



## Product Bulletin:

# Introduction to Data ONTAP 8.0 Cluster Network and Management Network Switches

## Revision History

14 September 2009

9 May 2010

6 July 2010

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This product bulletin informs NetApp sales and NetApp partners about new or changed NetApp® products or services.

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## 1. Summary

A fundamental change has been made in the standard cluster-mode configuration. All platforms will require two 10GbE NICs. Port a on each NIC must be connected to the cluster network. Port b on each NIC may be used for client data access, except for the FAS/V6080, which for maximum performance should use additional 10GbE NICs for client data access and leave the b port unconnected.

Support for FAS2040 and DS4243 shelves has been added to Data ONTAP® Cluster-Mode.

With Data ONTAP 8.0 Cluster-Mode, NetApp now requires purchase of cluster network and management network switches for all storage clusters originating in Data ONTAP 8.0. The Cisco Nexus 5010 (20-port 10GbE switch and optional 6-port expansion model) and the Cisco Nexus 5020 (40-port 10GbE switch) are available for the cluster network and the Cisco Catalyst 2960-24TT (24-port 10/100 Mb with two 1GbE uplink ports) for the management network. The cluster network and management network switches must be purchased through NetApp to make sure of full supportability of the cluster.

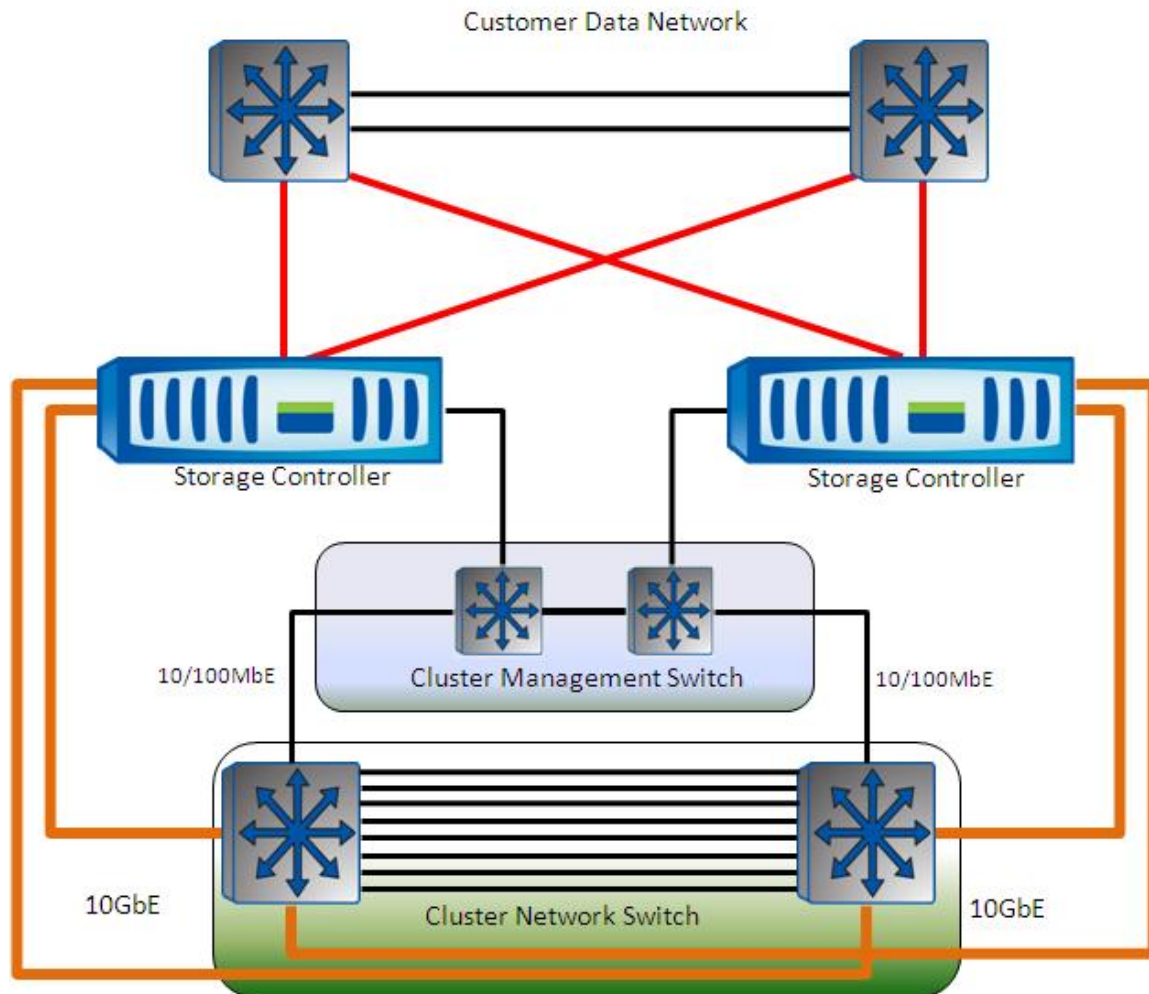
## 2. What's New?

