



Operations Bridge Analytics

Software Version: 3.03

Installation Guide

Document Release Date: December 2017

Software Release Date: November 2017



Hewlett Packard
Enterprise

Legal Notices

Warranty

The only warranties for Seattle SpinCo, Inc and its subsidiaries ("Seattle") 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. Seattle 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. Except as specifically indicated, valid license from Seattle 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

© 2016 - 2017 EntIT Software LLC, a Micro Focus company

Trademark Notices

Adobe® and Acrobat® are trademarks of Adobe Systems Incorporated.

AMD, the AMD Arrow symbol and ATI are trademarks of Advanced Micro Devices, Inc.

Citrix® and XenDesktop® are registered trademarks of Citrix Systems, Inc. and/or one more of its subsidiaries, and may be registered in the United States Patent and Trademark Office and in other countries.

Google™ and Google Maps™ are trademarks of Google Inc.

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

iPad® and iPhone® are trademarks of Apple Inc.

Java is a registered trademark of Oracle and/or its affiliates.

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

Microsoft®, Windows®, Lync®, Windows NT®, Windows® XP, Windows Vista® and Windows Server® are either registered trademarks or trademarks of Microsoft Corporation in the United States and/or other countries.

NVIDIA® is a trademark and/or registered trademark of NVIDIA Corporation in the U.S. and other countries.

Oracle is a registered trademark of Oracle Corporation and/or its affiliates.

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

SAP® is the trademark or registered trademark of SAP SE in Germany and in several other countries.

UNIX® is a registered trademark of The Open Group.

Documentation Updates

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/>.

This site requires that you register for an HPE Passport and to sign in. To register for an HPE Passport ID, click **Register** on the HPE Software Support site or click **Create an Account** on the HPE Passport login page.

You will also receive updated or new editions if you subscribe to the appropriate product support service. Contact your HPE sales representative for details.

Support

Visit the HPE Software Support site at: <https://softwaresupport.hpe.com/>.

Most of the support areas require that you register as an HPE Passport user and to sign in. Many also require a support contract. To register for an HPE Passport ID, click **Register** on the HPE Support site or click **Create an Account** on the HPE Passport login page.

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

Contents

Chapter 1: About this Guide	5
Chapter 2: System Requirements	6
Sizing	9
Port Mapping	12
Environment Variables	16
High availability	16
Chapter 3: Pre-installation tasks	18
Obtain the software	20
Chapter 4: Installation Workflow	21
Obtain Licenses	21
Install and Configure the Vertica software	21
Install a New Vertica	22
Install the OBA Application Server software	24
Install the OBA collector software	24
Chapter 5: Post-installation workflow	26
Post-Installation tasks for the OBA Application Server	27
Post-installation steps for the OBA Collector host	28
Register the collector host	29
Set up the licenses	29
Access OBA for the first time	30
Chapter 6: Upgrade from OBA 3.02 to 3.03	31
Chapter 7: Uninstall OBA	34
Send documentation feedback	35

Chapter 1: About this Guide

Read this guide to understand the process required to install Operations Bridge Analytics (OBA) properly.

For general support information about all Operations Bridge products, download the [Support Matrices for Operations Center products](#). Open SUMA.htm and then select, for example, Operations Bridge Analytics from the Product List.

The following sections provide information on prerequisites and process for installing OBA.

- ["System Requirements" on page 6](#)
- ["Pre-installation tasks" on page 18](#)
- ["Installation Workflow" on page 21](#)
- [" Post-installation workflow" on page 26](#)
- ["Upgrade from OBA 3.02 to 3.03" on page 31](#)
- ["Uninstall OBA" on page 34](#)

Chapter 2: System Requirements

This section provides information about the supported hardware and software that are required in order to successfully install and run Operations Bridge Analytics.

Supported Operating Systems for OBA Application Server and Collector Hosts

Platform	Supported Versions
Red Hat Enterprise Linux (RHEL)	6.x, 7.x
Oracle Enterprise Linux (OEL)	6.x, 7.x
CentOS	6.x

OBA requires a 64-bit operating system. It is recommended that you not have any anti-virus software installed on any of the hosts you plan to use for Vertica or OBA. As a workaround to have anti-virus software running on the host, you can add scanning exclusions for all the directories created by this installation under /opt.

Ensure that the following packages are installed on the required systems:

Package	System
m4	Must be installed on all OBA application server and collector hosts.
perl	Must be installed on all OBA application server and collector hosts.
dialog	Must be installed on the hosts you plan to use for the Vertica database.
net-tools	Must be installed on all OBA application server and collector hosts.

1. Check if you have installed those packages by running the following commands:

```
rpm -qa | grep -E "m4 | perl-5 | net-tools" (on OBA application server and collector hosts)
```

```
rpm -qa | grep -i dialog (on the hosts for the Vertica database)
```

2. If one or multiple of the packages are not listed after running the previous commands, install them by using `yum install`:

```
yum install m4 perl net-tools (on OBA application server and collector hosts)
```

```
yum install dialog (on the hosts for the Vertica database)
```

Databases

You must deploy and configure a Vertica database using the installation package delivered by OBA. OBA supports Vertica version 8.1.1-0.

See the [Vertica Analytics Platform Version 8.1.x Documentation](#) for more information.

A Vertica node is a hardware (physical server) or software (virtual) host configured to run an instance of Vertica. Vertica does not perform as fast in a virtual environment as it does in a physical server environment. This happens primarily because of the overhead and resource constraints imposed by the virtualization software. Operations Analytics recommends using physical server environments wherever possible to achieve the best performance.

Java

OBA deploys and uses OpenJDK 1.8.0.

Web Browsers

Use any of the supported web browsers shown in the following table to access OBA.

