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MicroBlade™ - Networking
(MBM-XEM-002 | MBM-GEM-004 | MBM-XEM-001 | MBM-GEM-001 | MBM-GEM-003I/S)

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MicroBlade Networking

MicroBlade networking options include four Ethernet modules. The modules MBM-XEM-001 and MBM-XEM-002 provide a 10GbE solution for high bandwidth networking for Cloud environment and offer L2L3 capabilities. For simple Layer 2 switching and to aggregate the blade traffic, two modules, MBM-GEM-004 and MBM-GEM-001 offer a cost connectivity options for MicroBlade enclosure.

The modules MBM-XEM-001 and MBM-XEM-002 offer 10Gb network connectivity to MicroBlade servers. These switch modules offer 40Gb QSFP+ uplink connectivity to the external network. The QSFP+ uplinks support QSFP+ cable as well breakout cable for 10Gb connectivity.

The MBM-XEM-002 and MBM-GEM-004 support Supermicro Switch OS, MBM-XEM-001 and MBM-GEM-001 support Intel ONS software, and the MBM-GEM-003I/S modules support Pluribus Networks Netvisor.

10GbE Modules

Switches

The 10 Gigabit Ethernet switch modules (part ID MBM-XEM-001 and MBM-XEM-002) include connection to the MicroBlade's LAN interfaces. While MBM-XEM-001 and MBM-XEM-002 connect to the LAN interfaces onboard the Blade servers. These are layer 2 Ethernet switching modules also have two internal Ethernet paths to the MicroBlade Chassis Management Module CMM(s) to allow configuration and management of the switch. Offering such advanced features as link aggregation, VLAN, Spanning Tree, Access Control Lists and Jumbo Frame support, the switches provide a connection between the Ethernet controllers integrated on the mainboard to the external Ethernet systems.

MicroBlade SDN Switch Module (MBM-XEM-001)	
General Specifications	<ul style="list-style-type: none">Intel® FM6348 10GbE Low Latency Switch4x 40Gbps QSFP uplinks56x 10Gbps, 2.5Gbps, or 1Gbps downlinks1 Console port1 USB port
Switching Capacity	<ul style="list-style-type: none">960Gbps
Physical Layer Features	<ul style="list-style-type: none">Jumbo frames up to 9KB40 gigabit optical/copper1 gigabit optical Ethernet copper
Layer 2 Features	<ul style="list-style-type: none">4K VLANsSpanning Tree (802.1D)Rapid Spanning Tree (802.1w)Multiple Spanning Trees (802.1s)IEEE 802.1Q VLANs/ port-based VLANsIEEE 802.3ac VLAN taggingIEEE 802.1AX LACPIEEE 802.1AB Link Layer Discovery Protocol (LLDP)
Advanced Layer 2 Features	<ul style="list-style-type: none">Storm controlFlow controlPort mirroringStatic MAC filteringUDLDUplink Failure Detection (UFD)
Data Center Features	<ul style="list-style-type: none">L2 Data Center BridgingCEE v1.01 DCB for PFC/ETS
SDN	<ul style="list-style-type: none">Open Flow 1.x
Security Features	<ul style="list-style-type: none">Switch access password protectionRADIUS and TACACS+ AuthenticationAccess Control ListsSSH, SSL Encryption
System Management	<ul style="list-style-type: none">XML-RPCIndustry Standard CLICommand completionContext Sensitive HelpSNMP v1/v2/v3SSHTFTP ClientSyslogDHCP (Client)Web-based management interface - HTTP/HTTPSNTP
Multicast	<ul style="list-style-type: none">IGMP Snooping
Weight	<ul style="list-style-type: none">3.2lbs/1.5kg
Dimensions (W x D x H)	<ul style="list-style-type: none">267mm x 159mm x 36mm (10.5" x 6.25" x 1.4")
Download	<ul style="list-style-type: none">Firmware [Download]



