

ONTAP Select 9.8 and 9.7

Deploying an Evaluation Cluster on KVM

Quick Start Guide

This guide describes how to quickly deploy a 90-day evaluation instance of an ONTAP Select cluster consisting of one, two, four, six, or eight nodes.

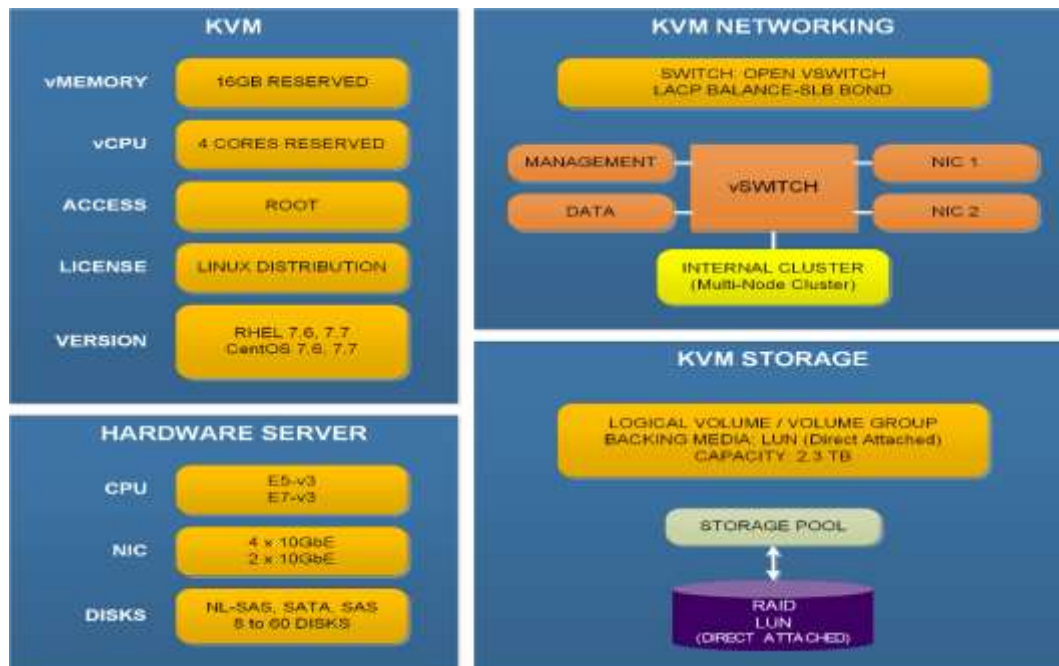
- You do not need to obtain storage capacity licenses or serial numbers from NetApp
- You can allocate the same amount of storage for user data at each node as a purchased license
- You can upgrade the nodes from an evaluation license to a purchased capacity tiers license

You must first install the ONTAP Select Deploy administration utility and then use the utility to deploy the ONTAP Select cluster. ONTAP Select Deploy provides both a web and CLI user interface for creating ONTAP Select clusters.

Preparing hosts

ONTAP Select cluster host requirements

The platform description is based on the standard or small instance type configuration with direct-attached storage (DAS) using a local hardware RAID controller. You can also use an external storage array or software RAID provided with ONTAP Select.



With most deployments, the node management and cluster management networks are in the same subnet. The internal cluster network is not used with a single-node cluster. Also, the Deploy utility must have connectivity to every host where ONTAP Select is running. You must create a storage pool and configure Open vSwitch on each node. For details on host configuration, including networking and storage options, see [NetApp Documentation: ONTAP Select](#) for more information.

ONTAP Select Deploy utility host requirements

- Both hardware and software are 64-bit
- Linux distribution must be one of the following:
 - RedHat Enterprise Linux 7.6 or 7.7
 - CentOS 7.6 or 7.7
- Virtual CPUs (2)
- Virtual memory (4GB)
- Storage (40GB)
- DHCP-enabled (if you will dynamically assign an IP address)

In addition, you must have all the information needed to deploy the virtual machine using KVM, including the name of the virtual machine, storage pool, host name, and additional networking details if you plan to configure a static IP address.

Installing the ONTAP Select Deploy utility

Complete the following steps to install Deploy on a supported Linux KVM host server.

1. Download the ONTAP Select Deploy utility virtual machine image from the [NetApp Support Site](#) to your local workstation; click **Find your product** and then **ONTAP Select** and select the appropriate release of the **Deploy Install** package.
2. Upload the compressed file to the Linux server and extract the raw virtual machine image.
3. With root access, install the virtual machine at the Linux CLI.

Example

```
virt-install --name=deploy-kvm --vcpus=2 --ram=4096 --os-type=linux
--controller=scsi,model=virtio-scsi
--disk path=/home/ONTAPdeploy.raw,device=disk,bus=scsi,format=raw
--network "type=bridge,source=ontap_externalnetwork model=virtio,
virtualport_type=openvswitch" --console=pty --import --wait 0
```

4. Connect to the virtual machine console:
virsh console deploy-kvm
5. When prompted, provide the host name and select either DHCP or a static IP configuration, and respond to all prompts.
6. Verify that there is network connectivity between the Deploy VM and the KVM hosts where the ONTAP Select cluster will run.

