



HP WBEM solutions



HP technical data sheet

## HP OpenVMS Operating System CIM Provider

### provider overview

#### description

The Operating System Provider makes available operating system information such as operating system type, version, last boot up time, local date and time, number of users, swap space size, and free physical memory. The Operating System Provider instruments the CIM\_OperatingSystem class and PG\_OperatingSystem subclass. Not all properties of the CIM\_OperatingSystem are currently supported. This provider does not support the Reboot and Shutdown methods of the CIM\_OperatingSystem class. The PG\_OperatingSystem subclass adds the SystemUpTime and OperatingSystemCapability properties.

- SystemUpTime is a convenience property. It provides direct access to this value, versus having client/providers calculate the value from LastBootUpTime and the LocalDateTime.
- OperatingSystemCapability indicates whether the OS itself is 32-bit or 64-bit capable.

This provider is for use by clients as part of a basic understanding of the identity of the managed system on which it is running (typically a server or appliance).

#### requirements

The provider requires HP WBEM Services for OpenVMS.

#### release history

- HP I64VMS WBEMPROVIDERS V1.7-16 (May 2009)
- HP I64VMS WBEMPROVIDERS V2.0-4 (June 2010)
- HP I64VMS WBEMPROVIDERS V2.1-4 (August 2010)
- HP I64VMS WBEMPROVIDERS V2.2-3 (February 2011)

#### supported managed resources

Managed systems running HP WBEM Services for OpenVMS.

#### setting up this provider

#### installing this provider

The installation of HP WBEM Providers will set up this provider. Ensure HP WBEM Services is already installed.

On installation, executable binaries, configuration files and MOF definition and registration files will be available in their respective directory, as follows:

- The CIM MOF file, containing the definitions of the MOF classes, (namely PG\_OperatingSystem20.mof ) will be available in SYS\$COMMON:[WBEM\_Services.opt.wbem.mof.Pegasus]. This directory will also include the provider registration file, namely PG\_OperatingSystem20R.mof. Note: All the HP-specific MOF classes will be registered under the "root/cimv2" namespace.
- The SYS\$SPECIFIC:[WBEMPROVIDERS] directory will contain the configuration files of the WBEM Providers Product.
- The WBEM Services SYS\$SPECIFIC:[WBEM\_Services]CIMSERVER\_STARTUP.LOG log file will contain logs generated during the execution of this provider. By editing the "Severity" property in the SYS\$SPECIFIC:[WBEMPROVIDERS]FMLOGGERCONFIG.TXT file different levels of messages in the SYS\$SPECIFIC:[WBEM\_SERVICES]CIMSERVER.LOG can be generated. The valid values are TRACE, DEBUG, INFORMATIONAL, WARNING, ERROR, CRITICAL, STOPLOGGING.

There are no special installation instructions; the provider will be installed by default with HP WBEM Services for OpenVMS.

**configuring this provider**  
**using this provider**

This provider does not accept specific configuration adjustments (beyond standard WBEM support).

**schema supported by this provider**

This provider supports the CIM\_OperatingSystem and PG\_OperatingSystem classes. Tables 1 through 4 describe the properties and methods supported by the provider.

Note: All non-key properties that are not supported are also listed below with comment "Not Supported".

**table 1: CIM\_OperatingSystem properties**

Table 1 describes the properties of the CIM\_OperatingSystem class. It has three columns. The first is the property name (including type and units), the second is the property inheritance (indicating which class or superclass defines the property), and the third is the property's value and data source. Each row describes a property.

