

ZebOS-XP 1.4 Feature Matrix

Release Dates

- July 2013 1.0
- August 2013 1.0.1
- October 2013 1.0.2
- April 2014 1.1; Standards Supported merged into Feature Matrix
- December 2014 1.2
- July 2015 1.3
- September 2015 1.3.1
- November 2015 1.3.2
- December 2015 1.4

All technical manuals are available to licensed customers at:

http://www.ipinfusion.com/support/document_list

For SNMP MIB support, see the ZebOS-XP MIB compliance documents

For additional information, please contact:

support@ipinfusion.com

	Legend
Feature	Name of the feature
SKU	Stock keeping unit
Standard	Standards organization (such as IEEE or IETF) definition or format; if blank, then no standard applies
Sub-features not supported	Parts of the feature not supported
Version first supported	ZebOS-XP version where the feature was first supported
Previous version validated	ZebOS-XP version where the feature was last validated
ZebOS-XP 1.4	Whether feature is validated in this verison
Forwarder Support	Whether feature is supported by software forwarder (L2 or MPLS only)
Data plane integration	ZebIC versions and platforms validated
Comments	Details about platform support
Yes	Validated
No	Not validated
Ecosystem	Support supplied by Linux, TCP/IP stack, and/or chipset

			П		ZebOS	SXP													ZebIC									
Feature	sku	Standard	Sub-features not supported	Version first supported	Previous version validated	ZebOS-XP 1.4	Forwarder	Support								Data plane	integration											Comments
			•	subborted	validated				ZebIC	2.1 (ZebOS version	on 7.10.1)		ZebIC 3.	1 (ZebOS-XP ver	sion 1.1)			ZebIC 3.2 (ZebO	S-XP version 1.2	9	T T	ZebIC 4.0 (ZebC	S-XP version 1.	3)	Zet	oIC 4.1(ZebOS-XP ve	ersion 1.4)	+
								Comments	PMC-Sierra Winpath-3	Broadcom BCM56846 Trident+	Broadcom BCM56440 Katana	Broadcom BCM56846 Trident+	Broadcom BCM56440 Katana	Broadcom BCM56643 Triumph3	Marvell Prestera CX 8248/8234 Lion	Marvell Prestera 98CX8129 Hooper	Broadcom BCM56850 Trident2	Broadcom BCM56643 Triumph3	Marvell Prestera 98CX8296 Lion2	Marvell Prestera 98CX8129 Hooper	Broadcom BCM56440 Katana	Broadcom BCM56850 Trident2	Marvell Prestera 98CX8296 Lion2	Marvell Prestera 98CX8129 Hooper	Marvell Prestera 98CX8296 Lion2	Broadcom BCM56850 Trident2	Broadcom BCM56340 Helix4	
VLANs									Willbattis	IIIdeitt+	Ratalia	I Hidelite	Ratalia	mumons	LIOII	noober	Tridentz	mumbiis	LIGHZ	noober	Nataria	moentz	LIGHZ	Hoodel	Lionz	Indentz	nenze	
Virtual LANs with Port-based VLANs	ZOS-XP-L2-VLAN	IEEE 802.1Q (2005)		XP 1.0	XP 1.3	Yes			Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
IP Subnet-based VLAN classifiers	ZOS-XP-L2-VCLASS			XP 1.0	XP 1.3	Yes			No	Yes	Yes	Yes	Yes	Yes	No	No	Yes	Yes	No	No	Yes	Yes	No	No	No	Yes	Yes	
Private VLANs	ZOS-XP-L2-VLAN			XP 1.0	XP 1.3	Yes			No	Yes	Yes	Yes	Yes	Yes	No	No	Yes	Yes	No	No	Yes	Yes	No	No	No	Yes	Yes	
VLAN classifiers	ZOS-XP-L2-VCLASS	IEEE 802.1v		XP 1.0	XP 1.3	Yes			No	Yes	Yes	Yes	Yes	Yes	No	No	Yes	Yes	No	No	Yes	Yes	No	No	No	Yes	Yes	
Spanning Tree (STP)																												
Spanning Tree (STP)	ZOS-XP-L2-xSTP	IEEE 802.1D (2004)		XP 1.0	XP 1.3	Yes			Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	\top
Multiple Spanning Tree Protocol	ZOS-XP-L2-xSTP	IEEE 802.1Q (2005):		XP 1.0	XP 1.3	Yes			Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Rapid Spanning Tree (RSTP)	ZOS-XP-L2-xSTP	IEEE 802.1D (2004): Clause 17		XP 1.0	XP 1.3	Yes			Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Rapid Spanning Tree (RSTP) optimization for rings	ZOS-XP-L2-xSTP		i e	XP 1.0	No	No			No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	
Rapid Per-VLAN Spanning Tree Plus (RPVST4)	ZOS-XP-L2-xSTP	Cisco version of Spanning tree/Rapid spanning tree	i i	XP 1.0	XP 1.3	Yes			Yes	Yes	Yes	Yes	Yes	Yes	No	No	Yes	Yes	No	No	Yes	Yes	No	No	No	No	No	
Disable Spanning Tree on Specific Instance	ZOS-XP-L2-xSTP		i i	XP 1.0	No	No			No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	
Support for 64 MSTP Instances	ZOS-XP-L2-xSTP			XP 1.0	XP 1.3	Yes			Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	APS and ERPS share mstp instances
MSTP Enhancement of Display for STPBPDU Statistics	ZOS-XP-L2-xSTP			XP 1.0	No	No			No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	
MSTP Enhancement for Port Timer and Port Receive Pseudo-Information State Machinea	d e ZOS-XP-L2-xSTP	IEEE 802.1ah		XP 1.0	No	No			No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	
MIB-II	ZOS-XP-L2-xSTP	RFC 1213		XP 1.0	No	No			No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	
Definitions of Managed Objects for Bridges	ZOS-XP-L2-xSTP	RFC 4188		XP 1.0	XP 1.3	Yes			No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	
Definitions of Managed Objects for Bridges with Traffic Classes, Multicast Filtering, and Virtual LAN Extensions.	II ZOS-XP-L2-xSTP	RFC 4363		XP 1.0	XP 1.3	Yes			No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	
Definitions of Managed Objects for Bridges with Rapid Spanning Tree Protocol (RSTP)	ZOS-XP-L2-xSTP	RFC 4318		XP 1.0	XP 1.3	Yes			No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	
MSTP MIB	ZOS-XP-L2-xSTP	draft-malhotra-mstpmib-		XP 1.0	XP 1.3	Yes			No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	
Registration Frameworks																												
Generic Attribute Registration Protocol (GARP)	ZOS-XP-L2-XRP	IEEE 802.1Q (2005)		XP 1.0	XP 1.3	Yes			No.	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	
Dynamic L2 Multicast Registration Protocol (GMRP)	ZOS-XP-L2-XMRP	IEEE 802.1Q (2005)		XP 1.0	XP 1.3	Yes			No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	
Generic VLAN Registration Protocol (GVRP)	ZOS-XP-L2-XVRP	IEEE 802.1Q (2005)		XP 1.0	XP 1.3	Yes			No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	
Multiple Registration Protocol (MRP)	ZOS-XP-L2-XRP	IEEE 802.1ak draft 8, 2007		XP 1.0	XP 1.3	Yes			No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	T
Multiple Multicast Registration Protocol (MMRP)	ZOS-XP-L2-XMRP	IEEE 802.1ak draft 8, 2007		XP 1.0	XP 1.3	Yes			No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	
Multiple VLAN Registration Protocol (MVRP)	ZOS-XP-L2-XVRP	IEEE 802.1ak draft 8, 2007		XP 1.0	XP 1.3	Yes			No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	

