OcNOS SP 3.1 Feature Matrix

Release Dates

- October 2015 - 1.0
- March 2016 - 1.1
- June 2016 - 1.2
- Aug 2016 - 1.2.1
- Dec 2016 - 1.2.4
- March 2017 - 1.3
- June 2017 - 1.3.1
- October 2017 - 1.3.2
- December 2018 - SP 1.0 ED1
- May 2019 - SP 1.0 ED2
- June 2019 - SP 1.0 ED 2.1
- June 2019 - SP 1.0 ED 2.1.1
- July 2019 - SP 1.0 ED 2.2
- September 2019 - SP 1.0 ED 2.3
- November 2019 - SP 1.0 ED 2.4 R1
- March 2020 - SP 1.0 ED 2.4 R2
- May 2020 - SP 1.0 ED 2.4 R4
- September 2020 - SP 3.0
- November 2020 - SP 3.1

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Column Headings

Feature name	Name of the feature
Standard	IEEE or IETF standard upon which the feature is based, such as an RFC
Comment	Explanation of the feature
Exceptions	Exceptions to the cited standard or to standard practice
First Version Supported	When the feature became available
Platforms	Whether a given switch model supports the features

Feature Matrix

Feature Name	Standard	Comments	Exceptions	First Version Supported	Dell	Delta-Agema	UFISpace	EdgeCore	EdgeCore vOLT
					S4248-FB/FBL-ON	AGC-7648A	S9500-30XS	AS-5912-54X, AS7316-26XB, AS5916-54XKS	ASXvOLT16
Layer 2									
Virtual Local Area Network (VLAN)									
Virtual LANs with Port-based VLANs	IEEE 802.1Q (2005)			1.0.0	Yes	Yes	Yes	Yes	No
Routed VLAN interface				1.0.0	Yes	Yes	Yes	Yes	No
Port based VLAN interface				1.0.0	Yes	Yes	Yes	Yes	No
Private VLAN				1.0.0	Yes	Yes	Yes	Yes	No
Ingress and egress VLAN translation for C-VLAN and S-VLAN at PNP			No Mib support	1.0.0	Yes	Yes	Yes	Yes	No
Cvlan translation at CEP			No Mib support	1.0.0	yes	yes	Yes	yes	No
Q-in-Q			No Mib support	1.0.0	Yes	Yes	Yes	Yes	No
L2PT				1.0.0	Yes	Yes	Yes	Yes	No
Spanning Tree Protocol (STP)									
STP	IEEE 802.1D (2004)			1.0.0	Yes	Yes	Yes	Yes	No
Multiple Spanning Tree Protocol (MSTP)	IEEE 802.1Q (2005): Clause 13	Maximum number of MSTP instances is 64		1.0.0	Yes	Yes	Yes	Yes	No
Rapid Spanning Tree (RSTP)	IEEE 802.1D (2004): Clause 17			1.0.0	Yes	Yes	Yes	Yes	No
Link Layer Discovery Protocol (LLDP)									
LLDP v2	IEEE 802.1ab 2009			1.0.0	Yes	Yes	Yes	Yes	No
Link Aggregation (L2 only)									
Link Aggregation Control Protocol (LACP)	IEEE802.3ad-2002			1.0.0	Yes	Yes	Yes	Yes	No
Static link aggregation group			Minimum link is not supported	1.0.0	Yes	Yes	Yes	Yes	No
Multi-Chassis Link Aggregation									
MC-LAG Active/Standby support as attachment circuit for VPWS Pseudowire Redundancy	IPI Proprietary			1.0.0	Yes	Yes	Yes	Yes	No
Other Layer 2 Features									
BPDU Protect				1.0.0	Yes	Yes	Yes	Yes	No
Root Guard				1.0.0	Yes	Yes	Yes	Yes	No
MAC Learning Disable				1.0.0	Yes	Yes	Yes	Yes	No
Static MAC Address Assignment		At interface level we are not allowed to change the MAC address		1.0.0	Yes	Yes	Yes	Yes	No
Port based authentication with Radius server	IEEE 802.1x				No	No	No	No	No
Layer 3									
Address Resolution Protocol (ARP)									
Ethernet ARP	RFC 826	Supports proxy ARP and Local proxy ARP		1.0.0	Yes	Yes	Yes	Yes	No
Path MTU									
Path MTU for IPv4 & IPv6	RFC 1191 (for IPv4) RFC 8201 (for IPv6)				No	No	No	No	No
Routing									
Transmission of IP Datagrams over Ethernet	RFC 894			1.0.0	Yes	Yes	Yes	Yes	No
Congestion Control in IP/TCP Networks	RFC 896			1.0.0	Yes	Yes	Yes	Yes	No
IP Broadcast	RFC 919			1.0.0	Yes	Yes	Yes	Yes	No
IP Broadcast in the Presence of Subnets	RFC 922			1.0.0	Yes	Yes	Yes	Yes	No
IP Subnetting	RFC 950			1.0.0	Yes	Yes	Yes	Yes	No
Classless Inter-Domain Routing (CIDR)	RFC 1519			1.0.0	Yes	Yes	Yes	Yes	No
Requirements for IP Version 4 Routers	RFC 1812			1.0.0	Yes	Yes	Yes	Yes	No
Route Redistribution across RIP, OSPF and BGP				1.0.0	Yes	Yes	Yes	Yes	No
VLAN Routing				1.0.0	Yes	Yes	Yes	Yes	No
URPF (Unicast Reverse Path Forwarding)									
Loose mode				1.0.0	Yes	Yes	Yes	Yes	No
Loose default mode				1.0.0	Yes	Yes	Yes	Yes	No

