

Installation and Configuration Guide for Windows and Linux

vCenter Operations Manager 5.8.2

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vCenter Operations Manager Installation Guide

The *vCenter Operations Manager Installation and Configuration Guide* provides information about installing and upgrading VMware® vCenter Operations Manager on Windows or Linux operation systems.

Intended Audience

This guide is intended for anyone who wants to install vCenter Operations Manager.

Before Installing vCenter Operations Manager

1

This section introduces the vCenter Operations Manager server installation.

This chapter includes the following topics:

- [“Overview,”](#) on page 7
- [“Architecture,”](#) on page 7

Overview

Installing vCenter Operations Manager consists of two procedures:

- 1 Preparing a database in either SQL Server or Oracle to hold the vCenter Operations Manager data.
- 2 Installing the vCenter Operations Manager software.

vCenter Operations Manager is designed as an enterprise solution, so planning and preparing your environment is critical to successful deployment. You should consider several factors when planning your vCenter Operations Manager environment:

- Environment size and landscape—the vCenter Operations Manager architecture needs to take into account how large the environment is, including the number of applications, data sources, resources and metrics, the physical environment distribution (the number of data centers), and the number of users.
- Environment complexity—what specific architectural and service level requirements must be met, including security, availability, and accessibility.

Architecture

vCenter Operations Manager architecture allows for deployment flexibility.

vCenter Operations Manager is a Java-based application with four interdependent components:

- vCenter Operations Manager server—Hosts the user interface and coordinates the functions of the software, including controlling communications between the other components.
- vCenter Operations Manager analytics—Receives metrics gathered from monitored resources, analyzes the data, and creates statistical models to detect abnormal behavior. This includes the dynamic thresholds processor, which can be installed separately to distribute the processing load, as described in [Chapter 10, “Installing the Analytics Processor,”](#) on page 37.
- vCenter Operations Manager collector—Acts as the gateway between vCenter Operations Manager and the adapters used to collect data from the collection landscape. It is installed by default as part of the primary server but can also be distributed as a stand-alone component. You can install one or more remote collectors to navigate firewalls, share bandwidth across data centers, and reduce the load on the vCenter Operations Manager server. You can install the collector on a shared server.

- vCenter Operations Manager messaging—The message bus (ActiveMQ) passes metric information between vCenter Operations Manager components.

vCenter Operations Manager uses two data storage solutions. A relational database (Oracle or Microsoft SQL Server) stores configuration and state data. A proprietary high-performance file system-based repository (FSDB) stores the collected raw metrics.

The installation script installs all vCenter Operations Manager components—server (including messaging), collector, and analytics—in the same folder structure. It also installs several vCenter Operations Manager system tools.

System Requirements

vCenter Operations Manager has specific hardware and software requirements.

Before you Begin

Verify that you have read the system requirements for vCenter Operations Manager. For the most current information about system requirements, see the vCenter Operations Manager release notes at <https://www.vmware.com/support/pubs/vcops-pubs.html>.

Refer to the VMware Compatibility Guide for more information about VMware certified compatibility for vCenter Operations Manager at <http://www.vmware.com/resources/guides.html>.

This chapter includes the following topics:

- [“Operating System Requirements,”](#) on page 9
- [“vCenter Operations Server Hardware Requirements,”](#) on page 10
- [“Database Server Requirements for vCenter Operations Manager,”](#) on page 10
- [“Hardware and Software Requirements for Client Systems,”](#) on page 11

Operating System Requirements

You must install vCenter Operations Manager on a supported operating system.

Table 2-1. Operating Systems That vCenter Operations Manager Supports

Operating System and Version	Service Pack
Windows Server 2003 64-bit	SP2 or later
Windows Server 2003	R2
Windows Server 2008 64-bit	N/A
Windows Server 2008	R2
Red Hat Enterprise Linux 5 64-bit or later	N/A

vCenter Operations Server Hardware Requirements

You must install vCenter Operations Manager Server on a 64-bit machine that meets specific hardware requirements.

Table 2-2. Hardware Requirements

Hardware Component	One Million Metrics	Two Million Metrics	Six Million Metrics
CPU	4CPU	8CPU	32CPU
Memory	14GB	28GB	72GB
Disk Storage	1.5TB FSDB: 1.5TB Database: 100GB	3TB FSDB: 2.8TB Database: 200GB	8.8TB FSDB: 8.4TB Database: 400GB
Disk I/O for Analytics VM	2,000 IOPS	4,000 IOPS	12,000 IOPS

Database Server Requirements for vCenter Operations Manager

vCenter Operations Manager requires an SQL or Oracle database to store data. The database server should be dedicated to the vCenter Operations Manager database. The database must be configured and available to the vCenter Operations Manager server host.

vCenter Operations Manager supports the following database servers and versions.

- Oracle 10g Release 2
- Oracle 11g Release 2
- Microsoft SQL Server 2005 SP2 or later
- Microsoft SQL Server 2008
- Microsoft SQL Server 2008 R2

Microsoft SQL Server is supported only on Windows hosts. Microsoft SQL Server database is supported only on vCenter Operations Manager installations on Windows hosts.

You cannot use Integrated Windows Authentication while using Microsoft SQL server. The JDBC driver supports the use of Type 2 integrated authentication on Windows operating systems through the `integratedSecurity` connection string property. To use integrated authentication, copy the `sqljdbc_auth.dll` file to the `%ALIVE_BASE%/common/bin` folder.