All controllers except the FAS2040 must use two 10GbE NICs to connect to the cluster network. FAS2040 connects into a cluster using onboard 1GbE ports. The first 8 ports of the Cisco Nexus 5010 and the first 16 ports of the Cisco Nexus 5020 can be either 1GbE or 10GbE depending on the SFP that is used. We have released a new 1GbE SFP to enable FAS2040 to participate in clusters. All other platforms remain at 10GbE.

With the introduction of Data ONTAP 8.0 Cluster-Mode, NetApp now provides integrated Ethernet switches for the cluster network and the management network. This NetApp engineered solution offers standard configurations based on approved switch firmware and NetApp switch configuration files. This solution is fully tested throughout the Data ONTAP 8.0 quality assurance process and offers greater supportability, leading to faster problem resolution. NetApp offers SupportEdge Services for the Cisco Nexus 5010 cluster network switch and the Cisco Catalyst 2960-

24TT management network switch for completely integrated one-call support with Data ONTAP 8.0.

The cluster network architecture is depicted in the following figure. Each storage controller has a pair of 10GbE NICs; each of these 10GbE NICs connects to one of two redundantly deployed cluster network switches. Similarly, each storage controller has separate management connections to each of the redundantly deployed management network switches.



NOTE: Although NetApp resells the Cisco Nexus 5010 and 5020 for FCoE and Data Center Bridging (DCB) support, there are separate model numbers for the Data ONTAP 8.0 cluster network switches:

- X-N5K-C5010P-BF-R5-C
- X-N5K-C5020P-BF-R5-C

These model numbers are specific to the Data ONTAP 8.0 cluster network and may not be sold or repurposed for any other usage. Customers looking for Cisco Nexus switches for other usages outside of the cluster network architecture should consult [Product Bulletin FCoE Ecosystem Expansion](#) for correct ordering information.

### 3. Sales and Customer-Ready Tools (Training, SE, Customer Presentations, Datasheets, Sales Guides)

Sales and customer-ready tools for the cluster network and management network switches are incorporated as part

of the Data ONTAP 8.0 Cluster-Mode collateral.

- [Data ONTAP 8.0 Cluster-Mode Systems](#)
- [Cluster-Mode Site Questionnaire](#)

## 4. System Requirements

A site questionnaire is available on the [NetApp Field Portal](#). Use of this questionnaire is required to make sure that the proper switch components and cable lengths are ordered.

The following table summarizes the supported cluster configurations. Complete compatibility information can be found on the [NetApp NOW™ site](#).

| Function           | Switch                   | Max Nodes | Configurable in NetApp Cabinet | Supported NICs                  |
|--------------------|--------------------------|-----------|--------------------------------|---------------------------------|
| Cluster Network    | Cisco NX-5010            | 2–18      | Yes                            | X1008A-R6, FAS2040 onboard 1GbE |
| Cluster Network    | Cisco NX-5020            | 2–24      | No                             | X1008A-R6, FAS2040 onboard 1GbE |
| Management Network | Cisco Catalyst 2960-24TT | 2–24      | No                             | On boards ports only            |

Note: Currently the Cisco NX-5020 and Cisco Catalyst 2960-24TT switches are not configurable in NetApp cabinets, including post sale. We expect to allow the Cisco Catalyst 2960 to be installable in a NetApp cabinet in September 2010. If all nodes are 3040, 3070, or 6000 series, then the maximum allowable is 22 nodes.

