads the relevant tables in the SAP-alerts log database, parse the SAP trace/log files for the information gathered in the two days prior to the monitor start time. This could lead to the generation of a large number of duplicate messages.

To ensure that the history files for the SPI for SAP monitors remain available to the monitors after the package switches, you have to store the history file *locally* for each monitor on each physical node in the cluster where the package is configured to run and, in addition, define the local history path in the appropriate monitor-specific configuration file. [Example 3 on page 90](#) shows a configuration file for the `r3mona1e` monitor. In this example, the history path is set according to the operating system running on the cluster node. You can change this setting and, in addition, modify `<hostname>` to match the name of the *physical* cluster-node on which the monitor is to run.

Example 3: Modifying the History-file Path in the `<monitor>.cfg` File

```
#-----
# History          hostname          path
# Path
#
HistoryPathUnix   =<hostname_1>   =/var/opt/OV/tmp
HistoryPathAIX    =<hostname_2>   =/var/lpp/OV/tmp
HistoryPathWinNT  =<hostname_3>   =default
#-----
```

Changing the configuration file in this way ensures that, in the event of a package switch, the SPI for SAP monitors know where to find their history file and, for the most part, do not send duplicate messages. Despite this, monitors such as `r3monxmi` and `r3monsap` might still, occasionally, send duplicate messages. The same process applies when the package is switched from the adoptive node back to the host node in the cluster, too.



In a situation where the path for the history file is defined in more than one place, for example; the environment variable `SAPOPC_HISTORYPATH` and the `r3<monitor_name>.cfg` monitor configuration file. The environment variable `SAPOPC_HISTORYPATH` takes precedence.

Special Considerations for the Alert Monitors

This section contains information which is intended to help you set up the SPI for SAP alert monitors in a high-availability environment. For more detailed information about the alert-monitor configuration files and keywords for

`r3monal` in particular, see the *HP OpenView Smart Plug-in for SAP Online Help*. To set up the SPI for SAP Alert Monitors in a high-availability environment, you need to carry out the following steps:

- 1 Enable the SPI for SAP's CCMS Alert monitor, `r3monal`, to use the SAP XMI/XAL interface (=XAL) to read CCMS alerts rather than shared memory. Note that the SAP XMI/XAL interface is only available with SAP version 4.6 and higher.
- 2 Enable (=1) the `r3monal` monitor's auto-acknowledgement feature for CCMS alerts in SAP to avoid duplicate messages appearing in the OVO Console
- 3 Define a CCMS Monitor Set, for example; "OpenView", and a CCMS Monitor, for example; "SPI Monitoring", for the messages you want to forward from CCMS to the OVO Console. Note that the monitor-set feature can be only used with the XMI/XAL interface.
- 4 Disable (=0) the shared-memory check using the parameter "SAPSHMCheck" for the following Alert Monitors: `r3monsap`, `r3monpro`, `r3mondev`, `r3monxmi` and `r3monal`.

[Example 4 on page 91](#) shows which parameters you should use in `r3monal.cfg` file to set up the `r3monal` monitor to use the XMI/XAL interface, which is available with SAP 4.6 and higher and *must* be enabled for the `r3monal` monitor in a cluster environment. You enable the XMI/XAL interface for `r3monal` with the `CCMSInterface` keyword in the monitor-configuration file.

Example 4: Enabling the XAL Interface for `r3monal`

```
# The XAL interface can be only used with SAP 4.6 and higher.
#-----
# SHM => for the shared memory interface (old interface)
# XAL => for the new enhanced XMI/XAL interface (BAPI)
CCMSInterface =XAL

# AutoAcknowledge of CCMS alerts will only work if you use the
# XMI/XAL interface. If you use the SHM interface, the XAL
# settings are ignored.
#-----
# CCMSAcknowledgeMessage SAP      Ack. filtered   Enable=1
#                          System  Messages       Disable=0
CCMSAcknowledgeMessage  =SP6      =0              =1
```

```
# A Monitor Set defines the messages you want to forward to
# the OVO console. The Monitor Set can be only used with the
# XMI/XAL interface.
#-----
# Monitor Set      SAP      SAP      Monitor Set  Monitor
#                  System    Number
CCMSMonitorSet    =SP6      =33      =OpenView    =SPI-Monitoring
#-----
```

In addition, in order to prevent `r3monal` sending duplicate messages in the event of a package failover, you have to use the keyword `CCMSAcknowledgeMessage` to enable the `r3monal` monitor's auto-acknowledgement feature for CCMS alerts in SAP. This feature automatically acknowledges CCMS Alerts in SAP so that they are not repeatedly found by the SPI for SAP and used to generate messages.

The parameter "SAPSHMCheck" should be explicitly set to disabled (=0) for the following Alert Monitors: `r3monsap`, `r3monpro`, `r3mondev`, `r3monxmi` and `r3monal`, as illustrated in [Example 5 on page 92](#). By default, the shared-memory check is enabled (=1).

Example 5: Disabling the SAP Shared-memory Check

```
#-----
# SAPSHMCheck      hostname      Enable =1 (default if not defined)
#                  Disable =0
SAPSHMCheck        =ALL              =0
#-----
```

Defining SAP Logins in a High-availability Environment

When setting up the SPI for SAP in a high-availability environment, remember to include references to SAP instances running on all *physical* nodes in the cluster in the `r3itosap` file, the file which the SPI for SAP uses to define all SAP logins. When you enter the information for the SAP logins in this file, it is essential that you use the names of the *physical* nodes in the high-availability cluster, since the SPI for SAP monitors reference the physical node (and not the relocatable IP address associated with the package)

when they do a host-name lookup. For more information about specifying SAP logins in a cluster environment, see [“Specifying SAP R/3 Systems to Monitor” on page 66](#).



The SPI for SAP uses the host-mapping section of the `r3itosap.cfg` file to define information about the configuration of the high-availability cluster, such as the names of the physical hosts and the name of the managed node to be associated with messages originating from the cluster. For more information, see [“Configuring the SPI for SAP in a Cluster Environment” on page 87](#).

If the adoptive node in the high-availability cluster is already configured as an Application Server, then the logins for both the Central Instance (=CI) and the Application Server (=APP) can lead to problems with some of the SPI for SAP components, for example; `r3moncol` and `r3monpro`, both of which require special configuration as described in [“Special-Case Scenarios” on page 93](#).

Special-Case Scenarios

For reasons of efficiency or cost, the adoptive node in a high-availability cluster might already be in use as an application server. If this is the case in your environment and regular high loads mean that you need the Central Instance to maintain the same performance level after the failover package switch as before, you have the option of shutting down the Application Server on the adoptive node after the failover so that the machine’s performance is available solely to the Central Instance. You can then share the user load between any other available Application Servers.

If performance is not an issue in your environment, you can choose to keep the Application Server instance running on the adoptive node even after the failover package switch. However, if an instance of an SAP Application Server is running on the same machine as an SAP Central Instance, you will need to ensure that the SPI for SAP monitors are made aware of this fact and do not generate messages for both the Central-Instance and the Application-Server. The SPI for SAP monitors which are only designed to work with the Central Instance should be set up to exclude monitoring of the Application-Server instance. The `r3moncol` and `r3monpro` monitors, for example, require special attention.

Each SPI for SAP monitor has a configuration file that you use to define which SAP R/3 instances in your SAP landscape it should watch and, in addition, what information it should collect. For example, you use the `r3monpro.cfg` file to configure the `r3monpro` monitor to collect information about either the Central-Instance processes or the processes tied to the Application-Server instance. Note that the *HP OpenView Smart Plug-in for SAP Online Help* has much more information about the individual SPI for SAP monitors as well as additional hints about what aspects you can configure to suit the requirements of your environment.



The SAP instance number associated with the Application Server already running on the adoptive node cannot be the same as the SAP instance number associated with the SAP Central Instance, which starts on the adoptive node after the failover package switch.

Table 7 shows which monitors apply to which SAP instance types.

Table 7: SPI for SAP Monitors and SAP Instance Types

SPI for SAP Monitor Name	Central Instance	Application Server
r3monaco	✓	
r3monale	✓	
r3monal ^a	✓	✓
r3monchg	✓	
r3moncts	✓	
r3mondev	✓	✓
r3mondmp	✓	
r3monjob	✓	
r3monlck	✓	
r3monoms	✓	
r3monpro	✓	✓

Table 7: SPI for SAP Monitors and SAP Instance Types

SPI for SAP Monitor Name	Central Instance	Application Server
r3monrfc	✓	
r3monsap ^b	✓	✓
r3monspl	✓	
r3montra	✓	
r3monupd	✓	
r3monusr	✓	
r3monwpa	✓	
r3monxmi	✓	✓

a. CCMS 4.x only

b. CCMS 3.x alert monitor

The r3moncol Monitor in a High-Availability Cluster

The `r3moncol` monitor collects alerts from all the SPI for SAP alert monitors such as; `r3monale`, the iDOC-Status Monitor, and `r3mondmp`, the ABAP-dump monitor. The alert monitors themselves ensure that alert collectors are executed according to a defined schedule and report any messages that come back from the called function.

The `r3moncol` monitor is only intended to run on an SAP Central Instance: it is not designed to run on an Application Server. As a consequence, if the adoptive node in a high-availability cluster is running an application server, care has to be taken to ensure that the monitors that are started when the Central Instance comes up on the adoptive node after the failover switch do not become confused about which SAP instance to monitor—Application Server or Central Instance.

To avoid problems when the Central Instance and the Application Server are running on the same cluster node at the same time, for example; after a system failover, you need to ensure that each of the monitors which the `r3moncol` starts when the Central Instance comes up on the adoptive node is

configured to ignore alerts associated with the Application Server and monitor *only* those alerts that belong to the Central Instance. This means modifying the configuration file of *each* of the SPI for SAP's Central-Instance monitors listed in [Table 7 on page 94](#) in such a way as to make sure that the monitor is tied to a particular SAP Central-Instance number, for example; 00. By default, the SPI for SAP monitors are configured to monitor *all* SAP instances present on the node, which in this special-case scenario would include the unwanted Application-Server instance, too.

[Example 6](#) illustrates how the configuration file for the `r3monale` monitor on the *adoptive* node would look if you configured `r3monale` to monitor only the Central Instance (for example=00) on the adoptive node `nodename2.com` and *not* the instance of the Application Server (=01), which is already running. Note that the node name you specify in this file is the name of the *physical* cluster node: `<CI>` refers to the SID for the Central Instance. Note, too, that the configuration files illustrated in [Example 6](#) and [Example 7 on page 97](#) are incomplete (...) and are included in this form only for the purposes of illustration.

Example 6: Tying the `r3monale` Monitor to an SAP Instance Number

```
#AlertMonFun  SAP          SAP  SAP  SAP  Alert  Enable=1 (...)
#              Host          Sys  Num  Client Monitor  Disable=0 (...)
#-----
AlertMonFun  =node2.com  =<CI> =00  =099  =ALE    =1      (...)
```

The `r3monpro` Monitor in a High-Availability Cluster

The `r3monpro` monitor scans for and checks all processes associated with a given SAP instance, for example; the `dialog`, `enqueue`, `update`, `batch`, `dispatch`, `message`, `gateway`, and `spool` work processes. However, the `r3monpro` monitor can be used to monitor database processes, too.