Deploying an ONTAP Select cluster

Deploying an ONTAP Select cluster using the web user interface

1. Sign in to the Deploy utility through the web interface using the IP address of the Deploy virtual machine and administrator account (admin). The first time you sign in, provide the password you set during installation or the default password (admin123) as needed.
2. Confirm that you have met the configuration requirements and prerequisites as described in the **Welcome to ONTAP Select** prerequisites popup window and click **OK**.
3. If prompted, change the administrator password and provide any other configuration information appropriate for your environment.
4. On the **Getting Started** page, click **Next** in the **Add Licenses** section.
5. Define a KVM hypervisor host and click **Add**.
6. Add additional hypervisor hosts if you are deploying a multi-node cluster.
7. Click **Refresh** and confirm the **Type** value for every host is **KVM**.
8. Click **Next** to begin the cluster creation process.
9. In the **Cluster Details** section of the page, provide all the required information describing the cluster and click **Done**.
10. Under **Node Setup**, configure the node (single-node cluster) or two nodes within the HA pair (multi-node cluster). For each node, configure the hypervisor and network section as well as the storage section. You must select the evaluation license. Click **Done**.
11. If you are deploying a cluster with four or more nodes, repeat step 10 to configure all the nodes in the additional HA pairs.
12. Review and confirm the configuration of the cluster and nodes; you can change the configuration if needed by clicking **Edit** in the applicable section. Click **Next** to continue.
13. If you are creating a multi-node cluster, run the network connectivity checker to test the connectivity among the nodes on the internal cluster network.
14. Provide the ONTAP administrator password and click **Create Cluster** to begin the cluster creation process and then click **OK** in the **Cluster create operation started** popup window. It can take up to 30 minutes for the cluster to be created.
15. Monitor the process on the **Clusters** page to confirm the cluster is created successfully.

Deploying an ONTAP Select cluster using the command line interface

1. Sign in to the Deploy utility CLI using SSH with the administrator account. The first time you sign in, provide the default password (admin123) and change the password when prompted.

2. Add the host where the cluster will run:

```
host register -name <FQDN|IP> -hypervisor-type KVM -username KVM_USERNAME
```

Example

```
host register -name 10.234.81.14 -hypervisor-type KVM -username root
```

Note: One or more ONTAP Select nodes can run on a single host.

3. Verify the host status is authenticated:

```
host show -name <FQDN|IP> -detailed
```

4. If you are deploying a multi-node cluster, repeat steps 2 and 3 to add additional hypervisor hosts.

5. Create the cluster:

```
cluster create -name CLUSTERNAME -node-count NODES
```

Example

```
cluster create -name test-cluster -node-count 1
```

6. Configure the cluster:

```
cluster modify -name CLUSTERNAME -mgmt-ip IP_ADDRESS -netmask NETMASK  
-gateway IP_ADDRESS -dns-servers <FQDN|IP>_LIST -dns-domains DOMAIN_LIST
```

Example

```
cluster modify -name test-cluster -mgmt-ip 10.234.81.20 -netmask 255.255.255.192  
-gateway 10.234.81.1 -dns-servers 10.221.220.10 -dns-domains company-demo.com
```

7. Display the configuration and state of the cluster, then display the node names automatically generated by Deploy:

```
cluster show -name CLUSTERNAME -detailed
```

```
node show -cluster-name CLUSTERNAME
```

8. Perform basic configuration of the node:

```
node modify -name NODENAME -cluster-name CLUSTERNAME  
-host-name <FQDN|IP> -serial-number - -instance-type TYPE  
-passthrough-disks false
```

Example

```
node modify -name test-cluster-01 -cluster-name test-cluster  
-host-name 10.234.81.14 -license-serial-number - -instance-type small  
-passthrough-disks false
```

Note: A license serial number value of – indicates an evaluation deployment. If using software RAID, **passthrough-disks** must be **true**.

9. Perform network configuration of the node:

```
node modify -name NODENAME -cluster-name CLUSTERNAME -mgmt-ip IP  
-management-networks NETWORK_NAME -mgmt-vlan NNN -data-networks NETWORK_NAME  
-data-vlan NNN
```

Example

```
node modify -name test-cluster-01 -cluster-name test-cluster  
-mgmt-ip 10.234.81.21 -management-networks sDOT_Network -mgmt-vlan 100  
-data-networks sDOT_Network -data-vlan 200
```

Note: When deploying a multi-node cluster, you must also provide an internal network (-internal-network) and associated VLAN (-internal-vlan).

10. Attach a storage pool to the node:

```
node storage pool attach -name POOLNAME -cluster-name CLUSTERNAME  
-node-name NODENAME -capacity-limit LIMIT
```

Example

```
node storage pool attach -name sDOT-02 -cluster-name test-cluster  
-node-name test-cluster-01 -capacity-limit 2TB
```

Note: If using software RAID, you must attach a system storage pool and one or more disks.

11. If you are deploying a multi-node cluster, you must repeat steps 8 through 10 to configure the additional nodes.

12. Deploy the ONTAP Select cluster:

```
cluster deploy -name CLUSTERNAME
```

Where to find additional information

- Support for evaluation deployments: Refer to the [NetApp Community](#) site for support. Click **ONTAP Select** to start a discussion and to see all the postings related to ONTAP Select.
- [NetApp Documentation: ONTAP Select](#)
- [NetApp Technical Report 4613: ONTAP Select on KVM Product Architecture and Best Practices](#)
- [ONTAP Select Resources page](#)
- [NetApp Community](#)
- [NetApp Interoperability Matrix Tool](#)