Platform	Supported Versions
Google Chrome	latest
Microsoft Internet Explorer	11
Microsoft Edge	No version specified
Mozilla Firefox	ESR versions only, 45 and higher

General Web Browser Requirements

Assuming that your browser is open to full screen for optimal viewing, the supported client display resolutions are as follows:

- Small: 1366x768
- Large: 1920x1080

Recommended: color palette setting of at least 32,000 colors

Languages

Operations Bridge Analytics 3.03 displays in English only. Operations Bridge Analytics 3.03 is currently not internationalized, and localized only to the English language.

Virtualization Products

Operations Bridge Analytics is agnostic as to any virtualization software and version. The important factor is the operating system version.

Software Integrations

Information about software that integrates with OBA can be found in the [Integration Catalog](#).

For this release, OBA supports Splunk version 5.0.2+. Splunk Light is not supported. OBA also supports an optional integration with ArcSight Logger.

Sizing

The following sections summarize host sizing requirements for an OBA deployment. OBA collectors, application servers, and Vertica must be installed on different hosts, thus the smallest implementation requires three servers or virtual machines. These are only rough guidelines, because the amount of data volume per host is highly variable, depending on the number and types of integrations you implement. It is best to plan for growth, and to monitor your systems over time as you add more integrations to ensure they are running well, adding more collectors if needed over time.

Use the sizing information in this section for Operations Bridge Analytics VMware installations as well as physical server installations.

OBA Application Server

OBA application server host recommendations:

- 4 CPU minimum, 12 GB Memory minimum 16 GB recommended, 60 GB disk minimum.
- Only add application servers if you must configure multiple application servers to meet your environment's high availability requirements. See the section [Add more servers](#) for information on adding servers. The user interface may lack responsiveness when using multiple OBA application servers.

Note that the load on the OBA server scales according to the number of concurrent queries being executed. Therefore, idle browser users do not affect application server load. What affects load and may necessitate you adding CPUs or memory to the host is when users are concurrently requesting dashboards to be drawn or executing searches in the OBA browser interface.

OBA Collector

Refer to the table below for the number of OBA collector hosts recommended.

The guidelines shown in the following table for OBA Collector disk size are suitable for most cases. In some extreme circumstances, there might be a need to shorten the retention policy for data files in the collector's archive folder. If the combined data volume for a collector exceeds 250 GB per day, add OBA Collectors.

For more information, see the topic "[Manage collected data file usage](#)" under the section "Administer" of the Operations Bridge Analytics documentation.

Number of monitored hosts	OBA collectors	Vertica cluster nodes
up to 500	1 Collector (8 CPU, 24 GB Memory minimum 32 GB recommended, 40 GB Disk minimum)	1 node (8 CPU, 32 GB Memory, 1 TB Disk)
up to 5000	3 Collectors (8 CPU, 24 GB Memory minimum 32 GB recommended, 40 GB Disk minimum each)	3 node cluster (each 16 CPU, 64 GB Memory, 10 TB Disk)
more than 5000	Add 1 Collector for every additional 5000 nodes	3 or more node cluster (each 32 CPU, 256 GB Memory, 10 TB Disk)

Add one Vertica node for each additional 1 TB of daily data. For integrating OBA with Splunk or ArcSight Logger, if the daily volume of log messages is expected to be larger than 125 GB per day, add an OBA Collector host for each additional 125 GB per day volume. In all cases, monitor the load and capacity of OBA hosts and expand the count to prevent any loss.

Certain collection types, like custom metric collections, SiteScope, and NNM/NPS collections may require substantially more disk space. If you know that you will be processing a large amount of metric data, plan the size of your disks on each collector to hold one month's worth of processed files. Log and event data is not stored on the collector for as long, and typically does not add substantially to disk space consumption on the collectors. Collectors may not be loaded with more than 250 GB of incoming data per day from all sources. Therefore, if you expect or measure more than 250 GB of data per day on a collector, add more collectors accordingly.

Deploy additional ArcSight Logger systems for every 125 GB of expected data volume per day. See ArcSight product documentation for more information.

Vertica

The amount of storage for Vertica depends on your licensing and the amount of total stored data. OBA defaults to a 3-months retention period.

For small OBA deployments, single node Vertica installations are supported. For larger OBA installations, we recommend at least a three node cluster Vertica installation to ensure k-safety. For more information, see the [Vertica documentation](#).

See the [Vertica Hardware Planning Guide](#) for detailed information on planning your Vertica deployment. For information on the Vertica installation, see the [Vertica Install Guide](#).

File system recommendations

For Vertica node requirements, see the [Vertica documentation](#).

For OBA collectors and servers, check to make sure you have at least 30 GB of free disk space under the /opt/HP directory prior to installation, which will be used for product files. This is in addition to the space consumed by the installation files themselves. In general, OBA installations add less than 1 GB to the /usr, /lib, /opt/OV, /var/opt, and /var/tmp directories.

In addition to the above disk space requirements, you must have 10 GB of disk space in the /tmp directory for installation on all OBA hosts.

Directory file paths

OBA populates the following directories during installation.

Default Installation Paths

Application Server or Collector	Path to Folder (used during installation)	Purpose of Path
Application Server and Collector	/opt/HP/opsa	This folder contains the OBA software application files.
Application Server and Collector	/opt/OV	This folder contains the Operations Agent application files. This application is delivered with OBA.
Application Server and Collector	/opt/perf	This folder contains the Operations Agent's performance components software application files.
Application Server and Collector	/opt/vertica	This folder contains the files used by OBA for the Vertica database.
Application Server and Collector	/var/opt/OV	This folder contains Operations Agent data.
Application Server and Collector	/var/opt/perf	This folder contains data for the Operations Agent's performance components.
Collector	/opt/HP/BSM	OBA uses some OBR components such as PMDB internally for some collections.