If the adoptive node in a high-availability cluster is running an Application Server, then care has to be taken after a package switch that the `r3monpro` monitor started by the package does not assume that the processes associated with the Application Server also need to be monitored along with the processes belonging to the Central Instance. One way of ensuring this is to specify the exact number of processes to be monitored by `r3monpro` in the `r3monpro.cfg` file (in the column: `Process number=#`). The number of processes to monitor must be the same on each node both before and after the failover package switch.

In addition, if you want to ensure that the `r3monpro` monitors only those processes belonging to a specific SAP instance on a node where multiple SAP instances are running, for example; after a package switch, you have to make sure that the `r3monpro` monitor knows which SAP instances it is supposed to watch. You can do this by modifying the `r3monpro.cfg` file on the adoptive node in the cluster in such a way that each SAP instance number (defined in the column: `SAP Num=`) is linked to a specific process name, and a defined number of process instances, as illustrated in [Example 7](#).

Example 7: Tying the `r3monpro` Monitor to an SAP Instance Number

```
#AlertInstMonPro  SAP      SAP      Process   Enable  Mode   Proc   (...)
#                  Sys      Num      Name      =1      =Min   Num   (...)
#-----
AlertInstMonPro   =T11    =00      =dw.sapSID* =1      =Min   =9     (...)
AlertInstMonPro   =T11    =01      =dw.sapSID* =1      =Min   =6     (...)
```

Performance Tools in a Cluster Environment

If you are using the Performance Agent (or OVO Embedded Performance Component) to monitor SAP R/3 in a high-availability environment, you must install the performance agents on both nodes in the cluster, namely; the *host* and *adoptiv*e nodes, and then configure the performance agent to monitor the same SAP System IDs on both nodes.

In the event of a failover and subsequent package switch, the Performance Agent stops collecting values for the SAP metrics on the host node and, as soon as the package comes up on the adoptive node, starts to monitor and report the appropriate SAP metrics on the adoptive node. Metrics for physical components such as CPU and disk performance continue to be collected on

both nodes irrespective of where the package is running. This needs to be taken into account when generating and publishing performance reports and graphs.



The SAP SPI service reports correlate the values collected by the Performance Agent agent on the cluster over time. This means that if a package switches from the host node to the adoptive (backup) node, the values for the switched instance will be split between the two nodes in the cluster. If the scenario described reflects the situation in your environment, you will have to use the reports from both nodes to get a complete view of SAP performance.

Service Reports and Performance Graphs in a Cluster Environment

If you want to generate SPI for SAP service reports and performance graphs for all the nodes in the high-availability cluster, make sure that both the OpenView Performance Manager and OpenView Reporter, are installed, correctly configured, and available on a machine, which can see the cluster nodes. You will also have to ensure that the appropriate performance-agent functionality (OVO Embedded Performance Component or the OpenView Performance Agent) is installed, configured, and available on all the physical nodes in the high-availability cluster and the appropriate SPI for SAP performance sub-agent integration functionality is installed and correctly configured.



Note that operating-system (OS) reports are tied to the individual physical nodes in the cluster. This means that the SPI for SAP monitors are collecting OS data even when the SAP package is not running, for example; on the backup (adoptive) node.

You can generate reports and graphs for the high-availability cluster using SAP-, hardware-, and network-related metrics, which the performance agents collect from the physical nodes in the cluster. Since the performance agents run on all the physical nodes in the cluster and are independent of the SAP package, reports which use hardware- or

network-related metrics can even be configured to include the periods during which the SAP package is not running, for example; on the adoptive node *before* a package switch and on the host node *after* the package switch. Note that SAP-related metrics such as status and availability are linked to the physical node where (and during the time which) the package is running.

Service Views in a Cluster Environment

You can use tools provided by the SPI for SAP to generate Service Views of the SAP environment automatically. If you want to make use of Service Views with the SPI for SAP, you need to set it up to see the services you want the SPI for SAP to monitor in the SAP landscape and ensure that incoming messages are linked to the correct physical nodes in the cluster.

The service-discovery policy needs to be able to read the `r3itosap.cfg` file to determine the SAP Systems which the SPI for SAP is monitoring and, more specifically, the host-mapping section. The information in the host-mapping section of the `r3itosap.cfg` file specifies the names of the nodes in the high-availability cluster and, in addition, which node name should be associated with messages generated by nodes in the cluster. For more information about the contents of the `r3itosap.cfg` file, see [“Configuring the SPI for SAP in a Cluster Environment” on page 87](#) and [“Specifying SAP R/3 Systems to Monitor” on page 66](#).



Only physical nodes can appear in the service tree, and data can only be collected for the physical node on which the package is running at a given point in time.

Removing the SPI for SAP Software in a Cluster Environment

The SPI for SAP software and functionality has to be removed from each individual physical node in the high-availability cluster, where the product was installed and configured. This will involve the following steps:

- 1 If you installed the SPI for SAP Performance Sub-agent on the managed nodes in the cluster, you will have to remove it and its components from the SAP managed nodes in the high-availability cluster before you proceed to step two. For more information, see [“Removing SAP R/3 Management Functionality from OVO for Windows Managed Nodes”](#) on page 149.
- 2 After removing the SPI for SAP Performance Sub-agent, you have to remove the SPI for SAP components from the SAP managed nodes in the high-availability cluster. For more information, see [“Removing SAP R/3 Management Functionality from OVO for Windows Managed Nodes”](#) on page 149.

SAP Internet Transaction Server (ITS) Monitoring

This section describes how to install and configure the ITS Monitor so that you can make full use of the functionality provided by the SPI for SAP to monitor the load and performance of the SAP Internet-transaction Server. The section also shows you how to remove the SPI for SAP's ITS Monitor quickly and easily. For more information, see the following sections:

- “Installing the ITS Performance Monitor” on page 101
- “Removing the ITS Performance Monitor” on page 107

Installing the ITS Performance Monitor

The instructions in this section assume that either OVO Embedded Performance Component (CODA) or the Performance Agent agent (formerly MeasureWare) is already installed on all OVO managed nodes, where the ITS Performance Monitor is required.



The SPI for SAP ITS monitor is designed to monitor the Agate server. If your environment has the Agate server and the Wgate servers running on separate hosts, make sure the ITS Performance Monitor is installed on the host where the Agate server is running.

To install the ITS Performance Monitor on an OVO for Windows managed node, you need to perform the steps indicated below, each of which is described in more detail in the subsections that follow:

- “Installation Pre-requisites” on page 102.
- “Setting up the ITS Monitor for Performance-monitoring” on page 103
- “Deploying the ITS Performance Monitor Instrumentation” on page 104.
- “Deploying the ITS Configuration-file Policies” on page 105.
- “Deploying ITS Policies on the ITS Node” on page 106
- “Verifying Deployment of the ITS Configuration-file Policies” on page 106.

Installation Pre-requisites

Before you start the installation of the SPI for SAP ITS Performance Monitor, make sure that the ITS AGate node on which you have chosen to install the ITS Performance Monitor meets the following requirements:

- Operating system: Windows NT 4.0, Windows 2000
- OVO for Windows agent installed and running
- ConfigFile Policy Package for Windows Node is deployed
- either the Performance Agent agent for MS Windows or the OVO Embedded Performance Component
- SAP ITS: 4.6 - 6.10

In order to be able to view the collected performance metrics, you need to install the following product anywhere in your environment other than on the AGate system:

- HP OpenView Performance Manager
- HP OpenView Reporter to view long-term analysis data



The ITS Performance Monitor depends on the presence of the SPI data collector instrumentation on the OVO for Windows management server. For example, on Windows 2000, check the following location:

```
%OvInstallDir%\Instrumentation\Windows 2000\5.0\SPI
Data Collector
```

Setting up the ITS Monitor for Performance-monitoring

The SPI for SAP's ITS Performance Monitor uses information in the ITS `global.srvc` configuration file to provide a default configuration automatically. However, to set up the ITS Performance Monitor to collect performance information, you need to perform the following configuration tasks:

- 1 Make sure that the ITS Performance Monitor has access to (and the necessary permissions for) the directories containing the following log files:

```
%OvInstallDir%\SAP\ITS\2.0\<ITS_Instance_Name>\logs
```

- 2 Activate performance monitoring by setting the following keys to the value one (1) in the Registry on the managed node for *each* ITS instance:

- a Enable the command interface under:

```
HKEY_LOCAL_MACHINE\Software\SAP\ITS\2.0\<ITS_instance>\
\Programs\AGate\AdminEnabled
```

- b Configure performance monitoring under:

```
HKEY_LOCAL_MACHINE\Software\SAP\ITS\2.0\<ITS_instance>\
\CCMS\PerfMonitoring
```

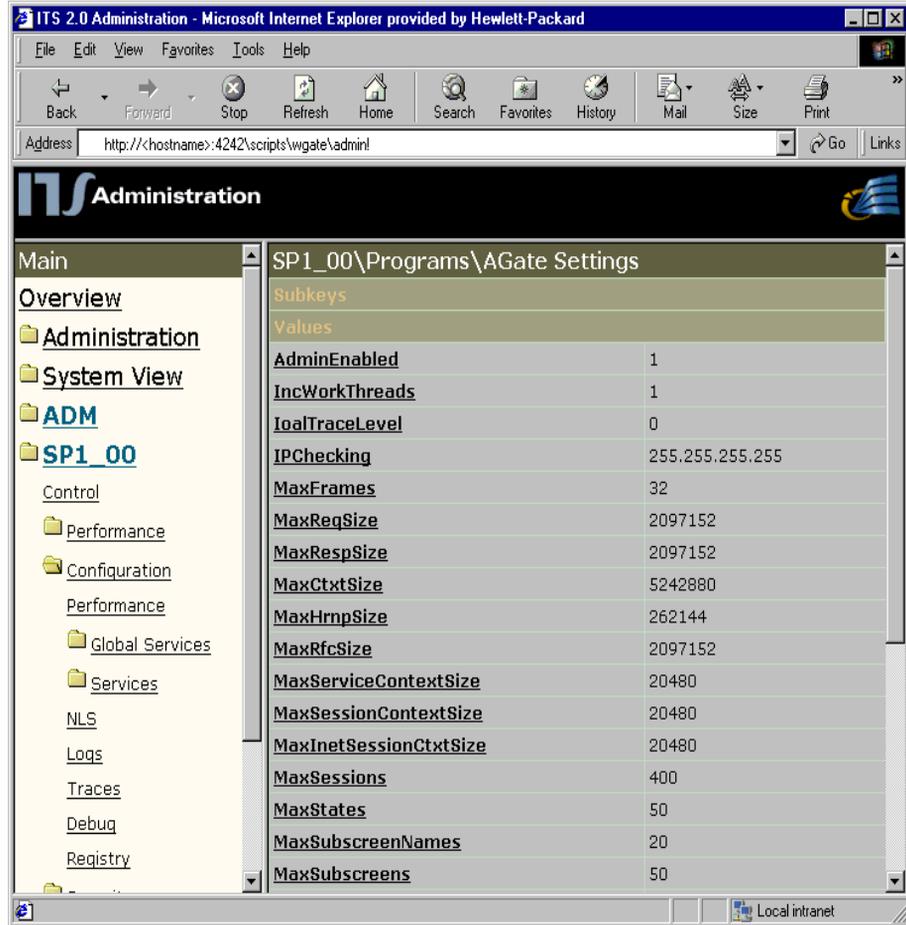
- c Restart the AGate instance(s) to activate the changes made to the registry.



