Supported network configurations

ONTAP Select

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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.[1]	Do not use any LACP channels. All the ports must be owned by the same vSwitch. The vSwitch must support a large MTU size.[1]	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.[1]	Do not use any LACP channels. The internal network must use a port group with 1 x 10Gb active and 1 x 10Gb standby.[1] 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.[1]

[1] 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