ONTAP Select Deploy

ONTAP Select

NetApp
November 08, 2026

This PDF was generated from https://docs.netapp.com/us-en/ontap-select-9191/reference_plan_dep_general.html on November 08, 2026. Always check docs.netapp.com for the latest.

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ONTAP Select Deploy

ONTAP Select Deploy general requirements and planning

There are several general requirements that you should consider as part of planning to install the ONTAP Select Deploy administration utility.

Pairing the Deploy utility with the ONTAP Select clusters

You have several options when pairing an instance of the Deploy utility with the ONTAP Select clusters.

> In all deployment scenarios, a single ONTAP Select cluster and the nodes in the cluster can be managed by only one instance of the Deploy administration utility. A cluster cannot be managed by two or more different instances of the Deploy utility.

One instance of the utility for each ONTAP Select cluster

You can deploy and manage each ONTAP Select cluster using a dedicated instance of the Deploy utility. With this one-to-one configuration, there is a clear separation between each of the utility-to-cluster pairings. This configuration provides a high level of isolation with smaller failure domains.

One instance of the utility for multiple ONTAP Select clusters

You can deploy and manage multiple ONTAP Select clusters in your organization using a single instance of the Deploy utility. With this one-to-many configuration, all processing and configuration data is managed by the same instance of the Deploy utility.

> One instance of the Deploy utility can administer up to 400 ONTAP Select nodes or 100 clusters.

Requirements related to the KVM environment

Before installing the Deploy administration utility in a KVM hypervisor environment, you should review the basic requirements and prepare for the deployment.

Requirements and restrictions for a deployment

There are several requirements and restrictions that you should consider when installing the ONTAP Select Deploy utility in a KVM environment.

Linux KVM host server hardware requirements

There are several minimum resource requirements that your Linux KVM hypervisor host must meet. Verify that the hosts where ONTAP Select is deployed meet the following basic requirements:

- Linux server:
  - The hardware and software must be 64-bit
  - The server must adhere to the same supported versions as defined for an ONTAP Select node
- Virtual CPUs (2)
- Virtual memory (4GB)
- Storage (40GB)

- "Dynamic Host Configuration Protocol (DHCP) is enabled (you can also assign a static IP address)

Network connectivity

Verify that the Deploy virtual machine network interface is configured and can to connect to the ONTAP Select hosts that it manages.

Support for IP version 4

ONTAP Select Deploy only supports IP version 4 (IPv4). IP version 6 (IPv6) is not supported. This restriction affects ONTAP Select in the following ways:

- You must assign an IPv4 address to the management LIF of the Deploy VM.
- Deploy cannot create ONTAP Select nodes configured to use IPv6 on the ONTAP LIFs.

Required configuration information

As part of your deployment planning, you should determine the required configuration information before installing the ONTAP Select Deploy administration utility.

Name of the Deploy VM

The name to use for the VM.

Name of the Linux KVM host

The Linux KVM host where the Deploy utility is installed.

Name of the storage pool

The storage pool holding the VM files (approximately 40GB is required).

Network for the VM

The network where the Deploy VM is connected.

Optional network configuration information

The Deploy VM is configured using the DHCP by default. However, if needed, you can manually configure the network interface for the VM.

Host name

The name of the host.

Host IP address

The static IPv4 address.

Subnet mask

The subnetwork mask, which is based on the network that the VM is a part of.

Gateway

The default gateway or router.

Primary DNS server

The primary domain name server.

Secondary DNS server

The secondary domain name server.

Search domains

The search domains to use.

Authentication using the credential store

The ONTAP Select Deploy credential store is a data base holding account information. Deploy uses the account credentials to perform host authentication as part of cluster creation and management. You should be aware of how the credential store is used as part of planning an ONTAP Select deployment.

> The account information is stored securely in the database using the AES encryption algorithm and SHA-256 hashing algorithm.

Types of credentials

The following types of credentials are supported:

- **Host**: Used to authenticate a hypervisor host as part of deploying an ONTAP Select node directly to VMware ESXi
- **vCenter**: Used to authenticate a vCenter server as part of deploying an ONTAP Select node to ESXi when the host is managed by VMware vCenter

Access

The credential store is accessed internally as part of performing normal administrative tasks using Deploy, such as adding a hypervisor host. You can also manage the credential store directly through the Deploy web user interface and CLI.

ONTAP Select Deploy hypervisor host considerations

There are several planning issues related to the hypervisor host that you should consider.

