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Application Note

Recommended HPE Ethernet Switches for RDMA-enabled Fabrics

Products Affected

HPE® Model	HPE Part Number
HPE Ethernet 10Gb 521T Adapter	867707-B21
HPE Ethernet 10Gb 524SFP+ Adapter	P08446-B21
HPE Ethernet 10/25Gb 621SFP28 Adapter	867328-B21
HPE Ethernet 10/25Gb 622FLR-SFP28 Adapter	867334-B21
HPE CN1200R-T 10GBase-T CNA	Q0F26A
HPE CN1300R 10/25GbE CNA	Q0F09A
HPE Synergy 4820C 10/20/25Gb CNA	876449-B21
HPE Synergy 6820C 25/50Gb CNA	P02054-B21
HPE Synergy 6810C 25/50Gb Ethernet Adapter	867322-B21
HPE Ethernet 10Gb 2-port Base-T QL41132HLRJ Adapter	P08437-B21
HPE Ethernet 10Gb 2-port BASE-T QL41132HQRJ OCP3 Adapter	P10103-B21
HPE Ethernet 10Gb 2-port SFP+ QL41132HLCU Adapter	P21933-B21
HPE Ethernet 10Gb 2-port SFP+ QL41132HQCU OCP3 Adapter	P08452-B21
HPE Ethernet 10GbE 4-port SFP+ QL41134HLCU Adapter	P10094-B21
HPE Ethernet 10/25Gb 2-port SFP28 QL41232HLCU Adapter	P22702-B21
HPE Ethernet 10/25Gb 2-port SFP28 QL41232HQCU OCP3 Adapter	P10118-B21

Introduction

The use of remote direct memory access (RDMA) in networks is becoming more common in the data center for low-latency connectivity. Customers have a choice of deploying either RDMA over Converged Ethernet (RoCE) or Internet wide area RDMA protocol (iWARP) RDMA protocols across the network.

While all the adapters listed in the Products Affected table support both RoCE and iWARP, customers often ask which switches support RDMA. This is a valid question. To get the benefit of low-latency RDMA, enterprise-class switches are required in the network. This application note outlines the recommended

enterprise-class switches from HPE that provide the best performance for an RDMA fabric running either 10-Gigabit Ethernet (GbE), 25GbE, or 50GbE bandwidths and either RoCE or iWARP RDMA protocols.

RoCE needs a lossless network, which can require extra switch features, such as data center bridging (DCB) priority flow control (PFC)/enhanced transmission selection (ETS)/congestion notification (CN) to function properly over lossy Ethernet networks. The iWARP protocol does not need DCB and can function on most 10GBASE-T and 10G SFP+/25G SFP28/100G QSFP28 switches using just the TCP protocol stack.

Switch Table

The following HPE Ethernet switches can be used for iWARP RDMA connectivity:

Switches for Use With iWARP RDMA Protocol

HPE Switch Family	HPE Models
Aruba	3810M CX8320 CX8325 CX8360 CX8400
HPE FlexFabric®	5700 5710 5800 5820 5920 5930 5950 11900 12900E 5900 5940 5945 5980
Office Connect	1950 12XGT

Switches for Use With iWARP RDMA Protocol (Continued)

HPE Switch Family	HPE Models
StoreFabric®	SN8500C SN2010M SN2100M SN2410M SN2700M SN3700M SN3800M
HPE Synergy Fabric Switches	HPE Synergy 40Gb F8 Switch Module HPE VC SE 40Gb F8 Module for HPE Synergy HPE VC SE 100Gb F32 Module for HPE Synergy HPE Synergy 10Gb Pass-Thru Module HPE Synergy 10Gb Interconnect Link Module HPE Synergy 20Gb Interconnect Link Module HPE Synergy 50Gb Interconnect Link Module Mellanox® SH2200 TAA Switch Module

See the HPE QuickSpecs for full product features and specification.
https://h41370.www4.hpe.com/quickspecs/overview.html

The following HPE Ethernet Switches can be used for RoCE RDMA connectivity.

Switches for Use With RoCE RDMA Protocol

HPE Switch Family	HPE Models
Aruba	CX8325 CX8360 CX8400

Switches for Use With RoCE RDMA Protocol (Continued)

HPE Switch Family	HPE Models
HPE FlexFabric	5700 5710 5820 5920 5930 5950 11900 12900E 5900 5940 5945 5980
StoreFabric	SN2010M SN2100M SN2410M SN2700M SN3700M SN3800M
HPE Synergy Fabric Switches	HPE Synergy 40Gb F8 Switch Module HPE VC SE 40Gb F8 Module for HPE Synergy HPE VC SE 100Gb F32 Module for HPE Synergy Mellanox SH2200 TAA Switch Module

RoCE requires switching that supports lossless Ethernet networking, which includes switch support for Data Center Bridging and Priority Flow Control (IEEE 802.1Qbb).

See the HPE QuickSpecs for full product features and specification.
https://h41370.www4.hpe.com/quickspecs/overview.html

Document Revision History
Revision 1, February 26, 2020
Revision 2, April 8, 2020
Revision 3, December 4, 2020
Changes
Added Aruba switch model CX8360 as supported for use with iWARP RDMA and RoCE RDMA proto-cols.

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