Figure 14 shows how to set the appropriate SAP ITS registry keys using the ITS administrator GUI. Enter:

```
http://<hostname>:<port_number>\scripts\wgate\admin!
```

Figure 14: Setting Registry Keys with the ITS Administrator GUI



Deploying the ITS Performance Monitor Instrumentation

- 1 In the OVO for Windows console, select and right-click the SAP ITS server (managed node) where the ITS components will be deployed, and browse to the following menu option:
All Tasks > Deploy instrumentation
- 2 From the Deploy Instrumentation window select the following components:

- Actions
 - Commands
 - Monitors
 - SPI Data Collector
- 3 Select **OK** to deploy the instrumentation. Note that you can monitor the deployment in real time in the Deployment Jobs window.
 - 4 Verify that the instrumentation was successfully deployed to the managed node as follows:
 - a In the OVO for Windows Console, right click the managed node which you want to check and select the following menu option:
View > Package Inventory
 - b Ensure that the following item is present in the list of policies that is displayed:
OpenView Operations Agent

Deploying the ITS Configuration-file Policies

- 1 In the OVO for Windows Console, browse to the following:
Policy management > Policy groups > SPI for SAP > SAP ITS
- 2 Select the following policy: `global_r3itsperfmon.cfg`
- 3 Deploy the policy to the ITS server, which you want to manage with the SPI for SAP:
All Tasks > Deploy on...
- 4 Select the OVO for Windows managed node (ITS server) to which you want to deploy the policy and click **OK**
- 5 Verify that the ITS configuration-file policy was successfully deployed to the OVO for Windows managed node as follows:
 - a In the OVO for Windows Console, right click the managed node whose policy inventory you want to check and select the following menu option:
View > Policy Inventory

- b** Ensure that the following item is present in the list that is displayed:
`global_r3itsperfmon.cfg`

Deploying ITS Policies on the ITS Node

- 1** In the OVO for Windows Console, browse to the following policy group:
Policy management > Policy groups > SPI for SAP > SAP ITS
- 2** Select and right-click the following items:
 - `r3itsperfmon` (Scheduled Task)
 - `SAP R3 opcmsg` (Open Message Interface)
- 3** Browse to the following item in the menu that pops up:
All Tasks > Deploy on...
- 4** Select the SAP-ITS server to which you want to deploy the policies
- 5** Click **OK**
- 6** Verify that the ITS policies were successfully deployed to the managed node as follows:
 - a** In the OVO for Windows Console, right click the managed node whose policy inventory you want to check and select the following menu option:
View > Policy Inventory
 - b** Ensure that the following items are present in the list that is displayed:
 - `r3itsperfmon`
 - `SAP R3 opcmsg`

Verifying Deployment of the ITS Configuration-file Policies

- 1** Select and right-click the ITS node and browse to the following item in the menu that pops up:
View > Policy Inventory

- 2 The files displayed in [Table 8](#): should appear in the right-hand pane of the OVO for Windows Console.

Table 8: ITS Policy-inventory Verification Files

Policy Name	Policy Type
r3itsperfmon	Scheduled Task
SAP R3 opcmmsg	Open Message Interface
global_r3itsperfconfig	Configuration File

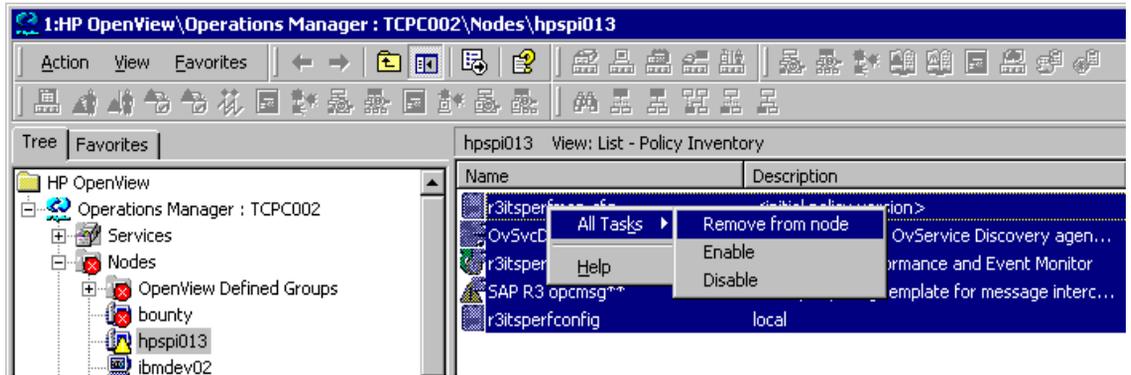
For more information about what information is copied where during the installation of the ITS Performance Monitor, see *HP OpenView Smart Plug-in for SAP Online Help*.

Removing the ITS Performance Monitor

This section describes how to remove the ITS Performance Monitor from the managed node quickly and easily. To remove the ITS Performance Monitor software from the OVO for Windows managed node, you should carry out the following steps in the order specified.

- 1 Right click the SAP-ITS server and browse to the following item:
View > Policy inventory
- 2 In the policy-inventory list, select the ITS policies you want to remove and, from the drop-down menu, select the following as illustrated in [Figure 15](#):
All tasks > Remove from node

Figure 15: Removing the ITS Monitor



Smart Plug-in for SAP Performance Monitors

This section describes how to install and configure the SPI for SAP performance-integration package. It also provides information about how to put the performance monitors to best use and supplement the information provided by the SPI for SAP performance monitors with information supplied by the Performance Agent. The section includes the following topics:

- “Performance Monitors Overview” on page 110
- “Installing/De-installing the Performance Monitor” on page 111
- “Locating the Performance Monitor Files” on page 116
- “Configuring the Performance Monitor” on page 119
- “Managing the Performance Agent” on page 124

Performance Monitors Overview

The SPI for SAP Performance Monitors collect SAP R/3 performance data. This data can then be used to compare trends between SAP R/3 business transactions and other system metrics. The Performance Monitors can then be used to monitor, manage, and correlate this data centrally along with any other application, database, system and network data.

Figure 16: Performance Data displayed in Performance Manager



Implemented ABAP-function modules inside SAP R/3 are accessed via an RFC-call. The Performance Monitors gather a snapshot of SAP runtime performance data.

In addition to the R/3 Performance Alert Monitor (**rz03**), which is part of the SAP R/3 CCMS subsystem, the SPI for SAP Performance Agent is able to collect over 100 additional metrics.

The new SPI for SAP Performance Agent can be configured to specify which performance monitors should be run on which SAP R/3 instances and how frequently. The Performance Agent or OVO Embedded Performance Component alerts the management station when defined thresholds are exceeded.

The SPI for SAP Performance Agent runs under Windows as a service and under Unix as a daemon process that runs independently of the OVO for Windows agent processes. In order to start or stop the SPI for SAP performance monitor processes, use the appropriate OVO for Windows tools, which you can find in the OVO for Windows Console.

Installing/De-installing the Performance Monitor

The information in this section walks you through the steps required to install and configure the SPI for SAP performance integration and covers the following topics:

- “Selecting the Performance Data Source” on page 112.
- “Changing Default Settings for the Performance Data Source” on page 113
- “Deploying the Performance Monitor Packages” on page 114
- “Installing the Performance Packages” on page 115
- “De-Installing the Performance Packages” on page 116



Note that the instructions in this section assume that:

- either the Performance Agent or the OVO Embedded Performance Component is installed
- SAP R/3 version 3.1I, 4.0B, 4.5B, 4.6C, or 4.6D, 6.10/6.20 is installed
- the OVO for Windows Enterprise Message/Action Agent is already installed and running on the SAP R/3 servers, which you want to manage with OVO for Windows.

Selecting the Performance Data Source

By default, OVO for Windows deploys the OVO Embedded Performance Component (CODA) with all OVO for Windows 7.x agents. All OVO for Windows 7.x Smart Plug-ins use the OVO Embedded Performance Component as the default performance-data source for graphing in OpenView Performance Manager and OpenView Reporter. However, previously installed OpenView products that use the Performance Agent will continue to use the Performance Agent as the data source.

If you prefer to use the OpenView Performance Agent/MeasureWare as the agent for newly installed OpenView products rather than the OVO Embedded Performance Component (for example, to be able to use Performance Manager, which does not support the OVO Embedded Performance Component), you can override the default use of the OVO Embedded Performance Component by setting up a small text file, `nocoda.opt`, which changes the default data source from CODA to OpenView Performance Agent/MeasureWare.

Once configured, the `nocoda.opt` file must be stored in a specific location on each managed node, whose performance-data source you want to change. The location of the `nocoda.opt` file on the managed node varies according to the operating system running on the OVO for Windows management server and managed node. [Table 9](#) displays the location of the `nocoda.opt` files on nodes managed by an OVO for Windows management server.

Table 9: OVO 7.x for Windows Management Servers

Managed Node Operating System	Location of the <code>nocoda.opt</code> file
AIX	<code>/var/lpp/OV/conf/dsi2ddf/nocoda.opt</code>
HP-UX/Solaris	<code>/var/opt/OV/conf/dsi2ddf/nocoda.opt</code>
Windows	<code>%OvAgentDir%\{790C06B4-844E-11D2-972B-080009EF8C2A}\conf\dsi2ddf\nocoda.opt</code>

Changing Default Settings for the Performance Data Source

To change the default setting for the data source, use your favorite text editor to open the `nocoda.opt` file on the managed node whose data source you want to modify and follow the instructions below. You will need to enter the appropriate information manually using the format and syntax illustrated in [Table 10](#) and [Example 8](#). If a `nocoda.opt` file does not already exist, you will need to create a new one.

- 1 To designate OpenView Performance Agent (MeasureWare) as the agent for all data sources, enter the key word **ALL** at the top of the file.
- 2 To designate OpenView Performance Agent as the agent for a data source tied to a specific SAP R/3 (or SAP R/3 ITS) instance, include a reference to each instance on a separate line of the `nocoda.opt` file, using the format and syntax indicated in [Table 10](#) and illustrated in [Example 8](#):

Table 10: nocoda.opt File Syntax

For...	Use the following format...
SAP R/3	R3 _ <i><SAP_hostname></i> _ <i><SAPSID></i> _ <i><SAP_instance_number></i> _DATA
SAP R/3 ITS	R3ITS _ <i><virtual_SAPITS_instance_name></i> _ <i><SAPITS_hostname></i> _DATA

- 3 Save the changes to the `nocoda.opt` file.
- 4 Restart the OVO for Windows agent on the managed node where the `nocoda.opt` file has been modified.

Example 8: Excerpt from the nocoda.opt File

```
#####
# Add to (or modify) the contents of this file to change the
# data-source from the default Coda to MeasureWare
#####
# All hosts:
# ALL
# SAP R/3 hosts/instances:
R3_ovsdsap_DEV_00_DATA
```

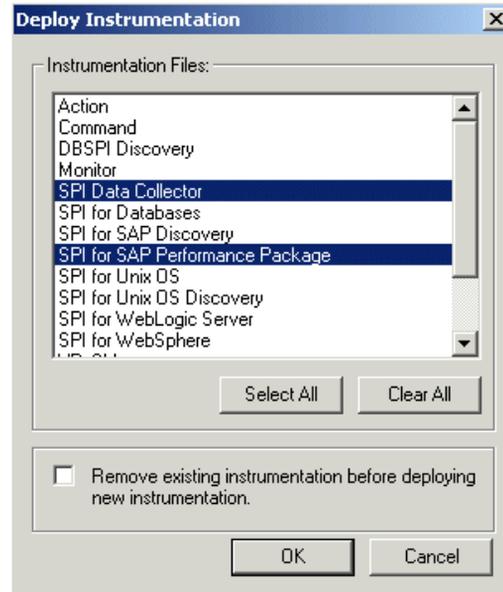
```
# SAP R/3 ITS hosts/instances:  
R3ITS_SP6_00_ovspi_DATA
```

Deploying the Performance Monitor Packages

Follow the instructions below to deploy the SPI for SAP Performance Monitor instrumentation from the OVO for Windows Management Server to the OVO for Windows managed node systems.

