



4. Deploy the RHV-H Hypervisor on the HCI Compute Nodes: NetApp HCI with RHV

NetApp Solutions

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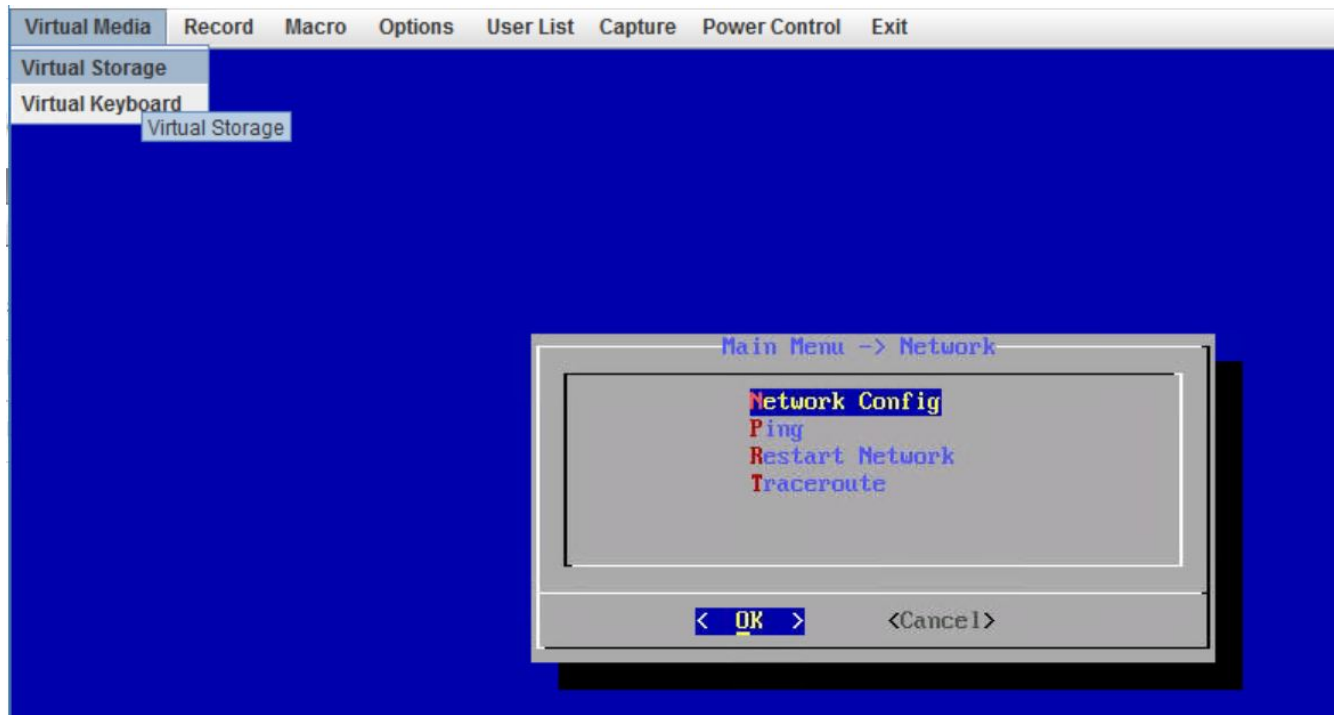
4. Deploy the RHV-H Hypervisor on the HCI Compute Nodes: NetApp HCI with RHV

This solution employs the recommended self-hosted engine architecture of RHV deployment with the minimum setup (two self-hosted engine nodes). These steps begin after the nodes have been racked and cabled and the IPMI port has been configured on each node for using the console. To deploy the RHV-H hypervisor on HCI compute nodes, complete the following steps:

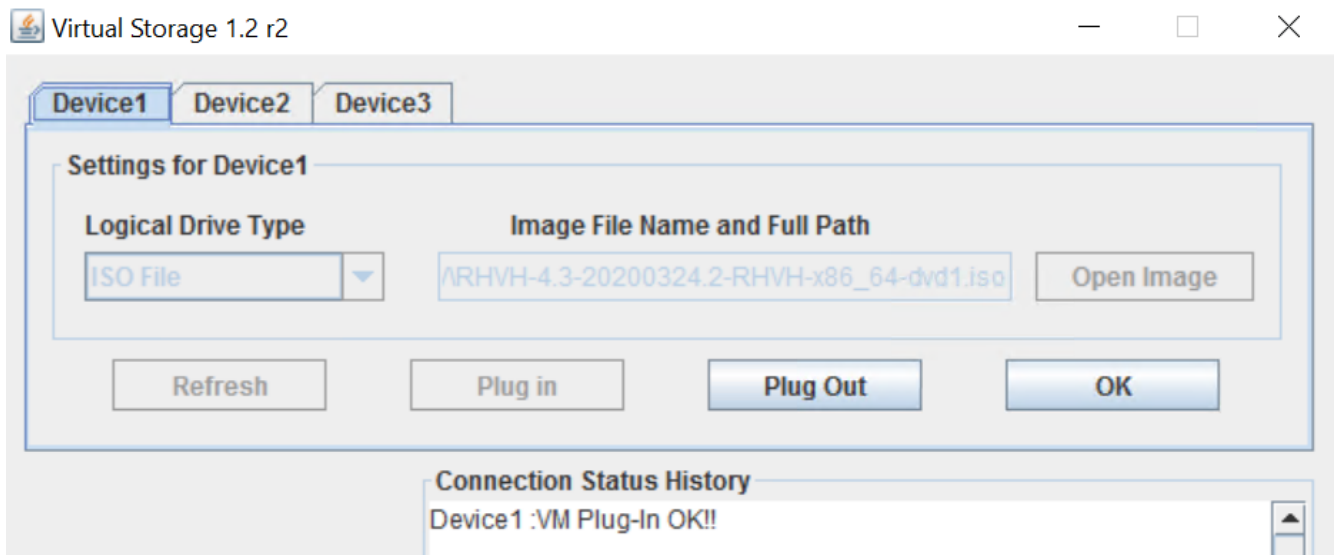
1. Access the out-of-band management console for the compute nodes in the cluster and log in with the default credentials ADMIN/ADMIN.

A screenshot of a web-based login interface. The background is a light beige color. At the top center, the text "Please Login" is displayed in a bold, black, sans-serif font. Below this, there are two input fields. The first field is labeled "Username" in a bold, black, sans-serif font, and it contains the text "ADMIN". The second field is labeled "Password" in a bold, black, sans-serif font, and it contains five dots ".....". Below the password field, there is a button labeled "login" in a bold, black, sans-serif font. The entire login form is enclosed in a thin black border.

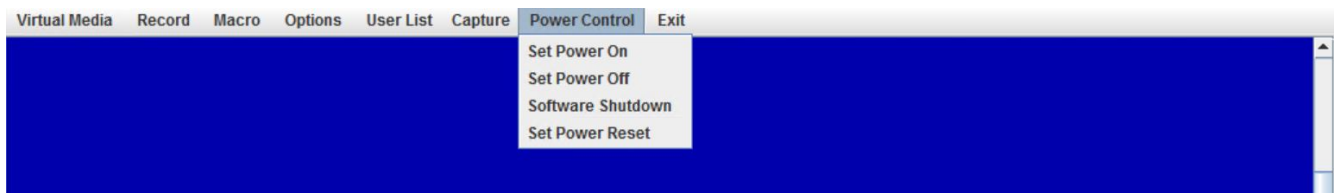
2. Click the Remote Console Preview image in the center of the screen to download a JNLP file launched by Java Web Start, which launches an interactive console to the system.
3. After the virtual console launches, attach the RHV-H 4.3.9 ISO by navigating to and clicking Virtual Media > Virtual Storage.



4. For Logical Drive Type, select ISO File from the drop down. Provide the full path and full name of the RHV-H 4.3.9 ISO file or attach it by clicking the Open Image button. Then click Plug In.