## 5. Product Information

Customers creating new storage network clusters with Data ONTAP 8.0 Cluster-Mode are required to purchase from NetApp the appropriate cluster network switches and the management network switches.

Note: The Cisco Nexus switch part numbers listed below are specific to the Data ONTAP 8.0 cluster network and **may not be sold or repurposed for any other usage**. Customers looking for Cisco Nexus switches for other usages outside of the Data ONTAP 8.0 cluster network should consult [Product Bulletin FCoE Ecosystem Expansion](#) for correct ordering information.

| Part Number            | Description                                    | Discount Category Code |
|------------------------|------------------------------------------------|------------------------|
| X-N5K-C5010P-BF-R5-C   | Cisco N5010 Switch,Cluster,20-Pt,10GE,-C,R5    | C                      |
| X-N5K-M1600-CLM-R5-C   | Cisco, I/O Module, 5010, Cluster, 6-Port,-C,R5 | C                      |
| X-N5K-C5020P-BF-R5-C   | Cisco N5020 Switch,Cluster,40-Pt,10GE,-C,R5    | C                      |
| X-WS-C2960-24TT-L-R5-C | Cisco,Switch,Management,10/100MbE,-C,R5        | C                      |

The following accessory part numbers are also available to support configuration of the cluster network and management network switches:

| Part Number | Description | Discount Category Code |
|-------------|-------------|------------------------|
|-------------|-------------|------------------------|

|                       |                                               |   |
|-----------------------|-----------------------------------------------|---|
| X-SFP-1G-SR-R6        | Cisco,1GBase SR SFP+ RJ45,R6                  | C |
| X-SFP-1G-SR-R6-C      | Cisco,1GBase SR SFP+ RJ45,-C,R6               | C |
| X-SFP-10G-SR-R6       | Cisco,10GBase SR SFP+ RJ45,R6                 | C |
| X-SFP-10G-SR-R6-C     | Cisco,10GBase SR SFP+ RJ45,-C,R6              | C |
| X-SFP-H10GB-CU1M-R6   | Cisco N50XX 10GBase Copper SFP+cable,1m,R6    | C |
| X-SFP-H10GB-CU1M-R6-C | Cisco N50XX 10GBase Copper SFP+cable,1m,-C,R6 | C |
| X-SFP-H10GB-CU3M-R6   | Cisco N50XX 10GBase Copper SFP+cable,3m,R6    | C |
| X-SFP-H10GB-CU3M-R6-C | Cisco N50XX 10GBase Copper SFP+cable,3m,-C,R6 | C |
| X-SFP-H10GB-CU5M-R6   | Cisco N50XX 10GBase Copper SFP+cable,5m,R6    | C |
| X-SFP-H10GB-CU5M-R6-C | Cisco N50XX 10GBase Copper SFP+cable,5m,-C,R6 | C |
| X-CAB-AC-R6           | Cisco,C2960,Power Cord, North America,R6      | C |
| X-CAB-ACA-R6          | Cisco,C2960,Power Cord, Australian,R6         | C |
| X-CAB-ACC-R6          | Cisco,C2960,Power Cord China,R6               | C |
| X-CAB-ACE-R6          | Cisco,C2960,Power Cord Europe,R6              | C |
| X-CAB-ACI-R6          | Cisco,C2960,Power Cord-Italian,R6             | C |
| X-CAB-ACR-R6          | Cisco,C2960,Power Cord, Argentina,R6          | C |
| X-CAB-ACS-R6          | Cisco,C2960,Power Cord for Switzerland,R6     | C |
| X-CAB-ACU-R6          | Cisco,C2960,Power Cord UK,R6                  | C |
| X-CAB-JPN-R6          | Cisco,C2960,Power Cord, Japan,R6              | C |
| X-N5K-PAC-550W-R5-C   | Cisco N5010 Power Supply,550W,-C,R5           | C |
| X-N5K-PAC-550W-R5     | Cisco N5010 Power Supply,550W,R5              | C |
| X-N5K-C5010-FAN-R5    | Cisco N5010 Fan Module,R5                     | C |
| X6560-R6-C            | Cable,Ethernet,ACP,RJ45,CAT6,0.5m,-C,R6       | C |
| X6560-R6              | Cable,Ethernet,ACP,RJ45,CAT6,0.5m,R6          | C |
| X6561-R6-C            | Cable,Ethernet,ACP,RJ45,CAT6,2m,-C,R6         | C |
| X6561-R6              | Cable,Ethernet,ACP,RJ45,CAT6,2m,R6            | C |

