



Deploy Cloud Insights for FlexPod

FlexPod

NetApp
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Deploy Cloud Insights for FlexPod

To deploy the solution, you must complete the following tasks:

1. Sign up for the Cloud Insights service
2. Create a VMware virtual machine (VM) to configure as an Acquisition Unit
3. Install the Red Hat Enterprise Linux (RHEL) host
4. Create an Acquisition Unit instance in the Cloud Insights Portal and install the software
5. Add the monitored storage system from the FlexPod Datacenter to Cloud Insights.

Sign up for the NetApp Cloud Insights service

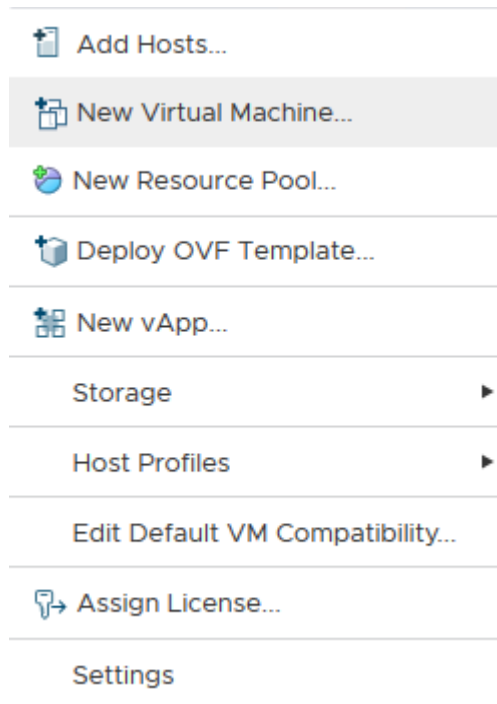
To sign up for the NetApp Cloud Insights Service, complete the following steps:

1. Go to <https://cloud.netapp.com/cloud-insights>
2. Click the button in the center of the screen to start the 14-day free trial, or the link in the upper right corner to sign up or log in with an existing NetApp Cloud Central account.

Create a VMware virtual machine to configure as an acquisition unit

To create a VMware VM to configure as an acquisition unit, complete the following steps:

1. Launch a web browser and log in to VMware vSphere and select the cluster you want to host a VM.
2. Right-click that cluster and select Create A Virtual Machine from the menu.



3. In the New Virtual Machine wizard, click Next.

4. Specify the name of the VM and select the data center that you want to install it to, then click Next.
5. On the following page, select the cluster, nodes, or resource group you would like to install the VM to, then click Next.
6. Select the shared datastore that hosts your VMs and click Next.
7. Confirm the compatibility mode for the VM is set to ESXi 6.7 or later and click Next.
8. Select Guest OS Family Linux, Guest OS Version: Red Hat Enterprise Linux 7 (64-bit).

Select a guest OS

Choose the guest OS that will be installed on the virtual machine

Identifying the guest operating system here allows the wizard to provide the appropriate defaults for the operating system installation.

Guest OS Family: 

Guest OS Version: 

Compatibility: ESXi 6.7 and later (VM version 14)

CANCEL

BACK

NEXT

9. The next page allows for the customization of hardware resources on the VM. The Cloud Insights Acquisition Unit requires the following resources. After the resources are selected, click Next:
 - a. Two CPUs
 - b. 8GB of RAM
 - c. 100GB of hard disk space

- d. A network that can reach resources in the FlexPod Datacenter and the Cloud Insights server through an SSL connection on port 443.
- e. An ISO image of the chosen Linux distribution (Red Hat Enterprise Linux) to boot from.

Customize hardware

Configure the virtual machine hardware

Virtual Hardware

VM Options

ADD NEW DEVICE

> CPU *	2		
> Memory *	8		GB
> New Hard disk *	100		GB
> New SCSI controller *	VMware Paravirtual		
> New Network *	VM_Network		<input checked="" type="checkbox"/> Connect...
> New CD/DVD Drive *	Datastore ISO File		<input checked="" type="checkbox"/> Connect...
> Video card *	Specify custom settings		
VMCI device	Device on the virtual machine PCI bus that provides support for the virtual machine communication interface		

Compatibility: ESXi 6.7 and later (VM version 14)

CANCEL

BACK

NEXT

10. To create the VM, on the Ready to Complete page, review the settings and click Finish.

Install Red Hat Enterprise Linux

To install Red Hat Enterprise Linux, complete the following steps:

1. Power on the VM, click the window to launch the virtual console, and then select the option to Install Red Hat Enterprise Linux 7.6.