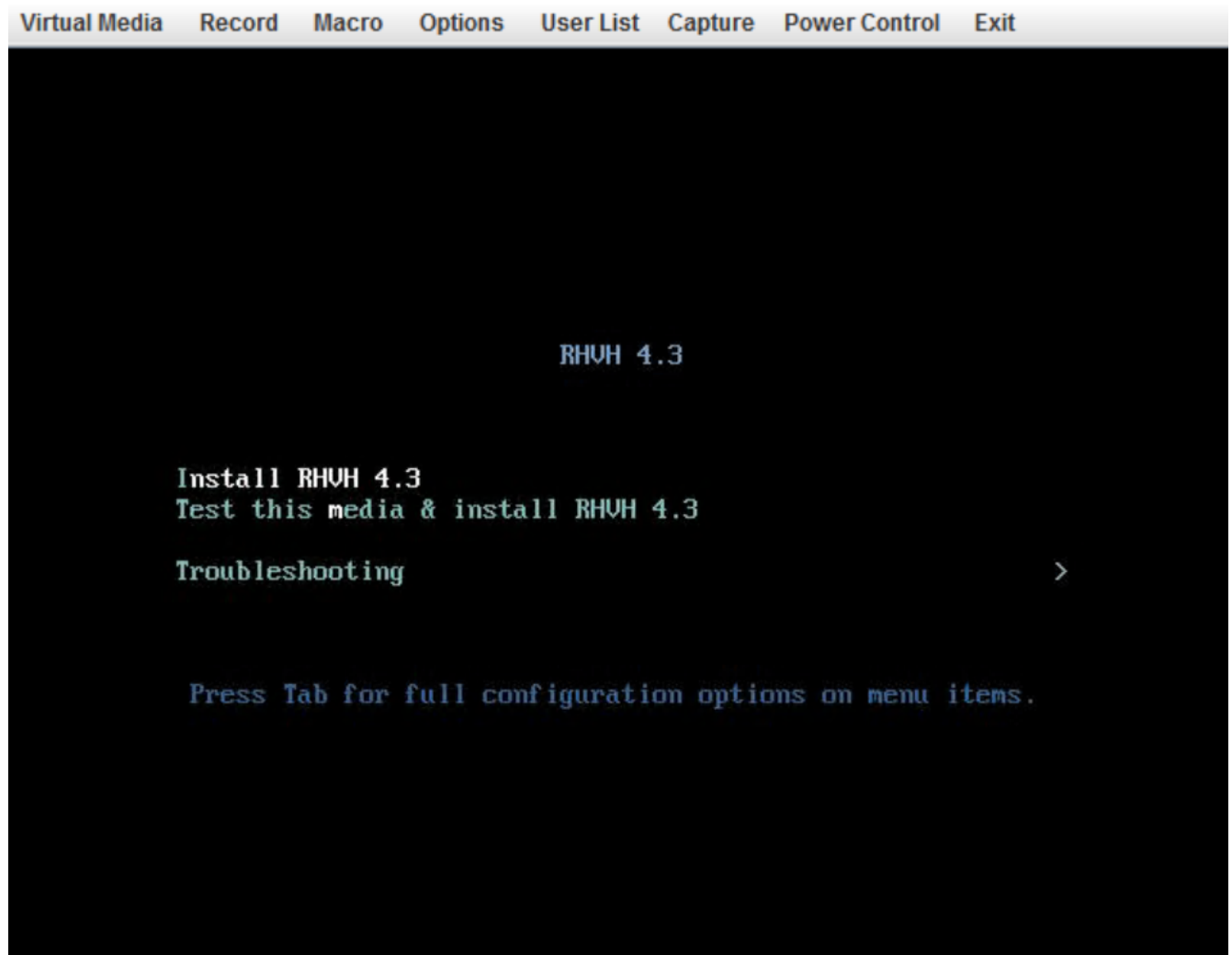
5. Reboot the server so that it boots using RHV-H 4.3.9 ISO by navigating and clicking Power Control > Set Power Reset.



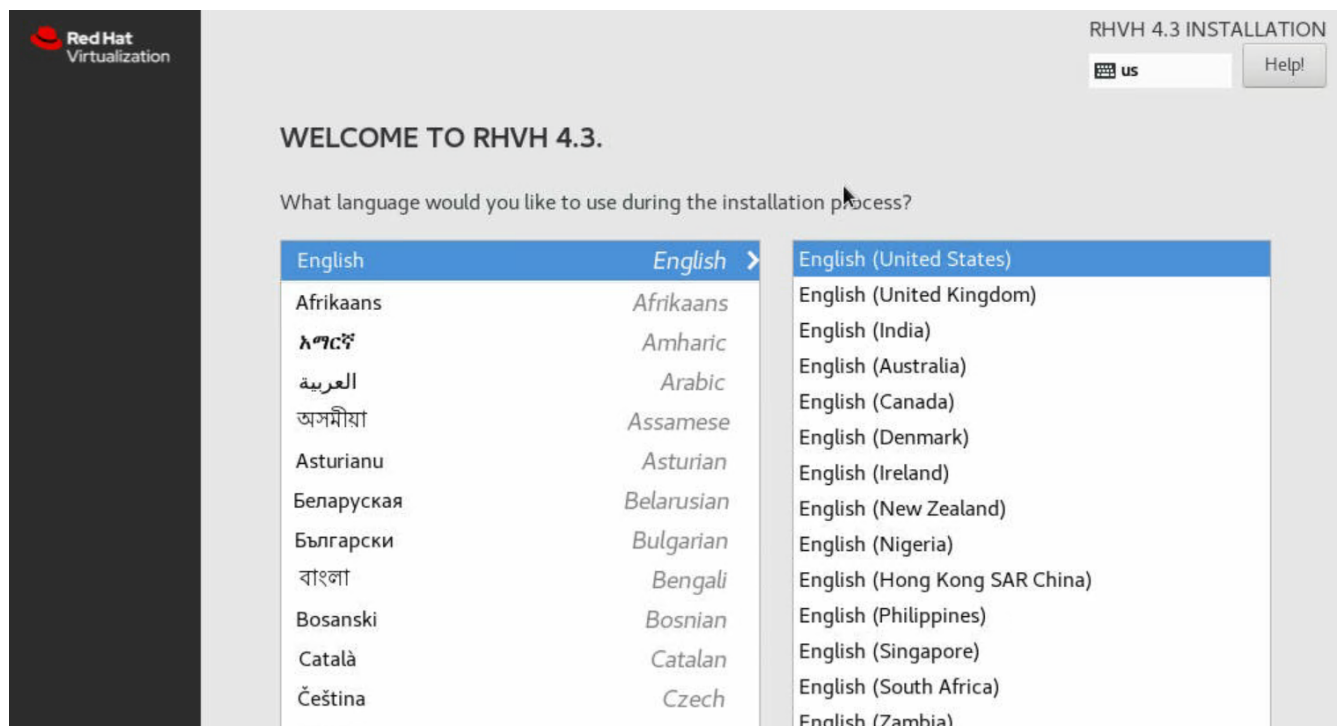
6. When the node reboots and the initial screen appears, press F11 to enter the boot menu. From the boot menu, navigate to and click ATEN Virtual CDROM YSOJ.