In addition to the installation file paths, the OBA uses the following file paths:

Other Useful Directories

Folder Name	Path	OBA Application Server host, OBA Collector Host
JBOSS Home	/opt/HP/opsa/jboss	OBA Application Server host
JDK	/opt/HP/opsa/jdk	OBA Application Server and Collector host
scripts	/opt/HP/opsa/scripts	OBA Application Server and Collector host

Other Useful Directories, continued

Folder Name	Path	OBA Application Server host, OBA Collector Host
conf	/opt/HP/opsa/conf	OBA Application Server and Collector host
data	/opt/HP/opsa/data	OBA Application Server and Collector host
log	/opt/HP/opsa/log	OBA Application Server and Collector host The log files after installing and configuring OBA will be saved under this folder.
HPOvInstaller	/tmp/HPOvInstaller	OBA Application Server and Collector host The log files during installation of OBA will be saved under this folder. Note that the /tmp file system cannot be mounted with the noexec option.
lib	/opt/HP/opsa/lib	OBA Application Server and Collector host
bin	/opt/HP/opsa/bin	OBA Application Server and Collector host
Vertica Database Installation	/opt/vertica	OBA Application Server and Collector host have the Vertica client installed in this folder

Port Mapping

The well-known network ports described in the section need to be open in a secured environment for Operations Bridge Analytics to be able to function and collect data from the data Source Types you configured or plan to configure.

The OBA Application Server and Collector host, as well as data sources configured in the Data Source Manager, must be installed on the same subnet with full network access among them. The Vertica database that OBA uses as part of its deployment should reside in the same network subnet as the OBA hosts.

The communication ports shown in "[Well-Known Port Mapping \(Sources External to Operations Bridge Analytics\)](#)" on the next page must be open on any firewall in the path between the OBA Application Server and Collector host and all of the data sources, in the direction listed within the table. The OBA Application Server host validates the communication to the data sources before creating a collection. The OBA Collector host needs these open communication ports so it can collect data.

Note: In the tables shown in this section, the hosts shown in the **Open To** column listen on the

port or ports shown in the **Port** column and the hosts shown in the **Open From** column initiate connections to the port or ports shown in the **Port** column.

Note: In the tables shown in this section, the listed connection type is TCP unless otherwise noted.

External traffic is the traffic coming into OBA Application Server and Collector host from a client that is not an OBA Application Server host or an OBA Collector host. The communication ports shown in "[Well-Known Port Mapping \(Sources External to Operations Bridge Analytics\)](#)" below lists the ports used to transmit data between non-Operations Bridge Analytics hosts to an OBA Application Server host or an OBA Collector host.

Well-Known Port Mapping (Sources External to Operations Bridge Analytics)

Port	Open From	Open To	Comments
137, 138, 139, 445	OBA Collector hosts	NNM iSPI Performance for Metrics and NNMi Custom Poller	Operations Bridge Analytics uses SMB protocol to mount a CSV data directory on the NNMi system to the OBA Collector host. Because of this mounted data directory, SMB ports must be open.
383	OBA Application Server and Collector hosts	Operations Agent (OM Performance Agent and Database SPI)"	
443 or 9000	ArcSight Connectors, OBA Application Server and Collector hosts	ArcSight Logger	ArcSight Logger can be configured to be accessible on different ports such as 9000. The OBA default for adding a Logger instance is port 443.
1433, 1521	OBA Application Server and Collector hosts	Database host used by OM or OMi	1433 if using MSSQL or PostgreSQL, 1521 if using Oracle. This port might have been changed by the OM or OMi database administrator.
4888	ArcSight Logger	OBA Collector host	TCP Receiver: This port is used in case log data is collected from the Logger TCP forwarder and not the pull API. In this case the TCP forwarder from the ArcSight Logger source should be able to send data from the Logger server to

Well-Known Port Mapping (Sources External to Operations Bridge Analytics), continued

Port	Open From	Open To	Comments
			port 4888.
4447, 9990	OBA Application Server host		JBOSS server ports
5433	OBA Application Server and Collector hosts	Vertica	The default Vertica port is 5433. This default value can be changed by the Vertica administrator.
8080	Web browsers on client devices that access the OBA console	OBA Application Server host	Web browsers connect to the 8080 port using HTTP (non-SSL) to the OBA Application Server host to access the OBA console. (<a href="http://<OBA Application Server FQDN>:8080/opsa">http://<OBA Application Server FQDN>:8080/opsa)
8080	OBA Application Server and Collector hosts	SiteScope	OBA communicates with SiteScope. This port might have been configured differently by the SiteScope administrator.
8089	OBA Application Server and Collector hosts	Splunk	Used if Splunk is used instead of ArcSight Logger.
8443 (https) 8080 (http)	OBA Application Server and Collector hosts	BSM or OMi Gateway server	Used for BSM/BPM and OMi integration.
9443	SiteScope server	OBA Application Server and Collector hosts	This port is the default port of a SiteScope integration instance and can be changed by the SiteScope administrator.

Internal traffic is the traffic between OBA Application Server hosts and the OBA Collector hosts. The communication ports shown in "[Well-Known Port Mapping \(Sources Internal to Operations Bridge Analytics\)](#)" on the next page lists the ports used to transmit data among OBA Application Server and Collector host. It works better to disable any firewalls between the OBA Application Server hosts and Operations Bridge Analytics Collector hosts. Each port listed in this table should be opened in both directions (send from it and receive to it).

Note: It works better to disable any firewalls between the OBA Application Server and Collector

host. However, if a firewall is enabled, open the ports shown in "[Well-Known Port Mapping \(Sources Internal to Operations Bridge Analytics\)](#)" below.