Red Hat Enterprise Linux 7.6

Install Red Hat Enterprise Linux 7.6

Test this media & install Red Hat Enterprise Linux 7.6

Troubleshooting



Press Tab for full configuration options on menu items.

2. Select the preferred language and click Continue.

The next page is Installation Summary. The default settings should be acceptable for most of these options.


3. You must customize the storage layout by performing the following options:
 - a. To customize the partitioning for the server, click Installation Destination.
 - b. Confirm that the VMware Virtual Disk of 100GiB is selected with a black check mark and select the I Will Configure Partitioning radio button.

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


100 GiB



VMware Virtual disk
sda / 100 GiB 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.

[Full disk summary and boot loader...](#)

1 disk selected; 100 GiB capacity; 100 GiB free [Refresh...](#)

c. Click Done.

A new menu displays enabling you to customize the partition table. Dedicate 25 GB each to /opt/netapp and /var/log/netapp. You can automatically allocate the rest of the storage to the system.

MANUAL PARTITIONING
RED HAT ENTERPRISE LINUX 7.6 INSTALLATION

Done

us

Help!

New Red Hat Enterprise Linux 7.6 Installation

DATA

/opt/netapp25 GiB>

rhel-opt_netapp

/var/log/netapp25 GiB

rhel-var_log_netapp

SYSTEM

/boot1024 MiB

sda1

/40 GiB

rhel-root

swap8064 MiB

rhel-swap

+

-

↺

AVAILABLE SPACE

1140.97 MiB

TOTAL SPACE

100 GiB

[1 storage device selected](#)

rhel-opt_netapp

Mount Point:

/opt/netapp

Device(s):

VMware Virtual disk (sda)

Desired Capacity:

25 GiB

Modify...

Device Type:

LVM

☐ Encrypt

File System:

xfs

☒ Reformat

Volume Group

rhel (4096 KiB free)

Modify...

Label:

Name:

opt_netapp

Reset All

d. To return to Installation Summary, click Done.

4. Click Network and Host Name.

a. Enter a host name for the server.

b. Turn on the network adapter by clicking the slider button. If Dynamic Host Configuration Protocol (DHCP) is configured on your network, you will receive an IP address. If it is not, click Configure, and manually assign an address.

NETWORK & HOST NAME

RED HAT ENTERPRISE LINUX 7.6 INSTALLATION

Done

us

Help!

Ethernet (ens192)
VMware VMXNET3 Ethernet Controller

+ -

Ethernet (ens192)
Connected

ON

Hardware Address 00:50:56:AD:13:69
Speed 10000 Mb/s
IP Address 10.63.172.12
Subnet Mask 255.255.255.0
Default Route 10.63.172.1
DNS 10.61.184.251 10.61.184.252