- 1 From the OVO for Windows Console, select and right-click the SAP managed (s) where you want to deploy the instrumentation.
- 2 Browse to the following menu option:
All tasks > Deploy instrumentation
- 3 Select the following files as illustrated in [Figure 17](#):
 - SPI Data Collector
 - SPI for SAP Performance Package
- 4 Select **OK**.

Figure 17: Deployment Package Selection

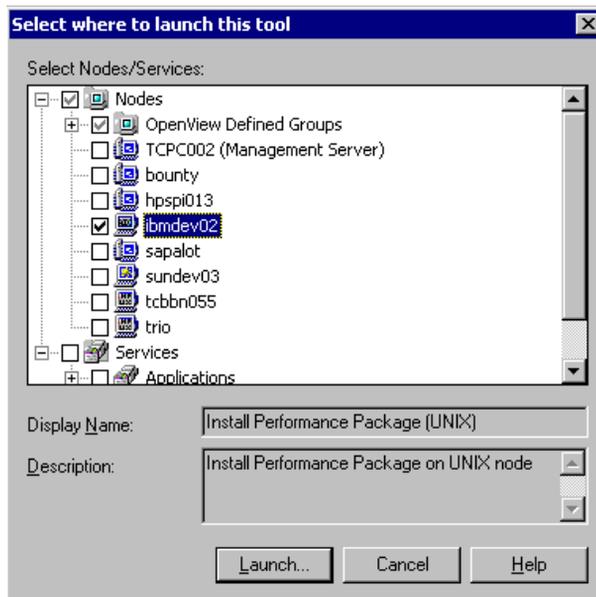


Installing the Performance Packages

Once you have successfully completed the deployment of the SPI for SAP Performance Packages as described in the previous step, follow the instructions below to *install* the Performance Packages.

- 1 From the OVO for Windows Console, browse to the following tools folder:
Tools > SPI for SAP > SAP R/3 Admin
- 2 Select and right click the tool corresponding to your Operating System (Unix or Windows), for example; Install Performance Package (UNIX), and select the following option from the menu that pops up:
All Tasks > Launch Tool...
- 3 Select the SAP managed node(s) where you want to start the Performance Package installation, as illustrated in [Figure 18](#) below. Remember to ensure that the nodes you select correspond to the OS of the chosen tool (UNIX or Microsoft Windows).
- 4 Click **Launch...** to start the installation.

Figure 18: De-installing the Performance Package



De-Installing the Performance Packages

The procedure for de-installing the SPI for SAP Performance Packages from a managed node is very similar to the procedure described in “Installing the Performance Packages” on page 115 except that, at the appropriate moment, you select and launch the *deinstallation* tool rather than the installation tool. Note that after de-installing the Performance Package, you need to remove the SPI for SAP performance monitor package from the same managed nodes.

Locating the Performance Monitor Files

This section lists the files installed as part of the SPI for SAP performance package for the following platforms:

- “Performance Monitor Files on AIX” on page 116.
- “Performance Monitor Files on HP-UX/Solaris” on page 117.
- “Performance Monitor Files on Windows” on page 118.

Performance Monitor Files on AIX

This section lists the files installed as part of the SPI for SAP performance package for AIX:

- **Binaries:** `/var/lpp/OV/bin/R3PerfAgent/bin`
 - `r3perfconfig`
SPI for SAP Performance Monitor configuration tool.
 - `r3perfagent`
SPI for SAP Performance Monitor Agent.
- **Configuration files:** `/var/lpp/OV/conf/SAP_SPI/[local | global]`
 - `r3perfagent.cfg`
Global and local configuration file for the various performance monitors.
- **Dsilogfiles:** `/var/lpp/OV/bin/R3PerfAgent/data`

- R3_<HOSTNAME>_<SID>_...:

On installation, this directory is empty. It is used to store the dsilogfiles compiled by r3perfconfig and compdsifile.sh files.

- Templates: /var/lpp/OV/bin/R3PerfAgent/template

- R3statistics.<PERF-MONITOR>

files used to compile the dsilogfiles.

- Parm.UX:

Parameter file template.

Performance Monitor Files on HP-UX/Solaris

This section lists the files installed as part of the SPI for SAP performance package for HP-UX and Solaris:

- Binaries: /var/opt/OV/bin/R3PerfAgent/bin

- r3perfconfig

SPI for SAP Performance Monitor configuration tool.

- r3perfagent

SPI for SAP Performance Monitor Agent.

- Configuration files: /var/opt/OV/conf/SAP_SPI/[local | global]

- r3perfagent.cfg

Global and local configuration file for the various performance monitors.

- Dsilogfiles: /var/opt/OV/bin/R3PerfAgent/data

- R3_<HOSTNAME>_<SID>_...:

On installation, this directory is empty. It is used to store the dsilog files compiled by r3perfconfig and compdsifile.sh

- Templates: /var/opt/OV/bin/R3PerfAgent/template

- R3statistics.<PERF-MONITOR>:

files used to compile the dsilogfiles.

- Parm.UX
Parameter file template.

Performance Monitor Files on Windows

This section lists the files installed as part of the SPI for SAP performance package for Windows:

- **Binaries:** %OVAGENTDIR%\bin\SAP_SPI\R3PerfAgent\bin
 - r3perfconfig
SPI for SAP Performance Monitor configuration tool.
 - r3perfagent
SPI for SAP Performance Monitor Agent.
 - r3perfagent_service
Starts the SPI for SAP Performance Monitor Agent as a service under Windows.
- **Configuration files:**
%OVAGENTDIR%\bin\SAP_SPI\R3PerfAgent\bin\global
 - r3perfagent.cfg
Configuration file for the various SPI for SAP performance monitors. Note that this directory is created after the first SPI for SAP performance package policies have been deployed.
- **Dsilogfiles:** %OVAGENTDIR%\bin\SAP_SPI\R3PerfAgent\bin\data
 - R3_<HOSTNAME>_<SID>_...
On installation, this directory is empty. It is used to store the dsilog files compiled by: r3perfconfig.bat and compdsifile.bat
- **Templates:**
%OOVAGENTDIR%\bin\SAP_SPI\R3PerfAgent\bin\template
 - R3statistics.<**PERF-MONITOR**>
files to be used to compile the dsilog files.
 - Parm.NT
Parameter file template.

Configuring the Performance Monitor

Before starting to configure the Performance Monitor note that if the Performance Agent is used instead of OVO Embedded Performance Component, then you need to stop the Performance Agent on the managed node using the commands listed in [Table 11](#) appropriate to your system environment:

Table 11: Stopping the Performance Agent/MeasureWare Agent

Platform	Command
AIX	<code>/usr/lpp/perf/bin/mwa stop</code>
HP-UX/Solaris	<code>/opt/perf/bin/mwa stop</code>
Windows	<code>mwacmd stop</code>

Once you have stopped the OpenView Performance Agent, you can proceed with the configuration of the performance monitor. Note that if you are using the OVO Embedded Performance Component, no special action is required before you start the configuration of the performance monitor.

Configure the Performance Monitor

- 1 On the node where the SPI for SAP Performance Monitor is installed, locate and enter the following command to run configuration scripts:

Windows: `r3perfconfig`

UN*X: `./r3perfconfig`

Follow the instructions which appear on screen. The script lists the SIDs it finds together with a number, and prompts you to select the SAP R/3 instance to be configured. See [Example 9](#).

Example 9: Installed SAP Instances

```

-----SID   SapNr   HostName -----
(0)   AST     0       sapper
(1)   DEV     1       ovdsap1

```

```
Choose:
(x) to configure shown system
888 to manually configure a SAP system
999 to quit
-----
```

Enter the appropriate identification number, for example; 0 for AST. If you choose **888** to configure an SAP R/3 SID from scratch, you are required to answer a series of questions concerning the SAP SID you want to configure.

When you are finished, the `dsilog` files are then compiled and the data source is added to the OpenView Performance Agent configuration file:

```
UN*X:      perflbd.rc
Windows:   perflbd.mwc
```



If you are using the OVO Embedded Performance Component, the names of the configuration files are `ddf1bd.rc` and `ddf1bd.mwc` respectively for UN*X and MS Windows.

On completion, the `r3perfconfig` script prompts you to restart the Performance Agent. However, it makes sense to update the `parm.mwc` file as described in the next step *before* you start the Performance Agent.

2 Update the Performance-agent parameter file



This step does not apply to the OVO Embedded Performance Component.

If you are using the Performance Agent, append the template file `parm.NT` (or `parm.UX`, depending on the installed operating system on the managed node) to the `parm` file of the Performance Agent, as follows:

- UN*X: **cat parm.UX >> parm**
In UN*X, the `parm` file is located in: `/var/opt/perf/parm`
- MS Windows: **type parm.NT >> parm.mwc**
The `parm` file is located in the following directory in Windows NT:

```
<drive_letter>\rpmtools\data\parm.mwc
```



You can represent several SAP R/3 instances in the `parm` file by using the asterisk (*) wild card.

- 3 On the OVO for Windows management server, you configure the SPI for SAP performance monitors in the `r3perfagent.cfg` file. If you do not complete this task, all monitors will run with the default settings as illustrated in [Figure 19: on page 123](#). This could lead to a large number of unwanted messages appearing in the OVO for Windows Console.

There are two possible configurations:

- **Global:** `global_r3perfagent.cfg`
SPI for SAP performance-monitor settings for all SAP R/3 servers
- **Local:** `local_r3perfagent.cfg`
SPI for SAP local performance-monitor settings for individual SAP R/3 servers



The settings in the *global* configuration files are used for all nodes which do not have local configuration settings. Where both files are present, *local* settings override global settings.

You should use the configuration-file policy editor to create a new or modify an existing `r3perfagent.cfg` file.

