HP WBEM Providers for OpenVMS
Installation and Administrator’s Guide

April 2009

This document describes how to install and administer the Web-Based Enterprise Management (WBEM) Providers software and its components.

Revision/Update Information: This is a revised manual.
Operating System: OpenVMS V8.3-1H1 for Integrity servers
Software Version: HP WBEM Providers for OpenVMS, Version 1.7

Hewlett-Packard Company
Palo Alto, California
## Contents

### Preface

<table>
<thead>
<tr>
<th>Preface</th>
</tr>
</thead>
<tbody>
<tr>
<td>vii</td>
</tr>
</tbody>
</table>

### 1 Introduction

<table>
<thead>
<tr>
<th>1.1 Overview</th>
<th>1–1</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.2 Features and Benefits</td>
<td>1–1</td>
</tr>
<tr>
<td>1.2.1 OpenVMS Event Monitoring Service</td>
<td>1–1</td>
</tr>
<tr>
<td>1.3 Types of Providers</td>
<td>1–2</td>
</tr>
<tr>
<td>1.3.1 Instance Providers</td>
<td>1–2</td>
</tr>
<tr>
<td>1.3.2 Indication Provider</td>
<td>1–3</td>
</tr>
<tr>
<td>1.4 HP Systems Insight Manager</td>
<td>1–4</td>
</tr>
<tr>
<td>1.5 Architecture on Integrity Server Systems</td>
<td>1–4</td>
</tr>
</tbody>
</table>

### 2 Installing the WBEM Providers Software

<table>
<thead>
<tr>
<th>2.1 Prerequisites</th>
<th>2–1</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.2 Installing the WBEM Providers Software on an OpenVMS Integrity server</td>
<td>2–2</td>
</tr>
<tr>
<td>2.3 Configuring the WBEM Providers Software</td>
<td>2–3</td>
</tr>
<tr>
<td>2.4 Configuring WBEM Services for OpenVMS to Support HP SIM</td>
<td>2–5</td>
</tr>
<tr>
<td>2.5 Deconfiguring the WBEM Providers Software</td>
<td>2–5</td>
</tr>
<tr>
<td>2.6 Removing the WBEM Providers Software</td>
<td>2–8</td>
</tr>
<tr>
<td>2.7 Testing the WBEM Providers Instances</td>
<td>2–9</td>
</tr>
</tbody>
</table>

### 3 Administering Indications and Instances Using HP SIM

<table>
<thead>
<tr>
<th>3.1 Prerequisites for HP SIM</th>
<th>3–1</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.1.1 Setting the Global Protocol</td>
<td>3–1</td>
</tr>
<tr>
<td>3.1.2 Discovering a System</td>
<td>3–3</td>
</tr>
<tr>
<td>3.1.3 Identifying a System</td>
<td>3–4</td>
</tr>
<tr>
<td>3.2 Subscribing/Unsubscribing to Indications (Events)</td>
<td>3–7</td>
</tr>
<tr>
<td>3.3 Viewing Indications (Events)</td>
<td>3–8</td>
</tr>
<tr>
<td>3.4 Viewing Instances</td>
<td>3–10</td>
</tr>
</tbody>
</table>

### Glossary

### Index
Figures

1–1  WBEM Providers on Integrity server Systems .......................... 1–5
3–1  Protocol Settings ................................................. 3–2
3–2  Global Protocol Settings ...................................... 3–2
3–3  Discovery Option ............................................... 3–3
3–4  Discovery Page ................................................ 3–4
3–5  System Protocol Settings link ................................... 3–5
3–6  System Protocol Settings ....................................... 3–5
3–7  Identify Systems .............................................. 3–6
3–8  Task Results .................................................. 3–6
3–9  Events list ...................................................... 3–8
3–10 Event Details ................................................ 3–9
3–11 Printable Event Details ........................................ 3–9
3–12 System Page .................................................. 3–10
3–13 Properties Window ............................................ 3–10
3–14 Status Tab .................................................... 3–11
3–15 Status .......................................................... 3–11
3–16 Configuration Tab ............................................ 3–12
3–17 Configuration ................................................ 3–12

Tables

1–1  Instance Providers .................................................. 1–2
Preface

About This Document
This document describes how to install and administer the Web-Based Enterprise Management Providers, herein after referred to as WBEM Providers software.

Document updates may be issued between editions to correct errors or to document product changes.

Intended Audience
This document is intended for system administrators responsible for installing and managing remote systems using the WBEM Providers software. This document is also intended for users working on the client systems. Administrators and users are expected to have knowledge of operating system concepts and commands.

This document is not a tutorial.

Document Structure

HP WBEM Providers Installation and Administrators Guide is organized as follows:

Chapter 1 Introduction Introduces the WBEM Providers software. It also discusses the features and benefits of this software, and the architecture of the WBEM Providers software.

Chapter 2 Installing the WBEM Providers Software Describes how to install, configure, deconfigure, and remove the WBEM Providers software.

Chapter 3 Administering Indications and Instances Using HP SIM Describes how to use the HP Systems Insight Manager (HP SIM) Graphical User Interface (GUI) to administer indications and view instances on remote systems.

Related Information
Following are the additional documentation available for the WBEM Providers software in SYS$COMMON:[WBEMPROVIDERS.DOCUMENTATION] after installing the kit:

- HP WBEM Providers Release Notes
- HP WBEM Providers Data Sheets
- HP WBEM Providers Events List
Reader’s Comments

HP welcomes your comments on this manual.

Include the document title, manufacturing part number, and any comment, error found, in this document. Also, include what we did right, so we can incorporate it into other documents.

Send your comments or suggestions to openvmsdoc@hp.com.

Conventions

The following conventions are used in this manual:

\textbf{Ctrl/\textbackslash x} \quad A sequence such as Ctrl/\textbackslash x indicates that you must press and hold the key labeled Ctrl while you press another key or a pointing device button.