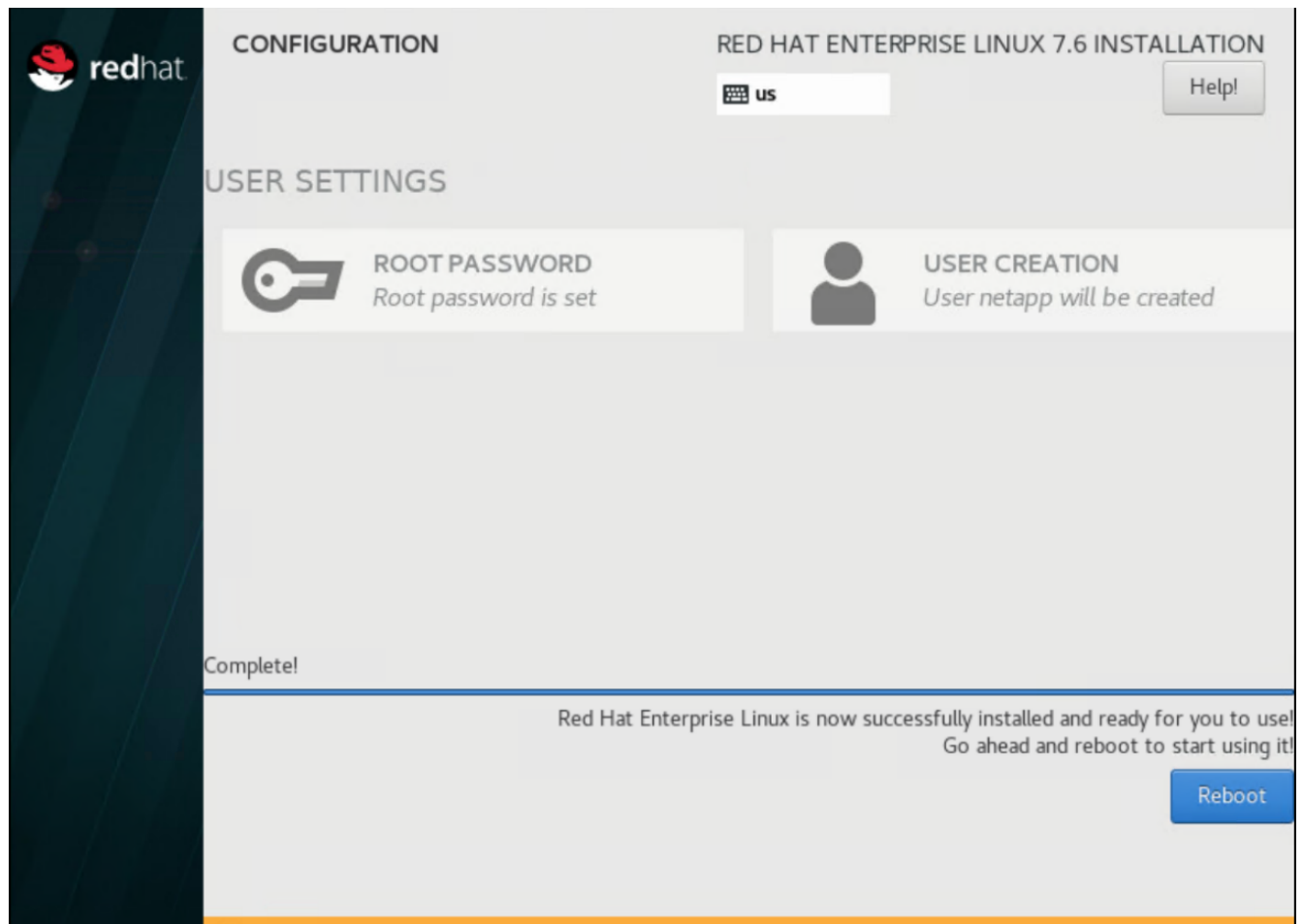
Configure...

Host name: Netapp-AU

Apply

Current host name: localhost

- c. . Click Done to return to Installation Summary.
5. On the Installation Summary page, click Begin Installation.
6. On the Installation Progress page, you can set the root password or create a local user account. When the installation finishes, click Reboot to restart the server.



7. After the system has rebooted, log in to your server and register it with Red Hat Subscription Manager.

```
[root@Netapp-AU ~]# subscription-manager register
Registering to: subscription.rhsm.redhat.com:443/subscription
Username: alan.cowles@netapp.com
Password:
The system has been registered with ID: a47f2e7b-81cd-4757-85c7-eb1818c2c2a1
The registered system name is: Netapp-AU
[root@Netapp-AU ~]#
```

