



## **Solution overview**

### **FlexPod**

NetApp  
June 08, 2021

# Table of Contents

- Solution overview ..... 1
  - FlexPod converged infrastructure program ..... 1
  - NetApp Verified Architecture program ..... 2
  - Solution technology ..... 2
  - Use case summary ..... 3

# Solution overview

This FlexPod Express solution is part of the FlexPod Converged Infrastructure Program.

## FlexPod converged infrastructure program

FlexPod reference architectures are delivered as Cisco Validated Designs (CVDs) or NetApp Verified Architectures (NVAs). Deviations based on customer requirements from a given CVD or NVA are permitted if these variations do not create an unsupported configuration.

The FlexPod program includes two solutions: FlexPod Express and FlexPod Datacenter.

- **FlexPod Express.** Offers customers an entry-level solution with technologies from Cisco and NetApp.
- **FlexPod Datacenter.** Delivers an optimal multipurpose foundation for various workloads and applications.

# The FlexPod Portfolio

A prevalidated, flexible platform that features



## FlexPod® Express

Remote office or branch office, retail, small and midsize business, and edge



## FlexPod Datacenter

Enterprise apps, unified infrastructure, and virtualization

# NetApp Verified Architecture program

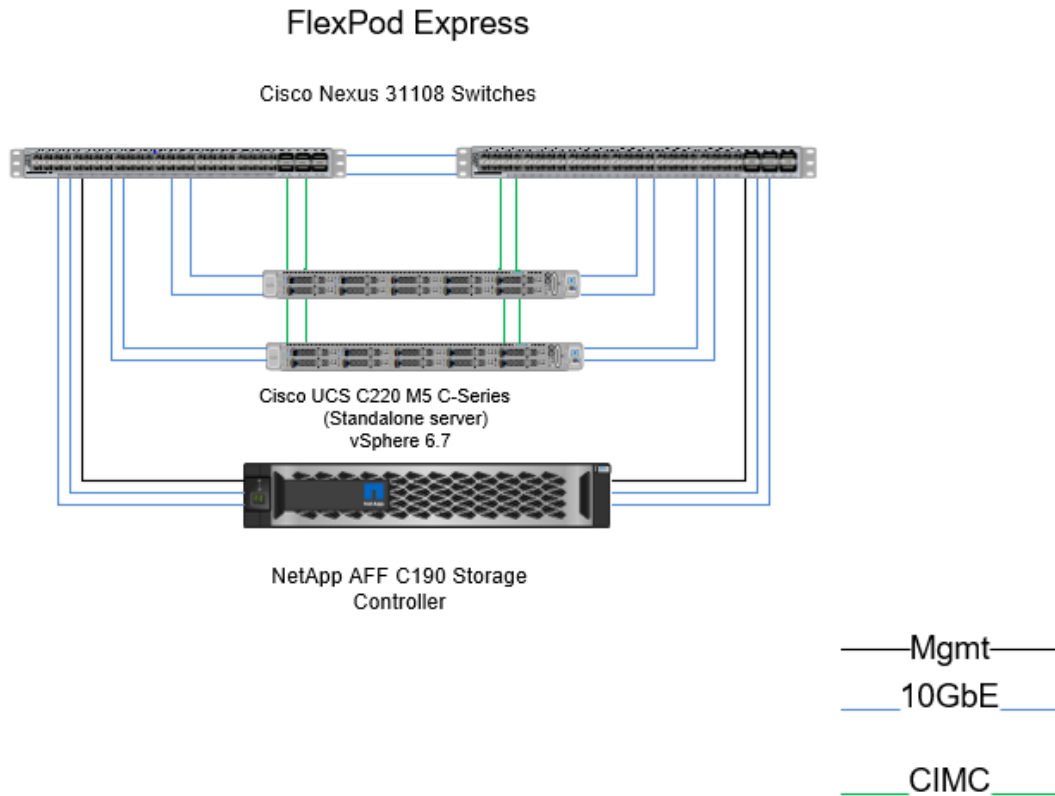
The NetApp Verified Architecture program offers customers a verified architecture for NetApp solutions. A NetApp Verified Architecture provides a NetApp solution architecture with the following qualities:

- Thoroughly tested
- Prescriptive in nature
- Minimized deployment risks
- Accelerated time to market

This guide details the design of FlexPod Express with VMware vSphere. In addition, this design uses the all-new AFF C190 system (running NetApp ONTAP® 9.6), the Cisco Nexus 31108, and Cisco UCS C-Series C220 M5 servers as hypervisor nodes.

## Solution technology

This solution leverages the latest technologies from NetApp, Cisco, and VMware. This solution features the new NetApp AFF C190 running ONTAP 9.6, dual Cisco Nexus 31108 switches, and Cisco UCS C220 M5 rack servers running VMware vSphere 6.7U2. This validated solution uses 10GbE technology. Guidance is also provided on how to scale compute capacity by adding two hypervisor nodes at a time so that the FlexPod Express architecture can adapt to an organization’s evolving business needs.





To use the four physical 10GbE ports on the VIC 1457 efficiently, create two extra links from each server to the top rack switches.

## Use case summary

The FlexPod Express solution can be applied to several use cases, including the following:

- Remote or branch offices
- Small and midsize businesses
- Environments that require a dedicated and cost-effective solution

FlexPod Express is best suited for virtualized and mixed workloads. Although this solution was validated with vSphere 6.7U2, it supports any vSphere version qualified with the other components by the NetApp Interoperability Matrix Tool. NetApp recommends deploying vSphere 6.7U2 because of its fixes and enhanced features, such as the following:

- New protocol support for backing up and restoring a vCenter server appliance, including HTTP, HTTPS, FTP, FTPS, SCP, NFS and SMB.
- New functionality when utilizing the content library. Syncing of native VM templates between content libraries is now available when vCenter Server is configured for enhanced linked mode.
- An updated Client Plug-In page.
- Added enhancements in the vSphere Update Manager (VUM) and the vSphere client. You can now perform the attach, check-compliance, and remediate actions, all from one screen.

For more information on this subject, see the [vSphere 6.7U2 page](#) and the [vCenter Server 6.7U2 Release Notes](#).

## 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 <http://www.netapp.com/TM> are trademarks of NetApp, Inc. Other company and product names may be trademarks of their respective owners.