



5. Deploy the RHV Manager as a Self-Hosted Engine: NetApp HCI with RHV HCI

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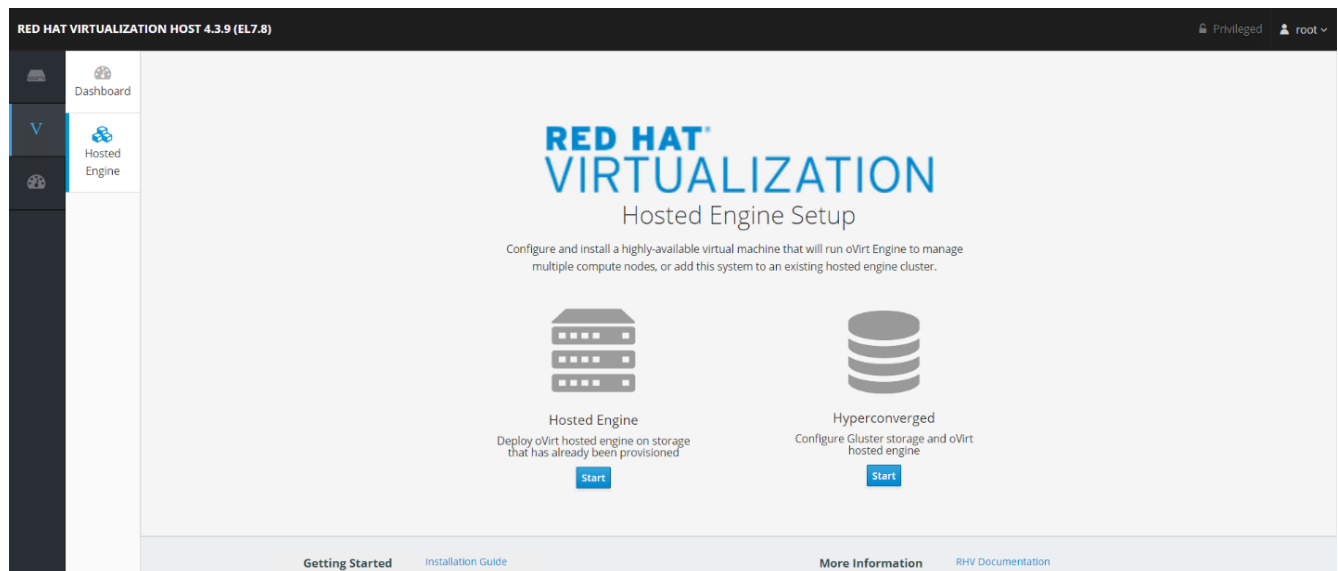
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5. Deploy the RHV Manager as a Self-Hosted Engine: NetApp HCI with RHV

This section describes the detailed steps for installing the Red Hat Virtualization Manager as a self-hosted engine. These steps begin after the RHV hosts are registered and the Cockpit GUI is accessible.

1. Log in to the Cockpit GUI of one of the RHV hosts at <https://<HostFQDN/IP>:9090> using the root credentials. Navigate to the Virtualization sub-tab and click Hosted Engine. Then click the Start button below the Hosted Engine content to initiate the engine deployment.



2. In the first screen of engine deployment, configure the RHV-M FQDN, network related configuration, root password, and resources for the engine VM (at least 4 CPUs and 16GB memory). Confirm the other configuration settings as required and click Next.

Hosted Engine Deployment

VM

Engine

Prepare VM

Storage

Finish

1

2

3

4

5

VM Settings

Engine VM FQDN

rhv-m.cie.netapp.com

MAC Address

00:16:3e:4e:6b:05

Network Configuration

Static

VM IP Address

10.63.172.150

/ 24

Gateway Address

10.63.172.1

DNS Servers

10.61.184.251

-

10.61.184.252

-

+

Bridge Interface

bond0.1172

Root Password

.....

Root SSH Access

Yes

Number of Virtual CPUs

4

Memory Size (MiB)

16384

511,548MB available

> Advanced

Cancel

< Back

Next >



Make sure that the engine VM FQDN is resolvable by the specified DNS servers.

3. In the next screen, enter the admin portal password. Optionally, enter the notification settings for alerts to be sent by email. Then click Next.

Hosted Engine Deployment

VM

Engine

Prepare VM

Storage

Finish

1

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5

Engine Credentials

Admin Portal Password

.....

