All SAN Array Software Configuration

ONTAP 9

aherbin
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The following content describes how to configure an All SAN Array using ONTAP System Manager.

Supported ALL SAN Array configurations

The NetApp All SAN Arrays (ASAs) are all-flash SAN-only solutions built on proven AFF NetApp platforms.

The ASA platforms are available in two-node switched or switchless clusters, can be configured for FC or iSCSI, and 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.

With ONTAP 9.9.1, customers can now scale AFF ASA configurations up to 12 nodes. ASAs are supported in ONTAP 9.7 and later. Supported configurations are listed in the NetApp Interoperability Matrix Tool.

Related information

NetApp Technical Report 4515: ONTAP AFF All SAN Array Systems
NetApp Technical Report 4080: Best Practices for Scalable SAN ONTAP 9

How to set up an ASA

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

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

ASA limitations and restrictions

You need to be aware of the limitations and restrictions for using AFF All SAN Array (ASA) controllers, prior to ONTAP 9.9.1.

ASAs do not support NVMe-oF protocol.

With ONTAP 9.9.1, NVMe-oF protocol support is now available with an AFF ASA system.

You should use the tested and supported maximum configuration limits established for the AFF All SAN Array (ASA) controllers. For reliable operations, you should not exceed the current tested and supported limits listed in NetApp Hardware Universe.

Note: With ONTAP 9.9.1, customers can now scale AFF ASA configurations up to 12 nodes. Customers can also now deploy 8-node MCC IP configurations on AFF platforms that support ASA.

Support for persistent ports

Beginning in ONTAP 9.8, persistent ports are enabled by default on All 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 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 Scalable SAN ONTAP 9.

ASA host settings and utilities

Host settings for setting up All 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 ONTAP System Manager or using the ONTAP command line interface (CLI).

From the ONTAP System Manager dashboard, click **Cluster > Overview** and then select the system node. The **PERSONALITY** is displayed as **All SAN Array**.

From the CLI, you can use san config show command. The "All SAN Array" value returns as true for ASA systems.