Well-Known Port Mapping (Sources Internal to Operations Bridge Analytics)

Port	Open From	Open To	Comments
381-383	OBA Application Server and Collector host	OBA Application Server and Collector host	Used by local OM performance agents.
2181	OBA Application Server and Collector host	OBA Application Server host	Any data flow that uses Apache Zookeeper within Operations Bridge Analytics.
2888, 3888	OBA Application Server and Collector host	OBA Application Server host	Zookeeper leader election and peer ports.
4242	Clients connection to Apache Storm (used internally by Operations Bridge Analytics)	OBA Application Server host	Clients connecting to Apache Storm.
6627	OBA Application Server and Collector host	OBA Application Server host	Apache Storm Nimbus thrift port.
6700-6703	OBA Application Server and Collector host	OBA Collector hosts	Apache Storm Nimbus worker ports.
9443	OBA Application Server and Collector host	OBA Collector hosts	Used by the OBA Application Server host to register OBA Collector hosts.

Environment Variables

The installation and configuration instructions for the OBA software, including the OBA Application Server host and the OBA Collector host, refer to the following environment variables. The environment variables are set automatically for the opsa user who can use all Operations Bridge Analytics functionality, and has access to data at the tenant level. See *Manage Users and Tenants* in the *Operations Bridge Analytics Help* for more information.

Environment Variables

Variable Name	Path	OBA Application Server host, OBA Collector host
OPSA_HOME	/opt/HP/opsa	OBA Application Server and Collector host
JAVA_HOME	/opt/HP/opsa/jdk	OBA Application Server and Collector host

High availability

There is no product-specific mechanism for High Availability (HA) nor Disaster Recovery (DR) of Operations Bridge Analytics components. To implement DR for OBA Application Server and Collector, you must rely on mechanisms available in your underlying IT architecture such as VMware High Availability, server clustering, or other application-agnostic technologies. You should implement these DR methods for both Collector and Application Servers, as a failure of one host can affect the product as a whole. Multiple OBA Application Servers can be load balanced and accessed through virtual IP addresses. For your Database supporting Operations Bridge Analytics, Vertica offers a K-Safety configuration for fault tolerance, and offers recovery and replication options for HA and DR.

See the [Vertica documentation](#) for more information.

Chapter 3: Pre-installation tasks

The following section provides an overview of the OBA installation environment.

- ["Overview of OBA components" below](#)
- ["Pre-installation tasks" above](#)
- ["Pre-installation tasks" above](#)
- ["opsa user" on the next page](#)
- ["Overview of installation workflow" on the next page](#)

Overview of OBA components

The distributed version of OBA discussed in this manual is made up of the following main components:

- **OBA Application Server:**
 - Provides the business logic and presentation capabilities of Operations Bridge Analytics.
 - OBA can have one or more OBA Application Server hosts, depending on your requirements for High Availability. See the section [Add more servers](#) for details.
 - The server is JBoss-based.
- **OBA Collector Host:**
 - Connects to the different data Source Types and aggregates the data collected from them.
 - This data is pushed to the OBA Database.
 - OBA can have one or more OBA Collector hosts, depending on the expected volume of data from the data Source Types to which the system is connected. See the section [Add more servers](#) for details.
 - Your installed collectors form a Kafka cluster for the purposes of log ingestion. If you have more than one OBA collector, then the Kafka replication factor is set to two by default. This means that the cluster can handle the loss of one collector and continue harvesting Logstash or OA log file streams. However, metric collections from such sources as Operations Agents, SiteScope, NPS, BPM, and custom collections are assigned to specific OBA collectors and do not form a cluster to ensure availability, so those collections will not continue if their assigned collector is

down. If an OBA collector goes down that had metric collections assigned to it and it cannot be recovered, you must delete those collections from the server and re-create them on another collector. Likewise, Kafka clustering cannot operate anymore if, for example, more than one of your collectors are down due to maintenance. If, in that case, the collectors cannot be recovered, you must take additional disaster recovery actions specific to Kafka. For more information, see the section [Decommission collectors and perform disaster recovery](#).

- **OBA Database:**

A dedicated Vertica database, `opsadb`, is created and used to support the data analysis requirements of OBA. This database must exist on one or more hosts separate from the OBA application server and collectors.

opsa user

The OBA installation adds an `opsa` user to the operating system environment, which is used by OBA processes. In general, the maximum number of processes and maximum number of open files for the `opsa` userid must be set to high values. During installation, the following settings are added to the `/etc/security/limits.conf` file:

```
opsa soft nproc unlimited
opsa hard nproc unlimited
root soft nproc unlimited
root hard nproc unlimited
* soft nofile 65536
* hard nofile 65536
```

Overview of installation workflow

The information in this section gives you a high level overview of what will be done when setting up an OBA environment.

System setup includes the following steps:

1. **Installation:**

- Install the Vertica Database.
- Install the OBA Application Server host.
- Install the OBA Collector host.

2. Post-Install Configuration

- Connect the OBA Application Server host to the Vertica Database.
- Connect the OBA Collector host to the Vertica Database.
- Register the collector system with the OBA application server host.

3. Configure collections

Configure the connection to several data source types to collect metrics. Note that collection configuration creates a link between the OBA Application Server host and the OBA Collector host.

See [Connect source types](#) for more information.

4. Add more OBA Collector hosts:

You can add additional collector hosts as needed. See the section [Add more servers](#) for details.

Obtain the software

While OBA 3.03 is delivered as a patch, it can be installed on a clean system or on top of an existing OBA 3.02 deployment. To update from OBA version 3.02 to version 3.03, see ["Upgrade from OBA 3.02 to 3.03" on page 31](#).

Note: Upgrade from OBA 3.00 or OBA 3.01 to OBA 3.03 is not supported. You must first upgrade older systems to OBA 3.02 and then upgrade OBA 3.02 to OBA 3.03.