<b>Property name</b>	<b>Property inheritance</b>	<b>Property value (and data source)</b>
string Caption	Inherited from CIM_ManagedElement	Returns the name of the Operating system and followed by the version information from the uname() system call (for example, OpenVMS V8.3)
string Description	Inherited from CIM_ManagedElement	Returns the string "This instance reflects the Operating System on which the CIMOM is executing (as distinguished from instances of other installed operating systems that could be run)."
datetime InstallDate	Inherited from CIM_ManagedSystemElement	Returns the OpenVMS operating system installation date and time. A lack of a value does not indicate that the object is not installed.
string Status	Inherited from CIM_ManagedSystemElement	Returns ("Unknown").
string CSCreationClassName [Key]	Local to CIM_OperatingSystem	Always returns string "CIM_UnitaryComputerSystem".
string CSName [Key]	Local to CIM_OperatingSystem	Returns the system name (fully qualified if possible).
string CreationClassName [Key]	Local to CIM_OperatingSystem	Returns "CIM_OperatingSystem".
string Name [Key]	Inherited from CIM_ManagedSystemElement (and made one of 4 keys of CIM_OperatingSystem)	Returns the name of the Operating system from the sysname field of the uname() system call.
uint16 OSType	Local to CIM_OperatingSystem	Returns 7 (defined by DMTF as the value to set for OpenVMS).
string OtherTypeDescription	Local to CIM_OperatingSystem	Returns empty string
string Version	Local to CIM_OperatingSystem	Returns the release information from the uname() system call (for example, V8.3).
datetime LastBootUpTime	Local to CIM_OperatingSystem	Returns the system boot time. (local time with GMT offset. GMT offset).
datetime LocalDateTime	Local to CIM_OperatingSystem	Returns current local time with GMT offset in minutes.
uint16 CurrentTimeZone	Local to CIM_OperatingSystem	Returns the number of minutes the OperatingSystem is

		offset from Greenwich Mean Time.
uint32 NumberOfLicensedUsers	Local to CIM_OperatingSystem	Number of user licenses for the OperatingSystem. OpenVMS: Returns number of licensed users from interpreting the DCL 'show license' command output. (0 if unlimited).
UInt32 NumberOfUsers	Local to CIM_OperatingSystem	Returns the number of users (unique user accounts) logged into the system, as obtained by the "Total number of users" field in "show user/node" command.
UInt32 NumberOfProcesses	Local to CIM_OperatingSystem	Returns the total number of active processes.
UInt32 MaxNumberOfProcesses	Local to CIM_OperatingSystem	Returns the maximum process count as obtained in the MAXPROCESSCNT sysgen parameter.
UInt64 TotalSwapSpaceSize (in KiloBytes)	Local to CIM_OperatingSystem	Returns the free size in the currently installed swapping files (corresponds to the output of F\$GETSYI("SWAPFILE_PAGE") lexical converted to Kilo Bytes).
UInt64 TotalVirtualMemorySize (in KiloBytes)	Local to CIM_OperatingSystem	Returns the sum TotalVisibleMemorySize and SizeStoredInPagingFiles.
UInt64 FreeVirtualMemory (in KiloBytes)	Local to CIM_OperatingSystem	Returns the sum of FreePhysicalMemory and FreeSpaceInPagingFiles.
UInt64 FreePhysicalMemory (in KiloBytes)	Local to CIM_OperatingSystem	Returns the free physical memory size
UInt64 TotalVisibleMemorySize (in KiloBytes)	Local to CIM_OperatingSystem	Returns the total physical memory (corresponds to the output of F\$GETSYI("MEMSIZE") lexical converted to Kilo Bytes).
UInt64 SizeStoredInPagingFiles (in KiloBytes)	Local to CIM_OperatingSystem	Returns the total size in the currently installed page files (corresponds to the output of F\$GETSYI("PAGEFILE_PAGE") lexical converted to Kilo Bytes).
UInt64 FreeSpaceInPagingFiles (in KiloBytes)	Local to CIM_OperatingSystem	Returns the free size in the currently installed page files (corresponds to the output of F\$GETSYI("PAGEFILE_FREE") lexical converted to Kilo Bytes)
UInt64 MaxProcessMemorySize (in KiloBytes)	Local to CIM_OperatingSystem	Returns in Kilo bytes the Maximum number of Kbytes of memory that can be allocated to a Process. (Corresponds to the output of F\$GETSYI("WSMAX") lexical converted to Kilo Bytes).
boolean Distributed	Local to CIM_OperatingSystem	Returns TRUE, if the OpenVMS system is a cluster member.
UInt32 MaxProcessesPerUser	Local to CIM_OperatingSystem	Returns the maximum process count as obtained in the MAXPROCESSCNT sysgen parameter.
UInt32 Reboot()	Not Applicable.	Not Supported.
UInt32 Shutdown()	Not Applicable.	Not Supported.

