



ONTAP on AFF: NetApp HCI and Cisco ACI

NetApp HCI Solutions

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ONTAP on AFF: NetApp HCI and Cisco ACI

NetApp AFF is a robust storage platform that provides low-latency performance, integrated data protection, multiprotocol support, and nondisruptive operations. Powered by NetApp ONTAP data management software, NetApp AFF ensures nondisruptive operations, from maintenance to upgrades to complete replacement of your storage system.

NetApp ONTAP is a powerful storage operating system with capabilities like inline compression, nondisruptive hardware upgrades, and cross-storage import. A NetApp ONTAP cluster provides a unified storage system with simultaneous data access and management of Network File System (NFS), Common Internet File System (CIFS), iSCSI, Fibre Channel (FC), Fibre Channel over Ethernet (FCoE), and NVMe/FC protocols. ONTAP provides robust data protection capabilities, such as NetApp MetroCluster, SnapLock, Snapshot copies, SnapVault, SnapMirror, SyncMirror technologies and more. For more information, see the [ONTAP documentation](#).

To extend the capabilities of storage to file services and add many more data protection abilities, ONTAP can be used in conjunction with NetApp HCI. If NetApp ONTAP already exists in your environment, you can easily integrate it with NetApp HCI and Cisco ACI.

Workflow

The following high-level workflow was used to set up the environment. Each of these steps might involve several individual tasks.

1. Create a separate bridge domain and EPG on ACI for NFS and/or other protocols with the corresponding subnets. You can use the same HCI-related iSCSI EPGs.
2. Make sure you have proper contracts in place to allow inter-EPG communication for only the required ports.
3. Configure the interface policy group and selector for interfaces towards AFF controllers. Create a vPC policy group with the LACP Active mode for port-channel policy.

PC/VPC Interface Policy Group - Storage-AFF-01

The screenshot shows the 'Properties' section for a policy group named 'Storage-AFF-01'. The 'Description' field contains the text 'optional'. Under 'Link Aggregation Type', the 'VPC' option is selected. Below this, several policy settings are listed, each with a dropdown menu and a copy icon:

- Link Level Policy: 10G-Auto
- CDP Policy: CDP-Enabled
- MCP Policy: select a value
- CoPP Policy: select a value
- LLDP Policy: LLDP-Enabled
- STP Interface Policy: select a value
- Egress Data Plane Policing Policy: select a value
- Ingress Data Plane Policing Policy: select a value
- Priority Flow Control Policy: select a value
- Fibre Channel Interface Policy: select a value
- Slow Drain Policy: select a value
- Port Channel Policy: LACP-Active

4. Attach both a physical and VMM domain to the EPGs created. Attach the vPC policy as static paths and, in the case of the Cisco AVE virtual switch, use Native switching mode when you attach the VMM domain.

The screenshot shows a configuration dialog for attaching a VMM domain. The 'VMM Domain' field is empty. The 'On Demand' dropdown is selected, followed by 'Immediate' and 'formed'. There are two 'e.g., vlan-1' fields, a checkbox, and a 'native' dropdown. The 'VLAN' field is also present. 'Update' and 'Cancel' buttons are at the bottom.

5. Install and configure an ONTAP cluster on the AFF controllers. Then create and configure NFS and/or iSCSI volumes/LUNs. See the [AFF and ONTAP documentation](#) for more information.
6. Create a VMkernel adapter (in the case of VMware ESXi) or a logical interface (in the case of RHV-H and RHEL-KVM hosts) attaching the NFS (or other protocols) port group or logical network.
7. Create additional datastores, storage domains, or storage pools on hypervisors (VMware, RHV, or KVM) using AFF storage.

Next: [ONTAP Select with VMware vSphere: NetApp HCI and Cisco ACI](#)

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