HP Operations Analytics

For the Linux Operating System

Software Version: 2.10

Operations Analytics Upgrade Guide

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Contents

Chapter 1: Introduction to Upgrading Operations Analytics

This document shows you how to upgrade Operations Analytics (OpsA) from version 2.00 to version 2.10. The upgrade steps shown in this document support one or more OpsA Server Appliances along with the associated Collector Appliances used in your OpsA configuration.

Chapter 2: Environment Variables used in this Document

This document refers to the following environment variables and other useful directories when explaining upgrade instructions for the Operations Analytics (OpsA) Software, including the OpsA Server Appliance and the OpsA Collector Appliance.

Table 1: Environment Variables

Variable Name	Path	Operations Analytics Server Appliance or Collector Appliance
OPSA_HOME	/opt/HP/opsa	Server and Collector Appliances
JAVA_HOME	/opt/HP/opsa/jdk	Server and Collector Appliances

Table 2: Other Useful Directories

Folder Name	Path	Operations AnalyticsServer Appliance or Collector Appliance
JBOSS Home Directory	/opt/HP/opsa/jboss	Server Appliance
JDK Folder	/opt/HP/opsa/jdk	Server and Collector Appliances
scripts Folder	/opt/HP/opsa/scripts	Server and Collector Appliances
conf Folder	/opt/HP/opsa/conf	Server and Collector Appliances
data Folder	/opt/HP/opsa/data	Server and Collector Appliances
log Folder	/opt/HP/opsa/log	Server and Collector Appliances
lib Folder	/opt/HP/opsa/lib	Server and Collector Appliances
bin Folder	/opt/HP/opsa/bin	Server and Collector Appliances
upgrade Folder	/opt/HP/opsa/upgrade	Server and Collector Appliances
Vertica Database Installation Folder	/opt/vertica	Server and Collector Appliances have the Vertica client installed in this folder

Chapter 3: Upgrade Infrastructure and Specifications

The Operations Analytics (OpsA) Server Appliances and Collector Appliances are distributed as shown in the following diagram.

Note: The following diagram shows a single OpsA Server Appliance and Collector Appliance in a distributed configuration. You can upgrade OpsA configurations that use more than one OpsA Server Appliance or Collector Appliance.

System Deployment Infrastructure
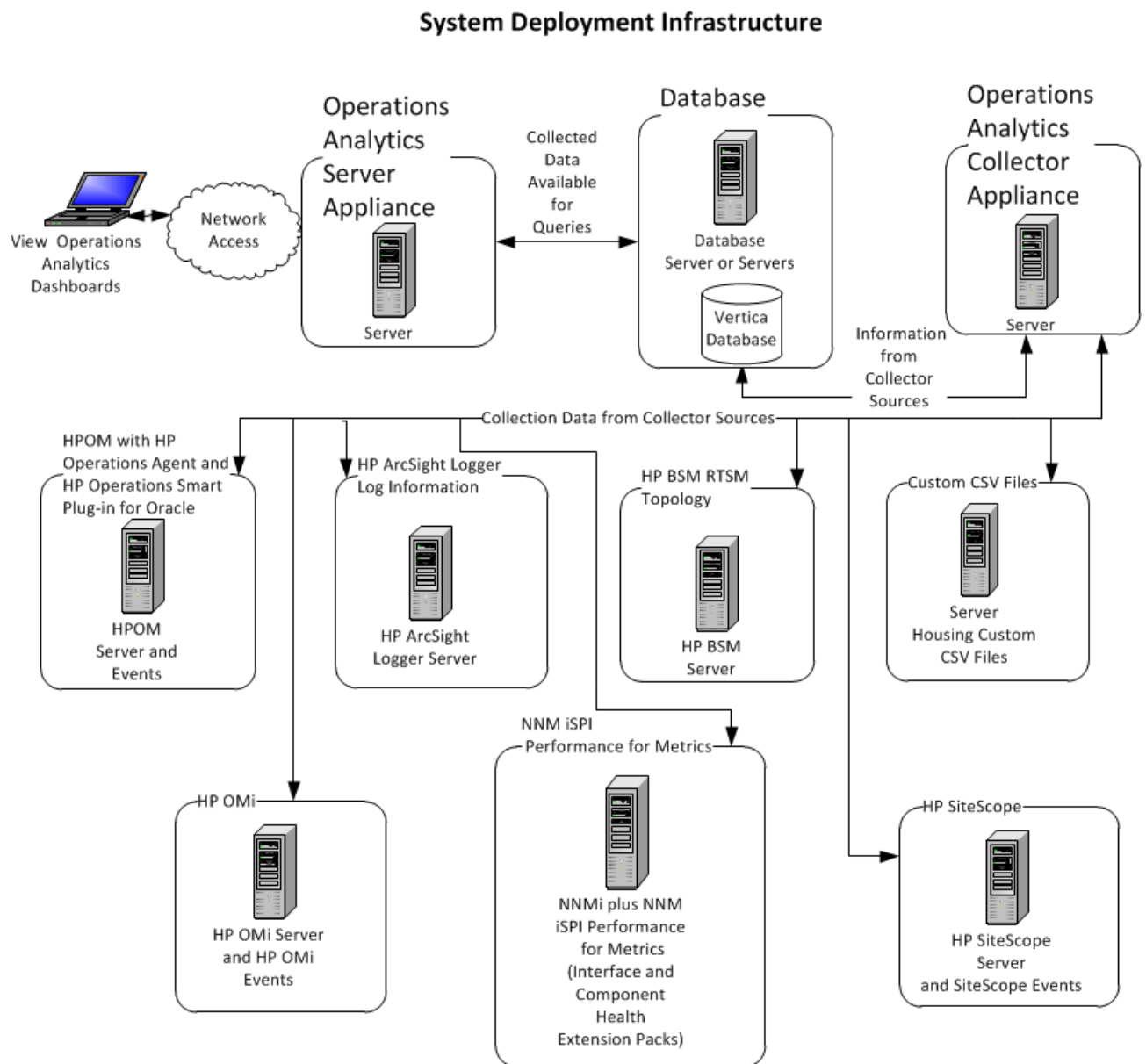
This document supports the configurations and actions shown in this section when upgrading to OpsA 2.10.

> **Note**: See the *Operations Analytics Support Matrix* for the hardware and operating system requirements for OpsA.

The following upgrade instructions support a distributed system deployment of OpsA:

- You must upgrade all OpsA appliances.

- These instructions do not support upgrading the OpsA All-in-One Virtual Appliance.

- Do not upgrade your Vertica or Logger servers during this upgrade.

