# **HP Operations Agent**

Software Version: 11.16 Windows ®, Linux, HP-UX, Solaris, and AIX operating systems

# Release Notes

Document Release Date: March 2017 Software Release Date: March 2017

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# Acknowledgements

This product includes cryptographic software written by Eric Young (eay@cryptsoft.com).

This product includes software developed by the OpenSSL Project for use in the OpenSSL Toolkit (http://www.openssl.org/).

This product includes software written by Tim Hudson (tjh@cryptsoft.com).

This product includes software developed by the Apache Software Foundation (http://www.apache.org/).

This product includes an interface of the 'zlib' general purpose compression library, which is Copyright © 1995-2002 Jean-loup Gailly and Mark Adler.

# **Documentation Updates**

The title page of this document contains the following identifying information:

- Software Version number, which indicates the software version.
- Document Release Date, which changes each time the document is updated.
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# **HP Operations Agent Release Notes**

for the Windows ®, Linux, HP-UX, Solaris, and AIX operating systems.

Software version: 11.16

Publication date: March 2017

This document is an overview of the changes made to HP Operations Agent. It contains important information that is not included in books or Help. You can find information about the following in this document:

- Release Announcement
- · What's New in This Release
- Support Matrix
- Installation Requirements
- Known Problems
- Documentation Updates

# Release Announcement

HP Operations Agent 11.16 is a security patch release and can be downloaded from the following location:

http://h20230.www2.hp.com/selfsolve/patches

The following table lists the patch names for all five platforms of HP Operations Agent and one patch of Infrastructure SPI:

Platform	File Name
Windows	OAWIN_00044
Linux	OALIN_00044
HP-UX	OAHPUX_00044
Solaris	OASOL_00044
AIX	OAAIX_00044
Infra SPI	INFSPI_00007

For more information, see HP Operations Agent and Infrastructure SPIs Installation Guide.

# What's New in This Release

# 11.16

• HP Operations Agent 11.16 is a security patch release and is enhanced with the following features:

No	Enhancement Requests	Description
1	QCCR1A180343	Disable remote http status queries to Operations Agent by default.
2	QCCR1A187734	Path traversal vulnerability in Operations Agent.
3	QCCR1A188040	DoS vulnerability ovbbccb.
4	QCCR1A190386	Upgrade OpenSSL to version 1.0.2j.

# 11.15

# • Enhancements:

The HP Operations Agent 11.15 is enhanced with the following features:

No	Enhancement Requests	Description
1	QCCR1A185604	OpenSSL is upgraded to version 1.0.1s.
2	QCCR1A184676	The communication ciphers used by the ovbbccb is configured.
3	QCCR1A182233	The Operations Agent provides the BYLS_MEM_ENTL_UTIL Metrics to get the configured and available memory.
4	QCCR1A181821	OAVA is enhanced with the following support tools:  oava_data_collector.sh  oava_inst_report.sh  oava_list_events.sh  oava_dump_metrics.sh
5	QCCR1A181068	The backup proxy servers are enabled for BBC communication.
6	QCCR1A180470	HP Operations Agent11.15 hotfix supports SUSE Linux Enterprise HA 11 SP3.
7	QCCR1A180102	A new variable USE_IP_FOR_PROXY_CONNECT is introduced to use IP address as the target address instead of hostname in the proxy

No	Enhancement Requests	Description
		CONNECT request.
8	QCCR1A179087	Solaris x86 is enhanced with the following ECS libraries:  • libEDIEC.so  • libEME.so  • libESEEC.so  • drilld.so
9	QCCR1A178890	HP Operations Agent 11.15 uses the newly added variable LOCAL_NODE_NAME as the hostname of the local system.

# • Consolidated media for HP Operations agent and Infrastructure SPI

The consolidated media provides both the HP Operations Agent and Infrastructure SPIs packages for the base media (version 11.11) and patch (version 11.15) together.

The base media is the DVD containing the HP Operations agent and Infrastructure SPIs packages for all the platforms. The patch releases contain enhancements and defect fixes of the product. You can download the platform-specific ISO's from the <a href="http://h20230.www2.hp.com/selfsolve/patches">http://h20230.www2.hp.com/selfsolve/patches</a>

The HP Operations agent releases are categorized as:

Release Version	Media	Patch
11.10	Yes	-
11.11	Yes	-
11.12	Yes (Consolidated media containing the packages of the product for the version 11.11 and platform specific ISO's for the version 11.12)	Yes
11.13	Yes (Consolidated media containing the packages of the product for the version 11.11 and platform specific ISO's for the version 11.13)	Yes
11.14	Yes (Consolidated media containing the packages of the product for the version 11.11 and platform specific ISO's for the version 11.14)	Yes
11.15	Yes (Consolidated media containing the packages of the product for the version 11.11 and platform specific ISO's for the version 11.15)	Yes

By using the consolidated media version 11.15, you have an option to upgrade from Operations agent 8.53, 8.60, 11.0x, or 11.10 to the following version in a *single* step:

• Base media version (11.11)

#### or

• Base media version (11.11) and then the patch version (11.15) together

In addition, you can do the following by using the consolidated media:

- Register HP Operations agent 11.11 and 11.15 together on the management server.
- Register HP Operations agent 11.11 and install Infrastructure SPIs11.11 on the management server
- Install Infrastructure SPIs 11.11 and 11.15 together on the management server.
- Installing HP Operations agent (version 11.11 and 11.15) on the managed node.

The consolidated media also provides an option to remove the Infrastructure SPI patch or remove all the available Infrastructure SPIs patches.

To upgrade HP Operations Agent and Infrastructure SPIs from version 11.11 to version 11.15, you can do the following:

- Download the consolidated media which contains platform-specific ISO's for HP Operations agent and Infrastructure SPIs
- Download the HP Operations agent and Infrastructure SPIs ISO files from the web site: http://h20230.www2.hp.com/selfsolve/patches.

For more information, see HP Operations agent and Infrastructure SPIs Installation Guide.

- Support for new platforms: AIX 7.1 TL3, Solaris SPARC 11 U2, SLES 12, RHEL 6.7, OEL 7, Debian 7.6 and RHEL 7.1
- · Support for new clusters:
  - VCS 6.1 Cluster on RHEL 6.5 X64
  - SUSE Linux HA Cluster 11.3
  - HACMP AIX 7.1
  - VCS 6 Cluster on RHEL 5.11 X64
- · Support for new virtualization platforms:
  - Solaris Zones SPARC 11
  - AIX WPAR 7.1 TL3
  - HPVM 6.3 and 6.4
  - KVM RHEL 6.4, 6.6 and 7.0

# 11.14

# • GlancePlus enhancements on Linux machines:

• The Logical Volume Metric class and the Core CPU Metric class are introduced on Linux machines.