Perform all the installation steps as the root user unless otherwise specified, as for example, in the post installation steps, you will perform tasks as the opsa user. Download the OPSA_00012.zip from [Software Support Online \(SSO\)](#) and extract the archive. The following table shows the content of the archive and the purpose.

Available Downloads for Operations Bridge Analytics 3.03

Download File Name	Purpose
HPE_OpsA_3.03_Analytics_Installation.zip	Operations Bridge Analytics Application Server and Collector software installations
HPE_OpsA_3.03_Vertica_Installation.zip	Operations Bridge Analytics Vertica Installations

Chapter 4: Installation Workflow

This section guides you through the process of installing and configuring Operations Bridge Analytics. Complete the main tasks shown below:

1. ["Obtain Licenses" below](#)
2. ["Install and Configure the Vertica software" below](#)
3. ["Install the OBA Application Server software" on page 24](#)
4. ["Install the OBA collector software" on page 24](#)

If you plan to update from an existing OBA 3.02 version to 3.03, complete the task below:

["Upgrade from OBA 3.02 to 3.03" on page 31](#)

Obtain Licenses

After purchasing Operations Bridge Analytics, you will need to download two licenses, one each for Operations Bridge Analytics and Vertica, and apply these licenses later in the install process below. If you are installing a trial version you do not need to obtain any licenses immediately. To obtain your licenses, do the following:

1. Using your browser, navigate to the licensing link shown in the license email you received. Log on using **HPE Passport** credentials.
2. When prompted, enter your order numbers.
3. Follow the instructions to download and apply your Operations Bridge Analytics and Vertica licenses. You will apply the licenses during installation as described in the following sections.

Install and Configure the Vertica software

OBA is supported only when it is installed along with the specific Vertica database discussed in this document. Using a previous Vertica installation that is shared with databases other than opsadb, or is a different version than the version provided with OBA, is not supported.

Install a New Vertica

To install and set up a new Vertica database for OBA on a single node (for small installations) or on three nodes (for medium or large installations), do the following.

1. Review the [Recommendations for Sizing Vertica Nodes and Clusters](#) and [Supported Operating Systems and File System Requirements for Vertica Server](#). Vertica recommends having at least 8 GB of memory per CPU and at least 40 MB disk throughput per second per CPU on your target nodes. Some sub-versions of RedHat are not supported by Vertica 8.1.1-0, ext4 file systems are recommended, and the file system that you use for the database must not be under LVM drive mapping.

Additionally, if you are considering virtualization for a small environment, see [Vertica in a Virtualized Environment](#). Performance test tools like `vioperf` become available on the system after the `rpm` install.

2. If your target node(s) meet the requirements described above, see the [Vertica Installation Guide](#) and complete all tasks under [Before You Install Vertica](#) to ensure that each node in your intended Vertica cluster meets all the prerequisites. If these prerequisites are not met, the installation is likely to fail. The documentation includes information about the supported operating systems, known issues, the required kernel parameters, the file system type, multi-node clustering, setting and changing the default password, and so on.
3. On one node in the cluster you want to create, log in as root and extract the contents of the `HPE_OpsA_3.03_Vertica_Installation.zip` file to a temporary location. Then use `rpm` to install the Vertica package, as follows:

```
unzip HPE_OpsA_3.03_Vertica_Installation.zip
rpm -Uvh Vertica_Installation/vertica-8.1.1-0.x86_64.RHEL6.rpm
```

The software provided also includes the `vertica-R-lang` package RPM. You should not install `vertica-R-lang` unless you plan on extending specialized AQLs using R-function add-ons; this is not done in typical environments. See [Using R with AQL](#) for more information.

4. Verify that your node meets the performance benchmarks required by Vertica by executing the [Validation Scripts](#), for example:

```
/opt/vertica/bin/vcpuperf
/opt/vertica/bin/vioperf --duration=60s /opt/vertica
```

For multi-node Vertica, test network speeds to the other two intended nodes:

```
/opt/vertica/bin/vnetperf --condense --datarate 1024 \
--hosts <VerticaNode2>,<VerticaNode3>
```

5. If the benchmark results are acceptable, run the Vertica installation script, replacing the host list with your intended cluster node host names. If you are setting up a small environment of only a single node, specify the host you are on as the single `--hosts` parameter. See the [install_vertica Options](#) for information about other parameters you may want to change. It is important to specify the intended data directory where the bulk of the database will be stored, which in this example is directed under `/opt/vertica`:

```
/opt/vertica/sbin/install_vertica \
--hosts <VerticaNode1>,<VerticaNode2>,<VerticaNode3> \
--rpm Vertica_Installation/vertica-8.1.1-0.x86_64.RHEL6.rpm \
--data-dir /opt/vertica
```

As this script runs, you must enter the root passwords for the other nodes and set a password for the `dbadmin` user. The script also checks that you have implemented prerequisites from the Vertica documentation. If the above command fails due to warnings about the environment, despite having implemented all of the prerequisites that you can, then you can override the warnings by adding the `--failure-threshold FAIL` option to the command.

6. After performing the above steps, Vertica should be running on all the nodes in your cluster. On one node, run `su - dbadmin` or log in as the `dbadmin` user. Then execute the `/opt/vertica/bin/admintools` program. The program prompts you to enter a license file. Enter your license key obtained from the fulfillment center. If you have not yet obtained your license, you can click **OK** to enable the community license, and then select **Accept** for the EULA and exit the program. Be sure to obtain your permanent license keys for Vertica from the license center and install them using `admintools` soon after installation.
7. Run the following command as the `dbadmin` user to create and start the `opsadb` database. This example uses `dbadmin` as the password for the `opsadb` database instance. See the Vertica documentation for more information about available options.

```
admintools -t create_db -d opsadb -p dbadmin \
--hosts=<VerticaNode1>,<VerticaNode2>,<VerticaNode3> --policy=always
```

8. To optionally save space, you may configure the internal database logs to be kept for one week by running the following command:

```
adminTools -t logrotate -d opsadb -r daily -k7
```

9. To verify that the Vertica settings are as you expected, run the following commands:

```
vsq1 -U dbadmin -w dbadmin -c 'select display_license();'
vsq1 -U dbadmin -w dbadmin -c 'select get_compliance_status();'
```

```
vsq1 -U dbadmin -w dbadmin -c 'select * from storage_locations;'  
vsq1 -U dbadmin -w dbadmin -c 'select current_fault_tolerance from system;'
```

Install the OBA Application Server software

Install the OBA Application Server software on a supported host. If you plan to update from an existing OBA 3.02 version to 3.03, skip this task and proceed to ["Upgrade from OBA 3.02 to 3.03" on page 31](#). For information on supported servers, see ["System Requirements" on page 6](#).