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					S4248-FB/FBL-ON	AGC-7648A	S9500-30XS	AS-5912-54X, AS7316-26XB, AS5916-54XKS	ASXvOLT16
Strict mode				1.0.0	Yes	Yes	Yes	Yes	No
Border Gateway Protocol (BGP)									
Border Gateway Protocol, Version 4	RFC 4271			1.0.0	Yes	Yes	Yes	Yes	No
BGP Community Attributes	RFC 1997			1.0.0	Yes	Yes	Yes	Yes	No
BGP Route Reflection	RFC 4456			1.0.0	Yes	Yes	Yes	Yes	No
Autonomous System Confederations for BGP	RFC 5065	Support only for IPv4 and IPv6 unicast address family		1.0.0	Yes	Yes	Yes	Yes	No
Capabilities Negotiation with BGP-4	RFC 5492			1.0.0	Yes	Yes	Yes	Yes	No
Applications of BGP-4 in the Internet	RFC 1772			1.0.0	Yes	Yes	Yes	Yes	No
Protection of BGP Sessions Via the TCP MD5 Signature Option	RFC 2385			1.0.0	Yes	Yes	Yes	Yes	No
Route Refresh Capability for BGP-4	RFC 2918	Support only for IPv4 and IPv6 unicast address family		1.0.0	Yes	Yes	Yes	Yes	No
BGP Support for Four-Octet AS Number Space	RFC 4893			1.0.0	Yes	Yes	Yes	Yes	No
Subcodes for BGP Cease Notifications	RFC 4486			1.0.0	Yes	Yes	Yes	Yes	No
Graceful BGP Session Shutdown	draft-ietf-grow-bgp-gshut-06	Support only for IPv4 and IPv6 unicast address family	Section 4.2.2: IBGP g-shut not supported		No	No	No	No	No
BGPv4 MD5 Authentication	RFC 2385			1.0.0	Yes	Yes	Yes	Yes	No
BGP soft configuration			Inbound soft reconfiguration is not supported	1.0.0	Yes	Yes	Yes	Yes	No
BFD Trigger for BGP				1.0.0	Yes	Yes	Yes	Yes	No
Route Target Filter		Support only for IPv4 and IPv6 unicast address family		1.0.0	Yes	Yes	Yes	Yes	No
Next Hop Tracking		Support only for IPv4 and IPv6 unicast address family		1.0.0	Yes	Yes	Yes	Yes	No
BGP - Outbound Route Filter	RFC 5292	Support only for IPv4 and IPv6 unicast address family		1.0.0	Yes	Yes	Yes	Yes	No
BGP - Labeled Unicast (BGP-LU)	RFC 3107	Support only for IPv4		1.0.0	Yes	Yes	Yes	Yes	No
BGP MIB	RFC 4273	Support only for IPv4 and IPv6 unicast address family		1.0.0	Yes	Yes	Yes	Yes	No
BGP Graceful-Restart	RFC 4724				No	No	No	No	No
BGP Dampening					No	No	No	No	No
BGP Peer Groups		Support only for IPv4 Unicast and IPv4 Labeled-Unicast address-families. Only static peer group			Yes	Yes	Yes	Yes	No
Routing Information Protocol (RIP)									
RIP Version 1	RFC 1058			1.0.0	Yes	Yes	Yes	Yes	No
RIP and RIP Version 2	RFC 2453			1.0.0	Yes	Yes	Yes	Yes	No
Increment Metrics When Sending Routes, Not When Receiving				1.0.0	Yes	Yes	Yes	Yes	No
RIP-2 MD5 Authentication	RFC 2082			1.0.0	Yes	Yes	Yes	Yes	No
Open Shortest Path First (OSPF)									
Open Shortest Path First Version 2	RFC 2328			1.0.0	Yes	Yes	Yes	Yes	No
Applicability statement for OSPF	RFC 1370			1.0.0	Yes	Yes	Yes	Yes	No
OSPF Opaque LSA	RFC 5250			1.0.0	Yes	Yes	Yes	Yes	No
OSPF Graceful Restart	RFC 3623		Only planned restart is supported.		No	No	No	No	No
OSPF as PE/CE protocol for BGP/MPLS IP VPN	RFC 4577			1.0.0	Yes	Yes	Yes	Yes	No
Passive Interface Support for OSPFv2				1.0.0	Yes	Yes	Yes	Yes	No
OSPF Multiarea adjacency	RFC 5185				No	No	No	No	No
OSPF Not-So-Stubby-Area (NSSA) Option	RFC 3101			1.0.0	Yes	Yes	Yes	Yes	No
IP FRR: OSPF-LFA	RFC 5286		Virtual link over LFA is not supported. OSPF V3 LFA not supported.	SP1.0 ED2.4	Yes	Yes	Yes	Yes	No

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					S4248-FB/FBL-ON	AGC-7648A	S9500-30XS	AS-5912-54X, AS7316-26XB, AS5916-54XKS	ASXvOLT16
Bidirectional Forwarding Detection Trigger for OSPFv2				1.0.0	Yes	Yes	Yes	Yes	No
Link Local Signaling				1.0.0	Yes	Yes	Yes	Yes	No
Virtual link				1.0.0	Yes	Yes	Yes	Yes	No
OSPF Version 3 for IPv6 Support	RFC 5340		OSPFv3 authentication is not supported. Section 4.9: No support for multiple interfaces on the same link	1.0.0	Yes	Yes	Yes	Yes	No
Passive Interface Support in OSPFv3				1.0.0	Yes	Yes	Yes	Yes	No
Graceful Restart Mechanism for OSPFv3	RFC 5187				No	No	No	No	No
BFD Trigger for OSPFv3				1.0.0	Yes	Yes	Yes	Yes	No
Intermediate System-Intermediate System (ISIS)									
Use of OSI IS-IS for routing in TCP/IP and dual environments	RFC 1195			1.0.0	Yes	Yes	Yes	Yes	No
Management Information Base (MIB) for ISIS	RFC 4444			1.0.0	Yes	Yes	Yes	Yes	No
Original ISO specification of IS-IS	ISO 10589			1.0.0	Yes	Yes	Yes	Yes	No
Dynamic Hostname Exchange Mechanism for IS-IS	RFC 2763			1.0.0	Yes	Yes	Yes	Yes	No
Restart Signaling (Graceful Restart) for IS-IS	RFC 5306				No	No	No	No	No
Routing IPv6 with IS-IS	RFC 5308			1.0.0	Yes	Yes	Yes	Yes	No
IS-IS Exponential Back-off of SPF	RFC8541		Only exponential back-off delay is supported	1.0.0	Yes	Yes	Yes	Yes	No
Intermediate System to Intermediate System for IPv6				1.0.0	Yes	Yes	Yes	Yes	No
Passive Interface Support for IS-IS				1.0.0	Yes	Yes	Yes	Yes	No
Bidirectional Forwarding Detection Trigger for IS-IS				1.0.0	Yes	Yes	Yes	Yes	No
IS-IS Mesh Groups	RFC 2973			1.0.0	Yes	Yes	Yes	Yes	No
Domain-wide Prefix Distribution with Two-Level IS-IS	RFC 2966			1.0.0	Yes	Yes	Yes	Yes	No
Three-Way Handshake for Intermediate System to Intermediate System (IS-IS) Point-to-Point Adjacencies	RFC 3373			1.0.0	Yes	Yes	Yes	Yes	No
IS-IS extensions for Traffic Engineering	RFC 3784		Following configurations are supported: 1) Maxium Link Bandwidth 2) Reservable Bandwidth 3) Administrative Group Constraints	1.0.0	Yes	Yes	Yes	Yes	No
M-ISIS: Multi Topology (MT) Routing in IS-IS	draft-ietf-isis-wg-multi-topology-11.txt				No	No	No	No	No
IS-IS Cryptographic Authentication	RFC 3567			1.0.0	Yes	Yes	Yes	Yes	No
IS-IS Expanded Use of Overload Bit for BGP Convergence					No	No	No	No	No
IP Fast Reroute - Loop-Free Alternate for IS-IS	RFC 5286		IPv6 LFA is not supported	SP1.0 ED2.4	Yes	Yes	Yes	Yes	No
Bidirectional Forwarding Detection (BFD)									
BFD	RFC 5880		BFD authentication is not supported for IPV4 single hop , supported only for IPV4 multihop and IPV6 Bfd sessions BFD demand mode is not supported	1.0.0	Yes	Yes	Yes	Yes	No