Logical Volume Metrics	Core CPU Metrics
LV_PHYSLV_SIZE	BYCORE_TOTAL_UTIL
LV_READ_RATE	BYCORE_TOTAL_TIME
LV_READ_RATE_CUM	BYCORE_TOTAL_UTIL_CUM
LV_READ_BYTE_RATE	BYCORE_TOTAL_TIME_CUM
LV_READ_BYTE_RATE_CUM	BYCORE_TOTAL_UTIL_HIGH
LV_WRITE_RATE	BYCORE_SYS_MODE_UTIL
LV_WRITE_RATE_CUM	BYCORE_SYS_MODE_TIME
LV_WRITE_BYTE_RATE	BYCORE_SYS_MODE_UTIL_CUM
LV_WRITE_BYTE_RATE_CUM	BYCORE_SYS_MODE_TIME_CUM
LV_SPACE_UTIL	BYCORE_SYS_MODE_UTIL_HIGH
LV_DIRNAME	BYCORE_USER_MODE_UTIL
LV_DEVNO	BYCORE_USER_MODE_TIME
LV_TYPE	BYCORE_USER_MODE_UTIL_CUM
LV_GROUP_NAME	BYCORE_USER_MODE_TIME_CUM
LVDETAIL_LABEL	BYCORE_USER_MODE_UTIL_HIGH
LVDETAIL_NAME	BYCORE_NICE_UTIL
	BYCORE_NICE_TIME
	BYCORE_NICE_UTIL_CUM
	BYCORE_NICE_TIME_CUM
	BYCORE_NICE_UTIL_HIGH
	BYCORE_INTERRUPT_UTIL
	BYCORE_INTERRUPT_TIME
	BYCORE_INTERRUPT_UTIL_CUM
	BYCORE_INTERRUPT_TIME_CUM
	BYCORE_INTERRUPT_UTIL_HIGH
	BYCORE_IDLE_UTIL
	BYCORE_IDLE_TIME
	BYCORE_IDLE_UTIL_CUM
	BYCORE_IDLE_TIME_CUM
	BYCORE_IDLE_UTIL_HIGH
	BYCORE_WAIT_UTIL

Logical Volume Metrics	Core CPU Metrics
	BYCORE_WAIT_TIME
	BYCORE_WAIT_UTIL_CUM
	BYCORE_WAIT_TIME_CUM
	BYCORE_WAIT_UTIL_HIGH

For more information about metric classes, see the HP Operations Agent Concepts Guide 11.14.

 Introduced new PROCSYSCALL, GBL\_SYSCALL, and SYSCALL performance metrics for GlancePlus on Linux machines.

PROCSYSCALL Metrics	GBL_SYSCALL Metrics
PROCSYSCALL_CALL_COUNT	GBL_SYSCALL_RATE
PROCSYSCALL_CALL_COUNT_CUM	GBL_SYSCALL
PROCSYSCALL_CALL_ID	GBL_SYSCALL_RATE_CUM
PROCSYSCALL_CALL_NAME	GBL_SYSCALL_READ_RATE
PROCSYSCALL_CALL_RATE	GBL_SYSCALL_RATE_HIGH
PROCSYSCALL_CALL_RATE_CUM	GBL_SYSCALL_READ
PROCSYSCALL_INTERVAL	GBL_SYSCALL_READ_PCT
PROCSYSCALL_INTERVAL_CUM	GBL_SYSCALL_WRITE_RATE
PROCSYSCALL_TOTAL_TIME	GBL_SYSCALL_WRITE
PROCSYSCALL_TOTAL_TIME_CUM	GBL_SYSCALL_WRITE_PCT

### **SYSCALL Metrics**

SYSCALL\_ACTIVE\_CUM

SYSCALL\_COUNT

SYSCALL\_CALL\_COUNT\_CUM

SYSCALL\_CALL\_ID

SYSCALL\_CALL\_NAME

SYSCALL\_CALL\_RATE

SYSCALL\_CALL\_RATE\_CUM

SYSCALL\_CPU\_TOTAL\_TIME

SYSCALL\_CPU\_TOTAL\_TIME\_CUM

SYSCALL\_INTERVAL

SYSCALL\_INTERVAL\_CUM

The metric collection starts after you complete the configuration on your Linux machine. For more information about configuring the new metrics collection on a Linux machine, see the *HP Operations Agent User Guide 11.14.* 

Support for new metrics

Thread System Call Metrics	CPU Metrics
THREADSYSCALL_ACTIVE_CUM	BYCPU_CPU_SYSCALL_TIME
THREADSYSCALL_CALL_ID	BYCPU_CPU_SYSCALL_TIME_CUM
THREADSYSCALL_CALL_NAME	BYCPU_CPU_SYSCALL_UTIL
THREADSYSCALL_CALL_COUNT	BYCPU_CPU_SYSCALL_UTIL_CUM
THREADSYSCALL_CALL_COUNT_CUM	
THREADSYSCALL_TOTAL_TIME	
THREADSYSCALL_TOTAL_TIME_CUM	
THREADSYSCALL_CALL_RATE	
THREADSYSCALL_CALL_RATE_CUM	
THREADSYSCALL_INTERVAL	
THREADSYSCALL_INTERVAL_CUM	

#### **Process Metrics**

PROC\_CPU\_SWITCHES
PROC\_CPU\_SWITCHES\_CUM

PROC\_CPU\_SYSCALL\_TIME

PROC\_CPU\_SYSCALL\_TIME\_CUM

PROC\_CPU\_SYSCALL\_UTIL

PROC\_CPU\_SYSCALL\_UTIL\_CUM

# The Global class CPU Metrics with HP Operations agent 11.14

HP Operations Agent 11.14 provides GlancePlus enhancement on the CPU-related metrics of the Global class available with the Performance Collection Component of HP Operations agent.

- The reasons for this GlancePlus enhancement are as follows:
- To bring more consistency in the collection of CPU-utilization performance metric values for GlancePlus.
- To avoid setting the ignore\_mt parameter while Simultaneous Multi-Threading is enabled on a Linux system. For Linux machines, this parameter is set to false by default with HP Operations Agent 11.14.