				Maraian	Zeb08	S XP													ZebIC									
Feature	sku	Standard	Sub-features not supported	Version first supported	Previous version validated	ZebOS-XP 1.4	Forwarder 5	Support								Data plane	integration											Comments
								Comments	ZebIC PMC-Sierra	2.1 (ZebOS version Broadcom BCM56846	Broadcom BCM56440	Broadcom BCM56846	Broadcom BCM56440	Broadcom BCM56643	Marvell Prestera CX	Marvell Prestera 98CX8129	Broadcom BCM56850	ZebIC 3.2 (ZebOS Broadcom BCM56643	Marvell Prestera	Marvell Prestera 98CX8129	Broadcom BCM56440	Broadcom BCM56850	Marvell Prestera	Marvell Prestera 98CX8129	Marvell Prestera	Broadcom BCM56850	Broadcom BCM56340	
Carrier Ethernet												BCM56846			8248/8234				98CX8296				98CX8296		98CX8296			
Provider Bridging (Q-in-Q) Double VLANVMAN Tagging	ZOS-XP-L2-PB ZOS-XP-L2-PB	IEEE 802.1ad/D6.0		XP 1.0 XP 1.0	XP 1.3 XP 1.3	Yes Yes			Yes Yes	Yes Yes	Yes Yes	Yes	Yes	Yes Yes	No No	No No	Yes Yes	Yes Yes	No No	No No	Yes Yes	Yes Yes	No No	No No	No No	Yes Yes	No No	
Provider Backbone Bridging (PBB) (MAC-in-MAC)	ZOS-XP-L2-PBB	IEEE 802.1ah/D4.1 IEEE 802.1Qay-D4.5 IEEE 802.1ap/D3.2, clause 17.5.8		XP 1.0	XP 1.3	Yes			No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	
Connectivity Fault Management (CFM)	ZOS-XP-L2-CFM	IEEE 802.1ag 2007		XP 1.0	XP 1.3	Yes			PARTIAL	No	PARTIAL	No	PARTIAL	PARTIAL	No	No	No	PARTIAL	No	No	PARTIAL	No	No	No	No	Yes	No	CCM and other features like loopback, linktrace have Cf support
Connectivity Fault Management Enhancement for B-VLAN, I-SID and LAN segments		IEEE 802.1ah		XP 1.0	No	No			PARTIAL	No	PARTIAL	No	PARTIAL	PARTIAL	No	No	No	PARTIAL	No	No	PARTIAL	No	No	No	No	No	No	B-VLAN and I- SID is not supported
Connectivity Fault Management MIB Connectivity Fault Management Enhancement for Provider Backbone Bridging –Traffic Engineering	ZOS-XP-L2-CFM ZOS-XP-PBB-TE	IEEE 802.1ag 2007		XP 1.0 XP 1.0	No No	No No			No No	No No	No No	No No	No No	No No	No No	No No	No No	No No	No No	No No	No No	No No	No No	No No	No No	No No	No No	
Bridging -Traffic Engineering	205-AP-P88-1E	IEEE 802.1Qssy		AP 1.0	NO	NO			NO.	NO	NO	No.	NO	NO.	No.	NO	NO	No	NO	NO.	NO.	NO	NO	NO	NO	NO	NO.	
OAM Functions and Mechanisms for Ethernet-based networks	ZOS-XP-L2-CFM	ITU-Y.1731/05-08 IEEE 802.1ag 2007		XP 1.0	Partial	Partial			PARTIAL	No	PARTIAL	No	PARTIAL	PARTIAL	No	No	No	PARTIAL	No	No	PARTIAL	No	No	No	No	Yes	No	Loss measurement an delay measurement features have CF support.
Ethernet to the First Mile (EFM)	ZOS-XP-L2-EFM ZOS-XP-L2-ETH-OAM	IEEE 802.3ah - IEEE 802.3ah - 2004 clause		XP 1.0	Partial	Partial			PARTIAL	No.	PARTIAL	No.	PARTIAL	PARTIAL	No.	No.	No No	PARTIAL	No.	No.	PARTIAL	No No	No No	No.	No No	No No	No.	
Ethernet Link OAM	BNDL	57	Ethernet OAM statistics	XP 1.0	Partial	Partial			No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	
Eithernet Link OAM		RFC 4878	group table, section 6: thisise are allways set to zero: dot30-am/variableReques tRx dot30-am/variableRespon seTx dot30-am/variableRespon seRx	XP 1.0	Partial	Partial			Yes	No	Yes	No	Yes	Yes	No	No	No	Yes	No	No	Yes	No	No	No	No	No	No	
Ethernet Senice OAM	ZOS-XP-L2-ETH-OAM BNDL	IEEE 802.3ah – 2004 clause 57 ITU-T Y.1731/05-2006 IEEE 802.1ag – 2007 amandraret 5 IEEE 802.1Qay/D4.5 – clause 28.9	CFM configuration sensors, IEEE 802.1ag - 2007; section 22.2.4 net supported. The statement *MB variables can be quaried by OAM client (on the Ethannet Irisk) using OAMPOUT is not supported; IEEE 802.3ah 2004; Clause ST, OAM client Braniss are a part of the protocol module	XP 1.0	No	No			PARTIAL	No	Yes	No	Yes	Yes	No	No	No	Yes	No	No	Yes	No	No	No	No	No	No	WP3 - Loss measurement ar delay measurement ar not supported
Service OAM		MEF 17: implamentation based on ITU-T Y1731 and IEEE 802.1ag 2007		XP 1.0	No	No			PARTIAL	No	Yes	No	Yes	Yes	No	No	No	Yes	No	No	Yes	No	No	No	No	No	No	WP3 - Loss measurement an delay measurement an not supported
Metro Ethernet Forum (MEF) UNI specifications (Type I and 2, only) ENNI specifications		MEF 11 MEF 20 Section 8 MEF 20 Section 9 MEF 20 Section 10 MEF 10.2 MEF 6.1, 6.1.1, 33 MEF 10.2, 10.2.1, 26.1		XP 1.0	XP 1.3	Yes			No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	
User Network Interface (UNI) Type 1		MEF 10.2, 10.2.1, 26.1 MEF 13		XP 1.0	Partial	Partial			No.	No	No	No	No	No	No.	No	No	No	No	No	No	No	No	No	No	No	No	
User Network Interface (UNI) Type 1 Implementation Agreement (Type 1.1 and 1.2) Provider Backbone Transport (PBT or PBB-TE)	ZOS-XP-PBB-TE	ITU-T-9G15/Q12 IEEE 802.1Qay		XP 1.0	No	No			No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	
	ZOS-XP-PBB-TE	IEEE 802.1Qay		XP 1.0	No	No.			No.	No.	No.	No.	No	No.	No.	No	No.	No.	No.	No.	No.	No.	No.	No.	No	No	No	
Ethernet Protection Switching	ZOS-XP-EPS	IEEE 802.1Qay/D4.5 clause 26.10 TIL-F G, 8031 - 06.2006 TIL-F G, 8032 Amendment 1 - 10.2007 TIL-F G, 8032 - 06.2008 MEF 2	Protection types n:1 and 1:m MEF 2 sections 6.12.2 & 6.12.3; not specified in TNU-T G.803:18032 upon who for more section for the section for section for the	XP 1.0	No	No.			No.	No	Yes	No	Yes	Yes	No	No	No	Yes	No	No	Yes	No	No	No	No	No	No.	
	ZOS-XP-EPS	ITU-T G.8032- 02:2012 MEP2	Protection types n:1 and 1:n: MEF 2 sections 6:1-2.2 8 6:1-2.3 net specified in 1:n:0 0.80318032 upon which 2:e0-0-3-70 MEF 2 section 6:1-2.2 not section 6:1-2.2 not section 6:1-2.2 not relevant for setward for hardware	XP 1.0	XP 1.3	Yes			Yes	No	Yes	No	Yes	Yes	No	No	No	Yes	No	No	Yes	No	No	No	No	No	No	Control plane support
Automated Protection Switching for PBB-TE Data Center Bridging (DCBx)	ZOS-XP-EPS	IEEE 802.1Qay		XP 1.0	No	No			No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	
Congestion Notification	205-DCB	IEEE 802.1Qau draft 2.4		XP 1.0	XP 1.3	Yes			No.	Yes	No	Yes	No	No	No.	No	Yes	No	No	No	No	Yes	No	No	No	Yes	No	
Priority Flow Control Enhanced Transmission Selection	205-DCB 205-DCB	IEEE 802.1 Qbb IEEE 802.1 Qaz draft 2.5		XP 1.0 XP 1.0	XP 1.3 XP 1.3	Yes Yes	H		No No	Yes Yes	No No	Yes Yes	No No	No No	No No	No No	Yes Yes	No No	No No	No No	No No	Yes Yes	No No	No No	No No	Yes Yes	No No	
DCBX	ZOS-DCB	IEEE 802.1Qaz IEEE 802.1ab 2009		XP 1.0		Yes			No.	Yes	No	Yes	No	No	No	No	Yes	No	No.	No	No.	Yes	No	No	No	Yes	No	
Link Layer Discovery Protocol (ZOS-XP-L2-LLDP			XP 1.0	XP 1.3	Yes			Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
LLDP v2	ZOS-XP-L2-LLDP	IEEE 802.1ab 2009	No MIB support; no support for global variable on per agent basis	XP 1.0	XP 1.3	Yes			Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
	ZOS-XP-L2-LACP	IEEE 802.1AX-REV-D3.1		XP 1.0	XP 1.3	Yes			Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
LAG) LACP MIR	708-XPJ 2J ACP	IEEE 802.1AX-REV-D3.1 IEEE 802.1AX-REV-D3.1		XP 1.1 XP 1.0	No No	No No			No	No No	No No	No No	No No	No No	No No	No No	No No	No No	No	No	No No	No No	No	No	No	Yes No	No No	
Other Layer 2 Functionality IEEE 802.3x — Flow Cortrol	ZOS-XP-NSM	IEEE 802.3x		XP 1.0 XP 1.0	No XP 1.3	No Yes			Yes Yes	Yes Yes	Yes Yes	Yes Yes	Yes Yes	Yes Yes	Yes Yes	Yes Yes	Yes Yes	Yes Yes	Yes Yes	Yes Yes	Yes Yes	Yes Yes	Yes Yes	Yes Yes	Yes Yes	Yes Yes	Yes No	
Ethernet Priority with Provisioning and	208-Q08	IEEE 802.1X (2004) IEEE 802.1Q (2003)		XP 1.0	XP 1.3 No	Yes No			Yes Yes	Yes	Yes	Yes	Yes	Yes	Yes No	Yes No	Yes	Yes	Yes No	Yes No	Yes	Yes	Yes No	Yes No	Yes No	Yes	No No	
	ZOS-XP-ELMI	MEF 16		XP 1.0	Partial	Partial			Yes	Yes	Yes	Yes	Yes	Yes	No	No	Yes	Yes	No	No	Yes	Yes	No	No	No	Yes	No	
(E-LMI) Broadcast/Multicast/Unknown Unicast Storm Recovery	ZOS-XP-NSM	No public domain standard		XP 1.0	No	No		!	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	

					ZebOS	a ve													ZebIC									
Feature	SKU	Standard	Sub-features not supported	Version first supported	Previous version	ZebOS-XP 1.4	Forwarder S	Support	7-10	2.1 (ZebOS version	7404)		7-1-10-2	1 (ZebOS-XP ver	-i 4 4)	Data plane			S-XP version 1.2			7-bic / 0/7-b/	S-XP version 1.	**	7-1	IC 4.1(ZebOS-XP ve		Comments
							c	Comments	PMC-Sierra	Broadcom BCM56846	Broadcom BCM56440	Broadcom BCM56846	Broadcom BCM56440	Broadcom BCM56643	Marvell Prestera CX 8248/8234	Marvell Prestera 98CX8129	Broadcom BCM56850	Broadcom BCM56643	Marvell Prestera 98CX8296	Marvell Prestera 98CX8129	Broadcom BCM56440	Broadcom BCM56850	Marvell Prestera 98CX8296	Marvell Prestera 98CX8129	Marvell Prestera 98CX8296	Broadcom BCM56850	Broadcom BCM56340	
Jumbo Ethernet Frames	ZOS-XP-NSM			XP 1.0	No	No	in pl	LI support is available, rplementatio n is data lane/hardwar e specific	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Static MAC Filtering	ZOS-XP-NSM			XP 1.0	XP 1.2	No			Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Ī
MAC based VLANs	ZOS-XP-NSM			XP 1.0	XP 1.3	Yes			No	Yes	Yes	Yes	Yes	Yes	No	No	Yes	Yes	No	No	Yes	Yes	No	No	No	Yes	Yes	
Rate Limiting, Suppression	ZOS-XP-NSM			XP 1.0	No	No	in	LI support is available, replamentatio n is data lane/hardwar e specific	Partial	Partial	Partial	Partial	Partial	Partial	No	No	Partial	Partial	No	No	Partial	Partial	No	No	No	Partial	No	Suppression not supported

