



# Supported network configurations

## ONTAP Select

Barb Einarsen  
November 19, 2019

This PDF was generated from [https://docs.netapp.com/us-en/ontap-select/concept\\_nw\\_supported\\_configs.html](https://docs.netapp.com/us-en/ontap-select/concept_nw_supported_configs.html) on October 12, 2020. Always check docs.netapp.com for the latest.

# Table of Contents

Supported network configurations ..... 1

# Supported network configurations

Select the best hardware and configure your network to optimize performance and resiliency.

Server vendors understand that customers have different needs and choice is critical. As a result, when purchasing a physical server, there are numerous options available when making network connectivity decisions. Most commodity systems ship with various NIC choices that provide single-port and multiport options with varying permutations of 1Gb and 10Gb ports. Care should be taken when selecting server NICs because the choices provided by server vendors can have a significant impact on the overall performance of the ONTAP Select cluster.

Link aggregation is a common network construct used to aggregate bandwidth across multiple physical adapters. LACP is a vendor-neutral standard that provides an open protocol for network endpoints that bundle groupings of physical network ports into a single logical channel. ONTAP Select can work with port groups that are configured as a Link Aggregation Group (LAG). NetApp recommends using the individual physical ports as simple uplink (trunk) ports, avoiding the LAG configuration.

Because the performance of the ONTAP Select VM is tied directly to the characteristics of the underlying hardware, increasing the throughput to the VM by selecting 10Gb-capable NICs results in a higher-performing cluster and a better overall user experience. When cost or form factor prevents the user from designing a system with four 10Gb NICs, two 10Gb NICs can be used. There are a number of other configurations that are also supported. For two-node clusters, 4 x 1Gb ports or 1 x 10Gb ports are supported. For single node clusters, 2 x 1Gb ports are supported.

## Network configuration best practices

For both standard and distributed vSwitches, consider the best practices listed in the following table:

Network configuration support matrix

Server Environment	Select Configuration	Best Practices
Standard or distributed vSwitch 4 x 10Gb ports or 4 x 1Gb ports The physical uplink switch does not support or is not configured for LACP and supports large MTU size on all ports. <sup>1</sup>	Do not use any LACP channels. All the ports must be owned by the same vSwitch. The vSwitch must support a large MTU size. <sup>1</sup>	Up to four port groups are supported, two for the internal network and two for the external network. For best performance, all four port groups should be used.

Server Environment	Select Configuration	Best Practices
The load-balancing policy at the port-group level is Route Based on Originating Virtual Port ID. VMware recommends that STP be set to Portfast on the switch ports connected to the ESXi hosts.	Standard or distributed vSwitch 2 x 10Gb ports The physical uplink switch does not support or is not configured for LACP and supports large MTU size on all ports. <sup>1</sup>	Do not use any LACP channels. The internal network must use a port group with 1 x 10Gb active and 1 x 10Gb standby. <sup>1</sup> The external network uses a separate port group. The active port is the standby port for the internal port group. The standby port is the active port for the internal network port group. All the ports must be owned by the same vSwitch. The vSwitch must support a large MTU size. <sup>1</sup>

<sup>1</sup> The internal network supports an MTU size between 7,500 and 9,000.

### Network minimum and recommended configurations

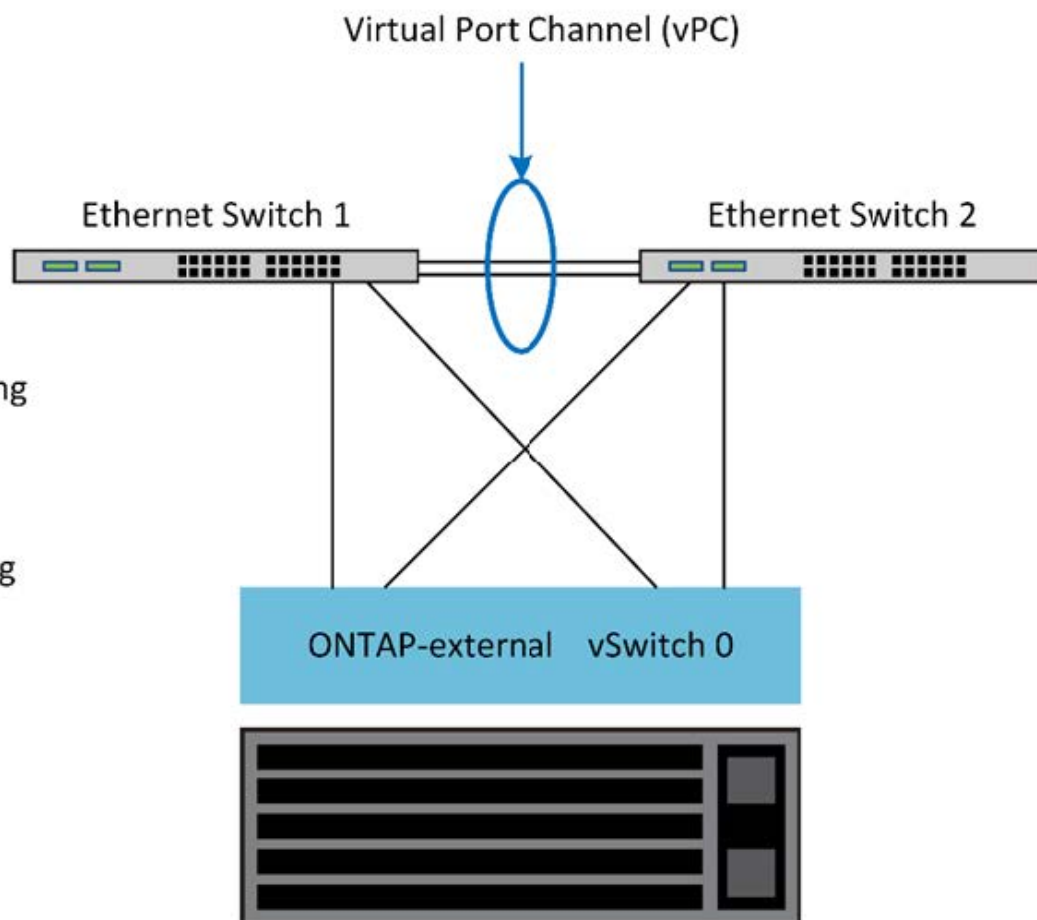
	Minimum Requirements	Recommendations
Single node clusters	2 x 1Gb	2 x 10Gb
Two node clusters / Metrocluster SDS	4 x 1Gb or 1 x 10Gb	2 x 10Gb
4/6/8 node clusters	2 x 10Gb	4 x 10Gb

### Network configuration using multiple physical switches

When sufficient hardware is available, NetApp recommends using the multiswitch configuration shown in the following figure, due to the added protection against physical switch failures.

**ONTAP-internal:**  
Virtual Switch Tagging  
VLAN 10

**ONTAP-external:**  
Virtual Guest Tagging  
Native VLAN 20



## Copyright Information

Copyright © 2020 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.