HP Automation Insight

For the Red Hat Enterprise Linux ® and SUSE Enterprise Linux ® operating systems

Software Version: 1.0

Installation Guide

Document Release Date: July 2014

Software Release Date: July 2014

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Contents

Welcome to HP Automation Insight

Welcome to HP Automation Insight (AI) 1.0. HP AI is a comprehensive solution that enables you to make better cloud management decisions. HP AI provides the following features:

- Collection and secure archiving of historical data from cloud automation management systems
- Reporting, advanced analytics, and services to securely access and analyze archived and real-time data
- Out-of-box analysis content
- Solution packs, which contain operational system definitions, reports, analysis procedures and dashboards

HP AI has the following primary use cases:

- Datacenter Management—Using the operational, tactical, and strategic reports and dashboards provided by HP Solution Packs, you can manage and operate your Cloud Datacenter more effectively and securely.
- Compliance—Using the extract/transform/load processes provided by the HP AI infrastructure and solution packs, you can warehouse the operational data needed for compliance and business intelligence requirements.

HP AI uses HP Vertica Analytics Database technology and provides a complete set of ETL tools, dimensional data models, reports, dashboards, analytics systems, and content for the HP suite of automation tools.

The HP AI administrator manages all aspects of the HP AI core by using the HP AI web administration user interface.

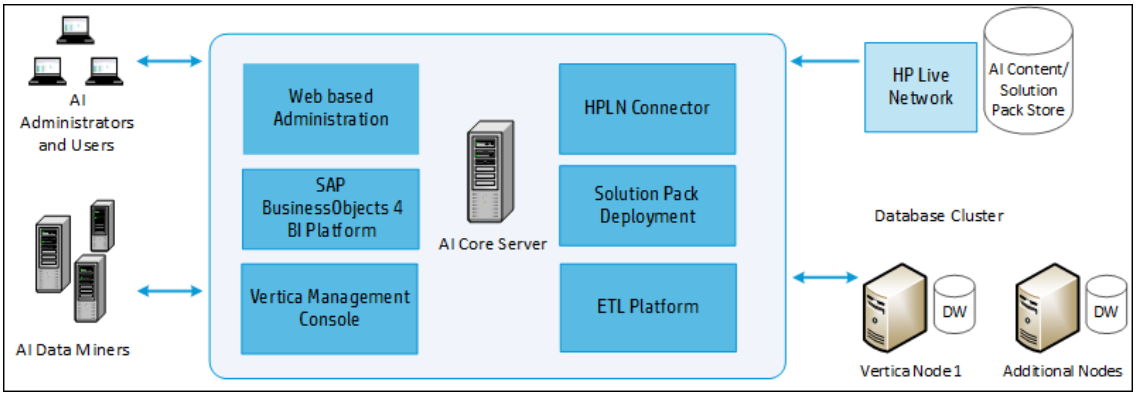
HP AI users can view the reports and dashboards that are presented by the BusinessObject Web Intelligence platform. The BusinessObject dashboards and reports provide advanced analysis on cloud automation activities that enable you to make decisions based on real-time data, historical data, and data trends. The analyzed data is collected from HP software products that perform automation and monitoring services.

HP AI monitors the HPLN AI solution pack store and refreshes the list shown to HP AI users based on HPLN account entitlement.

The HP AI dataminer is installed on a data source. It mines the database leveraging vault transactions and then uploads the mined data to the HP AI core server. On the HP AI core server, the data loader loads data into the HP Vertica data warehouse.

Figure 1 shows the HP AI architecture.

Figure 1: HP Automation Insight Architecture Overview



Prerequisites

You must meet the requirements in the following sections before installing the HP AI core server:

User Account Ulimit

Use the following ulimit settings in RHEL 6.x and SLES 11.x.

RHEL 6.x Platforms

1. Edit the `/etc/security/limits.conf` file to add the following settings:

   ```
   * soft nofile 65536

   * hard nofile 65536

   * soft data unlimited

   * hard data unlimited

   * soft fsize unlimited

   * hard fsize unlimited
   ```

2. Edit the `/etc/security/limits.d/90-nproc.conf` file to add the following settings:

   ```
   * hard nproc unlimited

   * soft nproc unlimited
   ```

SLES 11.x Platforms

1. Edit the `/etc/security/limits.conf` file to add the following settings:

```
* soft nofile 65536

* hard nofile 65536

* soft data unlimited

* hard data unlimited

* soft fsize unlimited

* hard fsize unlimited

* hard nproc unlimited

* soft nproc unlimited
```

2. Type the `ulimit -a` command to verify the ulimit settings.

Note: After editing the files, you must reboot your machine to apply the ulimit updates.

Required HP AI Ports

Table 1 and Table 2 list the default HP AI ports. Make sure that the ports in the table below are open before installing HP AI.

Table 1: Required HP AI Ports

Open Port	Source	Destination	Description
6410	HP AI Core	HP AI Core	Port that Service Intelligence Agent (SIA) uses to listen for incoming connections on the Central Management Server (CMS.)
6400	HP AI Core	HP AI Core	Port that the HP AI CMS uses to listen for incoming connections on the SAP Web Application Server (SAP Web AS.)
2638	HP AI Core	HP AI Core	Port that Sybase SQL Anywhere uses to listen for incoming database queries.

Table 1: Required HP AI Ports, continued

Open Port	Source	Destination	Description
8080	HP AI Core	HP AI Core	Port that Web Clients use to listen for incoming connections on the web application server.
8005	HP AI Core	HP AI Core	Port that allows the web application to be shut down remotely.
8443	HP AI Core	HP AI Core	Port that Web clients use to listen for incoming connections on Web Application Server by secure channels.
3690	HP AI Core	HP AI Core	Life Cycle Management (LCM) port.
6405	HP AI Core	HP AI Core	Port that web clients use to listen for incoming connections on the SAP Web Application Container Server (WACS.)
4443	HP AI Core	HP AI Core	Port that the HP AI administrator uses to access the user interface and SAP BusinessObjects dashboard.
8873	Data Source Core	HP AI Core	Rsync port that the data miner running on the source systems use to transfer data to the HP AI core server.
5433	Vertica Nodes	HP AI Core	HP Vertica port used to communicate with the HP Vertica cluster database. This port can be defined in the HP AI web admin user interface on the **Configuration** tab.
5450	HP AI Core	HP AI Core	Port of the HP AI core server that is used to retrieve statistics about the Vertica nodes through the Vertica Management Console.

Table 2: Required Ports for Supported HP AI Data Sources

Open Port	Source	Destination	Description
8873	Data Source Core	HP AI Core	Port that should be enabled on the data source server to transfer files to the HP AI core server.
4443	Data Source Core	HP AI Core	Port that should be enabled on the data source machine for communication between the data miner and the HP AI core server.

Locale and Language

Change the language and locale for the HP AI core server to UTF-8 in the following file:

`/etc/sysconfig/i18n`

LANG=en_US.UTF-8

LC_ALL=en_US.UTF-8

You must be logged in as the root user to set the locale and language settings.

Kernel Parameters

Perform the following steps to set the Kernel parameters shown in Table 3:

1. Type the following command to view the kernel parameters in your RHEL 6.x or SUSE 11 system:

   ```
   ipcs -l
   ```

2. Set the kernel parameters shown in Table 3 in the `/etc/sysctl.conf` file.

3. Type the following command to update the kernel parameters:

   ```
   /sbin/sysctl -p
   ```

Note: You must have root access to modify kernel parameters.

For RHEL 6.x and SUSE 11.x platforms, see the `sysctl` man page for more information on configuring kernel parameters.

Table 3: HP AI Kernel Parameters

Kernel Parameter	Required Value	Description
kernel.shmmni	256* (RAM in GB)	The minimum size of a shared memory segment.
kernel.shmmax	Size of RAM in bytes	The maximum size of a shared memory segment.
kernel.shmall	Size of RAM * 512 KB	The maximum allocation of shared memory pages on a system, for example: 16*512*1024.
kernel.sem	250 256000 32 256* (RAM in GB)	The amount of semaphores available to the operating system. The sem parameter consists of 4 tokens: SEMMSL, SEMMNS, SEMOPM and SEMMNI.
kernel.msgmni	8192* (RAM in MB) or 1024* (RAM in GB)	The number of agents that can be started.
kernel.msgmax	65536	The size of the message that can be sent in a queue.
kernel.msgmnb	65536	The size of the queue.
fs.file-max	204708	The maximum number of open files allowed.
vm.swappiness	0	The level the kernel favors swap over RAM.
vm.overcommit_memory	0	The setting that determines whether the kernel accepts or denies large memory requests.
kernel.randomize_va_space	0	The setting that disables Address Space Layout Randomization (ASLR).
kernel.threads-max	254923	The maximum number of threads.

Required RPM Packages

RHEL 6.x Required RPM Packages

Before installing SAP BusinessObjects on Red Hat Enterprise Linux 6.x, you should verify that all of the following RPMs are installed on the HP AI core server.

Table 4: Packages Required for Red Hat Enterprise Linux

Required Packages	Architecture
compat-libstdc++	i686
compat-libstdc++	x86_64
glibc	i686
glibc-devel	x86_64
libstdc++	i686
libX11	i686
libXext	i686
libXext-devel	i686
libXau	i686
expat	i686
libgcc	i686
libxcb	i686
make	x86_64
gcc	x86_64
lynx	x86_64
openssl-devel*	x86_64
Openssl*	x86_64
nss-softokn-freebl	i686

Note: On RHEL 6.5 systems, the openssl-devel and Openssl RPM version should be 1.0.1e-16 or greater.

Type the following command to determine if a required package is installed:

`rpm -q package_name`

If the required RPM packages are not installed, then you must install them from the RHEL6.x media.

SUSE 11.x Required RPM Packages

Before installing HP AI on SUSE Linux Enterprise Server 11.x, you should verify that all of the following RPMs are installed on the HP AI core server.

Table 5: Packages Required for SUSE

Required Packages	Architecture
glibc	x86_64
glibc-devel	x86_64
gcc	x86_64
gcc43	x86_64
cpp	x86_64
cpp43	x86_64
libopenssl	x86_64
libopenssl-devel	x86_64
make	x86_64
zlib	x86_64
zlib-devel	x86_64
unixODBC	x86_64

Type the following command to determine if a required package is installed:

```
rpm -q package_name
```

If the required RPM packages are not installed, then you must install them from the SUSE 11.x media. You can also use the YaST utility to install and maintain the required RPMs.

SELinux Setting

SELinux must be disabled on the HP AI core server before installation.

Hosts File

HP AI requires that the output from the hostname application have an appropriate entry in the `/etc/hosts` file.

For example, your hosts file will contain text similar to the following:

```
# Do not remove the following line, or various programs
# that require network functionality will fail.
127.0.0.1 localhost.localdomain localhost
15.3.106.41 myserver.ai.mycompany.com myserver
```

Do not use the `localhost` entry to specify the host name of your HP AI core server in the `/etc/hosts` file. The HP AI core server host name should be a separate entry in the file. It is shown correctly in the example above.

Note: Replace the example IP addresses shown here with real addresses. Do not remove the loopback address (127.0.0.1).

Time Zone and NTP Configuration

Perform the following steps to set the time zone to UTC on the HP AI core server, all nodes of the HP Vertica database cluster, and the data source:

1. Copy the `UTC` file to the `localtime` file. For example:

   ```
   · # cp /usr/share/zoneinfo/UTC /etc/localtime
   ```

2. Edit the `clock` file to set the TIMEZONE to UTC. For example:

   ```
   · vi /etc/sysconfig/clock

   TIMEZONE or ZONE="UTC"
   ```

3. Synchronize the time zone on each server using the Network Time Protocol daemon (NTPD).

   On RHEL 6.x platforms, type the following command to check the status of NTPD:

   ```
   #service ntpd status

   ntpd (pid 2461) is running...
   ```

   One SLES 11.x platforms, type the following command to check the status of NTPD:

   ```
   #service ntp status

   Checking for network time protocol daemon (NTPD): running
   ```

4. Synchronize the target server time using NTPD .The time on the HP AI core server, the HP Vertica database server, and the data source cluster nodes must be the same in order to to load data in reports.

Hardware Prerequisites

Before you install the HP AI core server, make sure the minimum hardware prerequisites shown in Table 6 are met.

Table 6: HP AI Hardware Prerequisites

Component	Minimum	Recommended
NIC	1	1
Memory	32 GB	64 GB
Storage (under /)	200 GB	300 GB
CPU	4 CPUs (2.6+ GHz)	4 CPUs (2.6+ GHz)
Screen Resolution	1024 x 768	For HP Vertica Management Console, higher resolutions are recommended for optimal viewing.

Note: HP AI can also be installed on Virtual Machines (VMs).

Installing HP Automation Insight

Perform the following tasks to install HP AI:

- "Rebuild the Electronic Distribution"
- "Install the HP AI Core Server"
- "Install and Set Up the Data Warehouse"

Rebuild the Electronic Distribution

The electronic distribution of HP AI 1.0 is provided on five 2-gigabyte ISOs. When using the electronic distribution, you must unpack all five ISOs and reassemble them into a single distribution before you can install the product. Copy the contents of the ISOs to a file system or mount point with at least 8 gigabytes of storage before beginning the installation.

See the `README.txt` file on the HP AI distribution media for instructions.

Install the HP AI Core Server

This section explains how to install and set up the HP AI core server. You can install the HP AI core server from console mode, interface mode, or in silent mode.

Note: The installation of the HP AI core server, database creation, and the core configuration are very time-consuming steps in the installation. You should also plan for additional time to install the HP Vertica database, which is installed separately from the HP AI core server.

Note: If you cancel the installation, the installer creates the log file `HP_Automation_Insight_Install_xxx.log` in the `/root` directory. If the installation fails, the installer creates the log file in the `/var/log/HP/CBI/install_logs` directory.

Note: During installation, HP AI creates a custom log file in the `/tmp/` folder with the name `AI_custom_install_XXXX.log` that you can use to view the status of the installation. If you cancel the installation, or if the installation fails because of any missing prerequisites, the installer creates the log file `AI_custom_install_XXXX.log` in the `/tmp` directory. When the installation is complete, the installer moves the `AI_custom_install_XXXX.log` file to the `/var/log/HP/CBI/install_logs` directory.

After you set up the HP AI core server, copy the install files from the installation media onto the core server. The SAP BusinessObjects (BO) 4 SP7 tar files and the `AI-installer-1.0.0.xxxx.bin` file must be placed in the same location. Do not change the BusinessObjects tar file names. If the file names are changed, the installer does not detect the existence of the tar files.

The `AI-installer-1.0.0.xxxx.bin` file contains all components other than BO. The file names should be as follows:

```
-rw-r--r--. root root BO4SP7_1-4.0.7.tar

-rw-r--r--. root root BO4SP7_2-4.0.7.tar

-rw-r--r--. root root BO4SP7_3-4.0.7.tar

-rwxr-xr-x root root AI-installer-1.0.0.xxxx.bin
```

Install from Console Mode

To install the HP AI core server from console mode, perform the following steps:

1. Use SSH to connect to the core server as root:

   ```
   ssh root@ai-core.ip-address
   ```

   You can also connect to the core server as root using tools such as PuTTY.

2. Change directory to the location where you downloaded the BO tar files and the `AI-installer-1.0.0.xxxx.bin` file.

3. Check the directory to ensure that the required `AI-installer-1.0.0.xxxx.bin` and BO tar files are present. For example:

   ```
   [root@aicore ai-install]# ls -l

   total 5835148

   -rw-r--r--. 1 root root 1652510720 Oct 27 23:42 BO4SP7_1-4.0.7.tar

   -rw-r--r--. 1 root root 1656012800 Oct 27 23:45 BO4SP7_2-4.0.7.tar

   -rw-r--r--. 1 root root 1968271360 Oct 27 23:48 BO4SP7_3-4.0.7.tar

   -rwxrwxrwx  1 root root  697482713  Nov 10 20:02 AI-installer-1.0.0.xxxx.bin
   ```

4. To begin the installation, do one of the following:

   - To install on a terminal with the X Window System, type the following command:

     ```
     ./AI-installer-1.0.0.xxxx.bin -i console
     ```

     or

   - To install on a terminal without an X Window Server, type the following command without

parameters:

```
./AI-installer-1.0.0.xxxx.bin
```

The installer begins the installation, and the following messages appear:

```
Preparing to install...

Extracting the JRE from the installer archive...

Unpacking the JRE...

Extracting the installation resources from the installer archive...

Configuring the installer for this system's environment...

Launching installer...
```

5. Press `ENTER` to continue.
6. Read the license agreement. Type `y` to accept the license agreement and continue with the installation:

```
DO YOU ACCEPT THE TERMS OF THIS LICENSE AGREEMENT? (Y/N): y
```

7. The installer performs a prerequisites check. Output similar to the following is displayed:

```
=============================================================

AI Prerequisites Check                          Status

=============================================================

Free Space Check                                 PASS

SELinux Status Check                             FAIL

Required RPMs Check                              PASS

Kernel Param Check                               PASS

BI Ulimits Check                                 PASS

=============================================================

Failure Summary:

Free Space Check

WARNING:
```

```
Freespace on Root File System of 300GB is recommended.

SELinux Status Check:

Expected:disabled,Actual:permissive

Press Enter to re-run the AI and BI4.0 Prechecks

Type 'ignore' to ignore the prerequisites

============================================================
```

Note: Caution should be taken when ignoring the prerequisites as the product may not work as expected if prerequisites are not met.

8. Press `ENTER` to continue. The installer displays the default ports used by HP AI, SAP BusinessObjects, and the Vertica Management Console. Output similar to the following is displayed:

```
============================================================

Default Ports used by SAP BO and VMC during AI installation

============================================================

Default Port                              Description

============================================================

3690                                      LCM PORT

6410                                      SIA PORT

2638                                      SYBASE PORT

6405                                      BO WACS PORT

5450                                      VMC PORT

8070                                      TOMCAT HTTP PORT

============================================================
```

9. Press `ENTER` to continue. Enter and confirm the HP AI administrator password. The password must contain at least one character and can include letters, numbers, and any of the following special characters:

```
~!@#%^&*-_+=
```

The password cannot contain any other special characters or blank spaces. Note that the password is masked on the screen.

```
============================================================

Enter Password

--------------

This installation requires a password to continue.

Please Enter the Password for AI admin:

Confirm Password for AI admin:

============================================================
```

10. Press ENTER to accept the default HP AI gateway port. The HP AI gateway and port provide a unified way to access the HP AI web administration user interface and dashboards. If you enable a firewall after installing the HP AI core server, you must enable the HTTPS port.

    4443 is the default HTTPS port. If port 4443 is already in use in your system, enter a different HP AI gateway port.

```
============================================================

HP AI Gateway Configuration

-------------------------

Please enter the HTTPS port for HP AI gateway.

HTTPS Port (DEFAULT: 4443):

============================================================
```

11. Press ENTER to accept the default jetty HTTPS port for the HP AI core server. The HTTPS port is the locally accessible port for the HP AI web administration user interface.

    8443 is the default HTTPS port. If port 8443 is already in use in your system, enter a different HP AI core server port.

```
============================================================

HP AI Server Configuration

------------------------

Please enter the jetty HTTPS port for the HP AI core server.
```

```
HTTPS Port (DEFAULT: 8443):

============================================================
```

12. Press ENTER to accept the default LDAP and LDAPS ports for the ApacheDS. The LDAP directory is used to store information about HP AI users and groups for authentication purposes by HP AI. The LDAPS directory is also used to store the HP AI solution pack catalog and the deployment metadata.

    10389 is the default LDAP port. 10645 is the default LDAPS port. If port 10389 or 10645 is already in use in your system, enter different LDAP and LDAPS ports.

```
============================================================

LDAP Server Configuration

------------------------

Please enter the LDAP port for the ApacheDS.

LDAP Port (DEFAULT: 10389):

============================================================

============================================================

LDAPS Server Configuration

Please enter the LDAPS port for the ApacheDS.

LDAPS Port (DEFAULT: 10645):

============================================================
```

13. Enter and confirm the cryptographic key. The cryptographic key is used to encrypt secure Central Management Server (CMS) cluster communications. The key must be a minimum of 6 characters and should be alphanumeric or a combination of lower and upper case letters.The key cannot contain special characters or blank spaces. Note that the key is masked on the screen.

```
============================================================

Cryptographic key for BO Installation

-------------------------------------

This installation requires a BO Cryptographic key to continue.

Please Enter BO Cryptographic key for BO installation:
```

```
Confirm Cryptographic key for BO installation:

============================================================
```

14. Press ENTER to accept the default SAP BusinessObjects Web Server HTTPS and Central Management Server (CMS) ports. The Web Server HTTPS port is the local port used to access the HP AI launch pad user interface.

    8080 is the default HTTPS port. 6400 is the default SAP BusinessObjects CMS port. If port 8080 or 6400 is already in use in your system, enter different HTTPS and CMS ports.

```
============================================================

BusinessObjects Web Server Configuration

--------------------------------------

Please enter the SAP BusinessObjects Web Server HTTPS port.

HTTPS Port (DEFAULT: 8080):

============================================================

============================================================

BusinessObjects Web Server Configuration

--------------------------------------

Please enter the SAP BusinessObjects Web Server CMS port.

BO CMS PORT (DEFAULT: 6400):

============================================================
```

15. Press ENTER to accept the default rsync server port. The rsync server transfers reporting data from source systems to the HP AI core server.

    8873 is the default rsync server port. If port 8873 is in use in your system, enter a different rsync server port.

```
============================================================

rsync Server Configuration

-------------------------

Please enter the port number for the rsync server.

RSYNC Port (DEFAULT: 8873):
```

```
===============================================================
```

16. Review the pre-installation summary.

```
===============================================================
Pre-Installation Summary
------------------------
Please Review the Following Before Continuing:
Product Name:
 HP Automation Insight
Install Folder:
    /opt/HP/CBI
Install Set:
    Full Installation (Core)
Product Features:
    BI Platform,
    Administration,
    ETL Components,
    Documentation
AI Server HTTPS Port
    8443
BO CMS Port
    6400
AI Gateway HTTPS Port
    4443
BusinessObjects Web Server HTTPS Port
    8080
```

```
LDAP HTTP Port

    10389

LDAP HTTPS Port

    10645

Rsync Server Port

    8873

PRESS <ENTER> TO CONTINUE:
```

17. Press `Enter` to continue. The installer continues.

> **Note:** The HP AI installation time can vary depending on your system settings. Allow at least 30 minutes to an hour for the installation to complete.

```
================================================================================
===

Installing...

-------------

[==================|==================|==================|==================]

[------------------|------------------|------------------|------------------]

================================================================================
===

Installation Complete

---------------------

Congratulations. HP Automation Insight has been successfully installed to:

/opt/HP/CBI

PRESS <ENTER> TO EXIT THE INSTALLER:

[root@aicore ai-install]#
```

Install from Graphical Interface Mode

Installing the HP AI core server from graphical interface mode requires a graphical X Window System installation. Ensure that the environment variable `DISPLAY` specifies *host*:*display*, where

host identifies the host name of the X server to be contacted, and *display* is the display number.