\ldots \quad A horizontal ellipsis in examples indicates one of the following possibilities:

\begin{itemize}
  \item Additional optional arguments in a statement have been omitted.
  \item The preceding item or items can be repeated one or more times.
  \item Additional parameters, values, or other information can be entered.
\end{itemize}

\textbf{Monospace text} \quad Monospace type indicates code examples and interactive screen displays.

In the C programming language, monospace type in text identifies the following elements: keywords, the names of independently compiled external functions and files, syntax summaries, and references to variables or identifiers introduced in an example.

\textbf{-} \quad A hyphen at the end of a command format description, command line, or code line indicates that the command or statement continues on the following line.

\textit{Italic text} \quad Italic text indicates important information, complete titles of manuals, or variables. Variables include information that varies in system output (Internal error \textit{number}), in command lines (/PRODUCER=\textit{name}), and in command parameters in text (where \textit{dd} represents the predefined code for the device type).

\textbf{UPPERCASE} \quad Uppercase text indicates the name of a routine, the name of a file, the name of a file protection code, or the abbreviation for a system privilege.
In command format descriptions, parentheses indicate that you must enclose the options in parentheses if you specify more than one.

In command format descriptions, brackets indicate optional elements. You can choose one, none, or all of the options. (Brackets must be included, however, in the syntax of a directory name in an OpenVMS file specification or in the syntax of a substring specification in an assignment statement.)

User input is shown in bold.

The dollar sign is used to indicate the DCL prompt on OpenVMS systems.
This chapter introduces the WBEM Providers software and the tools that this software includes. It also discusses the features and benefits of the WBEM Providers software, and their architecture on Integrity server systems.

This chapter addresses the following topics:

• Overview
• Features and Benefits
• Types of Providers
• HP Systems Insight Manager
• Architecture on Integrity Server Systems

1.1 Overview

The WBEM Providers software is a collection of tools that enables you to monitor the health of HP servers running HP OpenVMS. This software retrieves information about hardware devices such as CPU, memory, power supply, and cooling devices. It operates within the WBEM environment.

1.2 Features and Benefits

On request, the WBEM Providers software queries property information about a hardware device on a local or remote system. It offers the following features and benefits:

• Displays information on standards-compliant graphical and command-line system management applications, such as HP SIM.
• Operates within the WBEM environment.
• Enables you to view and administer the WBEM indications.
• Enables you to view the WBEM instances.

1.2.1 OpenVMS Event Monitoring Service

OpenVMS Event Monitoring Service, herein after referred to as OpenVMS EMS is a component that is included in the WBEM Providers software. This component monitors and captures the hardware events and saves them in an OpenVMS index file. OPENVMS_EMS process gathers the events for the EMS Wrapper Provider. The EMS Wrapper Provider queries the index file and wraps these hardware indications (events).

OpenVMS EMS supports the following types of hardware monitors:

• IA64 Core Hardware Monitor (Events)
• IPMI Forward Progress Log Monitor (Events)
Introduction

1.2 Features and Benefits

For a list of events that can be generated on OpenVMS, see HP WBEM Providers Events List in SYS$COMMON:[WBEMPROVIDERS.DOCUMENTATION].

OPENVMS_UTLD is a process that runs in the background, and it is required by the utilization provider.

The WBEMPROV$HOST_P parameter (OS version) runs in the background, and this parameter sets the host on the Integrated Lights-Out (iLO).

1.3 Types of Providers

The WBEM Providers software comprise instance providers and indication providers. This section describes these providers.

1.3.1 Instance Providers

Table 1–1 lists the instance providers.

Table 1–1 Instance Providers

<table>
<thead>
<tr>
<th>Instance Provider</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>CPU</td>
<td>The CPU Instance Provider retrieves the following types of information:</td>
</tr>
<tr>
<td></td>
<td>• Logical processor information, such as the following:</td>
</tr>
<tr>
<td></td>
<td>— Current clock speed</td>
</tr>
<tr>
<td></td>
<td>— Processor family</td>
</tr>
<tr>
<td></td>
<td>— Processor status information, including configuration and deconfiguration, failure status, and active and inactive status</td>
</tr>
<tr>
<td></td>
<td>— Load percentage</td>
</tr>
<tr>
<td></td>
<td>• Physical processor chip information, such as chip revisions and architecture revisions</td>
</tr>
<tr>
<td></td>
<td>• Location details, such as the following:</td>
</tr>
<tr>
<td></td>
<td>— Location attributes such as cabinet number, cell number, slot number, and so on. Instance providers display or retrieve information only for the filled slots</td>
</tr>
<tr>
<td></td>
<td>— Processor IDs</td>
</tr>
</tbody>
</table>

(continued on next page)
Table 1–1 (Cont.) Instance Providers

<table>
<thead>
<tr>
<th>Instance Provider</th>
<th>Description</th>
</tr>
</thead>
</table>
| Memory            | The Memory Instance Provider retrieves the following types of information:  
|                   | • Memory slot information  
|                   | • Memory module information, such as the following:  
|                   | – Serial number  
|                   | – Part number  
|                   | – Memory capacity  
|                   | – Module form factor  
|                   | – Module status (for example, configuration status and failure status)  
| Environmental     | The Environmental Instance Provider retrieves information about the following hardware components:  
|                   | • Fans  
|                   | • Power supply  
|                   | • Bulk power supply  
|                   | • AC input lines  
| Firmware Revision | The Firmware Revision Instance Provider retrieves firmware revision information for firmwares present on the managed system and their related details.  
| Management Processor (MP) | The MP Instance Provider retrieves information about the Management Processor of the managed system.  
| Enclosure         | The Enclosure Instance Provider retrieves information about the Rack/Enclosure and the blade on an Integrity server blade system.  
| Utilization       | Retrieves information about the CPU, memory, disk and network utilization.  
| LAN               | Retrieves the consolidated status of the Ethernet interfaces.  
| VM                | Retrieves the information about HP VM Guest on supported HP Integrity Servers, running HP OpenVMS.  