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BFD for IPv4 single hop	RFC 5881			1.0.0	Yes	Yes	Yes	Yes	No
Generic Application for BFD	RFC 5882			1.0.0	Yes	Yes	Yes	Yes	No
BFD Multi-hop	RFC 5883		Software BFD is supported	SP1.0 ED2.4	Yes	Yes	Yes	Yes	No
BFD Over BGP / ISIS / OSPF / Static route				1.0.0	Yes	Yes	Yes	Yes	No
Virtual Router Redundancy Protocol (VRRP)									
VRRP Version 3 for IPv4	RFC 5798			1.0.0	Yes	Yes	Yes	Yes	No
VRRP Interface Tracking					No	No	No	No	No
Multi-Protocol Label Switching (MPLS)									
General									
MPLS Architecture	RFC 3031			1.0.0	Yes	Yes	Yes	Yes	No
MPLS Label Stack Encoding	RFC 3032			1.0.0	Yes	Yes	Yes	Yes	No
Time To Live (TTL) Processing in Multi-Protocol Label Switching (MPLS) Networks	RFC 3443			1.0.0	Yes	Yes	Yes	Yes	No
MPLS Diffserv	RFC 3270			1.0.0	Yes	Yes	Yes	Yes	No
Multiprotocol Label Switching (MPLS) Label Switching Router (LSR) Management Information Base (MIB)	RFC 3813			1.0.0	Yes	Yes	Yes	Yes	No
Multiprotocol Label Switching (MPLS) Forwarding Equivalence Class to Next Hop Label Forwarding Entry (FEC-To-NHLFE) Management Information Base (MIB)	RFC 3814			1.0.0	Yes	Yes	Yes	Yes	No
Label Distribution Protocol (LDP)									
LDP	RFC 5036		ATM Label TLV [Section 3.4.2.2] is not supported. Frame Relay TLV [Section 3.4.2.3] is not supported. LDP Vendor Private Extension [Section 3.6.1] is not supported. No support for ECMP for LDP signaled LSPs	1.0.0	Yes	Yes	Yes	Yes	No
LDP Applicability	RFC 3037			1.0.0	Yes	Yes	Yes	Yes	No
Support for LDP TCP-MD5				1.0.0	Yes	Yes	Yes	Yes	No
Definitions of Managed Objects for the MPLS and LDP	RFC 3815			1.0.0	Yes	Yes	Yes	Yes	No
LDP Downstream-on-Demand in Seamless MPLS	RFC 7032	DoD with orderded mode is not supported		1.0.0	Yes	Yes	Yes	Yes	No
Resource Reservation Protocol (RSVP)									
RSVPv1	RFC 2205			1.0.0	Yes	Yes	Yes	Yes	No
RSVP Refresh Overhead Reduction Extensions	RFC 2961			1.0.0	Yes	Yes	Yes	Yes	No
Inter-area RSVP-TE					No	No	No	No	No
Fast Reroute Extensions to RSVP-TE for LSP Tunnels One-to-One Backup	RFC 4090			1.0.0	Yes	Yes	Yes	Yes	No
Fast Reroute Extensions to RSVP-TE for LSP Tunnels - Facility Backup	RFC 4090			SP1.0 ED2.4	Yes	Yes	Yes	Yes	No
RSVPv1 message processing rules	RFC 2209			1.0.0	Yes	Yes	Yes	Yes	No
Entropy label support for RSVP transport	RFC 6790		1>Entropy for LDP signalling 2> Entropy for BGP	SP1.0 ED2.4	Yes	Yes	Yes	Yes	No
RSVP re-optimization		This is a proprietary solution and does not confirm to any RFC		SP1.0 ED2.4	Yes	Yes	Yes	Yes	No
Diffserv Traffic Engineering (DSTE)					No	No	No	No	No
Protocol Extensions for Support of Diff-serv-aware MPLS Traffic Engineering	RFC 4124			1.0.0	Yes	Yes	Yes	Yes	No

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Maximum Allocation Bandwidth Constraints Model for Diff-serv-aware MPLS Traffic Engineering	RFC 4125				No	No	No	No	No
Multiprotocol Label Switching (MPLS) Traffic Engineering (TE) Management Information Base (MIB)	RFC 3812		The following SNMP traps are not supported. 1. MPLS Tunnel Up 2. MPLS Tunnel Down 3. MPLS Tunnel Rerouted 4. MPLS Tunnel Reoptimized	1.0.0	Yes	Yes	Yes	Yes	No
RSVP multiple secondary		This is a proprietary solution and does not confirm to any RFC	The following attributes are not supported for MSP 1) include any/all 2) exclude any/all	SP 3.0	Yes	Yes	Yes	Yes	No
Layer 2 VPN (VPWS and VPLS)									
Pseudowire Setup and Maintenance using the Label Distribution Protocol	RFC 4447			1.0.0	Yes	Yes	Yes	Yes	No
VPLS/VPWS ethernet encapsulation mapping(Service Mapping) 1> Outer tag Match 2> Outer & inner tag Match 3> Outer tag range Match 4> Untag				1.0.0	Yes	Yes	Yes	Yes	No
VPLS/VPWS ethernet action (Service Mapping, Action) 1> POP outer tag 2> XLATE outer tag 3> Push tag				1.0.0	Yes	Yes	Yes	Yes	No
Encapsulation Methods for Transport of Ethernet Over MPLS Networks	RFC 4448		Frame ordering [Section 4.4.3] is not supported. Sequencing of Frames using Control word [Section 4.6] is not supported.	1.0.0	Yes	Yes	Yes	Yes	No
Static VPLS				1.0.0	Yes	Yes	Yes	Yes	No
Virtual Private LAN Service (VPLS) Using Label Distribution Protocol (LDP) Signaling	RFC 4762		Generalized Pwid fec element [Section 6.1] is not supported. VPLS encapsulation actions [Section 7.1] is not supported. Multi-domain VPLS Service [Section 10] is not supported. Hierarchical VPLS Model Using Ethernet Access Network - Dual homing and failure recovery [Section 11] is not supported.	1.0.0	Yes	Yes	Yes	Yes	No
Virtual Private LAN Service (VPLS) Using BGP for signaling and auto-discovery	RFC 4761		1)Multi-AS VPLS [Section 3.4] 2)Multi-homing Path Selection [Section 3.5] 3)Hierarchical BGP VPLS [Section 3.6]	1.0.0	Yes	Yes	Yes	Yes	No
Static pseudowire Setup and Maintenance				1.0.0	Yes	Yes	Yes	Yes	No
Pseudowire MIB support	RFC 5601		The following SNMP traps are not supported. 1. PW Down NOTIFICATION-TYPE 2. PW Up NOTIFICATION-TYPE 3. PW Deleted NOTIFICATION-TYPE	1.0.0	Yes	Yes	Yes	Yes	No