Installing with the Installation Wizard

To install the HP AI core server using the installation wizard, perform the following steps:

1. Log in as root to the server where you want to install the HP AI core server:

   ```
   su - root
   ```

2. Mount the HP AI installation media.

3. Go to the media root directory:

   ```
   cd /mnt_point>/
   ```

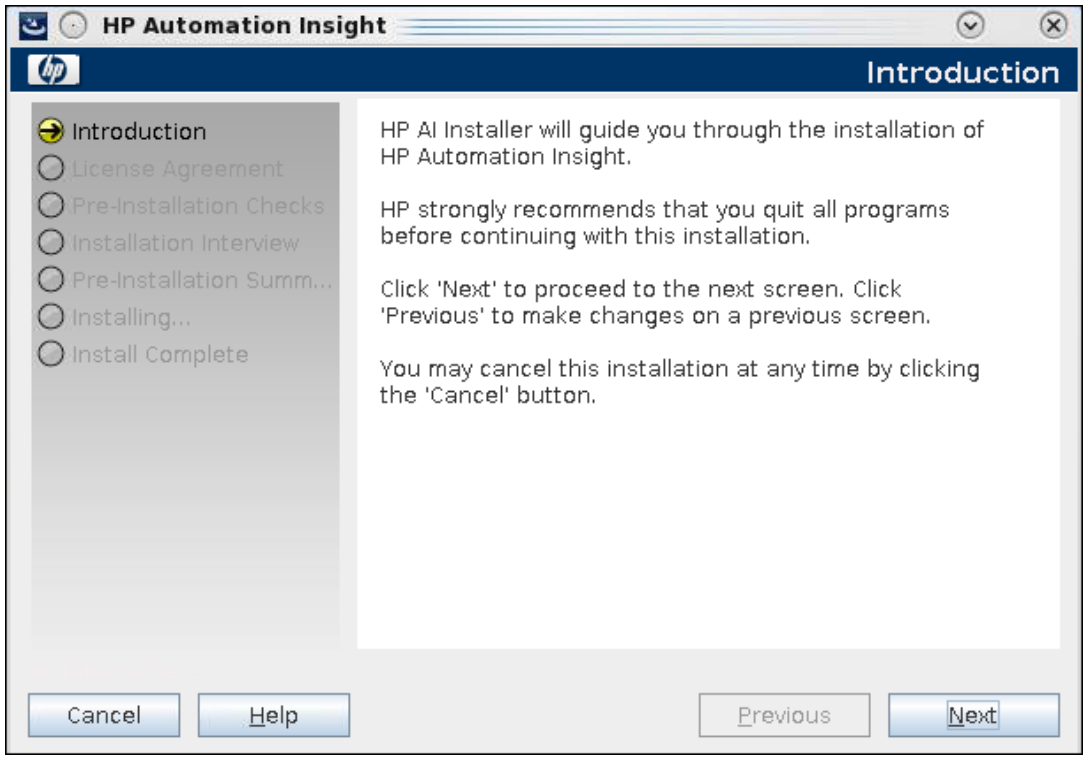
4. Check the directory to ensure that the required `AI-installer-1.0.0.xxxx.bin` and BusinessObjects tar files are present:

   ```
   ls -l

   total 5835148

   -rw-r--r--. 1 root root 1652510720 Oct 27 23:42 BO4SP7_1-4.0.7.tar

   -rw-r--r--. 1 root root 1656012800 Oct 27 23:45 BO4SP7_2-4.0.7.tar

   -rw-r--r--. 1 root root 1968271360 Oct 27 23:48 BO4SP7_3-4.0.7.tar

   -rwxrwxrwx  1 root root 697482713  Nov 10 20:02 AI-installer-1.0.0.xxxx.bin
   ```

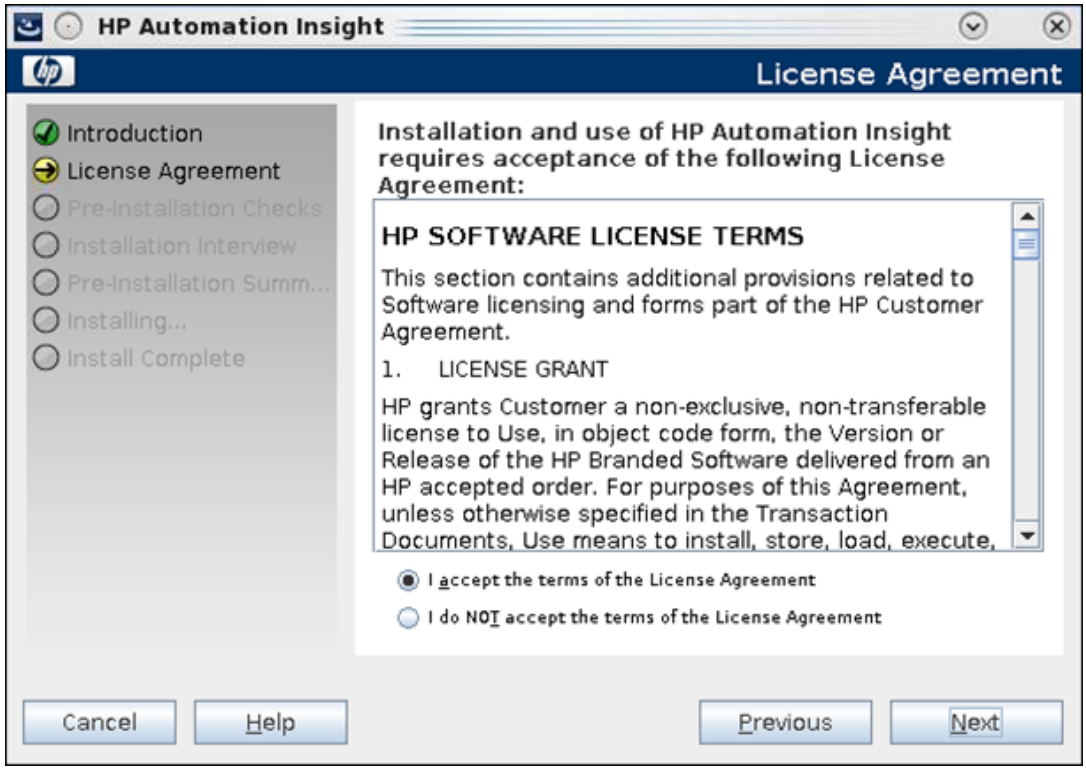
5. Run the following command to start the installer:

   ```
   ./AI-installer-1.0.0.xxxx.bin
   ```

   The installer Introduction window opens.



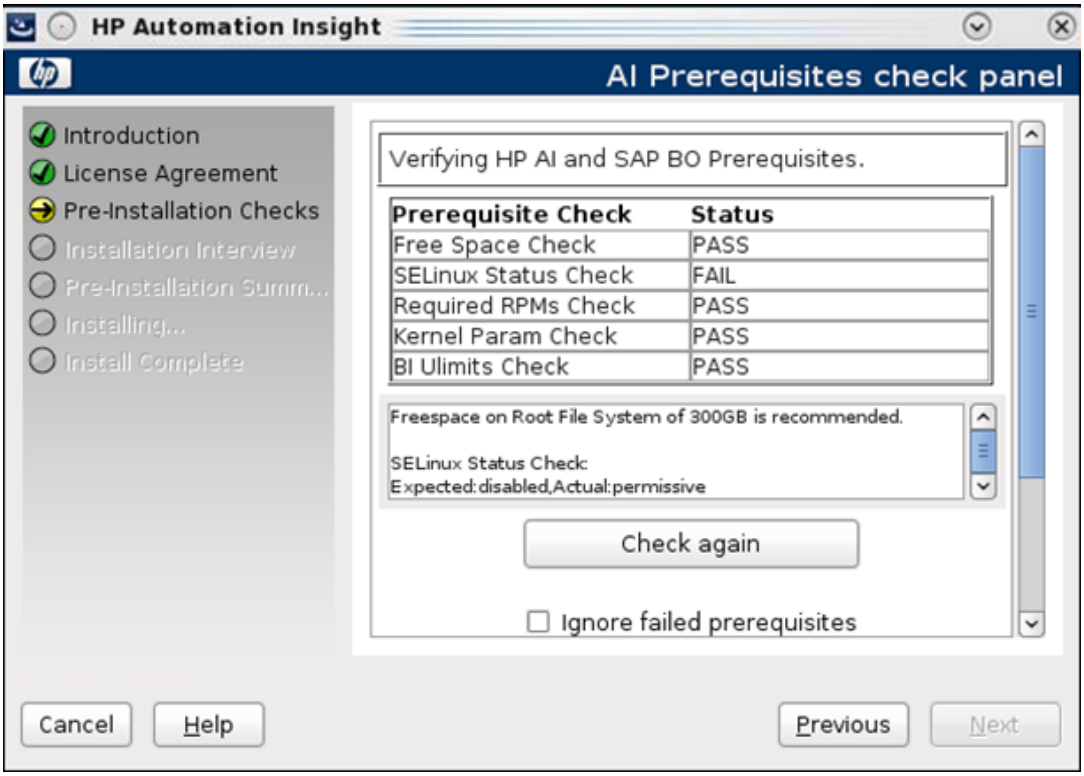
6. Click **Next**. The License Agreement window opens.



Read the license agreement.

7. Click the radio button to accept the License Agreement.

8. Click **Next**. The installer checks your system for the required settings. There may be a pause before the Pre-Installation Checks window opens.



The pre-installation check verifies the following HP AI installation prerequisites:

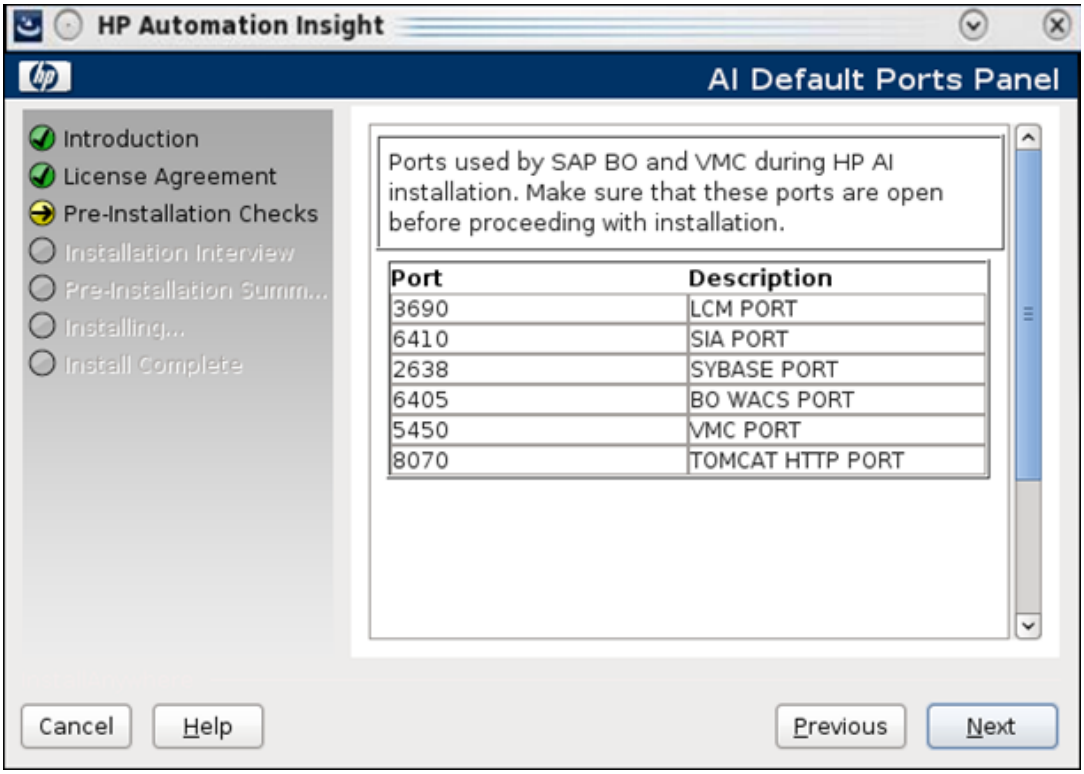
- Free space available in server
- SELinux status
- Required RPMs
- Kernel parameters
- BI ulimits

The status of each prerequisite appears in the Status column. If **FAIL** appears in any row, check the display for details of the error. Scroll down to see all messages. You can leave the Pre-installation Checks window open while you correct any errors. After correcting the errors, click **Check Again** to rerun the pre-installation check.

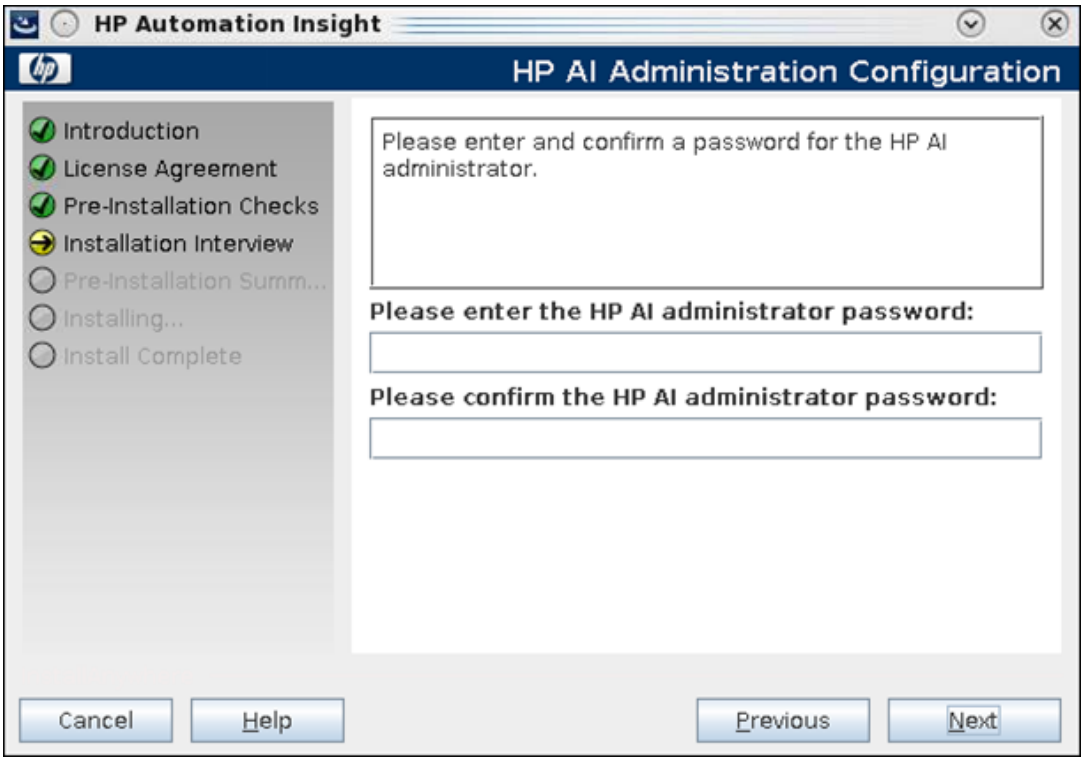
If any prerequisite is in a FAIL status, the installer does not proceed to the next step, unless you select the **Ignored failed prerequisites** box.

> **Note:** If you select the **Ignore failed prerequisites** box, a warning message appears and the **Next** button is enabled. Caution should be taken when selecting the **Ignore failed prerequisites** box as the product may not work as expected if prerequisites are not met.

9. When all rows display a **PASS** status, click **Next** to continue. The the default port window opens and displays the default ports used by HP AI, SAP BusinessObjects, and the Vertica Management Console (VMC).



10. Click **Next**. The HP AI Administration Configuration window opens.

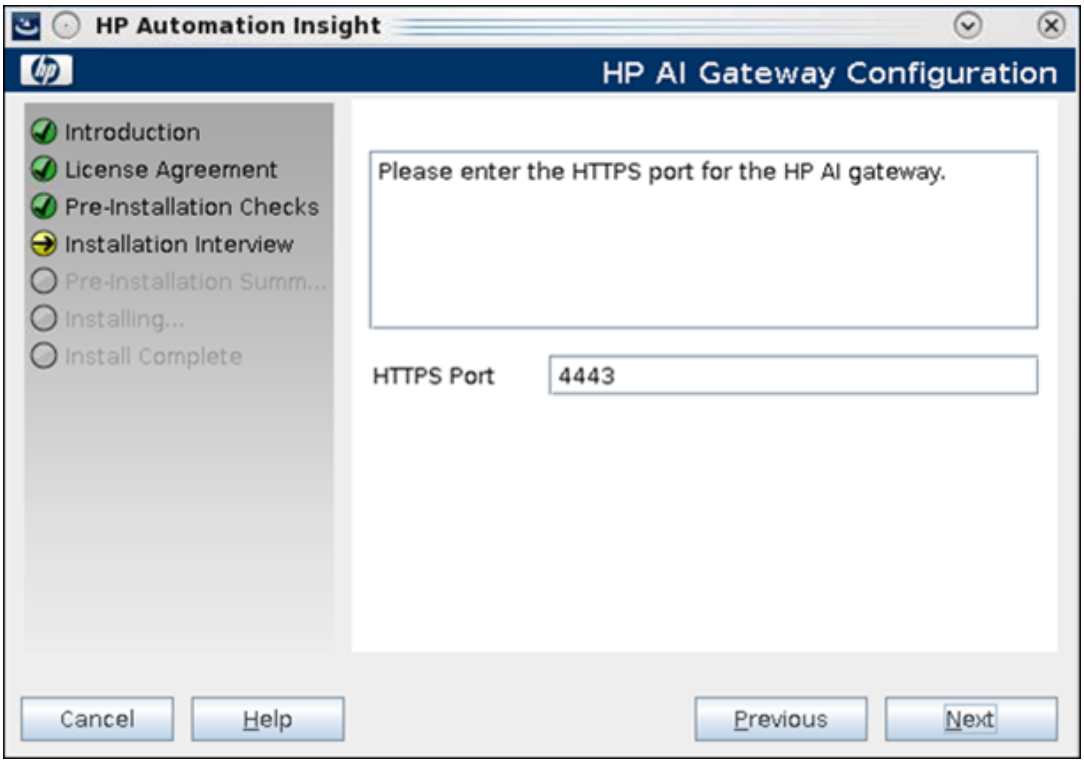


11. Enter and confirm the HP AI administrator password. The password must contain at least one character and can include letters, numbers, and any of the following special characters:

    ~!@#%^&*-_+=

    The password cannot contain any other special characters or blank spaces. Note that the password is masked on the screen.

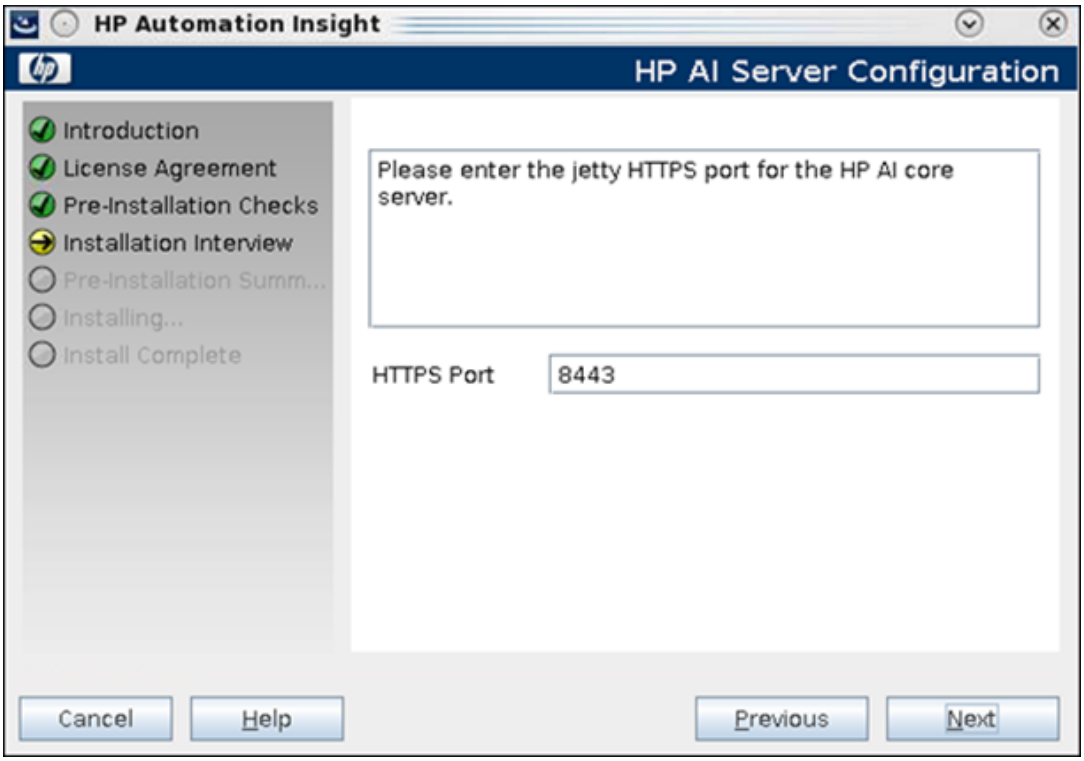
12. Click **Next**.The HP AI Gateway Configuration window opens.



13. Enter the HTTPS port for the HP AI gateway. The HP AI gateway and port provide a unified way to access the HP AI web administration user interface and dashboards. If you enable a firewall after installing the HP AI core server, you must enable the HTTPS port.

    4443 is the default HTTPS port. If port 4443 is already in use in your system, enter a different HP AI gateway port.