The computer that hosts the database server must meet minimum hardware requirements.

- 2GB RAM
- Two 32-bit CPUs, P4 2GHz or faster

For systems that collect more than one million metrics, the database server host should have 8GB RAM and two 64-bit CPUs.

The ping time between the database server host and the vCenter Operations Manager Server host should be less than one millisecond.

Hardware and Software Requirements for Client Systems

Make sure that your system supports the vCenter Operations Manager client.

Table 2-3. Client System Hardware and Software Requirements

Component	Requirement
RAM	At least 2GB
Browser	<ul style="list-style-type: none"> ■ Apple Safari 6 ■ Google Chrome 24 and 25 ■ Internet Explorer for Windows 8.0 and 9.0 with Compatibility View mode disabled ■ Mozilla Firefox 18 and higher JavaScript must be enabled. Popup blockers must be removed or disabled. The minimum supported browser resolution is 1024 by 768 pixels.
PDF viewer	Adobe Reader or a similar PDF viewer for viewing reports.

Installation and Configuration Checklist

3

Use this checklist to track the progress of vCenter Operations Manager standalone installation and configuration, including any changes you make from the default configuration settings.

NOTE Changing the configuration settings is not covered in this guide. Consult your VMware representative to determine the proper settings for your installation.

Table 3-1. Installation Checklist

Action Item	Notes
Pre-Installation	
Acquire hardware based on sizing projection.	
Download the software.	
Prepare the Database	
For SQL Server:	
<ul style="list-style-type: none">■ Install SQL Server.■ Create a Windows or SQL authentication account with sufficient privileges to create a new database.	
For Oracle:	
<ul style="list-style-type: none">■ Install Oracle.■ Install and configure the SQLPlus tool.■ Create a user with sufficient Oracle privileges to create a tablespace and user schemas.	
Prepare Hardware	
Confirm external port access to vCenter Operations Manager server and the database server. The default server ports include:	
<ul style="list-style-type: none">■ Remote Collectors: 80, 1100, 61616■ External: 1433, 1521	
Confirm the following ports are reserved on the vCenter Operations Manager server: 1099, 1100, 1199, 1201, 1202, 1203, 61616	
Confirm that the response time between vCenter Operations Manager server and database server is: greater than 1 millisecond	
Installation	

Table 3-1. Installation Checklist (Continued)

Action Item	Notes
Install and configure the primary vCenter Operations Manager server. <ul style="list-style-type: none"> ■ Test vCenter Operations Manager database configuration ■ Validate FSDB Home path ■ Before completing configuration wizard, move all unused adapters (For example, Hyperic, ITM, SCOM) to the plugins directory. 	
(Optional) Install and configure a secondary server using the backup option.	
(Optional) Install and configure any remote collectors.	

Preparing the vCenter Operations Manager Database

4

Before you can install vCenter Operations Manager, you must create a database in either Microsoft SQL Server or Oracle to store the vCenter Operations Manager data.

This chapter includes the following topics:

- [“Prepare a SQL Database on a Windows Host,”](#) on page 15
- [“Prepare an Oracle Database on a Windows Host,”](#) on page 16
- [“Prepare an Oracle Database on a Linux Host,”](#) on page 16

Prepare a SQL Database on a Windows Host

You prepare a SQL database for vCenter Operations Manager by running SQL scripts. The vCenter Operations Manager installation package includes the SQL scripts.

Prerequisites

- Familiarize yourself with the database server requirements for vCenter Operations Manager. See [“Database Server Requirements for vCenter Operations Manager,”](#) on page 10.
- Install SQL Server.
- Create a Windows authentication account and an SQL authentication account that has sufficient privileges to create a new database and a new SQL user.
- Obtain the vCenter Operations Manager installation package.
- Extract the ZIP file that contains the SQL scripts, `vcops-db-scripts-sqlserver-<build number>.zip`.

Procedure

- 1 If you are using Windows authentication for SQL Server, log in as a user who has sufficient privileges to create a database.
- 2 Create a database in the Microsoft SQL Server instance.
- 3 In SQL Server Management Studio, connect to the new database and run the `vcops_sqlserver_10.sql` script from the extracted ZIP file.

What to do next

Install vCenter Operations Manager server. See [“Install vCenter Operations Manager on Windows,”](#) on page 19.

Prepare an Oracle Database on a Windows Host

If the Oracle database is on a Windows host, you can run a batch file to prepare the database to store vCenter Operations Manager data. The batch file is included in the vCenter Operations Manager installation package.

The batch file creates a 500MB Oracle table space named `vcops10_TS`, an Oracle schema named `vcops`, database objects for vCenter Operations Manager, including tables, indexes, and sequences, and a trigger that makes the database case insensitive. For more control over the configuration, you can perform these operations manually. For more information about the manual configuration process, see the `Readme.txt` file in the vCenter Operations Manager installation directory.

Prerequisites

- Familiarize yourself with the database server requirements. See [“Database Server Requirements for vCenter Operations Manager,”](#) on page 10.
- Install Oracle.
- Install and configure the `sqlplus` tool.
- Create a user that has sufficient Oracle privileges to create a tablespace and user schemas.
- Decide where on the disk to create the tablespace.
- Obtain the vCenter Operations Manager installation package.