- Do not connect an OpsA Server or Collector Appliance running version 2.00 after you complete this upgrade.

Consider the following when planning your upgrade:

- The upgrade supports upgrading all tenants.

- The upgrade **does not support** using a staging process.

  > **Note**: Staging is a way to upgrade so that you can compare the behavior of OpsA2.00 to OpsA 2.10 in parallel. Although a staging approach is not supported, the idea would be to run both systems in staging until you are satisfied with the results. Again, a staging process is not currently supported.

- The upgrade supports OpsA 2.00 data structure changes to incorporate any new data definitions for OpsA 2.10.

- The upgrade retains OpsA data and configuration, including custom CSV data collection and configuration information.

- The upgrade comprises both manual and automated steps.

- The upgrade can result in up to two hours of missing data collections and downtime.

Chapter 4: Upgrade Infrastructure and Steps

Complete the following steps to upgrade to Operations Analytics (OpsA) 2.10. Use the following diagram while completing these steps.

Upgrade Infrastucture
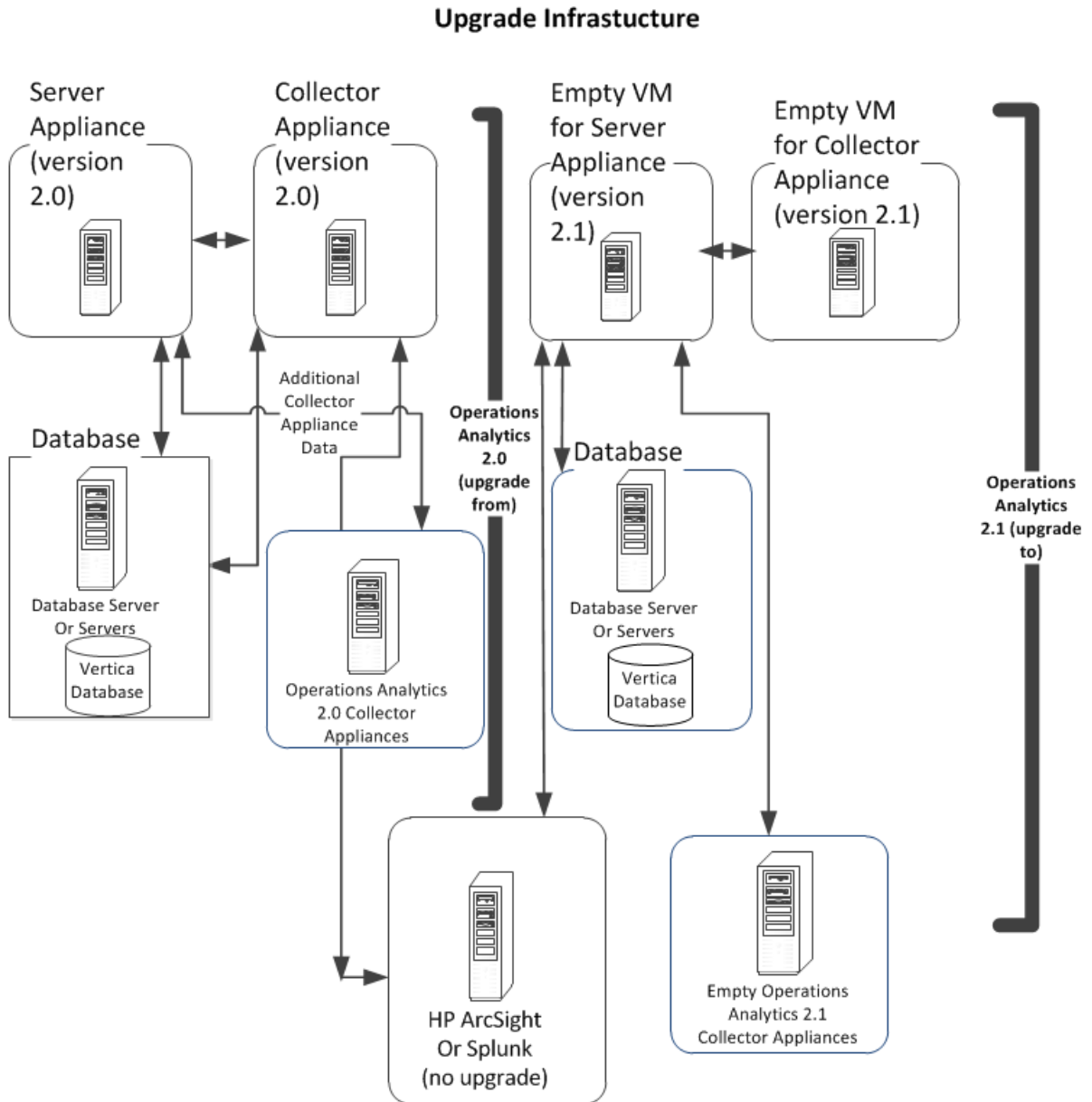
> **Note**: The instructions in this section cite reference pages and Linux manpages. These reference pages and manpages show details of how to use the OpsA command line tools. To view reference pages or Linux manpages, do one of the following:
>
> - **Reference Pages**: From the upper right side of the Operations Analytics console, click **?** > **Reference Pages** to view a list of reference pages.
>
> - **Manpages**: From a command prompt, enter `man <command line name>` to see the manpage for a command.

1. Back up the Vertica database used by OpsA 2.00 before starting the upgrade.

2. Log Analytics is a forensic tool in Operations Analytics that scans your log messages over a given time range and generates a list of the most significant ones.To use Log Analytics you must install the R Language Pack from Vertica.

   > **Note**: The R Language Pack from Vertica consumes a moderate amount of disk space once you have it running, so put it on a large disk.

   Do the following:
   a. As a root user, run the following commands to install libgfortran:

      > **Note**: The following commands will not work without an Internet connection. Make sure you have an Internet connection before running the following commands.