#### **Example**

The example has 2 physical CPUs each with a dual-core processor. Hyper-threading /simultaneous multi-threading is enabled on both the systems. Each core supports two hardware threads. As a result, in this scenario, total 8 hardware threads are running simultaneously on 4 cores.

Simultaneous Multi- Threading	ignore_ mt parameter	HP Operations agent (release versions till 11.13)	HP Operations agent 11.14
On	Component logs all the CPU- related metrics of the Global class after normalizing the metric values against the 4 active cores on the monitored hard		The Performance Collection Component logs all the CPU- related metrics of the Global class after normalizing the metric values against the 8 hardware threads on the monitored systems.
On	False	The Performance Collection Component logs all the CPU- related metrics of the Global class after normalizing the metric values against the 8 hardware threads on the monitored systems.	The Performance Collection Component logs all the CPU- related metrics of the Global class after normalizing the metric values against the 8 hardware threads on the monitored systems.

The Performance Collection Component ignores the ignore\_mt parameter if the multi-threading property is disabled on the system. For more information on ignore\_mt parameter, see the *HP Operations agent User Guide 11.14.* 

# • Consolidated media for HP Operations agent and Infrastructure SPI

The consolidated media provides both the HP Operations Agent and Infrastructure SPIs packages for the base media (version 11.11) and patch (version 11.14) together.

The base media is the DVD containing the HP Operations agent and Infrastructure SPIs packages for all the platforms. The patch releases contain enhancements and defect fixes of the product. You can download the platform-specific ISO's from the <a href="http://h20230.www2.hp.com/selfsolve/patches">http://h20230.www2.hp.com/selfsolve/patches</a>

The HP Operations agent releases are categorized as:

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11.13	Yes (Consolidated media containing the packages of the product for the version 11.11 and platform specific ISO's for the version 11.13)	Yes
11.14	Yes (Consolidated media containing the packages of the product for the version 11.11	Yes

Release Version	Media	Patch
	and platform specific ISO's for the version 11.14)	

By using the consolidated media version 11.14, you have an option to upgrade from Operations agent 8.53, 8.60, 11.0x, or 11.10 to the following version in a *single* step:

• Base media version (11.11)

#### or

• Base media version (11.11) and then the patch version (11.14) together

In addition, you can do the following by using the consolidated media:

- Register HP Operations agent 11.11 and 11.14 together on the management server.
- Register HP Operations agent 11.11 and install Infrastructure SPIs11.11 on the management server.
- Install Infrastructure SPIs 11.11 and 11.14 together on the management server.
- Installing HP Operations agent (version 11.11 and 11.14) on the managed node.

The consolidated media also provides an option to remove the Infrastructure SPI patch or remove all the available Infrastructure SPIs patches.

To upgrade HP Operations Agent and Infrastructure SPIs from version 11.11 to version 11.14, you can do the following:

- Download the consolidated media which contains platform-specific ISO's for HP Operations agent and Infrastructure SPIs.
- Download the HP Operations agent and Infrastructure SPIs ISO files from the web site: http://h20230.www2.hp.com/selfsolve/patches.

For more information, see HP Operations agent and Infrastructure SPIs Installation Guide.

### • HP Operations Agent 11.14 integration / coexistence with other products

HP Operations Agent 11.14 supports coexistence or integration with the below products:

- OM Servers: OMW 9, OMU HPUX 9, OMS 9, OML 9.11, and OML 9.20
- PM 9.20
- SiteScope 11.24
- BSMC 09.23
- BSM 9.24

# Obsolescence of variables

The following variables are obsoleted:

• OPC\_NAMESRV\_DISABLE\_CACHE

- OPC\_NAMESRV\_BUFFER\_SIZE
- OPC\_NAMESRV\_CACHE\_SIZE
- OPC\_NAMESRV\_MAX\_TIME

# 11.13

#### · GlancePlus enhancements on Linux machines:

 Introduced new PROCSYSCALL, GBL\_SYSCALL, and SYSCALL performance metrics for GlancePlus on x64 Linux machines. This is supported on RHEL 6.1 and above versions, Kernel 2.6.

### · Support for new metrics

PROCSYSCALL	GBL_SYSCALL	SYSCALL
PROCSYSCALL PROCSYSCALL_CALL_ COUNT PROCSYSCALL_CALL_ COUNT_CUM PROCSYSCALL_CALL_ID PROCSYSCALL_CALL_NAME PROCSYSCALL_CALL_RATE PROCSYSCALL_CALL_RATE PROCSYSCALL_INTERVAL PROCSYSCALL_INTERVAL CUM PROCSYSCALL_TOTAL_ TIME	GBL_SYSCALL  GBL_SYSCALL_RATE  GBL_SYSCALL_RATE_ CUM  GBL_SYSCALL_READ_ RATE  GBL_SYSCALL_RATE_ HIGH  GBL_SYSCALL_READ_ GBL_SYSCALL_READ_ PCT  GBL_SYSCALL_WRITE  GBL_SYSCALL_WRITE	SYSCALL SYSCALL_ACTIVE_CUM SYSCALL_CALL_COUNT SYSCALL_CALL_COUNT_ CUM SYSCALL_CALL_ID SYSCALL_CALL_NAME SYSCALL_CALL_RATE SYSCALL_CALL_RATE CUM SYSCALL_CPU_TOTAL_ TIME SYSCALL_CPU_TOTAL_ TIME_CUM SYSCALL_INTERVAL
PROCSYSCALL_TOTAL_ TIME_CUM	GBL_SYSCALL_ WRITE_PCT	SYSCALL_INTERVAL_CUM

The new metric collection starts after you complete the configuration on your Linux machine. For more information about configuring the new metrics collection on a Linux machine, see the *HP Operations agent User Guide 11.13.* 

### · New commands to determine the Operations agent version installed on the node

This version of the HP Operations Agent provides the capability to determine the Operations agent base version, patches, or hotfixes installed on the node. For more information, see *HP Operations* agent and Infrastructure SPIs Installation Guide 11.13.

### Support for IPv6

This version of the HP Operations Agent provides the capability to communicate with IPv6- enabled servers.

Consolidated media for HP Operations agent and Infrastructure SPI

The consolidated media provides both the HP Operations Agent and Infrastructure SPIs packages for the base media (version 11.11) and patch (version 11.13) together.