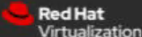
7. On the next screen, navigate to and click Install RHV 4.3. This loads the image, runs the pre-installation scripts, and starts Anaconda, the Red Hat Enterprise Linux system installer.



8. The installation welcome screen appears. Select the preferred language and click Next.



9. In the next screen, select your time zone under Date & Time. The default is UTC. However, NetApp recommends that you configure NTP servers for your environment on this screen. Then select the keyboard language and click Done.





INSTALLATION SUMMARY


RHVH 4.3 INSTALLATION

us Help!


LOCALIZATION


 **DATE & TIME**
Americas/Toronto timezone


 **KEYBOARD**
English (US)


 **LANGUAGE SUPPORT**
English (United States)

SYSTEM

 **INSTALLATION DESTINATION**
No disks selected

 **NETWORK & HOST NAME**
Not connected

 **KDUMP**
Kdump is enabled

 **SECURITY POLICY**
No profile selected

10. Next, click Installation Destination. In the Installation Destination screen, select the drives on which you want to install RHV-H. Verify that Automatically Configure Partitioning is selected in the Partitioning section. Optionally, you can enable encryption by checking the box next to Encrypt My Data. Click Done to confirm the settings.

INSTALLATION DESTINATION

Done


RHVH 4.3 INSTALLATION


us Help!

Device Selection

Select the device(s) you'd like to install to. They will be left untouched until you click on the main menu's "Begin Installation" button.


Local Standard Disks

223.57 GiB

ATA Micron_5100_MTFD
sda / 1592.5 KiB free

223.57 GiB

ATA Micron_5100_MTFD
sdb / 1592.5 KiB free

Disks left unselected here will not be touched.

Specialized & Network Disks

 Add a disk...

Disks left unselected here will not be touched.

Other Storage Options

Partitioning

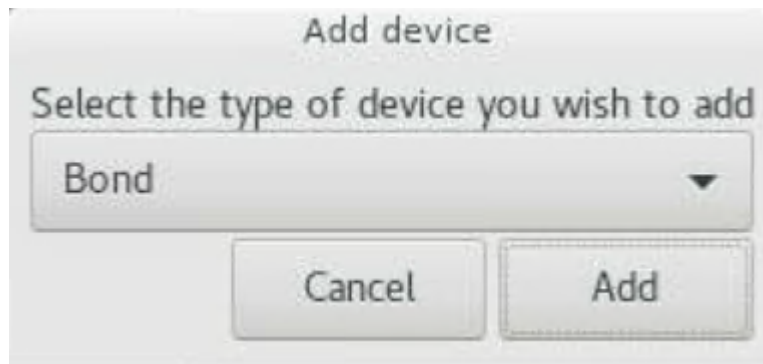
☒ Automatically configure partitioning. ☐ I will configure partitioning.

☐ I would like to make additional space available.

Encryption

☐ Encrypt my data. You'll set a passphrase next.

11. Click Network & Host Name. Provide the desired host name at the bottom of the screen. Then click the (+) button at the bottom. Select the Bond from the drop down and click Add.