|                       |                                        |   |
|-----------------------|----------------------------------------|---|
| X6562-R6-C            | Cable,Ethernet,ACP,RJ45,CAT6,5m,-C,R6  | C |
| X6562-R6              | Cable,Ethernet,ACP,RJ45,CAT6,5m,R6     | C |
| X6577-R6              | Cable,Ethernet,ACP,RJ45,CAT6,30m,R6    | C |
| X6577-R6-C            | Cable,Ethernet,ACP,RJ45,CAT6,30m,-C,R6 | C |
| X-N5010-ACC-CL-KIT-R5 | Cisco, N50X0,Accessory Kit,Cluster,R5  | C |

### Product Availability

Although all part numbers announced in this bulletin are available for quoting in the June 2010 Quote Tool release, quoting can only be done by authorized field people. Quotes can be generated only after the deal has been approved for Data ONTAP 8.0 Cluster-Mode by the deals desk. Please contact [DL-DADs-only@netapp.com](mailto:DL-DADs-only@netapp.com) for preapproval and help with the quote.

The cluster network and management network switches and associated accessory parts are available for shipment beginning in June 2010.

## 6. Regulatory Compliance

Products need to be validated against the NetApp Safety/EMI Regulatory Compliance List prior to order submission. This is required to make sure that products are being sold only in the countries in which NetApp has received regulatory compliance certification. This information can be found in the Field Portal by searching under "Compliance, Policies and Procedures" or following these links:

- [RoHS Compliance](#)
- [Safety/EMI Regulatory Compliance \(XLS\)](#)
- [WEEE Compliance](#)

## 7. Warranty and Service

Standard NetApp hardware warranty applies for these part numbers. NetApp SupportEdge Service offerings for the Cisco Nexus 5010 cluster network switch (X-N5K-C5010P-BF-R5-C) and the Cisco Catalyst 2960-24TT management network switches (X-WS-C2960-24TT-L-R5-C) are available.

NetApp resells Cisco SMARTnet services for the Cisco Nexus 5020 cluster network switch. The Cisco Nexus 5020 has a one year return to factory warranty. Due to the limited need for the Cisco Nexus 5020 in cluster networks, NetApp is unable at this time to offer SupportEdge Services for the 40-port switch.

| Part Number          | Description                | Discount Category Code |
|----------------------|----------------------------|------------------------|
| SVCVN-CON-OSE-N5020  | Cisco Onsite 8x5x4hr,5020  | S                      |
| SVCVN-CON-OS-N5020   | Cisco Onsite 8x5xNBD,5020  | S                      |
| SVCVN-CON-OSP-N5020  | Cisco Onsite 24x7x4hr,5020 | S                      |
| SVCVN-CON-PREM-N5020 | Cisco Onsite 24x7x2hr,5020 | S                      |
| SVCVN-CON-S2P-N5020  | Cisco AR 24x7x2hr,5020     | S                      |

|                      |                        |   |
|----------------------|------------------------|---|
| SVCVN-CON-SNTE-N5020 | Cisco AR 8x5x4hr,5020  | S |
| SVCVN-CON-SNT-N5020  | Cisco AR 8x5xNBD,5020  | S |
| SVCVN-CON-SNTP-N5020 | Cisco AR 24x7x4hr,5020 | S |

## 8. Additional Information

**Contact information:** Please contact your NetApp sales or channel partner representative with questions concerning this bulletin.

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