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11.11	Yes	-
11.12	Yes (Consolidated media containing the packages of the product for the version 11.11 and platform specific ISO's for the version 11.12)	Yes
11.13	Yes (Consolidated media containing the packages of the product for the version 11.11 and platform specific ISO's for the version 11.13)	Yes

By using the consolidated media version 11.13, you have an option to upgrade from Operations agent 8.53, 8.60, 11.0x, or 11.10 to the following version in a *single* step:

• Base media version (11.11)

#### or

• Base media version (11.11) and then the patch version (11.13) together

In addition, you can do the following by using the consolidated media:

- Register HP Operations agent 11.11 and 11.13 together on the management server.
- Register HP Operations agent 11.11 and install Infrastructure SPIs11.11 on the management server.
- Install Infrastructure SPIs 11.11 and 11.13 together on the management server.
- Installing HP Operations agent (version 11.11 and 11.13) on the managed node.

The consolidated media also provides an option to remove the Infrastructure SPI patch or remove all the available Infrastructure SPIs patches.

To upgrade HP Operations Agent and Infrastructure SPIs from version 11.11 to version 11.13, you can do the following:

- Download the consolidated media which contains platform-specific ISO's for HP Operations agent and Infrastructure SPIs.
- Download the HP Operations agent and Infrastructure SPIs ISO files from the web site: http://h20230.www2.hp.com/selfsolve/patches.

For more information, see HP Operations agent and Infrastructure SPIs Installation Guide.

# VMware virtual appliance

The HP Operations agent 11.13 (patch) includes a VMware virtual appliance in the form of HP0A\_VM\_ 0VF10.ova file prepackaged with HP Operations agent 11.13. To monitor the vSphere environment, you can deploy the virtual appliance and collect performance data of the virtual infrastructure from different VMware vCenter Servers.

For more information about deploying the virtual appliance, see the *HP Operations Agent User Guide: VMware Monitoring* 

Simple upgrade from the previous version of virtual appliance with HP Operations agent to version 11.13 is available. For more information, see *Upgrading the Virtual Appliance with HP Operations agent to Version 11.13* in the *HP Operations Agent User Guide: VMware Monitoring* 

## • OPC\_IP\_ADDRESS variable with HP Operations agent 11.13

The OPC\_IP\_ADDRESS variable, which was obsoleted with HP Operations agent 11.12 has been reintroduced with HP Operations agent 11.13. The OPC\_IP\_ADDRESS variable is a configuration variable available with the Operations Monitoring Component of HP Operations agent. The value of this variable specifies the IP addresses of the managed node. If the agent is installed on a node in a Network Address Translation (NAT) environment or a multi-homed setup, ensure that the value of this variable on the node is identical with the IP address used in the HP Operations Manager (HPOM) console while adding the node.

# 11.12

# • Consolidated media for HP Operations agent and Infrastructure SPI

The consolidated media provides both the HP Operations Agent and Infrastructure SPIs packages for the base media (version 11.11) and patch (version 11.12) together.

The base media is the DVD containing the HP Operations agent and Infrastructure SPIs packages for all the platforms. The patch releases contain enhancements and defect fixes of the product. You can download the platform-specific ISO's from the <a href="http://h20230.www2.hp.com/selfsolve/patches">http://h20230.www2.hp.com/selfsolve/patches</a>

The HP Operations agent releases are categorized as:

Release Version	Media	Patch
11.10	Yes	-
11.11	Yes	-
11.12	Yes (Consolidated media containing the packages of the product for the version 11.11 and platform specific ISO's for the version 11.12)	Yes

By using the consolidated media version 11.12, you have an option to upgrade from Operations agent 8.53, 8.60, 11.0x, or 11.10 to the following version in a *single* step:

• Base media version (11.11)

#### or

• Base media version (11.11) and then the patch version (11.12) together

In addition, you can do the following by using the consolidated media:

- Register HP Operations agent 11.11 and 11.12 together on the management server.
- Register HP Operations agent 11.11 and install Infrastructure SPIs11.11 on the management server.
- Install Infrastructure SPIs 11.11 and 11.12 together on the management server.
- Installing HP Operations agent (version 11.11 and 11.12) on the managed node.

The consolidated media also provides an option to remove the Infrastructure SPI patch or remove all the available Infrastructure SPIs patches.

To upgrade HP Operations Agent and Infrastructure SPIs from version 11.11 to version 11.12, you can do the following:

- Download the consolidated media which contains platform-specific ISO's for HP Operations agent and Infrastructure SPIs.
- Download the HP Operations agent and Infrastructure SPIs ISO files from the web site: http://h20230.www2.hp.com/selfsolve/patches.

For more information, see HP Operations agent and Infrastructure SPIs Installation Guide.

### VMware virtual appliance

The HP Operations agent 11.12 (patch) includes a VMware virtual appliance in the form of HPOA\_VM\_OVF10.ova file prepackaged with HP Operations agent 11.12. To monitor the vSphere environment, you can deploy the virtual appliance and collect performance data of the virtual infrastructure from different VMware vCenter Servers.

For more information about deploying the virtual appliance, see the *HP Operations Agent User Guide: VMware Monitoring* 

Simple upgrade from the previous version of virtual appliance with HP Operations agent to version 11.12 is available. For more information, see *Upgrading the Virtual Appliance with HP Operations agent to Version 11.12* in the *HP Operations Agent User Guide: VMware Monitoring* 

### New consolidated package for HP-UX

This version of the HP Operations agent contains a consolidated package depot file for HP-UX. You can use the new consolidated HP-UX package by copying the package from the media. The file is available at the following location:

For the Itanium platform:

 $$$\end{align*} $$\operatorname{AHPUX\_00030\end{align*} HP-UX_IA32\end{align*} HPOAC on solidated. depot. Z For the PA-RISC platform:$ 

<Media\_root>\patches\OAHPUX\_00030\HP-UX\_PA32\HPOAConsolidated.depot.Z
You can install HP operations agent package by using the swinstall command on HP-UX.

## • Integration of HP Operations agent with HP Network Node Manager i

Integration with HP Operations agent helps you to monitor the traps forwarded by HP NNMi and view the enriched SNMP traps on the HPOM console. The HP Operations agent integration with HP NNMi is available with Northbound interface and trap forwarding.

