Hewlett Packard Enterprise

HPE Storage Operations Manager

Software Version: 10.20
Windows® and Linux® operating systems

Release Notes

Legal Notices

Warranty

The only warranties for Hewlett Packard Enterprise products and services are set forth in the express warranty statements accompanying such products and services. Nothing herein should be construed as constituting an additional warranty. HPE shall not be liable for technical or editorial errors or omissions contained herein.

The information contained herein is subject to change without notice.

Restricted Rights Legend

Confidential computer software. Valid license from HPE required for possession, use or copying. Consistent with FAR 12.211 and 12.212, Commercial Computer Software, Computer Software Documentation, and Technical Data for Commercial Items are licensed to the U.S. Government under vendor's standard commercial license.

Copyright Notice

© Copyright 2015-2017 Hewlett Packard Enterprise Development LP

Trademark Notices

Adobe® is a trademark of Adobe Systems Incorporated.

AMD is a trademark of Advanced Micro Devices, Inc.

© 2012 Google Inc. All rights reserved. Google™ is a trademark of Google Inc.

Intel®, Intel® Itanium®, and Intel® Xeon® are trademarks of Intel Corporation in the U.S. and other countries.

Linux® is the registered trademark of Linus Torvalds in the U.S. and other countries.

Microsoft®, Windows®, and Windows Server® are U.S. registered trademarks of Microsoft Corporation.

Oracle and Java are registered trademarks of Oracle and/or its affiliates.

Red Hat® is a registered trademark of Red Hat, Inc. in the United States and other countries.

SAP®, SAP® BusinessObjects™, and SAP® BusinessObjects™ Web Intelligence® are the trademarks or registered trademarks of SAP SE in Germany and in several other countries.

UNIX® is a registered trademark of The Open Group.

Oracle Technology – Notice of Restricted Rights

Programs delivered subject to the DOD FAR Supplement are 'commercial computer software' and use, duplication, and disclosure of the programs, including documentation, shall be subject to the licensing restrictions set forth in the applicable Oracle license agreement. Otherwise, programs delivered subject to the Federal Acquisition Regulations are 'restricted computer software' and use, duplication, and disclosure of the programs, including documentation, shall be subject to the restrictions in FAR 52.227-19, Commercial Computer Software-Restricted Rights (June 1987). Oracle America, Inc., 500 Oracle Parkway, Redwood City, CA 94065.

For the full Oracle license text, see the `open_source_third_party_license_agreements.pdf` file in the `license-agreements` directory in the SOM product download file.

Acknowledgements

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

This product includes software developed by the Indiana University Extreme! Lab. (http://www.extreme.indiana.edu)

This product uses the j-Interop library to interoperate with COM servers. (http://www.j-interop.org)

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.
- Software Release Date, which indicates the release date of this version of the software.

To check for recent updates or to verify that you are using the most recent edition of a document, go to: https://softwaresupport.hpe.com/group/softwaresupport/search-result?keyword=.

This site requires an HP Passport account. If you do not have one, click the **Create an account** button on the HP Passport Sign in page.

Support

Visit the HPE Software Support web site at: **https://softwaresupport.hpe.com**

This web site provides contact information and details about the products, services, and support that HPE Software offers.

HPE Software Support provides customer self-solve capabilities. It provides a fast and efficient way to access interactive technical support tools needed to manage your business. As a valued support customer, you can benefit by using the support web site to:

- Search for knowledge documents of interest
- Submit and track support cases and enhancement requests
- Download software patches
- Manage support contracts
- Look up HPE support contacts
- Review information about available services
- Enter into discussions with other software customers
- Research and register for software training

Most of the support areas require that you register as an HP Passport user and sign in. Many also require a support contract. To register for an HP Passport ID, go to **https://softwaresupport.hpe.com** and click **Register**.

To find more information about access levels, go to:
https://softwaresupport.hpe.com/web/softwaresupport/access-levels

Contents

Storage Operations Manager Release Notes

for the Windows® and Linux® operating systems.

Software version: 10.20

Publication date: March 2017

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

"New Features in SOM 10.20" on the next page

"Installation" on page 8

"Known Issues" on page 12

> **Note:** This document is updated as new information becomes available. To check for recent updates, or to verify that you are using the most recent edition of a document, go to: https://softwaresupport.hpe.com/group/softwaresupport
>
> For more information, see "Documentation Updates" on page 3.

Support Matrix

For information about the installation requirements and compatibility with other products, see the *SOM Support Matrix*.