Procedure

- 1 In the `tnsnames.ora` file, add a connection name that the vCenter Operations Manager server can use to connect to the Oracle server.
- 2 Extract the files from the `vcops-db-scripts-oracle-<buildnumber>.zip` file to an available directory.
The `vcops-db-scripts-oracle-<buildnumber>.zip` file is located in the same folder as the vCenter Operations Manager executable files.
- 3 Run the `setup.bat` utility.
For example: `setup.bat connection user password`
connection is the connection name defined in `tnsnames.ora`. The user that you specify with *user* and *password* must have permission to log in to the Oracle database as SYSDBA.
- 4 Verify that the tablespace and user schema were created properly.

What to do next

Install vCenter Operations Manager server. See [“Install vCenter Operations Manager on Windows,”](#) on page 19.

Prepare an Oracle Database on a Linux Host

If the Oracle database is on a Linux host and you cannot connect to the host from a Windows computer, you can run a shell script on the Linux host to prepare the Oracle database to store vCenter Operations Manager data.

Prerequisites

- Familiarize yourself with the database server requirements. See [“Database Server Requirements for vCenter Operations Manager,”](#) on page 10.
- Install Oracle.

- Install and configure the sqlplus tool.
- Create a user that has sufficient Oracle privileges to create a tablespace and user schemas.
- Decide where on the disk to create the tablespace.
- Obtain the vCenter Operations Manager installation package.

Procedure

- 1 Upload the vCenter Operations Manager installation files in binary mode to the Linux host.
- 2 Change the permission on the `setupOracle.sh` file to make it executable.

For example: `chmod +x setupOracle.sh`

- 3 In the `vcopsTableSpace.sql` file, verify that the value for the OS file name is appropriate for your Oracle instance and adjust the size of the vCenter Operations Manager OS file, if necessary.

The default size is 500MB.

- 4 If you changed the tablespace name, replace `vcops10_TS` with the correct tablespace name in the `vcopsUser.sql` file.

For example: `DEFINE vcops_tablespace = "tablespacename"`

- 5 Run `setupOracle.sh`.

For example: `setupOracle.sh -s SID -u user -p pwd -t -r`

SID is the Oracle System Identifier, *user* is the name of an Oracle user who can log in as SYSDBA, and *pwd* is the password for the user.

What to do next

Install vCenter Operations Manager server. See [Chapter 5, "Installing vCenter Operations Manager,"](#) on page 19

Installing vCenter Operations Manager

5

You can install the vCenter Operations Manager software on a supported version of either Windows or Linux. There are separate procedures for Windows, Linux using GUI mode, and Linux using console mode.

This chapter includes the following topics:

- [“Install vCenter Operations Manager on Windows,”](#) on page 19
- [“Install vCenter Operations Manager on Linux - GUI Mode,”](#) on page 21
- [“Install vCenter Operations Manager on Linux - Console Mode,”](#) on page 24
- [“Advanced vCenter Operations Manager Configuration,”](#) on page 25

Install vCenter Operations Manager on Windows

Install the vCenter Operations Manager on a supported version of Windows.

Prerequisites

- VMware recommends using an administrator user name.
- You must log on as user with enough privileges to create services.
- If you are using SQL Server with Windows authentication, you must also be able to create and modify databases.

Procedure

- 1 Log on to the host machine and navigate to the folder containing the vCenter Operations Manager executable files.
- 2 Run the `vcops-win64<version_and_build_number>.exe` file. The first page of the vCenter Operations Manager installation wizard appears.
- 3 Click **Next**.
- 4 Read the Patent Agreement in its entirety. Click **Next**.
- 5 Read the License Agreement in its entirety. Select I Accept the Terms of the License Agreement and click **Next**.

- 6 On the Choose Install Set page, click the icon beside Full Installation and click **Next**.

This installs all vCenter Operations Manager components. If you attempt to install vCenter Operations Manager on a 32-bit system, Full Installation is not an option. You can install only a vCenter Operations Manager remote collector or the separate analytics processor on a 32-bit system.

NOTE The Collector option installs just the vCenter Operations Manager collector on a remote server to improve performance and accessibility, see [Chapter 8, “Install a vCenter Operations Manager Collector,”](#) on page 33.

- 7 On the Choose Install Folder page, click **OK** to accept the default installation folder, or click Browse and select the installation folder you want. The default installation folder is `\vmware\vmcenter-operations` beneath the default program installation folder for your system. We recommend you accept the default. Click **Next**.
- 8 The Pre-installation Summary page lists the components that will be installed. Click **Install** to begin the installation. When this part of the process is finished (it may take several minutes), the Configuration Mode page appears.
- 9 On the Configuration Mode page, select **Basic** or **Advanced**. Use advanced configuration only if one or more of the following is true:
 - Communication between a remote vCenter Operations Manager Collector and the vCenter Operations Manager Server will be via firewall or HTTP proxy.
 - vCenter Operations Manager will be monitoring more than 100,000 resources.
 - Replication is enabled between the primary vCenter Operations Manager server and a backup server.
 - For security reasons, you do not want the vCenter Operations Manager components to use default passwords and ports.
- 10 On the Full Configuration page, select **Primary** or **Backup** under Server Configuration.
- 11 In the Database Type field select **SQL** or **Oracle**. Fields appropriate for the selected database appear on the page.