To process and use this information with HP Operations agent, you must configure SNMP interceptor (opctrapi) for the following:

- Enhance message severity
- Create CMAs from NNMi Custom Incident Attributes (CIA) on the HPOM console
- Assign source of SNMP trap

For more information, see *Integrating HP Operations Agent with HP NNMi* in the *HP Operations Agent User Guide*.

### · Capability to stop all the HP Operations agent processes by a single command

You can stop all the processes of the HP Operations agent components (Operations monitoring and performance collection components) by running a single command (opcagt -kill). For more information, see the HP Operations Agent and Infrastructure SPIs Installation Guide.

# • Enhanced perfd process to check the license before starting the data collection

The **perfd** process starts the data collection only after verifying that the license is enabled. If the license is not enabled, the process is idle.

## • Enhanced perfd process to enable threshold and filter conditions

You can set the threshold and filter options in the perfd process. For more information, see *Enabling Threshold and Filter Conditions* in the *HP Operations Agent User Guide*.

### Support for new metrics

- BYNETIF\_NET\_SPEED
- BYNETIF\_UTIL
- GBL\_NET\_UTIL\_PEAK
- GBL\_CPU\_WAIT\_TIME\_CUM
- GBL CPU WAIT UTIL CUM
- GBL\_CPU\_WAIT\_UTIL\_HIGH
- GBL\_CPU\_WAIT\_TIME
- PROC SCHEDULER
- THREAD\_SCHEDULER

#### Deprecation of Event Correlation Agent (opcea) component

HP Software announces deprecation of Event Correlation Agent components (opceca and opcecaas) of HP Operations agent with the version 11.12. HP Software will continue to support the component (in terms of defect fixes) till the obsolescence of product component is announced. No further enhancement to the Event Correlation Agent component will be done.

#### Obsolescence of OPC IP ADDRESS variable with HP Operations agent 11.12

The OPC\_IP\_ADDRESS variable is a configuration variable available with the Operations Monitoring Component of HP Operations agent. This variable is used with DCE and the value of this variable specifies the IP address or node name of the managed node. With this release, OPC\_IP\_ADDRESS will be obsolete. OvCoreID is used with HTTPS agents to identify messages for the managed node.

### **Code Signing**

HP Operations agent contains digitally signed code. This is to protect the integrity of the software. Sometimes, when you run Agent commands on the managed node, the response is very slow. The delay may happen due to Certificate Revocation List (CRL) check.

For more information, see http://support.openview.hp.com/selfsolve/document/KM00377257.

# New Features Introduced in 11.1x Releases

# 11.11

### VMware virtual appliance

The HP Operations Agent 11.11 media includes a VMware virtual appliance in the form of HPOA\_ VM\_OVF10.ova file prepackaged with HP Operations agent 11.11.

To monitor the vSphere environment, you can deploy the virtual appliance and collect performance data of the virtual infrastructure from different VMware vCenter Servers.

For more information about deploying the virtual appliance, see the *HP Operations Agent User Guide: VMware Monitoring.* 

• Support for new platforms: Debian 6, Ubuntu 11.10 and 12.04

#### Backup Server

You can set up one or more backup servers, to which the messages must be sent when the primary server is down. For more information, see the *HP Operations Agent User Guide*.

#### AIX Virtualization Monitoring

Monitor Power Frame level metrics - To discover and monitor Logical instances that are active on a frame.

## 11.10

### Support for new virtualization platforms:

- Kernel-based Virtual Machine (KVM) for all supported Linux kernels
- Xen (for supported SUSE Linux versions)
- Oracle Solaris 10 hosted on Oracle Solaris 11

For more information, see *HP Operations Agent in an Extended Virtualized Environment* section in the *HP Operations Agent Concepts Guide*.

- **Licensing:** You can now set a license for the HP Operations Agent at the time of installation. For more information, see the *HP Operations Agent Installation Guide* and *License Guide*. The installation of the HP Operations Agent no longer sets evaluation licenses. To be able to use any feature, you must do one of the following:
  - Apply a license at the time of installation; see the Installation Guide and License Guide for more information.
  - Apply a license after installation by using the oalicense utility; see the License Guide for more information.

- Simplified installation process of the HP Operations Agent and Infrastructure SPIs

  The HP Operations Agent and Infrastructure SPIs media provides both the HP Operations Agent
  and Infrastructure SPIs packages and enables you to install both the products with the oainstall
  program.
- **Faster installation on Windows:** On Windows, the installation of the HP Operations Agent 11.10 requires significantly less time than the installation of the older version (11.00).
- Enhanced security:
  - You can now run the HP Operations Agent with a non-root/non-privileged user. You can also
    configure the agent to run only the Operations Monitoring Component with a non-root/nonprivileged user and continue to run the Performance Collection Component with root/Local
    System. For more information, see the HP Operations Agent User Guide.
  - The HP Operations Agent enables you to configure the key length of the RSA key pair that is used for secure communication with the HPOM. For more information, see the *Configuring the Security Component Variables* section in the *HP Operations Agent User Guide*.
  - With the help of the new configuration variable ENABLE\_DEF\_SYM\_KEY\_ALGO, you can configure
    the agent to use a symmetric key algorithm of your choice for secure communication. Supported
    algorithms are:
    - eBlowfish
    - eDES
    - eDES3
    - eAES128
    - o eAES192
    - o eAES256

For more information, see the *Configuring the Security Component for Symmetric Key* section in the *HP Operations Agent User Guide* 

- Support for new platforms: Solaris 11
- **Discontinuance of support:** With this version, support for the HP Operations Agent is discontinued on the following platforms:
  - Linux on Itanium
  - · Windows on Itanium
  - AIX 5.3 (32-bit)
  - Solaris 9

# HP Operations Agent Support Matrix

You can find the Support Matrix for this product that lists all software and hardware requirements at this location: HP Support matrices.

You can also go to the below link for HP Operations Agent Support Matrix:

https://softwaresupport.hp.com/group/softwaresupport/search-result/-/facetsearch/document/KM323488

**Note:** Most of the support areas require that you register as an HP Passport user and sign in. Many also require an active support contract. To find more information about support access levels, go to Access levels.

To register for an HP Passport ID, go to HP Passport Registration.

# Installation Requirements

You can find requirements and steps to install the HP Operations Agent in the HP Operations Agent Installation Guide at this location:

http://h20230.www2.hp.com/selfsolve/manuals

After you log on to the manuals web site, follow these steps:

- 1. In the Product list, select Operations Agent.
- 2. In the Version list, select 11.16. If you are installing version 11.11, download *Installation Guide* 11.11.
- Click Search.