      - **RHEL 6 and CentOS6**: `yum install compat-libgfortran-41`

      - **RHEL 5 and CentOS 5**: `yum install libgfortran`

   b. Download the R Language Pack for Vertica. The R Language Pack must match the version of Vertica you plan to use. For example, suppose you have Vertica version 6.1.1 installed, and that Operations Analytics supports that Vertica version. You must use R Language Pack version 6.1.1, as it matches the Vertica version you are using.
      i. Using a browser, navigate to the following URL: **https://my.vertica.com/download-community-edition**

         > **Note**: This URL varies depending on your Vertica account type. Use the URL for the Vertica product you purchased.

      ii. Log on and download the R Language Pack.

   c. Copy the following files from the `/package` folder in the DVD bundle to the `/home` directory:
      - `GammaDistribution.R`

      - `MASS_7.3-23.tar.gz`

- ○ `libgfortran-4.1.2-52.el5_8.1.x86_64.rpm`

- ○ `create_R_GammaDist.sh`

- ○ `vertica-R-lang-6.1.2-0.x86_64.RHEL5.rpm`

    Note: This file must contain the Vertica version in the file name. The Vertica version must be the same version as the Vertica that is installed.

d. If step 1 failed due to a connection error, run the following command: `yum install /usr/lib64/libgfortran.so.1`

e. Run the following command to create the link to the R-Vertica function: `ln -s /home/dbadmin /home_vertica`

    Note: This command will not work without an Internet connection. Make sure you have an Internet connection before running this command.

f. Run the following command to set the correct folder permissions: `chmod 770 /home_ vertica`

g. Run the following command from the `/home` directory to copy the `GammaDistribution.R` file to the `/home_vertica` directory:
   `cp GammaDistribution.R /home_vertica`

h. Run the following command to install a group package to enable the MASS statistics Library to compile:
   `yum groupinstall 'Development tools'`

    Note: This command will not work without an Internet connection. Make sure you have an Internet connection before running this command. The alternative approach is to download the R Language Pack using a computer that has an Internet connection and install it manually.

i. Run the following command to start the R Language Pack installation:
   `rpm –Uvh vertica-R-lang_VERSION.rpm`
   After the installation completes, the R Language Pack installation is done.

j. Verification: To verify the R Language Pack installation, do the following:

   i. Run the following command: a. `rpm –qa | grep –i vertica-R`

   ii. If you see a message similar to the following, the installation was successful: `vertica-R-lang-VERSION`

    k. Complete the following steps to install the MASS package:
       i. Run the following command to set the correct permissions: `chmod 770 MASS_ 7.3-23.tar.gz`

       ii. Copy the `/home/MASS_7.3-23.tar.gz` file to `/root/MASS_7.3-23.tar.gz`

       iii. Run the following command: `/opt/vertica/R/bin/R CMD INSTALL /root/MASS_7.3-23.tar.gz`

    l. Run the following command to set the correct permissions:
      `chmod 777 /home/create_R_GammaDist.sh`

    m. Run the following command to switch to the dbadmin user: `su - dbadmin`

    n. From the /home directory, run the following command: `./create_R_GammaDist.sh`

3. Prepare the new virtual machines for the OpsA Server Appliance and Collector Appliances and install the new OpsA 2.10 Server and Collector Appliances.

> **Note**: You must manually make any changes done to the operating system parameters for OpsA 2.00 servers to the virtual machines you plan to use for OpsA 2.10. These operating system parameter changes are not updated automatically by the upgrade process.

4. Create an `upgrade` folder in the `/opt/HP/opsa` directory on the OpsA 2.00 Server Appliance.

> **Important Note**: If you plan to upgrade more than one OpsA Server Appliance, complete the steps in "Upgrading Multiple Operations Analytics Appliances" on page 21 before continuing with the upgrade.

5. Copy the `host_map.properties` file from the `/opt/HP/opsa/upgrade` directory on the OpsA 2.10 Server Appliance to the `upgrade` directory (`/opt/HP/opsa/upgrade`) on the OpsA 2.00 Server Appliance.

> **Note**: If you are upgrading more than one OpsA Server Appliance,this section continues from Step 16 in the "Upgrading Multiple Operations Analytics Appliances" section.

6. Using a text editor, edit the `/opt/HP/opsa/upgrade/host_map.properties` file on the OpsA 2.00 Server Appliance, listing all of the servers you must upgrade. Use the following lines as a guide to enter content into this file:
```
server_1_IP_old=10.60.164.34
server_1_hostname_old=hostname1.<domain>
collector_1_ip_old=10.60.188.108
collector_1_hostname_old=hostname2.<domain>
server_1_ip_new=10.60.164.195
server_1_hostname_new=hostname3.<domain>
collector_1_ip_new=10.60.164.196
collector_1_hostname_new=hostname4.<domain>
```

7. Copy the line for the BPM host from the `/etc/hosts` file from each OpsA 2.00 Collector Appliance to the `/etc/hosts` file on each corresponding OpsA 2.10 Collector Appliance using the following format: `10.1.2.3 server.location.domain.com`.

8. Copy the following files from the `/opt/HP/opsa/upgrade` directory on the OpsA 2.10 Server Appliance to the `/opt/HP/opsa/upgrade` directory on the OpsA 2.00 Server Appliance.

   - `opsa-preupgrade-tool.sh`

   - `opsa-rollback-end.sh`

   - `opsa-rollback.jar`

   - `opse-rollback-merge.sh`

   - `opsa-server-rollback.sh`

   - `rollback-liquibase`

   - `rollback_schema.properties`

9. From the OpsA 2.00 Server Appliance, run the `chmod 777` command on the `/opt/HP/opsa/upgrade` folder and the files it contains.

10. **Important**: Run the following command to create rollback backup tables for the OpsA 2.00 database (in case you need to roll back to the original OpsA 2.00 configuration). This command also records the upgrade start time:
    `/opt/HP/opsa/upgrade/opsa-server-rollback.sh`
    a. The `opsa-server-rollback.sh` script prompts you for the Vertica dbadmin use password which was dbadmin during the initial Vertica installation.

    b. When prompted with the next question, answer **yes**.

       See the *opsa-server-rollback.sh* reference page (or the Linux manpage) for more information.

   Note: You must not make configuration changes to OpsA after completing this step.