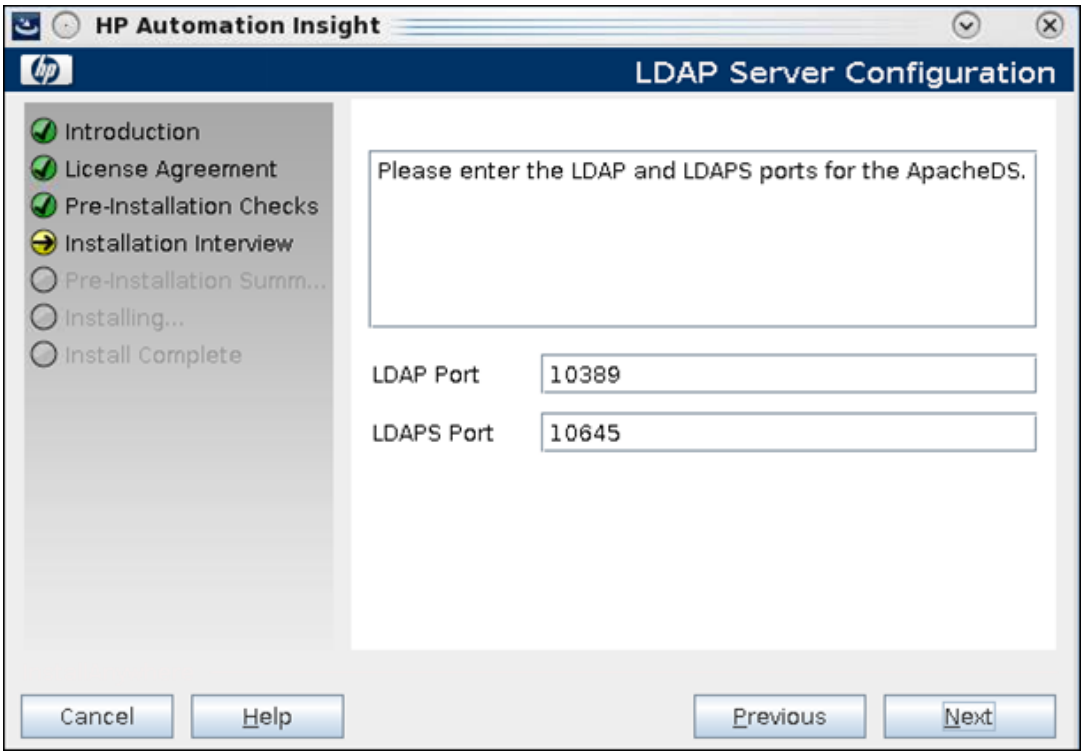
14. Click **Next**. The HP AI Server Configuration window opens.



15. Enter the jetty HTTPS port for the HP AI core server. The HTTPS port is the locally accessible port for the HP AI web administration user interface.

    8443 is the default HTTPS port. If port 8443 is already in use in your system, enter a different HTTPS port.

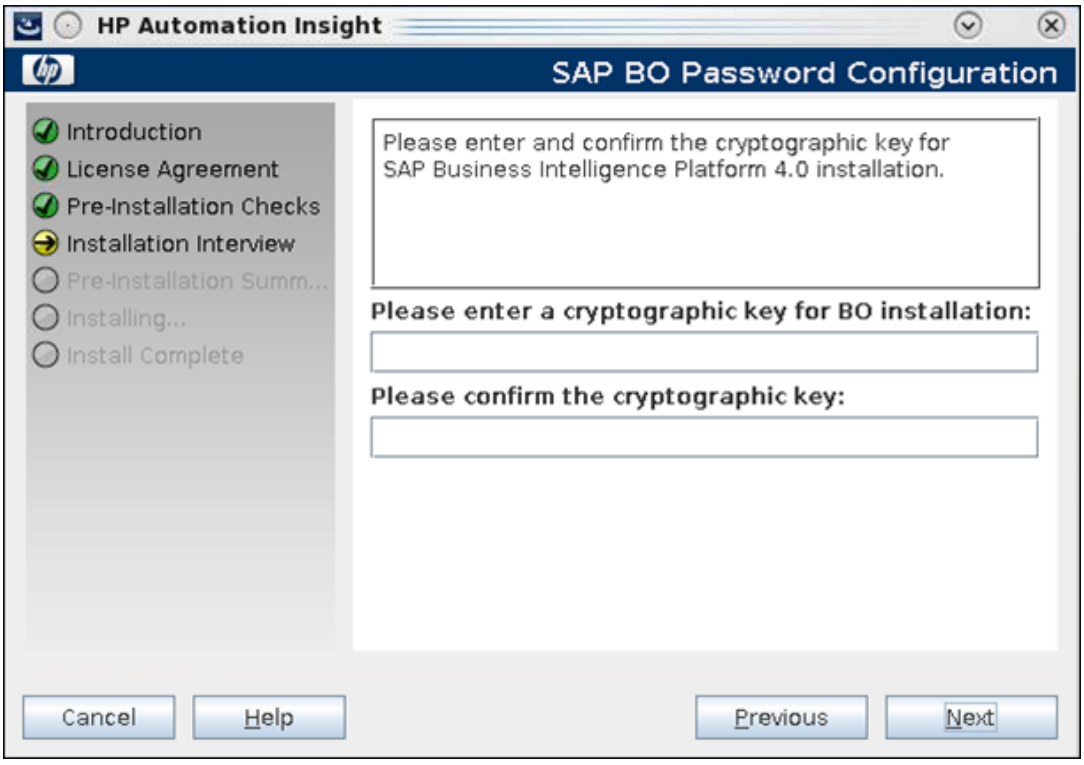
16. Click **Next**. The LDAP Server Configuration window opens.



17. Enter the LDAP and LDAPS ports for the ApacheDS. The LDAP directory stores information about HP AI users and groups for authentication purposes by HP AI. The LDAPS directory is used to store the HP AI solution pack catalog and the deployment metadata.

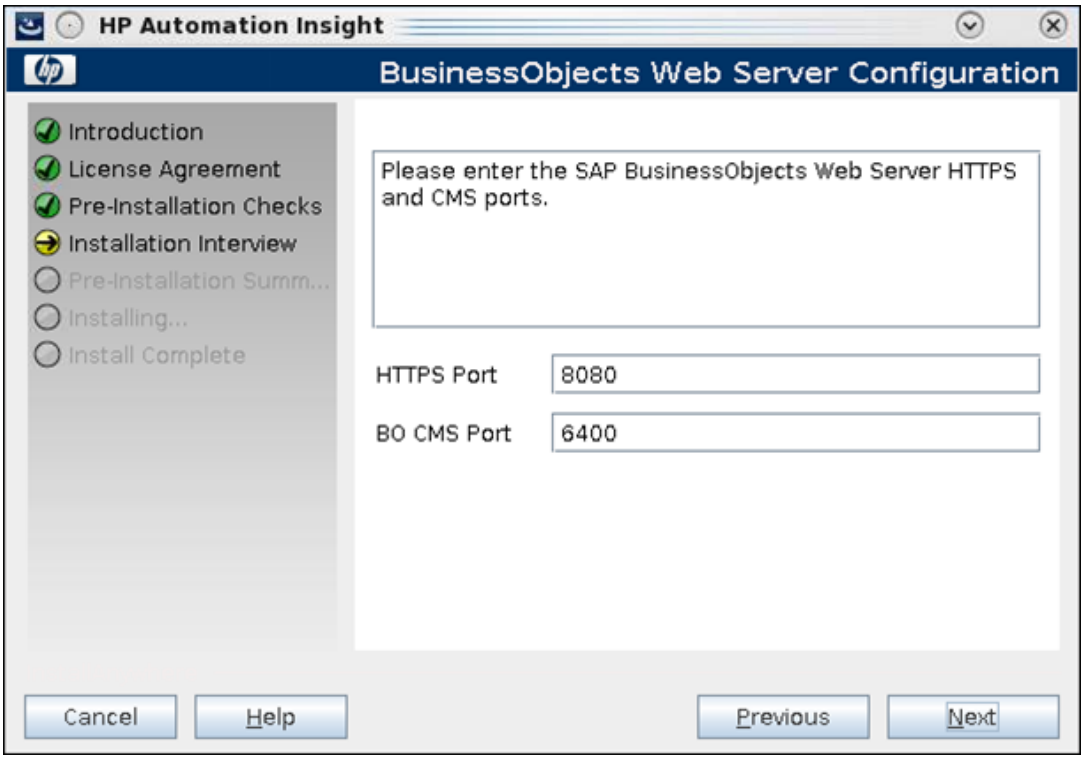
    10389 is the default LDAP port. 10645 is the default LDAPS port. If port 10389 or 10645 is already in use in your system, enter different LDAP and LDAPS ports.

18. Click **Next**. The SAP BO Password Configuration window opens.



19. Enter and confirm the cryptographic key for HP AI installation. The cryptographic key is used to encrypt secure Central Management Server (CMS) cluster communications. The key must be a minimum of 6 characters and should be alphanumeric or a combination of lower and upper case letters.The key cannot contain any special characters or blank spaces. Note that the key is masked on the screen.

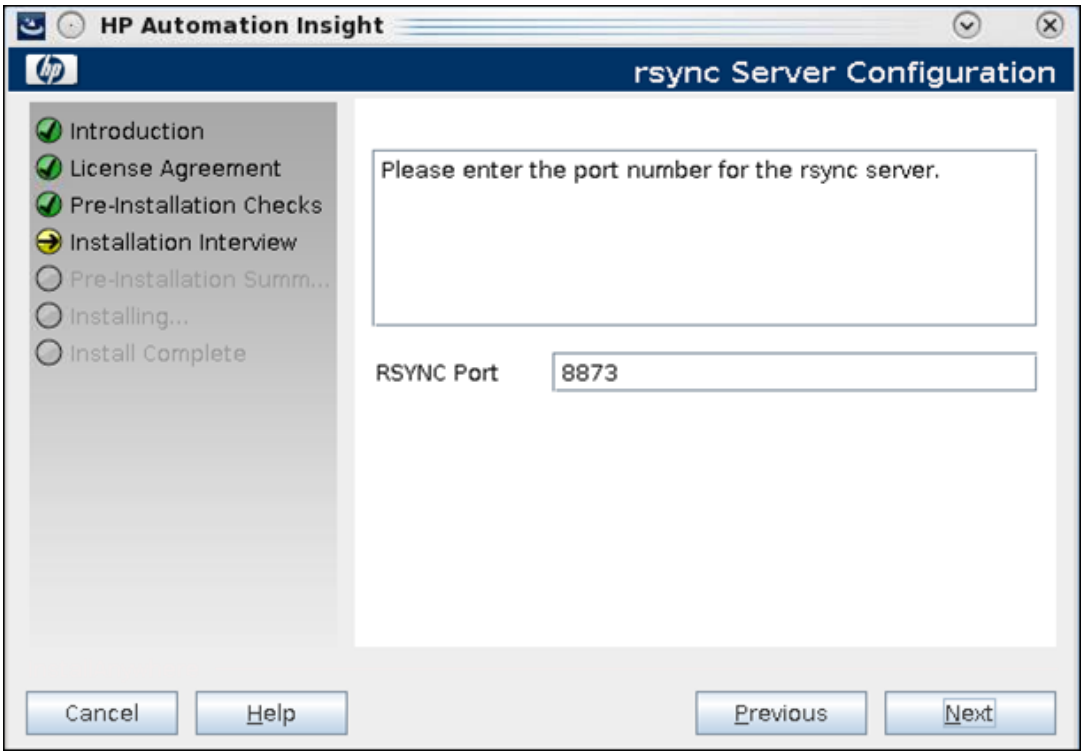
20. Click **Next**. The BusinessObjects Web Server Configuration window opens.



21. Enter the SAP BusinessObjects Web Server HTTPS and Central Management Server (CMS) ports. The Web Server HTTPS port is the local port used to access the HP AI launch pad user interface.

    8080 is the default HTTPS port. 6400 is the default SAP BusinessObjects CMS port. If port 8080 or 6400 is already in use in your system, enter different HTTPS and BO CMS ports.

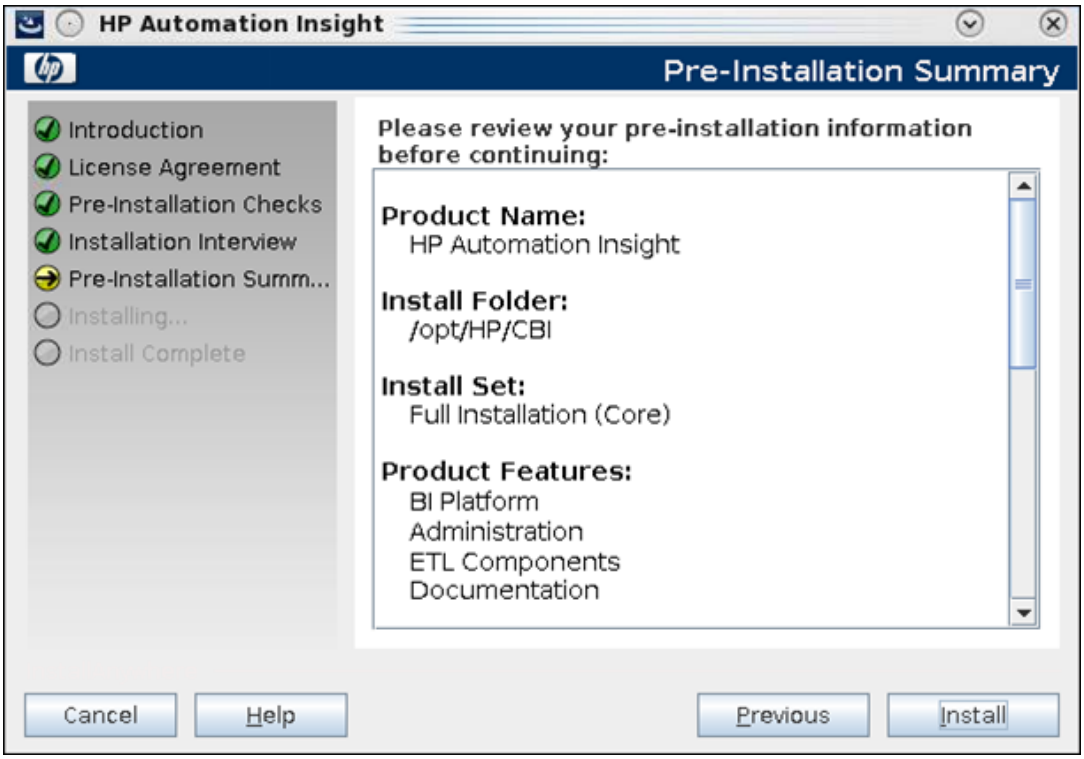
22. Click **Next**. The rsync Server Configuration window opens.



23. Enter the port number for the rsync server. The rsync server transfers reporting data from source systems to the HP AI core server.

    8873 is the default rsync server port. If port 8873 is in use in your system, enter a different rsync server port.

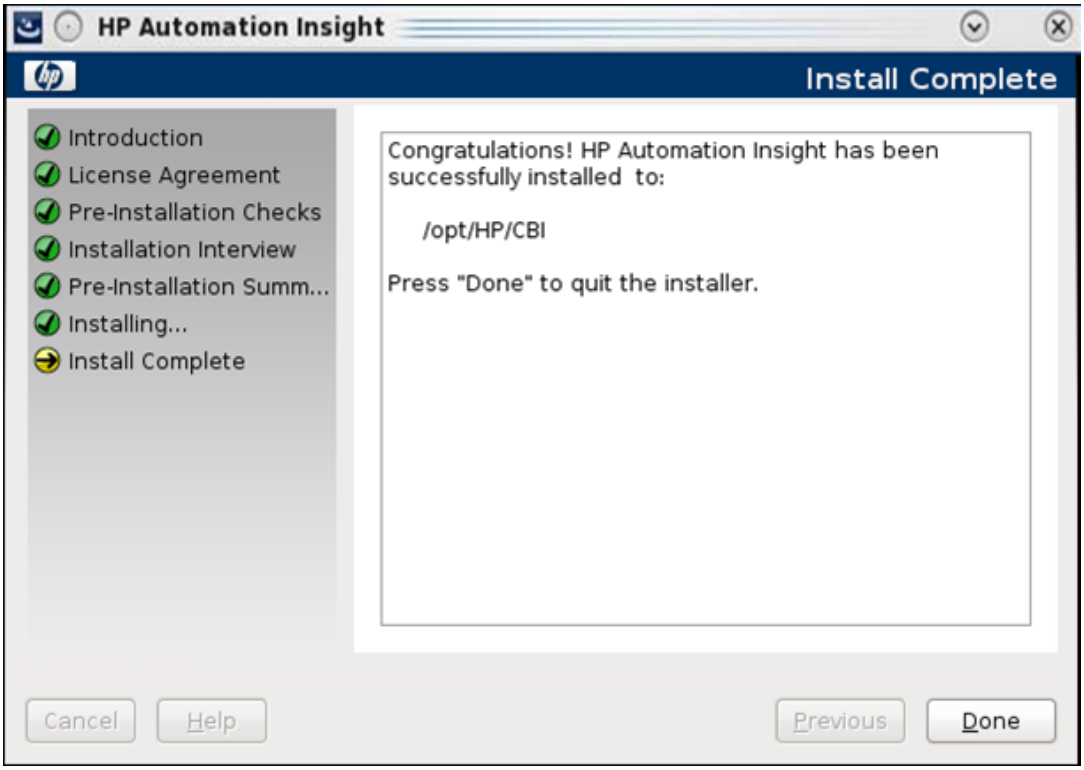
24. Click **Next**. The Pre-Installation Summary window opens.



25. Review your pre-installation information. Click the **Previous** button to make any changes. If no changes are needed, click the **Install** button. The HP AI installation begins.

> **Note:** The HP AI installation time can vary depending on your system settings. Allow 30 minutes to an hour for the installation to complete.

The installation completes and the AI Install Complete window opens.



26. Click **Done**.

Install in Silent Mode

You can install the HP AI core server in silent mode. Silent installation is unattended installation where no messages or windows are displayed during the installation. The primary use of silent installation is to automate installation on a large number of systems.

In silent mode, the installer has no end user interaction and runs by using a response file from which the installer retrieves the values for various InstallAnywhere variables used to control the installation.

To perform a silent installation, you must first perform an installation using either GUI or console installation mode. The first time you perform the installation, you create a response file that contains the parameters necessary to perform a silent installation. You can then perform a silent installation from the command line by supplying the generated response file as an argument on the command line. To perform a silent installation from the command line, perform the following tasks:

- Create the Response File
- View and Modify the Response File (Optional)
- Run the Silent Installation

Create the Response File

To create a response file when installing in GUI or console mode, specify the `-r` command line argument. The `-r` argument records your responses to the installer prompts and creates a response file when the installer ends.

If you are using GUI mode, type the following command:

```
./AI-installer-1.0.0.xxxx.bin -r /tmp/responsefile.txt
```

If you are using console mode, type the following command:

```
./AI-installer-1.0.0.xxxx.bin -i console -r /tmp/responsefile.txt
```

Note: The `-r` option allows you to specify a response file as its argument. In the example above, the response file is `/tmp/responsefile.txt`. You must specify the full or relative path of the response file. When specifying the pathname, the path must already exist. The actual file name is optional. If you do not specify a response file name, the installer will create a file named `installer.properties` in the directory specified as the argument to the `-r` option.

The `AI-installer-1.0.0.xxxx.bin` program starts an interactive session directing all the parameter values that you specify in this session to the response file named `responsefile.txt` located in the `/tmp` directory. This generated response file is the file you will use on the command line when you perform the silent installation. Follow the remaining steps in "Installing with the Installation Wizard" on page 25 or "Install from Console Mode" on page 17 until the pre-installation summary panel opens.

After the pre-installation summary panel opens, you can quit the installation by clicking the **Cancel** button in GUI mode or by typing **`quit`** in console mode.

View and Modify the Response File

The response file is a text file that you can edit to change any response prior to using it in subsequent installations. This task is optional.

1. Open the generated response file in any text editor.
2. View and modify your responses as necessary before performing the silent install.

Note: Do not modify the AI_ADMIN_PASSWORD or the BO_CRYPTO_PASSWORD values manually since they contain encrypted values.

Note: You can set the IGNORE_PREREQUISITES property to **true** to ignore failed prerequisites and continue the installation. Caution should be taken when setting the IGNORE_PREREQUISITES property to **true** as the product may not work as expected if prerequisites are not met.

Run the Silent Installation

Type the following command to use the generated response file to run the silent installation:

```
./AI-installer-1.0.0.xxxx.bin -i silent -f /tmp/responsefile.txt
```

The `AI-installer-1.0.0.xxxx.bin` program starts a silent session using the parameter values in the specified response file to perform the installation.

Verify the Installation

The following sections provide information about how to verify that your installation of HP AI was successful.

Verify the HP AI Core Services

To verify the status of the the HP AI core services, run the following command:

```
[root@aicore ai-install]# /etc/init.d/cbi-core status
```

Output similar to the following is displayed:

```
Vertica Console: status OK

Usage: /etc/init.d/SAPBOBJEnterpriseXI40 { start | stop }

ApacheDS Directory Server is running. [process 12413]

PlatformServices OSGi Instance Server is running. [process 12429]

DataLoader OSGi Instance Server is running. [process 12490]

ContentLoader OSGi Instance Server is running. [process 12531]

Tomcat is running. [process 12566]

AI Gateway is running. [process 12611]

AI rsync server is running. [process 12605]
```

View the HP AI Log Files

After the installation is complete, change to the `/var/log/HP/CBI/install_logs/` directory to view the log files. For example:

```
[root@aicore init.d]# cd /var/log/HP/CBI/install_logs
```

The following log files are generated during the HP AI installation:

- `HP_Automation_Insight_Install_XXXX.log`
- `AI_custom_install_XXXX.log`

- `installer-bo-install-script-output.log`
- `installer-dataminer-script-output.log`
- `installer-hpln-script-output.log`
- `installer-http-server-script-output.log`
- `installer-rsync-script-output.log`
- `installer-script-output.log`
- `installer-vertica-console-script-output.log`

Log in to HP AI Interfaces

Log in to the HP AI interfaces at the following URLs:

HP AI web administration user interface:

`https://ai-core:4443/ai-admin`

Business Intelligence (BI) Launch Pad:

`https://ai-core:4443/ai-user/BOE/BI`

BO Central Management Console (CMC):

`https://ai-core:4443/ai-user/BOE/CMC`

4443 is the reverse-proxy port provided during HP AI installation.

You can also log in to the BI Launch Pad and CMC from the HP AI web administration user interface.

Note: You must log in as Admin to log in to the BI Launch Pad and CMC.

Install and Set Up the Data Warehouse

HP AI uses HP Vertica 6.1.3 as its data warehouse. You can install HP Vertica on both RHEL and SUSE platforms. HP Vertica 6.1.3 software Enterprise Edition is provided bundled with the HP AI installer for both RHEL and SUSE platforms. The bundled HP Vertica Enterprise Edition license is limited to three nodes and 1 TB of data. You may need to purchase additional HP Vertica licenses to go beyond these limits.

HP AI 1.0 supports only distributed databases. The HP Vertica database software should not be installed on the same server as the HP AI core server.