About SOM

HPE Storage Operations Manager (SOM) is an offering for storage resource management. Key benefits of SOM include:

- Heterogeneous device support with enablement for device and reporting updates between releases. For the supported devices, see the *SOM Device Support Matrix*.
- A rich set of environment capacity dashboards for easy visualization of your current storage availability.
- Topology views that highlight the connectivity in your storage network.
- Optimized storage device discovery and data collection with an appropriate default configuration.
- A high-performance HTML5 user interface that runs in modern web browsers.
- Simplified deployment: SOM is customer installable and configurable for quick time-to-value.
- Low cost of ownership with the embedded Postgres database that scales to support many environments.
- High performance enterprise reporting with the bundled HPE Operations Bridge Reporter (OBR).
- High scale: Each SOM management server can manage a large number of storage devices. For specific numbers, see the *SOM Support Matrix*.

New Features in SOM 10.20

HPE Storage Operations Manager 10.20 includes the following new features and enhancements:

- Performance workbench

  SOM provides customizable dashboards to analyze device specific performance metrics. Multiple dashboards help to compare the performance of device components and identify any performance issues.

- OMi integration

  SOM integrates with HPE Operations Manager i to forward SOM incidents to OMi for a single pane of glass view of the events in your infrastructure.

  For more information, see the *SOM HPE Operations Manager i Integration Guide*.

- Additional Device Support and Features

  SOM 10.20 includes new features for devices and supports the following new devices:

  - EMC Data Domain Backup Storage System

  - IBM XIV

  - Data Mover performance metrics for EMC Celerra/VNX Filer

  - Block support for NetApp C-Mode

  - NetApp C-Mode compression and deduplication

  - VNX FAST-VP sub-LUN tiers

  - IBM AIX VIO

- Event monitoring

  SOM 10.20 generates events for the following devices:

  - Hitachi AMS, HUS –VSP, XP array family

  - EMC – VNX, VMAX, CLARiiON

  - NetApp C-Mode and 7-Mode

  - IBM SVC

    For information about supported devices, see the *SOM Device Support Matrix*.

- Reports

  The SOM 10.20 release includes the following additions and enhancements:

  - New content pack - HPE SOM Content Pack for the IBM SVC Performance Statistics.

  - New standard report - License usage report

- Enhancements to the existing universes:
  - Host universe - Thin-on-thin analytics report
  - Storage system universe - Host mode report
  - Connectivity universe - Path analytics report
- Customer-requested enhancements:
  - SOM displays all the active zones to which a host belongs along with the zone members.
  - SOM displays the LUNs that are exposed from a single storage device port.
  - SOM displays the fabric column for the virtual switches of a physical switch in the inventory view.
  - SOM displays the LUN WWN/Device ID and HBA port WWN of the Inferred Host in a storage dependency view.
  - SOM allows an administrator to disable the auto-quarantine feature so that elements are not automatically quarantined after data collection fails for three consecutive cycles.
  - SOM allows a user to search for a discovered element using the element's name.

Installation

The *SOM Interactive Installation Guide* available in the `Documentation` directory of the product installation media provides instructions for installing SOM 10.20.

Installation Notes

Upgrading existing HP Storage Essentials installations to SOM 10.20 is not supported. You can migrate the configuration of an existing HP Storage Essentials installation to SOM 10.20. For more information, see the *SOM HPE Storage Essentials Configuration Migration Guide*.

Installing SOM on an HPOM-Managed or OMi-Managed Node

Installation of SOM on an HPOM-managed or OMi-managed node deletes all HPE Operations agent certificates. For compatible versions of the HPE Operations agent, see the *HPE Software Coexistence* section in *Support Matrix*.

To address this issue, do the following:

- Prior to installing SOM on such a system, take a backup of all HPE Operations agent certificates before installing SOM by following these steps:

  a. Log on to the managed node as root or administrator.

  b. Run the following command:

      - *On Windows:*

          - **%ovinstalldir%\bin\ovcert -exporttrusted -file C:\temp\backup_trusted_cert**

          - **%ovinstalldir%\bin\ovcert -exportcert -file C:\temp\backup_agent_cert**

      - *On Linux:*

          - **/opt/OV/bin/ovcert -exporttrusted -file /tmp/backup_trusted_cert**

          - **/opt/OV/bin/ovcert -exportcert -file /tmp/backup_agent_cert**

      The HPE Operations agent certificate is now backed up in the `backup_agent_cert` file and the trusted certificates are backed up in the `backup_trusted_cert` file.