For an Oracle database, the Database Name and Instance Name fields do not appear and an SID field is added.
- 12 If you are using an Oracle database, type its System Identifier in the SID field.
- 13 In the Database Host field, enter the IP address of the database server.
- 14 In the Database Port field, leave the default entry (1433 for SQL Server or 1521 for Oracle) unless you installed the database using a different port number.
- 15 If you are using a SQL Server database, enter the name of the vCenter Operations Manager database in the Database Name field.
- 16 In the Authentication, User Name, and Password fields, select the type of authentication to use (for SQL Server databases only) and enter the user name and password for a user with permission to read and write to the SQL Server database or Oracle schema.

vCenter Operations Manager requires a user account with SQL authentication credentials to establish a connection with the database. If you want to use Windows authentication with SQL Server, there are additional steps to perform after completing the installation.
- 17 Click the **Test** button to test the connection to the database. If the test fails, check your entries, make any needed corrections, and try again.

- 18 In vCenter Operations Manager Server Configuration, choose **HTTP** or **HTTPS**. This sets the protocol to use for client connections to the vCenter Operations Manager server.

vCenter Operations Manager sends alert email messages containing hyperlinks to the vCenter Operations Manager server so administrators can find more information about the alert. If you want offsite administrators to be able to use these links, be sure to enter a public IP address for the vCenter Operations Manager server. You should not set the host name to localhost.
- 19 If you want adapters which use the HTTP post method to use Web authentication, check the HTTP Post adapter web authentication enabled box. If you check this box, only a vCenter Operations Manager user with the Administrative Access right will be able to post data to vCenter Operations Manager.
- 20 The vCenter Operations Manager Server Port field displays the default port number for the protocol you chose. If you need to change this, port, type the correct number.
- 21 To enable Internet connections to the vCenter Operations Manager server, type the server name or public IP address for the server in the vCenter Operations Manager Host field. (The installer tries to detect the host name or IP address of the server and fill it in as the default.) If you leave this field blank, users will not be able to connect from outside the local network.
- 22 In the FSDB Home (File System Database) field, type the path to the directory where vCenter Operations Manager should save the metrics it collects. You can enter up to eight locations to distribute drive I/O use. If you enter more than one, separate them with semi-colons. For best performance, this should not be on the same drive where the vCenter Operations Manager software is installed.
- 23 In SMTP Host and SMTP Port, enter the host name or IP address and port number for the SMTP server for vCenter Operations Manager to use to send email messages.
- 24 In Recipient, enter one or more email addresses; if you enter more than one, separate them with commas. If a vCenter Operations Manager service fails or experiences problems, an email will be sent to each recipient.
- 25 If desired, click the **Test** button to test the email configuration. This checks the SMTP host and port settings and attempts to send an email message to the entered recipients. It displays an appropriate message if any of its tests fail. However, it cannot ensure that the email addresses entered as recipients actually exist, as sending a message to a non-existent address does not fail immediately.
- 26 Click **Finish** to complete the installation. The Install Complete page appears.
- 27 On the Install Complete page, click **Done**.
- 28 If the server host has two IP addresses:
 - Choose **No** and click **Done**.
 - Open the file `vcenter-ops\user\conf\collector\wrapper.conf`.
 - Add this line to the file:

`wrapper.java.additional.9=-Djava.rmi.server.hostname=IP Address/Name where IP address/Name is the IP address or host name to use for the collector.`
 - Save your change and close the file.
 - Reboot the system.

The vCenter Operations Manager installation is complete.

Install vCenter Operations Manager on Linux - GUI Mode

Install vCenter Operations Manager on a supported version of Linux.

If a previous version of vCenter Operations Manager is already installed on the Linux host, you must stop its processes before you install vCenter Operations Manager. You can do this using the `vcops.sh` script with the `stop` parameter:

```
vcops.sh stop
```

To make sure the services have all stopped, use the `status` parameter:

```
vcops.sh status
```

Prerequisites

- The Linux user account for installing vCenter Operations Manager must have root-level privileges. If you need to be able to install under a non-root account, please contact VMware Professional Services.
- X Windows System release 11 (X11) needs to be running on the Linux server.
- You must have a standard terminal emulator for X Windows System.

Procedure

- 1 Using binary mode, upload `vcops.bin` to the target Linux host.
- 2 Navigate to the folder containing `vcops.bin`.
- 3 Change the permission on this file to make it executable:

```
chmod +x vcops.bin
```

- 4 From within any standard terminal emulator for X Windows, execute the program `vcops.bin`.

The first page of the vCenter Operations Manager installation wizard appears.

- 5 Click **Next**.
- 6 Read the Patent Agreement in its entirety. Click **Next**.
- 7 Read the License Agreement in its entirety. Select **I Accept the Terms of the License Agreement** and click **Next**.
- 8 On the Choose Install Set page, click the icon beside Full Installation and click **Next**.

This installs all vCenter Operations Manager components. If you attempt to install vCenter Operations Manager on a 32-bit system, Full Installation is not an option. You can install only a vCenter Operations Manager remote collector or the separate analytics processor on a 32-bit system.

NOTE The Collector option installs just the vCenter Operations Manager collector on a remote server to improve performance and accessibility, see [Chapter 8, “Install a vCenter Operations Manager Collector,”](#) on page 33.