Note: This process installs the Operations Agent 12.01 on the OBA Application Server host. This Operations Agent installation includes permanent licenses for the Operation Agent, Performance Agent (perfd), and Glance software applications. If you plan to use a latest version of Operations Agent, you can install it before or after installing OBA Application Server.

Complete the following steps to deploy Operations Bridge Analytics on a server (OBA Application Server host).

1. Extract and execute the OBA setup script. As the root user, from the local directory that you placed the `HPE_OpsA_3.03_Analytics_Installation.zip` file. Run the following commands:

```
unzip HPE_OpsA_3.03_Analytics_Installation.zip  
cd Analytics_Installation  
./opsa_03.03_setup.bin
```

2. When prompted, specify that you are installing the Operations Analytics Server.
3. Follow the interactive prompts to complete the installation.

Install the OBA collector software

Install the Operations Bridge Analytics Collector software on a supported server. For information on supported servers, see ["System Requirements" on page 6](#).

Note: This will install the Operations Agent 12.01 on the OBA Collector host. This Operations Agent installation includes permanent licenses for the Operation Agent, Performance Agent (Perfd), and Glance software applications. If you plan to use a latest version of Operations Agent, you can install it before or after installing the OBA Collector.

Complete the following steps to install OBA Collector host.

1. Extract and execute the OBA setup script. As the root user, from the local directory that you placed the `HPE_OpsA_3.03_Analytics_Installation.zip` file. Run the following commands:

```
unzip HPE_OpsA_3.03_Analytics_Installation.zip
```

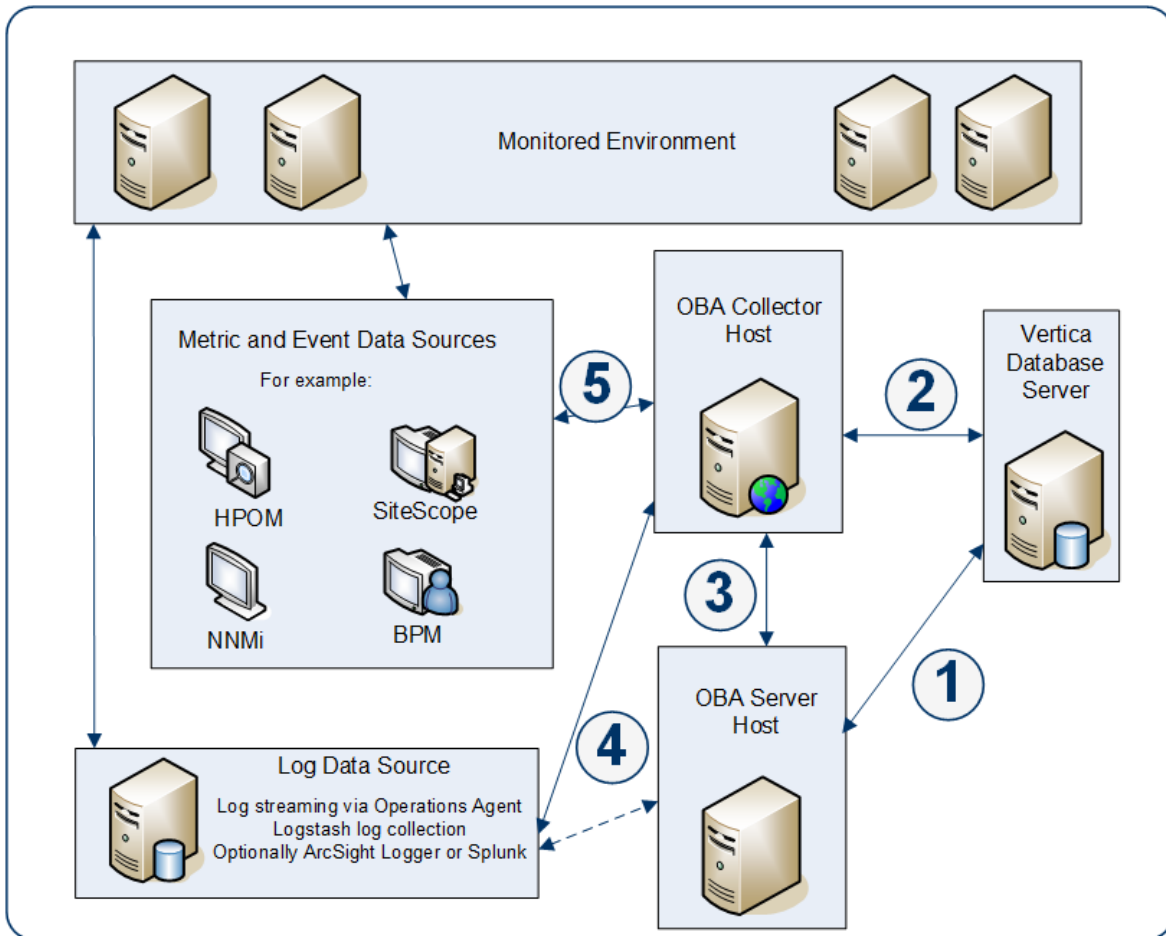
```
cd Analytics_Installation
```

```
./opsa_03.03_setup.bin
```

2. When prompted, specify that you are installing the OBA Collector host.
3. Follow the interactive prompts to complete the installation.