Before you begin installing the HP Vertica database, see the following sections in the *HP Vertica Analytics Platform 6.1.x Installation Guide* which is available from the **Help** menu on the HP AI web administration user interface:

- Before You Install HP Vertica
- Platform Requirements and Recommendations
- Configuring Hardware and Installing Linux
- Configuring the Network

There are different paths you can take when installing HP Vertica. You can:

- Install HP Vertica on one or more hosts using the command line, and not use the Management Console (Recommended.)
- Install the Management Console, and from the Management Console install HP Vertica on one or more hosts by using the Management Console cluster creation wizard.
- Install HP Vertica on one or more hosts using the command line, then install the Management Console and import the cluster to be managed.

Note: HP AI supports installing the HP Vertica data warehouse only on a three node cluster with access to the database from a configured virtual IP (VIP.)

Obtain the HP Vertica Software

HP AI 1.0 includes HP Vertica Enterprise Edition (6.1.3) software in the installation media and in the installer. Perform the following steps to copy the HP Vertica software package from the HP AI core server on to a directory on a HP Vertica node.

1. Use SSH to connect to the core server as root:

   ```
   ssh root@ai-core.ip-address
   ```

   You can also connect to the core server as root using tools such as PuTTY.

2. Change to the `installcontent` directory:

   ```
   cd /opt/HP/CBI/installcontent
   ```

   When HP AI is installed, the HP Vertica Enterprise Edition RPM files can be found in the `/opt/HP/CBI/installcontent` directory. Use the following RPMs to install HP Vertica on the Vertica nodes:

   ```
   vertica-6.1.3-11.x86_64.RHEL5.rpm
   ```

   ```
   vertica-6.1.3-11.x86_64.SUSE.rpm
   ```

   Use the RPM file for the HP Vertica database based on the Vertica Operating System.

3. When HP AI is installed, the HP Vertica Enterprise Edition license file can be found in the `/opt/HP/CBI/installcontent` directory. Use the `vertica_license-6.1.3.dat` license file during HP Vertica installation on the Vertica nodes.

4. Secure copy the RPM and license files to an upload directory on the HP Vertica node, for example:

   ```
   scp vertica-6.1.3-11.x86_64.RHEL5.rpm root@ai-vertica-node:/root

   scp vertica_license-6.1.3.dat root@ai-vertica-node:/root
   ```

Install HP Vertica Using the Command Line Interface

Although HP supports installation on one node, two nodes, and multiple nodes, this section describes how to install the HP Vertica software on a cluster of nodes. It assumes that you have already performed the tasks in the "Before You Install HP Vertica" section of the *HP Vertica Analytics Platform 6.1.x Installation Guide*.

To install HP Vertica, follow the complete install procedure for both single-node and multi-node installations.

Special notes

- Downgrade installations are not supported.
- Be sure that you download the RPM for the correct operating system and architecture.

Install the HP Vertica Software

If a previous version of HP Vertica is already installed on any of the nodes in the HP Vertica cluster, use the Administration Tools to shut down any running database. The database must stop normally; you cannot upgrade a database that requires recovery.

Perform the following steps to download and install the HP Vertica install package:

1. Log in to the HP Vertica node as the root user (or log in as another user and switch to root.)

   ```
   $ su - root

   password: root-user-password

   #
   ```

   Caution: When installing HP Vertica using an existing user as the dba, you must exit all UNIX terminal sessions for that user. After setup completes, log in again to ensure that group privileges are applied correctly.

   After HP Vertica is installed, you no longer need root privileges.

2. Change to the directory on the HP Vertica node where you downloaded the RPM file, for example: `/opt`.
3. Use one of the following commands to run the RPM package installer:
   - If you are root:

     ```
     # rpm -Uvh <absolute-path-to-the-package-name>
     ```

   - If you are using sudo::

     ```
     $ sudo rpm -Uvh <absolute-path-to-the-package-name>
     ```

   where *absolute-path-to-the-package-name* is the HP Vertica RPM file you downloaded.

   For example:

   ```
   # rpm -Uvh /opt/vertica-6.1.3-11.x86_64.RHEL5.rpm
   ```

   After entering the command, a progress indicator appears:

   ```
   Preparing... ########################################### [100%]

   1:vertica

   ########################################### [100%]
   ```

   When the RPM is successfully installed, the following message appears:

   ```
   HP Vertica 6.1.x.xx successfully installed on host hostname.
   ```

Run the install_vertica Script to Create the Cluster

After downloading and installing the HP Vertica software to a Vertica node, use the `install_vertica` script to install the RPM on all other nodes in the cluster. The path for the `install_vertica` script file is `/opt/vertica/sbin/install_vertica`.

About the install_vertica Script

The `install_vertica` script creates a cluster of nodes on which you can create a Vertica database. The script performs checks to catch common Linux misconfigurations, such as checking the connectivity and bandwidth characteristics of the communication links among the cluster machines and verifying other prerequisites.

Note: The `install_vertica` script requires that the shell of the calling user is `/bin/bash`. Other shells give unpredictable results and are not supported.

The install_vertica script takes the following as basic options:

- A list of hosts on which to install the cluster.
- The HP Vertica RPM path and file name.
- (Optiona) A user name for the HP Vertica administrator. The install script creates a new system user-account. (dbadmin is used if you do not provide a user name.)
- The license file for all nodes in the cluster that are declared in the list of hosts.
- A switch to accept the EULA silently.

Note: If you run the HP Vertica installation script without parameters, the script performs a single-node install on `localhost`.

The following table provides the options and values for each option of the `install_vertica` script.

install_vertica Options

`-s host_list`	A comma-separated list of host names or IP addresses to include in the cluster. Do not include space characters in the list. Examples:
	`-s host01,host02,host03`
	`-s 192.168.233.101,192.168.233.102,192.168.233.103`
	The `-s` parameter is required on multi-node installations only. On single-node installations the default is `localhost`.
	Note: If you are upgrading an existing installation of HP Vertica, use the same host names that you used previously.

`-r package_name`	The name of the RPM package that contained this script. Example: `-r vertica_6.1.x.x.x86_64.RHEL5.rpm` The `-r` parameter is required on multi-node installations only. It has no default value.
`-d data_directory`	The default directory for database data and catalog files. The default is `/home/dbadmin`.
`-g user_group`	The unix group for DBA users. The default is `verticadba`.

install_vertica Options, continued

`-l dba_home_directory`	The home directory for the database administrator. The default is `/home/dbadmin`.
`-p dba_password`	The password for the database administrator account. If not supplied, the script prompts for a password and does not echo the input.
`-w`	Configures spread to output logging output to `/opt/vertica/log/spread_<hostname>.log` (default).

`-P root_password`	The root password to use by default for each cluster host. If not supplied, and the `-i` option is not used, then the script prompts for the password if and when necessary and does not echo the input. Do not use with the `-i` option.
	Special note about root password:
	If you run the `install_vertica` script as root, specify the root password with the `-P` parameter:
	`# /opt/vertica/sbin/install_vertica -P <root_passwd>`
	If, however, you run the `install_vertica` script with the `sudo` command, the password for the `-P` parameter should be the password of the user who runs `install_vertica`, not the root password. For example, if the user dbadmin runs `install_vertica` with sudo and has a password with the value `dbapasswd`, then the value for `-P` should be `dbapasswd`. For example:
	`$ sudo /opt/vertica/sbin/install_vertica -P dbapasswd`

`-i file`	The root private-key *file* to use if passwordless SSH has already been configured between the hosts. Verify that normal SSH works without a password before using this option. The file can be private key file (for example, id_rsa), or PEM file. Do not use with the `-P` option. **Note:** You cannot run *install_vertica* with the `sudo` command when using this parameter.

install_vertica Options, continued

`-u dba_username`	The name of the database administrator account to create. Only this account can run the Administration Tools. If you omit the `-u` parameter, the default database administrator account name is `dbadmin`. **Note:** This parameter is optional for new installations done as root but must be specified when upgrading or when installing using sudo. If upgrading, use the `-u` parameter to specify the same DBA account name that you used previously. If installing using sudo, the user must already exist. Otherwise you might encounter problems later.
`-z file`	Accepts an existing properties file created by `-B file_name`. This properties file contains key/value parameters that map to values in the `install_vertica` script, many with boolean arguments that default to false.
`-A`	A comma-separated list of hosts to add to an existing HP Vertica cluster. `-A` modifies an existing installation of HP Vertica by adding a host to the database cluster and then reconfiguring the spread. This is useful for increasing system performance or setting K-safety to one (1) or two (2). **Notes:** • If you have used the `-T` parameter to configure spread to use direct point-point communication within the existing cluster, you must use the `-T` parameter when you add a new host; otherwise, the new host automatically uses UDP broadcast traffic, resulting in cluster communication problems that prevent HP Vertica from running properly. Examples: ▪ `-A host01` ▪ `-A 192.168.233.101` • The `update_vertica` script described in the "Adding Nodes"" section of the *HP Vertica Analytics Platform 6.1.x Administrator's Guide* calls the `install_vertica` script to update the installation. You can use either the `install_vertica` or `update_vertica` script with the `-A` parameter.

install_vertica Options, continued

-B *file_name*	Accepts a file name, which when used in conjunction with command line options, creates a properties file that can be used with the -z parameter. This parameter creates the properties file and exits; it has no impact on installation.
-C	Cleans previously stored configuration files if the database is not defined. Use this parameter if you need to change the hosts that are included in your cluster. You can use this parameter only when no database is already defined.
-E	Allows a new node to replace a failed node in the database. Without this parameter, HP Vertica does not allow the failed node to be dropped because it is still considered in use by the database even though it has failed. This parameter must be used in combination with the -A (add) and -R (remove) host parameters. For example: `-A 192.168.233.102 -R 192.168.233.101 -E` **Note:** After running install_vertica with -A -R -E to replace a failed host, run install_vertica again with only -R after you have removed the node from the database. This action clears the node that you replaced from the Administration Tools metadata.
-L { *license_file*}	Silently and automatically deploys the license key to /opt/vertica/config/share. On multi-node installations, the –L option also applies the license to all nodes declared in the –s host_list
-N	Indicates that HP Vertica is installed on hosts that exist on different subnets.
-Q	Ends setup without asking the user to run the Administration Tools.

install_vertica Options, continued

-R	A comma-separated list of hosts to remove from an existing HP Vertica cluster. -R modifies an existing installation of HP Vertica by removing a host from the database cluster and then reconfiguring the spread. This is useful for removing an obsolete or over-provisioned system. For example: -R host01 -R 192.168.233.101 **Notes:** • If you have identified a node using various forms of the host name and IP address, you must identify all the forms you used. For example, you might identify a node with both short and fully-qualified names. Use a comma-separated list to identify two or more forms of the host name. Do not add a space between the commas. For example: -R host01,Host01.vertica.com • If you used the -T parameter to configure spread to use direct point-point communication within the existing cluster, you must use -T when you remove a host; otherwise, the hosts automatically use UDP broadcast traffic, resulting in cluster communication problems that prevents HP Vertica from running properly. • The update_vertica script described in the "Removing Nodes" section in the *HP Vertica Analytics Platform 6.1.x Administrator's Guide* calls the install_vertica script to perform the update to the installation. You can use either the install_vertica or update_vertica script with the -R parameter.

install_vertica Options, continued

-S	Takes either the value 'default' or a broadcast network IP address to allow spread communications to be configured on a subnet that is different from other HP Vertica data communications. `-S` is also used to force a cluster-wide spread reconfiguration when changing spread related options—it is needed when you switch between `-T` and `U`. `-S` is required when adding or replacing a host. **Important:** Stop all databases before you use the `-S` parameter. If the databases are not stopped then the `-S` parameter causes the database to restart.
-T	Configures spread to use direct point-to-point communication between all HP Vertica nodes. You should use this option if your nodes are not located on the same subnet. You should also use this option for all virtual environment installations, regardless of whether the virtual servers are on the same subnet or not. **Important:** When changing the configuration from `-U` (the default) to `-T` or from `-T` to `-U`, the `-S` parameter must also be used.
-U	Specifies that HP Vertica use UDP broadcast traffic by spread between nodes on the subnet. This parameter is automatically used by default. **Important:** When changing the configuration from `-U` (the default) to `-T` or from `-T` to `-U`, the `-S` parameter must also be used.
-Y	Silently accepts the EULA agreement. On multi-node installations, the `-Y` value is propagated throughout the cluster at the end of the installation, at the same time as the Administration Tools metadata.

When run on a cluster (more than one node), the install script installs the provided RPM on all nodes and sets up passwordless SSH for the administrator user across all hosts. (If passwordless SSH is already set up, the install script verifies that passwordless SSH is functioning correctly. If passwordless SSH is already set up but not functioning correctly, the install script backs up the existing keys to `.ssh.vtbackup` and sets up new keys.)The install script checks network connectivity across the hosts.

On a single-node localhost installation, the installer does not set up passwordless SSH. Because HP Vertica's backup scripts require that the administrator can log into the node via SSH without a

password, you must manually enable passwordless SSH logins for any single-node install if you want to use the backup scripts.

The install script also creates an operating system user called `spread`, which is responsible for running the `spread` daemon. User `spread` is non-configurable and is set to `no login`.

The install script modifies some operating system configuration settings and warns about issues with the setup that could prevent HP Vertica from functioning properly.

Perform the following steps to perform a typical installation of HP Vertica:

1. Run the install script on one node on which HP Vertica is already installed to initiate the installation of HP Vertica on the other nodes of the cluster:

   Note: You must run the install script using the BASH shell. Other shells are not supported.

   - If you are root:

     ```
     # /opt/vertica/sbin/install_vertica -s comma-separated-list-of-hostnames-or-IPs -r absolute-path-to-the-rpm_package -u dba_username -L absolute-path-to-license_file -Y
     ```

   - If you are using sudo:

     ```
     $ sudo /opt/vertica/sbin/install_vertica -s comma-separated-list-of-hostnames -r absolute-path-to-the-rpm_package -u dba_username -L license_file -Y
     ```

     Example: The following example shows the `install_vertica` command for a three node cluster comprised of node1, node2 and node3, the license file *vertica_license_file* and the Vertica RPM file available in the `/opt` directory:

     ```
     # /opt/vertica/sbin/install_vertica -s node1,node2,node3 -r /opt/vertica-6.1.3-11.x86_64.RHEL5.rpm -u dbadmin -L vertica_license-6.1.3.dat -Y
     ```

2. When prompted, provide the requested password to allow installation of the RPM and system configuration of the other cluster nodes. If you are root, this is the root password. If you are using sudo, this is the sudo user password. The password does not echo on the command line.

   For example, root would see:

   ```
   HP Vertica Database 6.1.x Installation Tool

   Please enter password for root@node01:<password>
   ```

3. Provide the database administrator account password when prompted:

   ```
   Password for dbadmin:password
   ```

The script runs for up to 3 to 5 minutes. During this time the script checks the status of the different services, prerequisites, creation of the HP Vertica dba user, updates ownerships, hostname resolutions, port availabilities and creates the spread configuration. Wait until the following output is displayed:

```
-------------------------------------------------------------------------------
-------------

...Done

Error Monitor 0 errors 0 warnings

Installation complete.

To create a database:

1. Logout and login as dbadmin

2. Run /opt/vertica/bin/adminTools as dbadmin

3. Select Create Database from the Configuration Menu

To ensure that group privileges are properly applied, you will need to log
out of any existing sessions for the user dbadmin and login again.

-------------------------------------------------------------------------------
-------------
```

4. Carefully examine any warnings produced by `install_vertica` and correct the problems, if possible. For example, insufficient RAM, insufficient network throughput, and too high readahead settings on the filesystem cause performance problems later on. Additionally, LANG warnings, if not resolved, can cause database startup to fail and create issues with VSQL. The system LANG attributes must be UTF-8 compatible.

Note: After you configure the HP Vertica cluster, you can configure load balancing and failover. For more information, see the *HP Automation Insight Vertica Cluster Load Balancing and Failover* document.

Create the HP Vertica Database on the Cluster

Perform the following steps to create the database on the HP Vertica cluster through the command line interface. You must use 'cbidb' for the HP AI database instance.

In the following example, the following are the sample IP addresses for the three nodes in the HP Vertica cluster:

1. 16.166.49.145
2. 16.166.49.146
3. 16.166.49.149

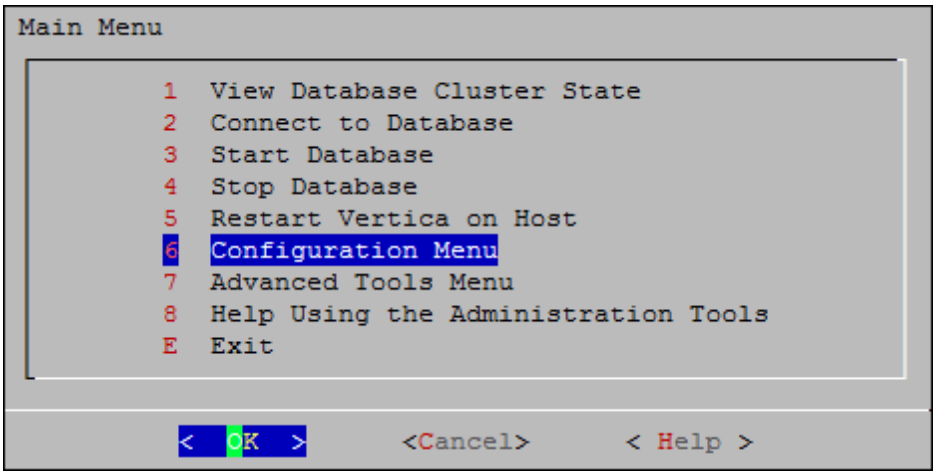
The database configured on any of the nodes in the cluster is visible on the other two nodes. Connect to any of the nodes in the cluster (or to the cluster VIP) to access the command line interface of the node and then run the following command to create the database on the cluster:

1. Log in as the database admin user (or switch to the database admin user):

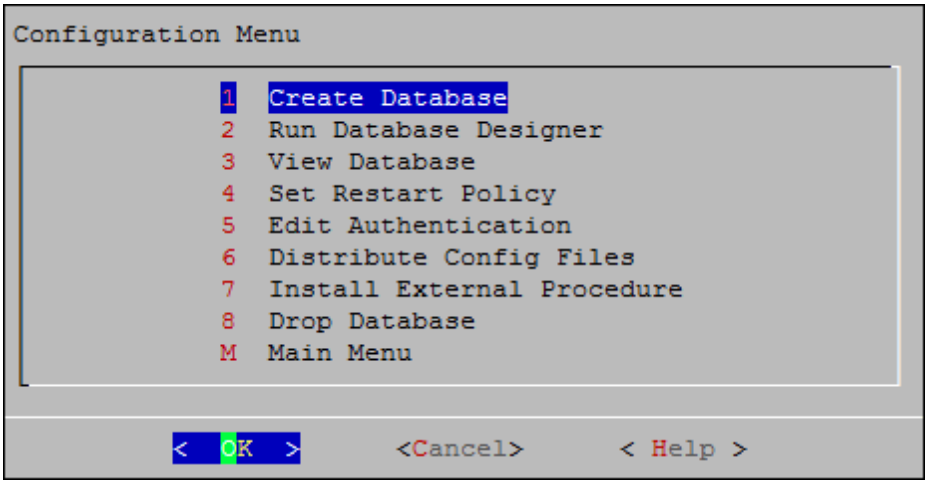
   ```
   #su - dbadmin
   ```

2. Enter the following command to open the Vertica Analytics Database 6.1.3 Administration Tools main menu:

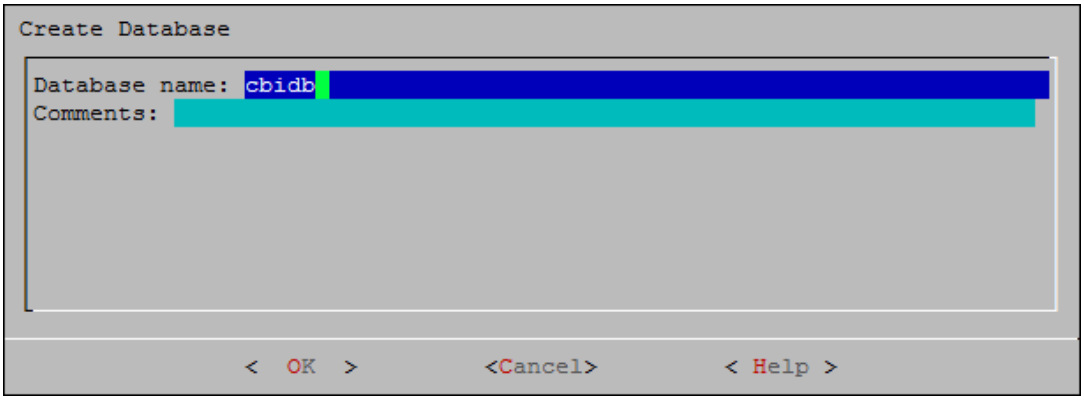
   ```
   $ /opt/vertica/bin/admintools
   ```



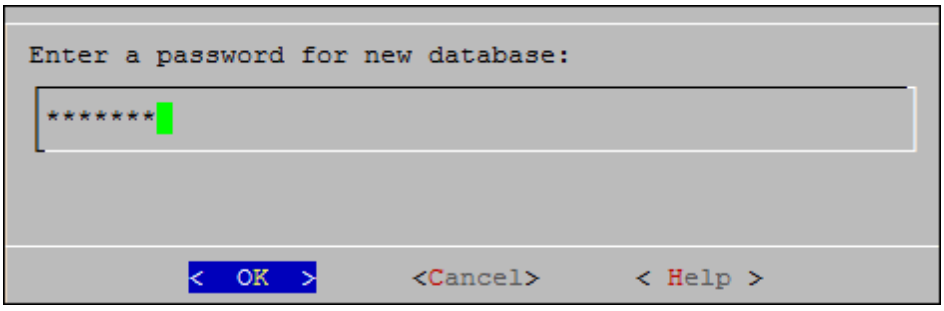
3. Select **Configuration Menu**.