				1	ZebOS	XP													ZebIC									
Feature	SKU	Standard	Sub-features not supported	Version first	Previous version	ZebOS-XP 1.4	Forwarder	Support								Data plane	integration											Comments
				supported	validated				ZebIC	2.1 (ZebOS versio	n 7.10.1)		ZebIC 3.	1 (ZebOS-XP ver				ZebIC 3.2 (ZebO				ZebIC 4.0 (ZebC	S-XP version 1.			IC 4.1(ZebOS-XP ve	rsion 1.4)	
							•	Comments	PMC-Sierra	Broadcom BCM56846	Broadcom BCM56440	Broadcom BCM56846	Broadcom BCM56440	Broadcom BCM56643	Marvell Prestera CX 8248/8234	Marvell Prestera 98CX8129	Broadcom BCM56850	Broadcom BCM56643	Marvell Prestera 98CX8296	Marvell Prestera 98CX8129	Broadcom BCM56440	Broadcom BCM56850	Marvell Prestera 98CX8296	Marvell Prestera 98CX8129	Marvell Prestera 98CX8296	Broadcom BCM56850	Broadcom BCM56340	
Other Layer2 MIBs Ethemet-like MIB	ZOS-XP-NSM	RFC 1643		XP 1.0	No	No			No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	
	ZOS-XP-NSM All relevant protocol	RFC 2233	-	XP 1.0	No	No			No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	
RADIUS Authentication Client MIB Entity MIB version 2	modules ZOS-XP-NSM	RFC 2618		XP 1.0	No No	No No			No No	No No	No No	No No	No No	No No	No No	No No	No No	No No	No No	No No	No No	No No	No No	No No	No No	No No	No No	
RMON Groups 1, 2, 3 and 9	ZOS-RMON	RFC 2819		XP 1.0	No No	No No			Yes	Yes	Yes	Yes	Yes	Yes	No No	No No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Definitions for Port Access Control	ZOS-XP-L2-802.1x	draft-leff-bridge-8021x-03.txt		XP 1.0	No	No			No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	
Routing Bridges (RBridges): Base Protocol Specification	ZOS-TRILL	RFC 6325		XP 1.0	XP 1.3	Yes			No	Yes	No	Yes	No	No	No	No	Yes	No	No	No	No	Yes	No	No	No	Yes	No	
Routing Bridges (RBridges): Adjacency	y ZOS-TRILL	RFC 6327		XP 1.0	XP 1.3	Yes			No	Yes	No	Yes	No	No	No	No	Yes	No	No	No	No	Yes	No	No	No	Yes	No	
Transparent Interconnection of Lots of Links (TRILL) Use of IS-IS	ZOS-TRILL	RFC 6326		XP 1.0	XP 1.3	Yes			No	Yes	No	Yes	No	No	No	No	Yes	No	No	No	No	Yes	No	No	No	Yes	No	
RBridges: Appointed Forwarders	ZOS-TRILL	RFC 6439	Only a framework is available; no specific options are implemented	XP 1.0	XP 1.3	Yes			No	Yes	No	Yes	No	No	No	No	Yes	No	No	No	No	Yes	No	No	No	Yes	No	
Options Support	ZOS-TRILL	draft-ietf-trill-rbridge-options- 05		XP 1.0	No	No			No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	
OAM support	ZOS-TRILL	draft-ietf-trill-tbridge-cam-02 draft-yizhou-trill-multi- destination-ping-02		XP 1.0	No	No			No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	
MIB support	ZOS-TRILL	draft-ielf-trill-rbridge-mib-03		XP 1.0	XP 1.3	Yes			No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	
ESADI support	ZOS-TRILL	draft-ied-trill-esadi-00		XP 1.0	XP 1.3	Yes			No	Yes	No	Yes	No	No	No	No	Yes	No	No	No	No	Yes	No	No	No	Yes	No	
RBridge Channel Support Multi- destination Ping	ZOS-TRILL	draft-ietf-trill-rbridge-channel- 07.txt		XP 1.0	No	No			No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	
VxLAN																												
Unicast IPv4 host-to-host communication	ZOS-XP-VXLAN	RFC 7348			No	No			No	Yes	No	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	
Broadcast IPv4 communication and mapping to multicast	ZOS-XP-VXLAN	RFC 7348			No	No			No	Yes	No	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	
Synchronization																												Control Bloom
Precision Time Protocol	ZOS-SYN-PTP	IEEE 1588 2008 var 2		XP 1.0	XP 1.3	Yes			Yes	Partial	No	Partial	No	No	No	No	Partial	No	No	No	No	Partial	No	No	No	Partial	No	Control Plane supported in Broadcom Trident+
Synchronization layer functions	ZOS-SYN-SyncE	ITU-T G.781	Synchronization layer functions not partaining to packet networks, sections 5.1 to 5.11: only the general concepts of synchronization supported	XP 1.0	XP 1.3	Yes			No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	
Trings and synchronization sepects of packet networks	ZOS-SYN-SyndE	ITU-T G.8281	Nework limit, sections 2.1, 3.2 not supported to 2.1, 3.2 not supported soft-managed partners of the section of	XP 1.0	XP 1.3	Yes			No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	
Timing characteristics of synchronous Ethernet equipment slave clock	20S-SYN-SyncE	ITU-T G.8382	Measurements of frequency accuracy, pull- injubi-out ranges, noise generation/tolerance/tran- sfer, stansient response, hold-ower performance: not supported; performance: measurements for the synchronization naturok which are dependent on handware capability	XP 1.0	No	No			No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No.	
Distribution of timing through packet natworks	ZOS-SYN-SyncE	ITU-T G.8284	ESMC PDU extensions, section 11.4: for further study as per standard Multiple instances of salection algorithms: not supported; only single instances of clock-salection algorithm at one time.	XP 1.0	No	No			No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	

					Zeb08	P VD													ZebIC									
			Sub-features not	Version	Previous		Farmanda	er Support								Data plane	internation		Zeoit									
Feature	SKU	Standard	supported	first supported	version validated	ZebOS-XP 1.4	Forwarde	er Support								Data plane	-											Comments
								Comments	PMC-Sierra	2.1 (ZebOS versio Broadcom BCM56846	Broadcom BCM56440	Broadcom BCM56846	Broadcom BCM56440	Broadcom BCM56643	Marvell Prestera CX	Marvell Prestera	Broadcom BCM56850	Broadcom BCM56643	S-XP version 1.2 Marvell Prestera	Marvell Prestera	Broadcom BCM56440	Broadcom BCM56850	Marvell Prestera	Marvell Prestera	Marvell Prestera	Broadcom BCM56850	Broadcom BCM56340	
Shortest Path Bridging (SPB)			-												8248/8234	98CX8129			98CX8296	98CX8129			98CX8296	98CX8129	98CX8296			
onortest ratio bridging (or b)	ZOS-SPB		6 ECT algorithms, 28.6 -																									-
Amendment 20: Shortest Path Bridging		IEEE 802.1aq draft 4.6	28.9: only 2 ECT algorithms supported Opaque extensions, 28.12.6, 28.12.8: not supported	XP 1.0	XP 1.3	Yes			No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	
IS-IS Extensions Supporting IEEE 802.1aq Shortest Path Bridging	ZOS-SPB	draft-ietf-isis-ieee-aq-05.txt		XP 1.0	30P 1.3	Yes			No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	
IP1PVPN services with IEEE 802.1aq SPB networks	ZOS-SPB	draft-unbehagen-spb-ip-ipvpn- 00.txt	Import/export of routes associated with different ISID, 4.1: not supprited	XP 1.0	No	No			No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	
M-1915 Multi Topology (MT) Rousing in intermediate System to Intermediate Systems (IS-25)	XOS-SPB	RFC 5120	Mali-Tropology Reachable IP-4 Prefines TUV, section 7.3: not applicable to SPB Mali-Tropology Reachable IP-4 Prefines TUV, section 7.4: not applicable to SPB Mali-Tropology Reachable IP-4 Prefines TUV, section 7.4: not septimized to SPB Mali-Tip-Forwarding Considerations, section 2.0: not applicable to SPB Mali-Tip-Forwarding Tip-Forwarding Tip-Forw	XP 1.0	No	No			No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	
Edge Virtual Bridging (EVB)			•																									
Edge Vinsul Bridging	ZOS-EVB	IEEE 803.14(s) 40-2	Section 17: MIB modular ror supported VIB discovery and configuration protect. VIB discovery and configuration protect. 41: 2.10.2. Pre-secondise and pre-secondise via 12: 2.0.2. Pre-secondise and pre-secondise via 12: 2.0.4. Regulation supported Section 41: 2.0.3 and Section 41: 2.0.3 and 12: 2.0.4. Clargel sind format not supported for crapitationally defined 11.V. Section 41: 5.3. Station representation supported.	s v v n 3921.0	XP 1.3	Yes			No	No	No	No	No	No	No	No	No.	No	No	No	No	No	No	No	No	No	No	
UniDirectional Link Detection (UDLD)																												
Unidirectional Link Detection (UDLD)	ZOS-XP-L2-UDLD	RFC 5171		No	No	No			No	No	No	No	No	No	Yes	Yes	No	No	Yes	Yes	No	No	Yes	Yes	Yes	No	No	
Trigger FailOver (TFO) Trigger Fail Over (TFO) monitors specific upstream link and propagates failure to downstream	ZOS-XP-TFO			No	No	No			No	No	No	No	No	No	Yes	Yes	No	No	Yes	Yes	No	No	Yes	Yes	Yes	No	No	
sFlow sFlow module polls interface counters and samples data packets	ZOS-XP-L2-SFLOW	/ RFC 3176		No	No	No			No	No	No	No	No	No	Yes	Yes	No	No	Yes	Yes	No	No	Yes	Yes	Yes	No	No	