1.3.2 Indication Provider

EMS Wrapper Provider is an indication provider included with the WBEM Providers software. The EMS Wrapper Provider performs the following tasks:

• Converts hardware events captured by the OpenVMS EMS component into WBEM indications.

• Common Information Model Object Manager (CIMOM) is a component of WBEM that manages the interaction between the providers and other modules in the WBEM environment. CIMOM manages CIM objects. It receives and processes CIM operation requests and issues responses.
The EMS Wrapper Provider reports the WBEM indications to the CIMOM. Using a management application, such as HP SIM, you can subscribe to and receive OpenVMS EMS events generated on a remote system.

\begin{center}\textbf{Note}\end{center}

The terms \textit{events} and \textit{indications} are used interchangeably.

\section*{1.4 HP Systems Insight Manager}

HP Systems Insight Manager (HP SIM) is the foundation for HP’s unified server-storage management strategy. It is a multiple operating system and a hardware level management product. HP SIM provides the basic management features of system discovery and identification, single event view, inventory data collection, and reporting.

This software is a web-based user interface that enables you to control and monitor resources within a large environment on OpenVMS. You can use HP SIM for creating subscriptions, event handling, provisioning, and viewing the indications and instances, among many other functions, on a remote system. You must install HP SIM on the Central Management Server (CMS) run on Microsoft® Windows®.

\section*{1.5 Architecture on Integrity Server Systems}

Figure 1–1 illustrates the architecture of the WBEM Providers software installed on an Integrity server client system. The client system is managed by the CMS.
Processing a request for information involves the following steps:

1. The CIMOM receives requests from the CMS for device information.
2. The CIMOM converts the requests to a format that is read by the WBEM Providers software and directs the requests to the appropriate provider, for example, the CPU Instance Provider.
3. The WBEM Providers software queries the associated hardware device for property information.
4. The WBEM Providers software returns the query information to the CIMOM.
5. The CIMOM conveys the responses from the provider to the CMS.

The OpenVMS EMS monitors and captures the hardware events required by OpenVMS. The EMS Wrapper Provider wraps the events and retrieves the information.

---

**Note**

Information can be viewed using HP SIM on the remote system.
Installing the WBEM Providers Software

The WBEM Providers software is installed by default with the HP OpenVMS Operating Environment (OE) media. However, at some point you may need to install the WBEM Providers software separately. This chapter describes how to install the WBEM Providers software as a standalone component on the OpenVMS operating system. It also describes how to configure and remove the WBEM Providers software. In addition, it describes how to test the WBEM Providers instances.

This chapter addresses the following topics:

• Prerequisites
• Installing the WBEM Providers Software on an OpenVMS Integrity server
• Configuring the WBEM Providers Software
• Configuring WBEM Services for OpenVMS to Support HP SIM
• Deconfiguring the WBEM Providers Software
• Removing the WBEM Providers Software
• Testing the WBEM Providers Instances

2.1 Prerequisites

Following are the prerequisites for installing the WBEM Providers software:

• HP OpenVMS V8.3-1H1 for Integrity servers
• HP WBEM Services for OpenVMS, V2.9 or later
• HP TCP/IP Stack
• Latest SYS and UPDATE patches

Note

All the prerequisites are available on the OE media. You can select the WBEM Providers software dependencies from the OE media while installing the WBEM Providers software as a standalone component.

HP recommends that you install HP SIM to remotely administer indications and instances.
2.2 Installing the WBEM Providers Software on an OpenVMS Integrity server

This section describes how to install the WBEM Providers software using the POLYCENTER Software Installation (PCSI) utility.

To install the WBEM Providers software, follow these steps:

1. Log on to the system with the SYSTEM account.
2. Ensure that the WBEM Providers software kit and manifest files are in the current directory.
3. Enter the following command at the command prompt:

```
$ PRODUCT INSTALL WBEMPROVIDERS
```

An output similar to the following is displayed. When the system asks whether you want to continue with the installation, answer YES.

```
Performing product kit validation ...
%PCSI-I-VALPASSED, validation of
  _$1SDGA413:[KITS.IA64.WBEMPROVIDERS]
HP-I64VMS-WBEMPROVIDERS-X0107-16-1.PCSI;1 succeeded%PCSI

The following product has been selected:
  HP I64VMS WBEMPROVIDERS X1.7-16 Layered Product

Do you want to continue? [YES]
```

Configuration phase starting ...

You will be asked to choose options, if any, for each selected product and for any products that may be installed to satisfy software dependency requirements.

```
Configuring HP I64VMS WBEMPROVIDERS X1.7-16: HP WBEM providers for OpenVMS I64
```

2007 Hewlett-Packard Development Company, L.P. All rights reserved.

Hewlett Packard Company

* This product does not have any configuration options.