# Installation Notes

Installation requirements, as well as instructions for installing the HP Operations Agent are documented in the HP Operations Agent Installation Guide.

# Uninstall Notes

If the node hosts another HP Software product, make sure to stop all the processes of the product prior to the agent uninstallation. After the agent is completely uninstalled, you can start the processes of the HP Software product

# Known Problems

The reference number for each defect is the Quality Center Change Request (QCCR) number. For more information about open defects, visit HP Software Support Online, or contact your HP Support representative directly.

QCCR1A175479: On Linux machines, during installation of RPM files, warning message may appear as <Header V3 RSA/SHA1 signature>: NOKEY, <key ID> in the log file for each component.

## Example:

Following messages may appear in oainstall.log and oapatch.log during installation of HP Operations agent 11.14:

Warning: /var/opt/OV/installation/standalone/HPOvXpl.rpm: Header V3 RSA/SHA1 signature: NOKEY, key ID 5ce2d476

Warning: /var/opt/OV/installation/standalone/HPOvBbc.rpm: Header V3 RSA/SHA1

signature: NOKEY, key ID 5ce2d476

**Workaround:** Before installing HP Operations Agent, import the HP public key using the steps mentioned in the following link:

https://h20392.www2.hp.com/portal/swdepot/displayProductInfo.do?productNumber=HPLinux CodeSigning

If you do not want to import the HP public key, ignore the messages appearing in the log file.

**QCCR1A168860:** Installation of patch ISO on HPOM server for UNIX and HPOM server for Linux shows copy file error when not triggered directly from mounted location.

**Workaround:** Install the patches on the HP Operations Manager servers from a mounted location. Follow these steps:

• To go to the mounted directory, run the following command:

### cd < mounted directory>

• To install the patches, run the following command:

./oainstall.sh -i -m

**QCCR1A174983:** After successfully upgrading HP Operations Agent Virtual Appliance 11.13 to 11.14, the following error message may appear:

#### Unable to connect to web server

Workaround: Launch the following URL:

https://<va\_/P\_address>:5480 or https://<va\_FQDN>:5480.

In this instance, <IP\_address> is the IP address of the upgraded virtual appliance and <FQDN> is the fully qualified domain name of the upgraded virtual appliance.

**Note**: When you launch this address for the first time, the web browser shows a security certificate exception. Ignore the exception and continue to proceed.

**QCCR1A168077:** Infrastructure SPI alert assignment does not work on HPOM server console for Windows if the length of SYSTEM\_ID metric is greater than 64 characters.

Workaround: None.

**QCCR1A167820:** On a virtual appliance, for a vCenter that faced an issue in network connection, the status is displayed as **connecting** even after it regains the network connection.

**Workaround:** Restart viserver process on the virtual appliance to show the correct status.

QCCR1A167902: On Linux, when you install HP Operations Agent, the user opc\_op in /etc/passwd file and the group ovgrp in /etc/group are not created.

**Workaround:** Use the command **groupadd opcgrp** to create the opcgrp group manually before installing HP Operations agent. In case HP Operations Agent is already installed, run the following command to create the user:

useradd -g opcgrp -d /home/opc-op opc\_op

**QCCR1A167883:** On Windows, if HP Operations Agent is already installed in the **defer\_configure** mode, using the consolidated media and then, if the user tries to re-install agent using the command **cscript oainstall.vbs -i -a**, agent is not configured on the nodes.

Workaround: Use the command cscript oainstall.vbs -c -a, to configure agent on those nodes.

**QCCR1A160602:** After you uninstall HP Operations agent 11.14, the queue files available with version 11.14 are still present on the node. The HP Operations agent 11.11 will not work with the queue files available with version 11.14.

Workaround: Run the command to restart agent processes: opcagt -cleanstart

**QCCR1A161956**: On AIX LPARs, the values of the GBL\_CPU and BY\_CPU metrics do not match the values indicated by system monitoring tools that are built-in with AIX unless you set the CPU sharing mode as DEDICATED.

Workaround: None

**QCCR1A162689:** Install HP Operations agent 11.14 on HP-UX machine using swinstall command and then reconfigure HP Operations agent using the command: /opt/OV/bin/OpC/install/oainstall.sh -c - a. Some of the agent component XML files for the version 11.14 will not appear in the inventory list.

#### Workaround:

Run the command to restore the deleted agent component XML files:

cp /opt/OV/newconfig/installation/inventory/\*-OAHPUX\_00032.xml /var/opt/OV/installation/inventory/ In this instance, OAHPUX\_00032 is the HP-UX patch ID.

**QCCR1A153010**: Opcle multiple monitoring template policy fails to send messages after restarting the opcle process from the Ubuntu operating system.

Workaround: Set the locale to en US.utf8.

**QCCR1A150517:** When logfile policies having some pre-processing actions are deployed, and a reconfiguration happens simultaneously, **opcle** aborts.

Workaround: None

**QCCR1A150469:** If you add or delete an ESX/ESXi host to a vCenter monitored by HP Operations agent on the virtual appliance, the change is not detected by the HP Operations agent.

**Workaround:** Restart the data collection process of the HP Operations agent from the HP Operations Agent Virtual Appliance web console.

**QCCR1A153345**: Command line utility **Extract** does not provide the complete output and exits with Segmentation fault message in the following scenarios:

- While retrieving data from **rxlog** file in the guided mode. This affects both the Detail and Summary records.
- While retrieving data by using the command to specify the class name using –C option extract –xp
   C <classname>. This impacts DSI data export and retrieval functionality.

Workaround: Use the extract command: extract -xp <any of -gapkdztncuyiGADZTNUYI > -I logfile. To retrieve DSI data, use CODA interface to add logfile entry in the datasources file.

**QCCR1A126866:** On an agent node in a high-availability cluster, when the state of an HPOM policy changes from disabled to enabled, the clusterpollist file is not updated.

Workaround: None.

**QCCR1A160910:** After you uninstall Operations agent 11.1x from HP-UX PA- RISC node, some messages are available with oalicense. Messages are available in file (*/core*).

Workaround: Ignore the messages.

**QCCR1A138582**: On Solaris systems, Whenever there are more number of DSI data sources configured and if the number of open file descriptors for the CODA process is less than the maximum limit, then CODA stops.

**Workaround:** Set the ulimit manually to ensure that the coda process has sufficient bandwidth to open more number of file descriptors.