- 9 On the Choose Install Folder page, click **OK** to accept the default installation folder, or click **Browse** and select the installation folder you want. The default installation folder is `/root/vmware/vcenter-operations`. We recommend you accept the default. Click **Next**.
- 10 The Pre-installation Summary page lists the components that will be installed. Click **Install** to begin the installation. When this part of the process is finished (it may take several minutes), the Configuration Mode page appears.
- 11 On the Configuration Mode page, select **Basic** or **Advanced**. Use advanced configuration only if one or more of the following is true:
 - Communication between a remote vCenter Operations Manager Collector and the vCenter Operations Manager Server will be via firewall or HTTP proxy.
 - vCenter Operations Manager will be monitoring more than 100,000 resources.

- Replication is enabled between the primary vCenter Operations Manager server and a backup server.
 - For security reasons, you do not want the vCenter Operations Manager components to use default passwords and ports.
- 12 On the Full Configuration page, select **Primary** or **Backup** under Server Configuration.
 - 13 In the Database Type field select **SQL** or **Oracle**. Fields appropriate for the selected database appear on the page.
For an Oracle database, the Database Name and Instance Name fields do not appear and an SID field is added.
 - 14 If you are using an Oracle database, type its System Identifier in the SID field.
 - 15 In the Database Host field, enter the IP address of the database server.
 - 16 In the Database Port field, leave the default entry (1433 for SQL Server or 1521 for Oracle) unless you installed the database using a different port number.
 - 17 If you are using a SQL Server database, enter the name of the vCenter Operations Manager database in the Database Name field.
 - 18 In the Authentication, User Name, and Password fields, select the type of authentication to use (for SQL Server databases only) and enter the user name and password for a user with permission to read and write to the SQL Server database or Oracle schema.
vCenter Operations Manager requires a user account with SQL authentication credentials to establish a connection with the database. If you want to use Windows authentication with SQL Server, there are additional steps to perform after completing the installation.
 - 19 Click the **Test** button to test the connection to the database. If the test fails, check your entries, make any needed corrections, and try again.
 - 20 In vCenter Operations Server Configuration, choose **HTTP** or **HTTPS**. This sets the protocol to use for client connections to the vCenter Operations Manager server.
vCenter Operations Manager sends alert email messages containing hyperlinks to the vCenter Operations Manager server so administrators can find more information about the alert. If you want offsite administrators to be able to use these links, be sure to enter a public IP address for the vCenter Operations Manager server. You should not set the host name to localhost.
 - 21 If you want adapters which use the HTTP post method to use Web authentication, check the HTTP Post adapter web authentication enabled box. If you check this box, only a vCenter Operations Manager user with the Administrative Access right will be able to post data to vCenter Operations Manager.
 - 22 The vCenter Operations Server Port field displays the default port number for the protocol you chose. If you need to change this, port, type the correct number.
 - 23 To enable Internet connections to the vCenter Operations Manager server, type the server name or public IP address for the server in the vCenter Operations Server Host field. (The installer tries to detect the host name or IP address of the server and fill it in as the default.) If you leave this field blank, users will not be able to connect from outside the local network.
 - 24 In the FSDB Home (File System Database) field, type the path to the directory where vCenter Operations Manager should save the metrics it collects. You can enter up to eight locations to distribute drive I/O use. If you enter more than one, separate them with semi-colons. For best performance, this should not be on the same drive where the vCenter Operations Manager software is installed.
 - 25 In SMTP Host and SMTP Port, enter the host name or IP address and port number for the SMTP server for vCenter Operations Manager to use to send email messages.

- 26 In **Recipient**, enter one or more email addresses; if you enter more than one, separate them with commas. If a vCenter Operations Manager service fails or experiences problems, an email will be sent to each recipient.
- 27 If desired, click the **Test** button to test the email configuration. This checks the SMTP host and port settings and attempts to send an email message to the entered recipients. It displays an appropriate message if any of its tests fail. However, it cannot ensure that the email addresses entered as recipients actually exist, as sending a message to a non-existent address does not fail immediately.
- 28 Click **Finish** to complete the installation. The **Install Complete** page appears.
- 29 On the **Install Complete** page, click **Done**.
- 30 If the server host has two IP addresses:
 - Choose **No** and click **Done**.
 - Open the file `vcenter-ops\user\conf\collector\wrapper.conf`.
 - Add this line to the file:


```
wrapper.java.additional.9=-Djava.rmi.server.hostname=IP Address/Name where IP address/Name is the IP address or host name to use for the collector.
```
 - Save your change and close the file.
 - Reboot the system.

The vCenter Operations Manager installation is complete.

Install vCenter Operations Manager on Linux - Console Mode

Install vCenter Operations Manager on a supported version of Linux.

Prerequisites

If a previous version of vCenter Operations Manager is already installed on the Linux host, you must stop its processes before you install vCenter Operations Manager. You can do this using the script file `vcops.sh`. Run the script with the `stop` parameter:

```
vcops.sh stop
```

To make sure the services have all stopped, use the `status` parameter:

```
vcops.sh status
```

Procedure

- 1 Using binary mode, upload `vcops.bin` to the target Linux host.
- 2 Navigate to the folder containing `vcops.bin`. Change the permission on this file to make it executable:


```
chmod +x vcops.bin
```
- 3 Enter this command to start the console mode installation:


```
./vcops.bin -i console
```
- 4 All of the information entered in the GUI - mode installation will be prompted for in console mode.

After you finish the installation, see [“Advanced vCenter Operations Manager Configuration,”](#) on page 25.