Complete the following steps to continue upgrading to OpsA 2.10. Use the following diagram while completing these steps.
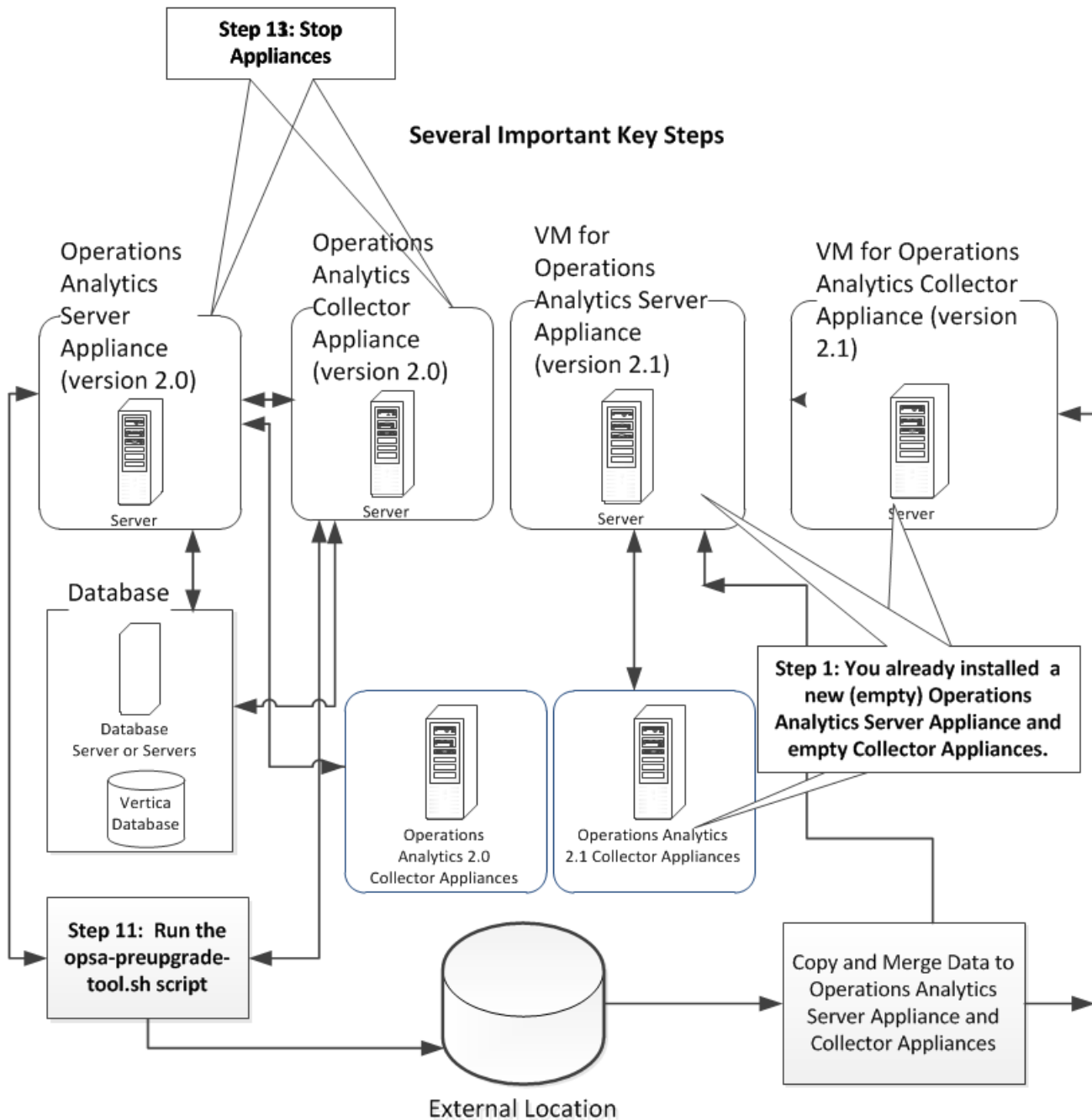
11. From the OpsA 2.00 Server Appliance, run the following command to collect the information you need to complete this upgrade. See the *opsa-preupgrade-tool.sh* reference page (or the Linux manpage) for more information.
    a. As an opsa user, run the `opsa-preupgrade-tool.sh` script on the OpsA 2.00 Server Appliance. Use the following syntax: `/opt/HP/opsa/upgrade/opsa-preupgrade-`

```
tool.sh server 1.
```

b. You will see a message similar to the following:

```
Wed Feb 26 14:00:17 UTC 2014 OPSA_HOME is set to /opt/HP/opsa
Wed Feb 26 14:00:17 UTC 2014
Wed Feb 26 14:00:17 UTC 2014 ---- opsa-server preupgrade tool
validation -----
Wed Feb 26 14:00:17 UTC 2014
Wed Feb 26 14:00:17 UTC 2014 server_1_ip_old 10.60.164.44 is
valid
Wed Feb 26 14:00:17 UTC 2014 server_1_ip_new 10.60.164.101 is
valid
Wed Feb 26 14:00:17 UTC 2014 collector_1_ip_old 10.60.164.82 is
valid
Wed Feb 26 14:00:17 UTC 2014 collector_1_ip_new 10.60.164.107 is
valid
Wed Feb 26 14:00:17 UTC 2014 server_1_hostname_old
host1.thislab.ad is not accessible
Wed Feb 26 14:00:17 UTC 2014 server_1_hostname_new
host2.thislab.ad is not accessible
Wed Feb 26 14:00:17 UTC 2014 collector_1_hostname_old
host3.thislab.ad.ad is not accessible
Wed Feb 26 14:00:17 UTC 2014 collector_1_hostname_new
host4.thislab.ad.ad is not accessible
Wed Feb 26 14:00:17 UTC 2014 server_2_ip_old 10.60.164.94 is
valid
Wed Feb 26 14:00:17 UTC 2014 collector_2_ip_old 10.60.164.78 is
valid
Wed Feb 26 14:00:17 UTC 2014 collector_2_ip_new 10.60.164.109 is
valid
Wed Feb 26 14:00:17 UTC 2014 server_2_hostname_old
host1.thislab.ad.ad is not accessible
Wed Feb 26 14:00:17 UTC 2014 collector_2_hostname_old
ACEVM139201827.devlab.ad is not accessible
Wed Feb 26 14:00:17 UTC 2014 collector_2_hostname_new
ACEVM139333687.devlab.ad is valid
Wed Feb 26 14:00:17 UTC 2014
Wed Feb 26 14:00:17 UTC 2014 Some servers in host_map.properties
are not accessible
Wed Feb 26 14:00:17 UTC 2014 The accessibility is not mandatory
for the upgrade process but please verify the file has the
correct details before continuing
You may stop now and rerun the script. Do you wish to continue
now?
```

c. Examine the host list from the previous step and verify that the list of IP addresses and host names are accurate, and that those IP addresses and host names that are not accessible are intentionally configured that way. Select **yes** after you are confident that the list is accurate, and you will be asked to enter the opsa user password for the Linux file

system.

> **Note**: Correct any problems you find when reviewing the host list from the previous step, then rerun the `/opt/HP/opsa/upgrade/opsa-preupgrade-tool.sh server 1` command before continuing with the upgrade.

    d. After the opsa-preupgrade-tool.sh script finishes, you should see the following message:
```
preupgrade_<IP Address>.tar.gz 100% 108KB 107.6KB/s 00:00
host_map.properties 100% 110 0.1KB/s 00:00
opsa-server preupgrade tool end
```

See the *opsa-preupgrade-tool.sh* reference page (or the Linux manpage) for more information.