Follow the steps to set the ulimit manually:

- Run the following command to open the /etc/system file using the vi editor: vi /etc/system
- Type the following at the end of the /etc/system file: set rlim\_fd\_cur = 1024
- 3. Restart the operating system.

**QCCR1A178825:** On the Red Hat Enterprise Linux cluster, the **midaemon** process causes LVM metadata corruption after the logical volume is resized using the lvresize command. This corruption occurs when there are two or more nodes without a cluster LVM daemon running on the node.

Workaround: Make sure to stop the midaemon process when using the lyresize command.

# Limitations

• On an HP-UX system, if you open the character-mode interface of glance during the installation of the agent, the following error message appears in the glance console:

```
Glance fatal error. == Fatal Nums Error == Ignore this error.
```

- After installing the HP Operations Agent on a Windows system, several new programs such as HP Software E/A Agent, HP Software Measurement Interface, HP Software Performance Core, and HP Operations-agent program appear in the Programs and Features (Add/Remove Programs) window. While uninstalling the HP Operations Agent by using the Programs and Features window, always select HP Operations-agent and ignore all other programs that were added after the installation.
- Although the scope collector logs an identical set of BYLS metrics on vMA, KVM hosts, and Xen hosts, the values of the following metrics are always indicated as na in the scope log on KVM or Xen hosts:

- BYLS\_CLUSTER\_NAME
- BYLS\_CPU\_PHYS\_READY\_UTIL
- BYLS\_CPU\_PHYS\_WAIT\_UTIL
- BYLS\_CPU\_PHYSC
- BYLS\_CPU\_SYS\_MODE\_UTIL
- BYLS\_CPU\_USER\_MODE\_UTIL
- BYLS\_CPU\_UNRESERVED
- BYLS\_DATACENTER\_NAME
- BYLS\_DISK\_UTIL
- BYLS\_DISK\_UTIL\_PEAK
- BYLS\_LS\_PARENT\_TYPE
- BYLS\_LS\_PARENT\_UUID
- BYLS\_MEM\_ACTIVE
- BYLS\_MEM\_HEALTH
- BYLS\_MEM\_OVERHEAD
- BYLS\_MEM\_SWAPPED
- BYLS\_MEM\_SWAPTARGET
- BYLS\_MEM\_SWAP\_UTIL
- BYLS\_MEM\_SYS
- BYLS\_MEM\_UNRESERVED
- BYLS\_VC\_IP\_ADDRESS
- BYLS\_DATACENTER\_NUM\_HOSTS
- BYLS\_BOOT\_TIME\_EPOCH
- BYLS\_SUBTYPE
- BYLS\_DISK\_CAPACITY
- BYLS\_MULTIACC\_ENABLED
- BYLS\_DISK\_IORM\_ENABLED

- BYLS\_DISK\_IORM\_THRESHOLD
- BYLS\_DISK\_FREE\_SPACE
- BYLS\_DISK\_SHARE\_PRIORITY
- BYLS\_DISK\_READ\_LATENCY
- BYLS\_DISK\_WRITE\_LATENCY
- BYLS\_DISK\_QUEUE\_DEPTH\_PEAK
- BYLS\_DISK\_COMMAND\_ABORT\_RATE
- BYLS\_DISK\_THROUGPUT\_USAGE
- BYLS\_DISK\_THROUGHPUT\_CONTENTION
- BYLS\_NUM\_CLONES
- BYLS\_NUM\_CREATE
- BYLS\_NUM\_DEPLOY
- BYLS\_NUM\_DESTROY
- BYLS\_NUM\_RECONFIGURE
- BYLS\_TOTAL\_VM\_MOTIONS
- BYLS\_TOTAL\_SV\_MOTIONS
- BYLS\_CPU\_EFFECTIVE\_UTIL
- BYLS\_MEM\_EFFECTIVE\_UTIL
- BYLS\_CPU\_FAILOVER

These metrics are not available with GlancePlus or the Real-Time Metric Access (RTMA) utilities (like cpsh).

- For Domain-0 or any other instance with unlimited memory entitlement, the BYLS\_MEM\_PHYS\_ UTIL metric shows na. (On KVM and Xen hosts, the BYLS\_MEM\_PHYS\_UTIL metric shows the percentage of the total memory assigned to the virtual machine that is currently used.)
- On AIX, the FS\_SPACE\_RESERVED metric is typically zero for local file systems since AIX does not reserve any file system space by default for the superuser.
- On AIX x64 node with IPv6-only sockets, remote deployment of HP Operations Agent 11.14 patch is not supported from OML server as the OVC processes fail to run after HP Operations Agent 11.11 is installed on the node.
- HPOM server with IPv4 stack configured with dual stack Reverse Channel Proxy cannot communicate with an IPv6 stack HP Operations agent node and vice versa.
- Before registering the patch OALIN\_00032, HPOM Windows server needs to be upgraded to HP

Operations Agent 11.13 or higher using the following command:

### cscript oainstall.vbs -i -a

- On **all** IPv6-only socket nodes, setting SNMP\_SESSION\_MODE to "NO\_TRAPD" is not supported, as the opctrapi process aborts.
- The GBL NUM VG metric shows zero if you disable the Logical Volume class of metrics.
- The scope collector logs the value of the FS\_DEVNO metric in the decimal format. The real-time metric access (RTMA) and real-time measurement (RTM) components and HP GlancePlus show the value of FS\_DEVNO in the hexadecimal format.
- On Solaris non-global zones and AIX WPARs, the following metric classes are not supported by the Performance Collection Component, GlancePlus, and RTMA:
  - CPU class (BYCPU)
  - Disk class (BYDSK)
  - Swap class (BYSWP)
  - Logical volume (LVM)
  - Logical system (BYLS)

**Note:** In addition, the Performance Collection Component does not support metrics of the NFS metric class in AIX WPARs.