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Pseudowire (PW) over MPLS PSN Management Information Base (MIB)	RFC 5602		The following SNMP traps are not supported. 1. PW to Non-TE mapping Table. 2. PW to TE MPLS tunnels mapping Table	1.0.0	Yes	Yes	Yes	Yes	No
Ethernet Pseudowire (PW) Management Information Base (MIB)	RFC 5603		The following SNMP trap is not supported. 1. Ethernet PW Statistics Table	1.0.0	Yes	Yes	Yes	Yes	No
Layer 3 VPN									
Intra-AS	RFC 4364	Relevant sections of RFC 4364 supported to achieve basic L3VPN within same AS		1.0.0	Yes	Yes	Yes	Yes	No
OSPF PE-CE	RFC 4577			1.0.0	Yes	Yes	Yes	Yes	No
Intranet VPN				1.0.0	Yes	Yes	Yes	Yes	No
Static route PE-CE				1.0.0	Yes	Yes	Yes	Yes	No
6vPE	RFC 4659			SP1.0 ED2.3	Yes	Yes	Yes	Yes	No
6PE	RFC 4798			SP1.0 ED2.3	Yes	Yes	Yes	Yes	No
Label Disposition for VPNV4 & 6VPE		Default is per-vrf		SP1.0 ED2.3	Yes	Yes	Yes	Yes	No
Label Disposition for 6PE				SP1.0 ED2.3	Yes	Yes	Yes	Yes	No
Inter AS support for L3PVN/6VPE/6PE		IPv4 core only supported. Options A,B,C are suppported LU supported as transport for VPN and 6VPE services.		SP 3.0	Yes	Yes	Yes	Yes	No
PER VRF Label support for 6PE				SP 3.0	Yes	Yes	Yes	Yes	No
BGP Peer Group - static		IPv4 unicast and Label addressfamilies supported in default instance		SP 3.0	Yes	Yes	Yes	Yes	No
Internet access for L3VPN		Static route based internet access supported		SP 3.0	Yes	Yes	Yes	Yes	No
MPLS OAM									
OAM for MPLS networks	RFC 4377			1.0.0	Yes	Yes	Yes	Yes	No
A framework for MPLS OAM	RFC 4378			1.0.0	Yes	Yes	Yes	Yes	No
Detecting MPLS Data Plane Failures	RFC 4379			1.0.0	Yes	Yes	Yes	Yes	No
MPLS PW and LSP Traffic Statistics									
Stats per Label Switched Path (LSP)				1.0.0	Yes	Yes	Yes	Yes	No
Stats per Virtual Circuit (VC)				1.0.0	Yes	Yes	Yes	Yes	No
Carrier Ethernet									
Connectivity Fault Management (CFM)									
MD, MA, MIP, Down MEP	IEEE 802.1ag - 2007			1.0.0 ED1	Yes	Yes	No	Yes	No
Continuity check (multicast CCM)	IEEE 802.1ag - 2007			1.0.0 ED1	Yes	Yes	No	Yes	No
Ping (unicast)	IEEE 802.1ag - 2007			1.0.0 ED1	Yes	Yes	No	Yes	No
Link trace	IEEE 802.1ag - 2007			1.0.0 ED1	Yes	Yes	No	Yes	No
Fault reporting (RDI, Mac Status defect, CCM Cross Connect Defect, Error CCM Defect)	IEEE 802.1ag - 2007			1.0.0 ED1	Yes	Yes	No	Yes	No
CFM over L2 Bridge with xSTP	IEEE 802.1ag - 2007			1.0.0 ED1	Yes	Yes	No	Yes	No
CCM over VPWS				1.0.0 ED2.1	Yes	Yes	No	Yes	No
Performance Monitoring									
Frame Delay and inter frame dealy variation measurment using DMM and DMR over L2 Bridge	Y.1731			SP1.0 ED2.4	Yes	Yes	No	Yes	No
Frame Dealy and inter frame dealy variation measurment using DMM and DMR over VPWS				SP1.0 ED2.4	Yes	Yes	No	Yes	No
Frame Loss Measurment using LMM/LMR and SLM/SLR over VPWS				SP1.0 ED2.4	Yes	Yes	No	Yes	No
Ethernet Ring Protection (ERPS)									

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ERPS over CFM on Provider/Customer domain	ITU-T G.8032v2			SP1.0 ED2.4	Yes	Yes	No	Yes	No
Sub-ring support (Multiple ring and ladder topologies)	ITU-T G.8032v2			SP1.0 ED2.4	Yes	Yes	No	Yes	No
Support of multiple ERP Instances on single ring	ITU-T G.8032v2			SP1.0 ED2.4	Yes	Yes	No	Yes	No
VXLAN with EVPN									
EVPN for VXLAN	RFC 7348, RFC 7432, draft-ietf-bess-evpn-overlay-04		Routing over Vxlan not supported. Default Gateway extended community, Auto RD/RT generation is not supported. Static vxlan multicast not supported	1.0.0	Yes	Yes	No	Yes (Except AS7316-26XB)	No
EVPN Multihoming for VXLAN	RFC 7432, draft-ietf-bess-evpn-overlay-04	Active-Active supported. CE can be multihomed to two PEs. Support for Multihoming is experiemental.		SP1.0 ED2.4	Yes	Yes	No	Yes (Except AS7316-26XB)	No
VxLAN - QoS				SP1.0 ED2.4	Yes	Yes	No	Yes (Except AS7316-26XB)	No
VxLAN support over SVI interface				SP1.0 ED2.4	Yes	Yes	No	Yes (Except AS7316-26XB)	No
Multicast									
Protocol Independent Multicast (PIM)									
PIM - Sparse Mode (PIM-SM)	RFC 4601			1.0.0	Yes	Yes	Yes	Yes	No
Bootstrap Router (BSR) Mechanism for PIM	RFC 5059			1.0.0	Yes	Yes	Yes	Yes	No
Static Rendezvous Point Configuration				1.0.0	Yes	Yes	Yes	Yes	No
PIM - Dense Mode (PIM-DM): Protocol Specification (Revised)	RFC 3973			1.0.0	Yes	Yes	Yes	Yes	No
PIM - Source Specific Multicast				1.0.0	Yes	Yes	Yes	Yes	No
Multicast Source Discovery Protocol (MSDP)	RFC 3618				No	No	No	No	No
Support for More than 32 PIM Interfaces				1.0.0	Yes	Yes	Yes	Yes	No
Source-Specific Multicast for IP	RFC 4607			1.0.0	Yes	Yes	Yes	Yes	No
Source-Specific Protocol-Independent Multicast in 232/8	RFC 4608			1.0.0	Yes	Yes	Yes	Yes	No
Overview of Source-Specific Multicast	RFC 3569			1.0.0	Yes	Yes	Yes	Yes	No
Internet Group Management Protocol (IGMP)									
IGMP, Version 2	RFC 2236			1.0.0	Yes	Yes	Yes	Yes	No
IGMP, Version 3	RFC 3376			1.0.0	Yes	Yes	Yes	Yes	No
IGMP report supporession for v1, v2 and v3					No	No	No	No	No

Feature Matrix

Feature Name	Standard	Comments	Exceptions	First Version Supported	Dell	Delta-Agema	UFISpace	EdgeCore	EdgeCore vOLT
					S4248-FB/FBL-ON	AGC-7648A	S9500-30XS	AS-5912-54X, AS7316-26XB, AS5916-54XKS	ASXvOLT16
Considerations for IGMP Snooping Switches	RFC 4541	An administrative control can be provided to override this restriction, allowing the report messages to be flooded to other ports: OcNOS IGMP always forwards reports to mrouter ports. This list should be built by the snooping switch sending Multicast Router Solicitation messages as described in IGMP Multicast Router Discovery [MRDISC]. It can also snoop Multicast Router Advertisement messages sent by and to other nodes: OcNOS IGMP builds this list using IGMP queries.		1.0.0	Yes	Yes	Yes	Yes	No
IGMP-based Multicast Forwarding ("IGMP Proxying")	RFC 4605			1.0.0	Yes	Yes	No	Yes	No
Multicast Listener Discovery (MLD)									
Multicast Listener Discovery (MLD)	RFC 2710 (MLDv1) and RFC 3810 (MLDv2)				No	No	No	No	No
Considerations for Multicast Listener Discovery (MLD) Snooping Switches	RFC 4541			SP 3.0	Yes	Yes	Yes	Yes	No
Quality of Service (QoS)									
General									
DiffServ Field in IPv4/IPv6 Headers	RFC 2474		IPv6 not supported	1.0.0	Yes	Yes	Yes	Yes	No
Assign matching traffic flow to a specific queue				1.0.0	Yes	Yes	Yes	Yes	Yes
1/2/3 Level queuing hierarchy		1 Level with fixed hierarchy		1.0.0	Yes	Yes	Yes	Yes	No
L2 and L3 QoS				1.0.0	Yes	Yes	Yes	Yes	No
Shaping per queue, per port				1.0.0	Yes	Yes	Yes	Yes	No
Multiple hardware queues per port		Quman has only 8 queues (Multicast and Unicast traffic goes to the same queue)		1.0.0	Yes	Yes	Yes	Yes	No
WFQ/SP Scheduling Per Queue				1.0.0	Yes	Yes	Yes	Yes	No
WRED				1.0.0	Yes	Yes	Yes	Yes	No
802.1p remarking				1.0.0	Yes	Yes	Yes	Yes	No
Classification based on interface, ACL, DSCP, IP precedence, RTP, 802.1p, and VLAN				1.0.0	Yes	Yes	Yes	Yes	No
Trust IEEE 802.1p/DSCP				1.0.0	Yes	Yes	Yes	Yes	No
Remarking of bridged packets					No	No	No	No	No
Police Rate (SRTCM/TRTCM)	RFC 2697, RFC 4115			1.0.0	Yes	Yes	Yes	Yes	No
Minimum and Maximum Bandwidth Per Queue		Qumran supports only Maximum bandwidth		1.0.0	Yes	Yes	Yes	Yes	No
Service Queuing (Mapping services to specific vlans and shaping each vlan based traffic)		Configuring four queues per service is supported. Supported for VPLS/VPWS, PB, L3VPN (SVI interface and L3 Subinterface)		1.0.0 EA	Yes	Yes	Yes	Yes	No
Management									
Role based CLI management and access				1.0.0	Yes	Yes	Yes	Yes	No
CLI access via console, telnet and SSH				1.0.0	Yes	Yes	Yes	Yes	Yes
Authentication using tacacs+/radius client			Only ppp/ip and exec type services are supported.	1.0.0	Yes	Yes	Yes	Yes	No
Extended ping and traceroute				1.0.0	Yes	Yes	Yes	Yes	No