12. Next, in the bond configuration screen, click Add to add the member interfaces to the bond interface.

Editing Bond connection 1

Connection name:

General **Bond** Proxy IPv4 Settings IPv6 Settings

Interface name:

Bonded connections:

Add

Edit

Delete

Mode:

Link Monitoring:

Monitoring frequency: ms

Link up delay: ms

Link down delay: ms

MTU: bytes

13. Select Ethernet from the drop down, indicating that the Ethernet interface is added as a member to the bond interface. Click Create.



Choose a Connection Type

Select the type of connection you wish to create.

If you are creating a VPN, and the VPN connection you wish to create does not appear in the list, you may not have the correct VPN plugin installed.

Ethernet ▼

Cancel

Create...

14. From the Device dropdown in the slave 1 configuration screen, select the Ethernet interface. Verify that the MTU is set to 9000. Click Save.

Editing bond0 slave 1

Connection name:

General **Ethernet** 802.1X Security DCB

Device:

Cloned MAC address:

MTU: bytes

Wake on LAN: ☒ Default ☐ Phy ☐ Unicast ☐ Multicast
☐ Ignore ☐ Broadcast ☐ Arp ☐ Magic

Wake on LAN password:

Link negotiation:

Speed:

Duplex:

15. Repeat steps 12, 13, and 14 to add the other Ethernet port to the bond0 interface.
16. From the Mode dropdown in the bond configuration screen, select 802.3ad for LACP. Verify that the MTU is set to 9000. Then click Save.

Editing Bond connection 1

Connection name: Bond connection 1

General **Bond** Proxy IPv4 Settings IPv6 Settings

Interface name: bond0

Bonded connections:

- bond0 slave 1
- bond0 slave 2

Add

Edit

Delete

Mode: 802.3ad

Link Monitoring: MII (recommended)

Monitoring frequency: 1 ms

Link up delay: 0 ms

Link down delay: 0 ms

MTU: 9000 bytes

Cancel Save

17. Create the VLAN interface for the in-band management network. Click the (+) button again, select VLAN from the dropdown and click Create.

Add device

Select the type of device you wish to add

VLAN ▼

Cancel Add

18. In the Editing VLAN connection screen, select bond0 in the Parent Interface dropdown, enter the VLAN ID of the in-band management network. Provide the name of the VLAN interface in `bond 0.< vlan_id >` format.

Editing VLAN connection 1

Connection name VLAN connection 1

General **VLAN** Proxy IPv4 Settings IPv6 Settings

Parent interface bond0 (via "Bond connection 1") ▼

VLAN id 1172 - +

VLAN interface name bond0.1172

Cloned MAC address ▼

MTU automatic - + bytes

Flags ☒ Reorder headers ☐ GVRP ☐ Loose binding ☐ MVRP

Cancel Save

19. In the Editing VLAN connection screen, click the IPv4 Settings sub-tab. In the IPv4 Settings sub-tab, configure the network address, netmask, gateway, and DNS servers corresponding to the in-band management network. Click Save to confirm the settings.

The screenshot shows a window titled "Editing VLAN connection 1" with a close button (X) in the top right corner. The window has a tabbed interface with four tabs: "General", "VLAN", "Proxy", and "IPv4 Settings" (which is selected and underlined). Below the tabs, the "Method" is set to "Manual". Under the "Addresses" section, there is a table with three columns: "Address", "Netmask", and "Gateway". The table contains one row with the values "10.63.172.151", "24", and "10.63.172.1". To the right of the table are "Add" and "Delete" buttons. Below the table, there are input fields for "DNS servers" (containing "10.61.184.251, 10.61.184.252"), "Search domains" (containing "cie.netapp.com"), and "DHCP client ID" (which is empty). Below these fields is a checkbox labeled "Require IPv4 addressing for this connection to complete", which is currently unchecked. To the right of the checkbox is a "Routes..." button. At the bottom right of the window are "Cancel" and "Save" buttons.

Address	Netmask	Gateway
10.63.172.151	24	10.63.172.1

20. Create the VLAN interface for the storage network. Click the (+) button again, select VLAN from the dropdown, and click Create. In the Editing VLAN Connection screen, select bond0 in the Parent Interface dropdown, enter the VLAN ID of the storage network, provide the name of the VLAN interface in the `bond0.<vlan_id>` format. Adjust the MTU to 9000 to allow jumbo frame support. Click Save.