Part					100 40												_										
Part	Essture PVII	Standard	Sub-features	Version	Previous	7+LOS VB 4 4	Comment								Data plane in	stearstion		ebiC									Comments
Part	reature SKO	Statidard	not supported	supported	validated	28003*XF 1.4	Comment	ZebIC 2	1(ZebOS version	7.10.1)	1	ZebIC 3	1 (ZebOS-XP)	version 1.1)	-	I .	ZebIC 3.2 (ZebC	S-XP version 1.	2)	Ze Ze	bIC 4.0 (ZebOS	-XP version 1	3)	Zeh	IC 4.1/ZebOS-XP ver	sion 1.4)	Comments
Part									Broadcom	Broadcom		Broadcom	Broadcom	Marvell Prostera CY	Marvell		Broadcom	Marvell	Marvell	Broadcom	Broadcom	Marvell	Marvell	Marvell	Broadcom	Broadcom	
Tener setting and the setting														8248/8234	98CX8129			98CX8296	98CX8129			98CX8296		98CX8296			
Section Sect	Routing							Winpath-3	Trident+	Katana	Trident+	katana	Triumph3	Lion	Hooper	Trident2	Triumph3	Lion2	Hooper	Trident2	Katana	Lion2	Hooper	Lion2	Trident2	Helix4	
Seminary Sem	Ethernet ARP	RFC 826		Ecosystem	Ecosystem	Ecosystem		Ecosystem	Ecosystem	Ecosystem	Ecosystem	Ecosystem	Ecosystem	Ecosystem	Ecosystem	Ecosystem	Ecosystem	Ecosystem	Ecosystem	Ecosystem	Ecosystem	Ecosystem	Ecosystem	Ecosystem	Yes	Yes	
Mathematical Math	Transmission of IP Datagrams over Ethernet	RFC 894		Ecosystem	Ecosystem	Ecosystem		Ecosystem	Ecosystem	Ecosystem	Ecosystem	Ecosystem	Ecosystem	Ecosystem	Ecosystem	Ecosystem	Ecosystem	Ecosystem	Ecosystem	Ecosystem	Ecosystem	Ecosystem	Ecosystem	Ecosystem	Yes	Yes	
Mathematical Math	Congestion Control in IP/TCP Networks	RFC 896		Ecosystem	Ecosystem	Ecosystem		Ecosystem	Ecosystem	Ecosystem	Ecosystem	Ecosystem	Ecosystem	Ecosystem	Ecosystem	Ecosystem	Ecosystem	Ecosystem	Ecosystem	Ecosystem	Ecosystem	Ecosystem	Ecosystem	Ecosystem	Yes	Yes	
Mathematical Math	IP Broadcast	RFC 919		Ecosystem	Ecosystem	Ecosystem		Ecosystem	Ecosystem	Ecosystem	Ecosystem	Ecosystem	Ecosystem	Ecosystem	Ecosystem	Ecosystem	Ecosystem	Ecosystem	Ecosystem	Ecosystem	Ecosystem	Ecosystem	Ecosystem	Ecosystem	Yes	Yes	
Mathematical Math	IP Broadcast in the Presence of Subnets	RFC 922		Ecosystem	Ecosystem	Ecosystem		Ecosystem	Ecosystem	Ecosystem	Ecosystem	Ecosystem	Ecosystem	Ecosystem	Ecosystem	Ecosystem	Ecosystem	Ecosystem	Ecosystem	Ecosystem	Ecosystem	Ecosystem	Ecosystem	Ecosystem	Yes	Yes	
Section Sect		REC 950		Frosystem	Fronustem	Frosystem		Fronsystem	Fonsystem	Frosustam	Forgustem	Frosustam	Forevstern	Frosystem	Frosystem	Forevstern	Forevetern	Frosystem	Fronsistam	Forevetem	Erroustem	Frosustem	Frosustem	Frosystem	Yes	Yes	
Mathematical part																											
Section of the sect			<u> </u>	_								Ecosystem															
Seminary Control of the semina												Ecosystem		-			-	-		Ecosystem	-	-			Yes		
Mathematical Region	address assignment and aggregation strategy	RFC 1519		XP 1.0	XP 1.3	Yes		No	Yes	Yes	Yes	Yes	Yes	No	No	Yes	Yes	No	No	Yes	Yes	No	No	No	Yes	No	
Seminate of the seminate of th	Requirements for IP Version 4 Routers	RFC 1812		Ecosystem	Ecosystem	Ecosystem		Ecosystem	Ecosystem	Ecosystem	Ecosystem	Ecosystem	Ecosystem	Ecosystem	Ecosystem	Ecosystem	Ecosystem	Ecosystem	Ecosystem	Ecosystem	Ecosystem	Ecosystem	Ecosystem	Ecosystem	Yes	Yes	
Section Sect																				_							
Segregation of the segregation o		RFC 3046																									
Part			<u> </u>																	_							
Part						-		-	-	-	-			-	-	-	_	_			_			_	-		
Secretary 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Ingrissa Filtering for Multihomed Nitreorks	RFC 3704		XP 1.0.2	No	No		No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	
March Marc	Network Ingress Filtering: Defeating Denial of Service Attacks which employ IP Source Address Spoofing	RFC 2827		XP 1.0.2	No	No		No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	
Part	Transition Mechanisms for IPv6 Hosts and Revenue	RFC 2893		XP 1.0	No	No.		No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	
Part	DHCPv6 (stateless + relay)	RFC 3315		Ecosystem	Ecosystem	Ecosystem		Ecosystem	Ecosystem	Ecosystem	Ecosystem	Ecosystem	Ecosystem	Ecosystem	Ecosystem	Ecosystem	Ecosystem	Ecosystem	Ecosystem	Ecosystem	Ecosystem	Ecosystem	Ecosystem	Ecosystem	No	No	
Mathematical Region	O	DEG 4394		F	F							F	F										F				
Act (1) Act (2) Column (2) <td></td> <td></td> <td><u> </u></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>-</td> <td>Ecosystem</td> <td></td> <td></td> <td></td> <td>-</td> <td></td> <td></td> <td></td> <td>-</td> <td>- 1</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>			<u> </u>								-	Ecosystem				-				-	- 1						
Part												Ecosystem								_							
Martine Mart				acacyca	- League	Tronjeco-				2037		z cosyena		2007/02							- Language		20070				
Mathematical Math												No Economic															
Properties Pro												No.								-							
Part				_																							
Mary Mary Mary Mary Mary Mary Mary Mary	Textual Representation of Autonomous	per cone		VP10	No.	No.		No	No	No	No	No.	No	No	No	No	No	No	No.	Mo	No	No	Mo	No	No	No	
From Processes 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		10 0 3030		X 1.5		100		160	160	140	165		165	142		165	10	140	N.	162	100					1.0	
Marian	IP Forwarding Table MIB																										
Medical Medica	The Interfaces Group MIB Enterprise MIBs Supporting Routing	RFC 2863	<u> </u>																								
Marche M	Peatures IPv6 MIB	RFC 2465	<u> </u>																								
Seed Ministry Ministr		RFC 2466																									
Secretary 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1				XP 1.0	No	No		No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	
Secriphone																											
Manufacture 1909 1909 1909 1909 1909 1909 1909 190			-																	_							
Properties Pro	BGP Route Flap Damping ZOS-XP-BGP	RFC 2439		XP 1.0	XP 1.3	Yes		No	Yes	Yes	Yes	Yes	Yes	No	No	Yes	Yes	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Section of the sectio		RFC 4456																									
According substance of the control o	VPN for IPv4 2US-XP-BGP	pro armo																									
Section 1 Sectio		10 C 4070		AP 1.0	70	NO.		NO.	re0	ND	rêb	ND .	reb	NO	nio .	rêb	No	nito .	No	No	ND	nio .	nio .	ND	ND	reŭ .	
- Capelinangerin	BGP ZOS-AP-BGP																										
Part																											
Proof or P																											
Second			 									-					-										
Second	BGP-4 Multi-protocol Extensions for IPv6																										
Section of the contribution of the contribut	Inter-domain Routing 205-XF-BGP																										
Registration of the Control of the C																											
Definition of the contribution of the contribu							<u> </u>																				
Secretar S																											
Secretar S	Graceful Restart Mechanism for BGP with ZOS-XP-BGP MPLS	RFC 4781		XP 1.0	No	No		No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	
Security Register 1997 Cause Medications 2053/P-6017 RFC 488		RFC 4724		XP 1.0	XP 1.3			No	Yes	Yes	Yes	Yes	Yes		No	Yes	Yes	No	No	Yes	Yes			Yes	Yes	Yes	
	BGP Support for Four-Octet AS Number ZOS-XP-BGP	RFC 4893		XP 1.0	XP 1.3	Yes		No	Yes	Yes	Yes	Yes	Yes	No	No	Yes	Yes	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
				XP 1.0	XP 1.3	Yes		No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	
48ys AS-Specific Extended Communicials 205-XP-BOD No.	4-Byte AS-Specific Extended Communities 20S-XP-BGP	draft-ietf-t3vpn-as-4octet-ext- community-03.txt		XP 1.0	XP 1.3	Yes		No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	