Feature Matrix

Feature Name	Standard	Comments	Exceptions	First Version Supported	Dell	Delta-Agema	UFISpace	EdgeCore	EdgeCore vOLT
					S4248-FB/FBL-ON	AGC-7648A	S9500-30XS	AS-5912-54X, AS7316-26XB, AS5916-54XKS	ASXvOLT16
SNMP v1, v2, and v3			snmpset operations are not supported in OcNOS for any of module or protocols.	1.0.0	Yes	Yes	Yes	Yes	No
sFlow					No	No	No	No	No
DHCP client		Support for IPv6 is experimental		1.0.0	Yes	Yes	Yes	Yes	No
DHCP relay		Option 82 supported		1.0.0	Yes	Yes	Yes	Yes	No
NTP Client				1.0.0	Yes	Yes	Yes	Yes	No
syslog				1.0.0	Yes	Yes	Yes	Yes	Yes
File Upload/Download using FTP/TFTP/SFTP/SCP				1.0.0	Yes	Yes	Yes	Yes	Yes
Management VRF		Only Host Protocols and LLDP support on "management" VRF.	Routing and switching protocols are not supported on "management" VRF.	1.0.0	Yes	Yes	Yes	Yes	No
Ansible			OcNOS require the device to be rebooted to be effective. • hardware-profile • forwarding profile • maximum-paths • copy empty-config startup-config Ansible returns success while configuring these commands. However, the device needs to be rebooted to make these effective. 2. By default, ANSIBLE_PERSISTENT_COMMAND_TIMEOUT is set to 30 (seconds). While pushing large configs through Ansible which might be taking more time than this default timeout, it is suggested that to increase the ansible_command_timeout to appropriate value. In group_vars/ocnos.yml, it is suggested to add the below line with appropriate timeout value: ansible_command_timeout: 1800 3. While configuring the below commands on OcNOS, there are certain warning messages shown to the customer.	1.0.0	Yes	Yes	Yes	Yes	No
Yang	RFC 6020	Only LLDPv2 and interface yang models are supported as part of SP 3.0. Supported Yang modules: ipi-lldpv2.yang,ipi-if-ethernet.yang,ipi-if-ip.yang,ipi-if-types.yang,ipi-interface.yang,ipi-lldp-types.yang.	All these Yang modules are auto genrerted from the data models. Hence any modification to this file is not recommended.	1.0.0	Yes	Yes	Yes	Yes	No

Feature Matrix

Feature Name	Standard	Comments	Exceptions	First Version Supported	Dell	Delta-Agema	UFISpace	EdgeCore	EdgeCore vOLT
					S4248-FB/FBL-ON	AGC-7648A	S9500-30XS	AS-5912-54X, AS7316-26XB, AS5916-54XKS	ASXvOLT16
NETCONF	RFC 6241		Edit-config operation is configured to use "candidate" by default. Hence edit-config on running configuration is not supported. rollback-on-error: This is the default behaviour, hence the error-options of edit-config is not handled. delete-config: Target as candidate and running are not supported. lock, unlock on candidate config store is not supported. copy-config: External config store is not supported (i.e. URL). validate: By default configuration entries are validated and stored, hence this operation and its parameters are not handled. External configuration store validation is not supported (i.e URL). XPath capability is not supported. URL capability is not supported. Writable running capability is not supported.	1.0.0	Yes	Yes	Yes	Yes	No
Upgrade Mechanism from ONIE prompt using onie nos install and from OcNOS shell using sys-update				1.0.0	Yes	Yes	Yes	Yes	No
Zero Touch Provisioning (ZTP)(with IPv4)		IPI Proprietry solution		1.0.0	Yes	Yes	Yes	Yes	No
ACL support over Management, VTY and Loopback				SP 3.0	Yes	Yes	Yes	Yes	No
License Server				SP 3.0	Yes	Yes	Yes	Yes	No
Two-Way Active Measurement Protocol (TWAMP)		Light mode is supported		1.0.0	Yes	Yes	Yes	Yes	No
Security									
General									
Secure interface login and password				1.0.0	Yes	Yes	Yes	Yes	No
Storm control				1.0.0	Yes	Yes	Yes	Yes	No
Flow control	IEEE 802.3x			1.0.0	Yes	Yes	Yes	Yes	No
DHCP Snooping					No	No	No	No	No
IP Source Gaurd					No	No	No	No	No
Access Control Lists (ACLs) based on:									
Source IP address				1.0.0	Yes	Yes	Yes	Yes	No
Destination IP address				1.0.0	Yes	Yes	Yes	Yes	No
TCP/UDP source port				1.0.0	Yes	Yes	Yes	Yes	No
TCP/UDP destination port				1.0.0	Yes	Yes	Yes	Yes	No
IP protocol type				1.0.0	Yes	Yes	Yes	Yes	No
Source MAC address				1.0.0	Yes	Yes	Yes	Yes	No
Destination MAC address				1.0.0	Yes	Yes	Yes	Yes	No
Ethertype				1.0.0	Yes	Yes	Yes	Yes	No
TCP Flags, Protocol type, IP fragment flags, DSCP, CoS, IP precedence, VLAN			IP fragment flags are not supported on Qumran	1.0.0	Yes	Yes	Yes	Yes	No
Rule prioritization and Re sequence				1.0.0	Yes	Yes	Yes	Yes	No
On-fly modification				1.0.0	Yes	Yes	Yes	Yes	No