**Table 2: PG\_OperatingSystem properties**

Table 2 describes the properties of the PG\_OperatingSystem class. It has three columns. The first is the property name (including type and units), the second is the property inheritance (indicating which class or superclass defines the property), and the third is the property's value or data source. Each row describes a property.

The PG\_OperatingSystem class inherits properties of superclass CIM\_OperatingSystem (as described in Table 1 and not repeated here).

<b>Property name</b>	<b>Property inheritance</b>	<b>Property value (and data source)</b>
UInt64 SystemUpTime (in seconds)	Local to PG_OperatingSystem	Returns a value calculated from current time and boot up time.
string OperatingSystemCapability	Local to PG_OperatingSystem	Returns "64 bit" (number of bits used by the kernel for pointers).

Tables 3 and 4 describe the intrinsic and extrinsic methods for CIM\_OperatingSystem and inherited by PG\_OperatingSystem. There are no local methods within PG\_OperatingSystem. The GetInstance operation is supported on both classes (returning only CIM\_ properties for CIM\_OperatingSystem). Enumerate operations only return instances on the PG\_ subclass (as the CIMOM will invoke subclass providers on enumerations). The provider current registers as an instance provider and a method provider.

**table 3: Intrinsic methods for CIM\_OperatingSystem and PG\_OperatingSystem**

Table 3 describes the intrinsic methods supported by this provider. It has three columns. The first is the method name, the second is a description of the provider's actions based on invoking that method, and the third is a list of any exceptions that could result from invoking the method. Each row describes a method.

<b>Method name</b>	<b>Description</b>	<b>Exceptions thrown</b>
EnumerateInstances	Returns all instances of class (expect one unless additional installed OSs) with all properties.	None
EnumerateInstanceNames	Returns object path of all instances of class (expect one unless additional installed OSs) with key properties.	None
GetInstance	Returns the requested instance (with all properties).	CIM_ERR_INVALID_PARAMETER (if wrong class or wrong number of keys or wrong keys) CIM_ERR_NOT_FOUND (from CIMOM) if no instance.
ModifyInstance	Returns Not Supported.	CIM_ERR_NOT_SUPPORTED
DeleteInstance	Returns Not Supported.	CIM_ERR_NOT_SUPPORTED
Initialize	Not Supported.	Not Supported.
Terminate	Not Supported.	Not Supported.
CreateInstance	Returns Not Supported	CIM_ERR_NOT_SUPPORTED

**table 4: extrinsic methods for CIM\_OperatingSystem**

Table 4 describes the extrinsic methods supported by this provider. It has three columns. The first is the method name, the second is a description of the provider's actions based on invoking that method, and the third is a list of any exceptions that could result from invoking the method. Each row describes a method.

<b>Method name</b>	<b>Description</b>	<b>Exceptions thrown</b>
Reboot	Reboot the operating system	Not implemented
Shutdown	Shutdown the operating system	Not implemented

- **Indications generated by this provider**  
This provider does not currently generate any indications.
- **Associations provided by this provider**  
This provider does not currently support any associations.

## Links to more information

- **Additional provider documentation**  
There is currently no additional documentation for this provider beyond this information.
- **WBEM information**  
For a CIM tutorial, go to <http://www.dmtf.org/education/tutorials>  
For information about HP WBEM Services for OpenVMS, see [http://h71000.www7.hp.com/openvms/system\\_management.html](http://h71000.www7.hp.com/openvms/system_management.html)
- **Client information**  
The osinfo command bundled with HP WBEM Services for OpenVMS is a client making use of the Operating System Provider.
- **Support contacts**  
The HP OpenVMS Operating System Provider is supported as part of HP WBEM Services for OpenVMS.

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