				Z	ebOS XP												Ze	blC									$\overline{}$
Feature	SKU	Standard	Sub-features not supported	Version first supported	Previous version validated	ZebOS-XP 1.4	Comment								Data plane in	itegration										c	Comments
				Supported	Vandated			ZeblC 2 PMC-Sierra	.1(ZebOS versio Broadcom	Broadcom	Broadcom	Broadcom	1 (ZebOS-XP) Broadcom	wersion 1.1) Marvell Prestera CX	Marvell Prestera	Broadcom	ZebIC 3.2 (ZebOS Broadcom	S-XP version 1.2 Marvell Prestera	Marvell Prestera	Broadcom	bIC 4.0 (ZebOS Broadcom	-XP version 1 Marvell Prestera	Marvell Prestera	Zeb Marvell Prestera	IC 4.1(ZebOS-XP vers	Broadcom	
Outbound Route Filtering Capability for BGP-4									BCM56846	BCM56440	BCM56846		BCM56643	8248/8234	98CX8129	BCM56850	BCM56643	98CX8296	98CX8129	BCM56850	BCM56440	98CX8296	98CX8129	98CX8296	BCM56850	BCM56340	
Address-Profix-Rosed Outhound Route	208-XP-BGP	RFC 5291		XP 1.0	No No	No No		No No	No No	No No	No No	No No	No No	No No	No No	No No	No No	No No	No No	No No	No No	No No	No No	No No	No No	No No	
Filter for BGP-4 Graceful BGP Session Shutdown	ZOS-XP-BGP	draft-ietf-grow-bgp-gshut-03	Section 4.2.2: IBGP g-shut not	XP 1.0	XP 1.3	Yes		No.	No.	No.	No.	No.	No	No.	No.	No	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	
BGP Support for Next-Hop Address Tracking	ZOS-XP-BGP		supported	XP 1.0	XP 1.3	Yes		No.	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	
BGP Next-Hop Trigger Delay Timer	ZOS-XP-BGP			XP 1.0	XP 1.3	Yes		No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	
BGP Internal and External Distance Configuration Per AFI Support for BGP Administrative Weights Per AFI	ZOS-XP-BGP			XP 1.0	No	No.		No.	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	
Per AFI BGP Graceful-Restart Graceful-Reset Enhancement	ZOS-XP-BGP ZOS-XP-BGP			XP 1.0	XP 1.3 XP 1.3	Yes		No No	No No	No No	No No	No No	No No	No No	No No	No No	No No	No No	No No	No No	No No	No No	No No	No No	No No	No No	
Enhancement Managed Objects for Border Gateway Protocol Version 4 (BGP-4) using SMIv2	ZOS-XP-BGP	RFC 4273		XP 1.0	XP 1.3	Yes		No No	No No	No No	No.	No No	No No	No No	No No	No No	No No	No No	No No	No No	No No	No.	No.	No No	No No	No No	
Bidirectional Forwarding Detection Trigger	ZOS-XP-BGP	RFC 4273		XP 1.0	XP 1.3	Yes		No.	No.	No No	No.	No No	No.	No No	No No	No No	No.	No.	No No	No No	No No	No.	No.	No No	No.	No No	
for BGP Bidirectional Forwarding Detection Trigger for BGP4+				XP 1.0	No.	No.		No No	No.	No.	No	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No	No	No.	No.	No.	
Routing Information Protocol (RIP)	200-20			AF 13	1.0	1.0		NE.	1.0	140	1.0		160	140	140	1.0			1.0	1.0		160				No.	
(RIP) Routing Information Protocol Version 1	ZOS-XP-RIP	RFC 1058		XP 1.0	XP 1.3	Yes		No.	Yes	Yes	Yes	Yes	Yes	No	No	Yes	Yes	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Routing Information Protocol and Routing Information Protocol Version 2	ZOS-XP-RIP	RFC 2453		XP 1.0	XP 1.3	Yes		No	Yes	Yes	Yes	Yes	Yes	No	No	Yes	Yes	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Increment Metrics When Sending Routes, Not When Receiving	ZOS-XP-RIP ZOS-XP-RIP6			XP 1.0	XP 1.3	Yes		No.	Yes	Yes	Yes	Yes	Yes	No	No	Yes	Yes	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
PE-CE Extensions for RIP	ZOS-XP-RIP6			XP 1.0	XP 1.3	Yes		No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	
	ZOS-XP-RIP ZOS-XP-RIP	RFC 2082 RFC 1724		XP 1.0 XP 1.0	XP 1.3	Yes No		No No	Yes No	Yes No	Yes No	Yes No	Yes	No No	No No	Yes No	Yes No	No No	No No	Yes No	Yes No	No No	No No	No No	Yes No	Yes No	
Routing Information Protocol next generation (RIPng) for IPv6	ZOS-XP-RIP6	RFC 2080		XP 1.0	XP 1.3	Yes		No No	Yes	Yes	Yes	Yes	Yes	No No	No No	Yes	Yes	No No	No No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
	ZOS-XP-BGP			XP 1.4	No	No.		No No	No	No	No	No.	No	No	No	No	No	No	No.	No	No	No	No	No	No	No	
Open Shortest Path First (OSPF)																											
	ZOS-XP-OSPF	RFC 2328		XP1.0	XP 1.3	Yes		No	Yes	Yes	Yes	Yes	Yes	No	No	Yes	Yes	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Open Shoness Path First Version 3 (OSPF-d) for IPH6 Support	ZOS-XP-OSPF6	RFC 5340	Section 4.9: no support for multiple interfaces on the same link. OSPFid authentication is not supported.	XP1.0	XP 1.3	Yes		No	Yes	Yes	Yes	Yes	Yes	No	No	Yes	Yes	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Open Shortest Path First Version 2 (OSPF-2) MIB	ZOS-XP-OSPF	RFC 4750 (obsolenes RFC1850)	Saction 3: OSPFTOSSUPPORT, OSPFMLLTICASTEXTENSION 3, OSPFDEMANDEXTENSIONS, OSPFSTUBMETRICTYPE, OSPFITDEMAND objects not supported	XP 1.0	XP 1.3	Yes		No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	
	ZOS-XP-OSPF	RFC 1370		XP 1.0	XP 1.3	Yes		No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	
OSPF Opaque LSA option OSPF-TE: Traffic Engineering (TE) Extensions to OSPF Version 2	ZOS-XP-OSPF ZOS-XP-OSPF	RFC 5250 RFC 3630		XP 1.0	XP 1.3 XP 1.3	Yes		No No	No No	No No	No No	No No	No No	No No	No No	No No	No No	No No	No No	No No	No No	No No	No No	No No	No No	No No	
Extensions to OSPF Version 2 Alternate implementations of OSPF Area Border Routers	ZOS-XP-OSPF	RFC 3509		XP 1.0	No No	No.		No No	No No	No No	No No	No No	No No	No No	No No	No No	No No	No No	No.	No No	No No	No.	No No	No No	No No	No No	
Graceful OSPF Restart	ZOS-XP-OSPF	RFC 3623		XP 1.0	XP 1.3	Yes		No	Yes	Yes	Yes	Yes	Yes	No	No	Yes	Yes	No	No	Yes	Yes	No	No	No	Yes	No	
	ZOS-XP-OSPF ZOS-XP-OSPF6	RFC 1765		XP 1.0	No	No		No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	
OSPF Enhancement to List Candidate List to A Binary Heap	ZOS-XP-OSPF			XP 1.0	No	No		No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	
OSPFv2 Multiple Instance Support	ZOS-XP-OSPF			XP 1.0	XP 1.3	Yes		No	Yes	Yes	Yes	Yes	Yes	No	No	Yes	Yes	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
OSPF ON DEMAND support for OSPFv2 and OSPFv3	ZOS-XP-OSPF ZOS-XP-OSPF6	RFC 1793		XP 1.2	XP 1.3	Yes																				No	
OSPF Optimization of Maxage Refresh Walker	ZOS-XP-OSPF			XP 1.0	No	No		No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	
OSPF Enhancement for NSSA/AS-External and Reducing CPU Loads	ZOS-XP-OSPF			XP 1.0	No	No		No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	
OSPF Exponential Back-off	ZOS-XP-OSPF			XP 1.0	No	No		No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	
Prioritized Treatment of Specific OSPFv2 Packets and Congestion Avoidance	ZOS-XP-OSPF	RFC 4222	Section 2 (1): Recommendation 1: Classification of OSPF packets not supported	XP 1.0	No	No		No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	
OSPF Scalability to 1000 Neighbors, 100,000 Routes, and 500 Nodes	20S-XP-OSPF			XP 1.0	No	No		No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	
OSPF as the Provider/Customer Edge Protocol for BGP/MPLS IP Virtual Private Networks	ZOS-XP-OSPF ZOS-XP-BGP	RFC 4577	Section 4.2.7: Sham links not supported (optional according to the RFC)	XP 1.0	Partial	Partial		No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	
	ZOS-XP-OSPF			XP 1.0	XP 1.3	Yes		No	Yes	Yes	Yes	Yes	Yes	No	No	Yes	Yes	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
OSPF Multi-Area Adjacency	ZOS-XP-OSPF	RFC 5185		XP 1.0	XP 1.3	Yes		No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	
OSPF Multi-Instance Extensions OSPF Database Exchange Summary List	ZOS-XP-OSPF ZOS-XP-OSPF6	21.txt		XP 1.0	No.	No.		No.	No.	No No	No	No.	No.	No.	No.	No.	No.	No	No.	No No	No.	No.	No.	No.	No.	No	
OSPF Database Exchange Summary List Optimization in OSPF v2 and v3 OSPF Not-So-Stubby-Area (NSSA) Option	ZOS-XP-OSPF ZOS-XP-OSPF	RFC 5243		XP 1.0	No XP13	No Yes		No No	No Van	No Yes	No Yes	No Yes	No Yes	No No	No No	No Yes	No Yes	No No	No No	No Yes	No Yes	No Yes	No Yes	No Yes	No Yes	No Yes	
Bidirectional Forwarding Detection Trigger		N G 3101		XP 1.0	XP 1.3 XP 1.3	Yes		No No	Yes	Yes	Yes	Yes	Yes	No No	No No	Yes	Yes	No No	No No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
for OSPFv2								1	1																		