Feature Matrix

Feature Name	Standard	Comments	Exceptions	First Version Supported	Dell	Delta-Agema	UFISpace	EdgeCore	EdgeCore vOLT
					S4248-FB/FBL-ON	AGC-7648A	S9500-30XS	AS-5912-54X, AS7316-26XB, AS5916-54XKS	ASXvOLT16
Hardware-Specific Features									
General									
Switched port analyzer (SPAN)				1.0.0	Yes	Yes	Yes	Yes	No
Remote switched port analyzer (RSPAN)				1.0.0	Yes	Yes	Yes	Yes	No
Unified Forwarding Table (UFT)					No	No	No	No	No
Load balancing		Fields: L2 MAC addresses, ether type, L3 IP addresses, IP protocol type, and TCP/UDP port numbers, labels		1.0.0	Yes	Yes	Yes	Yes	No
Dynamic load balancing (RTAG7 hash)					No	No	No	No	No
Port Breakout					No	No	No	No	No
TCAM space monitoring				1.0.0	Yes	Yes	Yes	Yes	No
Chassis Monitoring									
Temperature monitor				1.0.0	Yes	Yes	Yes	Yes	Yes
Fan control				1.0.0	Yes	Yes	Yes	Yes	Yes
Power Monitoring		PSU hardware monitor is on by default, software does not report the violation.			No	No	No	No	Yes
CPU load monitoring				1.0.0	Yes	Yes	Yes	Yes	Yes
Board information (EEPROM)				1.0.0	Yes	Yes	Yes	Yes	No
PSU FRU information				1.0.0	Yes	Yes	Yes	No	No
Fan FRU information				1.0.0	Yes	No	No	No	No
Hardware MIB and Traps				1.0.0	Yes	Yes	Yes	Yes	Yes
Digital Diagnostics Monitoring									
Temperature monitor				1.0.0	Yes	Yes	Yes	Yes	No
Power Monitoring(Power, Current, Voltage)				1.0.0	Yes	Yes	Yes	Yes	No
Hardware MIB and Traps				1.0.0	Yes	Yes	Yes	Yes	No
Timing and Synchronization									
SyncE	G.8262			SP1.0 ED2.3	No	No	Yes	Yes (AS7316-26XB only)	No
ESMC	G.8264		LAG not supported	SP1.0 ED2.3	No	No	Yes	Yes (AS7316-26XB only)	No
G.8275.1 (T-BC)	G.8275.1 (T-BC)		LAG supported	SP1.0 ED2.3	No	No	Yes	Yes (AS7316-26XB only)	No
G.8273.2	G.8273.2 (T-BC)			SP1.0 ED2.3	No	No	Yes	Yes (AS7316-26XB only)	No
G 8275.1 (T-GM) with antenna compensation	G 8275.1 (T-GM)			SP1.0 ED3.0	No	No	Yes	No	No
Subinterface									
L3 Subinterface									
L3 termination of IPv4 and IPv6 packets				SP1.0 ED2.3	Yes	Yes	Yes	Yes	No
Subinterface on channel group (LAG)				SP1.0 ED2.3	Yes	Yes	Yes	Yes	No
VLAN tagged packet - single / double for 802.1q and 802.1ad and combination			802.1aq not supported	SP1.0 ED2.3	Yes	Yes	Yes	Yes	No
VLAN tagged packet- 9100,9200 TPID		8100 - default TPID	Only 2 TPID per parent interface are supported at a time	SP 3.0	Yes	Yes	Yes	Yes	No
IPv4 & IPv6 Unicast routing			ISIS IPv6 is not supported BFD IPv6 is not supported	SP1.0 ED2.3	Yes	Yes	Yes	Yes	No
IP VRF				SP1.0 ED2.3	Yes	Yes	Yes	Yes	No
MPLS support		Following are supported: LDP RSVP L3VPN service		SP1.0 ED2.3	Yes	Yes	Yes	Yes	No
MAC and IPv4 ACL				SP 3.0	Yes	Yes	Yes	Yes	No

Feature Matrix

Feature Name	Standard	Comments	Exceptions	First Version Supported	Dell	Delta-Agema	UFISpace	EdgeCore	EdgeCore vOLT
					S4248-FB/FBL-ON	AGC-7648A	S9500-30XS	AS-5912-54X, AS7316-26XB, AS5916-54XKS	ASXvOLT16
QoS		Following are supported: dscp-to-queue dscp-to-dscp Policer & Remarking		SP 3.0	Yes	Yes	Yes	Yes	No
L2 Subinterface									
VLAN tagged packets - single/double for 802.1q and 802.1ad(88a8/9100/9200)		8100 - default TPID	Only 2 TPID per parent interface are supported at a time	SP 3.0	Yes	Yes	Yes	Yes	No
Untagged & Default				SP 3.0	Yes	Yes	Yes	Yes	No
Static and Dynamic channel-group				SP 3.0	Yes	Yes	Yes	Yes	No
Rewrite operations - PUSH/POP/TRANSLATE for subinterface				SP 3.0	Yes	Yes	Yes	Yes	No
AC-AC Cross-connect service				SP 3.0	Yes	Yes	Yes	Yes	No
MAC and IPv4 ACL				SP 3.0	Yes	Yes	Yes	Yes	No
QoS		Following are supported: cos-to-queue queue-color-to-cos Policer & Remarking		SP 3.0	Yes	Yes	Yes	Yes	No
VLAN range				SP 3.0	Yes	Yes	Yes	Yes	No
Optical Line Terminal									
XGS-PON	ITU-G.988, ITU-G.987			SP 3.0	No	No	No	Yes (AS-5912-54X only)	Yes
Multiple OLT support				SP 3.1	No	No	No	Yes (AS-5912-54X only)	No
ONU provisioning (manual and automatic modes)	ITU-G.988, ITU-G.987.3			SP 3.0	No	No	No	Yes (AS-5912-54X only)	Yes
1:1 VLAN translation	TR-156			SP 3.0	No	No	No	Yes (AS-5912-54X only)	Yes
Bandwidth allocation, Traffic shaping & QoS handling	ITU-G.988, ITU-G.987.3			SP 3.0	No	No	No	Yes (AS-5912-54X only)	Yes
DHCP relay Option-82	RFC-3046			SP 3.0	No	No	No	Yes (AS-5912-54X only)	Yes
PON ACL				SP 3.0	No	No	No	No	Yes
PON and NNI statistics				SP 3.0	No	No	No	Yes (AS-5912-54X only)	Yes