12. Verify that the following files exist:
   - OpsA 2.00 Server
     Appliance: `/opt/HP/opsa/upgrade/preupgrade<servername>.tar.gz`

   - OpsA 2.10 Server
     Appliance: `/opt/HP/opsa/upgrade/preupgrade<servername>.tar.gz`

     > **Note:** If this file does not exist, manually copy it from `/opt/HP/opsa/upgrade/preupgrade<servername>.tar.gz` on the OpsA 2.00 Server Appliance.

   - OpsA 2.10 Server Appliance: `/opt/HP/opsa/host_map.properties`

     > **Note:** If this file does not exist, manually copy it from `/opt/HP/opsa/upgrade/preupgrade<servername>.tar.gz` on the OpsA 2.00 Server Appliance.

13. Stop the OpsA 2.00 Server Appliance and Collector Appliances:

   a. Run the following commands from the OpsA 2.00 Server Appliance:
      ```
      opt/HP/opsa/bin/opsa-server stop
      ```

   b. Run the following command from each of the OpsA 2.00 Collector Appliances:
      ```
      /opt/HP/opsa/bin/opsa-collector stop
      opt/HP/opsa/bin/opsa-loader stop
      ```

   See the *opsa-server*, *opsa-collector*, or *opsa-loader* reference pages (or the Linux manpages) for more information.

   > **Note**: After completing this step, OpsA is no longer collecting information.

14. As the opsa user, run the following command from the OpsA 2.10 Server Appliance and follow the interactive instructions:

    `/opt/HP/opsa/bin/opsa-server-postinstall.sh -upgrade`
    - When the script asks you to enter the database details, use the default entries from the script.

    - When the script asks for the database password, enter the password for the Vertica dbadmin user.

    - When the script asks whether the database schema exists, enter **yes**.

    - When the script asks about loggers, enter `no`.
      After the command finishes, you should see a message similar to the following:

      ```
      2014-02-09 15:00:39,990 [main]
      (PostInstallConfiguration.java:218) INFO -
      Post installation configuration completed successfully
      ```

    See the *opsa-server-postinstall.sh* reference page (or the Linux manpage) for more information.

15. For every custom CSV collection you defined in OpsA 2.00, you must repeat the following steps on each OpsA 2.10 Collector Appliance:
    a. Create the following directory on each OpsA 2.10 Collector Appliance:

       `/opt/HP/opsa/data/<mySourceDirectory>`

    b. Run the following command from each OpsA 2.10 Collector Appliance to set the correct file ownership:

       `chown /opt/HP/opsa/data/<mySourceDirectory> opsa`

16. As the opsa user, run the following command from each of the OpsA 2.10 Collector Appliances: `/opt/HP/opsa/bin/opsa-collector-postinstall.sh`

    > **Note**: The script asks you to type the Vertica hostname and to enter the dbadmin password. Enter `no` when asked if you want to configure Logger.

    > **Note**: After the command finishes, you should see a message similar to the following:
    > ```
    > 2014-02-09 15:06:25,880 [main]
    > (CollectorPostInstallConfiguration.java:115) INFO -Post
    > installation configuration completed successfully
    > ```

    See the *opsa-collector-postinstall.sh* reference page (or the Linux manpage) for more information.

17. As the opsa user, run the following command from each of the OpsA 2.10 Collector Appliances to start these Collector Appliances:

    `/opt/HP/opsa/bin/opsa-collector start`

18. As the opsa user, run the following command from the OpsA 2.10 Server Appliance:

    `/opt/HP/opsa/upgrade/opsa-server-postupgrade.sh`

> **Note**: The command in this step can take up to 90 minutes to complete, depending on the complexity of the Operations Analytics configuration.

After the command in this step finishes, you should see a message similar to the following:
```
2014-02-09 15:57:14,961 [main] (PostUpgradeConfiguration.java:81)
INFO -
Post upgrade configuration completed successfully
```

See the *opsa-server-postupgrade.sh* reference page (or the Linux manpage) for more information.

19. As the opsa user, run the following command from the OpsA 2.10 Server Appliance to check its status:
```
/ops/HP/opsa/bin/opsa-server status
```

If the status shows that the OpsA 2.10 Server Appliance is not running, run the following command as the opsa user to start the OpsA 2.10 Server Appliance:
```
/ops/HP/opsa/bin/opsa-server start
```

> **Note**: After completing this step, the OpsA Server Appliance should be functioning.

20. If you are migrating OpsA Collector Appliances that connect to NNMi for collecting NNMi custom poller data, do the following on the OpsA 2.10 Collector Appliance similar to how you did this on the OpsA 2.00 Collector Appliance:

You must make the files exported from the `/var/opt/OV/shared/nnm/databases/custompoller/export/final` directory on NNMi available on the OpsA Collector Appliance in the `/opt/HP/opsa/data/nnm` directory.

If you want to use a different directory than `/opt/HP/opsa/data/nnm`, do the following:
a. Edit the following collection template:
   `/opt/HP/opsa/conf/collection/server/config.templates/nnm/1.0/net perf/mib/nnm_netperf_mib_collection.xml`.

b. Specify a different directory for the `sourcedir` attribute.

The `opsa` user on the OpsA Collector Appliance must have read and write access to the NNMi files on the OpsA Collector Appliance to move them to the processed directory. The default process directory is `/opt/HP/opsa/data/nnm_processed`.

21. If you are migrating OpsA Collector Appliances that connect to NNMi for NNM ISPi Performance for Metrics Component Health data, do the following on the OpsA 2.10 Collector Appliance similar to how you did this on the OpsA 2.00 Collector Appliance:

You must make the exported component health metrics available on the OpsA Collector

Appliance in the `/opt/HP/opsa/data/netcomponent` directory.

If you want to use a different directory than `/opt/HP/opsa/data/netcomponent`, do the following:

a. Edit the following collection template:

```
/opt/HP/opsa/conf/collection/server/config.templates/nnmispi/1.
0/
netcomponent/component/nnmispi_netcomponent_component_
collection.xml.
```

b. Specify a different directory for the `sourcedir` attribute.

The `opsa` user on the OpsA Collector Appliance must have read and write access to the component health metric files in the OpsA Collector Appliance to move them to the processed directory. The default process directory is `/opt/HP/opsa/data/netcomponent_processed`.

