



ONTAP® 9

NetApp ONTAP Configuration Guide

215-14688_A0_UR001
doccomments@netapp.com
For ONTAP 9.6 and later

 **NetApp®**

ONTAP Concepts

Aggregate	Pool of storage using RAID groups on physical drives
Storage Virtual Machine (SVM)	<p>SVMs are a logical abstraction that ONTAP uses for data management.</p> <p>SVMs contain data volumes and one or more I/O interfaces to serve application data.</p> <p>SVMs provide secure multitenancy by isolating the shared virtualized data storage and network, and each SVM appears as a single dedicated server to the clients.</p> <p>Each SVM has a separate administrator authentication domain and can be managed independently by its SVM administrator.</p>
FlexVol	Storage container for application files or LUNs
Logical Interface (LIF)	Virtualized interface for I/O that can migrate across physical ports or nodes.
Cluster	<p>A collection of nodes that form a scale-out storage system.</p> <p>Minimum number of nodes is two while the maximum number of nodes is 24 with NAS and 12 with SAN</p>
Cluster Interconnect Network	Ethernet infrastructure that nodes in a cluster use to enable data access or migration across nodes in the cluster. A two-node cluster can be switched or directly connected across the nodes without switches. Four node clusters and higher require switches.
AutoSupport	ONTAP call-home feature to report weekly status but also notify NetApp support of an issue with the storage system.

Storage Setup Worksheet

The worksheet prepares you to gather information needed to setup the storage system.

Storage System Information

Storage system name	
Password for admin account <e.g Eight characters long, must contain at least one letter and one number, special characters are allowed>	
Licenses	Licenses will be present on system on new factory orders. If license information is needed after initial setup go to the NetApp Support Site and click My Support > Software Licenses.
TCP/IP addresses for cluster and node management (3 total for e0M)	
TCP/IP addresses for BMC / SP remote management interfaces (2 total for BMC/SP)	
DNS domain names and DNS server IP address	
NTP network time services host name or IP address	
SMTP mail host and email address for notifications	
SNMP trap host	
System logs (syslog) server	
SVM name(s)	
Setup information for data protocol(s)	SAN – host side initiators NAS – TCP/IP addresses

Storage Provisioning and Data Management in Four Easy Steps

Preparing for installation

Login to your existing NetApp Support account or create an account.

[NetApp Support Registration](#)

Register your system.

[NetApp Product Registration](#)

Get your license keys.

[NetApp Software License Search](#)

Cabling the Storage System

Find the Installation and Setup Instructions PDF poster for your controller on the [NetApp AFF and FAS System Documentation Portal](#). Cabling options are shown on pages 2 and 3 with ONTAP setup instructions covered on page 4. Here is an example: [AFF A800 Installation and Setup Instructions](#).

Alternatively, you can view a video showing storage system cabling by model number. Here is an example of the cabling (3 min) video for the [AFF installation & setup](#).

Initializing the Storage System

Follow the steps on page 4 of the Installation and Setup Instructions PDF poster to initialize ONTAP on the storage system using System Manager in ONTAP for a guided setup.

Watch a (3 min) [video](#) showing storage system initialization and application provisioning using System Manager.

Managing the Storage System

NetApp offers ONTAP management utilities to support ongoing activities such as configuration updates, health and performance monitoring, and automation.

[ONTAP Data Infrastructure Management Overview](#) – Maintain control of your data, drive storage efficiency, and gain flexibility with ONTAP data management suite of tools.

[ONTAP Management Using System Manager 9.5](#) – Graphical management interface that enables you to monitor and manage storage systems from a web browser.

[Monitoring ONTAP Health and Performance Using OnCommand Unified Manager](#) – Provides comprehensive monitoring and key management capabilities for systems to help manage the availability, capacity, protection, and performance risks of your storage systems.

[Active IQ](#) – Active IQ is a web-based application that is based on AutoSupport information from your NetApp systems providing predictive and proactive insights to help improve availability, efficiency, and performance.

Additional Resources

ONTAP Concepts & functionality

[ONTAP Data Management Software](#) – Learn about all the features and capabilities that make ONTAP the #1 storage O/S in use on the planet.

[ONTAP Data Security and Compliance](#) – ONTAP security features provide the ability to enforce a zero-trust policy to protect against both internal and external threats. Coverage includes rule-based access control (RBAC), multi-factor authentication (MFA), antivirus, and encryption of data at rest or in transit.

[Backup and Recovery Solutions](#) – NetApp backup solutions deliver modern backup and recovery capabilities that keep your business data safe and available whether it is on premise, at remote offices, or in the cloud. NetApp also partners with leading backup software vendors to provide customers with more data protection options.

[Business Continuity and Disaster Recovery](#) – NetApp provides robust business continuity and disaster recovery capabilities for when your data cannot go offline. Since MetroCluster disaster recovery was introduced in 2002, NetApp has led the industry with protection against a site outage and many customers use ONTAP to protect other vendor SAN arrays with our FlexArray feature.

[Data Center and Storage Efficiencies](#) – Learn how to incorporate ONTAP to gain data center efficiencies that modernize and consolidate resulting in a lower total cost of ownership (TCO). In terms of storage savings ONTAP has reduced customer capacity needs by 6EB with storage efficiency features that are unique in the industry as they can be used with no performance impact.

ONTAP Administrative Guides

[ONTAP 9 Documentation Center](#) – Complete set of administrative guides for ONTAP features.

[Network and LIF Management](#) – Additional information about configuration and management of physical and virtual network ports (VLANs, interface groups), LIFs using IPv4 and IPv6, routing, and optimizing network traffic by load balancing.

[Provisioning for NAS Protocols](#) – Guides on NFS and SMB/CIFS administration. Both NFS and SMB are used for home directories. NFS is also used with some database applications and virtualized storage for certain hypervisors. SBM is now supported for Hyper-V and SQL Server.

[Provisioning for SAN Protocols](#) – Guides on SAN administration for FC and iSCSI protocols. SAN workloads typically are business critical applications that require high throughput with low latency, and a rapidly growing portion of SAN deployments are leveraging NetApp all-flash AFF systems.

[AFF and FAS System Documentation](#) – Hardware specific setup guides, videos, and collateral including procedures to replace faulty field replaceable units (FRU).

[SVM Overview](#) and [SVM Administration Guide](#) – Technical details on SVM use cases and administration to help with an understanding of how ONTAP leverages SVMs virtualization for data management.

Questions or Comments

If you have questions or comments about this document, please send an email to doccomments@netapp.com and include the document name in your reply.

If you want to be notified automatically when production-level documentation is released or important changes are made to existing production-level documents, follow Twitter account @NetAppDoc.