Feature by SKU

Feature Name	OcNOS_SP_IPBASE	OcNOS_SP_IPADV_CE_AGGR	OcNOS_SP_MPLS	OcNOS_SP_CSR	OcNOS_SP_OLT_LITE	OcNOS_SP_OLT_SA_IPBASE	OcNOS_SP_OLT_SA_IPMPLS
Layer 2							
Virtual Local Area Network (VLAN)	**Yes**	**Yes**	**Yes**	**Yes**	**No**	**Yes**	**Yes**
Virtual LANs with Port-based VLANs	Yes	Yes	Yes	Yes	No	Yes	Yes
Routed VLAN interface	Yes	Yes	Yes	Yes	No	Yes	Yes
Port based VLAN interface	Yes	Yes	Yes	Yes	No	Yes	Yes
Private VLAN	Yes	Yes	Yes	Yes	No	Yes	Yes
Ingress and egress VLAN translation f	Yes	Yes	Yes	Yes	No	Yes	Yes
Cvlan translation at CEP	Yes	Yes	Yes	Yes	No	Yes	Yes
Q-in-Q	Yes	Yes	Yes	Yes	No	Yes	Yes
L2PT	Yes	Yes	Yes	Yes	No	Yes	Yes
Spanning Tree Protocol (STP)	**Yes**	**Yes**	**Yes**	**Yes**	**No**	**Yes**	**Yes**
STP	Yes	Yes	Yes	Yes	No	Yes	Yes
Multiple Spanning Tree Protocol (MS	Yes	Yes	Yes	Yes	No	Yes	Yes
Rapid Spanning Tree (RSTP)	Yes	Yes	Yes	Yes	No	Yes	Yes
Link Layer Discovery Protocol (LLDP)	**Yes**	**Yes**	**Yes**	**Yes**	**No**	**Yes**	**Yes**
LLDP v2	Yes	Yes	Yes	Yes	No	Yes	Yes
Link Aggregation (L2 only)	**Yes**	**Yes**	**Yes**	**Yes**	**No**	**Yes**	**Yes**
Multi-Chassis Link Aggregation	**Yes**	**Yes**	**Yes**	**Yes**	**No**	**Yes**	**Yes**
Other Layer 2 Features							
BPDU Protect	Yes	Yes	Yes	Yes	No	Yes	Yes
Root Guard	Yes	Yes	Yes	Yes	No	Yes	Yes
MAC Learning Disable	Yes	Yes	Yes	Yes	No	Yes	Yes
Static MAC Address Assignment	Yes	Yes	Yes	Yes	No	Yes	Yes
Port based authentication with Radiu	No	No	No	No	No	No	No
Layer 3							
Address Resolution Protocol (ARP)	**Yes**	**Yes**	**Yes**	**Yes**	**No**	**Yes**	**Yes**
Ethernet ARP	**Yes**	**Yes**	**Yes**	**Yes**	No	**Yes**	**Yes**
Path MTU	**No**	**No**	**No**	**No**	**No**	**No**	**No**
Path MTU for IPv4 & IPv6							
Routing	**Yes**	**Yes**	**Yes**	**Yes**	No	**Yes**	**Yes**
Transmission of IP Datagrams over Ethernet	Yes	Yes	Yes	Yes	No	Yes	Yes
Congestion Control in IP/TCP Networks	Yes	Yes	Yes	Yes	No	Yes	Yes
IP Broadcast	Yes	Yes	Yes	Yes	No	Yes	Yes
IP Broadcast in the Presence of Subnets	Yes	Yes	Yes	Yes	No	Yes	Yes
IP Subnetting	Yes	Yes	Yes	Yes	No	Yes	Yes
Classless Inter-Domain Routing (CIDR)	Yes	Yes	Yes	Yes	No	Yes	Yes
Requirements for IP Version 4 Routers	Yes	Yes	Yes	Yes	No	Yes	Yes
Route Redistribution across RIP, OSPF and BGP	Yes	Yes	Yes	Yes	No	Yes	Yes
VLAN Routing	Yes	Yes	Yes	Yes	No	Yes	Yes
URPF (Unicast Reverse Path Forwarding)	**Yes**	**Yes**	**Yes**	**Yes**	**No**	**Yes**	**Yes**
Border Gateway Protocol (BGP)	**Yes**	**Yes**	**Yes**	**Yes**	**No**	**Yes**	**Yes**
Routing Information Protocol (RIP)	**Yes**	**Yes**	**Yes**	**Yes**	**No**	**Yes**	**Yes**
Open Shortest Path First (OSPF)	**Yes**	**Yes**	**Yes**	**Yes**	**No**	**Yes**	**Yes**
Intermediate System-Intermediate System (ISIS)	**Yes**	**Yes**	**Yes**	**Yes**	**No**	**Yes**	**Yes**
Bidirectional Forwarding Detection (BFD)	**Yes**	**Yes**	**Yes**	**Yes**	**No**	**Yes**	**Yes**
Virtual Router Redundancy Protocol (VRRP)	**Yes**	**Yes**	**Yes**	**Yes**	**No**	**Yes**	**Yes**

Feature by SKU

Feature Name	OcNOS_SP_IPBASE	OcNOS_SP_IPADV_CE_AGGR	OcNOS_SP_MPLS	OcNOS_SP_CSR	OcNOS_SP_OLT_LITE	OcNOS_SP_OLT_SA_IPBASE	OcNOS_SP_OLT_SA_IPMPLS
Multi-Protocol Label Switching (MPLS)							
General	**No**	**No**	**Yes**	**Yes**	**No**	**No**	**Yes**
MPLS Architecture	No	No	Yes	Yes	No	No	Yes
MPLS Label Stack Encoding	No	No	Yes	Yes	No	No	Yes
Time To Live (TTL) Processing in Multi-Protocol Label Switching (MPLS) Networks	No	No	Yes	Yes	No	No	Yes
MPLS Diffserv	No	No	Yes	Yes	No	No	Yes
Multiprotocol Label Switching (MPLS) Label Switching Router (LSR) Management Information Base (MIB)	No	No	Yes	Yes	No	No	Yes
Multiprotocol Label Switching (MPLS) Forwarding Equivalence Class to Next Hop Label Forwarding Entry (FEC-To-NHLFE) Management Information Base (MIB)	No	No	Yes	Yes	No	No	Yes
Label Distribution Protocol (LDP)	**No**	**No**	**Yes**	**Yes**	**No**	**No**	**Yes**
Resource Reservation Protocol (RSVP)	**No**	**No**	**Yes**	**Yes**	**No**	**No**	**Yes**
Layer 2 VPN (VPWS and VPLS)	**No**	**No**	**Yes**	**Yes**	**No**	**No**	**Yes**
Layer 3 VPN	**No**	**No**	**Yes**	**Yes**	**No**	**No**	**Yes**
MPLS OAM	**No**	**No**	**Yes**	**Yes**	**No**	**No**	**Yes**
MPLS PW and LSP Traffic Statistics	**No**	**No**	**Yes**	**Yes**	**No**	**No**	**Yes**
Carrier Ethernet							
Connectivity Fault Management (CFM)	**No**	**Yes**	**Yes**	**Yes**	**No**	**No**	**Yes**
Performance Monitoring	**No**	**Yes**	**Yes**	**Yes**	**No**	**No**	**Yes**
Frame Delay and inter frame dealy variation measurment using DMM and DMR over L2 Bridge	No	Yes	Yes	Yes	No	No	Yes
Frame Dealy and inter frame dealy variation measurment using DMM and DMR over VPWS	No	Yes	Yes	Yes	No	No	Yes
Frame Loss Measurment using LMM/LMR and SLM/SLR over VPWS	No	Yes	Yes	Yes	No	No	Yes
Ethernet Ring Protection (ERPS)	**No**	**Yes**	**Yes**	**Yes**	**No**	**No**	**Yes**
VXLAN with EVPN	**Yes**	**Yes**	**Yes**	**No**	**No**	**Yes**	**Yes**
EVPN for VXLAN	Yes	Yes	Yes	No	No	Yes	Yes
EVPN Multihoming for VXLAN	Yes	Yes	Yes	No	No	Yes	Yes
VxLAN - QoS	Yes	Yes	Yes	No	No	Yes	Yes
VxLAN support over SVI interface	Yes	Yes	Yes	No	No	Yes	Yes
Multicast							
Protocol Independent Multicast (PIM)	**Yes**	**Yes**	**Yes**	**Yes**	**No**	**Yes**	**Yes**
Internet Group Management Protocol (IGMP)	**Yes**	**Yes**	**Yes**	**Yes**	**No**	**Yes**	**Yes**
Considerations for IGMP Snooping Switches					No		
IGMP-based Multicast Forwarding ("IGMP Proxying")					No		
Multicast Listener Discovery (MLD)	**Yes**	**Yes**	**Yes**	**Yes**	**No**	**Yes**	**Yes**
Quality of Service (QoS)							
General							