Execution phase starting ...

```
The following product will be installed to destination:
  HP I64VMS WBEMPROVIDERS X1.7-16 DISK$ORANGE-1H1:[VMS$COMMON.]
```

Portion done: 0%...10%...20%...30%...40%...50%...60%...70%...80%...90%...100%

```
The following product has been installed:
  HP I64VMS WBEMPROVIDERS X1.7-16 Layered Product
```

The shareable images and other files are copied to the following locations:

- The shareable images are copied to SYS$SHARE
- The common files are copied to SYS$COMMON:[WBEMPROVIDERS]
- The Managed Object Format (MOF) files are copied to SYS$COMMON:[WBEMPROVIDERS.MOF]
- The documentation files are copied to SYS$COMMON:[WBEMPROVIDERS.DOCUMENTATION]
- The configuration and deconfiguration command procedure files are copied to SYS$COMMON:[WBEMPROVIDERS]
2.3 Configuring the WBEM Providers Software

After the installation of the WBEM Providers software for OpenVMS, to configure the WBEM Providers software, follow these steps:

1. Log on to the system with the SYSTEM account, if you are have logged on using a different account.

2. To define the WBEM Services logicals, enter the following command:

   $ @SYS$COMMON:[WBEM_SERVICES]WBEM_SERVICES$DEFINE_COMMANDS.COM

3. Ensure that the CIM Server is running and verify the list of Providers installed by entering the following command:

   $ CIMPROVIDER -L -S

   An output similar to the following is displayed:

<table>
<thead>
<tr>
<th>MODULE</th>
<th>STATUS</th>
</tr>
</thead>
<tbody>
<tr>
<td>OperatingSystemModule</td>
<td>OK</td>
</tr>
<tr>
<td>ComputerSystemModule</td>
<td>OK</td>
</tr>
<tr>
<td>ProcessModule</td>
<td>OK</td>
</tr>
<tr>
<td>IPProviderModule</td>
<td>OK</td>
</tr>
</tbody>
</table>

4. To configure the WBEM Providers software, enter the following command:

   $ @SYS$COMMON:[WBEMPROVIDERS]WBEMPROVIDERS$CONFIGURE.COM

   Enter the "Primary Owner name" and "Primary owner contact" when prompted.

   If you want to change the "Primary Owner name" and "Primary owner contact", edit the SYS$SPECIFIC:[WBEMPROVIDERS]WBEMPROVIDERS$LOGICALS.COM and change the "WBEM_PRIMARY_OWNER" and "WBEM_PRIMARY_OWNER_CONTACT" logical definitions appropriately.

   The configuration process takes a few minutes to complete. An output similar to the following is displayed:
Installing the WBEM Providers Software

2.3 Configuring the WBEM Providers Software

This command procedure registers the WBEM Providers software with the CIM Server and copies the node specific files to SYS$SPECIFIC:[WBEMPROVIDERS]

5. Verify the list of providers installed and their status by entering the following command:

```
$ CIMPROVIDER -L -S
```

An output similar to the following is displayed along with the WBEM Services providers:

<table>
<thead>
<tr>
<th>MODULE</th>
<th>STATUS</th>
</tr>
</thead>
<tbody>
<tr>
<td>OperatingSystemModule</td>
<td>OK</td>
</tr>
<tr>
<td>ComputerSystemModule</td>
<td>OK</td>
</tr>
<tr>
<td>ProcessModule</td>
<td>OK</td>
</tr>
<tr>
<td>IPv4ProviderModule</td>
<td>OK</td>
</tr>
<tr>
<td>EventIndicationConsumerModule</td>
<td>OK</td>
</tr>
<tr>
<td>EMSWrapperProviderModule</td>
<td>OK</td>
</tr>
<tr>
<td>HPVMSLANIndicationProviderModule</td>
<td>OK</td>
</tr>
<tr>
<td>StateChangeIndicationProviderModule</td>
<td>OK</td>
</tr>
<tr>
<td>ChassisProviderModule</td>
<td>OK</td>
</tr>
<tr>
<td>cpuproviedermodule</td>
<td>OK</td>
</tr>
<tr>
<td>MemoryModule</td>
<td>OK</td>
</tr>
<tr>
<td>FirmwareRevisionProviderModule</td>
<td>OK</td>
</tr>
<tr>
<td>MPProviderModule</td>
<td>OK</td>
</tr>
<tr>
<td>EnclosureProviderModule</td>
<td>OK</td>
</tr>
<tr>
<td>HPHealthStateProviderModule</td>
<td>OK</td>
</tr>
<tr>
<td>HPVMSLANProviderModule</td>
<td>OK</td>
</tr>
<tr>
<td>CSChassisProviderModule</td>
<td>OK</td>
</tr>
<tr>
<td>HPVMProviderModule</td>
<td>OK</td>
</tr>
<tr>
<td>HP_UtilizationProviderModule</td>
<td>OK</td>
</tr>
</tbody>
</table>
2.4 Configuring WBEM Services for OpenVMS to Support HP SIM

For HP SIM to discover an OpenVMS system, follow these steps to configure WBEM Services for OpenVMS to support HP SIM before discovering a system:

1. Log on to the system with the SYSTEM account, if you have logged on using a different account.

2. To define the WBEM Services logicals, enter the following command:

   `@SYS$COMMON:[WBEM_SERVICES]WBEM_SERVICES$DEFINE_COMMANDS.COM`

3. Add the username that you want to use in HP SIM to access the system, by entering the following command:

   `CIMUSER -A -U "<username>"`

   Where: `<username>` is an user account on the OpenVMS system, which must be provided again while setting the Global Protocol Settings on HP SIM.

   For example,

   `CIMUSER -A -U "system"`

   Ensure that the user name is case sensitive. The same name must be provided in the HP SIM protocol settings. Executing this command prompts you to enter the password for the `<username>` on the OpenVMS system. Enter the password.

   **Note**

   Use the command `CIMUSER -R -U <username>` to remove the added Cimuser. For more information about Cimuser commands, enter the `CIMUSER --HELP` command.