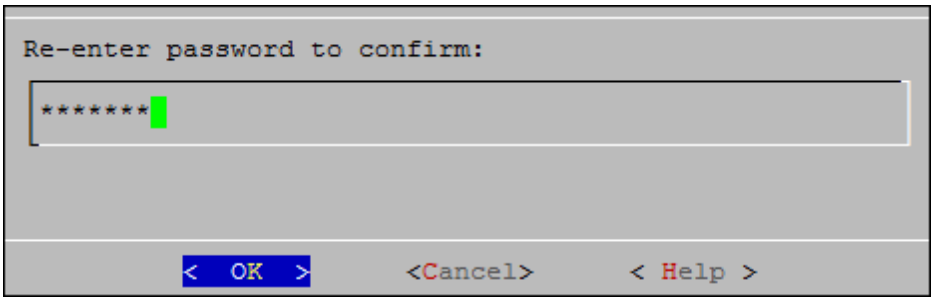
4. Select **OK**.
5. Select **Create Database** to create a database. The Create Database wizard opens:



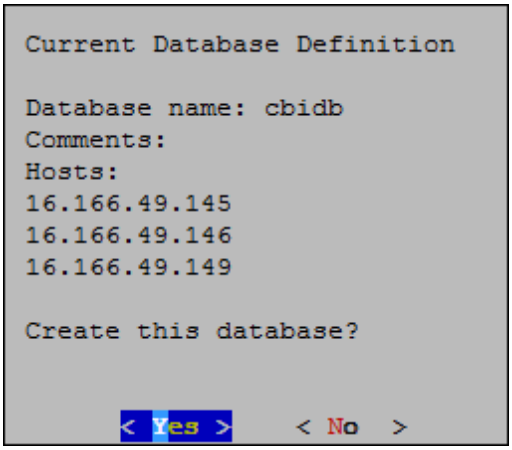
6. Enter the database name cbidb.
7. Select **OK**.
8. Enter a password for the database:



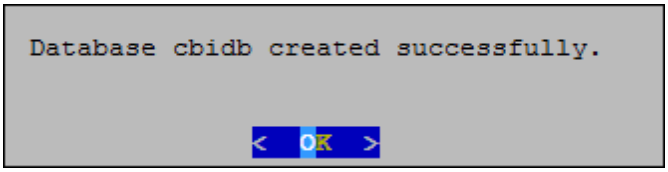
9. Select **OK**.
10. Re-enter the password:



11. Select **OK**.The list of cluster nodes on which the database is being created is displayed:



12. Select **Yes** to begin creating the database. The console displays status messages. When the database is created, the following message is displayed:



Install HP Vertica Using the Vertica Management Console

HP Vertica Management Console (MC) is a database management tool that provides a unified view of your HP Vertica cluster. Through a single point of access—a browser connection—you can create, import, manage, and monitor multiple databases on one or more clusters.

For more information about MC architecture, security, and functionality, see the *HP Vertica Analytics Platform 6.1.x Concepts Guide*. The Management Console provides some but not all of the functionality that the Administration Tools provides. In addition, MC provides extended functionality not available in the Administration Tools, such as a graphical view of your HP Vertica database. For details, see the "Administration Tools" and the "Management Console" sections in the *HP Vertica Analytics Platform 6.1.x Administrator's Guide*.

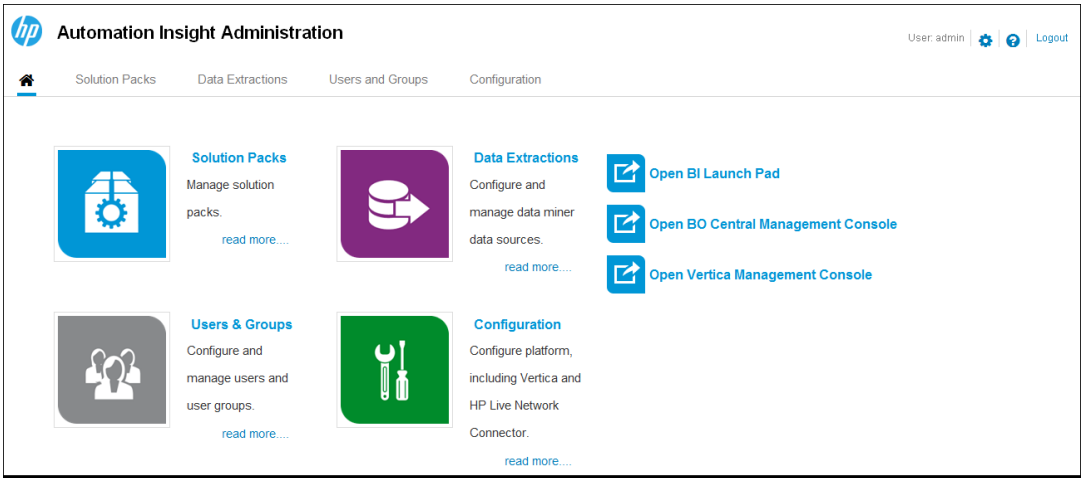
You can find the *HP Vertica Analytics Platform 6.1.x Administrator's Guide* by clicking the **Help** link in the HP AI web administration user interface.

Configure the HP Vertica Management Console

After you install HP AI, the MC configuration wizard guides you through the steps to configure MC. You can connect to MC with HTML 5-compliant browsers.

To configure the HP Vertica Management Console, perform the following steps:

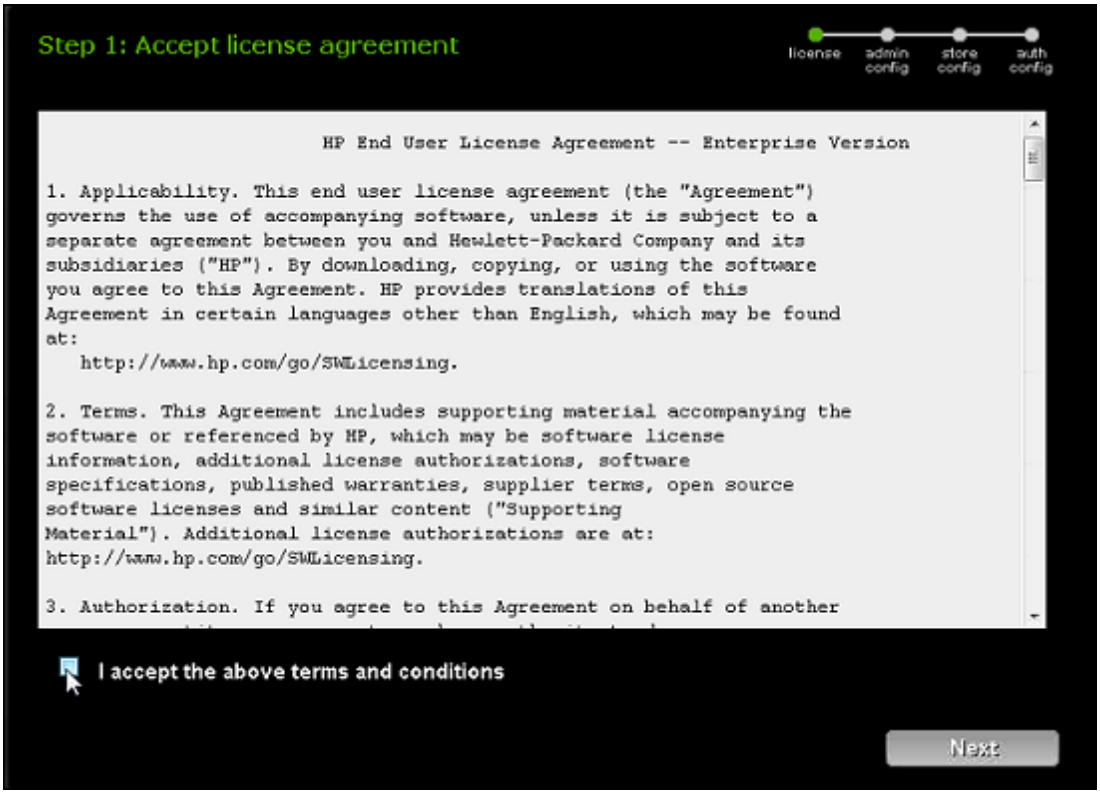
1. Log in to the HP AI web administration user page.
2. Click **Open Vertica Management Console**.



A new browser window or tab opens with the URL https://ai-core-server:4443/webui.

Note: After the initial MC configuration, you can use this URL to launch MC directly.

3. Click the box to accept the license agreement and then click **Next**.

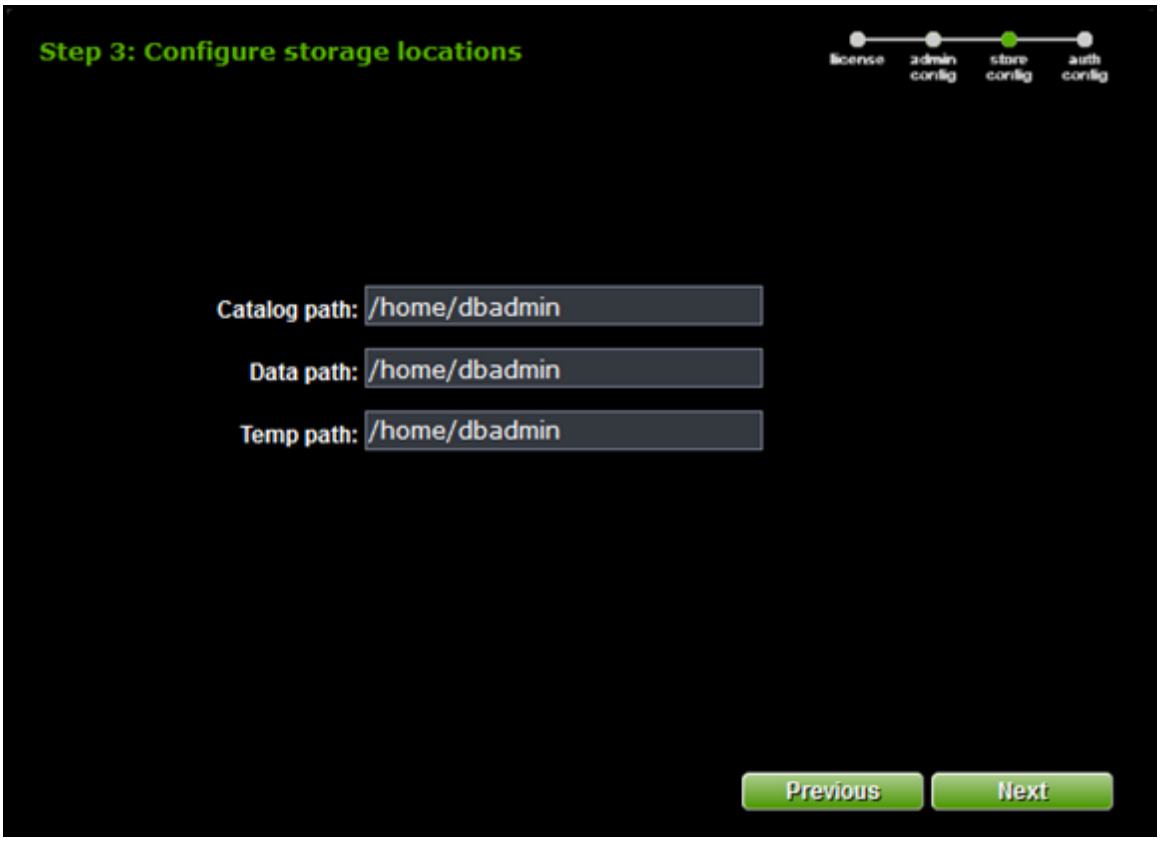


The Configure Management Console window opens.

4. Enter the following information to create the MC super user administrator account:

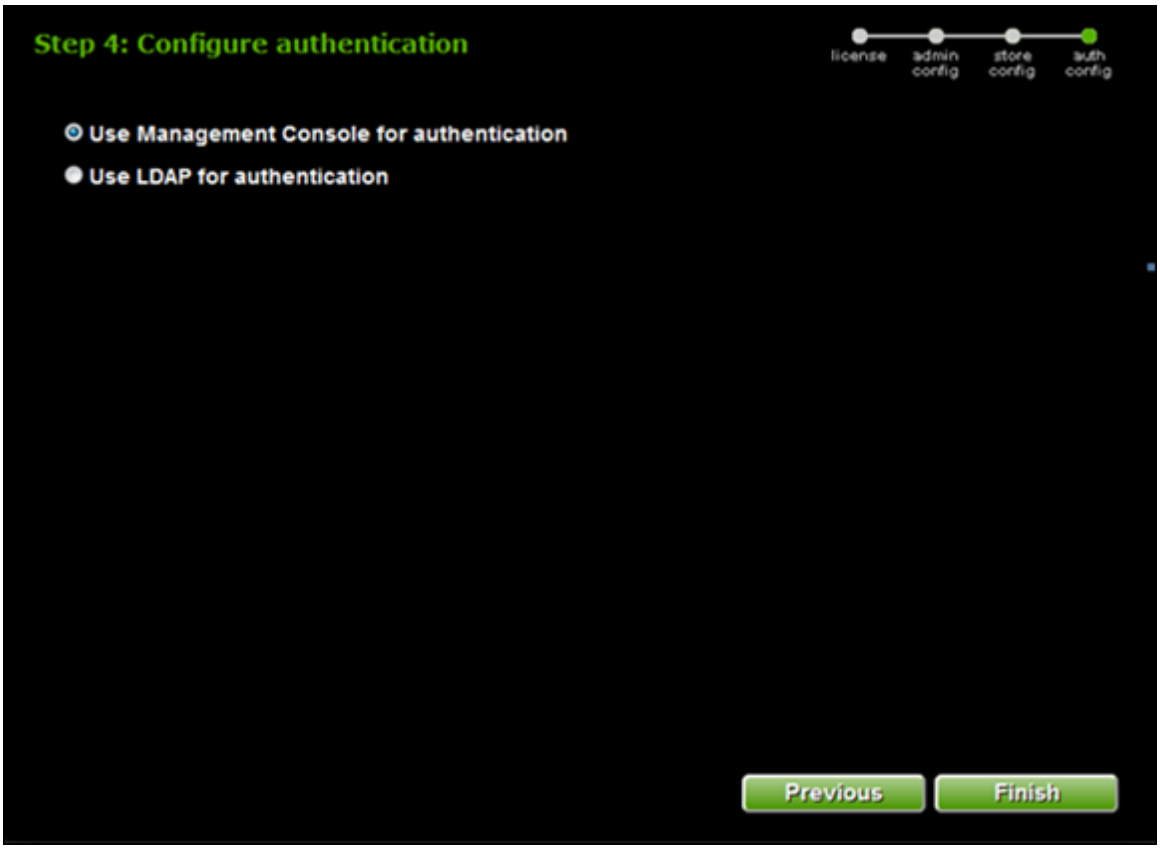
   - **Username**:The name for the MC super user administrator. You can assign the MC super user any name. See the "SUPER role (mc)" section in the *HP Vertica 6.1.x Administrator's Guide* for details.
   - **Password**: Enter a password that is 6 to 12 alphanumeric characters.
   - **Unix group ID**: Enter the group ID for database administrator users (for example, `verticadba`.)
   - **Home directory**: Specify a directory for the MC super user or accept the default of `/home/dbadmin`.
   - **License directory**: Specify a directory for the license or accept the default of `/home/dbadmin`.
   - **Management Console port**: Accept the default MC port 5450.

5. Click **Next**. The "Configure storage locations" window opens.



6. Accept the default directories (`/home/dbadmin`) or create new storage locations for catalog, data, and temporary files.

7. Click **Next**. The Configure authentication window opens.



8. Select **Use Management Console for authentication** and click **Finish**.

MC runs as the local root user long enough to bind to port number 5450 and then switches to the MC super account you created in Step 4.

Note: After you click **Finish** you may see a status in the browser before the login page displays. However, you may see only an empty page for several seconds before the login page displays. Allow the process to complete and the login page to appear.

MC restarts and then displays the MC login page.

Set Up Passwordless SSH

The dbadmin user must be authorized for passwordless SSH. In typical installs, you do not need to change anything; however, if you set up your system to disallow passwordless login,you must enable it for the dbadmin user.

To set up passwordless SSH, perform the following steps:

1. Connect to the HP AI core server as root.
2. Change to the `/opt/vconsole/sbin` directory.
3. Run the `createRootPem` utility with the `-h` parameter followed by the Management Console IP address and then the IP address or addresses of the HP Vertica node or nodes.

   The following example shows how to run the utility with multiple nodes with the following addresses for the HP AI core server VMC and the Vertica nodes:

   ```
   HP AI core server VMC: 192.168.1.17

   Vertica Node1: 192.168.1.19

   Vertica Node2: 192.168.1.20

   Vertica Node3: 192.168.1.21

   ./createRootPem -h 192.168.1.17,192.168.1.19,192.168.1.20,192.168.1.21
   ```
4. You will be prompted to continue connecting to each host. Enter **yes** to continue. You will be prompted three times for the root password for the VMC host and each node. For example:

   ```
   Are you sure you want to continue connecting (yes/no)? yes

   Warning: Permanently added '192.168.1.17 (RSA) to the list of known hosts.

   root@192.168.1.17's password:

   root@192.168.1.17's password:

   vauthorized_keys2             100%    394               0.4KB/s    00:00

   root@192.168.1.17's password:

   Copying and resetting permissions to .ssh directory for: 192.168.1.19

   The authenticity of host '192.168.1.19' (192.168.1.19)' can't be established.

   RSA key fingerprint is 85:3a:4c:99:c9:27:45:f4:08:69:c4:3d:36:fc:96:51.

   Are you sure you want to continue connecting (yes/no)? yes

   Warning: Permanently added '192.168.1.19' (RSA) to the list of known hosts.

   root@192.168.1.19's password:

   root@192.168.1.19's password:

   vauthorized_keys2             100%    394               0.4KB/s    00:00
   ```

```
root@192.168.1.19's password:

Completed
```

5. The createRootPem utility creates the `vid_rsa` file on the HP AI core server.
6. Download the `vid_rsa` file from the HP AI core server to your local system:

   ```
   scp root@ai-core-server:/root/.ssh/vid_rsa <directory-on-local-system>
   ```

   Note: *directory on-local-system* can be any directory you specify, for example, `C:\Users\user1\Downloads\`

   Note: After successful creation of the HP Vertica cluster and database, for security reasons, remove any copies of the `vid_rsa` file from your local system and the HP AI core server.

Use MC to Create the Cluster

You can install HP Vertica on one or more hosts using the command line or by using the Vertica Management Console (MC) cluster creation wizard.

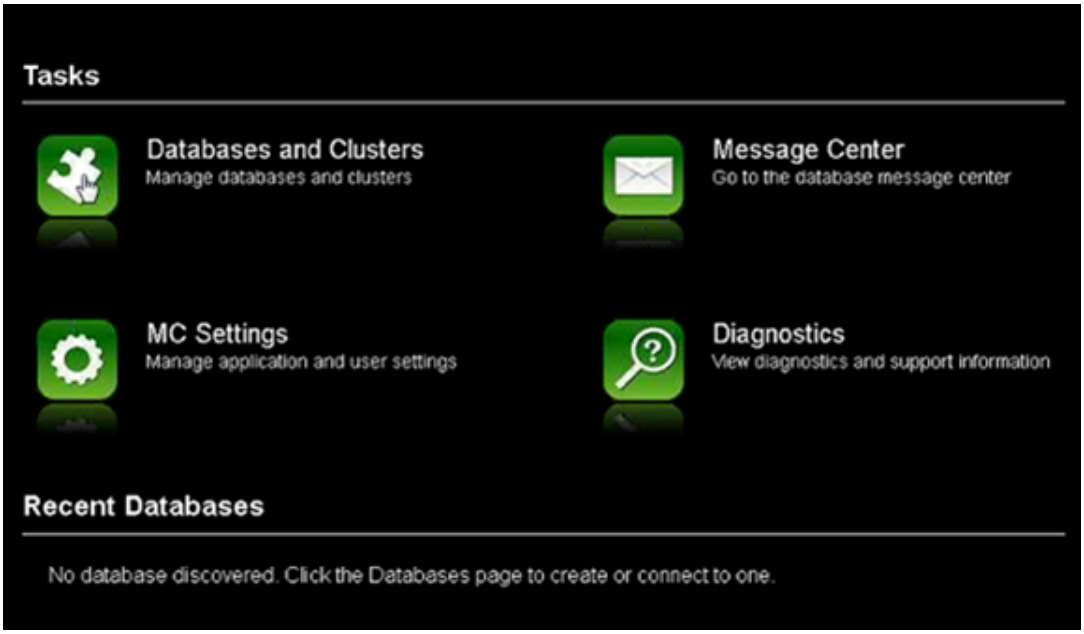
Use MC to install the HP Vertica Cluster on the nodes on which HP AI installs HP Vertica MC by default.

You can use MC to install an HP Vertica cluster on hosts on which HP Vertica software has not already been installed. The cluster creation wizard allows you to specify the hosts on which you want to install HP Vertica. After you specify the hosts, the cluster creation wizard loads the HP Vertica software onto the hosts and assembles the nodes into a cluster.

To use MC to create the Vertic cluster, perform the following steps:

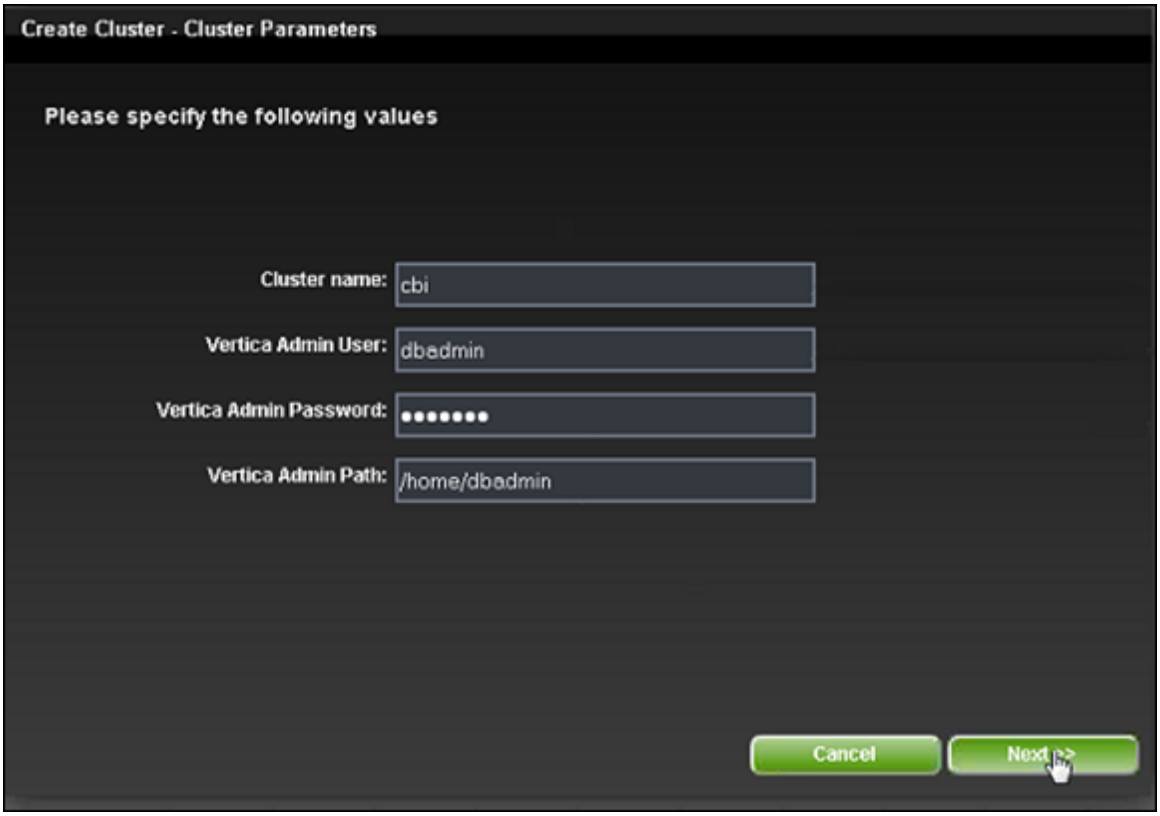
1. Log in to the HP Vertica Management console.