- After SOM is successfully installed on such a system, follow these steps to retrieve the certificates that were deleted during the installation procedure:

  a. Log on to the managed node as root or administrator.

  b. Run the following command:

- ○ *On Windows:*
  - **%ovinstalldir%\bin\ovcert -importtrusted -file C:\temp\backup_trusted_cert**
  - **%ovinstalldir%\bin\ovcert -importtrusted -file C:\temp\backup_trusted_cert -ovrg server**
  - **%ovinstalldir%\bin\ovcert -importcert -file C:\temp\backup_agent_cert**
- ○ *On Linux:*
  - **/opt/OV/bin/ovcert -importtrusted -file /tmp/backup_trusted_cert**
  - **/opt/OV/bin/ovcert -importtrusted -file /tmp/backup_trusted_cert -ovrg server**
  - **/opt/OV/bin/ovcert -importcert -file /tmp/backup_agent_cert**

  The HPE Operations agent certificates are restored and added to the certificates installed with SOM.

c. Export the certificates on the SOM management server by running the following commands:

   i. *On Windows:* **%ovinstalldir%\bin\ovcert -exporttrusted -file C:\temp\SOM_trusted_certs**

   ii. *On Linux:* **/opt/OV/bin/ovcert -exporttrusted -file /tmp/SOM_trusted_certs**

d. Transfer the `SOM_trusted_certs` file to the HPOM or OMi management server.

e. Log on to the HPOM or OMi management server as root or administrator.

f. Import the `SOM_trusted_certs` file that was transferred from the SOM management server by running the following command:

- ○ *On Windows:*
  - **%ovinstalldir%\bin\ovcert -importtrusted -file C:\temp\SOM_trusted_certs**
  - **%ovinstalldir%\bin\ovcert -importtrusted -file C:\temp\SOM_trusted_certs -ovrg server**
- ○ *On Linux:*
  - **/opt/OV/bin/ovcert -importtrusted -file /tmp/SOM_trusted_certs**
  - **/opt/OV/bin/ovcert -importtrusted -file /tmp/SOM_trusted_certs -ovrg server**

g. Create a new flexible management policy on the HPOM or OMi management server by using the following sample:

> **Tip:** For more information about flexible management policies, see the *Configuring Flexible Management Policies* section in OMi Online Help.

```
#
# Configuration file
# defines management responsibility switching
#
TIMETEMPLATES
#none
RESPMGRCONFIGS
RESPMGRCONFIG
DESCRIPTION "HPOM and OMi as responsible managers"
```

```
SECONDARYMANAGERS

SECONDARYMANAGER

NODE IP <OMi_IP> "<OMi_FQDN>"

DESCRIPTION "OMi"

SECONDARYMANAGER

NODE IP <SOM_IP> "<SOM_FQDN>"

DESCRIPTION "SOM"

SECONDARYMANAGER

NODE IP<OBR_IP>"<OBR_FQDN>"

DESCRIPTION "OBR"

ACTIONALLOWMANAGERS

ACTIONALLOWMANAGER

NODE IP<OMi_IP>"<OMi_FQDN>"

DESCRIPTION "OMi"

ACTIONALLOWMANAGER

NODE IP <SOM_IP> "<SOM_FQDN>"

DESCRIPTION "SOM"

ACTIONALLOWMANAGER

NODE IP<OBR_IP>"<OBR_FQDN>"

DESCRIPTION "OBR"

ACTIONALLOWMANAGER

NODE IP <OMi_IP> "$OPC_PRIMARY_MGR"

DESCRIPTION "current primary manager"

MSGTARGETRULES

MSGTARGETRULE

DESCRIPTION "always send all messages to current primary manager"

MSGTARGETRULECONDS

MSGTARGETMANAGERS

MSGTARGETMANAGER

TIMETEMPLATE "$OPC_ALWAYS"

OPCMGR IP <OMi_IP> "$OPC_PRIMARY_MGR"
```

In this instance:

- *<OMi_IP>* is the IP address of the OMi or HPOM management server
- *<OMi_FQDN>* is the FQDN of the OMi or HPOM management server
- *<SOM_IP>* is the IP address of the SOM management server
- *<SOM_FQDN>* is the FQDN of the SOM management server
- *<OBR_IP>* is the IP address of the SOM reporting server
- *<OBR_FQDN>* is the FQDN of the SOM reporting server

h. Deploy the policy on the SOM management server.

Known Issues

The reference number for each defect is the change request (QCCR) number. For more information about open defects, visit HPE Software Support Online, or contact your HPE Support representative directly.

SOM Console Known Issues

The following known issues apply to SOM running in all supported languages.

Title: Error on viewing dependency tabs in an element inventory view.

Description: In an inventory view for an element, clicking one or more of the dependency tabs might result in an `includeData` servlet response error. The tab in the SOM console displays a general error message.