2.5 Deconfiguring the WBEM Providers Software

To deconfigure the WBEM Providers software, follow these steps:

1. Log on to the system with the SYSTEM account, if you have logged on using a different account.

2. To define the WBEM Services logicals, enter the following command:

   `@SYS$COMMON:[WBEM_SERVICES]WBEM_SERVICES$DEFINE_COMMANDS.COM`

3. Ensure that the CIM Server is running, and verify the list of Providers installed by entering the following command:

   `CIMPROVIDER -L -S`

   An output similar to the following is displayed:
Installing the WBEM Providers Software

2.5 Deconfiguring the WBEM Providers Software

<table>
<thead>
<tr>
<th>MODULE</th>
<th>STATUS</th>
</tr>
</thead>
<tbody>
<tr>
<td>OperatingSystemModule</td>
<td>OK</td>
</tr>
<tr>
<td>ComputerSystemModule</td>
<td>OK</td>
</tr>
<tr>
<td>ProcessModule</td>
<td>OK</td>
</tr>
<tr>
<td>IPPProviderModule</td>
<td>OK</td>
</tr>
<tr>
<td>EventIndicationConsumerModule</td>
<td>OK</td>
</tr>
<tr>
<td>EMSWrapperProviderModule</td>
<td>OK</td>
</tr>
<tr>
<td>HPVMSLANIndicationProviderModule</td>
<td>OK</td>
</tr>
<tr>
<td>StateChangeIndicationProviderModule</td>
<td>OK</td>
</tr>
<tr>
<td>ChassisProviderModule</td>
<td>OK</td>
</tr>
<tr>
<td>cpuprovidermodule</td>
<td>OK</td>
</tr>
<tr>
<td>MemoryModule</td>
<td>OK</td>
</tr>
<tr>
<td>FirmwareRevisionProviderModule</td>
<td>OK</td>
</tr>
<tr>
<td>MPProviderModule</td>
<td>OK</td>
</tr>
<tr>
<td>EnclosureProviderModule</td>
<td>OK</td>
</tr>
<tr>
<td>HPHealthStateProviderModule</td>
<td>OK</td>
</tr>
<tr>
<td>HPVMSLANProviderModule</td>
<td>OK</td>
</tr>
<tr>
<td>HPVMSLANCSProviderModule</td>
<td>OK</td>
</tr>
<tr>
<td>CSChassisProviderModule</td>
<td>OK</td>
</tr>
<tr>
<td>HPVMProviderModule</td>
<td>OK</td>
</tr>
<tr>
<td>HP_UtilizationProviderModule</td>
<td>OK</td>
</tr>
</tbody>
</table>

4. To deconfigure the WBEM Providers software, enter the following command:

$ @SYS$COMMON:[WBEMPROVIDERS]WBEMPROVIDERS$DECONFIGURE.COM

The deconfiguration process displays the following sample output and prompts you to remove the files. Answer YES if you want to completely remove the product specific files. Answer NO if you intend to upgrade to a higher version of the WBEM Providers software.

This process also unregisters the WBEM Providers software.

%WBEMPROVIDERS-I-PROVIDECONFIG, Info: De-configuration procedure for WBEM Providers.
OperatingSystem Information
  Host: orange
  Name: OpenVMS
  Version: V8.3-1H1
  UserLicense: Unlimited user license
  Number of Users: 2 users
  Number of Processes: 46 processes
  OSCapability: 64 bit
  LocalDateTime: Nov 20, 2008 0:31:34 (-0500)
  SystemUpTime: 1780419 seconds = 20 days, 14 hrs, 33 mins, 39 secs
Deconfiguration is going to remove all the Providers and Restart Cimserver.
Do you want to continue?[Y/N] [Y]:
%WBEMPROVIDERS-I-STOP, Info: Stopping the OpenVMS_EMS process
%WBEMPROVIDERS-I-STOP, Info: Stopping the WBEMPROV$HOST_P process
%WBEMPROVIDERS-I-DEL, Info: Deleting the Obsolete files from SYS$SPECIFIC:[WBEMPROVIDERS] directory
%WBEMPROVIDERS-I-DECONFPROV, Info: De-configuration of HPHealthStateProviderModule...
Disabling provider module... Provider module disabled successfully.
Deleting provider module... Provider module deleted successfully.
%WBEMPROVIDERS-I-DECONFPROV, Info: De-configuration of cpuprovidermodule...
Disabling provider module... Provider module disabled successfully.
Deleting provider module... Provider module deleted successfully.
%WBEMPROVIDERS-I-DECONFPROV, Info: De-configuration of MemoryModule...
Disabling provider module... Provider module disabled successfully.
Deleting provider module... Provider module deleted successfully.
%WBEMPROVIDERS-I-DECONFPROV, Info: De-configuration of ChassisProviderModule...
Disabling provider module...
Provider module disabled successfully.
Deleting provider module...
Provider module deleted successfully.
%WBEMPROVIDERS-I-DECONFPROV, Info:De-configuration of FirmwareRevisionProviderModule...
Disabling provider module...
Provider module disabled successfully.
Deleting provider module...
Provider module deleted successfully.
%WBEMPROVIDERS-I-DECONFPROV, Info:De-configuration of EventIndicationConsumerModule...
Disabling provider module...
Provider module disabled successfully.
Deleting provider module...
Provider module deleted successfully.
%WBEMPROVIDERS-I-DECONFPROV, Info:De-configuration of StateChangeIndicationProviderModule...
Disabling provider module...
Provider module disabled successfully.
Deleting provider module...
Provider module deleted successfully.
%WBEMPROVIDERS-I-DECONFPROV, Info:De-configuration of EMSWrapperProviderModule...
Disabling provider module...
Provider module disabled successfully.
Deleting provider module...
Provider module deleted successfully.
%WBEMPROVIDERS-I-DECONFPROV, Info:De-configuration of MPProviderModule...
Disabling provider module...
Provider module disabled successfully.
Deleting provider module...
Provider module deleted successfully.
%WBEMPROVIDERS-I-DECONFPROV, Info:De-configuration of EnclosureProviderModule...
Disabling provider module...
Provider module disabled successfully.
Deleting provider module...
Provider module deleted successfully.
%WBEMPROVIDERS-I-DECONFPROV, Info:De-configuration of HPVMSLANProviderModule...
Disabling provider module...
Provider module disabled successfully.
Deleting provider module...
Provider module deleted successfully.
%WBEMPROVIDERS-I-DECONFPROV, Info:De-configuration of HPVMSLANCSProviderModule...
Disabling provider module...
Provider module disabled successfully.
Deleting provider module...
Provider module deleted successfully.
%WBEMPROVIDERS-I-DECONFPROV, Info:De-configuration of HPVMSLANIndicationProviderModule...
Disabling provider module...
Provider module disabled successfully.
Deleting provider module...
Provider module deleted successfully.
%WBEMPROVIDERS-I-DECONFPROV, Info:De-configuration of CSChassisProviderModule...
Disabling provider module...
Provider module disabled successfully.
Deleting provider module...
Provider module deleted successfully.
%WBEMPROVIDERS-I-DECONFPROV, Info:De-configuration of HPProviders
Installing the WBEM Providers Software