Notification Settings

Server Name

localhost

Server Port Number

25

Sender E-Mail Address

root@localhost

Recipient E-Mail Addresses

root@localhost

-

+

Cancel

< Back

Next >

4. In the next screen, review the configuration for the engine VM. If any changes are desired, go back at this point and make them. If the information is correct, click Prepare the VM.

VM

Engine

Prepare VM

Storage

Finish

1

2

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4

5

Please review the configuration. Once you click the 'Prepare VM' button, a local virtual machine will be started and used to prepare the management services and their data. This operation may take some time depending on your hardware.

✓ VM

Engine FQDN: rhv-m.cie.netapp.com

MAC Address: 00:16:3e:4e:6b:05

Network Configuration: Static

VM IP Address: 10.63.172.150/24

Gateway Address: 10.63.172.1

DNS Servers: 10.61.184.251,10.61.184.252

Root User SSH Access: yes

Number of Virtual CPUs: 4

Memory Size (MiB): 16384

Root User SSH Public Key: (None)

Add Lines to /etc/hosts: yes

Bridge Name: ovirtmgmt

Apply OpenSCAP profile: no

✓ Engine

SMTP Server Name: localhost

SMTP Server Port Number: 25

Sender E-Mail Address: root@localhost

Recipient E-Mail Addresses: root@localhost

Cancel

< Back

Prepare VM

5. The VM installation begins and can take some time to complete as it downloads a machine image and stages the VM locally. After it has completed, it displays the Execution Completed Successfully message. Click Next.

Hosted Engine Deployment

X

VM

Engine

Prepare VM

Storage

Finish


1

2

3

4

5



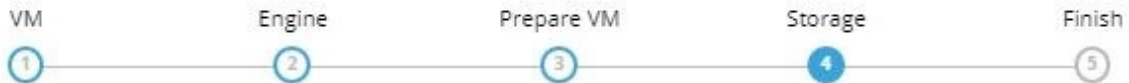
Execution completed successfully. Please proceed to the next step.

Cancel

< Back

Next >

6. After RHV-M is installed, enter the details of the hosted engine storage domain where it copies the VM from local storage to the shared storage domain to facilitate a high availability engine quorum.
7. Enter the Storage Type as iSCSI, provide the iSCSI portal details, click Retrieve Target List, which fetches the iSCSI target list corresponding to the portal, and select the volume and LUN to be mapped to the hosted engine storage domain. Click Next.



Please configure the storage domain that will be used to host the disk for the management VM. Please note that the management VM needs to be responsive and reliable enough to be able to manage all resources of your deployment, so highly available storage is preferred.

Storage Settings

| | |
|---|--|
| Storage Type | <input type="text" value="iSCSI"/> |
| Portal IP Address | <input type="text" value="172.21.87.140"/> |
| Portal Port | <input type="text" value="3260"/> |
| Portal Username | <input type="text" value="admin"/> |
| Portal Password | <input type="password" value="*****"/> |
| <input type="button" value="Retrieve Target List"/> | |

The following targets have been found:

● **iqn.2010-01.com.solidfire:nh35.rhv-hostedengine.1**, TPGT: 1
172.21.87.140:3260

The following luns have been found on the requested target:

● **ID: 36f47acc1000000006e68333500000003**
Size (GiB): 186.00
Description: SolidFir SSD SAN
Status: free
Number of Paths: 1

> Advanced



If the Hosted Engine setup is unable to discover the storage, open an interactive SSH session to the node and verify that you can reach the SVIP IP address through your node's storage interface. If the network is reachable, you might need to manually discover or log in to the iSCSI LUN intended for the Hosted Engine install.

- On the next screen, review the storage configuration and, if any changes are desired, go back and make them. If the information is correct, click Finish Deployment. It takes some time as the VM is copied to the storage domain. After deployment is complete, click Close.

Hosted Engine Deployment

X

VM

Engine

Prepare VM

Storage

Finish


1

2

3

4

5



Hosted engine deployment complete!