MicroBlade Switches
MBM-XEM-001

MicroBlade Switch Module (MBM-XEM-002)	
General Specifications	<ul style="list-style-type: none">Broadcom BCM56846 10GbE Low Latency Switch2x 40Gbps QSFP and 4x 10Gbps SFP+ uplinks56x 10/2.5/1Gbps downlinks1 Console port1 USB port
Switching Capacity	<ul style="list-style-type: none">1280Gbps
Physical Layer Features	<ul style="list-style-type: none">Jumbo frames up to 9KB40 gigabit optical/copper10 gigabit optical Ethernet SFP+/copper
Layer 2 Features	<ul style="list-style-type: none">4K VLANsSpanning Tree (802.1D)Rapid Spanning Tree (802.1w)Multiple Spanning Trees (802.1s)IEEE 802.1Q VLANs/ port-based VLANsIEEE 802.3ad with LACPIEEE 802.1AB Link Layer Discovery Protocol (LLDP)
Advanced Layer 2 Features	<ul style="list-style-type: none">Storm controlFlow controlPort mirroring
Other Features	<ul style="list-style-type: none">IP Source Guard
Security Features	<ul style="list-style-type: none">Switch access password protectionRADIUS and TACACS+ AuthenticationAccess Control ListsSSH, SSL EncryptionDHCP Snooping
System Management	<ul style="list-style-type: none">Industry Standard CLICommand CompletionContext Sensitive HelpSNMP v1/v2/v3SSHSyslogDHCP (Client)Web-based management interface - (future)NTPRMON
Multicast	<ul style="list-style-type: none">IGMP Snooping
Weight	<ul style="list-style-type: none">3.2lbs/1.5kg
Dimensions (W x D x H)	<ul style="list-style-type: none">267mm x 159mm x 36mm (10.5" x 6.25" x 1.4")
Download	<ul style="list-style-type: none">Firmware [Download]



MicroBlade Switch
MBM-XEM-002

Gigabit Ethernet Modules

Switches

The 1 Gigabit Ethernet switch modules (part ID MBM-GEM-004 and MBM-GEM-001) include connection to the MicroBlade's LAN interfaces. While MBM-GEM-001 and MBM-GEM-004 connect to the LAN interfaces onboard the Blade servers. These are layer 2 Ethernet switching modules also have two internal Ethernet paths to the MicroBlade Chassis Management Module CMM(s) to allow configuration and management of the switch.

The MBM-GEM-004 supports only 1Gb on downlinks, whereas GBM-GEM-001 supports 1 and 2.5 Gbs on downlinks. In addition GBM-GEM-001 has support for OpenFlow 1.x.

MicroBlade SDN Switch Module (MBM-GEM-001)	
General Specifications	<ul style="list-style-type: none">Intel® FM5224 GbE Low Latency Switch10Gbps RJ45, 2x 40Gbps QSFP or 8x 10Gbps SFP+ uplinks56x 2.5Gbps or 1Gbps downlinks1 Console port1 USB port
Switching Capacity	<ul style="list-style-type: none">442Gbps
Physical Layer Features	<ul style="list-style-type: none">Jumbo frames up to 9KB40 gigabit optical/copper10 gigabit optical/copper1 gigabit RJ45 Ethernet
Layer 2 Features	<ul style="list-style-type: none">4K VLANsSpanning Tree (802.1D)Rapid Spanning Tree (802.1w)Multiple Spanning Trees (802.1s)IEEE 802.1Q VLANs/ port-based VLANsIEEE 802.3ac VLAN taggingIEEE 802.1AX LACPIEEE 802.1AB Link Layer Discovery Protocol (LLDP)
Advanced Layer 2 Features	<ul style="list-style-type: none">Storm controlFlow controlPort mirroringStatic MAC filteringUDLDUplink Failure Detection (UFD)
Data Center Features	<ul style="list-style-type: none">L2 Data Center BridgingCEE v1.01 DCB for PFC/ETS
SDN	<ul style="list-style-type: none">Open Flow 1.x
Security Features	<ul style="list-style-type: none">Switch access password protectionRADIUS and TACACS+ AuthenticationAccess Control ListsSSH, SSL Encryption
System Management	<ul style="list-style-type: none">Industry Standard CLICommand completionContext-sensitive helpSNMP v1/v2/v3SSHTFTP ClientSyslogDHCP (Client)Web-based management interface - HTTP/HTTPSNTPXML-RPC
Multicast	<ul style="list-style-type: none">IGMP Snooping
Weight	<ul style="list-style-type: none">3.2lbs/1.5kg
Dimensions (W x D x H)	<ul style="list-style-type: none">267mm x 159mm x 36mm (10.5" x 6.25" x 1.4")
Download	<ul style="list-style-type: none">Firmware [Download]