2.5 Deconfiguring the WBEM Providers Software

%WBEMCIM-I-SHUTDOWN, Shutting down WBEM Services for OpenVMS...
%WBEMCIM-I-SHUTDOWNCS, Shutting down CIMServer.exe... CIM Server stopped.
%WBEMCIM-I-SERVERWAIT, Waiting for CIMServer to shut down. 60 seconds remaining...
%WBEMCIM-S-STARTSTOP, CIMServer has stopped.
%WBEMCIM-I-SHUTDOWNCCESSUCCESS, Shutdown of CIMServer.exe successful. sts=%X00000001.
%RUN-S-PROC_ID, identification of created process is 21A0B070
%WBEMCIM-I-SERVERWAIT, Waiting for CIMServer to start. 180 seconds remaining...
%WBEMCIM-S-STARTSTOP, CIMServer successfully started.

OperatingSystem Information

Host: orange
Name: OpenVMS
Version: V8.3-1H1
UserLicense: Unlimited user license
Number of Users: 2 users
Number of Processes: 43 processes
OSCapability: 64 bit
LocalDateTime: Nov 20, 2008 0:35:13 (-0500)
SystemUpTime: 1780638 seconds = 20 days, 14 hrs, 37 mins, 18 secs

%WBEMPROVIDERS-I-PROVDECONFIG, Info: De-configuration of WBEMProviders successful.

5. To ensure that the WBEM Providers software is unregistered, query the CIM server by entering the following command:

$ CIMPROVIDER -L -S

The providers that were displayed earlier will not be displayed now.

6. To ensure that all the shareable images are unloaded from the CIM Server image, restart the CIM Server after deconfiguration by entering the following command:

$ @SYS$STARTUP:WBEM_SERVICES$SHUTDOWN.COM

Wait for few minutes for the process to complete, and enter the following command:

$ @SYS$STARTUP:WBEM_SERVICES$STARTUP.COM

2.6 Removing the WBEM Providers Software

To remove the WBEM Providers software, complete the deconfiguration steps described in the Section 2.5 "Deconfiguring the WBEM Providers Software" and enter the following command at the command prompt:

$ PRODUCT REMOVE WBEMPROVIDERS

An output similar to the following is displayed:

The following product has been selected:
HP I64VMS WBEMPROVIDERS X1.7-16 Layered Product

Do you want to continue? [YES]

The following product will be removed from destination:
HP I64VMS WBEMPROVIDERS X1.7-16 DISK$ORANGE-1H1:[VMS$COMMON.]

Portion done: 0%...10%...20%...30%...40%...50%...60%...70%...80%...90%...100%

The following product has been removed:
HP I64VMS WBEMPROVIDERS X1.7-16 Layered Product
2.7 Testing the WBEM Providers Instances

To test the WBEM Providers instances, follow these steps:

1. To define the WBEM Services logicals, enter the following command:

   $ @SYS$COMMON:[WBEM\_SERVICES]WBEM\_SERVICES$\_DEFINE\_COMMANDS.COM

2. A set of XML files are provided in the SYS$COMMON:[WBEM\_PROVIDERS.TEST] directory that can be used to test the WBEM Providers software. The name of the XML file indicates the Provider that you want to test. Enter the following commands to generate instances using the WBEMEXEC request and the XML file:

   $ SET DEF SYS$COMMON:[WBEM\_PROVIDERS.TEST]
   $ WBEMEXEC <INSTANCES.XML>

   For example,

   $ SET DEF SYS$COMMON:[WBEM\_PROVIDERS.TEST]
   $ WBEMEXEC CS\_ENUMERATE\_INSTANCES.XML ! Enumerates instances of the CS provider
   $ WBEMEXEC CS\_ENUMERATE\_INSTANCE\_NAMES.XML ! Enumerates instance names of the ! CS Provider
3

Administering Indications and Instances Using HP SIM

This chapter describes how to administer the WBEM Providers software using HP SIM.

Note

You can perform similar tasks using other management applications that are compliant with the Common Information Model (CIM) schema of the Distributed Management Task Force (DMTF).

This chapter addresses the following topics:

- Prerequisites for HP SIM
- Subscribing/Unsubscribing to Indications (Events)
- Viewing Indications (Events)
- Viewing Instances

3.1 Prerequisites for HP SIM

To use HP SIM to administer and view events and indications, ensure that the following prerequisites are satisfied:

- Setting the Global Protocol
- Discovering a System
- Identifying a System

3.1.1 Setting the Global Protocol

To set the Global Protocol Settings using HP SIM, follow these steps:

1. On OpenVMS system, complete the steps described in the Section 2.4 "Configuring WBEM Services for OpenVMS to Support HP SIM".