Advanced vCenter Operations Manager Configuration

To perform advanced configuration, access Configuration Mode and follow the procedure below to complete the installation.

Prerequisites

Install vCenter Operations Manager.

Procedure

- 1 From Advanced Configuration, select **Primary** or **Backup** under Server Configuration.
- 2 In vCenter Operations Server Configuration, choose **HTTP** or **HTTPS**.
This sets the protocol to use for client connections to the vCenter Operations Manager server.
- 3 To enable Internet connections to the vCenter Operations Manager server, type the server name or public IP address for the server in the vCenter Operations Server Host field.
The installer attempts to detect the host name or IP address of the server and fill it in as the default. If you leave this field blank, users will not be able to connect from outside the local network.

NOTE vCenter Operations Manager sends alert email messages containing hyperlinks to the vCenter Operations Manager server so administrators can find more information about the alert. If you want offsite administrators to be able to use these links, be sure to enter a public IP address for the vCenter Operations Manager server. You should not set the host name to localhost.

- 4 The vCenter Operations Server Port field displays the default port number for the protocol you chose. If you need to change this, port, type the correct number.
- 5 If you want adapters which use the HTTP post method to use Web authentication, check the HTTP Post adapter web authentication enabled box.
- 6 Under Memory Configuration, set the following for the vCenter Operations Manager Web JVM process:
 - **Maximum Memory** – maximum heap size allocated to the vCenter Operations Manager user.
 - **Maximum Permanent Memory** – maximum heap size allocated to compile and run JVM classes.
- 7 Click **Next**.
- 8 Under Memory Configuration, set the following for the vCenter Operations Manager Analytics JVM process:
 - **Maximum Memory** – maximum heap size allocated to metric calculations.
 - **Maximum Permanent Memory** – maximum heap size allocated to compile and run JVM classes.
- 9 Under RMI Configuration, set the host and port for RMI access to the analytics service.
- 10 Under Data Storage Location, set the location of the FSDB Home.
You can enter up to eight locations to distribute drive I/O use. If you enter more than one, separate them with semi-colons. For best performance, the FSDB should not be on the same drive where the vCenter Operations Manager software is installed.
- 11 Under Replication Server, check the **Enable Replication** box if you want to enable FSDB replication.
When enabled, vCenter Operations Manager will push FSDB data to a remote server. Enter the following parameters for the remote MQ server: Host, Port, Protocol, Control Queue Response Queue, Data Queue, User Name, and Password.

- 12 Check **Enable Synchronization** if you want to synchronize existing data between this server and the replication server.

If you do not check this box, only data gathered from this point forward will be copied to the replication server. This option is most often used when setting up a replication server after initial vCenter Operations Manager installation.

- 13 Click **Next**.

- 14 Under Memory Configuration, set the following for the vCenter Operations Manager Message Queue JVM process:

- **Maximum Memory** – maximum heap size allocated to the vCenter Operations Manager user.
- **Maximum Permanent Memory** – maximum heap size allocated to compile and run JVM classes.

- 15 Under Message Queue Configuration, check the Enable JMX box if you want to enable JMX monitoring on vCenter Operations Manager. If you enable JMX monitoring, set the following MQ parameters: Host, Port, Protocol, Collector Queue, Controller Queue, Data Queue, User Name, and Password.

- 16 Click **Next**.

- 17 Configure collection settings.

- 18 Under Memory Configuration, set the following for the vCenter Operations Manager Collector JVM process:

- **Maximum Memory** – maximum heap size allocated to the vCenter Operations Manager resources.
- **Maximum Permanent Memory** – maximum heap size allocated to compile and run JVM classes.

- 19 Under Collector Configuration, set the following connection parameters for the collector:

- **Collector Name**
- **RMI Port**
- **Max Threads**
- **Min Data Send Size:** Measured by the number of vCenter Operations Manager resources.
- **Heart Beat Sleep Time:** Checks the health of the collector. Measured in milliseconds.

- 20 Check the **Enable Http Proxy** box to enable HTTP Proxy from the collector to vCenter Operations Manager. If you enable it, set the Host and Port.

- 21 In SMTP Host and SMTP Port, enter the host name or IP address and port number for the SMTP server for vCenter Operations Manager to use to send email messages.

- 22 In Recipient, enter one or more email addresses. If you enter more than one, separate them with commas. If a vCenter Operations Manager service fails or experiences problems, an email will be sent to each recipient.

- 23 Click **Next**.

The settings on this page are only used if the vCenter Operations Manager server is running in Backup mode.

- Under Message Queue Configuration, set the parameters for the replication server: Host, Port, Protocol, Collector Queue, Controller Queue, Data Queue, User Name, and Password.
- Under Data Storage Location, set the location of the local FSDB Home. You can enter up to eight locations to distribute drive I/O use. If you enter more than one, separate them with semi-colons.

- 24 Click **Next**.

- In the Database Type field select **SQL** or **Oracle**. Fields appropriate for the selected database appear on the page.

For an Oracle database, the Database Name and Instance Name fields do not appear and an SID field is added.

- If you are using an Oracle database, type its System Identifier in the SID field.
- In the Database Host field, enter the IP address of the database server.
- In the Database Port field, leave the default entry (1433 for SQL Server or 1521 for Oracle) unless you installed the database using a different port number.
- If you are using a SQL Server database, enter the name of the vCenter Operations Manager database in the Database Name field.
- If you are using a SQL Server database and need to specify an Instance Name for the database, type it in that field.
- In the Authentication, User Name, and Password fields, select the type of authentication to use (for SQL Server databases only) and enter the user name and password for a user with permission to read and write to the SQL Server database or Oracle schema.