For example, to configure read and write access to the component health metric files to the OpsA Collector Appliance when the files are located on a Windows server, do the following:

> **Note**: Only complete steps a through c if you made a change to NNMi.

a. On a Windows Server, navigate to **Computer Management** > **System Tools** > **Shares** > **Shared Folders**.

b. Right-click beneath shares and open the new share wizard.

c. Create shares for the directories in which the .csv files are stored.

d. From the OpsA Collector Appliance, add the correct entries to the `/etc/fstab` file. Use the following entries as a model:

```
//10.17.18.19/final /opt/HP/opsa/data/nnm cifs
username=administrator,password=password,uid=opsa,rw 0 0
//10.15.14.13/componentfinal /opt/HP/opsa/data/netcomponent cifs
username=admin,password=passwd,uid=opsa,rw 0 0
//10.15.14.13/interfacefinal /opt/HP/opsa/data/netinterface cifs
username=admin,password=passwd,uid=opsa,rw 0 0
```

e. Use the mount -a command to get the directories mounted.

22. If you are migrating OpsA Collector Appliances that connect to NNMi for collecting NNM ISPi Performance for Metrics Interface Health data, do the following on the OpsA 2.10 Collector Appliance similar to how you did this on the OpsA 2.00 Collector Appliance::

    You must make the exported interface health metrics available on the OpsA Collector Appliance in the `/opt/HP/opsa/data/netinterface` directory.
    If you want to use a different directory than `/opt/HP/opsa/data/netinterface`, do the following:

a. Edit the following collection template:

```
/opt/HP/opsa/conf/collection/server/config.templates/nnmispi/1.
0/
netinterface/interface/nnmispi_netinterface_interface_
collection.xml.
```

b. Specify a different directory for the `sourcedir` attribute.

The `opsa` user on the OpsA Collector Appliance must have read and write access to the interface health metric files in the OpsA Collector Appliance to move them to the processed directory. The default process directory is `/opt/HP/opsa/data/netinterface_ processed`.

For example, to configure read and write access to the interface health metric files to the Operations Analytics Collector Appliance when the files are located on a Windows server, do the following:

> **Note**: Only complete steps a through c if you made a change to NNMi.

a. On a Windows server, navigate to **Computer Management** > **System Tools** > **Shares** > **Shared Folders**.

b. Right-click beneath shares and open the new share wizard.

c. Create shares for the directories in which the .csv files are stored.

d. From the OpsA Collector Appliance, add the correct entries to the `/etc/fstab` file. Use the following entries as a model:

```
//10.17.18.19/final /opt/HP/opsa/data/nnm cifs
username=administrator,password=password,uid=opsa,rw 0 0
//10.15.14.13/componentfinal /opt/HP/opsa/data/netcomponent cifs
username=admin,password=passwd,uid=opsa,rw 0 0
//10.15.14.13/interfacefinal /opt/HP/opsa/data/netinterface cifs
username=admin,password=passwd,uid=opsa,rw 0 0
```

e. Use the mount -a command to get the directories mounted.

23. Check that the OpsA Collector Appliances are connected, and that new data is appearing in the Operations Analytics console.

a. Run the following command from the OpsA Server Appliance to check the status of the collector sources configured on an OpsA Collector Appliance:

```
$OPSA_HOME/bin/opsa-collection-config.sh -list -collectorhost
<collector hostname> -username <Tenant Admin User>
```

b. Check the dashboards for your collections to make sure they are collecting data.

> **Important Note**: Do not connect an OpsA Collector Appliance running version 2.00 after you complete this upgrade.

For information about configuring user authentication using Public Key Infrastructure, see *Configuring User Authentication using Public Key Infrastructure (PKI) to Access Operations Analytics* in the *Operations Analytics Configuration Guide.*

For information about configuring the Log Analytics feature, see *Configuring Log Analytics* in the *Operations Analytics Quick Start Guide*.

Chapter 5: Upgrading Multiple Operations Analytics Appliances

To upgrade multiple Operations Analytics (OpsA) Appliances, do the following:

Note: This section continues from Step 4 in the "Upgrade Infrastructure and Steps" section.

1. Create an `upgrade` folder in the `/opt/HP/opsa` directory on each OpsA 2.00 Server Appliance.

2. Copy the `host_map.properties` file from the `/opt/HP/opsa/upgrade` directory on the OpsA 2.10 Server Appliance to the `upgrade` directory (`/opt/HP/opsa/upgrade`) on each OpsA 2.00 Server Appliance.

3. Using a text editor, such as Notepad++, edit the `/opt/HP/opsa/upgrade/host_map.properties` file on the OpsA 2.00 Server Appliance, listing all of the servers you must upgrade. Use the following lines as a guide to enter content into this file:
    ```
    server_1_IP_old=10.60.164.34
    server_1_hostname_old=hostname1.<domain>
    collector_1_ip_old=10.60.188.108
    collector_1_hostname_old=hostname2.<domain>
    server_1_ip_new=10.60.164.195
    server_1_hostname_new=hostname3.<domain>
    collector_1_ip_new=10.60.164.196
    collector_1_hostname_new=hostname4.<domain>
    ```

4. Copy the line for the BPM host from the `/etc/hosts` file from each OpsA 2.00 Collector Appliance to the `/etc/hosts` file on each corresponding OpsA 2.10 Collector Appliance using the following format: `10.1.2.3 server.location.domain.com`.

5. Copy the following files from the `/opt/HP/opsa/upgrade` directory on the OpsA 2.10 Server Appliance to the `/opt/HP/opsa/upgrade` directory on each OpsA 2.00 Server Appliance.

    - `opsa-preupgrade-tool.sh`

    - `opsa-rollback-end.sh`

    - `opsa-rollback.jar`

    - `opse-rollback-merge.sh`

    - `opsa-server-rollback.sh`

    - `rollback-liquibase`

    - `rollback_schema.properties`

6. From the OpsA 2.00 Server Appliance, run the `chmod 777` command on the
   `/opt/HP/opsa/upgrade` folder and the files it contains.

7. **Important**: Run the following command from **only one** of the OpsA Server Appliances to
   create rollback backup tables for the OpsA 2.00 database (in case you need to roll back to the
   original OpsA 2.00 configuration). This command also records the upgrade start time:
   `/opt/HP/opsa/upgrade/opsa-server-rollback.sh`
   a. The `opsa-server-rollback.sh` script prompts you for the Vertica dbadmin use
   password which was dbadmin during the initial Vertica installation.

   b. When prompted to perform a metadata backup before upgrading [yes/no], answer **yes**.
   Look for a message similar to the following during the backup:
   ```
   do rollback backup
   Date when we started upgrade 2014-03-23 12:19:19.0
   Rollback configuration completed successfully
   ```

   See the *opsa-server-rollback.sh* reference page (or the Linux manpage) for more information.