Workaround: Rerun data collection for the affected element.

Title: Non-administrative SOM users cannot change incident values.

Description: SOM console users with the Level 1 Operators or Level 2 Operators user role do not have sufficient privilege to change values such as incident priority, lifecycle state, or severity. If such a user attempts to change an incident, SOM displays an error message stating that the user is not authorized for the requested resource.

Title: Time stamps for data points in graphs are for the SOM management server time zone.

Description: The time information for data points in graphs of metrics is in the time zone of the SOM management server. If the system being used to display the SOM console is set to a different time zone, the times in the metrics graphs are offset by the difference.

Title: Duplicate collector entry cannot be removed from a monitoring group.

Description: When the collector settings for a monitoring group include multiple entries for one collector, it is not possible to delete the duplicate entries. SOM returns an error message similar to the following: The `given object has a null identifier.`

Workaround: Ignore the duplicate entries. They do not impact SOM functionality. Alternatively, delete and recreate the monitoring group using the Create Monitoring Group wizard from the Object Groups folder in the Configuration workspace of the SOM console.

Title: The first data collection might show incorrect data or fail to complete.

Description: When the first round of data collection is run against multiple devices, data collection might show incorrect data, such as incorrect interswitch links. Alternatively, data collection might fail to complete for some devices.

Workaround: Re-run data collection. The second pass should succeed with correct data.

Title: Cannot set a view filter equal to an empty cell.

Description: In the inventory views, attempting to set the filter to either "Equal to this value" or "Not equal to this value" of an empty cell results in a servlet error.

Title: SNMP Traps table view does not show data if a new tenant is created while the Message column is filtered.

Description: If the **Message** column of the SNMP Traps table view has a view filter applied at the time that an SOM administrator creates a new tenant, the next time that user attempts to view the SNMP Traps table view, SOM displays an error message instead of the trap data.

Workaround: Click **Restore Default Filters**, and then reapply the filter.

Title: Nodes are listed incorrectly by the Security Wizard.

Description: The Security Wizard incorrectly shows nodes mapped to multiple security groups.

Workaround: Use the Security Groups Mappings view in the Security configuration workspace.

Title: SOM shows DTT values as 99999 for a few analytics metrics.

Description: When the capacity numbers do not change over time, HPE Operations Bridge Reporter (OBR) reports the metric value as 99999.

Deployment Known Issues

The following known issues apply across an SOM deployment.

Title: All Hitachi events are considered as similar traps.

Description: The framework treats each SNMP trap configuration as unique even if the configuration has a wild card character in the SNMP OID. Therefore, all events that match the OID are treated as similar traps.

Title: An SSL handshake exception occurs while connecting to the SOM server using a web client user

Description: SOM 10.20 supports SSL with TLSv1.1 and TLSv1.2 only. Lower versions of the SSL security protocol are not supported by default as this has been identified as a security vulnerability.

Workaround: To integrate with applications that do not support higher SSL versions such as TLSv1.1, and TLSv1.2, you must change to a lower version of SSL. For more information about configuring TLS protocols, see "*Configure TLS Protocols*" in the *SOM Hardening Guide.*

Title: Multiple SEVERE and ERROR messages exist in the `som.log` and `boot.log` files on the Windows and Linux platforms.

Description: These messages are a result of enabling the security in SOM. This does not have any impact on SOM's functionality.

Title: SOM fails to discover new Windows agentless hosts on RHEL 7.x platforms.

Description: The winexe file that is bundled with SOM 10.20 does not support RHEL 7.x. Therefore, SOM fails to discover new Windows agentless hosts on RHEL 7.x platforms.

Title: SOM displays only one dependent VIO for a virtual machine with dependencies on multiple VIOs.

Description: SOM displays only one dependent VIO in the Virtual Server Dependency tab for Aix Virtual Machines (Client LPAR) with a dependency on multiple VIOs.

Title: SOM does not display VNX Filer events that are generated during a data mover failover although the events are received as traps.

Description: SOM uses the IP of the primary data mover to discover the VNX Filer. During a failover, traps are sent from the IP of the secondary data mover that is unknown to SOM. Therefore, SOM is unable to display these traps.

Title: An "OvXpl.dll is missing" message appears during an SOM 10.20 installation if the non-default directory paths contain special characters.

Description: During an SOM installation, a missing DLL message is displayed if special characters are used to create the installation or data folders.

Title: An HornetQMessageHandler failure exception is registered in the log file when a host is deleted after successful data collection.

Description: This log message occurs as the underlying SOM framework is unable to load some dependencies due to the SecurityManager in SOM. This message can be ignored as it does not have any impact on SOM's functionality.