NOTE vCenter Operations Manager requires a user account with SQL authentication credentials to establish a connection with the database. If you want to use Windows authentication with SQL Server, there are additional steps to perform after completing the installation.

- Click the **Test** button to test the connection to the database. If the test fails, check your entries, make any needed corrections, and try again.
- 25 Click **Finish** to complete the installation. The Install Complete page appears.
- 26 On the Install Complete page, choose whether to restart the computer automatically or manually. If the server host has only one IP address, choose Yes, restart the system and click Done. The system reboots.

If the server host has two IP address:

- a Choose **No** and click **Done**.
- b Using Notepad or another editor, open the file `vcenter-ops\user\conf\collector\wrapper.conf`.
- c Add this line to the file: `wrapper.java.additional.9=-Djava.rmi.server.hostname=IP Address/Name` where IP Address/Name is the IP address or host name to use for the collector.
- d Save your change and close the file.
- e Reboot the system.

Validate the vCenter Operations Manager Installation

6

After you complete the installation of your vCenter Operations Manager server, you can check that the installation finished successfully and that vCenter Operations Manager is operating correctly.

These instructions are for a Windows server. Adjust them as necessary if your vCenter Operations Manager server runs on Linux.

Prerequisites

- Verify that the vCenter Operations Manager server is installed.
- Verify that you have the URL for the vCenter Operations Manager server.

Procedure

- 1 Validate the database connection during installation or use the Configure VMware vCenter Operations Manager utility.
 - a From the **Start** menu, select **All Programs > VMware > vCenter Operations Manager > Configure VMware vCenter Operations**.
 - b In the Full Configuration dialog box, click **Test**.
- 2 From the Control Panel, select **vCenter Operations Manager > vCenter Operations Manager** to open the Services window.
- 3 Confirm that the vCenter Operations Manager services are running.

The services are ActiveMQ, vcopsWebService, AnalyticsService, CollectorService.
- 4 Go to the vCenter Operations Manager URL and log in as the user admin with the password admin.
- 5 Enter the license key and click **Save**.
- 6 On the Home page, make sure that the default dashboards load properly.
- 7 Select **Environment > Environment Overview** and verify that the default tags are listed on the left and the vCenter Operations Manager resources appear on the right.
- 8 After 15 minutes, validate that the health for the vCenter Operations Manager resources turns from blue to green.
- 9 Verify that the message Adapter describe successfully finished appears on the Describe Info pane.
 - a Select **Admin > Support**.
 - b Click the **Info** tab and check the Describe Info pane.
- 10 Click the **About** tab and verify that the vCenter vCenter Operations Manager version and database version are correct.

- 11 Click the **Logs** tab and verify that the services started successfully for each of the logs.
 - In the vCenter Operations Manager Analytics folder, the `analytics.log`
 - In the vCenter Operations Manager Collector folder, the `collector.log`
 - In the vCenter Operations Manager Web folder, the `web.log`

Managing with Program Groups

Installing vCenter Operations Manager on Windows creates a vCenter Operations Manager program group under the VMware program group on the **All Programs** menu.

The program group contains the following items:

Configure VMware vCenter Operations Manager

Interface to change vCenter Operations Manager configuration settings. You can select either basic or advanced configuration.

Start all services

Starts all vCenter Operations Manager-related services on the server:

- vcopsWebService
- AnalyticsService
- ActiveMQ
- CollectorService
- DTProcessorService, which runs only if Analytics Processor is installed
- ReplicationServerService, which runs only on a vCenter Operations Manager replication server

Stop all services

Stops all vCenter Operations Manager-related services.

Uninstall

Uninstalls vCenter Operations Manager. This process uninstalls the vCenter Operations Manager server, vCenter Operations Manager collector, and analytics that the vCenter Operations Manager installer installs—. This process does not uninstall adapters or vCenter Operations Manager components on remote servers.

Install a vCenter Operations Manager Collector

8

You can install the vCenter Operations Manager collector on a remote host. You might want to do this to distribute vCenter Operations Manager activity for better performance.

Prerequisites

- Use an administrator user name to log on as a user with enough privileges to create services.
- Log in to a remote host and navigate to the folder containing the vCenter Operations Manager executable files.

This procedure is written for Windows. Follow similar steps for a Linux remote host.

Procedure

- 1 Run the `vcops-win32<version and build number>.exe` file to start the vCenter Operations Manager installation wizard.
- 2 Select the locale and click **OK**.
- 3 Accept the patent and license agreement and click **OK**.
- 4 Click **Next**, click the icon next to Collector, and click **Next** again.
- 5 On the Choose Install Folder page, click **Next** to accept the default installation folder, or click **Choose** and select an installation folder.

The default installation folder is `\vmware\vcenter-operations`, under the default program installation folder for your system.

The Pre-installation Summary page lists the components to be installed.

- 6 Click **Install** to begin the installation.

This part of the process might take several minutes.

- 7 On the Configuration Mode page, select **Basic**.

Select **Advanced** if you installed the server using the Advanced mode configuration and changed the MQ configuration. Enter the MQ configuration information.

- 8 Provide the required configuration information.