- The following metrics are not supported by the Performance Collection Component in Solaris nonglobal zones:
  - GBL\_DISK\_TIME\_PEAK
  - GBL\_DISK\_REQUEST\_QUEUE
  - GBL\_CPU\_WAIT\_UTIL
  - GBL\_DISK\_PHYS\_IO\_RATE
  - GBL\_DISK\_PHYS\_READ\_RATE
  - GBL\_DISK\_PHYS\_WRITE\_RATE
  - GBL\_DISK\_PHYS\_BYTE\_RATE
  - GBL\_DISK\_PHYS\_WRITE\_BYTE\_RATE
  - GBL\_DISK\_VM\_IO\_RATE
  - GBL\_MEM\_SYS\_AND\_CACHE\_UTIL
  - GBL\_SWAP\_SPACE\_AVAIL
  - GBL\_SWAP\_SPACE\_RESERVED
  - GBL\_SWAP\_SPACE\_AVAIL\_KB
  - GBL\_SWAP\_SPACE\_MEM\_AVAIL

- GBL\_CPU\_CYCLE\_ENTL\_MIN
- GBL\_DISK\_UTIL\_PEAK
- GBL\_DISK\_PHYS\_READ\_PCT
- GBL\_CPU\_WAIT\_TIME
- GBL\_DISK\_PHYS\_IO
- GBL\_DISK\_PHYS\_READ
- GBL\_DISK\_PHYS\_WRITE
- GBL\_DISK\_PHYS\_READ\_BYTE\_RATE
- GBL\_DISK\_PHYS\_BYTE
- GBL\_DISK\_VM\_IO
- GBL\_MEM\_CACHE\_HIT\_PCT
- GBL\_SWAP\_SPACE\_USED
- GBL\_SWAP\_SPACE\_UTIL
- GBL\_CPU\_MT\_ENABLED
- GBL\_SWAP\_SPACE\_DEVICE\_AVAIL
- GBL\_CPU\_CYCLE\_ENTL\_MAX
- TBL\_PROC\_TABLE\_UTIL
- TBL\_FILE\_LOCK\_USED
- GBL\_ZONE\_APP
- For the following metrics, the Performance Collection Component shows global zone values in non-global zones:
  - GBL\_MEM\_DNLC\_HIT\_PCT
  - GBL\_FS\_SPACE\_UTIL\_PEAK
  - GBL\_NET\_PACKET\_RATE
  - GBL\_NET\_IN\_PACKET
  - GBL\_NET\_IN\_PACKET\_RATE
  - GBL\_NET\_OUT\_PACKET
  - GBL\_NET\_OUT\_PACKET\_RATE

- GBL\_NET\_COLLISION\_RATE
- GBL\_NET\_COLLISION\_PCT
- GBL\_NET\_DEFERRED\_PCT
- GBL\_NET\_ERROR\_RATE
- GBL\_NET\_IN\_ERROR\_PCT
- GBL\_NET\_IN\_ERROR\_RATE
- GBL\_NET\_OUT\_ERROR\_PCT
- GBL\_NET\_OUT\_ERROR\_RATE
- GBL\_NET\_COLLISION\_1\_MIN\_RATE
- GBL\_NET\_ERROR\_1\_MIN\_RATE
- GBL\_RUN\_QUEUE
- GBL\_LOADAVG
- GBL\_LOADAVG5
- GBL\_BLOCKED\_IO\_QUEUE
- The Performance Collection Component always reports zero for the following metrics in non-global zones:
  - GBL\_NUM\_DISK
  - GBL\_NUM\_LS
  - GBL\_NUM\_ACTIVE\_LS
  - GBL\_NUM\_DISK
- On Linux, the following metrics are logged only for SUSE Linux Enterprise Server 11 and Red Hat Enterprise Linux 5.4 or higher:
  - APP\_DISK\_PHYS\_IO\_RATE
  - APP\_DISK\_PHYS\_READ
  - APP\_DISK\_PHYS\_READ\_RATE
  - APP\_DISK\_PHYS\_WRITE
  - APP\_DISK\_PHYS\_WRITE\_RATE
  - APP\_IO\_BYTE
  - APP\_IO\_BYTE\_RATE

- To view the man pages on UNIX/Linux platforms, you must manually set the MANPATH variable to the following locations:
  - On AIX: /usr/lpp/OV/man, /usr/lpp/perf/man
  - On HP-UX, Solaris, and Linux: /opt/0V/man, /opt/perf/man
- You cannot enable or disable a policy with the ovpolicy command if the policy name includes the: character.
- You cannot use the PROCESS object with the SCOPE data source in Measurement Threshold policies
  where the source is set to Embedded Performance Component. Such Measurement Threshold
  policies fail to perform monitoring and send the following message to the HPOM console:
  - CODA: GetDataMatrix returned 76='Method ScopeDataView::CreateViewEntity failed
- Limitations for using a non-default (non-root or non-privileged) user
  - The non-privileged user mode is not supported on the HP-UX platform.
  - The non-privileged user mode is not supported on the HPOM managment server but mixed user mode is supported on the HP Operations Manager for Unix, Linux and Solaris from version 9.20.
  - The non-privileged and mixed modes are not supported on AIX WPAR.
  - The BYLS metrics data cannot be collected for Xen and KVM hosts.
  - By default, the agent user with non-privileged and mixed user modes will not have permission to read the monitored log file.
  - By default, the agent user with non-privileged and mixed user modes will not have permission to start a program using an automatic command, operator-initiated command, tool, or scheduled task.
  - HP Operations Smart Plug-ins may require additional configuration or user rights if the agent user with non-privileged and mixed modes does not have administrative rights.
  - The HP Operations Agent cannot collect metrics starting with PROC\_REGION\_\* or PROC\_FILE\_\*
    for all instances of processes owned by non-privileged users. Also, processes running with
    higher privileges like ovbbccb and sshd are not available in the non-privileged mode.
  - On Windows, the PROC\_USER\_NAME metric is displayed as Unknown for processes owned by users other than the agent user.
  - On AIX, you may see the following error message in the command line console (or in the oainstall.log file in the/var/opt/0V/log directory) after you configure the agent to use the non-default user:

Product activation failure. Refer to the log file for more details. Ignore this error.

# **Documentation Updates**

The first page of this document identifies the:

- Version number for the software.
- Software release date.

To check for recent updates or to verify that you are using the most recent edition, visit the HP Software Product Manuals web site.

To retrieve a document, select the:

- 1. **Product** name.
- 2. Version list.
- 3. Operating System.
- 4. Preferred Language.
- 5. Document title.
- 6. Click Open or Download.

You must have Adobe® Reader installed to view files in PDF format (\*.pdf). To download Adobe Reader, go to the Adobe web site.

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# Feedback on Release Notes (Operations Agent 11.16)

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If no email client is available, copy the information above to a new message in a web mail client, and send your feedback to docfeedback@hpe.com.

We appreciate your feedback!