   > **Note**: You must not make configuration changes to OpsA after completing this step.

8. From the OpsA 2.00 Server Appliances, run the following command to collect the information
   you need to complete this upgrade. See the *opsa-preupgrade-tool.sh* reference page (or the
   Linux manpage) for more information.
   a. As an opsa user, run the `opsa-preupgrade-tool.sh` script on each OpsA 2.00 Server
   Appliance according to its index in the `host_map.properties` file. Use the following
   syntax: `/opt/HP/opsa/upgrade/opsa-preupgrade-tool.sh` *server X*, where
   server X matches the appropriate server number shown in the `host_map.properties`
   file.

   b. You will see a message similar to the following:
   ```
   Wed Feb 26 14:00:17 UTC 2014 OPSA_HOME is set to /opt/HP/opsa
   Wed Feb 26 14:00:17 UTC 2014
   Wed Feb 26 14:00:17 UTC 2014 ---- opsa-server preupgrade tool
   validation -----
   Wed Feb 26 14:00:17 UTC 2014
   Wed Feb 26 14:00:17 UTC 2014 server_1_ip_old 10.60.164.44 is
   valid
   Wed Feb 26 14:00:17 UTC 2014 server_1_ip_new 10.60.164.101 is
   valid
   Wed Feb 26 14:00:17 UTC 2014 collector_1_ip_old 10.60.164.82 is
   valid
   Wed Feb 26 14:00:17 UTC 2014 collector_1_ip_new 10.60.164.107 is
   valid
   Wed Feb 26 14:00:17 UTC 2014 server_1_hostname_old
   host1.thislab.ad is not accessible
   Wed Feb 26 14:00:17 UTC 2014 server_1_hostname_new
   host2.thislab.ad is not accessible
   Wed Feb 26 14:00:17 UTC 2014 collector_1_hostname_old
   host3.thislab.ad.ad is not accessible
   ```

```
Wed Feb 26 14:00:17 UTC 2014 collector_1_hostname_new
host4.thislab.ad.ad is not accessible
Wed Feb 26 14:00:17 UTC 2014 server_2_ip_old 10.60.164.94 is
valid
Wed Feb 26 14:00:17 UTC 2014 collector_2_ip_old 10.60.164.78 is
valid
Wed Feb 26 14:00:17 UTC 2014 collector_2_ip_new 10.60.164.109 is
valid
Wed Feb 26 14:00:17 UTC 2014 server_2_hostname_old
host1.thislab.ad.ad is not accessible
Wed Feb 26 14:00:17 UTC 2014 collector_2_hostname_old
ACEVM139201827.devlab.ad is not accessible
Wed Feb 26 14:00:17 UTC 2014 collector_2_hostname_new
ACEVM139333687.devlab.ad is valid
Wed Feb 26 14:00:17 UTC 2014
Wed Feb 26 14:00:17 UTC 2014 Some servers in host_map.properties
are not accessible
Wed Feb 26 14:00:17 UTC 2014 The accessibility is not mandatory
for the upgrade process but please verify the file has the
correct details before continuing
You may stop now and rerun the script. Do you wish to continue
now?
```

c. Examine the host list from the previous step and verify that the list of IP addresses and host names are accurate, and that those IP addresses and host names that are not accessible are intentionally configured that way. Select **yes** after you are confident that the list is accurate, and you will be asked to enter the opsa user password for the Linux file system.

> **Note**: Correct any problems you find when reviewing the host list from the previous step, then rerun the `/opt/HP/opsa/upgrade/opsa-preupgrade-tool.sh server 1` command before continuing with the upgrade.

d. After the opsa-preupgrade-tool.sh script finishes, you should see the following message:
```
preupgrade_<IP Address>.tar.gz 100% 108KB 107.6KB/s 00:00
host_map.properties 100% 110 0.1KB/s 00:00
opsa-server preupgrade tool end
```

9. Verify that the following files exist:
   - OpsA 2.00 Server
     Appliance: `/opt/HP/opsa/upgrade/preupgrade<servername>.tar.gz`

   - OpsA 2.10 Server
     Appliance: `/opt/HP/opsa/upgrade/preupgrade<servername>.tar.gz`

   > **Note:** If this file does not exist, manually copy it from `/opt/HP/opsa/upgrade/preupgrade<servername>.tar.gz` on the OpsA 2.00 Server Appliance.

> **Note:** For example, on the OpsA 2.10 Server Appliance 1, verify that it contains the `preupgrade<`*servername*`>.tar.gz` file from OpsA 2.00 Server Appliance 1 according to its index in the `host_map.properties` file.
> On the OpsA 2.10 Server Appliance 2, verify that it contains the `preupgrade<`*servername*`>.tar.gz` file from OpsA 2.00 Server Appliance 2 according to its index in the `host_map.properties` file.

- OpsA 2.10 Server Appliance: `/opt/HP/opsa/host_map.properties`

  > **Note:** If this file does not exist, manually copy it from `/opt/HP/opsa/upgrade/host_map.properties` on the OpsA 2.00 Server Appliance.

10. Stop the OpsA 2.00 Server Appliance and Collector Appliances:

    a. Run the following commands from the OpsA 2.00 Server Appliance:
       `opt/HP/opsa/bin/opsa-server stop`

    b. Run the following command from each of the OpsA 2.00 Collector Appliances:
       `/opt/HP/opsa/bin/opsa-collector stop`
       `opt/HP/opsa/bin/opsa-loader stop`

       See the *opsa-server*, *opsa-collector*, or *opsa-loader* reference pages (or the Linux manpages) for more information.

       > **Note**: After completing this step, OpsA is no longer collecting information.

11. As the opsa user, run the following command from the additional OpsA 2.10 Server Appliances and follow the interactive instructions:
    `/opt/HP/opsa/bin/opsa-server-postinstall.sh -upgrade`
    - When the script asks you to enter the database details, use the default entries from the script.

    - When the script asks for the database password, enter the password for the Vertica dbadmin user.

    - When the script asks whether the database schema exists, enter **yes**.

    - When the script asks about loggers, enter `no`.
      After the command finishes, you should see a message similar to the following:
      ```
      2014-02-09 15:00:39,990 [main]
      (PostInstallConfiguration.java:218) INFO -
      Post installation configuration completed successfully
      ```

    See the *opsa-server-postinstall.sh* reference page (or the Linux manpage) for more information.