Feature by SKU

Feature Name	OcNOS_SP_IPBASE	OcNOS_SP_IPADV_CE_AGGR	OcNOS_SP_MPLS	OcNOS_SP_CSR	OcNOS_SP_OLT_LITE	OcNOS_SP_OLT_SA_IPBASE	OcNOS_SP_OLT_SA_IPMPLS
DiffServ Field in IPv4/IPv6 Headers	Yes	Yes	Yes	Yes	No	Yes	Yes
Assign matching traffic flow to a specific queue	Yes	Yes	Yes	Yes	Yes	Yes	Yes
1/2/3 Level queuing hierarchy	Yes	Yes	Yes	Yes	No	Yes	Yes
L2 and L3 QoS	Yes	Yes	Yes	Yes	No	Yes	Yes
Shaping per queue, per port	Yes	Yes	Yes	Yes	No	Yes	Yes
Multiple hardware queues per port	Yes	Yes	Yes	Yes	No	Yes	Yes
WFQ/SP Scheduling Per Queue	Yes	Yes	Yes	Yes	No	Yes	Yes
WRED	Yes	Yes	Yes	Yes	No	Yes	Yes
802.1p remarking	Yes	Yes	Yes	Yes	No	Yes	Yes
Classification based on interface, ACL, DSCP, IP precedence, RTP, 802.1p, and VLAN	Yes	Yes	Yes	Yes	No	Yes	Yes
Trust IEEE 802.1p/DSCP	Yes	Yes	Yes	Yes	No	Yes	Yes
Remarking of bridged packets	No	No	No	No	No	No	No
Police Rate (SRTCM/TRTCM)	Yes	Yes	Yes	Yes	No	Yes	Yes
Minimum and Maximum Bandwidth Per Queue	Yes	Yes	Yes	Yes	No	Yes	Yes
Service Queuing (Mapping services to specific vlans and shaping each vlan based traffic)	Yes	Yes	Yes	Yes	No	Yes	Yes
Management							
Role based CLI management and access	Yes	Yes	Yes	Yes	No	Yes	Yes
CLI access via console, telnet and SSH	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Authentication using tacacs+/radius client	Yes	Yes	Yes	Yes	No	Yes	Yes
Extended ping and traceroute	Yes	Yes	Yes	Yes	No	Yes	Yes
SNMP v1, v2, and v3	Yes	Yes	Yes	Yes	No	Yes	Yes
sFlow	No	No	No	No	No	No	No
DHCP client	Yes	Yes	Yes	Yes	No	Yes	Yes
DHCP relay	Yes	Yes	Yes	Yes	No	Yes	Yes
NTP Client	Yes	Yes	Yes	Yes	No	Yes	Yes
syslog	Yes	Yes	Yes	Yes	Yes	Yes	Yes
File Upload/Download using FTP/TFTP/SFTP/SCP	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Management VRF	Yes	Yes	Yes	Yes	No	Yes	Yes
Ansible	Yes	Yes	Yes	Yes	No	Yes	Yes
Yang	Yes	Yes	Yes	Yes	No	Yes	Yes
NETCONF	Yes	Yes	Yes	Yes	No	Yes	Yes
Upgrade Mechanism from ONIE prompt using onie nos install and from OcNOS shell using sys-update	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Zero Touch Provisioning (ZTP)(with IPv4)	Yes	Yes	Yes	Yes	Yes	Yes	Yes
ACL support over Management, VTY and Loopback	Yes	Yes	Yes	Yes	No	Yes	Yes
License Server	Yes	Yes	Yes	Yes	No	Yes	Yes
Two-Way Active Measurement Protocol (TWAMP)	Yes	Yes	Yes	Yes	No	Yes	Yes
Security							
General							
Secure interface login and password	Yes	Yes	Yes	Yes	No	Yes	Yes
Storm control	Yes	Yes	Yes	Yes	No	Yes	Yes
Flow control	Yes	Yes	Yes	Yes	No	Yes	Yes
DHCP Snooping	No	No	No	No	No	No	No
IP Source Gaurd	No	No	No	No	No	No	No

Feature by SKU

Feature Name	OcNOS_SP_IPBASE	OcNOS_SP_IPADV_CE_AGGR	OcNOS_SP_MPLS	OcNOS_SP_CSR	OcNOS_SP_OLT_LITE	OcNOS_SP_OLT_SA_IPBASE	OcNOS_SP_OLT_SA_IPMPLS
Access Control Lists (ACLs) based on criteria	**Yes**	**Yes**	**Yes**	**Yes**	**No**	**Yes**	**Yes**
Hardware-Specific Features							
General							
Switched port analyzer (SPAN)	Yes	Yes	Yes	Yes	No	Yes	Yes
Remote switched port analyzer (RSPAN)	Yes	Yes	Yes	Yes	No	Yes	Yes
Unified Forwarding Table (UFT)	No	No	No	No	No	No	No
Load balancing	Yes	Yes	Yes	Yes	No	Yes	Yes
Dynamic load balancing (RTAG7 hash)	No	No	No	No	No	No	No
Port Breakout	No	No	No	No	No	No	No
TCAM space monitoring	Yes	Yes	Yes	Yes	No	Yes	Yes
Chassis Monitoring							
Temperature monitor	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Fan control	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Power Monitoring					Yes	Yes	Yes
CPU load monitoring	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Board information (EEPROM)	Yes	Yes	Yes	Yes	Yes	Yes	Yes
PSU FRU information	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Fan FRU information	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Hardware MIB and Traps	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Digital Diagnostics Monitoring	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**
Temperature monitor	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Power Monitoring(Power, Current, Voltage)	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Hardware MIB and Traps	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Timing and Synchronization							
SyncE	No	No	No	Yes	No	No	No
ESMC	No	No	No	Yes	No	No	No
G.8275.1 (T-BC)	No	No	No	Yes	No	No	No
G.8273.2	No	No	No	Yes	No	No	No
G 8275.1 (T-GM) with antenna compensation	No	No	No	Yes	No	No	No
Subinterface							
L3 Subinterface	**Yes**	**Yes**	**Yes**	**Yes**	**No**	**Yes**	**Yes**
L2 Subinterface	**Yes**	**Yes**	**Yes**	**Yes**	**No**	**Yes**	**Yes**
Optical Line Terminal	**No**	**No**	**No**	**No**	**Yes**	**Yes**	**Yes**
XGS-PON	No	No	No	No	Yes	Yes	Yes
Multiple OLT support	No	No	No	No	No	Yes	Yes
ONU provisioning (manual and automatic modes)	No	No	No	No	Yes	Yes	Yes
1:1 VLAN translation	No	No	No	No	Yes	Yes	Yes
Bandwidth allocation, Traffic shaping & QoS handling	No	No	No	No	Yes	Yes	Yes
DHCP relay Option-82	No	No	No	No	Yes	Yes	Yes
PON ACL	No	No	No	No	Yes	No	No
PON and NNI statistics	No	No	No	No	Yes	Yes	Yes

Platform Support Matrix

Platform	OCNOS_SP_IPADV_CE_AGGR	OCNOS_SP_MPLS	OCNOS_SP_IPBASE	OCNOS_SP_CSR	OCNOS_SP_OLT_LITE	OCNOS_SP_OLT_SA_IPBASE	OCNOS_SP_OLT_SA_MPLS
DELL_S4248-ON	✓	✓	✓	✗	✗	✗	✗
DELTA_AGC7648A	✓	✓	✓	✗	✗	✗	✗
EC_AS5912-54X	✓	✓	✓	✗	✗	✓	✓
EC_AS5916-54XKS	✓	✓	✓	✗	✗	✗	✗
EC_AS7316-26XB	✗	✗	✗	✓	✗	✗	✗
UFI_S9500-30XS	✗	✗	✗	✓	✗	✗	✗
EC_ASXVOLT16	✗	✗	✗	✗	✓	✗	✗