Chapter 5: Post-installation workflow

After you complete the steps in this section, common communication with the distributed components of Operations Bridge Analytics needs to be established. The following diagram shows these connections and the order in which they are implemented.



1. This connection is established when running the `opsa-server-postinstall.sh` script on the OBA Application Server.
2. This connection is established when running the `opsa-collector-postinstall.sh` script on the OBA Collector Host.
3. This connection is established when registering the OBA Collector host using the following command on the OBA Application Server: `opsa-collection-config.sh -register -`

```
collectorhost <collector hostname> -port <port>
```

4. This connection is established after configuring log streaming via the Operations Agent or by following the steps in the [OBA Logstash White Paper](#) to use a data collecting software, like Logstash, to pass log data to the OBA Kafka for processing. To use the agent method, you can configure policies in OMi to collect data and forward it to OBA. This enables central configuration of log collection and normalization of the incoming data. To do so, configure a structured log file policy to collect data and a data forwarding policy to forward the data to OMi.
5. This connection is established after a collection is created using the Source Type Manager in the user interface.

After you install OBA 3.03, perform the following tasks:

- ["Post-Installation tasks for the OBA Application Server" below](#)
- ["Post-installation steps for the OBA Collector host" on the next page](#)
- ["Register the collector host" on page 29](#)
- ["Set up the licenses" on page 29](#)
- ["Access OBA for the first time" on page 30](#)
- [Predefined User Groups](#)

Post-Installation tasks for the OBA Application Server

To finish the post-installation configuration steps and configure the communication connections for Operations Bridge Analytics, complete the following post-installation configuration steps on the OBA Application Server host.

1. On the OBA Application Server host, log on as the `opsa` user and execute the `$OPSA_HOME/bin/opsa-server-postinstall.sh` script (interactive mode). The default password for **opsa** user ID is set as **opsa**. When you log in for the first time, the system prompts you to change the password. The `opsa-server-postinstall.sh` script prompts for the following:
 - Vertica database host name
 - Vertica database port number. The default port number for Vertica is 5433.
 - Vertica database name. The default database name for Vertica is `opsadb`.

- Vertica database user name. The default database user name is dbadmin.
- Vertica database password. The password is set while creating the opsadb database instance.

To accept the default value, press **Enter** for each prompt.

2. The `opsa-server-postinstall.sh` script prompts you with the following message: Is the database created and running on host [yes/no]:

Enter yes; If the database is not created and running, enter no. Entering no would stop the post install configuration script. This script will create the opsadb schemas and tables, and it will not work unless the opsadb is freshly created and empty. If you are running the `opsa-server-postinstall.sh` script more than once, then you must drop the existing opsadb database and recreate it as described in the Running the `opsa-server-postinstall.sh` script section at [Installation Troubleshooting](#).

3. The `opsa-server-postinstall.sh` script will now have you set the OBA user interface passwords for opsadmin, opsatenantadmin, and opsa application users. The passwords you set must contain at least 13 characters, both upper and lowercase characters, and a numerical character.
4. Restart the OBA application server process. Use the following command:

```
opsa-server restart
```

Post-installation steps for the OBA Collector host

Complete the following post-installation steps on the OBA Collector host.

1. On the OBA collector host, log on as the opsa user and execute the `$OPSA_HOME/bin/opsa-collector-postinstall.sh` script (interactive mode). The default password for **opsa** user ID is set as **opsa**. When you log in for the first time, the system prompts you to change the password. The `opsa-collector-postinstall.sh` script prompts for the following:
 - Vertica database host name
 - Vertica database port number. The default port number for Vertica is 5433.
 - Vertica database name. The default database name for Vertica is opsadb.
 - Vertica database user name. The default database user name is dbadmin.
 - Vertica database password. The password is set while creating the opsadb database instance.
2. To accept the default value, press **Enter** for each prompt.

3. Restart the OBA Collector process. Use the following command:

```
opsa-collector restart
```

Register the collector host

To register the OBA collector host, run the following command on the OBA Application Server as the `opsa` user:

```
$OPSA_HOME/bin/opsa-collection-config.sh -register -username opsatenantadmin \  
-password <opsatenantadmin password> -collectorhost <collector FQDN> \  
-port 9443
```

The password for the `opsatenantadmin` user is set in the ["Post-Installation tasks for the OBA Application Server" on page 27](#) `opsa-server-postinstall.sh` step above, and the collector host should be the fully-qualified domain name that the application server will use to communicate with the collector software you just set up.

Set up the licenses

Operations Bridge Analytics licensing is based on the number of Operations Bridge Analytics nodes for which data is collected. An Operations Agent node is a real or virtual computer system, or a device (for example a printer, router, or bridge) within a network.

The following types of licenses can be applied to the OBA Application Server host:

An **Instant On** license gets applied during the OBA Application Server host installation. This *Instant On* license is valid for 60 days and has a capacity for 500 OA nodes.

A **Permanent** license is a license that you apply after your purchase Operations Bridge Analytics, and is based on the quantity of OA nodes.

When installing the Operations Bridge Analytics license, note the following:

- You can install a *Permanent* license even though an *Instant On* license is already installed.
- Installing a *Permanent* licenses disables the *Instant On* license.
- Operations Bridge Analytics license entitlements aggregate if you apply the same kind of license in

addition to the existing licenses.

- There is no license for the OBA Collector host.