				7	ebOS XP												7e	bIC									
Fortune	SKU	Standard	Sub-features	Version	Previous	ZebOS-XP 1.4	Comment								Data plane in	oto aretion											
Feature	SKU	Standard	not supported	first supported	version validated	ZebOS-XP 1.4	Comment								Data plane ii	ntegration										Ci	omments
								ZebIC 2 PMC-Sierra	Broadcom BCM56846	Broadcom BCM56440	Broadcom BCM56846	ZebIC 3 Broadcom BCM56440	Broadcom BCM56643	Marvell Prestera CX 8248/8234	Marvell Prestera 98CX8129	Broadcom BCM56850	ZebIC 3.2 (ZebOS Broadcom BCM56643	S-XP version 1.2 Marvell Prestera 98CX8296	Marvell Prestera 98CX8129	Broadcom BCM56850	Broadcom BCM56440	Marvell Prestera 98CX8296	Marvell Prestera 98CX8129	Marvell Prestera 98CX8296	Broadcom BCM56850	Broadcom BCM56340	
OSPF: Restart Signaling	ZOS-XP-OSPF	draft-nguyen-ospf-restart-05.txt		XP 1.0	XP 1.3	Yes		No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	
IP FRR: OSPF-LFA support for OSPFv2 and OSPFv3	ZOS-XP-OSPF ZOS-XP-OSPF6	RFC 5286		XP 1.0.2	XP 1.3	Yes		No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	
OSPFv3 Exponential Back-off	ZOS-XP-OSPF6			XP 1.0	No	No		No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	
Passive Interface Support in OSPFv3	ZOS-XP-OSPF6			XP 1.0	XP 1.3	Yes		No	Yes	Yes	Yes	Yes	Yes	No	No	Yes	Yes	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Graceful Restart Mechanism for OSPFv3	ZOS-XP-OSPF6	RFC 5187		XP 1.0	XP 1.3	Yes		No	Yes	Yes	Yes	Yes	Yes	No	No	Yes	Yes	No	No	Yes	Yes	No	No	No	Yes	No	
Traffic Engineering Extensions to OSPF Version 3	ZOS-XP-OSPF6	RFC 5329		XP 1.0	No	No		No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	
PE-CE Extensions for OSPFv3	ZOS-XP-OSPF6			XP 1.0	No	No		No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	
OSPFv3 MIB	ZOS-XP-OSPF6	RFC 5843	Section 4.9: Traps/notifications Only set, get and get next operations are supported	XP 1.0	XP 1.3	Yes		No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	
Bidirectional Forwarding Detection Trigger for OSPFv3	ZOS-XP-OSPF6			XP 1.0	XP 1.3	Yes		No	Yes	Yes	Yes	Yes	Yes	No	No	Yes	Yes	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Support for Multiple Address Families	ZOS-XP-OSPF6	RFC 5838	IPv4/IPv4 multicast family not supported	XP 1.0	XP 1.3	Yes		No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	
Bidirectional Forwarding Detection (BFD)																											
Bidirectional Forwarding Detection	ZOS-XP-BFD	RFC 5880		XP 1.0	XP 1.3	Yes		No	Yes	Yes	Yes	Yes	Yes	No	No	Yes	Yes	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	l
Bidirectional Forwarding Detection – Multi- hop	ZOS-XP-BFD	RFC 5883		XP 1.0	XP 1.3	Yes		No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	
Bidirectional Forwarding Detection for IPv-	4 20S-XP-BFD	RFC 5881		XP 1.0	XP 1.3	Yes		No	Yes	Yes	Yes	Yes	Yes	No	No	Yes	Yes	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Generic Application for BFD	ZOS-XP-BFD	RFC 5882		XP 1.0	XP 1.3	Yes		No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	
BFD Management Information Base	ZOS-XP-BFD	draft-ieft-bfd-mib-07.txt		XP 1.0	No	No		No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	
Bidrectional Forwarding Detection	ZOS-XP-BFD	draft-ietf-bfd-base-08.txt		XP 1.0	XP 1.3	Yes		No	Yes	Yes	Yes	Yes	Yes	No	No	Yes	Yes	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Bidirectional Forwarding Detection – Multi- hop	ZOS-XP-BFD	draft-letf-bfd-multihop-06.txt		XP 1.0	XP 1.3	Yes		No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	
Bidrectional Forwarding Detection for IPvi	8 ZOS-XP-BFD	draft-ietf-bfd-v4v6-1hop-08.txt		XP 1.0	XP 1.3	Yes		No	Yes	Yes	Yes	Yes	Yes	No	No	Yes	Yes	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Intermediate System-to- Intermediate-System (IS-IS)																											
Original ISO specification of IS-IS	ZOS-XP-ISIS	ISO 10589		XP 1.0	XP 1.3	Yes		No	Yes	Yes	Yes	Yes	Yes	No	No	Yes	Yes	No	No	Yes	Yes	No	No	No	Yes	Yes	ļ
Use of OSI IS-IS for Routing in TCP/IP and Dual Environments	ZOS-XP-ISIS	RFC 1195		XP 1.0	No	No		No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	
Dynamic Hostname Exchange Mechanism for IS-IS	208-XP-ISIS	RFC 2763		XP 1.0	XP 1.3	Yes		No	Yes	Yes	Yes	Yes	Yes	No	No	Yes	Yes	No	No	Yes	Yes	No	No	No	Yes	Yes	
IS-IS Extensions In Support of Gener-alized MPLS	208-XP-ISIS	RFC 4205		XP 1.0	XP 1.3	Yes		No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	
Restart Signaling for IS-IS	ZOS-XP-ISIS	draft-ietf-isis-restart- 02.txt		XP 1.0	No	No		No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	
Routing IPv6 with IS-IS	ZOS-XP-ISIS	draft-ietf-isis-ipv6-06.txt		XP 1.0	XP 1.3	Yes		No	Yes	Yes	Yes	Yes	Yes	No	No	Yes	Yes	No	No	Yes	Yes	No	No	No	Yes	No	
IS-IS Exponential Back-off of SPF	ZOS-XP-ISIS			XP 1.0	No	No		No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	
Intermediate System to Intermediate System for IPv6	ZOS-XP-ISIS			XP 1.0	XP 1.3	Yes		No	Yes	Yes	Yes	Yes	Yes	No	No	Yes	Yes	No	No	Yes	Yes	No	No	No	Yes	No	
Passive Interface Support for IS-IS	ZOS-XP-ISIS			XP 1.0	XP 1.3	Yes		No	Yes	Yes	Yes	Yes	Yes	No	No	Yes	Yes	No	No	Yes	Yes	No	No	No	Yes	No	
Routing IPv6 with IS-IS	ZOS-XP-ISIS	draft-iatf-isis-ipv6-06.bt		XP 1.0	XP 1.3	Yes		No	Yes	Yes	Yes	Yes	Yes	No	No	Yes	Yes	No	No	Yes	Yes	No	No	No	Yes	No	
Bidirectional Forwarding Detection Trigger for ISJR	208-XP-ISIS			XP 1.0	XP 1.3	Yes		No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	
IS-IS Mesh Groups	20S-XP-ISIS	RFC 2973		XP 1.0	XP 1.3	Yes		No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	
Domain-wide Prefix Distribution with Two- Level IS-IS	ZOS-XP-ISIS	RFC 2988		XP 1.0	XP 1.3	Yes		No.	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	
Three-Way Handshake for Intermediate System to Intermediate System (IS-IS) Point-to-Point Adjacencies	ZOS-XP-ISIS	RFC 3373		XP 1.0	No	No		No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	
IS-IS extensions for Traffic Engineering	ZOS-XP-ISIS	RFC 3784		XP 1.0	XP 1.3	Yes		No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	l
Point-to-Point Operation over LAN in Link State Routing Protocols	ZOS-XP-ISIS	RFC 5309		XP 1.0	No	No		No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	
Restart Signaling for IS-IS	ZOS-XP-ISIS	RFC 5306		XP 1.0	No	No		No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	
M-ISIS: Multi Topology (MT) Routing in IS	ZOS-XP-ISIS	draft-ietf-isis-wg-multi-topology- 11.tet		XP 1.0	XP 1.3	Yes		No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	
IS-IS Cryptographic Authentication	ZOS-XP-ISIS	RFC 3567		XP 1.0	XP 1.3	Yes		No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	-
IS-IS Expanded Use of Overload Bit for BGP Convergence	ZOS-XP-ISIS ZOS-XP-BGP			XP 1.0	No	No		No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	
Passive Interface Support for IS-IS	ZOS-XP-ISIS			XP 1.0	XP 1.3	Yes		No	Yes	Yes	Yes	Yes	Yes	No	No	Yes	Yes	No	No	Yes	Yes	No	No	No	Yes	No	
Intermediate System to Intermediate System (IS-IS) Transiert Blackhole	ZOS-XP-ISIS	RFC 3277		XP 1.0	No	No		No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	

			II	7	ebOS XP												7	blC									
Feature	SKU	Standard	Sub-features not supported	Version first supported	Previous version	ZebOS-XP 1.4	Comment								Data plane in	-											Comments
								ZebIC 2	.1(ZebOS versio	n 7.10.1)		ZebIC	3.1 (ZebOS-XP				ZebIC 3.2 (ZebO	S-XP version 1.2		Ze	bIC 4.0 (ZebOS				IC 4.1(ZebOS-XP ver	sion 1.4)	
								PMC-Sierra	Broadcom BCM56846	Broadcom BCM56440	Broadcom BCM56846	Broadcom BCM56440		Marvell Prestera CX 8248/8234	Marvell Prestera 98CX8129	Broadcom BCM56850	Broadcom BCM56643	Marvell Prestera 98CX8296	Marvell Prestera 98CX8129	Broadcom BCM56850	Broadcom BCM56440	Marvell Prestera 98CX8296	Marvell Prestera 98CX8129	Marvell Prestera 98CX8296	Broadcom BCM56850	Broadcom BCM56340	
Management Information Base for IS-IS	ZOS-XP-ISIS	draft-ietf-isis-wg-mib-09.txt		XP 1.0	No	No		No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	
Virtual Router Redundancy Protocol (VRRP)																											
Definitions of Managed Objects for the VRRP over IPv4 and IPv6	ZOS-XP-VRRP	draft-ietf-vrrp-unified-mib-06.txt		XP 1.0	XP 1.3	Yes		Yes	Yes	Yes	Yes	Yes	Yes	No	No	Yes	Yes	No	No	Yes	Yes	No	No	No	Yes	No	
Virtual Router Redundancy Protocol (VRRP) Version 3 for IPv4 and IPv6	ZOS-XP-VRRP	RFC 5798	Section 2.1, 5.2.9: ZebOS-XP does not support multiple Virtual IP addresses per VRRP session	XP 1.0	XP 1.3	Yes		Yes	Yes	Yes	Yes	Yes	Yes	No	No	Yes	Yes	No	No	Yes	Yes	No	No	No	Yes	No	
VRRP Interface Tracking	ZOS-XP-VRRP			XP 1.0	XP 1.3	Yes		No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	
Definitions of Managed Objects for the VRRP over IPv4 and IPv6	ZOS-XP-VRRP	draft-ietf-vrrp-unified-mib-06.txt		XP 1.0	XP 1.3	Yes		No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	
VR-VRF Infrastructure - Routing																											
OSPFv2				XP 1.3	XP 1.3	Yes		No	No	No	No	No	No	No	No	Yes	No	No	No	Yes	No	No	No	No	Yes	No	
BGP				XP 1.3	XP 1.3	Yes		No	No	No	No	No	No	No	No	Yes	No	No	No	Yes	No	No	No	No	Yes	No	
RIPv1				XP 1.3	XP 1.3	Yes		No	No	No	No	No	No	No	No	Yes	No	No	No	Yes	No	No	No	No	Yes	No	
RIPv2				XP 1.3	XP 1.3	Yes		No	No	No	No	No	No	No	No	Yes	No	No	No	Yes	No	No	No	No	Yes	No	
Static Routing				XP 1.3	XP 1.3	Yes		No	No	No	No	No	No	No	No	Yes	No	No	No	Yes	No	No	No	No	Yes	No	
Vian Routing				XP 1.3	XP 1.3	Yes		No.	No	No	No	No	No	No	No	Yes	No.	No	No	Yes	No.	No.	No	No	Yes	No.	
OSPFv3				XP 1.3	XP 1.3	Yes		No.	No.	No.	No	No.	No.	No	No.	Yes	No.	No	No	Yes	No.	No	No.	No.	Yes	No.	
ARP/Neighbor discovery				XP 1.4	XP 1.3	Yes		No	No	No	No	No	No	No	No	Yes	No	No	No	Yes	No	No	No	No	Yes	No	
Security																											
IP-Security	ZOS-XP-IPSEC		Authoritication header payload Transport mode She pose turnal instrace No routing procedus support No Posting procedus support No Posting Posting No IPsace MIB No IPsace MIB No IPsace support in Hardware	XP1.4	No	No	Supported 1. Encapsulated Security Payload 2. Tunnial mode 3. Both Manual and automatic configuration Above features are supported for both IPv4 and IPv6	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	LINLOX TCP/IP Stack / Chipset