The Vertica Management console opens.



2. Click **Databases and Clusters**. The Databases and Clusters window opens.

3. Click **Create Cluster**. The Create Cluster - Cluster Parameters window opens.



4. Enter a cluster name, and the Vertica Admin user name and password. Accept the default Vertica Admin Path.

5. Click **Next**. The Create Cluster - Cluster configurations windows opens.

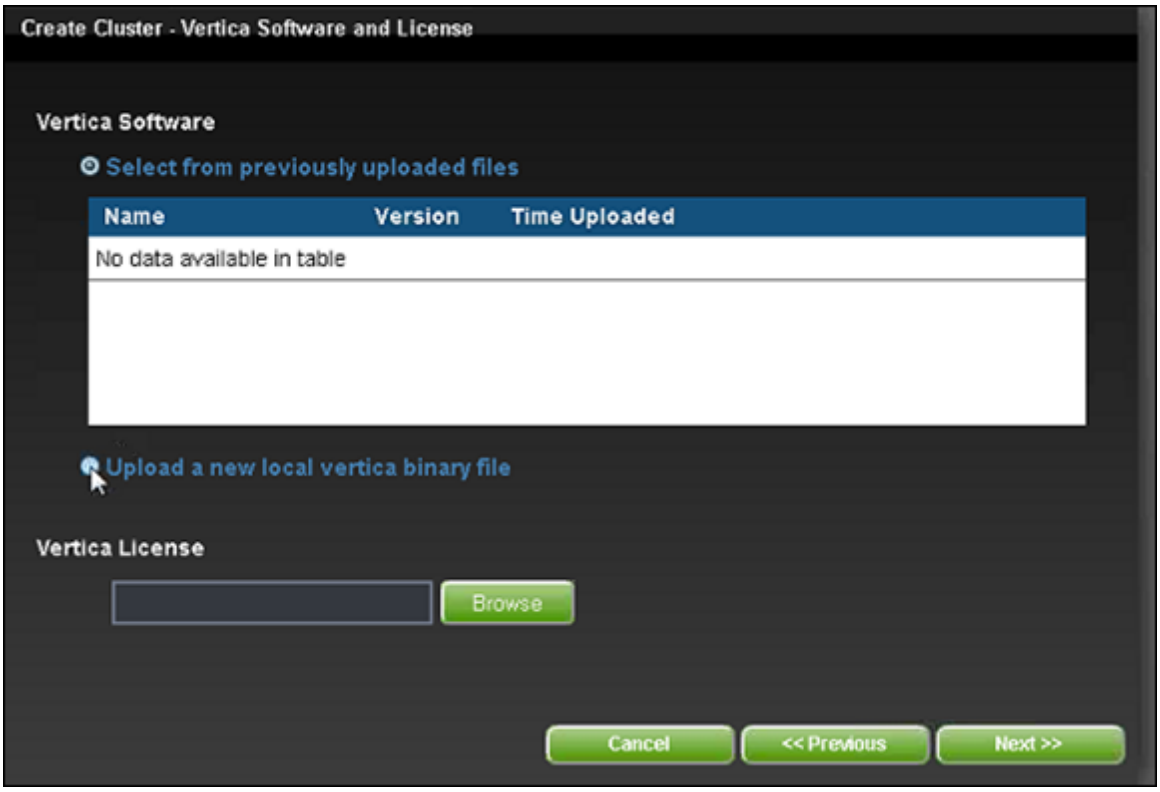
6. Click **Browse** and then navigate to the location where you downloaded the `vid_rsa` file on your local system.

> **Note:** After successful creation of the HP Vertica cluster and database, for security reasons, remove any copies of the `vid_rsa` file from your local system and the HP AI core server.

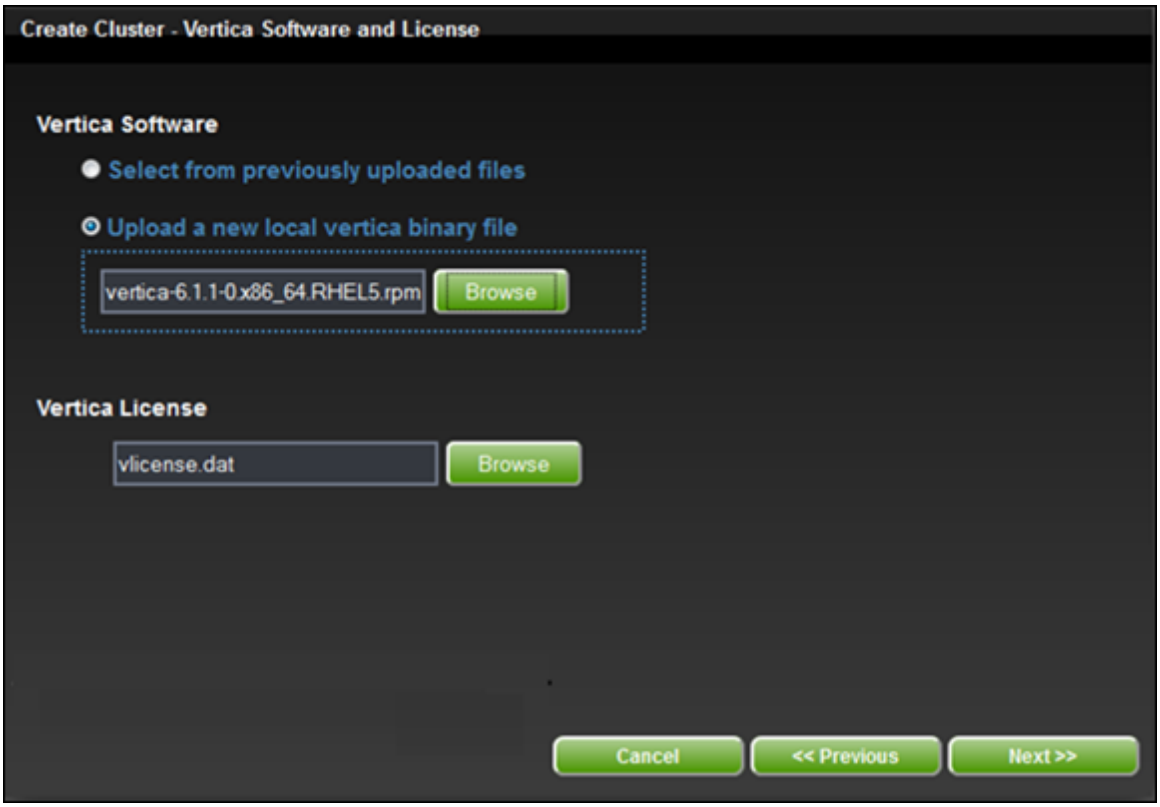
7. Specify the number of nodes in your cluster.

> **Note:** The HP Vertica Enterprise Edition license for HP AI is limited to three nodes. You may need to purchase additional Vertica licenses to configure additional nodes.

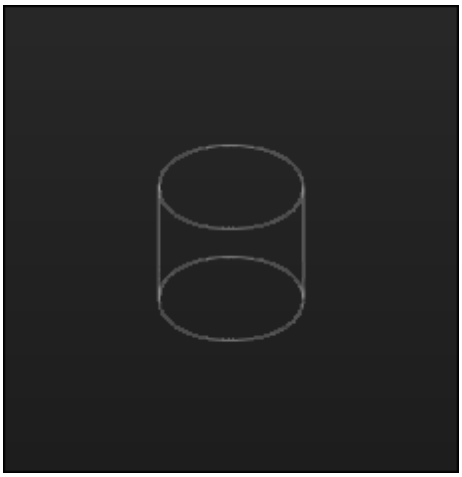
8. Click **Next**. The Create Cluster - Vertica Software and License windows opens.



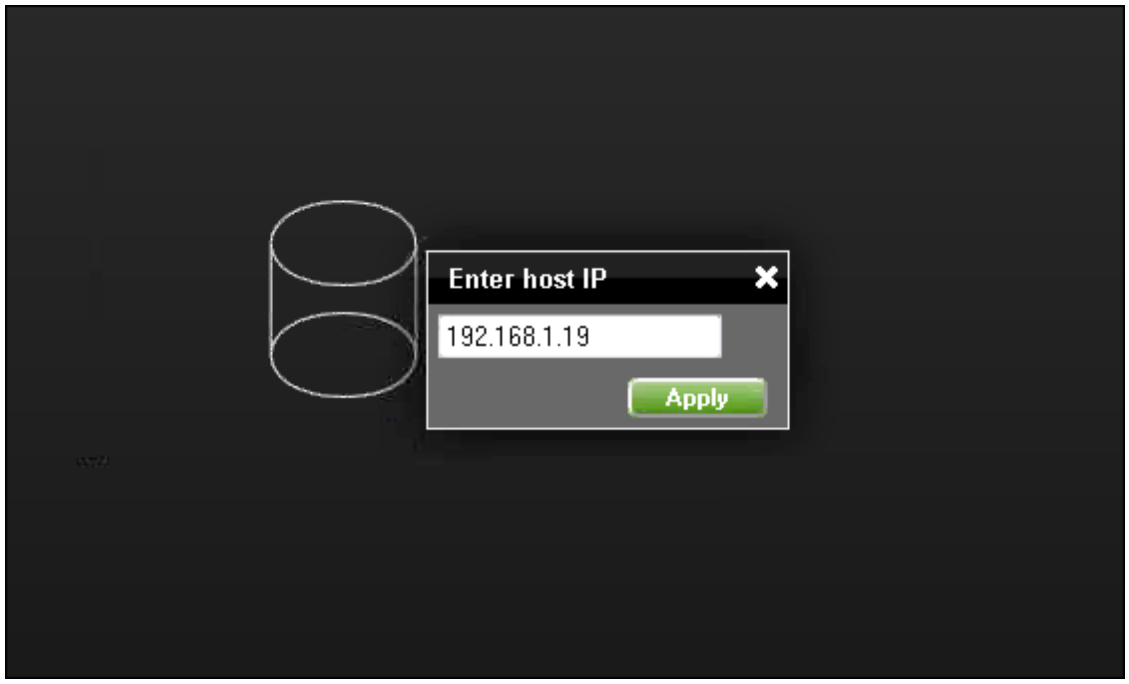
9. Select **Upload a new local vertica binary file**. The binary file selection window opens.
10. Click **Browse**.
11. Navigate on your local system to the location where you downloaded the Vertica RPM file. Select the RPM file. If you are running HP Vertica Enterprise Edition, click **Browse** next to the Vertica License box and navigate to the directory where you downloaded the Vertica license file.
12. Select the RPM file.



13. Click **Next**.
14. The Vertica license file and the Vertica RPM file begin to upload. The Create Cluster window opens. Click the icon of the node:

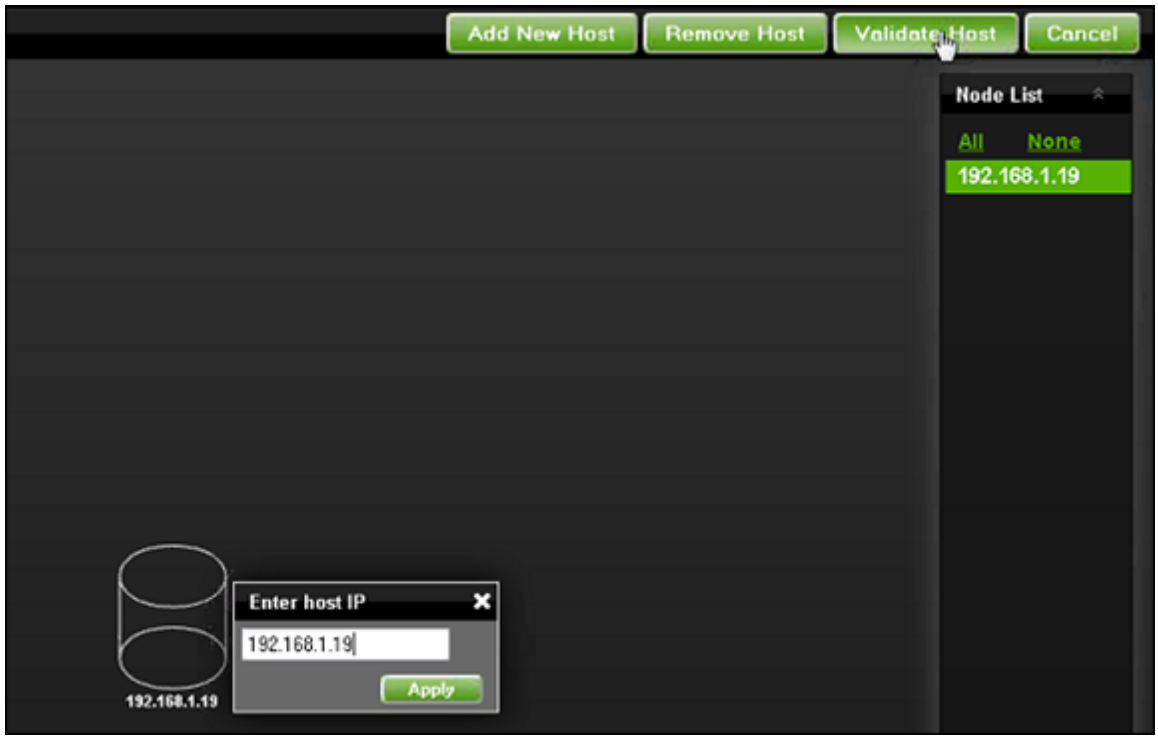


15. Enter the host IP address for that node and click **Apply**:



The host IP address appears in the Node List.

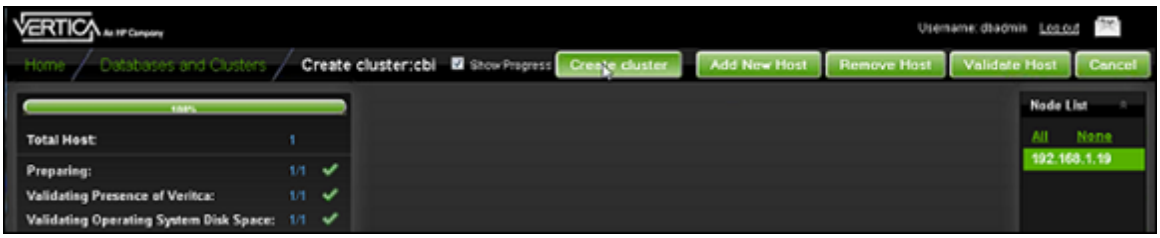
16. Click **Validate Host**:



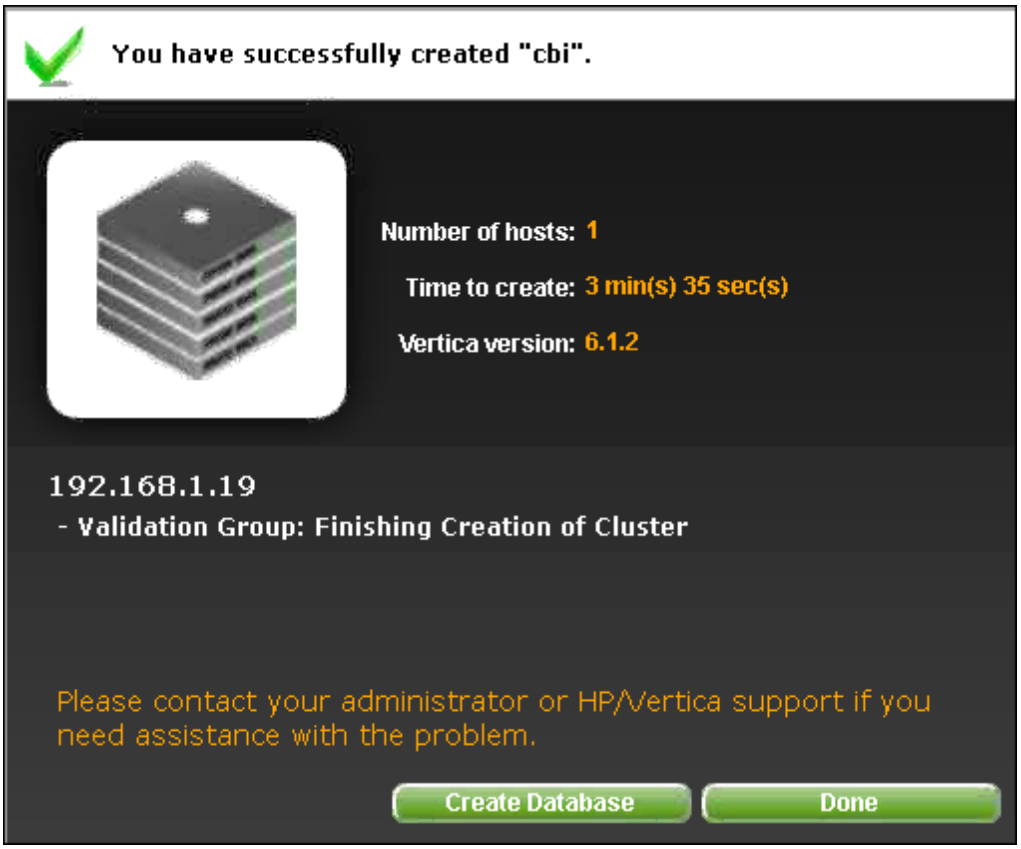
Vertica Management Console validates the prerequisites and settings for the host node.

17. If any warnings or errors appear in the **Total Host:** list, click the **Show Detail** button for more information. Address any issues and run the host validation check again.

18. Click the **Create Cluster** button. Vertica Management Console copies the Vertica RPM, installs the software, and creates the cluster.



When the cluster is created, the success window appears.



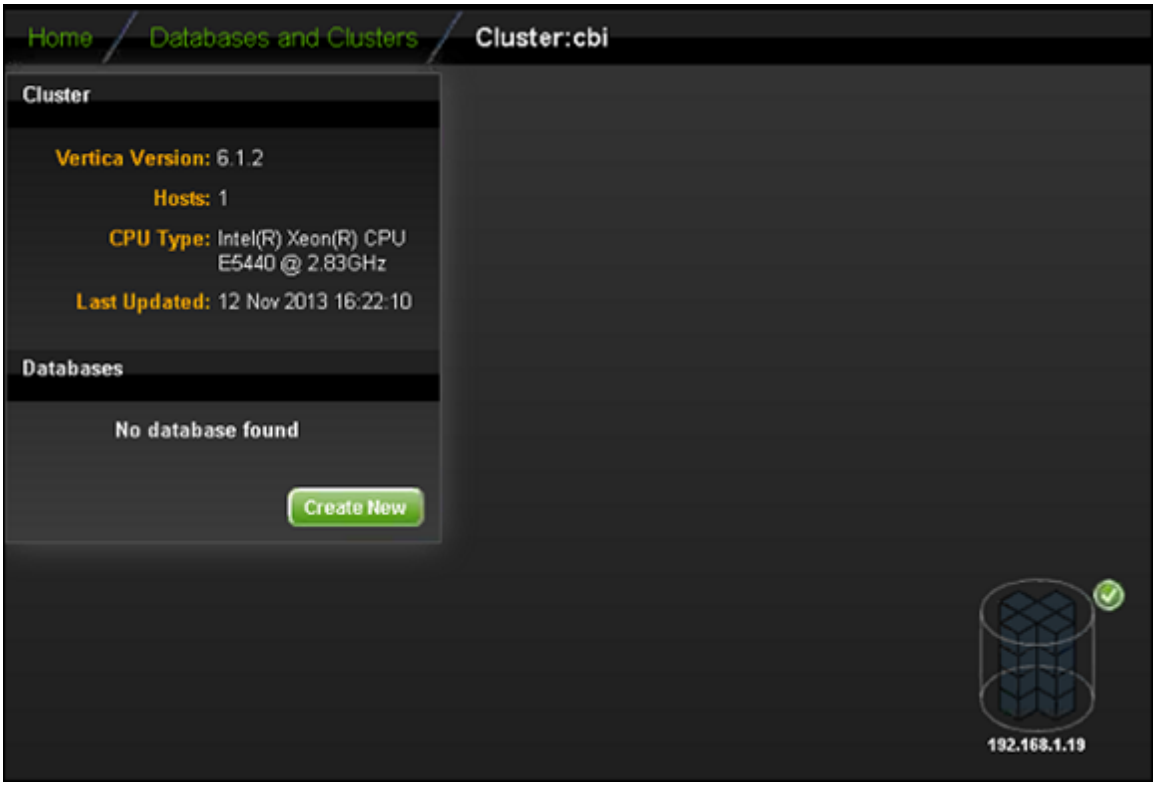
19. Click **Done**. Do not click **Create Database**.

Create the Database Instance (CBIDB) Using MC

After you use the MC Cluster Installation Wizard to create a cluster, you can create a database on that cluster using the Management Console (MC). You can create the database on all nodes on the cluster or on a subset of the nodes. If a database was created using the Administration Tools on any of the nodes, MC detects that database and displays it on the Manage (Cluster Administration) page so you can import it into the MC interface and begin monitoring it.