In Collector Name, the default value is `vCenter Operations Standard Server_<SYSTEM_NAME>`, which is the same name as the local collector. Do not use the default.

Option	Action
Heartbeat Host	Type the IP address of the vCenter Operations Manager Server.
Heartbeat RMI Port	Leave the default entry (1199) unless the port was modified during installation.

Option	Action
Host	Type the IP address of the message queue. This is typically the same as the vCenter Operations Manager Server host.
Port	Leave the default entry (61616) unless MQ uses a different port number.

- 9 Click **Finish** to complete the installation.
- 10 Click **Done**.
- 11 If the host has two IP addresses, define which address the collector should use.
 - a Open the `vcenter-ops\user\conf\collector\wrapper.conf` file.
 - b Add the following line to the file, where `IP address/Name` is the IP address or host name to use for the collector.


```
wrapper.java.additional.9=-Djava.rmi.server.hostname=IP Address/Name
```
 - c Save and close the file.
- 12 Restart the collector service.

Option	Description
Windows	Select Control Panel > Administrative Tools > Services and restart the <code>CollectorService</code> service.
Linux	Type <code>cd vcenter-ops/collector/bin/CollectorService.sh restart.</code>

The vCenter Operations Manager collector is installed.

Installing a vCenter Operations Manager Adapter

9

This section describes how to install and configure the vCenter Operations Manager Enterprise server.

When you install the vCenter Operations Manager Enterprise server, three adapters are deployed by default:

- **The vCenter Operations Manager Adapter.** This adapter monitors vCenter Operations Manager Enterprise.
- **The HTTP Post adapter.** This is a generic adapter used to push data to vCenter Operations Manager via HTTP.
- **The Container adapter.** vCenter Operations Manager uses this adapter to create container resources.

All other adapter files are supplied separately. Contact your VMware representative for the installation files for additional adapters. After you have the adapter installation files, follow the installation procedure. See the documentation supplied with the adapter for possible additional instructions.

Install an Adapter

Follow this procedure to install an adapter if you have a vCenter Operations Manager standalone installation.

Install an adapter on the vCenter Operations Manager server. Do not install an adapter on remote vCenter Operations Manager collectors. The adapter is "pushed" to all remote collectors when you click the Describe button in step 6, below.

This procedure is written for Windows. Follow similar steps for a Linux remote host.

Prerequisites

- Obtain the file for the adapter from VMware technical support.
- Read the adapter documentation. It might contain additional installation instructions.

Procedure

- 1 Open and extract the adapter files in a temporary folder.
- 2 From the temporary folder, execute the `AdpaterName_intsall.exe` file.
- 3 Click **Next** through the setup dialog boxes.
- 4 Click **Install** on the pre-installation summary page.
- 5 Click **Done** on the Install complete page.
- 6 Start vCenter Operations Manager and use `admin/admin` credentials.

For example: <https://ipaddress/vcops-custom/>

- 7 Select **Admin > Support**.
- 8 On the **Info** tab, select the following.
 - a Click the **Describe** icon on the Adapters Info pane.
 - b Click **confirm to start describe process**.
 - c Accept the Info dialogue **Adapters re-describe started**.

vCenter Operations Manager finds the adapter files, gathers information about the abilities of the adapter, and updates the user interface with information about the adapter.

The adapter is installed. Define credentials and create new instances for the new adapter.

Installing the Analytics Processor

This section describes how to install and configure the vCenter Operations Manager analytics processor.

The vCenter Operations Manager server installation includes a process which performs all of the various vCenter Operations Manager analytics calculations: dynamic thresholds, fingerprinting, and so on. vCenter Operations Manager also gives you the option of installing a separate analytics processor on one or more remote hosts to handle only the dynamic threshold computation; this is called the DT Processor. This has two benefits:

- It distributes the analytics processing among two or more hosts to improve performance and reduce the demand on the server.
- When you have a separate process just for the dynamic threshold calculations, a problem with dynamic thresholds does not stop the entire analytics process.

Install the Analytics Processor

You can install the DT Processor on one or more remote hosts. It is supported on both Windows and Linux hosts; the installation process is the same on either.

Prerequisites

Perform the first six steps of the vCenter Operations Manager Enterprise server installation.

Procedure

- 1 On the Choose Install Set page, select Analytics Processor and click **Next**.
- 2 Select the Locale and click **Next**.
- 3 From the End-User Patent Agreement, click **Next**.
- 4 From the License Agreement page, click **Next**.
- 5 On the Choose Install Folder page, accept the default or click **Choose** and browse to the folder where you want to install the processor. Click **Next**.
- 6 The Pre-installation Summary page lists the components that will be installed. Click **Install** to begin the installation.
- 7 On the DT Processor Configuration page, type the host name or IP address of the vCenter Operations Manager server host in the vCenter Operations Server field, then type the port number for RMI access to the analytics service in the Port field. The default is 1199. Click **Save**.
- 8 On the Install Complete page, click **Done**.
- 9 On the vCenter Operations Manager Enterprise server host, edit the following file `vcenter-ops\user\conf\analytics\advanced.properties`.

- 10 Find the property `distributedDTCalculationEnabled` and set it to `true`.
- 11 Save your change and close the file.
- 12 Restart the Analytics service on the vCenter Operations Manager server host.
- 13 Check to see if the service starts on the remote host. The service name is `Analytics Processor`.

Installation of the DT processor is complete.

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