To install the Operations Bridge Analytics license, do the following:

1. As an OBA user, run the following command from the OBA Application Server host to install the Operations Bridge Analytics license:

```
$OPSA_HOME/bin/opsa-license-manager.sh -add <path to license file>
```

You should see a message that includes the following:

```
Added license from file /opt/HP/opsa/license/Example_License.txt successfully
```

2. Run the following command to verify that the Operations Bridge Analytics license installed correctly:

```
$OPSA_HOME/bin/opsa-license-manager.sh -list
```

Access OBA for the first time

To log on to Operations Bridge Analytics do the following:

1. Access the following URL:
`http://<IP Address or fully-qualified domain name of the OBA Application Server>:8080/opsa`
2. After the Operations Bridge Analytics log on screen appears, use the below credentials to log on to Operations Bridge Analytics:
User Name: opsatenantadmin
Password: Use the password for this user that you set during installation

Chapter 6: Upgrade from OBA 3.02 to 3.03

Note: Upgrading from OBA 3.00/3.01 to 3.03 is not supported. You must first upgrade older systems to OBA 3.02 as described in the [OBA 3.02 Installation Guide](#), and then upgrade 3.02 to 3.03.

To upgrade from an existing OBA 3.02 installation to OBA 3.03, do the following:

1. Prepare the upgrade.

With the upgrade to OBA 3.03, database changes are required. To minimize the downtime, a temporary table is created and the data is migrated.

- a. Make sure that all OBA processes are running.
- b. Copy the OBA installation files to the OBA application servers and collectors.
- c. Extract the installation file `HPE_OpsA_3.03_Analytics_Installation.zip` to `<tmp>`. `<tmp>` can be any directory you choose.
- d. As the root user, execute the following commands on the OBA application server host:

Note: If you have multiple OBA application servers, choose one for the database preparation. The database preparation must be done only once.

```
cd <tmp>/Analytics_Installation
./upgrade_obas02_to_obas03.sh -h <DATABASE_HOST_NAME> -p 5433 \
    -u dbadmin -w <DATABASE_PASSWORD> -n opsadb prepare
```

Wait until the script execution has finished.

2. Shut down all processes.

Note: With the following steps, the OBA downtime starts.

- a. As the root user, shut down all OBA processes on every OBA application server and collector:

```
/opt/HP/opsa/bin/opsa stop
```

- b. Verify that the processes were successfully stopped by running the following command:

```
/opt/HP/opsa/bin/opsa status
```

Continue when all processes are shown as stopped. You may need to use the `kill` command, or even `kill -9`, to ensure all `opsa` processes have fully exited.

Note: Vertica must be up and running for the next upgrade steps.

3. Upgrade to OBA 3.03.

- a. As the root user, execute the following commands on all OBA application servers:

```
cd <tmp>/Analytics_Installation

./upgrade_oba302_to_oba303.sh -h <DATABASE_HOST_NAME> -p 5433 \
    -u dbadmin -w <DATABASE_PASSWORD> -n opsadb upgrade
```

- b. As the root user, execute the following commands on all OBA collectors:

```
cd <tmp>/Analytics_Installation

./upgrade_oba302_to_oba303.sh -h <DATABASE_HOST_NAME> -p 5433 \
    -u dbadmin -w <DATABASE_PASSWORD> -n opsadb upgrade
```

4. Complete the upgrade.

Note: With the following steps, the OBA downtime ends.

- a. As the root user, restart all OBA processes on every OBA application server and collector:

```
/opt/HP/opsa/bin/opsa start
```

- b. Verify that the processes were successfully started by running the following command:

```
/opt/HP/opsa/bin/opsa status
```

Continue when all processes are shown as running.

5. Resubmit the Storm Topology.

Due to improvements in OBA 3.03 and to ensure product reliability, you have to resubmit the Storm Topology.

As the `opsa` user, execute the following command on the OBA application server. If you have multiple OBA application servers, resubmit the topology on only one of the servers:

```
cd /opt/HP/opsa

scripts/opsa-log-analytics-kill-topology.sh
scripts/opsa-log-analytics-submit-topology.sh
scripts/opsa-post-persist-processing-kill-topology.sh
scripts/opsa-post-persist-processing-submit-topology.sh
```



```
scripts/opsa-data-ingestion-lane-kill-topology.sh  
scripts/opsa-data-ingestion-lane-submit-topology.sh
```

6. Validate the upgrade.

Ensure that the OBA collections are all working and that the functionality inside the OBA UI works as expected. If you experience any issues with OBA 3.03, contact Micro Focus support.

7. Perform the upgrade clean-up.

Important: Once you execute the clean-up, you can no longer roll back to 3.02.

After you validated everything and the system is running fine, clean up the temporary database tables which were created as part of the preparation. As the root user, execute the following commands on an OBA application server:

```
cd <tmp>/Analytics_Installation  
./upgrade_obas02_to_obas03.sh -h <DATABASE_HOST_NAME> -p 5433 \  
-u dbadmin -w <DATABASE_PASSWORD> -n opsadb cleanup
```

Chapter 7: Uninstall OBA

This section guides you through a high level list of things to do when you decide to uninstall Operations Bridge Analytics.

1. Remove all of the collections and logging integrations you configured.
2. On each of the OBA Application Server and Collector host, do the following:
 - a. Navigate to `/opt/HP/opsa/Uninstall/opsa`
 - b. Run `setup.bin`

Note: The Operations Agent is uninstalled by default during the OBA uninstallation.

- c. Follow the interactive prompts to complete uninstalling OBA.
3. *Optional.* Remove all Operations Bridge Analytics data from the Vertica database.
4. To verify uninstall, check if the `/opt/HP/opsa` folder is removed. If the folder is removed, uninstalling OBA is complete.

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 Installation Guide (Operations Bridge Analytics 3.03)

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 ovdoc-asm@hpe.com.

We appreciate your feedback!