Close

9. The next step is to register and enable the Red Hat Virtualization Manager repositories. Log in to the RHV-M VM with SSH to register it with Subscription Manager.

```
# subscription-manager register
Registering to: subscription.rhsm.redhat.com:443/subscription
Username: redhat_user
Password: redhat_password
The system has been registered with ID: 99d06fcb-a3fd74-41230f-bad583-0ae61264f9a3
The registered system name is: rhv-m.cie.netapp.com
```

10. After registration, list the available subscriptions and record the pool ID for RHV-M.

```
# subscription-manager list --available
<snip>
Subscription Name:   Red Hat Virtualization Manager
Provides:             Red Hat Beta
                    Red Hat Enterprise Linux Server
                    Red Hat CodeReady Linux Builder for x86_64
                    Red Hat Enterprise Linux for x86_64
                    Red Hat Virtualization Manager
                    Red Hat OpenShift Container Platform
                    Red Hat Ansible Engine
                    Red Hat Enterprise Linux Fast Datapath
                    Red Hat JBoss Core Services
                    JBoss Enterprise Application Platform
SKU:                 RV00045
Contract:
Pool ID:             8a85f9937a1a2a57c0171a366b5682540112a313 B Pool ID
Provides Management: No
Available:           6
Suggested:           0
Service Type:        L1-L3
Roles:
Service Level:       Layered
Usage:
Add-ons:
Subscription Type:   Stackable
Starts:              04/22/2020
Ends:                04/21/2021
Entitlement Type:     Physical
<snip>
```

11. Attach the RHV-M subscription using the recorded pool ID.

```
# subscription-manager attach --pool=8a85f9937a1a2a57c0171a366b5682540112a313
Successfully attached a subscription for: Red Hat Virtualization Manager
```

12. Enable the required RHV-M repositories.

```
# subscription-manager repos \
  --disable='*' \
  --enable=rhel-7-server-rpms \
  --enable=rhel-7-server-supplementary-rpms \
  --enable=rhel-7-server-rhv-4.3-manager-rpms \
  --enable=rhel-7-server-rhv-4-manager-tools-rpms \
  --enable=rhel-7-server-ansible-2-rpms \
  --enable=jb-eap-7.2-for-rhel-7-server-rpms
Repository 'rhel-7-server-ansible-2-rpms' is enabled for this system.
Repository 'rhel-7-server-rhv-4-manager-tools-rpms' is enabled for this system.
Repository 'rhel-7-server-rhv-4.3-manager-rpms' is enabled for this system.
Repository 'rhel-7-server-rpms' is enabled for this system.
Repository 'jb-eap-7.2-for-rhel-7-server-rpms' is enabled for this system.
Repository 'rhel-7-server-supplementary-rpms' is enabled for this system.
```

13. Next, create a storage domain to hold the VM disks or OVF files for all VMs in the same datacenter as that of the hosts.
14. To log into the RHV-M Administrative portal using a browser, log into <https://<ManagerFQDN>/ovirt-engine>, select Administrative Portal, and log in as the **admin@internal** user.
15. Navigate to Storage > Storage Domains and click New Domain.
16. From the dropdown menu, select Data for the Domain Function, select iSCSI for the Storage Type, select the host to map the volume, enter a name of your choice, confirm that the data center is correct, and then expand the data domain iSCSI target and add the LUN. Click OK to create the domain.

New Domain

Data Center

Default (V5)

Domain Function

Data

Storage Type

iSCSI

Host

rhv-h01.cie.netapp.com

Name

data_domain

Description

Data Domain for VMs

Comment

Targets > LUNS

Discover Targets

Login All

| Target Name | Address | Port | |
|---|---------------|------|---|
| iqn.2010-01.com.solidfire:nh35.rhv-hostedengine-1.3 | 172.21.87.140 | 3260 | → |
| iqn.2010-01.com.solidfire:nh35.rhv-hostedengine.1 | 172.21.87.140 | 3260 | → |
| iqn.2010-01.com.solidfire:nh35.data-domain.5 | 172.21.87.140 | 3260 | → |

| LUN ID | Size | #path | Vendor ID | Product ID | Serial | Add |
|----------------------------------|----------|-------|-----------|------------|--------------------------------|-----|
| 36f47acc1000000006e6833350000005 | 1430 GiB | 1 | SolidFir | SSD SAN | SSolidFirSSD_SAN_6e68333500000 | Add |

LUNS > Targets

Advanced Parameters

OK

Cancel



If the Hosted Engine setup is unable to discover the storage, you might need to manually discover or log in to the iSCSI LUN intended for the data domain.

17. Add the second host to the hosted engine quorum. Navigate to Compute > Hosts and click New. In the New Host pane, select the appropriate cluster, provide the details of the second host, and check the Activate Host After Install checkbox.