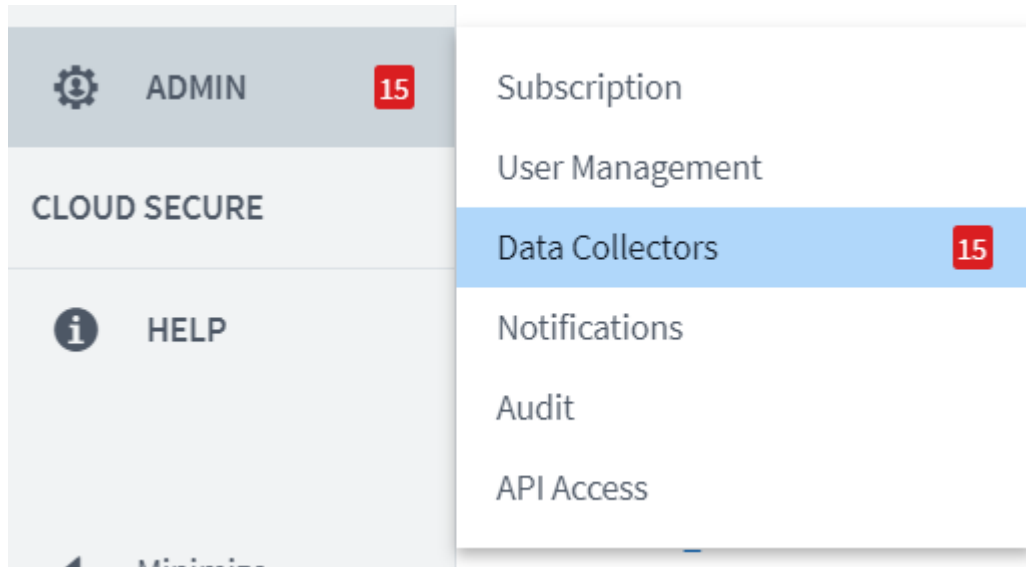
8. Attach an available subscription for Red Hat Enterprise Linux.

```
[root@Netapp-AU ~]# subscription-manager attach --pool=8a85f99b710f3b1901713b90b9e154cf
Successfully attached a subscription for: Red Hat Enterprise Linux, Standard Support (128 Sockets, NFR, Partner Only)
[root@Netapp-AU ~]#
```

Create an acquisition unit instance in the Cloud Insights portal and install the software

To create an acquisition unit instance in the Cloud Insights portal and install the software, complete the following steps:

1. From the home page of Cloud Insights, hover over the Admin entry in the main menu to the left and select Data Collectors from the menu.



2. In the top center of the Data Collectors page, click the link for Acquisition Units.



3. To create a new Acquisition Unit, click the button on the right.




4. Select the operating system that you want to use to host your Acquisition Unit and follow the steps to copy the installation script from the web page.

In this example, it is a Linux server, which provides a snippet and a token to paste into the CLI on our host. The web page waits for the Acquisition Unit to connect.

Cloud Insights collects device data via one or more Acquisition Units installed on local servers. Each Acquisition Unit can host multiple Data Collectors, which send device metrics to Cloud Insights for analysis.

What Operating System or Platform Are You Using?

Linux

Linux Versions Supported Production Best Practices 

Need Help?

- This snippet has a unique key valid for 24 hours for this Acquisition Unit only.*

 Reveal Installer Snippet

[illegible]


- 2 Paste the snippet into a bash shell to run the installer.
- 3 Please ensure you have copied and pasted the snippet into the bash shell.

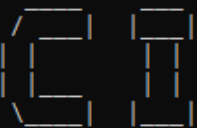
5. Paste the snippet into the CLI of the Red Hat Enterprise Linux machine that was provisioned and click Enter.

```
[root@Netapp-AU ~]# token=eyJ0eXAiOiJKV1QiLCJhbGciOiJIUzI1NiIsInR5cCI6IkpXZWxvZ2luZXNpdjY9dWxvZ2luLmMwMS5jbG91ZGluc2lnaHRzLm5ldGfGwcC5jb20iLCJybWV0aWw1VG9rZW5JCiEiQjQ5ZTY0MGMSLTk5MTItNDQyVjY0YmTlTlwiNGY2OTQyZnY1YSIsInR5cCI6IjpbImFjcXVpc2loaW9uX3NpZ25lcjJdLCJzZXZlZXJvcmmiwOiJodHRwczovLzhkNDENWEZLWViYjgtNGFkMC1hNmVmLTQxMzAyMzQwYjVhZiIsImFEuY2xvdWRpbnpZ2h0c2FuY29tZXRhcnAUAUy29tIiwiaXNzIjoib2NpIiwiaXhwIjoxNjA5MTg5Nzg2LjIsc2dpbiEiImFjcXVpc2loaW9uLjE2MTliZGI3LTk5OWQtNGNiYS05YmU1LTlmwZTcxZjk0ODRiZCIsImhhZCI6MTYwMA5NAjMyNiwidXVpZCIEic2lTkw5OWQtNGNiYS05YmU1LTlmwZTcxZjk0ODRiZCIsInRlbmFudCI6IjpkNDENWEZLWViYjgtNGFkMC1hNmVmLTQxMzAyMzQwYjVhZiIsInRlbmFudFN1YmRvbWFpbiEiInBzMtMYNSJ9.RvWLR3wh1_k6fIOCiO_h-Wok2STFFPDj7VksmXqw-GZ-JqSIe8SZE4SV3DuWrWM6 domainUrl=https://8d4195a6-ebb8-4ad0-a6ef-41302340b5af.c01.cloudinsights.netapp.com/rest/v1/au-version=1.253.0 bootstrap=cloudinsights-au-install-bootstrap.sh && curl $proxy_auth_scheme -H "Authorization: Bearer $token" -o $bootstrap $domainUrl/installerBootstrap && sudo chmod 755 $bootstrap && sudo /bin/bash -c "TOKEN=$token HTTPS_PROXY=$https_proxy PROXY_AUTH_SCHEME=$proxy_auth_scheme AU_VERSION=$version INSTALLER_NAME=cloudinsights-linux-au-installer-$version INSTALLER_URL=$domainUrl/installers/linux/$version ./$bootstrap"
```