- 4 To modify an existing configuration file:
 - a Select the policy view and, in the details pane, select and right-click the appropriate `r3perfagent.cfg` file, and click the following menu option:
All Tasks > Edit...
 - b The `r3perfagent.cfg` file is displayed as illustrated in [Figure 19: on page 123](#).
- 5 To create a new configuration-file
 - a In the OVO for Windows Console tree, expand the Policy Management policy group, select and right-click the SPI for SAP policy group, and

add a new configuration file by selecting the following option from the pop-up menu that appears:

New > ConfigFile

- b** Load the default `global_r3perfagent.cfg` file, change any values as required, and save the file. If you want to create a *local* configuration file, we recommend you include the name of the machine for which the local configuration is intended in the local-configuration file name as outlined below:

`<machine_name>_r3perfagent.cfg`

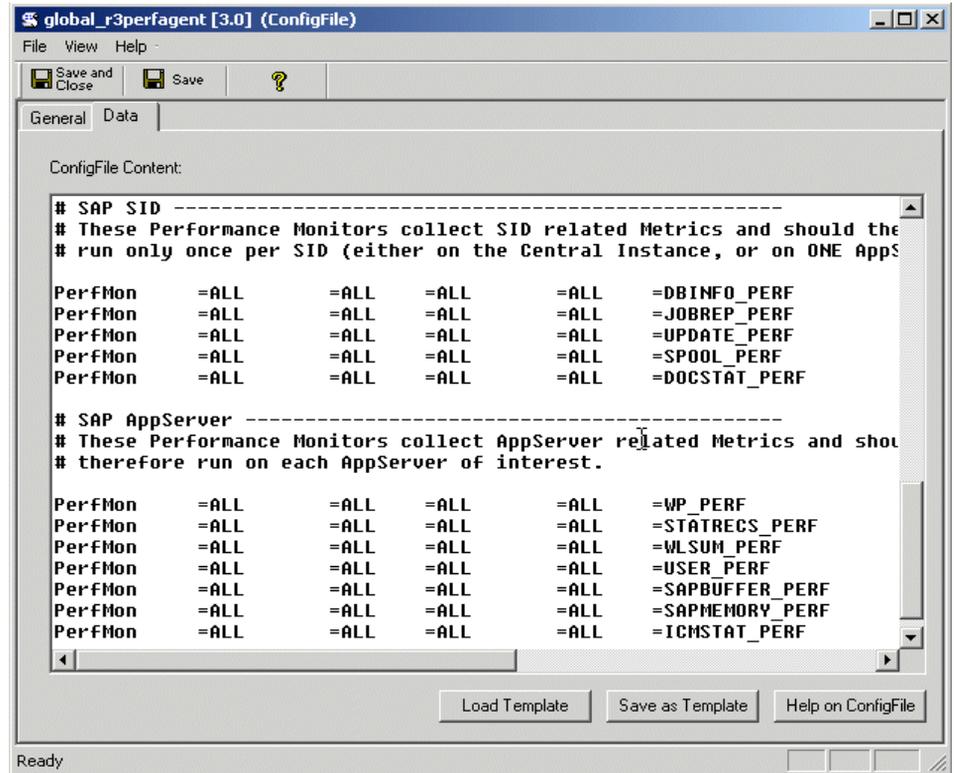
You have to deploy the modified policy to the managed node (`<machine_name>`) and restart both the Performance Agent and the SPI for SAP performance monitor in order to upload and apply the modified configuration. Note that, by default:

- all SPI for SAP performance monitors are enabled for all SAP hostnames, systems, numbers, and clients
- the polling intervals are set for each monitor in minutes
- the Hold-Connections option is disabled
- the Performance-monitor Scheduler sends a message if it is 10 minutes behind schedule
- the Performance-monitor Scheduler is set to restart if it is 13 minutes behind schedule

- 6** Deploy the modified policies:
 - a** Select and right click the policies you want to deploy
 - b** Select the Deploy option from the menu which pops up
- 7** Start (or stop and restart) the Performance Agent on the managed node by entering the following command in a shell or by using the menu options in the appropriate tool/application group.

UN*X: `mwa [stop | start]`

Windows: `mwacmd [stop | start]`

Figure 19: The Default Global r3perfagent.cfg File

- 8 On the managed node, locate the r3perfagent command resides (see “[Locating the Performance Monitor Files](#)” on page 116) and start (or stop and restart) the SPI for SAP performance monitor by entering the following command in a shell:

```
UN*X:    ./r3perfagent [stop | start]
```

```
Windows: r3perfagent_service [-e | -s]
```

Managing the Performance Agent

The SPI for SAP performance monitor can be controlled either by using command-line options which differ according to the platform and operating system, or the tools that are installed by the SPI for SAP. For more information on either of these topics, see the following sections:

- “Command-Line Options” on page 124.
- “SPI for SAP Tools” on page 125.

Command-Line Options

On UN*X, you can use the `r3perfagent` command to manage the SPI for SAP performance monitor. The UN*X `r3perfagent` command accepts the following command-line options:

```
r3perfagent [start | status | stop]
```

- **start** - to *start* the SPI for SAP performance monitor
- **stop** - to *stop* the SPI for SAP performance monitor
- **status** - to determine the current *status* of the SPI for SAP performance monitor

On Windows, you can manage the SPI for SAP performance monitor with the `r3perfagent_service` command, which accepts the following command-line options:

```
r3perfagent_service -e -i -s -u
```

- **-i** registers the service
- **-u** de-registers the service
- **-s** starts the service
- **-e** stops the service



Note that on Windows the `r3perfagent` services can also be controlled from the Services window, which you can open from the Windows Control Panel.

SPI for SAP Tools

Table 12: displays the tools that are available for the SPI for SAP performance monitor in the appropriate SPI for SAP tool group, for example; SAP R/3 NT or SAP R/3 UN*X.

Table 12: Performance Monitor Tools

Application Name	SAP R/3 NT	SAP R/3 UN*X
PerfAgt Start	•	•
PerfAgt Stop	•	•
PerfAgt Status		•

Service Reports

This section introduces the concept of Service Reports and explains how to use them in conjunction with the SPI for SAP and OVO for Windows. The information in this section is designed specifically to help manage the SAP R/3 environment in an efficient and convenient manner. Detailed information about specific tasks are listed below:

- “What Are Service Reports?” on page 127
- “Upgrading the SPI for SAP Reports” on page 129
- “Installing the SPI for SAP Reports” on page 129
- “Removing the SPI for SAP Reports” on page 135

What Are Service Reports?

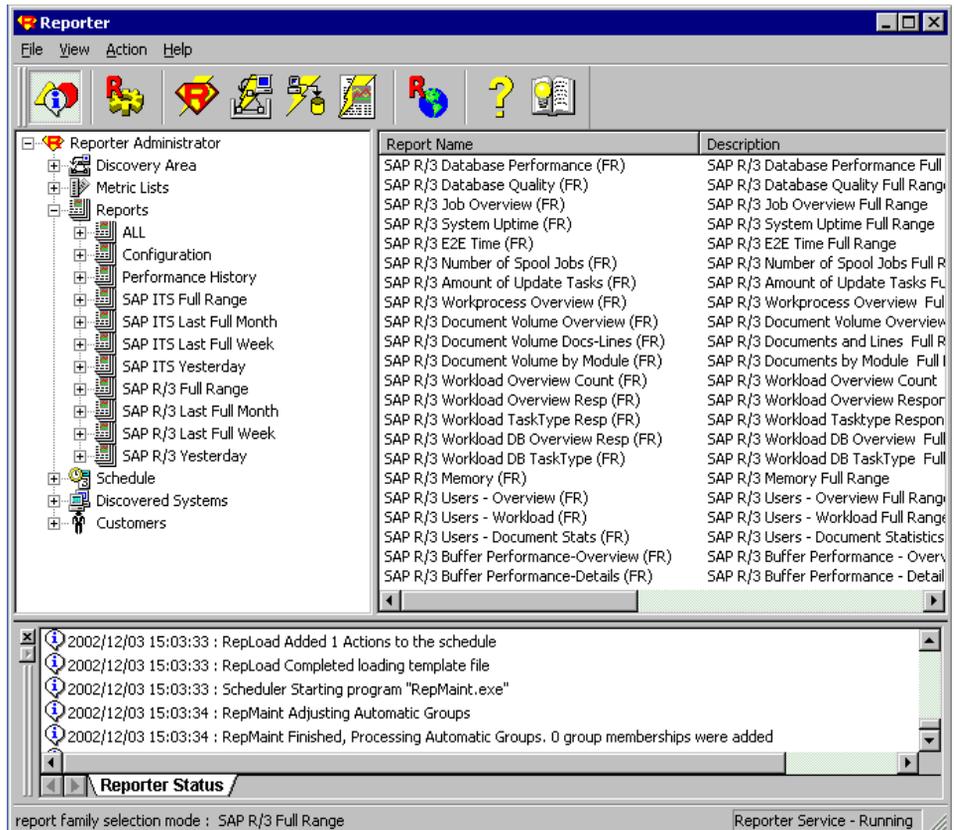
Service reports are web-based reports that are produced by HP OpenView Reporter (Reporter) using Crystal Reports templates and viewed using a web browser. Reporter allows you to request both scheduled and on-demand versions of reports.

SPI for SAP service reports correlate the data extracted from either the OVO Embedded Performance Component (CODA) or the OpenView Performance Agent (formerly MeasureWare). You can use the correlated data to generate reports which display short-, medium-, or long-term

views of your IT environment and supplement the detailed, real-time graphs available with Performance Manager. The combination of reports and graphs is a powerful tool for trend analysis. For example, you can:

- identify potential bottlenecks in your IT system, so that you can take action before problems become acute.
- use the information to help you to make accurate predictions for future upgrades.
- collect accurate information to be used in measuring service levels.

Figure 20: SPI for SAP Service Reports



Upgrading the SPI for SAP Reports

Versions B.08.11 and B.08.70 of the SPI for SAP have different versions of the SAP/Performance monitor which require different and incompatible versions of the OpenView Reporter. This means that old reports prepared with previous versions of the SPI for SAP cannot be viewed with the current SPI for SAP reporter integration. In addition, the old performance data gathered by the SAP/Performance subagent version B.08.11 must be removed from the Reporter database before you install the reporter integration package supplied with the version B.08.70 of the SPI for SAP.



Upgrading the SPI for SAP reports in the manner described in this section removes from the Reporter system *all* old report data collected by the SPI for SAP. However, you can use database tools to preserve the tables containing information that you want to use after completing the upgrade process. For more information, see the documentation provided with the database product.

- 1 Remove the old SPI for SAP reporter-integration package using the standard Windows software-removal method:

Start: Settings > Control Panel > Add/Remove Software

- 2 Install the new SPI for SAP reporter integration as described in “Installing the SPI for SAP Reports” on page 129.

Installing the SPI for SAP Reports

This section explains how to install the SAP R/3 and the SAP ITS service reports which come with the SPI for SAP and, in addition, provides information designed to help you prepare for the installation. This section covers the following topics:

- “Before You Begin” on page 130
- “Installing SAP R/3 Service Reports” on page 130
- “Configuring Report Packages” on page 133

Before You Begin

Before you install and set-up the SPI for SAP Service Reports, you must ensure that the following tasks have been completed:

- 1 Either the OVO Embedded Performance Component or the OpenView Performance Agent must be installed on all SAP managed nodes for which you want to generate service reports.
- 2 OpenView Reporter must be installed and available on an MS Windows host.



OpenView Reporter lite, which comes bundled with HP OpenView Operations for MS Windows, does not offer the same functionality as the full OpenView Reporter product: there are a number of restrictions, particularly in the area of supported performance agents. We recommend you install and use the *full* version of the OpenView Reporter in order to ensure compatibility with the installed performance agent and with the full range of performance metrics used in the SPI for SAP reports.

You can install Reporter either on the OVO for Windows Management Server or, to improve load balancing, on a separate system dedicated to the generation and display of Service Reports.

- 3 The SPI for SAP performance agent or the ITS Monitor must be installed and configured on the machines for which you want to generate reports.
- 4 To edit or create Service Reports for the SPI for SAP, Seagate's Crystal Reports version 8.5 (or later) needs to be installed and running on the machine hosting the OpenView Reporter (Reporter version A.03.50). For more details about supported software versions, see *HP OpenView Smart Plug-in for SAP Software README*.

Installing SAP R/3 Service Reports

The SAP R/3 and SAP ITS service reports are installed into the OpenView Reporter product as a snap-in package using InstallShield. This means that the OpenView Reporter must already be installed before you install the SPI for SAP service reports. During set-up of the SPI for SAP service reports you

will be asked to confirm or specify the common application path for OpenView Reporter.



The common application path is the folder where OpenView Reporter is installed. The set-up routine will attempt to discover this path automatically and in most circumstances you should avoid changing it.