				Zeh(ns yp				1						ZebIC					
Feature	SKU	Standard	Sub-features not supported	Version first	Previous	ZebOS-XP 1.4	For	warder Support				Data pla	ne integration		Ecolo					Comments
reature	SKU	Standard	Sub-reatures not supported	supported	version validated	ZebOS-XP 1.4	ron	warder Support	ZobiC 2	1 (ZebOS version	7 10 1)		(ZebOS-XP ver	reion 1.1)	ZebIC 3.2 (ZebOS-	ZebIC 4.0 (ZebOS-XP	ZobiC 4	1(ZebOS-XP vers	cion 1.4)	Comments
								Comments	PMC-Sierra	Broadcom	Broadcom	Broadcom	Broadcom	Broadcom	XP version 1.2) Broadcom	version 1.3)	Marvell Prestera	Broadcom	Broadcom	
								Comments	Winpath-3	BCM56846 Trident+	BCM56440 Katana	BCM56846 Trident+	BCM56440 Katana	BCM56643 Triumph3	BCM56643 Triumph3	BCM56440 Katana	98CX8296 Lion2	BCM56850 Trident2	BCM56340 Helix4	
MPLS	ZOE VD NEM								Winpatii-3	Hidelity	Ratalia	Hidelity	Ratalia	muniphs	mumphs	Ratalia	LIONZ	Trideritz	Helixa	
MPLS Architecture	ZOS-XP-NSM, ZOS-XP-LDP [OR] ZOS-XP-RSVP-TE,	RFC 3031		XP 1.0	XP 1.3	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	No	Ingress-LER (FTN), LSR (ILM) and Egress- LER functionality
	ZOS-XP-NSM, ZOS-XP-LDP [OR] ZOS-XP-RSVP-TE,	RFC 3032		XP 1.0	XP 1.3	Yes	Yes	x86-MPLS-SWFWDR supports basic LER/LSR forwarding functionality. It also supports basic VPWS forwarding. VPLS forwarding is not supported.	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	No	Ingress-LER (FTN), LSR (ILM) and Egress- LER functionality
Multiprotocol Label Switching (MPLS) Label Switching Router (LSR) Management Information Base (MIB)	ZOS-XP-NSM, ZOS-XP-LDP [OR] ZOS-XP-RSVP-TE,	RFC 3813		XP 1.0	XP 1.3	Yes	N/A		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	No	Yes	No	
Multiprotocol Label Switching (MPLS) Forwarding Equivalence Class to Next Hop Label Forwarding Entry (FEC-To- NHLFE) Management Information Base (MIB)	ZOS-XP-NSM, ZOS-XP-LDP [OR] ZOS-XP-RSVP-TE,	RFC 3814		XP 1.0	XP 1.3	Yes	N/A		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	No	Yes	No	
Time to Live (TTL) Processing in Multi-Protocol Label Switching (MPLS) Networks	ZOS-XP-NSM, ZOS-XP-LDP [OR] ZOS-XP-RSVP-TE,	RFC 3443		XP 1.0	No	No	Yes		No	No	No	No	No	No	No	No	No	Yes	No	
Label Distribution			ATM Label TLV [Section 3.4.2.2]																	
	ZOS-XP-LDP	RFC 5036	Frame Relay TLV [Section 3.4.2.3] LDP Vendor Private Extension [Section 3.6.1]	XP 1.0	XP 1.3	Yes	Yes	LDP ECMP is not supported in the forwarder	Yes	No	Yes	No	Yes	Yes	Yes	Yes	No	Yes	No	LDP ECMP is not supported on the platform.
LDP Applicability	ZOS-XP-LDP	RFC 3037		XP 1.0	XP 1.3	Yes	Yes		Yes	No	Yes	No	Yes	No	No	Yes	No	No	No	
Definitions of Managed Objects for Multiprotocol Label Switching (MPLS), Label Distribution Protocol (LDP)	ZOS-XP-LDP	RFC 3815	1) LDP Entity Statistics Table [Section 3.5.3] 2) The LDP Peer Table (Section 3.5.4] 3) The LDP Section Table 4) The LDP Sestion Statistics Table 5) The LDP Hello Adjacency Table	XP 1.0.1	XP 1.3	Yes	N/A		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	No	Yes	No	
Support for LDP TCP-MD5	ZOS-XP-LDP		<u> </u>	XP 1.0	XP 1.3	Yes	N/A		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	No	Yes	No	
LDP Scalability: 300,000 LSPs (LERs and LSR) 500 Targeted peers	ZOS-XP-LDP			XP 1.1	No	No	No		No	No	No	No	No	No	No	No	No	Yes	No	
Graceful Restart Mechanism for LDP	ZOS-XP-LDP	RFC 3478		XP 1.3	No	No	N/A		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	No	Yes	No	LDP-GR is an x86 feature.
RSVP-TE and Diffserv																				
RSVP (support limited to RSVP- TE requirements)	ZOS-XP-RSVP-TE	RFC 2205	Security - Encryption - Section 2.8, Non-RSVP clouds :-Section 2.9, Blocade State - Section 3.5, Traffic Policing and Non-Integrated Service hops - Section 3.8 & Multihomed Hosts - Section 3.9	XP 1.0	XP 1.3	Yes	Yes		No	No	No	No	No	No	No	No	No	Yes	No	
Use of RSVP with IETF Integrated Services	ZOS-XP-RSVP-TE	RFC 2210		XP 1.0	XP 1.3	Yes	Yes		No	No	No	No	No	No	No	No	No	Partial	No	Policer per LSP supported
Requirements for Traffic Engineering Over MPLS	ZOS-XP-RSVP-TE	RFC 2702	Induced MPLS Graph -Section 3.1, Bidirectional Traffic Trunks - Section 5.1, Accounting and Participant - Section 5.3, Maximum Allocation Multiplier - Section 6.1	XP 1.0	XP 1.3	Yes	Yes		No	No	No	No	No	No	No	No	No	Yes	No	
RSVP Refresh Overhead Reduction Extensions	ZOS-XP-RSVP-TE	RFC 2961	Message Bundling - Section 3.3, 3.4	XP 1.0	XP 1.3	Yes	Yes		No	No	No	No	No	No	No	No	No	No	No	
RSVP-TE: Extensions to RSVP for LSP Tunnels	ZOS-XP-RSVP-TE	RFC 3209	Label request for ATM and Frame Relay - Section 4.2.2 and 4.2.3, Multi-Link considerations: Section 5.4	XP 1.0	XP 1.3	Yes	Yes		No	No	No	No	No	No	No	No	No	Yes	No	
Applicability Statement for Extensions to RSVP for LSP- Tunnels	ZOS-XP-RSVP-TE	RFC 3210		XP 1.0	XP 1.3	Yes	Yes		No	No	No	No	No	No	No	No	No	Yes	No	
Differentiated Services	ZOS-XP-RSVP-TE-DS	RFC 3270	MPLS Support of Diff-Serv over PPP, LAN, Non-LC- ATM and Non-LC-FR , LC-ATM Interfaces, LC-FR Section 7, 8, 9.	XP 1.0	XP 1.3	Yes	No		No	No	No	No	No	No	No	No	No	Yes	No	
Protocol Extensions for Support of Diff-Serv-aware MPLS Traffic Engineering		RFC 4124		XP 1.0	XP 1.3	Yes	No		No	No	No	No	No	No	No	No	No	No	No	
RSVP-TE for LSP Tunnels	ZOS-XP-RSVP-FRR	RFC 4090		XP 1.0	XP 1.2	No	No		No	No	No	No	No	No	No	No	No	Yes	No	
RSVPv1 - Message Processing Rules		RFC 2209	Support only for RSVP-TE requirements. Non support for Blocade state block, Traffic Control State Block	XP 1.0	XP 1.2	No	Yes		No	No	No	No	No	No	No	No	No	No	No	
Multiprotocol Label Switching (MPLS) Traffic Engineering (TE) Management Information Base (MIB)	ZOS-XP-RSVP-TE	RFC 3812	mplsTunnelCRLDPResTable - Section 6.7	XP 1.0	No	No	N/A		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	No	Yes	No	

				Zeb0	OS XP										ZebIC					
Feature	SKU	Standard	Sub-features not supported	Version first supported	Previous version validated	ZebOS-XP 1.4	Forv	varder Support				Data pla	ne integration							Comments
									ZebIC 2.	1 (ZebOS version	n 7.10.1)	ZebIC 3.1	(ZebOS-XP ver	sion 1.1)	ZebIC 3.2 (ZebOS- XP version 1.2)	ZebIC 4.0 (ZebOS-XP version 1.3)	ZebIC 4	1(ZebOS-XP vers	sion 1.4)	
								Comments	PMC-Sierra	Broadcom BCM56846	Broadcom BCM56440	Broadcom BCM56846	Broadcom BCM56440	Broadcom BCM56643	Broadcom BCM56643	Broadcom BCM56440	Marvell Prestera 98CX8296	Broadcom BCM56850	Broadcom BCM56340	
RSVP-TE Scalability - 25,000 Tunnels	ZOS-XP-RSVP-TE			XP 1.1	XP 1.1	No	No		No	No	No	No	No	No	No	No	No	No	No	
Protocol (IGP) Routes Over	ZOS-XP-NSM, ZOS-XP-RSVP-TE, ZOS-XP-OSPF-CSPF	RFC 3906		XP 1.0	XP 1.2	No	No		No	No	No	No	No	No	No	No	No	No	No	
Extensions to Resource Resensation Protocol - Traffic	ZOS-XP-RSVP-TE	RFC 4875	Setup / Issandown of multiple S21. Sub.LSFs using single message, sections 4.5, 6.2.1, 5.2.5, 5.2.3; SERO, SRKOn taugeneds GMPLS Extensions, section 8 Usage of Integrity Bit, section 5.2.4 One-to-One Backup, section 15.2	XP 1.0	XP 1.3	Yes	No		No	No	No	No	No	No	No	No	No	No	No	
Pseudowire Setup and	ZOS-XP-LDP-VC	RFC 4447		XP 1.0	XP 1.3	Yes	Yes	MPLS-SWFWDR supports basic Ethernet and VLAN PW forwarding functionality	No	No	Yes	No	Yes	Yes	Yes	Yes	No	Yyes	No	
Encapsulation Methods for Transport of Ethernet Over MPLS Networks	ZOS-XP-LDP-VC	RFC 4448	Frame ordering [Only section 4.1, 4.2 are supported] Sequencing of Frames using Control word [Section 4.6]	XP 1.0	XP 1.3	Yes	Yes	MPLS-SWFWDR supports basic Ethernet and VLAN PW forwarding functionality	No	No	Yes	No	Yes	No	No	Yes	No	Yes	No	
Structure-Aware Time Division Multipleased (TDM) Circuit Emulation Service over Packet Switched Network (CESOPSN)	ZOS-XP-TDMoMPLS	RFC 5086	1)Layer 2 Tunneling Protocol Version 3 (Section 4.1) 2)Base NoS0 Services (Section 6.2) 3)Essending Basic NoS0 Services with CE Application Signating (Section 5.3) 4) Trunk-Specific NoS0 Services with CAS (Section 6.4)	XP 1.0	No	No	No		No	No	No	No	No	No	No	No	No	No	No	
Structure-Agnostic Time Division Multiplexing (TDM) over Packet (SAToP)	ZOS-XP-TDMoMPLS	RFC 4553	1)L2TPv3 PW demultiplexing [Section 4.3] 2) Time stamp generation in RTP header [Section 4.3.2]	XP 1.0	No	No	No		No	No	No	No	No	No	No	No	No	No	No	
Control Protocol Extensions for Setup of TDM Pseudowires in MPLS Networks	ZOS-XP-TDMoMPLS	draft-ietf-pwe3-tdm- control-protocol- extensi-07		XP 1.0	No	No	No		No	No	No	No	No	No	No	No	No	No	No	
Segmented Pseudowire	ZOS-XP-LDP-VC	dath-left-ywn3- segmented-yw-13.tet	MS-PW Setup using LIP using the generalized FEC 129 (Section 7) MS-PW Switching. Switching Steven a static and a dynamic LIP control plans (Section 7.2) Switching Steven LIP using FEC 128 and LIP using the generalized FEC 129 (Section 7.4) LIP Using FEC 128 to LIP Using the Generalized FEC 129 (Section 7.4) LIP Setup FEC 128 to LIP Using the Generalized FEC 129 (Section 7.4) LIP Setup FEC 129 (Section 7.5) PW Loop Detection (Section 7.6) MPLS-PW to LIZTIA-9PW Correl Planse Switching (Section 8) General Planse Switching (Section 8) Extensions to VCCI to Support MS-PWs (Section 9.2) Signaling OAM Capabilises for Switching Plansedowines (Section 8.4) OAM Capability for MS-PWs Demultipleard Using MS-13 (Section 9.1)	XP1.0	XP 1.3	Yes	No		No	No	No	No	No	No	No	No	No	No	No	
Multi Segment Pseudowire (PW)	ZOS-XP-LDP-VC	RFC 5659	Sections are not supported 7, 8, 9.2, 9.3, 10, 11, 12	XP 1.0	No	No	No		No	No	No	No	No	No	No	No	No	No	No	
Pseudowire (PW) Management Information Base (MB)	ZOS-XP-LDP-VC	RFC 5601	Tables: Tab	XP 1.0	XP 1.3	Yes	N/A		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	No	N/A	No	