Editing VLAN connection 2

Connection name: VLAN connection 2

General **VLAN** Proxy IPv4 Settings IPv6 Settings

Parent interface: bond0 (via "Bond connection 1")

VLAN id: 3343 - +

VLAN interface name: bond0.3343

Cloned MAC address:

MTU: 9000 - + bytes

Flags: ☒ Reorder headers ☐ GVRP ☐ Loose binding ☐ MVRP

Cancel Save

21. In the Editing VLAN Connection screen, click the IPv4 Settings sub-tab. In the IPv4 Settings sub-tab, configure the network address and the netmask corresponding to the storage network. Click Save to confirm the settings.

Editing VLAN connection 2 (on localhost.localdomain)

Connection name

VLAN connection 2

General

VLAN

Proxy

IPv4 Settings

IPv6 Settings

Method

Manual

Addresses

Address	Netmask	Gateway
172.21.87.31	255.255.255.0	

Add

Delete

DNS servers

Search domains

DHCP client ID

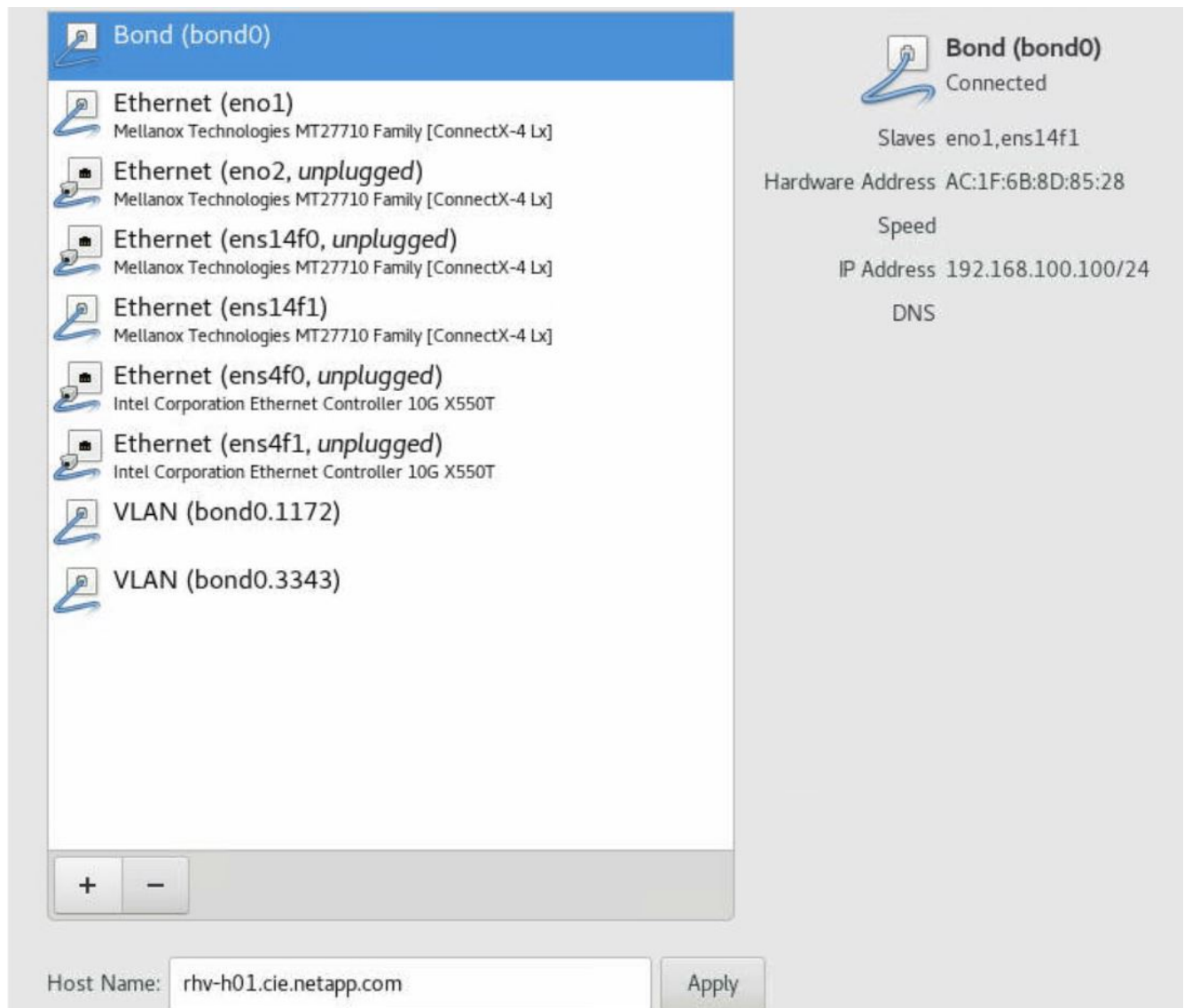
☐ Require IPv4 addressing for this connection to complete

Routes...