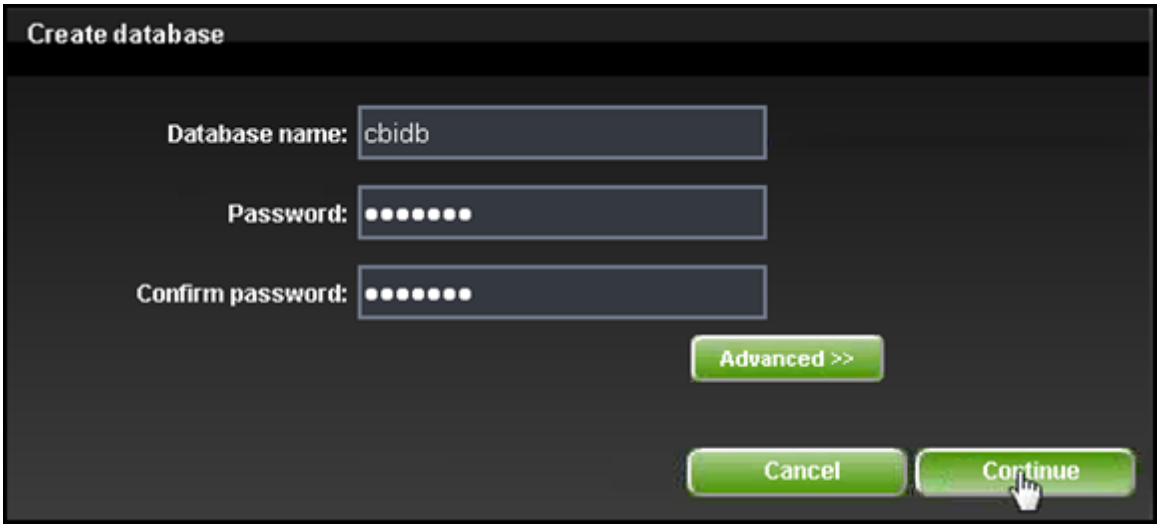
To create the HP Vertica database instance using MC, perform the following steps:

1. In the Vertica Management Console **Clusters and Databases** section, click **Create New**.



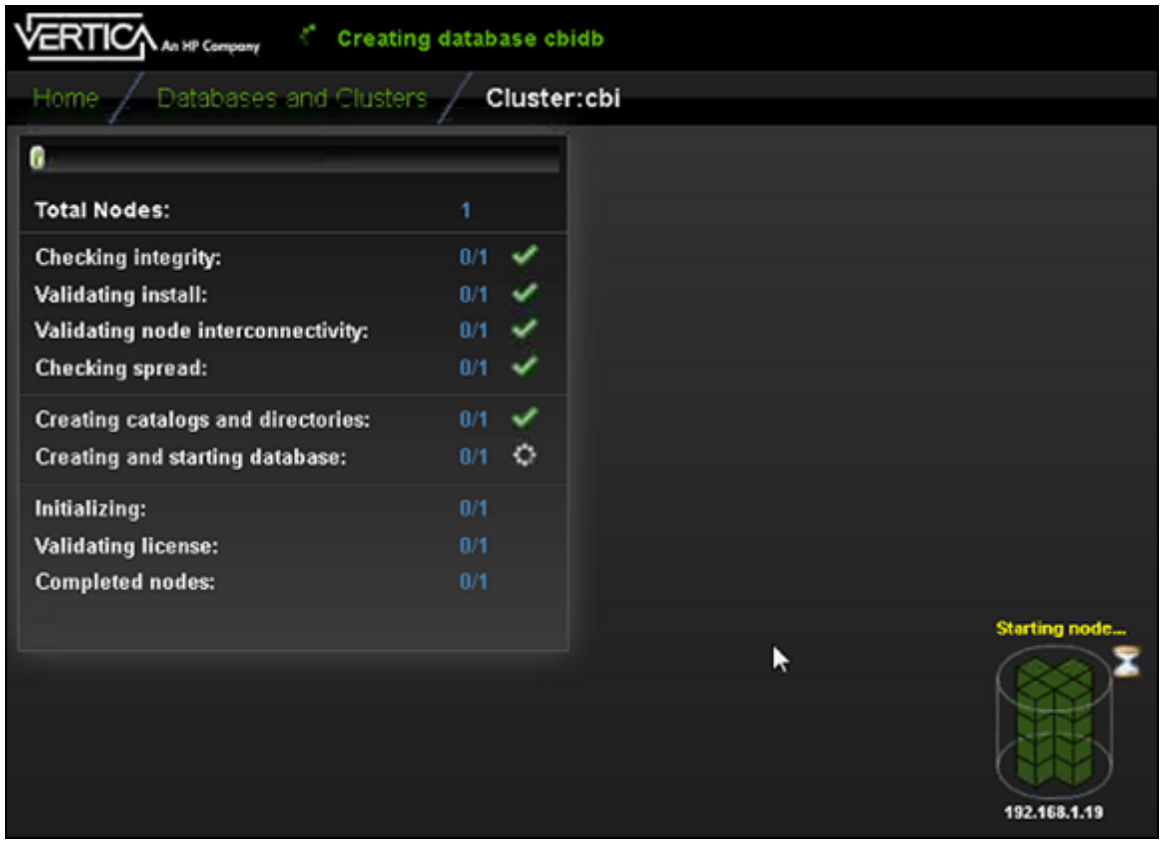
   The Create database window opens.

2. Enter the database name. Enter and confirm the password. The database name must be cbidb.

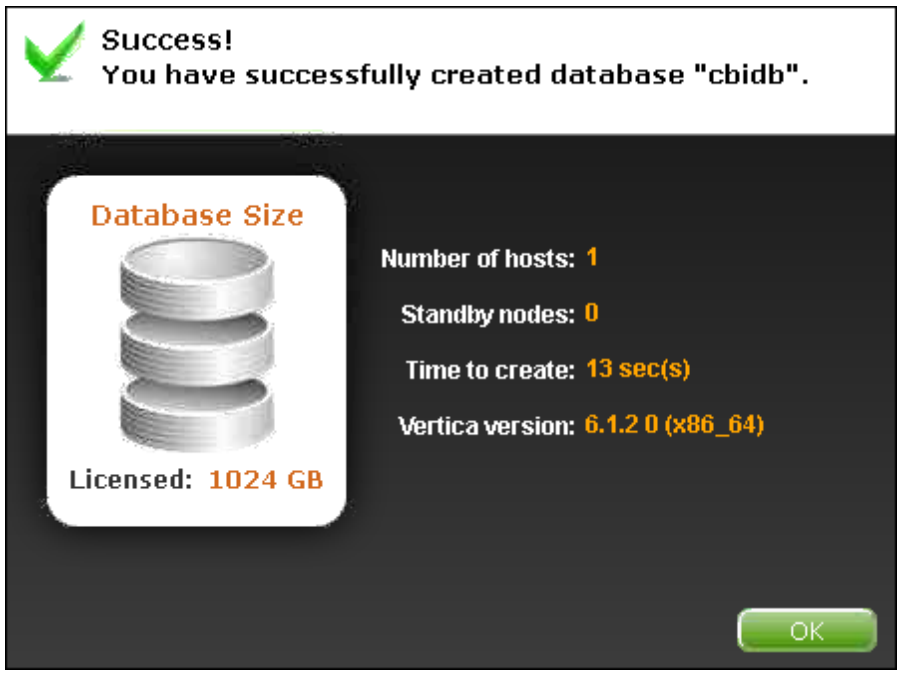


3. Click **Continue**.The Database Configuration window opens.

4. Click **Create**. VMC begins creating the cbidb database.



The Success window opens.



5. Click **OK**.

6. For security reasons, remove any copies of the `vid_rsa` file on your local system and the HP AI core server.

Import the HP Vertica Database Using MC

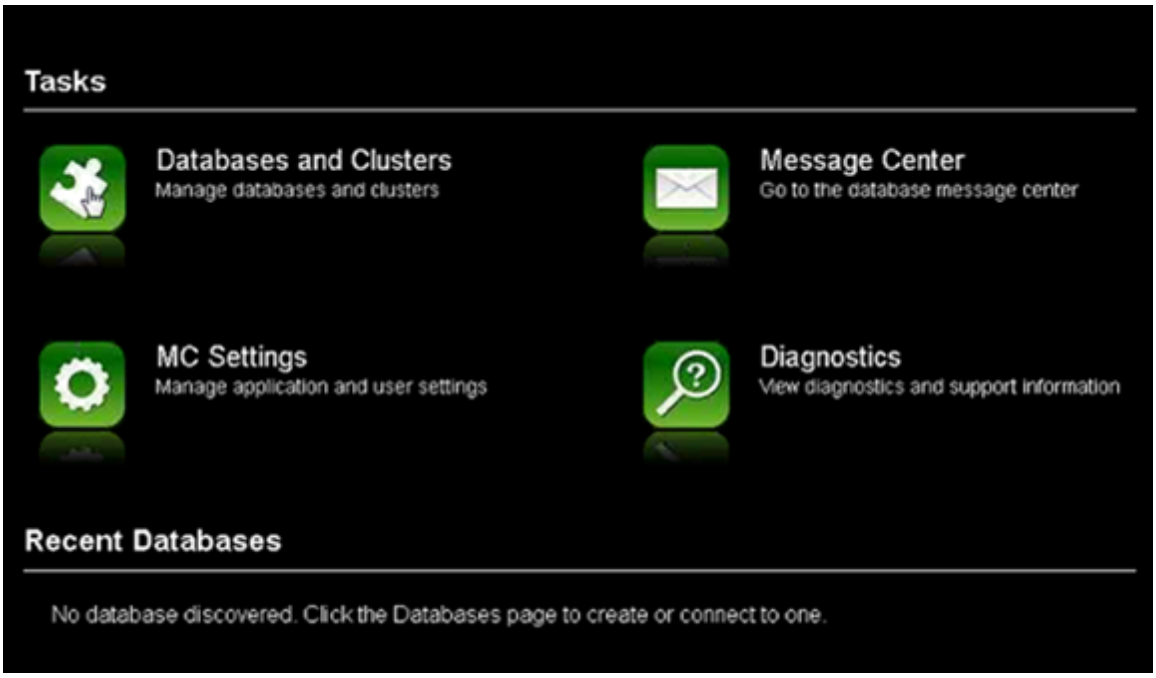
After you create the HP Vertica cluster and database, you can import the database using the Vertica Management Console.

Perform the following steps to import the HP Vertica database using MC:

1. Log on to the HP Vertica Management Console:

   The Vertica Management console opens.

2. Click **Databases and Clusters**.

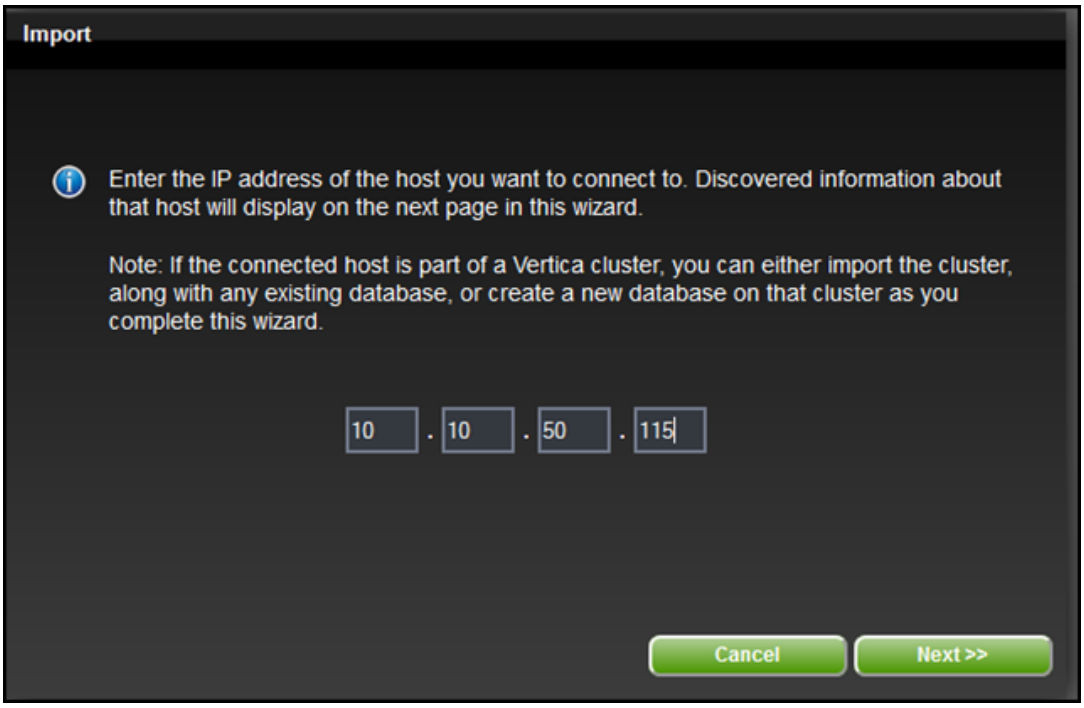


The **Databases and Clusters** window opens.

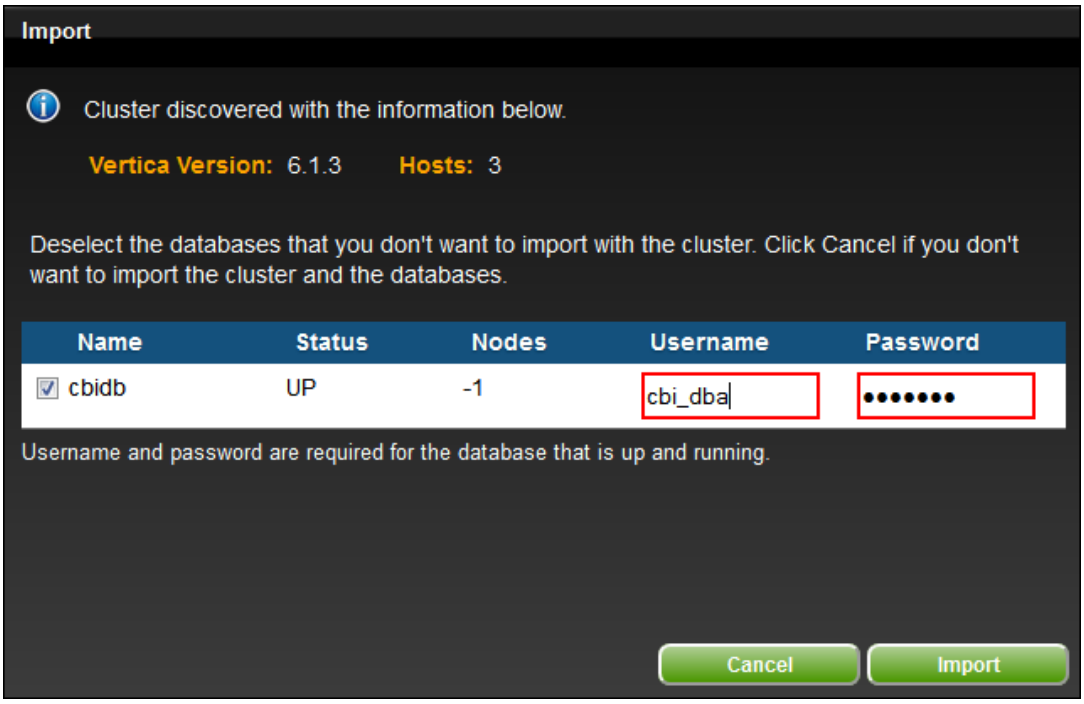
3. Click Import.

The Import window opens.

4. Enter the VIP of the cluster.

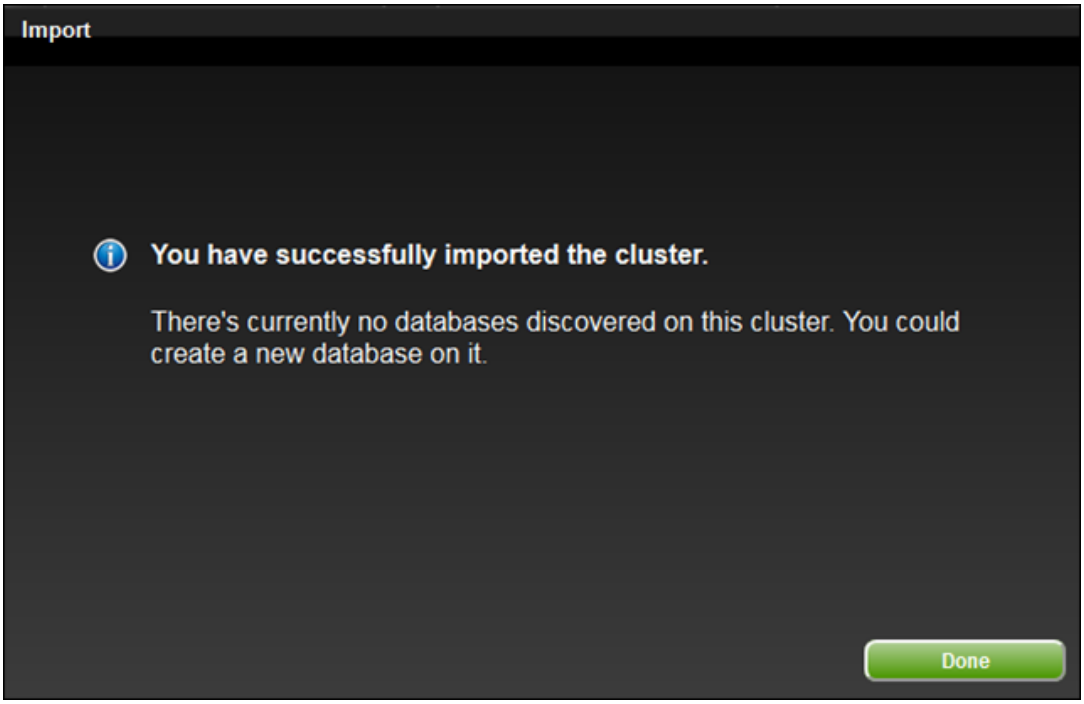


5. Click **Next**. The Import window opens. VMC displays the number of hosts connected to the cluster.



6. Enter the user name and password for the database and then click **Import**. When the cluster is

successfully imported, the following window opens:



7. Click **Done** to return to the **Databases and Clusters** window. The imported cluster is displayed.

Required Resource Pool Setting for Small Environments

If you have a small environment of less than 250 servers, you must change the resource pool memory from 8 to 4 GB before you can configure the HP AI core server to the HP Vertica database.

1. Change to the following directory on the HP AI core server:

   ```
   /opt/HP/CBI/database-scripts/
   ```

2. Create a backup copy of the `cbidb-user-setup-vertica.sql` file.
3. Open the `cbidb-user-setup-vertica.sql` file in a text editor.
4. Change the memory size for the cbi_admin_pool to 4 GB.

   Find the following line:

   ```
   CREATE RESOURCE POOL cbi_admin_pool MEMORYSIZE '8G' MAXMEMORYSIZE NONE
   RUNTIMEPRIORITY HIGH RUNTIMEPRIORITYTHRESHOLD 0 QUEUETIMEOUT 3600;
   ```

   Change this line to the following:

   ```
   CREATE RESOURCE POOL cbi_admin_pool MEMORYSIZE '4G' MAXMEMORYSIZE NONE
   RUNTIMEPRIORITY HIGH RUNTIMEPRIORITYTHRESHOLD 0 QUEUETIMEOUT 3600;
   ```

5. Save the `cbidb-user-setup-vertica.sql` file.

Configure the Data Warehouse in the HP AI Web Administration User Interface

Create the CBIDB schemas and users from the HP AI web administration user interface to automate creating HP AI database schema and user accounts in the HP Vertica database. You can also use this procedure to recreate schema on hosts that are already added if the existing schema or database is removed.

Note: Before you begin, make sure that HP Vertica is installed on the specified host/node and that the cbidb database is created and started.

Perform the following steps to configure the HP Vertica database from the HP AI web administration user interface:

1. Log in to the HP AI web administration user interface:

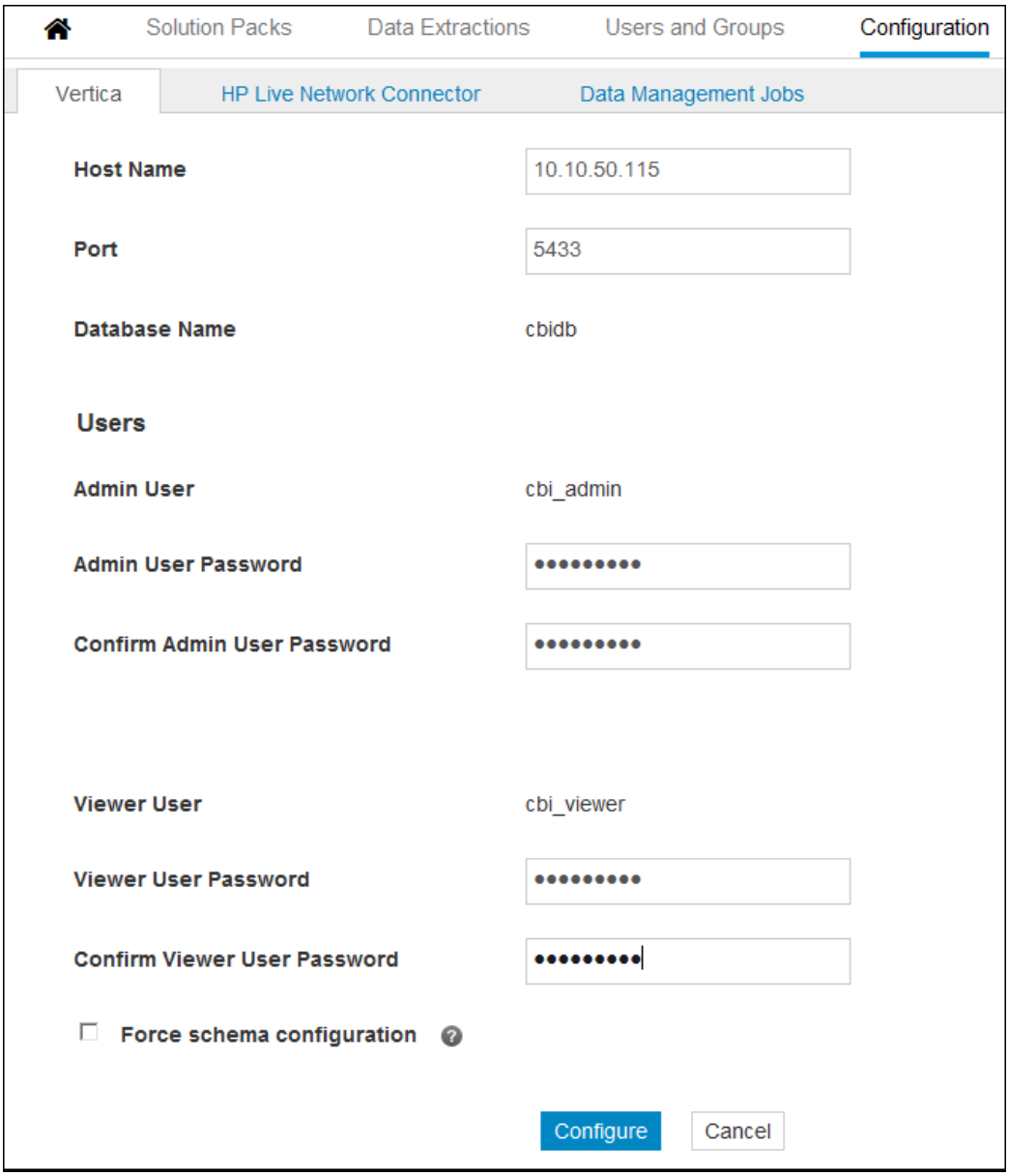
   `https://`*`ai-core`*`:4443/ai-admin/`

2. Click **Configuration** > **Vertica**
3. Click **Edit** and enter the following details:
   a. HP Vertica virtual IP address
   b. Port number
   c. AI admin database user (`cbi_admin`)
   d. AI admin database user password

e. AI database viewer user (`cbi_viewer`)

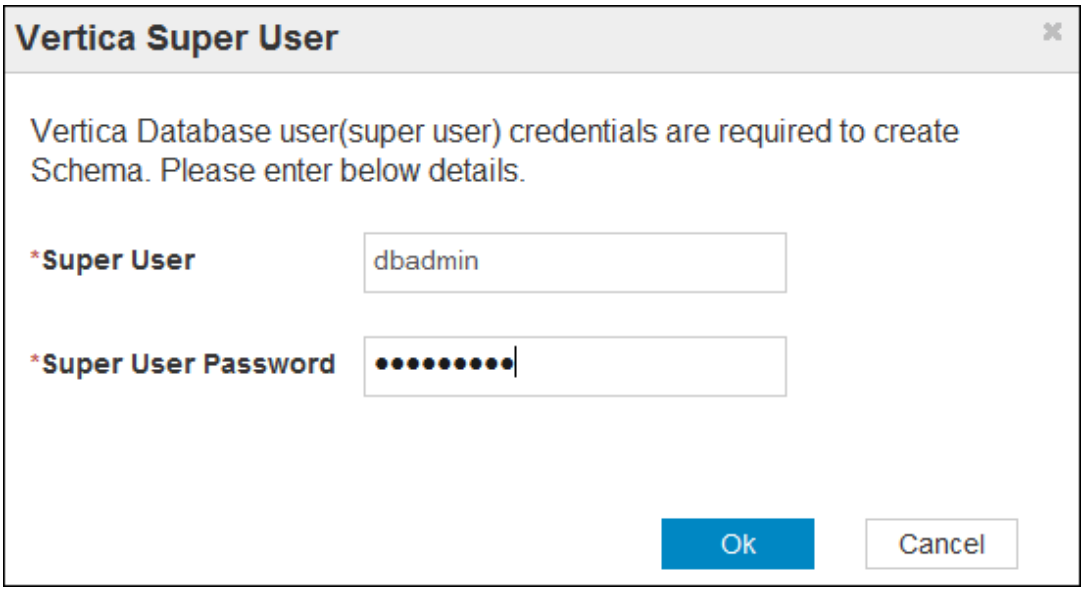
f. AI database viewer user password

g. HP AI database name (`cbidb`)



4. (Optional) Check the **Force Schema Configuration** box. You do not need to check the Force Schema Configuration box for first-time database setup.