> You should not directly modify the configuration of an ONTAP Select virtual machine unless directed to do so by NetApp support. A virtual machine should only be configured and modified through the Deploy administration utility. Making changes to an ONTAP Select virtual machine outside of the Deploy utility without assistance from NetApp support can cause the virtual machine to fail and render it unusable.

Hypervisor independent

Both ONTAP Select and the ONTAP Select Deploy administration utility are hypervisor independent.

The following hypervisors are supported for both ONTAP Select and the ONTAP Select Deploy administration:

- VMware ESXi
- Kernel-based Virtual Machine (KVM)

> Refer to the hypervisor-specific planning information and release notes for additional details regarding the supported platforms.

Hypervisor for ONTAP Select nodes and administration utility

Both the Deploy administration utility and the ONTAP Select nodes run as virtual machines. The hypervisor you choose for the Deploy utility is independent of the hypervisor you choose for the ONTAP Select nodes. You have complete flexibility when pairing the two:

- A Deploy utility running on VMware ESXi can create and manage ONTAP Select clusters on either VMware ESXi or KVM.
- A Deploy utility running on KVM can create and manage ONTAP Select clusters on either VMware ESXi or KVM.

One or more instances of ONTAP Select node per host

Each ONTAP Select node runs as a dedicated virtual machine. You can create multiple nodes on the same hypervisor host, with the following restrictions:

- Multiple nodes from a single ONTAP Select cluster cannot run on the same host. All the nodes on a specific host must be from different ONTAP Select clusters.
- You must use external storage.
- If you use software RAID, you can only deploy one ONTAP Select node on the host.

Hypervisor consistency for the nodes within a cluster

All of the hosts within an ONTAP Select cluster must run on the same version and release of the hypervisor software.

Number of physical ports on each host

You must configure each host to use one, two, or four physical ports. Although you have flexibility when configuring the network ports, you should follow these recommendations where possible:

- A host in a single-node cluster should have two physical ports.
- Each host in a multi-node cluster should have four physical ports

Integrate ONTAP Select with an ONTAP hardware-based cluster

You cannot add an ONTAP Select node directly to an ONTAP hardware-based cluster. However, you can optionally establish a cluster peering relationship between an ONTAP Select cluster and a hardware-based ONTAP cluster.

VMware hypervisor environment

There are several requirements and restrictions specific to the VMware environment that you should consider before installing the ONTAP Select Deploy utility in a VMware environment.

ESXi host server hardware requirements

Your ESXi hypervisor host must meet several minimum resource requirements. Check that the hosts where ONTAP Select is deployed meet the following basic requirements:

- ESXi server:
  - Hardware and software must be 64-bit
  - Must adhere to the same supported versions as defined for an ONTAP Select node
- Virtual CPUs (2)
- Virtual memory (4 GB)
- Storage (40 GB)

- DHCP enabled (can also assign a static IP address)

Network connectivity

Check that the ONTAP Select Deploy virtual machine network interface is configured and has a single management IP address. You can use DHCP to dynamically assign an IP address or manually configure a static IP address.

Depending on your deployment decisions, the Deploy VM must be able to connect to the vCenter server, ESXi hypervisor hosts, and ONTAP Select nodes it manages. You must configure your firewalls to allow the required traffic.

Deploy uses the VMware VIX API to communicate with the vCenter server and ESXi hosts. Initially, it establishes a connection using SOAP over SSL on TCP port 443. After this, a connection is opened using SSL on port 902. In addition, Deploy issues PING commands to verify that there is an ESXi host at the IP address you specify.

Additionally, Deploy must be able to communicate with the ONTAP Select node and cluster management IP addresses using the following protocols:

- PING command (ICMP)
- SSH (port 22)
- SSL (port 443)

Support for IP version 4

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- You must assign an IPv4 address to the management LIF of the Deploy virtual machine.
- Deploy cannot create ONTAP Select nodes configured to use IPv6 on the ONTAP LIFs.

VMware vCenter server considerations

VMware vSphere privileges for ESA

To create and manage vSAN Express Storage Architecture (ESA) in vCenter, you need the following vSphere Content Library privileges:



To access the Content Library privileges, an administrator needs to grant you access to Global Permissions in vCenter Server.

- Add library item
- Create local library
- Delete library item
- Delete local library
- Download files
- Read storage
- Update files
- Update library
- Update library item

- Update local library
- View configuration settings

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