The set-up copies components to the directories listed in [Table 13 on page 131](#). All directory paths are relative to the Reporter common-installation path.

Table 13: Locations of SPI for SAP Service-Reports Components

Component	Directory
Installation script	\newconfig\
Configuration files	
Report template files for SAP	\data\reports\SAP
Report template files for SAP ITS	\data\reports\SAPITS

To Install OpenView Reporter on the OVO for Windows Management Server

The information in this section describes the steps required to install the full version of the OpenView Reporter on the OVO for Windows management server. When you have completed this task, you will be able to generate and view *some* Service Reports but not the SAP-specific Service Reports provided by the SPI for SAP. You install the SPI for SAP service reports in a separate, additional step described in [“To Install the SPI for SAP Reports” on page 132](#).

- 1 From the Windows Start menu browse to the following:
Settings > Control Panel > Add/Remove Programs
- 2 Select: HP OpenView Operations Performance for Windows
- 3 Select: Change
- 4 Select: Install Products

- 5 When the InstallShield Wizard dialog box displays, select the following items:
 - SAP
 - hp OpenView Reporter
- 6 Follow the on-screen instructions to complete the installation.

To Install OpenView Reporter on a Separate Machine

The information in this section describes the steps required to install the full version of the OpenView Reporter on a machine, which is *not* the OVO for Windows management server. If you choose to install the OpenView Reporter on a machine other than the OVO for Windows management server, make sure the machine on which you install the OpenView Reporter can see the OVO for Windows managed nodes for which you want to generate reports.

When you have completed this task, you will be able to generate and view *some* Service Reports but not the SAP-specific Service Reports provided by the SPI for SAP. You install the SPI for SAP service reports in a separate, additional step described in [“To Install the SPI for SAP Reports” on page 132](#).

- 1 Insert Disk 1 of the OVO for Windows CD set into the CD-ROM drive of the machine where you want to install the OpenView Reporter.
- 2 Double click: HP OpenView Operations Performance for Windows
- 3 In the InstallShield Wizard dialog box, select the following items:
 - hp OpenView Reporter
- 4 Follow the on-screen instructions to complete the installation.

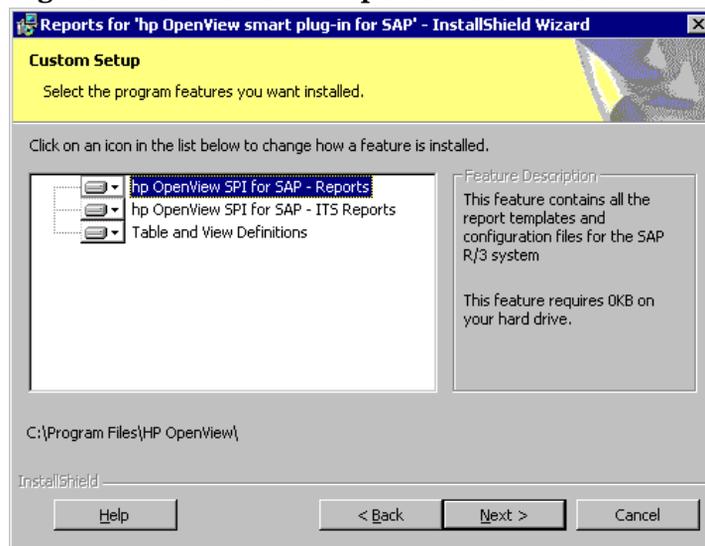
To Install the SPI for SAP Reports

The information in this section describes the steps required to add the SPI for SAP service-reports to an existing OpenView Reporter installation. When you have completed this task, the SPI for SAP service reports will be available in the OpenView Reporter GUI, and you will be able to use them to generate SAP-specific service reports, which you can view in a web browser.

- 1 Make sure that the OpenView Reporter is installed and configured on the

- machine where you want to install the SPI for SAP service reports.
- 2 Insert Disk 2 of the OVO for Windows CD set into the CD-ROM drive of the machine where the OpenView Reporter is installed and configured.
 - 3 Browse to the following folder:
Disk2\SAP SPI Reporter Package
 - 4 Locate, select, and run the following file:
sapspi_reporter.msi
 - 5 Follow the instructions to complete the installation

Figure 21: SPI for SAP Reports InstallShield Wizard.



Configuring Report Packages

The set-up process of the SPI for SAP's service-report integration automatically assigns the following report groups and metric lists:

- two new report groups: SAP_R3 and SAP_ITS
- new *metric lists* to the new SAP_R3 and SAP_ITS groups
- new group *reports* to the SAP_R3 and SAP_ITS groups

- new *system reports* to the SAP_R3 and SAP_ITS groups

To Configure Report Packages

- 1 Verify that the installation of the SPI for SAP service reports completed successfully by confirming that setup created the report and metrics groups listed in “[Configuring Report Packages](#)” on page 133.
- 2 In the Reporter console, browse to the Configure Report Packages window using the following menu option:

File > Configure > Report Packages

Check that the following packages are present in the list of installed packages.

- SPI for SAP
 - SPI for SAP - ITS
- 3 If you choose to add Systems manually to the OpenView Reporter, note that you can use the following values in the Add System window:

System **host.name.com**

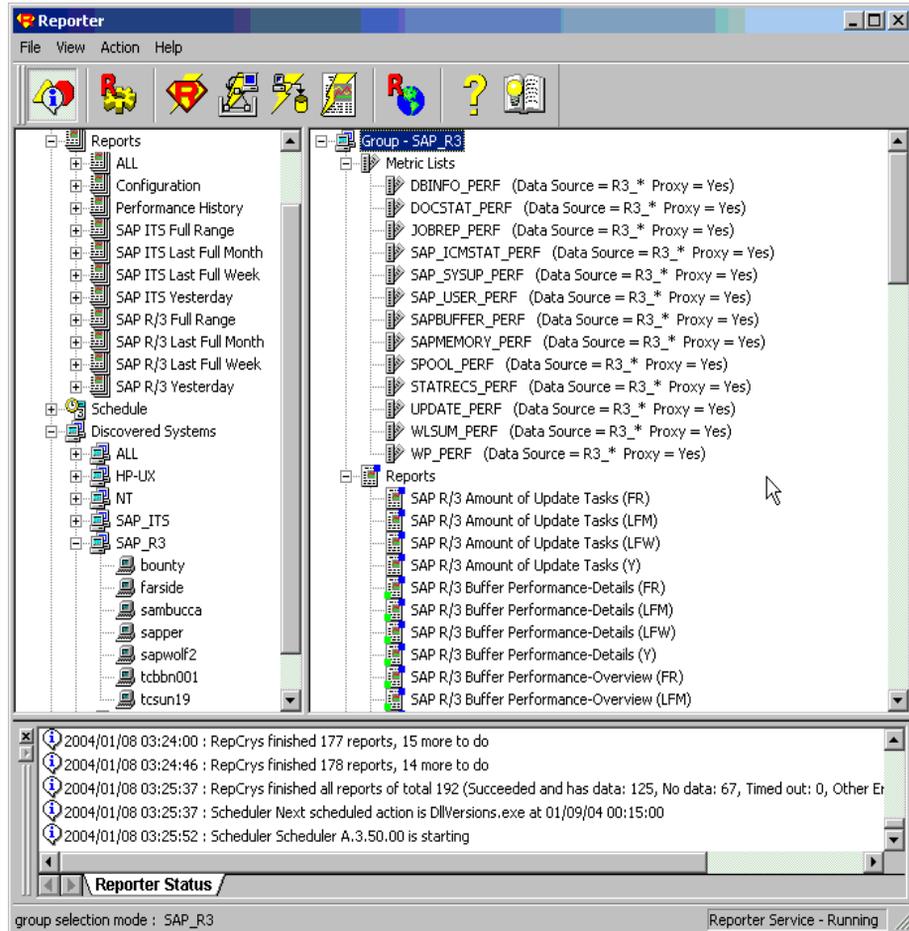
Network **SAP**

Domain either **SAP** or **ITS** as appropriate

Check that your SAP R/3 and SAP ITS hosts have been added to the appropriate Reporter group, namely; SAP_R3 or SAP_ITS. Hosts are automatically assigned to a report group according to the kind of data source (SAP R/3 or SAP ITS) discovered on the monitored host.

- 4 Click **OK** and the systems appear in the Reporter’s details pane.
- 5 Use the Reporter GUI to schedule the generation of the SPI for SAP reports or generate them now using the option indicated below and illustrated in [Figure 22: on page 135](#):

Actions > Run > Generate Reports

Figure 22: SPI for SAP Reports and Metrics

Removing the SPI for SAP Reports

In order to completely remove the SPI for SAP reports, you need to perform the following steps in the order specified:

- “To Remove Reporter Snap-in Packages” on page 136.
- “Removing Binaries from the OpenView Reporter System” on page 136.

To Remove Reporter Snap-in Packages

- 1 In Reporter, browse to:
File > Configure > Reporter Packages
- 2 Select the following files from the Installed Packages window located in the right pane of the Configure Report Packages window:
 - SPI for SAP
 - SPI for SAP - ITS
- 3 Double-click the left arrow button to remove the selected packages from the Available Packages window: the selected packages appear in the list of Available Packages in the left pane of the Configure Report Packages window.
- 4 Click **OK** to finish.

Removing Binaries from the OpenView Reporter System

- 1 Open the Windows Start menu, and browse to the following item:
Start:Settings > Control Panel > Add/Remove Programs
- 2 Select: HP OpenView Operations Performance for Windows
- 3 Highlight: Reports for hp OpenView smart plug-in for SAP
- 4 Select: Remove
- 5 Follow the on-screen instructions to complete the deinstallation process.

Using the Smart Plug-in for SAP

This section describes the Smart Plug-in for SAP components that are integrated into OVO for Windows and explains how to use them.

After you have installed and configured the Smart Plug-in for SAP you can begin to use it to monitor your SAP R/3 environment. Once you have deployed the Smart Plug-in for SAP policies and instrumentation, you will begin to see SAP R/3 related messages in the OVO for Windows Console.

This chapter provides an overview of the Smart Plug-in for SAP components that are integrated into OVO for Windows and describes the steps and procedures to run a typical Smart Plug-in for SAP session, including:

- “SAP R/3 Administration Tools” on page 138
- “Smart Plug-in for SAP Tools for UN*X and NT Managed Nodes” on page 139
- “Using the Smart Plug-in for SAP Tools” on page 141
- “Accessing Data on SAP R/3 Managed Nodes” on page 143
- “Working with SAP R/3 Messages” on page 146

SAP R/3 Administration Tools

The SAP R/3 Admin group includes tools for administrative functions such as writing SAP R/3 thresholds and activating alerts. The following table lists the tools which appear in the SAP R/3 Admin tool group and describes briefly what each of the tools does.

Table 14: SAP R/3 Admin Tools

Tool	Description
Write SAP Threshold	Apply the CCMS alert thresholds to an SAP R/3 system (old CCMS architecture only).
Write STAT Rec Config	Write statistical records in SAP R/3
Deploy... Install... Remove...	Tools for deploying, installing and removing the SPI for SAP performance monitor packages

For more information about editing and distributing monitor configurations, see the *HP OpenView Smart Plug-in for SAP Online Help*.

Smart Plug-in for SAP Tools for UN*X and NT Managed Nodes

The tools included in the SAP R/3 UN*X and SAP R/3 NT tools groups provide direct, context-sensitive access to SAP R/3 via the SAP R/3 front-end. For example, if you have a performance alert, you can run the Performance tool, which opens a SAP performance-analysis window.