5. Click **Configure**. The Vertica Super User window opens.



6. Enter the HP Vertica database super user name dbadmin and password. Click **OK**.
7. Click **Configure**.
8. The HP AI web administration interface returns to the Vertica tab and displays the updated information.

The following actions are performed when the **Force Schema Configuration** option is checked:

- The `cbi_admin` and `cbi_viewer` users are created and set to active state.
- The `cbi_data` and `cbi_meta` schemas are created with `cbi_admin` as pseudosuperuser.

The tables below are created as part of schema creation:

- `cbi_meta.database_info`
- `cbi_meta.dataextraction_mine_status`
- `cbi_meta.dataloader_registrations`
- `cbi_meta.datamodel_deployments`
- `cbi_meta.datasource_properties`
- `cbi_meta.datasource_registrations`

Use the **Force Schema Configuration** option to modify the `cbi_admin` and `cbi_viewer` user passwords and to create users and schemas in the HP Vertica database.

Note: You can create additional tables as required. Table names must be less than 30 characters in length.

Required Database Settings

To avoid errors when loading data into the HP Vertica database, you must reset the default Vertica Maximum Clients and Lock Timeout settings.

Maximum Clients

By default, HP Vertica allows a maximum of 50 client sessions and 5 administrator sessions. HP recommends setting the maximum number of client sessions to 100.

Perform the following steps to connect to vsql and increase the maximum number of client sessions to the recommended value of 100:

1. Connect to any HP Vertica node using ssh.
2. Change to the database super user:

   ```
   #su - dbadmin
   ```

3. Connect to vsql:

   ```
   $ /opt/vertica/bin/vsql
   ```

4. Enter the super user password when prompted.
5. Type the following command:

   ```
   => SELECT SET_CONFIG_PARAMETER('MaxClientSessions', 100);
   ```

Lock Timeout

To avoid errors during data loading related to an expired lock timeout in HP Vertica, perform the following steps to connect to vsql and increase the database lock timeout to the recommended value of 1800:

1. Connect to any HP Vertica node using ssh.
2. Change to the database super user:

   ```
   #su - dbadmin
   ```

3. Connect to vsql:

   ```
   $ /opt/vertica/bin/vsql
   ```

4. Enter the super user password when prompted.
5. Type the following command:

```
=> SELECT SET_CONFIG_PARAMETER('LockTimeout', 1800);
```

For more information about using MC to configure and manage your HP Vertica database settings, see the "Configuring the Database" section in the *HP Vertica Analytics Platform 6.1.x Administrator's Guide*.

Uninstalling HP Automation Insight

Uninstall Data Miners

Perform the following steps to uninstall an SA data miner on Linux.

1. Complete the steps in the "Unregistering a Data Miner" section in the *HP Automation Insight Administrator Guid*e.
2. Delete the directory where you installed the data miner.

Uninstall the HP Automation Insight Core Server

Perform the following steps to uninstall the HP AI core server.

This procedure uninstalls all components that are installed as part of the HP AI installation including the apacheds, HTTP, tomcat, and rsync servers. The uninstallation also uninstalls SAP BusinessObjects and the Vertica Management Console. The uninstallation deletes all services, log files, groups, users, and folders that are created during installation. The uninstaller does not remove the HP AI log files directory. The log files directory is located at `var/log/HP/CBI`.

Before you begin uninstallation of the HP AI core server, create a back up of the `/var/log/HP/CBI` directory. Some log files are overwritten when the HP AI core server is reinstalled.

1. Connect to the HP AI core server as root.
2. Type the following command:

   ```
   /opt/HP/CBI/installer/uninstaller
   ```

   The HP AI uninstaller launches in the same mode as the HP AI installer.

   You can use the `-i` option to launch the uninstaller in console mode. For example:

   ```
   /opt/HP/CBI/installer/uninstaller -i console
   ```

3. In the Maintenance Mode window, the "Uninstall Product" option is selected by default. Click **Next** in GUI mode or press **Enter** in console mode.
4. In the Uninstallation Introduction window, click **Next** in GUI mode or press **Enter** in console mode to begin the HP AI uninstallation process.

The uninstallation requires about 10 minutes to complete. After the uninstallation is complete, you can use the same server to reinstall the HP AI core server.

The uninstallation creates a log file at `/var/log/HP/CBI` with details of the uninstalled components.

Note: You must reboot the server before reinstalling HP AI on the same server.

Drop the HP Vertica Database on the Cluster

To drop the database on the HP Vertica cluster using the command line interface, perform the following steps.

SSH to any node in the cluster (or to the cluster VIP) to access the command line interface of the node. When the database is dropped on any of the nodes in the cluster, it is also dropped on the other cluster nodes.

To drop the database on the HP Vertica cluster using the HP Vertica Administration Tools, perform the following steps:

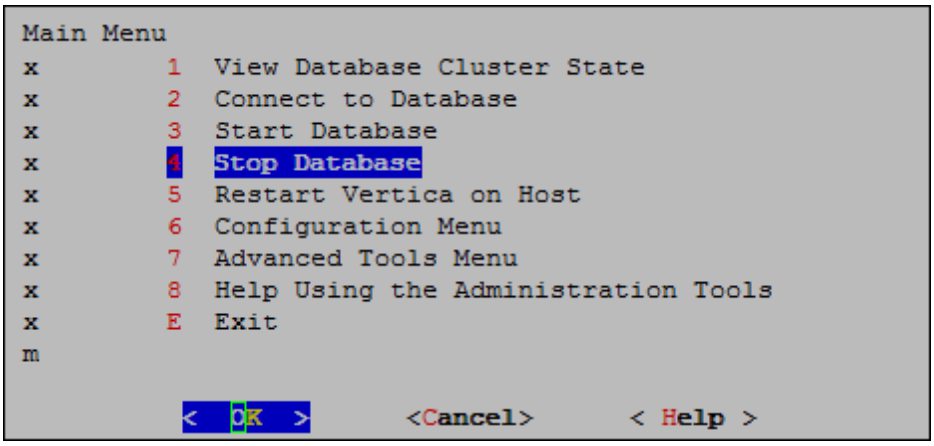
1. Log in as the database super user:

   ```
   #su - dbadmin
   ```

2. Type the following command to open the Vertica Analytics Database 6.1.3 Administration Tools main menu:

   ```
   $ /opt/vertica/bin/admintools
   ```

3. On the Main Menu, select **Stop Database** and then click **OK.**



4. Select the database you want to stop and then click **OK**.

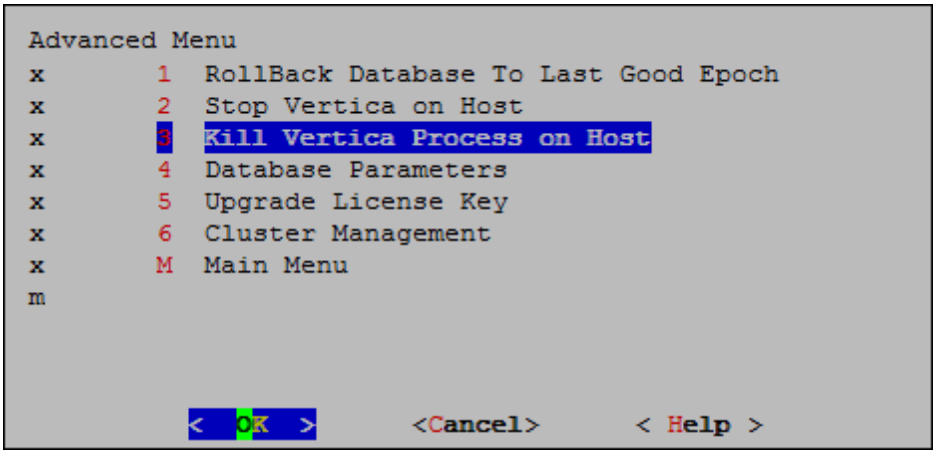
5. Enter the password. if prompted, and then click **OK**. A message confirms that the database has been successfully stopped.

6. Select **OK**.

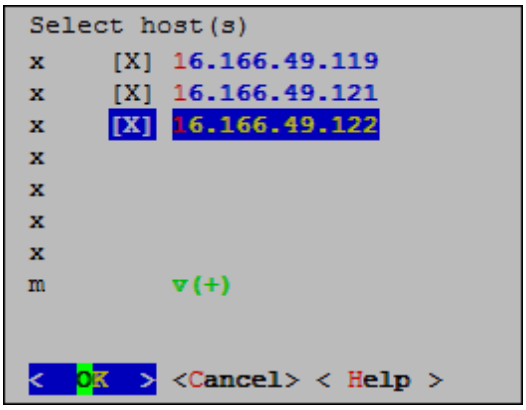
7. If the database instance is stopped successfully, skip to Step 11. If the database instance does not stop, perform Steps 8-10 to stop the Vertica processes.

8. On the Main Menu, select **Advanced Tools Menu** and then click **OK**.

9. On the Advanced Menu, select **Kill Vertica process on Host** and then click **OK**.

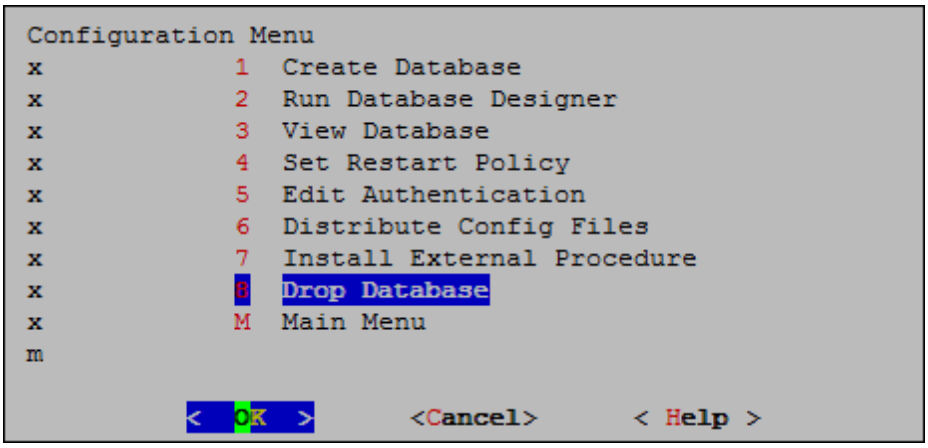


10. On the Select Host(s) menu, select all of the HP Vertica nodes and then click **OK**.

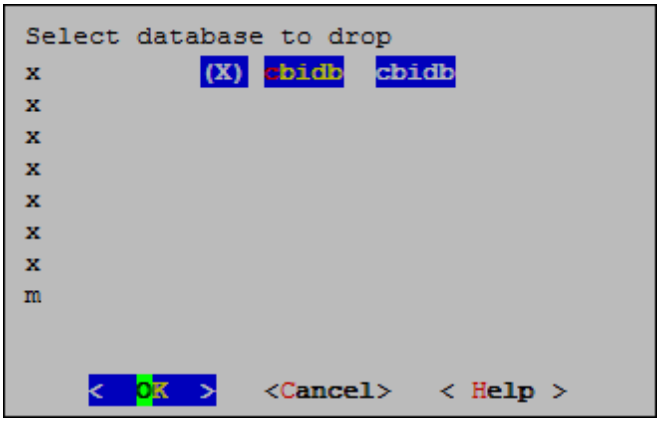


11. On the Main Menu, select **Configuration Menu** and then click **OK**.

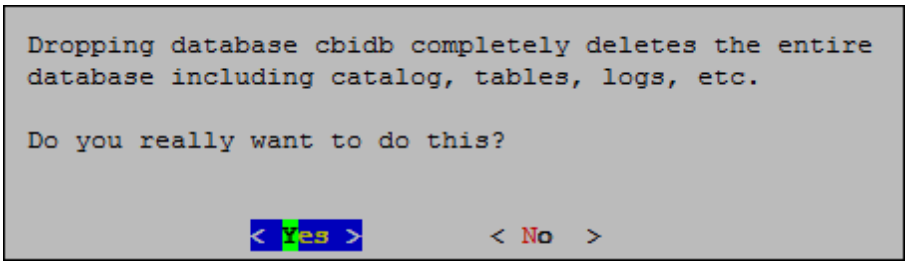
12. On the Configuration Menu, select **Drop Database** and then click **OK**.



13. Select the database to drop and then click **OK**.



14. Click **Yes** to confirm that you want to drop the database.
15. Type **yes** and then click **OK** to reconfirm that you want to drop the database.



A message indicates that you have successfully dropped the database.

16. Click **OK**.

Reinstalling HP Automation Insight After a Partial Installation

If your installation of HP AI is stopped before it is completed, you must manually stop all services and remove all folders, users, and groups from the HP AI core server before you can reinstall HP AI. Perform the following tasks to clean the HP AI core server before attempting to reinstall HP AI:

1. Type the following commands to stop the HP AI, VMC, and BO services:

   ```
   su - cbi -c "/opt/HP/CBI/bin/cbi.sh stop"

   /opt/vconsole/bin/mctl stop

   /etc/init.d/SAPBOBJEnterpriseXI40 stop
   ```

2. Type the following commands to delete all HP AI and SAP BO services and folders:

   ```
   rm -rf /etc/init.d/cbi-core

   chkconfig --del cbid

   rm -rf /etc/init.d/cbid

   rm -rf /opt/HP/CBI

   rm -rf /var/opt/HP/CBI

   rm -rf /etc/opt/HP/CBI

   rm -rf /etc/init.d/SAPBOBJEnterpriseXI40

   rm -rf /etc/rc.d/rc0.d/*SAPBO* /etc/rc.d/rc1.d/*SAPBO*
   /etc/rc.d/rc2.d/*SAPBO* /etc/rc.d/rc3.d/*SAPBO* /etc/rc.d/rc4.d/*SAPBO*
   /etc/rc.d/rc5.d/*SAPBO* /etc/rc.d/rc6.d/*SAPBO*

   rm -rf /etc/rc.d/rc0.d/*cbid* /etc/rc.d/rc1.d/*cbid* /etc/rc.d/rc2.d/*cbid*
   /etc/rc.d/rc3.d/*cbid* /etc/rc.d/rc4.d/*cbid* /etc/rc.d/rc5.d/*cbid*
   /etc/rc.d/rc6.d/*cbid*
   ```

3. Type the following commands to delete the HP AI users and groups:

   ```
   userdel -r -f cbi

   groupdel cbi
   ```

4. Reboot the server.

HP Automation Insight Documentation

This section lists the HP AI manuals and describes how to download the latest HP AI manuals.

Access the HP AI documentation listed below at: http://h20230.www2.hp.com/selfsolve/manuals

Document	URL
HP Automation Insight Quick Start Guide	http://support.openview.hp.com/selfsolve/document/KM00901789/binary/AutomationInsight_QuickStart_100.pdf
HP Automation Insight Installation Guide	http://support.openview.hp.com/selfsolve/document/KM00939718/binary/AutomationInsight_Installation_100.pdf
HP Automation Insight Administrator Guide	http://support.openview.hp.com/selfsolve/document/KM00901790/binary/AutomationInsight_Administrator_100.pdf
HP Automation Insight User Guide	http://support.openview.hp.com/selfsolve/document/KM00901791/binary/AutomationInsight_User_100.pdf
HP Automation Insight Support Matrix	http://support.openview.hp.com/selfsolve/document/KM00939716/binary/AutomationInsight_SupportMatrix_100.pdf
HP Automation Insight Release Notes	http://support.openview.hp.com/selfsolve/document/KM00939711/binary/AutomationInsight_ReleaseNotes_100.pdf
HP Automation Insight Troubleshooting Guide	http://support.openview.hp.com/selfsolve/document/KM00939720/binary/AutomationInsight_Troubleshooting_100.pdf
HP Automation Insight Vertica Cluster Load Balancing and Failover	http://support.openview.hp.com/selfsolve/document/KM00939721/binary/AutomationInsight_VerticaCluster_LoadBalancing_Failover_100.pdf
HP Automation Insight Migrate BSAE Universes and Reports	http://support.openview.hp.com/selfsolve/document/KM01001236/binary/AutomationInsight_Migrate_BSAE_Universes_Reports_100.pdf
HP Automation Insight SA Compliance User Guide *HP Automation Insight SA Inventory and Usage User Guide* *HP Automation Insight AI System Health User Guide* *HP Automation Insight SA User Management User Guide*	Solution pack user guides are provided with solution packs and are available for download from the HP Automation Insight portal on HPLN: https://hpln.hp.com/group/automation-insight

HP Vertica Database Documentation

Access HP Vertica Database documentation at the URLs in the following table, or click **?** on the HP AI web administration user interface:

Document	URL
HP Vertica Analytics Platform 6.1.x Administrator's Guide	https://my.vertica.com/docs/6.1.x/PDF/HP_Vertica_6.1.x_AdminGuide.pdf
HP Vertica Analytics Platform 6.1.x Installation Guide	http://my.vertica.com/docs/6.1.x/PDF/HP_Vertica_6.1.x_InstallGuide.pdf
HP Vertica Analytics Platform 6.1.x Supported Platforms	http://my.vertica.com/docs/6.1.x/HP_Vertica_6.1.x_Supported_Platforms.pdf

For more information about the HP Vertica database, go to the HP Vertica Analytics 6.1.x Product Documentation web site at the following URL:

http://www.vertica.com/documentation/documentation-6-1/

SAP BusinessObjects Documentation

Access SAP BusinessIntelligence Platform 4.0 Support Package 7 documentation at the URLs in the following table, or click **?** on the HP AI web administration user interface:

Document	URL
Business Intelligence Platform Administrator Guide	http://help.sap.com/businessobject/product_guides/boexir4/en/xi4sp7_bip_admin_en.pdf
BI Launch Pad User Guide	http://help.sap.com/businessobject/product_guides/boexir4/en/xi4sp4_bip_iv_en.pdf
SAP BusinessObjects Web Intelligence Users Guide	http://help.sap.com/businessobject/product_guides/boexir4/en/xi4sp4_ia_en.pdf
BI Workspaces User Guide	http://help.sap.com/businessobject/product_guides/boexir4/en/xi4_bi_workspace_user_en.pdf

For more information about SAP BusinessObjects 4.0, go to the SAP BusinessObjects Business Intelligence platform 4.0 web site at the following URL: http://help.sap.com/bobip40.

Get the Latest HP AI Manuals

You can download the latest AI manuals as follows.

1. Go to http://support.openview.hp.com/selfsolve/manuals.
2. Log in with your HP Passport.

   To get an HP passport, select the link “New Users - Please register.”
3. In the Product field, select Automation Insight.
4. In the Product Version field, select a version of HP AI.
5. In the Operating System field, select any operating system.
6. Select the Search button. This displays the HP AI manuals available for the product version you selected.
7. Select any manual to download it.

How to Find Information Resources

To access the information resources for the included products, use any of the following methods:

- Access individual documents by title and version with Documentation Libraries.
- Use the All Manuals Downloads .zip file to download PDFs of the documentation set to a local directory.
- Find documents on the HP Software Documentation Portal.
- Click the **?** in the HP AI web administration user interface.
- Access solution pack user guides from HPLN for your solution pack.

To access individual documents:

1. Go to the Documentation Library for the product:**Automation Insight Documentation Library**.
2. Log in using your HP Passport credentials.
3. Locate the desired document title and version and then click the **go** link.

To use the complete documentation set in a local directory:

1. To download the complete documentation set to a local directory:
   a. Go to the All Manuals Download for the product:**Automation Insight All Manuals Download**.

b. Log in using your HP Passport credentials.

c. Download the ZIP file to a local directory.

d. Unzip the file to a local directory.

2. To locate a document in the local directory, search through the filenames to identify the desired document.

3. To search for a keyword across all documents in the documentation set:

a. Open any PDF document in the local directory.

b. Select **Edit > Advanced Search** (or Shift+Ctrl_F).

c. Select the All PDF Documents option and browse for the local directory.

d. Enter your keyword and click **Search**.

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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 ai-doc-feedback@hp.com.


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