Title: The Dependent Storage Virtualizer tab of a backend storage system does not display the EMC VMAX virtualizer.

Description: The SMIS provider does not provide the mapping between the external disk drives and the storage volumes.

Title: SOM displays incorrect Thin Provisioning data for HDS arrays.

Description: The HDS XML API does not provide any capacity information about the thin volumes in an array.

Title: The SOM management server must be restarted after an upgrade from SOM 10.10.

Description: For SOM 10.10 deployments that are upgraded to SOM 10.20, restart the jboss service for the SNMP traps to be processed into Incidents.

Title: Earlier versions of CIM extensions are not forward compatible.

Description: For SOM 10.20 deployments, if a host uses a CIM extension for communicating with SOM, that CIM extension must be the version provided on the SOM 10.20 installation media.

Title: Target mappings of the second HBA port are not displayed for some HP-UX hosts.

Description: For HP-UX hosts with dual port HBA adapters discovered through the agentless method, the hbatest binary does not provide target mappings of the second port.

Localization and Globalization Known Issues

The following known issues apply to SOM running in a non-English language.

General

Title: The date displayed in graphs is not localized.

Description: The performance chart library used in SOM does not support a date format based on the locale. Therefore, the date displayed in charts is not localized.

Title: Error while editing configuration data in SOM on a Russian locale.

Description: When running on a Russian locale Windows operating system, SOM cannot interpret the localized SOM console session timeout value. Therefore, a warning message appears while editing configuration (User Interface Configuration view and Communication Configuration view) data.

Workaround: This does not have an impact and can be ignored.

Title: Russian text cut off in the localized product.

Description: Some Russian text is too long for the allotted space and is truncated in the SOM console, notably in the Quick Find window.

Title: Text in some drop-down lists is not in the web browser locale.

Description: SOM localizes "drop-down choice" code values (available from the menu bar and shortcut menus, for example collector names and collector metric names) at database creation time using the locale of the server. Unlike most other content, if accessed from a client under a different supported locale, the values remain in the locale of the server set at the time of database creation, which is typically installation time. The same is true for any user created "drop-down choice" code values. Other drop-down choices that are enumeration values (such as incident severity) are locale-sensitive and appear in the locale of the web browser for supported locales.

Title: English text in the SOM installer.

Description: Some messages in the pre-installation checks are not localized.

Title: Date and time values are displayed in the English format not the local date and time format.

Description: Dates and times are not localized.

Title: Command-line output is in English.

Description: The SOM command line interface is not localized. While the commands can accept localized language inputs as parameter values, all command output is in English.

Title: English text in the localized product.

Description: The following text strings cannot be localized and are always shown in English:

- Java runtime exceptions such as "Unknown type"
- Device profile names
- The contents of the Description field for the properties of a data collection control.

Reports

Title: The SOM content pack installer is available in English and not in any other languages.

Description: The SOM reports have been localized into the same languages as the SOM management server software. The SOM content pack installer is not available in these languages.

Workaround: If the SOM reports have been localized to the locale of the SOM reporting server (the HPE Operations Bridge Reporter (OBR) system), the SOM content pack installer installs the SOM reports in that language. Otherwise, the SOM content pack installer installs the SOM reports in English.

Title: The SOM content pack uninstaller is available in English and not in any other languages.

Description: The SOM content pack uninstaller is not available in other languages.

Workaround: Regardless of report language, run the English language SOM content pack uninstaller to remove the SOM reports from the SOM reporting server.

Title: Report drill-down menus contain English text.

Description: In OBR, labels on report drill-down menus may contain English text. This text is not translated to any other supported languages.

Title: Report universe context descriptions are in English.

Description: For all SOM reporting universes, any contexts displayed while creating or running a report in OBR are not translated to any other supported languages. Context names and descriptions always appear in English only.

Title: SOM report descriptions are in English.

Description: In OBR, the descriptions of reports delivered in the SOM content packs are not localized.

Title: Report prompts for raw measures are in English.

Description: When configuring the SOM performance statistics reports, the prompts and options for raw data measures are not localized.

Title: Graph labels are in English.

Description: Some labels on graphs in the SOM reports are not localized.

Title: Content pack tool tips are in English.

Description: The tool tips for SOM content packs in the OBR administration console are not localized.

Send Documentation Feedback

If you have comments about this document, you can contact the documentation team by email. If an email client is configured on this system, click the link above and an email window opens with the following information in the subject line:

Feedback on Release Notes (Storage Operations Manager 10.20)

Just add your feedback to the email and click send.

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

We appreciate your feedback!