2. Enter the following URL to launch HP SIM on the browser:
   http://<system name>:<port number>/
   The system name is the name of CMS.
   For example, http://abc.com:280/
   The HP SIM home page is launched.
3. To set the global protocol, select **Options->Protocol Settings->Global Protocol Settings**, as shown in Figure 3–1.

![Figure 3–1 Protocol Settings](image1)

The Global Protocol Settings window is displayed, as shown in Figure 3–2.

![Figure 3–2 Global Protocol Settings](image2)

4. Under the Default WBEM settings section, select **Enable WBEM**, as shown in Figure 3–2.
5. Add the users and their associated password that were added while configuring WBEM Services for HP SIM on OpenVMS. Click OK to save the settings.

Note

For more information, see the HP Systems Insight Manager Installation and User’s Guide at: http://docs.hp.com/en/netsys.html

3.1.2 Discovering a System

To discover an OpenVMS system using HP SIM, follow these steps:

1. Select Options → Discovery in the HP SIM home page, as shown in Figure 3–3.
The Discovery page is displayed, as shown in Figure 3–4.

**Figure 3–4  Discovery Page**

![Discovery Page](image)

2. Click New to add a new system, as shown in Figure 3–4. Enter the IP address, and click OK to save the settings.

3. Or click Edit to modify the discovered system settings.

4. Click Run Now.

---

**Note**

For more information, see the *HP Systems Insight Manager Installation and User’s Guide* at: http://docs.hp.com/en/netsys.html

---

### 3.1.3 Identifying a System

Identify a system on HP SIM, if the system has not been discovered properly, or if the Global Protocol Settings are different from the System Protocol Settings. To identify a system, follow these steps:

1. In the left pane of the HP SIM page, from the All Systems option, select the required OpenVMS system to open the Systems page.

2. Click Tools & Links, and click the **System Protocol Settings** link, as shown in Figure 3–5.
3.1 Prerequisites for HP SIM

The System Protocol Settings page is displayed, as shown in Figure 3–6.

Figure 3–6 System Protocol Settings

3. Under the WBEM settings section, select **Updated values for this protocol**, as shown in Figure 3–6.

   Select **Use values specified below**, and enter the required user credentials, if the system protocol settings are different from the global protocol settings.

   Click **OK** to save the settings.

4. Select **Options–>Identify Systems** to identify the system.
5. Select the required system, and click **Run Now** to verify the target system, as shown in Figure 3–7.

**Figure 3–7  Identify Systems**

The Task Results page is displayed, as shown in Figure 3–8.

**Figure 3–8  Task Results**

---

**Note**

For more information, see the *HP Systems Insight Manager Installation and User’s Guide* at:  [http://docs.hp.com/en/netsys.html](http://docs.hp.com/en/netsys.html)
3.2 Subscribing/Unsubscribing to Indications (Events)

When creating subscriptions on the CMS using HP SIM, indications are delivered to the CMS whenever an event occurs on the managed system.

To subscribe to indications or events generated on the required OpenVMS systems, follow these steps:

1. Log on to the Windows system on which HP SIM is installed. Ensure that the account used to log on has administrator privileges on HP SIM.

2. Ensure that you are able to ping the OpenVMS system using the first name. For example, if the system name is green.hp.com, enter the following command at the command prompt:

   C:\> PING green

   An output similar to the following is displayed:

   Pinging green [12.116.43.172] with 32 bytes of data:
   Reply from 12.116.43.172: bytes=32 time=317ms TTL=52
   Reply from 12.116.43.172: bytes=32 time=303ms TTL=52
   Reply from 12.116.43.172: bytes=32 time=314ms TTL=52
   Reply from 12.116.43.172: bytes=32 time=313ms TTL=52
   Ping statistics for 12.116.43.172:
   Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
   Approximate round trip times in milli-seconds:
   Minimum = 303ms, Maximum = 317ms, Average = 311ms

   Ensure that the IP address corresponds to the OpenVMS system, for which the subscription is intended.

   ____________________________________________________________________________

   Note

   If the first name does not correspond to the IP address of the intended system, or you are unable to ping the OpenVMS system, edit the hosts file in the following location to add the intended system:

   C:\WINDOWS\system32\drivers\etc\hosts file.

   For example, add the following line in the hosts file.

   12.116.43.172 green

   Save and close the file.

   ____________________________________________________________________________

3. Enter the following command at the command prompt:

   C:\> MXWBEMSUB -A -N <systemname>

   For example,

   C:\> MXWBEMSUB -A -N green

   An output similar to the following is displayed:

   Create Subscriptions for:
   green
   Indication subscription successfully created.
Administering Indications and Instances Using HP SIM

3.2 Subscribing/Unsubscribing to Indications (Events)

4. If you want to unsubscribe to indications, enter the following command at the command prompt:

C: \>MXWBEMSUB -R -N <systemname>

For example,

C: \>MXWBEMSUB -R -N green

An output similar to the following is displayed:

Delete Subscriptions from:
green
Indication subscription successfully deleted.

3.3 Viewing Indications (Events)

To view the list of indications or events generated on the selected systems, follow these steps:

1. Select All Events in the left pane of the HP SIM window. The list of events is displayed, as shown in Figure 3–9.

Figure 3–9 Events list

2. To view the details of an event, select the event. The details are displayed at the bottom of the same window, as shown in Figure 3–10.
3. To obtain the printable version of the event details, click **View Printable Details** at the bottom of the window. The printable report is displayed in a new window, as shown in Figure 3–11.

**For more information, see the *HP Systems Insight Manager Installation and User’s Guide* at: [http://docs.hp.com/en/netsys.html](http://docs.hp.com/en/netsys.html)**
3.4 Viewing Instances

To view the various instances, follow these steps:

1. On the System Page of HP SIM, click **Properties**, as shown in Figure 3–12.

**Figure 3–12 System Page**

![System Page](image1)

The Properties window is displayed. This window provides details about the system, as shown in Figure 3–13.