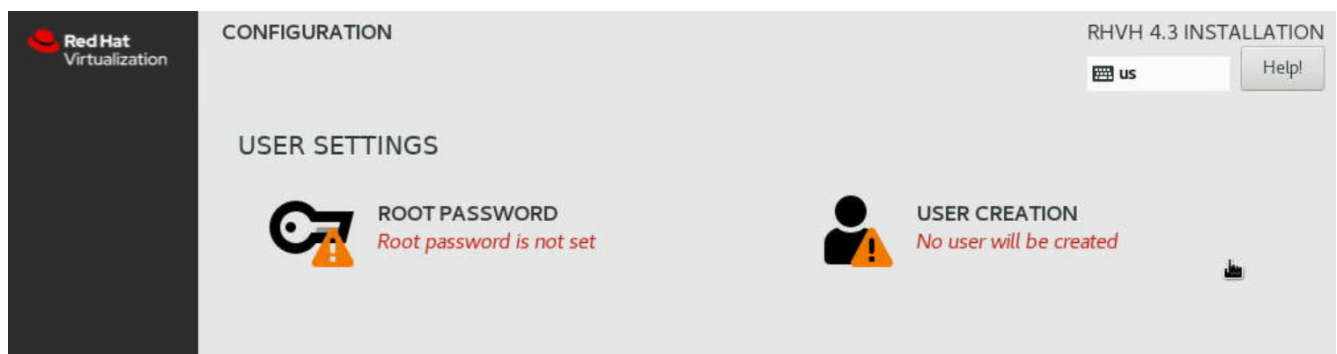
Cancel

Save

22. Confirm that the network interfaces are up and click Done.



23. After the wizard navigates back to the configuration page, click Begin Installation. The next screen prompts you to configure the root password and optionally to create another user for logging into RHV-H.



24. After the installation completes, unmount the ISO file by navigating to Virtual media > Virtual Storage in the virtual console and click Plug Out. Then click Reboot on the Anaconda GUI to complete the installation process. The node then reboots.

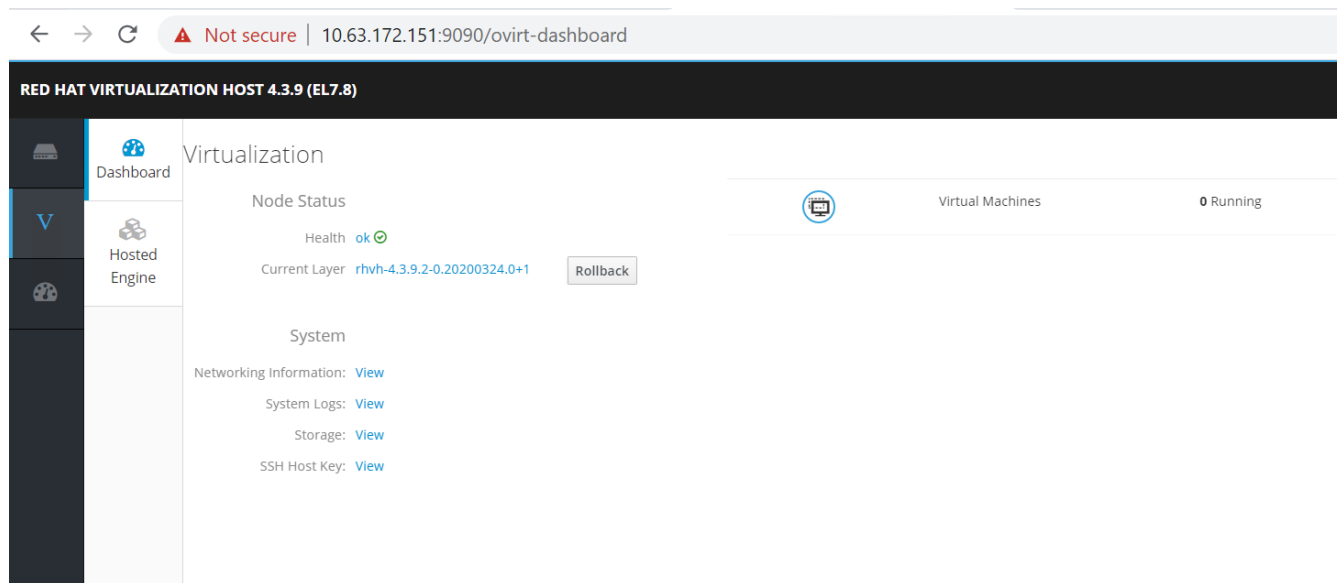


After the node comes up, it displays the login screen.

```
Red Hat Virtualization Host 4.3.9 (el7.8)
Kernel 3.10.0-1127.el7.x86_64 on an x86_64

rhv-h01 login:
```

25. Now that the installation is complete, you must then register RHV-H and enable the required repositories. Open a browser and log in to the Cockpit user interface at <https://<HostFQDN/IP>:9090> using the root credentials provided during the installation.