The installation program downloads a compressed package and begins the installation. When the installation is complete, you receive a message stating that the Acquisition Unit has been registered with NetApp Cloud Insights.

```


Welcome to CloudInsights (R) ..
Acquisition Unit



NetApp (R)
Installation: /opt/netapp/cloudinsights
Logs:        /opt/netapp/cloudinsights/logs -> /var/log/netapp/cloudinsights

To control the CloudInsights service:
  sudo cloudinsights-service.sh --help
To uninstall:
  sudo cloudinsights-uninstall.sh --help

1/8 Acquisition Unit Starting
2/8 Connecting to Cloud Insights
3/8 Sending Certificate-Signing Request..
4/8 Logging in to Cloud Insights
5/8 Updating Security Settings..
6/8 Downloading Data Collection Modules
7/8 Registering to Cloud Insights
8/8 Acquisition Unit Ready

Acquisition Unit has been installed successfully.
[root@Netapp-AU ~]#
```

Add the monitored storage system from the FlexPod Datacenter to Cloud Insights

To add the ONTAP storage system from a FlexPod deployment, complete the following steps:

1. Return to the Acquisition Units page on Cloud Insights portal and find the listed newly registered unit. To display a summary of the unit, click the unit.

NetApp PCS Sa... / Admin / Acquisition Units / NetApp-AU					Restart
Summary					
Name NetApp-AU	IP 10.1.156.115	Status OK	Last Reported 9 minutes ago	Note	

2. To start a wizard to add the storage system, on the Summary page, click the button for creating a data collector. The first page displays all the systems from which data can be collected. Use the search bar to search for ONTAP.

Choose a Data Collector to Monitor


 Cloud Volumes ONTAP



 Data ONTAP 7-Mode



 ONTAP Data Management
 Software


 ONTAP Select

3. Select ONTAP Data Management Software.


A page displays that enables you to name your deployment and select the Acquisition Unit that you want to use. You can provide the connectivity information and credentials for the ONTAP system and test the connection to confirm.





NetApp
 ONTAP Data Management Software

Configure Collector

Add credentials and required settings [Need Help?](#)


 Configuration: Successfully pinged 192.168.156.50.
 Configuration: Successfully executed test command on device.

Name ⓘ <input type="text" value="FlexPod Datacenter"/>	Acquisition Unit <input type="text" value="NetApp-AU"/>
NetApp Management IP Address <input type="text" value="192.168.156.50"/>	User Name <input type="text" value="admin"/>
Password <input type="password" value="*****"/>	
<input type="button" value="Complete Setup"/> <input type="button" value="Test Connection"/>	

 Advanced Configuration

4. Click Complete Setup.

The portal returns to the Data Collectors page and the Data Collector begins its first poll to collect data from the ONTAP storage system in the FlexPod Datacenter.

FlexPod Datacenter

All stand-by

NetApp ONTAP Data
Management Software

NetApp-AU

192.168.156.50

 Polling...


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