



ONTAP AI with NVIDIA

NetApp Solutions

NetApp
January 27, 2023

Table of Contents

- NetApp ONTAP AI with NVIDIA 1
 - NetApp ONTAP AI with NVIDIA DGX A100 Systems 1
 - NetApp ONTAP AI with NVIDIA DGX A100 Systems and Mellanox Spectrum Ethernet Switches 1
 - NVA-1151-DESIGN: NetApp ONTAP AI with NVIDIA DGX A100 Systems Design Guide 1
 - NVA-1151-DEPLOY: NetApp ONTAP AI with NVIDIA DGX A100 Systems 1
 - NVA-1153-DESIGN: NetApp ONTAP AI with NVIDIA DGX A100 Systems and Mellanox Spectrum Ethernet Switches 1
 - NVA-1153-DEPLOY: NetApp ONTAP AI with NVIDIA DGX A100 systems and Mellanox Spectrum Ethernet Switches 2

NetApp ONTAP AI with NVIDIA

Overview of ONTAP AI converged infrastructure solutions from NetApp and NVIDIA.

NetApp ONTAP AI with NVIDIA DGX A100 Systems

- [Design Guide](#)
- [Deployment Guide](#)

NetApp ONTAP AI with NVIDIA DGX A100 Systems and Mellanox Spectrum Ethernet Switches

- [Design Guide](#)
- [Deployment Guide](#)

NVA-1151-DESIGN: NetApp ONTAP AI with NVIDIA DGX A100 Systems Design Guide

David Arnette and Sung-Han Lin, NetApp

NVA-1151-DESIGN describes a NetApp Verified Architecture for machine learning and artificial intelligence workloads using NetApp AFF A800 storage systems, NVIDIA DGX A100 systems, and NVIDIA Mellanox network switches. It also includes benchmark test results for the architecture as implemented.

[NVA-1151-DESIGN: NetApp ONTAP AI with NVIDIA DGX A100 Systems Design Guide](#)

NVA-1151-DEPLOY: NetApp ONTAP AI with NVIDIA DGX A100 Systems

David Arnette, NetApp

NVA-1151-DEPLOY includes storage system deployment instructions for a NetApp Verified Architecture (NVA) for machine learning (ML) and artificial intelligence (AI) workloads using NetApp AFF A800 storage systems, NVIDIA DGX A100 systems, and NVIDIA Mellanox network switches. It also includes instructions for running validation benchmark tests after deployment is complete.

[NVA-1151-DEPLOY: NetApp ONTAP AI with NVIDIA DGX A100 Systems](#)

NVA-1153-DESIGN: NetApp ONTAP AI with NVIDIA DGX A100 Systems and Mellanox Spectrum Ethernet Switches

David Arnette and Sung-Han Lin, NetApp

NVA-1153-DESIGN describes a NetApp Verified Architecture for machine learning (ML) and artificial intelligence (AI) workloads using NetApp AFF A800 storage systems, NVIDIA DGX A100 systems, and NVIDIA Mellanox Spectrum SN3700V 200Gb Ethernet switches. This design features RDMA over Converged Ethernet (RoCE) for the compute cluster interconnect fabric to provide customers with a completely ethernet-based architecture for high-performance workloads. This document also includes benchmark test results for the

architecture as implemented.

[NVA-1153-DESIGN: NetApp ONTAP AI with NVIDIA DGX A100 Systems and Mellanox Spectrum Ethernet Switches](#)

NVA-1153-DEPLOY: NetApp ONTAP AI with NVIDIA DGX A100 systems and Mellanox Spectrum Ethernet Switches

David Arnette, NetApp

NVA-1153-DEPLOY includes storage-system deployment instructions for a NetApp Verified Architecture for machine learning (ML) and artificial intelligence (AI) workloads using NetApp AFF A800 storage systems, NVIDIA DGX A100 systems, and NVIDIA Mellanox Spectrum SN3700V 200Gb Ethernet switches. It also includes instructions for executing validation benchmark tests after deployment is complete.

[NVA-1153-DEPLOY: NetApp ONTAP AI with NVIDIA DGX A100 systems and Mellanox Spectrum Ethernet Switches](#)

Copyright information

Copyright © 2023 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.

LIMITED RIGHTS LEGEND: Use, duplication, or disclosure by the government is subject to restrictions as set forth in subparagraph (b)(3) of the Rights in Technical Data -Noncommercial Items at DFARS 252.227-7013 (FEB 2014) and FAR 52.227-19 (DEC 2007).

Data contained herein pertains to a commercial product and/or commercial service (as defined in FAR 2.101) and is proprietary to NetApp, Inc. All NetApp technical data and computer software provided under this Agreement is commercial in nature and developed solely at private expense. The U.S. Government has a non-exclusive, non-transferrable, nonsublicensable, worldwide, limited irrevocable license to use the Data only in connection with and in support of the U.S. Government contract under which the Data was delivered. Except as provided herein, the Data may not be used, disclosed, reproduced, modified, performed, or displayed without the prior written approval of NetApp, Inc. United States Government license rights for the Department of Defense are limited to those rights identified in DFARS clause 252.227-7015(b) (FEB 2014).

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.