26. Navigate to localhost > Subscriptions and click Register. Enter your Red Hat Portal username and password, click the check box Connect this System to Red Hat Insights, and click Register. The system automatically subscribes to the Red Hat Virtualization Host entitlement.

Red Hat Insights provide continuous analysis of registered systems to proactively recognize threats to availability, security, performance, and stability across physical, virtual, and cloud environments.

Register system

URL

Proxy ☐ Use proxy server

Login

Password

Activation Key

Organization

Insights ☒ Connect this system to Red Hat Insights [↗](#).

27. Navigate to localhost > Terminal to display the CLI. Optionally you can use any SSH client to log in to the RHV- H CLI. Confirm that the required subscription is attached, and then enable the Red Hat Virtualization Host 7 repository to allow further updates and make sure that all other repositories are disabled.

```
# subscription-manager list
+-----+
      Installed Product Status
+-----+
Product Name:    Red Hat Virtualization Host
Product ID:      328
Version:         4.3
Arch:            x86_64
Status:          Subscribed
# subscription-manager repos --disable=*
Repository 'rhel-7-server- rhvh-4-source-rpms' is disabled for this
system.
Repository 'rhvh-4-build-beta-for-rhel-8-x86_64-source-rpms' is disabled
for this system.
Repository 'rhel-7-server- rhvh-4-beta-debug-rpms' is disabled for this
system.
Repository 'rhvh-4-beta-for-rhel-8-x86_64-debug-rpms' is disabled for
this system.
Repository 'jboss-eap-textonly-1-for-middleware-rpms' is disabled for this
system.
Repository 'rhvh-4-build-beta-for-rhel-8-x86_64-rpms' is disabled for
this system.
Repository 'rhvh-4-beta-for-rhel-8-x86_64-source-rpms' is disabled for
this system.
Repository 'rhel-7-server- rhvh-4-debug-rpms' is disabled for this
system.
Repository 'rhvh-4-build-beta-for-rhel-8-x86_64-debug-rpms' is disabled
for this system.
Repository 'rhel-7-server- rhvh-4-beta-source-rpms' is disabled for this
system.
Repository 'rhel-7-server- rhvh-4-rpms' is disabled for this system.
Repository 'jboss-coreservices-textonly-1-for-middleware-rpms' is disabled
for this system.
Repository 'rhvh-4-beta-for-rhel-8-x86_64-rpms' is disabled for this
system.
Repository 'rhel-7-server- rhvh-4-beta-rpms' is disabled for this
system.
# subscription-manager repos --enable=rhel-7-server- rhvh-4-rpms
Repository 'rhel-7-server- rhvh-4-rpms' is enabled for this system.
```

28. From the console, modify the iSCSI initiator ID to match the one you set in the Element access group previously by running the following command.

```
rhv-h01 # echo InitiatorName=iqn.1994-05.com.redhat:rhv-host-node- 01 >
/etc/iscsi/initiatorname.iscsi
```

29. Enable and restart the iscsid service.

```
# systemctl enable iscsid
Created symlink from /etc/systemd/system/multi-
user.target.wants/iscsid.service to
/usr/lib/systemd/system/iscsid.service
# systemctl start iscsid
# systemctl status iscsid
● iscsid.service - Open-iSCSI
   Loaded: loaded (/usr/lib/systemd/system/iscsid.service; enabled;
 vendor preset: disabled)
   Active: active (running) since Thu 2020-05-14 16:08:52 EDT; 3 days
 ago
     Docs: man:iscsid(8)
           man:iscsiuio(8)
           man:iscsiadm(8)
  Main PID: 5422 (iscsid)
    Status: "Syncing existing session(s) "
   CGroup: /system.slice/iscsid.service
           └─5422 /sbin/iscsid -f
           └─5423 /sbin/iscsid -f
```

30. Install and prepare the other RHV host by repeating the steps 1 to 29.

[Next: 5. Deploy the RHV Manager as a Self-Hosted Engine](#)

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