MicroBlade Switch
MBM-GEM-001

MicroBlade Switch Module (MBM-GEM-004)	
General Specifications	<ul style="list-style-type: none">Broadcom BCM56151 1GbE Switch4x 10Gbps SFP+ and 8x 1Gbps RJ45 uplinks28x 1Gbps downlinks1 Console port
Switching Capacity	<ul style="list-style-type: none">176Gbps
Physical Layer Features	<ul style="list-style-type: none">Jumbo frames up to 9KB10 gigabit optical Ethernet SFP+/copper1 gigabit RJ45 Ethernet
Layer 2 Features	<ul style="list-style-type: none">4K VLANsSpanning Tree (802.1D)Rapid Spanning Tree (802.1w)Multiple Spanning Trees (802.1s)IEEE 802.1Q VLANs/ port-based VLANsIEEE 802.3ad with LACPIEEE 802.1AB Link Layer Discovery Protocol (LLDP)
Advanced Layer 2 Features	<ul style="list-style-type: none">Storm controlFlow controlPort mirroringUplink Failure Detection (UFD)
Security Features	<ul style="list-style-type: none">Switch access password protectionRADIUS and TACACS+ AuthenticationAccess Control ListsSSH, SSL EncryptionProtected Ports
System Management	<ul style="list-style-type: none">Industry Standard CLIContext Sensitive HelpCommand CompletionSNMP v1/v2/v3SSHSyslogDHCP (Client)Web-based management interfaceNTPRMON
Multicast	<ul style="list-style-type: none">IGMP Snooping
Automation	<ul style="list-style-type: none">Zero Touch Provisioning
Weight	<ul style="list-style-type: none">3.1lbs/1.4kg
Dimensions (W x D x H)	<ul style="list-style-type: none">267mm x 159mm x 36mm (10.5" x 6.25" x 1.4")



MicroBlade Switch
MBM-GEM-004

MicroBlade Switches:
| MBM-XEM-002 | MBM-GEM-004 | MBM-XEM-001 | MBM-GEM-001 | MBM-GEM-003I/S |

Optional Parts List (Ethernet Cabling Guide)			
	Part Number	Qty	Description
SFP+ Cable	CBL-0347L	-	39.37" (100cm) 10GbE SFP+ TO SFP+, Twinax copper cable
SFP+ Cable	CBL-0456L	-	78.74" (200cm) 10GbE SFP+ TO SFP+, Twinax copper cable
SFP+ Cable	CBL-0348L	-	118.11" (300cm) 10GbE SFP+ TO SFP+, Twinax copper cable
SFP+ Cable	CBL-0349L	-	196.85" (500cm) 10GbE SFP+ TO SFP+, Twinax copper cable
QSFP Cable	CBL-NTWK-0719	-	40GbE to 4x10GbE Breakout cable (1m)
QSFP Cable	CBL-NTWK-0720 (3m)	-	40GbE to 4x10GbE Breakout cable (3m)
QSFP Cable	CBL-NTWK-0721 (5m)	-	40GbE to 4x10GbE Breakout cable (5m)
QSFP Cable	CBL-NTWK-0417-01	-	1M QSFP TO QSFP with EEPROM. 30AWG
QSFP Cable	CBL-NTWK-0325-02	-	2M QSFP TO QSFP with EEPROM. 26AWG
QSFP Cable	CBL-NTWK-0446-01	-	3M QSFP TO QSFP with EEPROM. 26AWG
QSFP Cable	CBL-NTWK-0422-01	-	5M QSFP TO QSFP with EEPROM. 26AWG
SFP+ Transceiver	AOC-E10QSFSR	-	SFP+ Transceiver for use with fiber cable connections