Some of the tools installed by the Smart Plug-in for SAP appearing in the SAP R/3 UN*X and the SAP R/3 NT tool groups provide direct access to SAP R/3 via the SAP R/3 GUI. The following table lists the tools that are available, indicates in which group (UN*X or MS Windows) they may be found, and, in addition, shows which SAP R/3 transaction (Tcode) is called when the SAP R/3 GUI session starts.



You have to select the SAP R/3 managed node(s) on which you want the tool to run. Be sure to select the tool from the tool group that corresponds to the managed node's platform, for example; UNIX.

Table 15: The SAP R/3 UN*X and NT Tools

Tool Name	UX	NT	Description	SAP Tcode
Check R/3 Database	•		Connect to the R/3 database to check availability	n/a
Control Panel	•	•	Starts the SAP R/3 GUI and displays the CCMS control panel	RZ03
DB Performance	•	•	Shows database performance through tables and indexes	DB02
Gateway	•	•	SAP R/3 gateway monitor	SMGW
Job Maintain	•	•	Defines background jobs	SM36
Job Overview	•	•	Status of background jobs	SMX

Table 15: The SAP R/3 UN*X and NT Tools (Continued)

Tool Name	UX	NT	Description	SAP Tcode
Job Performance	•	•	Displays Job performance by Job/User name, time, or status	SM39
Maintain Thresholds	•	•	Maintenance of alert thresholds	RZ06
Operation Modes	•	•	CCMS: Maintain operation modes	RZ04
Operation Sets	•	•	Displays/Maintains operation-mode sets	SM63
PerfAgt START	•	•	Starts the Performance Agent	n/a
PerfAgt STATUS	•		Displays the status of the Performance Agent	n/a
PerfAgt STOP	•	•	Stop the Performance Agent	n/a
Performance	•	•	Workload analysis	ST03
Process	•	•	Process overview	SM50
Profile Maintain	•	•	Profile maintain	RZ10
R/3 Info	•	•	Displays the installed R/3 version, instance, hostname, etc.	n/a
Servers	•	•	R/3 Server overview	n/a
Start R/3 Frontend	•	•	Starts the SAP R/3 GUI	n/a
Status R/3 Config	•		Displays details of the status of any installed SAP R/3 instances	n/a
Syslog	•	•	Analysis of local System log	SM21

Table 15: The SAP R/3 UN*X and NT Tools (Continued)

Tool Name	UX	NT	Description	SAP Tcode
Syslog Msg	•	•	System log message maintenance	SE92
Users	•	•	Displays general information about logged-on SAP R/3 users	AL08

Using the Smart Plug-in for SAP Tools

Expand the **Tools > SPI for SAP** item in the OVO for Windows Console to display in the details pane the tools and tools groups installed by the Smart Plug-in for SAP. The following tool groups are added to the OpenView Operations Console when the Smart Plug-in for SAP is installed:

- SAP R/3 Admin
- SAP R/3 NT
- SAP R/3 UN*X



Some of the tools make use of the SAP R/3 GUI. Make sure that the SAP R/3 GUI is already installed on the OVO for Windows management server or on the machine where an OVO for Windows Console is to be run. For more information, see [“Installing the SAP R/3 GUI” on page 47.](#)

To launch a Smart Plug-in for SAP tool

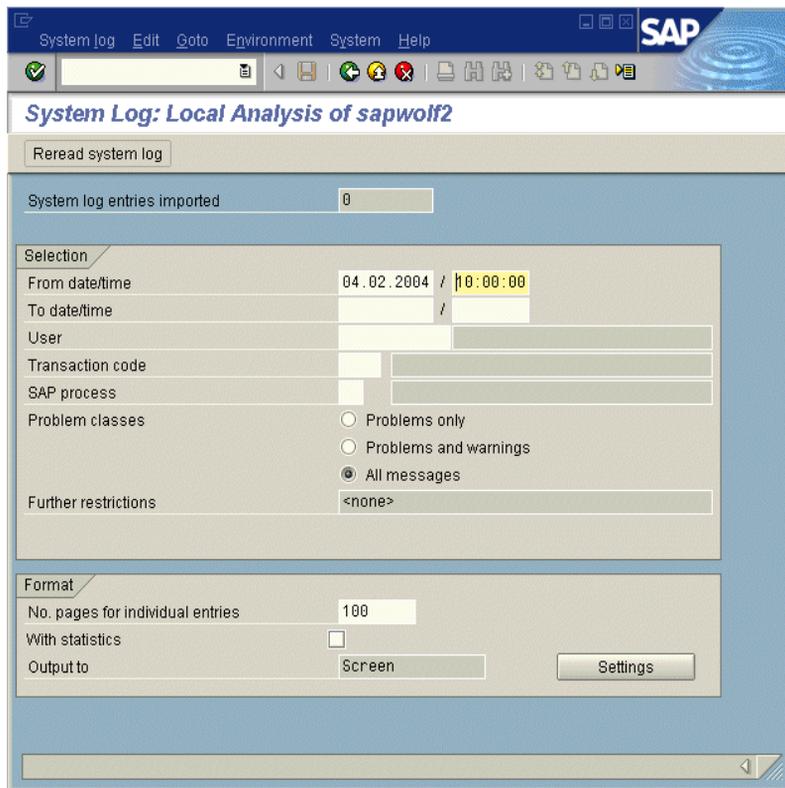
- 1 Expand the tool group containing the tool you want to launch
- 2 Right click the tool you want to launch and select the following option from the menu which pops up:

All Tasks > Launch Tool...

- 3 In the window which appears, select the SAP R/3 nodes on which you want to run the Smart Plug-in for SAP tool and click the **Launch...** button.

R/3 Info is one of a number of tools which display information in the Tool Output pane of the Tool Status dialog illustrated in [Figure 24](#). For more information about the R/3 Info tool, see [“Accessing Data on SAP R/3 Managed Nodes” on page 143](#). The majority of Smart Plug-in for SAP tools provide context-sensitive access to SAP R/3 by starting the SAP R/3 GUI and calling the appropriate SAP R/3 Transaction. For example, [Figure 23](#) shows the window that appears when you launch the Syslog tool, which you can find in the SAP R/3 UN*X and SAP R/3 NT tool groups.

Figure 23: Context-Sensitive Access to SAP R/3



Accessing Data on SAP R/3 Managed Nodes

The following Smart Plug-in for SAP tools provide quick access to SAP R/3-related information from the selected managed node. The R/3 Info and Start R/3 Front-end tools are available on both UN*X and NT platforms; some other tools are available on UN*X platforms only.

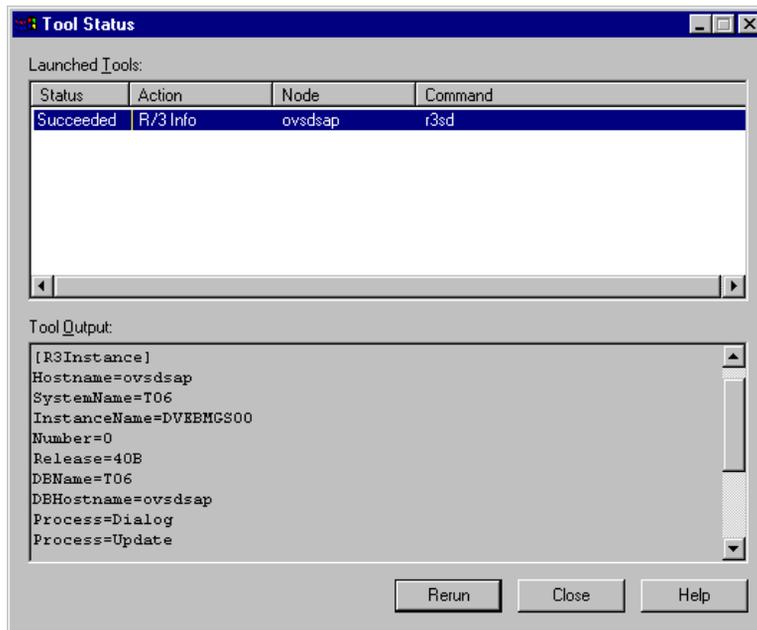
Each of the tools in the following list is explained in greater detail in the sections which follow. Where appropriate, real-life examples are used to demonstrate the more important aspects.

Check R/3 Database	Establishes a connection to the SAP R/3 database server and provides a quick way of checking the database connection. If multiple instances are installed, the tool prompts you to enter the System ID in which the database you want to check resides.
R/3 Info	<p>Returns the following information for SAP R/3 instances on a selected node.</p> <ul style="list-style-type: none"> • host name • SAP R/3 System name • SAP R/3 instance name/number • list of processes for the selected instance <p>The R/3 Info tool collects and uses the same information as <code>r3disc</code>, the SPI for SAP's service-discovery policy. However, R/3 Info simply displays the information it collects, it does not use the information to generate a service tree. For more information about the <code>r3disc</code> policy and Service Views, see <i>HP OpenView Smart Plug-in for SAP Online Help</i>.</p>
Start R/3 Front-end	Uses the local SAP GUI utility (running on the OVO for Windows management server) and profile to connect to the desired SAP R/3 system.

Status R/3 Config Displays a list of all SAP R/3 Systems (and the functional modules per System) present on the selected managed node. In addition, it lists all established SAP R/3 processes and indicates their current status.

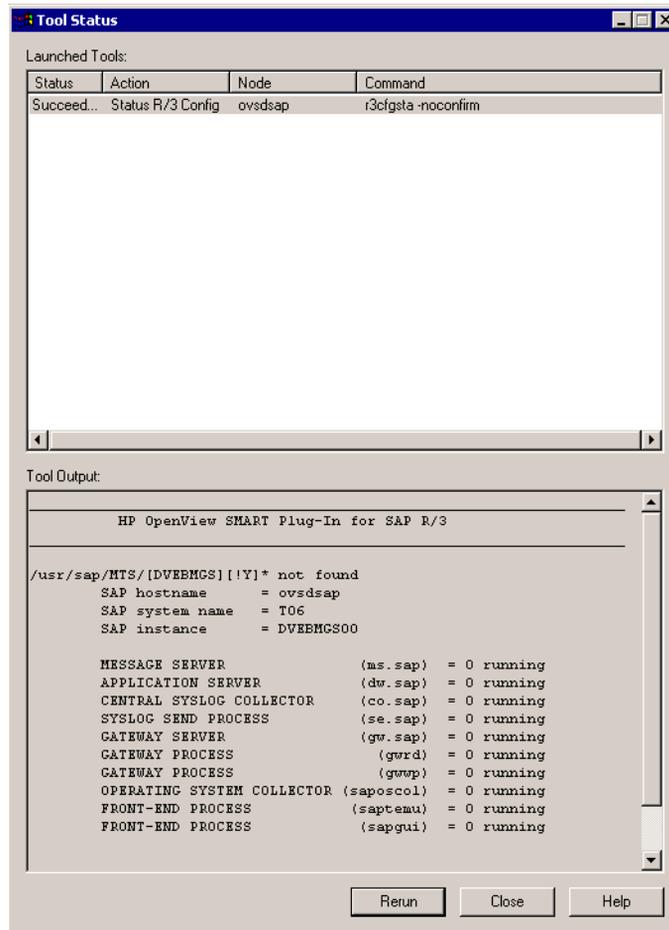
For example, launching the R/3 Info tool displays a dialog similar to the one illustrated in Figure 24. The Tool Status dialog indicates which command is being executed, on which node, and the command's current status.