**Figure 3–13 Properties Window**

![Properties Window](image2)
2. To view the status of various instances, click **Status**, as shown in Figure 3–14.

**Figure 3–14  Status Tab**

3. Click the required instance link to view more information about the instance, as shown in Figure 3–15.

**Figure 3–15  Status**

4. To view information about the instance configuration, click **Configuration**, as shown in Figure 3–16.
5. Click the required instance link to view the detailed instance configuration information, as shown in Figure 3–17.

**Figure 3–17  Configuration**

<table>
<thead>
<tr>
<th>Properties: green</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Identity</strong></td>
</tr>
<tr>
<td>Firmware</td>
</tr>
<tr>
<td>Power</td>
</tr>
<tr>
<td><strong>OS Configuration</strong></td>
</tr>
<tr>
<td>Number of Licensed Users</td>
</tr>
<tr>
<td>Number of Users</td>
</tr>
<tr>
<td>Number of Processes</td>
</tr>
<tr>
<td>Max. Number of Processes</td>
</tr>
<tr>
<td>Max. Process Memory Size</td>
</tr>
<tr>
<td>Max. Processes Per User</td>
</tr>
</tbody>
</table>

**Note**

For more information, see the *HP Systems Insight Manager Installation and User’s Guide* at: http://docs.hp.com/en/netsys.html
Central Management Server (CMS)
The server monitoring the client systems in the network using the WBEM Providers software.

Common Information Model (CIM)
An object-based model for describing managed resources. CIM uses the object-oriented paradigm, where managed objects are modeled using the concepts of classes and instances.

Common Information Model Object Manager (CIMOM)
The component of WBEM that manages the interaction between the providers and other modules in the WBEM environment. CIMOM manages CIM objects. It receives and processes CIM operation requests and issues responses.

CIM client
An entity in WBEM architecture which sends CIM Operation requests and receives CIM Operation responses. For example, HP SIM and other network management applications are considered CIM clients.

CIM server
The component of WBEM that manages the interaction between the providers and other modules in the WBEM environment. It is also known as CIMOM.

consumer
A recipient of services. For example, an indication consumer will receive indications (events) that occur in system hardware components.

Distributed Management Task Force (DMTF)
An industry organization involved in the development, adoption, and interoperability of management standards and initiatives for enterprise and Internet environments.

event
An alert generated when an unusual activity is detected on a monitored hardware device.

HP Systems Insight Manager (HP SIM)
HP's management application installed on the CMS that uses WBEM instrumentation on operating systems, such as HP-UX, HP OpenVMS, Linux, and Windows.
**indication**
An alert or a warning about the failure of a monitored hardware device. It is equivalent to an event in the Event Monitoring Service (EMS) framework.

**indication provider**
It translates events generated by the Event Monitoring Service (EMS) monitors into WBEM indications, and reports them to the CIMOM.

**instance**
A representation of the actual physical object that belongs to a class.

**instance provider**
It provides information about devices, such as model number and serial number of a CPU. In the Support Tools Manager (STM), this functionality is accomplished by Information (Info) Tools.

**managed resource**
A hardware device that is monitored.

**management application**
Any application that can be used to query for information about monitored devices and view indications and instances. For example, HP Systems Insight Manager (SIM).

**subscription**
Configuring WBEM Providers for consumers to receive indications. For example, HP SIM can subscribe to indications that are generated on hardware devices on a system.

**WBEM (Web-Based Enterprise Management)**
A collection of standards that aid large-scale systems management. WBEM allows management applications to monitor systems in a network.
Index

B
benefits
WBEM Providers, 1–1

C
Common Information Model See CIM
CIM, 3–1
CIMOM, 1–4, 1–5
CIMPROVIDER
-L -S option, 2–3, 2–4, 2–5
CIMUSER
-A -U option, 2–5
-HELP option, 2–5
-R -U option, 2–5
command procedure file, 2–2
common files, 2–2
CPU Instance Provider, 1–2

D
Distributed Management Task Force See DMTF
data sheet, vii
DMTF, 3–1
documentation files, 2–2

E
EMS Wrapper Provider, 1–3
Environmental Instance Provider, 1–3
event
details, 3–8
printable report, 3–9
Event Monitoring Service, 1–1
events list, 1–2

F
Forward Progress Log See FPL
features
WBEM Providers, 1–1
Firmware Revision Instance Provider, 1–3
FPL, 1–1

G
global protocol, 3–2

H
hardware indications, 1–1
hardware monitor
FPL, 1–1
ia64 Core Hardware, 1–1
HP OpenVMS Integrity Servers, 2–1
HP TCP/IP, 2–1
HP WBEM Services, 2–1
logicals, 2–3, 2–5

I
index file, 1–1
indication provider
EMS Wrapper, 1–3
instance
configuration, 3–11
property, 3–10
status, 3–11
instance provider
CPU, 1–2
Enclosure, 1–3
Environmental, 1–3
Firmware Revision, 1–3
LAN Provider, 1–3
Management Processor, 1–3
Memory, 1–2
Utilization Provider, 1–3

M
manifest file, 2–2
Memory Instance Provider, 1–2
MOF file, 2–2
MP Instance Provider, 1–3
O
Operating Environment See OE
OE, 2–1
OpenVMS EMS
  See Event Monitoring Service

P
POLYCENTER Software Installation See PCSI
PCSI, 2–2

S
Systems Insight Manager See SIM
shareable image, 2–2

SIM, 1–4
system protocol, 3–5

W
Web-Based Enterprise Management See WBEM
WBEM, 1–1
WBEMEXEC, 2–9
WBEM Providers
  architecture, 1–4
  indication provider, 1–3
  instance provider, 1–2
  register, 2–4

X
XML file, 2–9