Configure All-Flash SAN Array software

ONTAP 9

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Configure All-Flash SAN Array software

All-Flash SAN Array software configuration overview

The NetApp All-Flash SAN Arrays (ASAs) are available beginning with ONTAP 9.7. ASAs are all-flash SAN-only solutions built on proven AFF NetApp platforms.

ASA platforms use symmetric active-active for multipathing. All paths are active/optimized so in the event of a storage failover, the host does not need to wait for the ALUA transition of the failover paths to resume I/O. This reduces time to failover.

Set up an ASA

All-Flash SAN Arrays (ASAs) follow the same setup procedure as non-ASA systems.

System Manager guides you through the procedures necessary to initialize your cluster, create a local tier, configure protocols, and provision storage for your ASA.

Get started with ONTAP cluster set up.

ASA host settings and utilities

Host settings for setting up All-Flash SAN Arrays (ASAs) are the same as those for all other SAN hosts.

You can download the NetApp Host Utilities software for your specific hosts from the support site.

Ways to identify an ASA system

You can identify an ASA system using System Manager or using the ONTAP command line interface (CLI).

- **From the System Manager dashboard**: Click **Cluster > Overview** and then select the system node.

  The **PERSONALITY** is displayed as **All-Flash SAN Array**.

- **From the CLI**: Enter the `san config show` command.

  The "All-Flash SAN Array" value returns as true for ASA systems.

Related information

- Technical Report 4968: NetApp All-SAN Array Data Availability and Integrity
- NetApp Technical Report 4080: Best Practices for Modern SAN

All-Flash SAN Array configuration limits and support

All-Flash SAN Array (ASA) configuration limits and support varies by ONTAP version.

The most current details on supported configuration limits are available in NetApp Hardware Universe.

SAN protocols and supported number of nodes per cluster

The supported SAN protocols and maximum number of nodes per cluster depends on whether you have a non-MetroCluster or MetroCluster configuration:

Non-MetroCluster configurations

The following table shows the ASA support for SAN protocols and the supported number of nodes per cluster in non-MetroCluster configurations:

Beginning with ONTAP…	Protocol support	Maximum nodes per cluster
9.11.1	• NVMe/TCP • NVMe/FC	12
9.10.1	• NVMe/TCP	2
9.9.1	• NVMe/FC	2
	• FC • iSCSI	12
9.7	• FC • iSCSI	2

MetroCluster IP configurations

The following table shows the ASA support for SAN protocols and the supported number of nodes per cluster in MetroCluster IP configurations:

Beginning with ONTAP…	Protocol support	Maximum nodes per cluster
9.15.1	• NVMe/TCP	2 nodes per cluster in four-node MetroCluster IP configurations
9.12.1	• NVMe/FC	2 nodes per cluster in four-node MetroCluster IP configurations
9.9.1	• FC • iSCSI	4 nodes per cluster in eight-node MetroCluster IP configurations
9.7	• FC • iSCSI	2 nodes per cluster in four-node MetroCluster IP configurations

Support for persistent ports

Beginning with ONTAP 9.8, persistent ports are enabled by default on All-Flash SAN Arrays (ASAs) that are configured to use the FC protocol. Persistent ports are only available for FC and require zone membership

identified by World Wide Port Name (WWPN).

Persistent ports reduce the impact of takeovers by creating a shadow LIF on the corresponding physical port of the high-availability (HA) partner. When a node is taken over, the shadow LIF on the partner node assumes the identity of the original LIF, including the WWPNe. Before the status of path to the taken over node is changed to faulty, the shadow LIF appears as an Active/Optimized path to the host MPIO stack, and I/O is shifted. This reduces I/O disruption because the host always sees the same number of paths to the target, even during storage failover operations.

For persistent ports, the following FCP port characteristics should be identical within the HA pair:

- FCP port counts
- FCP port names
- FCP port speeds
- FCP LIF WWPN-based zoning

If any of these characteristics are not identical within the HA pair, the following EMS message is generated:

```
EMS : scsiblade.lif.persistent.ports.fcp.init.error
```

For more information on persistent ports, see NetApp Technical Report 4080: Best Practices for Modern SAN.

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