Figure 24: Output from the R/3 Info Tool



The Status R/3 Config tool is executed on the selected managed node and displays the current local R/3 configuration. It lists all SAP R/3 systems installed on the selected node and the functional modules installed per SAP R/3 System. In addition, the R/3 process status provides a list of all established R/3 processes and their current status.

Figure 25: R/3 Configuration Status Window



Working with SAP R/3 Messages

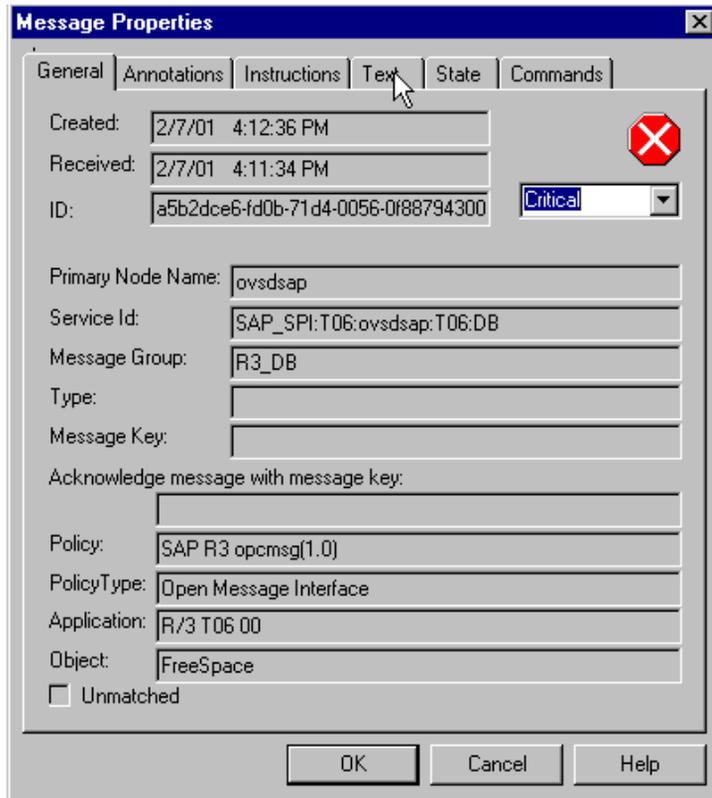
The Message Browser in the OVO for Windows Console is an important source of information about the status of the SAP servers, for which you are responsible. If you log in to OVO for Windows as a user with SAP responsibilities, the Message Browser displays, among others, messages from SAP R/3 servers, which you are monitoring with the SPI for SAP.

Selecting and double-clicking a message in the Message Browser displays the selected message's properties and allows you to perform the following tasks:

- view a detailed description of a problem
- view instructions designed to help you solve the problem to which the message relates
- initiate a pre-defined action, attached to a message
- add an annotation to a message in order to document the actions you took to solve a problem
- acknowledge a message so that it is moved to the Acknowledged-messages database

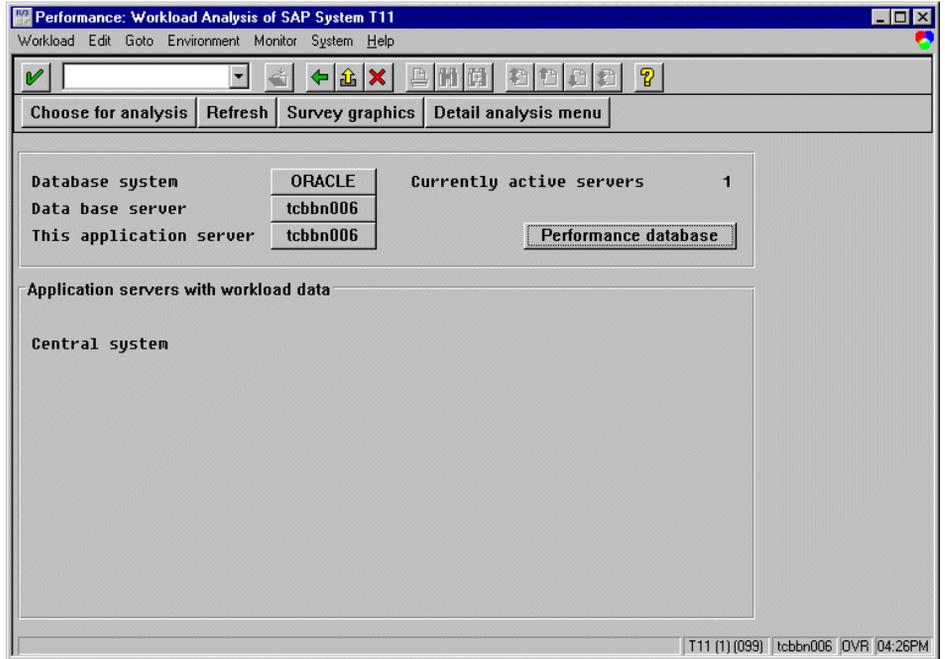
The example that follows shows a typical sequence of events which occur when a critical message appears in the OVO for Windows Console.

- 1 In the Active Messages browser, locate and double-click the critical message sent by the Smart Plug-in for SAP.
 - ▶ OVO for Windows displays the message's Text property sheet by default.
- 2 Click the Instructions tab to see if any instructions have been provided to help you sort out the problem that has been reported.
- 3 Once you have read and understood the information provided in the Instructions tab, click the Commands tab to see if an *automatic* or an *operator-initiated* action is available to help solve the problem reported by the incoming message. In many cases, the SPI for SAP R/3 uses these actions to provide context-sensitive access to SAP R/3 and automatically displays the appropriate SAP R/3 transaction window.

Figure 26: Message Details

- 4 If an operator-initiated action is available, click the **Start** button in the Operator-initiated field of the Commands property sheet to launch it. You can watch the progress of the action in the Status field. In the message field, the action starts the SAP R/3 GUI and displays the Workload-analysis transaction illustrated in [Figure 27](#).
- 5 Click the [*server_name*] button indicated in the This Application Server field and use the tools available with SAP R/3 to solve the problem.
- 6 When you have finished, log out of SAP R/3 and return to the Message Details window.
- 7 Click the **Acknowledge** button to confirm your awareness of the message to which you just responded. Once you have acknowledged the message, the message is moved from the Active-messages browser to the Acknowledged-messages browser.

Figure 27: SAP R/3 Performance: Workload Analysis



Removing the SPI for SAP

This section describes how to remove the SPI for SAP software quickly and cleanly. You will need to perform the following tasks, as appropriate, on both the SAP R/3 managed node(s) and the OVO for Windows management server(s) on which you installed the SPI for SAP software.

To remove the SPI for SAP software, you will need to carry out the following high-level steps which are described in greater detail in the corresponding sections that follow:

- “Removing SAP R/3 Management Functionality from OVO for Windows Managed Nodes” on page 149
- “Removing the SPI for SAP from the OVO for Windows Management Server” on page 151

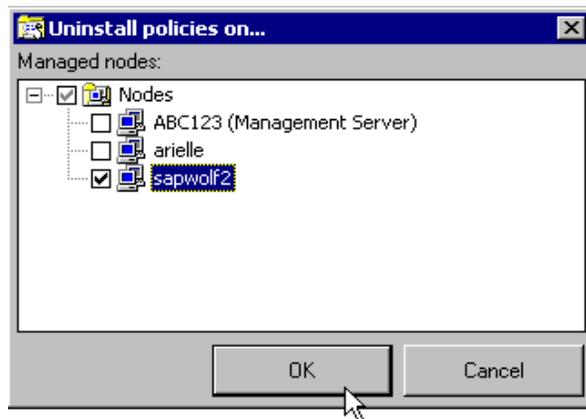
Removing SAP R/3 Management Functionality from OVO for Windows Managed Nodes

To de-assign SAP management functionality from OVO for Windows managed nodes:

- 1 On each managed node where you installed the SPI for SAP Performance Monitor, follow the corresponding deinstallation instructions in “De-Installing the Performance Packages” on page 116.

- 2 Remove the SPI for SAP policies from the SAP R/3 and ITS managed nodes.
 - a In the OVO for Windows Console, locate and expand the following policy group:
Policy Management > Policy Group > SPI for SAP
 - b Select and right click the SAP SPI policy group and remove the policies by using the following option in the pull-down menu:
All tasks > Uninstall from...
 - c In the Uninstall Policies on... window which appears, select the managed nodes from which you want to remove the SPI for SAP policies as illustrated in [Figure 28](#) and click **OK**.

Figure 28: Uninstalling SPI for SAP Policies



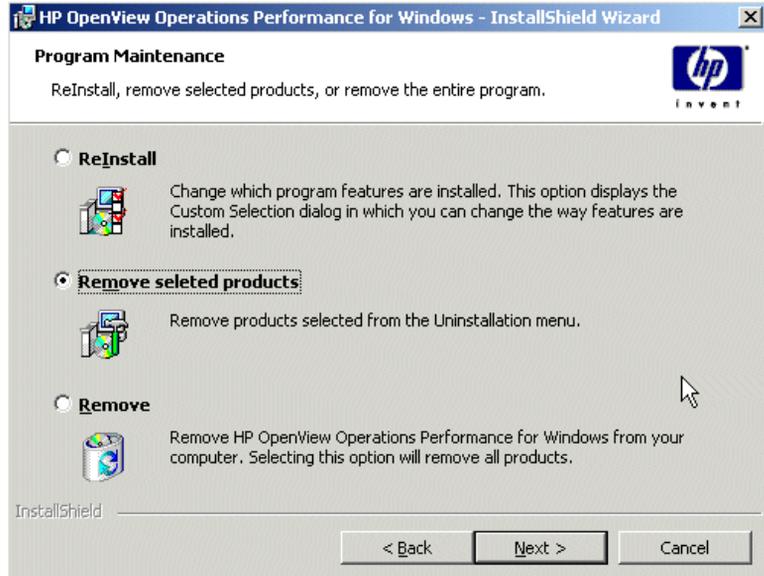
- d You can verify that the polices have indeed been removed from the SAP R/3 managed nodes by selecting and right-clicking the managed node in the console tree and using the following option in the pop-up menu, which appears:
View > Policy Inventory

Removing the SPI for SAP from the OVO for Windows Management Server

To remove the SAP software from OVO for Windows management server:

- 1 Remove the SPI for SAP software from the OVO for Windows management server as follows:
 - a Select the software to remove from your system using the standard windows Add/Remove Software window:
Start:Settings > Control Panel > Add/Remove Software
 - b The HP OpenView Operations/Performance for Windows InstallShield Wizard searches for products available for removal from your system. In the InstallShield Wizard window that appears, select the software package you want to remove from your system.
 - c Select: **Next**
 - d Select: Remove Selected Products as illustrated in [Figure 29: on page 152](#)
- 2 Select SAP from the Product Selection Uninstall screen.
- 3 Follow the on screen instructions and select Finish when the product removal is complete.
- 4 In the OVO for Windows Console, remove manually any remaining SPI for SAP GUI components, for example:
 - the SPI for SAP Tools group and its contents
You can find the SPI for SAP Tools group in the console tree in the following location:
Operations Manager -> Tools
 - any ConfigFile policies you have added
 - any policy groups you have created.
- 5 If you want to free the space occupied by the SPI for SAP monitor binaries on the OVO for Windows managed nodes, you can redeploy the instrumentation to the managed nodes.

Figure 29: Product Selection Uninstall screen



A

- account
 - NT
 - HP ITO user 58
- action
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