New Host

General

Power Management

SPM

Console and GPU

Kernel

Hosted Engine

Affinity

Host Cluster

Default

Data Center: Default

☐ Use Foreman/Satellite

Name

rhv-h02.cie.netapp.com

Comment

Hostname/IP

rhv-h02.cie.netapp.com

SSH Port

22

☒ Activate host after install

Authentication

User Name

root

☒ Password

☐ SSH Public Key

☐ Advanced Parameters

.....

OK

Cancel

18. Click the Hosted Engine sub-tab in the New Host pane dropdown and select Deploy from the hosted engine deployment action. Click OK to add the host to the quorum. This begins the installation of the necessary packages to support the hosted engine and activate the host. This process might take a while.

New Host

General

Power Management

SPM

Console and GPU

Network Provider

Kernel

Hosted Engine >

Affinity Labels

Choose hosted engine deployment action

Deploy

OK

Cancel

- Next, create a storage virtual network for hosts. Navigate to Network > Networks and click New. Enter the name of your choice, enable VLAN tagging, and enter the VLAN ID for the Storage network. Confirm that the VM Network checkbox is checked and that the MTU is set to 9000. Go to the Cluster sub-tab and make sure that Attach and Require are checked. Then click OK to create the storage network.

New Logical Network

General

Cluster

vNIC Profiles

Data Center

Name ⓘ


Description

Comment

Network Parameters

Network Label

☒ Enable VLAN tagging

☒ VM network 

MTU

Host Network QoS

Default

storagenet

☐ Default (1500)

☒ Custom

9000

[Unlimited]

OK

Cancel

20. Assign the storage logical network to the second host in the cluster or to whichever host is not currently hosting the hosted engine VM.
21. Navigate to Compute > Hosts, and click the host that has silver crown in the second column. Then navigate to the Network Interfaces sub-tab, click Setup Host Networks, and drag and drop the storage logical network into the Assigned Logical Networks column to the right of bond0.

Setup Host rhv-h02.cie.netapp.com Networks

X

Drag to make changes

Interfaces

Assigned Logical Networks

bond0

eno1

ens14f1

eno2

ens4f0

ens4f1

ens14f0

ovirtmg...
(VLAN 1172)

storagenet
(VLAN 3343)

no network assigned

no network assigned

no network assigned

no network assigned

Networks

Labels

Unassigned Logical Networks

Required

Non Required

External Logical Networks

☒ Verify connectivity between Host and Engine

☒ Save network configuration

OK

Cancel

22. Click the pen symbol on the storage network interface under bond0. Configure the IP address and the netmask, and then click OK. Click OK again in the Setup Host Networks pane.

Edit Network storagenet

IPv4

IPv6

QoS

Custom Properties

DNS Configuration

☐ Sync network

Boot Protocol

☐ None
☐ DHCP
☒ Static

IP

172.21.87.33

Netmask / Routing Prefix

24

Gateway

OK

Cancel

23. Migrate the hosted engine VM to the host that was just configured so that the storage logical network can be configured on the second host. Navigate to Compute > Virtual Machines, click HostedEngine and then click Migrate. Select the second host from the dropdown menu Destination Host and click Migrate.

Migrate VM(s)

Select a host to migrate 1 virtual machine(s) to:

Destination Host

rhv-h02.cie.netapp.com

Migrate VMs in Affinity

☐ Migrate all VMs in positive enforcing affinity with selected VMs.

Virtual Machines

HostedEngine

Cancel

Migrate

After the migration is successful and the hosted engine VM is migrated to the second host, repeat steps 21 and 22 for the host that currently possesses the silver crown.

24. After you have completed this process, you should see that both the hosts are up. One of the hosts has a golden crown, indicating that it is hosting the hosted engine VM, and the other host has a silver crown indicating that it is capable of hosting the hosted engine VM.

Red Hat Virtualization

Dashboard

Compute

Network

Storage

Compute » Hosts

Host:

✕

☆

▼

🔍

New Edit

↺

▼

| | | Name | Comment | Hostname/IP | Cluster | Data Center | Status |
|--|--|------------------------|---------|------------------------|---------|-------------|--------|
| | | rhv-h01.cie.netapp.com | | rhv-h01.cie.netapp.com | Default | Default | Up |
| | | rhv-h02.cie.netapp.com | | rhv-h02.cie.netapp.com | Default | Default | Up |

◀

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