

## **ONTAP on AFF: NetApp HCI and Cisco ACI**

NetApp Solutions

Kevin Hoke, Dorian Henderson January 14, 2021

# **Table of Contents**

ONTAP on AFF: NetApp HCI and Cisco ACI	 	1
Workflow	 	1

## 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.

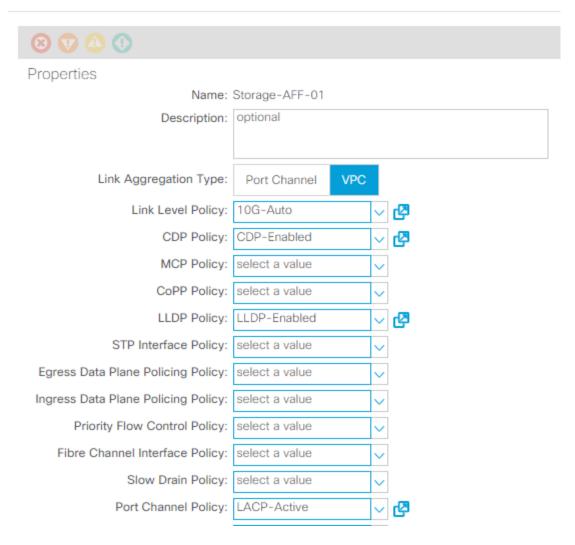
To extend the capabilities of storage to file services and add many more data protection abilities, ONTAP can be used in conjunction with NetApp HCI. If NetApp ONTAP already exists in your environment, you can easily integrate it with NetApp HCI and Cisco ACI.

### 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



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



- 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 HCl and Cisco ACl

#### **Copyright Information**

Copyright © 2021 NetApp, Inc. All rights reserved. Printed in the U.S. No part of this document covered by copyright may be reproduced in any form or by any means-graphic, electronic, or mechanical, including photocopying, recording, taping, or storage in an electronic retrieval system-without prior written permission of the copyright owner.

Software derived from copyrighted NetApp material is subject to the following license and disclaimer:

THIS SOFTWARE IS PROVIDED BY NETAPP "AS IS" AND WITHOUT ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, WHICH ARE HEREBY DISCLAIMED. IN NO EVENT SHALL NETAPP BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

NetApp reserves the right to change any products described herein at any time, and without notice. NetApp assumes no responsibility or liability arising from the use of products described herein, except as expressly agreed to in writing by NetApp. The use or purchase of this product does not convey a license under any patent rights, trademark rights, or any other intellectual property rights of NetApp.

The product described in this manual may be protected by one or more U.S. patents, foreign patents, or pending applications.

RESTRICTED RIGHTS LEGEND: Use, duplication, or disclosure by the government is subject to restrictions as set forth in subparagraph (c)(1)(ii) of the Rights in Technical Data and Computer Software clause at DFARS 252.277-7103 (October 1988) and FAR 52-227-19 (June 1987).

#### **Trademark Information**

NETAPP, the NETAPP logo, and the marks listed at <a href="http://www.netapp.com/TM">http://www.netapp.com/TM</a> are trademarks of NetApp, Inc. Other company and product names may be trademarks of their respective owners.