12. For every custom CSV collection you defined in OpsA 2.00, you must repeat the following steps on each OpsA 2.10 Collector Appliance:

    a. Create the following directory on each OpsA 2.10 Collector Appliance:

    `/opt/HP/opsa/data/<mySourceDirectory>`

    b. Run the following command from each OpsA 2.10 Collector Appliance to set the correct file ownership:

    `chown /opt/HP/opsa/data/<mySourceDirectory> opsa`

13. As the opsa user, run the following command from the OpsA2.10 Server Appliance and follow the interactive instructions:

    `/opt/HP/opsa/bin/opsa-server-postinstall.sh -upgrade`

    - When the script asks you to enter the database details, use the default entries from the script.

    - When the script asks for the database password, enter the password for the Vertica dbadmin user.

    - When the script asks whether the database schema exists, enter **yes**.

    - When the script asks about loggers, enter `no`.
      After the command finishes, you should see a message similar to the following:

      ```
      2014-02-09 15:00:39,990 [main]
      (PostInstallConfiguration.java:218) INFO -
      Post installation configuration completed successfully
      ```

    See the *opsa-server-postinstall.sh* reference page (or the Linux manpage) for more information.

14. As the opsa user, run the following command from each of the OpsA2.10 Collector Appliances:

    `/opt/HP/opsa/bin/opsa-collector-postinstall.sh`

    > **Note**: The script asks you to type the Vertica hostname and to enter the dbadmin password. Enter `no` when asked if you want to configure Logger.

    > **Note**: After the command finishes, you should see a message similar to the following:
    > ```
    > 2014-02-09 15:06:25,880 [main]
    > (CollectorPostInstallConfiguration.java:115) INFO -Post
    > installation configuration completed successfully
    > ```

    See the *opsa-collector-postinstall.sh* reference page (or the Linux manpage) for more information.

15. As the opsa user, run the following command from the additional OpsA 2.10 Server Appliances:

    `/opt/HP/opsa/upgrade/opsa-server-postupgrade.sh`

Note: The command in this step can take up to 90 minutes to complete, depending on the complexity of the OpsA configuration.

Note: Only run the `opsa-server-postupgrade.sh` script on one Server Appliance at a time. This script cannot run on multiple Server Appliances simultaneously, as all of the servers use the same database server.

After the command in this step finishes, you should see a message similar to the following:

```
2014-02-09 15:57:14,961 [main] (PostUpgradeConfiguration.java:81)
INFO -
Post upgrade configuration completed successfully
```

See the *opsa-server-postupgrade.sh* reference page (or the Linux manpage) for more information.

16. Continue upgrading OpsA at step 5 in the "Upgrade Infrastructure and Steps" section.

Chapter 6: Roll Back Due to Errors

If errors occur during the upgrade steps or if Operations Analytics (OpsA) 2.10 is running (following the upgrade) and you suspect errors that originated from the upgrade, you might need to roll back your system.

> **Note**: The steps in this section return your OpsA 2.00 system back to the state it was in before the upgrade. These steps will not remove or restore any of the tenant schemas that were removed from or created on the new system.

To roll back your system to the previous state, do the following:

1. Stop the OpsA 2.10 Server Appliance and Collector Appliances:
   a. Run the following commands from the OpsA 2.10 Server Appliance:
      ```
      opt/HP/opsa/bin/opsa-server stop
      ```

   b. Run the following command from the OpsA 2.10 Collector Appliances:
      ```
      /opt/HP/opsa/bin/opsa-collector stop
      opt/HP/opsa/bin/opsa-loader stop
      ```

2. Run the following command from the OpsA 2.10 Server Appliance:
   ```
   /opt/HP/opsa/upgrade/opsa-rollback-tool.sh server 1
   ```
   a. Verify that the IP addresses and names are correct.

   b. Enter **yes** after you see a message similar to the following:
      ```
      <timestamp> The accessibility is not mandatory for the rollback
      process but please verify the file has the correct details
      before continuing. You may stop now and rerun the script. Do you
      wish to continue now?
      ```

   c. Enter the opsa password for the OpsA 2.00 Server Appliance.

   d. If the copy to the OpsA 2.00 Server Appliance fails, copy the `prerollback*.tar.gz` file to /opt/HP/opsa/upgrade/ on the OpsA 2.00 Server Appliance.

   e. Repeat these steps for all of the OpsA 2.10 Server Appliances.

3. Run the following command from the OpsA 2.00 Server Appliance:
   ```
   /opt/HP/opsa/upgrade/opsa-server-rollback.sh
   ```
   a. Enter the Vertica administrator password, dbadmin.

   b. Enter **no** after you see a message similar to the following: `Do you want to perform metadata backup before upgrade [yes/[no]]:`

   c. Enter **yes** after you see a message similar to the following: `Do you want to rollback the upgrade [yes/[no]]:`

   d. Repeat these steps for all of the OpsA 2.00 Server Appliances.

4. Run the appropriate commands on all of the OpsA 2.00 Server and Collector Appliances:

   - **OpsA 2.00 Server Appliances**:
     ```
     opt/HP/opsa/bin/opsa-server start
     ```

   - **OpsA 2.00 Collector Appliances**:
     ```
     opt/HP/opsa/bin/opsa-collector start
     opt/HP/opsa/bin/opsa-loader start
     ```

5. The rollback should complete within five minutes.

Chapter 7: Support Considerations

This chapter contains information about special cases you might consider during your upgrade.

Preserving Operations Analytics Log Files

You might decide to preserve the Operations Analytics (OpsA) 2.00 log files during your upgrade. To do so, complete the following steps on each of the OpsA 2.00 Server and Collector appliances:

1. If you did not do so already, create the `/opt/HP/opsa/upgrade` folder.

2. Copy the `/opt/HP/opsa/upgrade/opsa-logcopy-tool.sh` script from `/opt/HP/opsa/upgrade` directory on the OpsA 2.10 Server Appliance to the `upgrade` directory (`/opt/HP/opsa/upgrade`) on the OpsA 2.00 Server Appliance.

3. Run the `/opt/HP/opsa/upgrade/opsa-logcopy-tool.sh` script.

   Note: The `opsa-logcopy-tool.sh` script creates the `logfiles_<current date time>.tar.gz` in the `/opt/HP/opsa/upgrade` folder.

4. Manually copy the `logfiles_<current date time>.tar.gz` file to a folder of your choice for support purposes.

See the *opsa-logcopy-tool.sh* reference page (or the Linux manpage) for more information.

We appreciate your feedback!

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