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Feature	sku	Standard	Sub-features not supported	Version first supported	Previous version validated	ZebOS-XP 1.4	Forv	varder Support				Data pla	ne integration		Zebic					Comments
									ZebIC 2.	1 (ZebOS versio	n 7.10.1)	ZebIC 3.1	(ZebOS-XP ver	sion 1.1)	ZebIC 3.2 (ZebOS- XP version 1.2)	ZebIC 4.0 (ZebOS-XP version 1.3)	ZebIC 4	.1(ZebOS-XP ver	sion 1.4)	
								Comments	PMC-Sierra	Broadcom BCM56846	Broadcom BCM56440	Broadcom BCM56846	Broadcom BCM56440	Broadcom BCM56643	Broadcom BCM56643	Broadcom BCM56440	Marvell Prestera 98CX8296	Broadcom BCM56850	Broadcom BCM56340	
Pseudowire (PW) over MPLS PSN Management Information Base (MIB)	ZOS-XP-LDP-VC	RFC 5602	PW to Non-TE mapping Table. PW to TE MPLS tunnels mapping Table	XP 1.0	XP 1.3	Yes	N/A		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	No	N/A	No	
Ethernet Pseudowire (PW) Management Information Base (MIB)	ZOS-XP-LDP-VC	RFC 5603	1) Ethernet PW Statistics Table	XP 1.0	XP 1.3	Yes	N/A		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	No	N/A	No	
Pseudowine Redundancy	ZOS-XP-LDP-VC	Pseudowire Redundancy(RFC 6718) dail-siel pwed- rick (RFC 6879) d 63.1st	1)ZebOS does not support "PW Redundancy for S-PE Protection", Section 3.2.3 of dark-ieth-pred-deuthancy-of-deuthance, vol. or dark-ieth-pred-deuthancy-of-deuthance, vol. dark-ieth-pred-deuthancy-of-deuthance, vol. dark-ieth-pred-deuthance, vol. d	XP 1.0	XP 1.3	Yes	No		No	No	No	No	No	No	No	No	No	No	No	
Pseudowire Emulation Edge-to- Edge (PWE3) Control Word for Use over an MPLS PSN	ZOS-XP-LDP-VC	RFC 4385		XP 1.0	XP 1.3	Yes	Yes		No	No	Yes	No	Yes	No	No	Yes	No	Yes	No	
Virtual Private LAN Service (VPLS) Using Label Distribution Protocol (LDP) Signaling	ZOS-XP-VPLS	RFC 4762	I) VPLS encapsulation actions [Section 7.1] 2)Multi-domain VPLS Service [Section 10] 3) Hierarchical VPLS Model Using Ethernet Access Network - Dual homing and failure recovery[Section 11]	XP 1.0	XP 1.3	Yes	No		No	No	Yes	No	Yes	No	No	Yes	No	Yes	No	
Virtual Private LAN Service (VPLS) Using BGP for signaling and auto-discovery	ZOS-XP-VPLS-DUAL	RFC 4761	1)Multi-AS VPLS [Section 3.4] 2)Multi-horning Path Selection [Section 3.5] 3)Hierarchical BGP VPLS [Section 3.6]	XP 1.0	XP 1.3	Yes	No		No	No	No	No	No	No	No	No	No	No	No	
Provisioning, Auto-Discovery, and Signaling in Layer 2 Virtual Private Networks (L2VPNs)	ZOS-XP-VPLS-DUAL	RFC 6074	1)Pseudowires as VPLS Attachment Circuits (Section 2.24). En full Mash of Point-se-Point Pseudowires (Section 3.3). Sociotes Protes (Section 3.4). (3)Coloter Point-Standi Mesh (Section 3.4). 4)(Distributed VPLS (Section 3.5). Springer AS) Openion (Section 4.6). Springer AS) Openion (Section 4.6). (Significan AS) Openion (Section 4.6). Section 7)	XP 1.2	XP 1.3	Yes	No		No	No	No	No	No	No	No	No	No	No	No	
L2VPN Scalability: 25K PWs, 3K VPLS VSIs 8 PWs per VSI				XP 1.1	No	No	No		No	No	No	No	No	No	No	No	No	No	No	



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Feature	SKU	Standard	Sub-features not supported	Version first supported	Previous version validated	ZebOS-XP 1.4	For	warder Support				Data pla	ne integration							Comments
									ZebIC 2	1 (ZebOS versio	n 7.10.1)	ZebIC 3.1	(ZebOS-XP ver	sion 1.1)	ZebIC 3.2 (ZebOS- XP version 1.2)	ZebIC 4.0 (ZebOS-XP version 1.3)	ZebIC 4.	1(ZebOS-XP ver	sion 1.4)	
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L3VPN																				
			Multi-path support for MPLS-VPNs																	
BGP MPLS IPv4 VPN	ZOS-XP-BGPVPNX	RFC 4364 RFC 3107	Per-VRF label allocation (section 4.3.2) Use of Route Reflectors (section 4.3.3)	XP 1.2	XP 1.3	Yes	Yes		No	No	No	No	No	No	No	No	No	No	No	
			Multi-path support for MPLS-VPNs																	
BGP-MPLS IP Virtual Private Network (VPN) Extension for IPv6 VPN	ZOS-XP-6VPE	RFC 4659	Per-VRF label allocation (section 4.3.2)	XP 1.0	No	No	No		No	No	No	No	No	No	No	No	No	No	No	
Connecting IPv6 Islands over IPv4 MPLS Using 6PE	ZOS-XP-6PE	RFC 4798		XP 1.0	No	No	No		No	No	No	No	No	No	No	No	No	No	No	
MPLS OAM																				
	ZOS-MPLS-OAM	RFC 4377		XP 1.0	XP 1.3	Yes	Yes		No	No	Yes	No	Yes	No	No	Yes	No	No	No	
A Framework for MPLS OAM	ZOS-MPLS-OAM	RFC 4378		XP 1.0	XP 1.3	Yes	Yes		No	No	Yes	No	Yes	No	No	Yes	No	No	No	
Detecting MPLS Data Plane Failures	ZOS-MPLS-OAM	RFC 4379		XP 1.0	XP 1.3	Yes	Yes	Only reply mode 2 'Reply via an IPv4 UDP packet' is supported	No	No	Yes	No	Yes	No	No	Yes	No	No	No	
BFD For MPLS LSPs	ZOS-MPLS-OAM	draft-ietf-bfd-mpls- 07.txt		XP 1.0	XP 1.3	Yes	No		No	No	No	No	No	No	No	No	No	No	No	
Bidirectional Forwarding Detection (BFD) for the Pseudowire Virtual Circuit Connectivity Verification (VCCV)	ZOS-MPLS-OAM	draft-ietf-pwe3-vccv-bld-07	Support of IPv6 LSPaVC, section 3.2; supported for Pv4 LSPaVC3 BFD VCCV for L2TPv3, section 5.2; LZTPv3 is not supported. Congestion, section 6; implemented for SWFWDR only. Security considerations, section 7; LDP module supports MDS autheritication BFD VCCV for LDP signated PW	XP 1.0	No	No	Yes		No	No	Yes	No	Yes	No	No	Yes	No	No	No	Only BFD CV-type 0x10 is suppoted. (BFD, PW-ACH Encapsulation)
Pseudowire Virtual Circuit Connectivity Verification (VCCV)	ZOS-MPLS-OAM	RFC 5085	Only "LSP Ping" CV Type supported, sections 4, 5.2.1 VCCV to L'2TP-0, sections 6, 8.3, L2TP-0 is not supported Congestion, section 9, implemented for SWFWDR only Congestion, section 9, implemented for SWFWDR only Congestion, section 10, LDP module supports MDS authersication	XP 1.0	No	No	Yes		No	No	Yes	No	Yes	No	No	Yes	No	No	No	Only CC-type 0x01 is supported. (Type 1: PWE3 Control Word with 0001b as first nibble)
PW Status for Static PW	ZOS-MPLS-OAM	RFC 6478		XP 1.0	XP 1.3	Yes	No		No	No	No	No	No	No	No	No	No	No	No	+

Feature	SKU	Standard	Sub-features not supported	Version first supported	Previous version validated	ZebOS-XP 1.4	Fon	warder Support				Data pla	ne integration		ZebIC					Comments
					validated				ZeblC 2.	1 (ZebOS version	n 7.10.1)	ZebIC 3.1	(ZebOS-XP ver	sion 1.1)	ZebIC 3.2 (ZebOS- XP version 1.2)	ZebIC 4.0 (ZebOS-XP version 1.3)	ZebIC 4	1(ZebOS-XP vers	sion 1.4)	
								Comments	PMC-Sierra	Broadcom BCM56846	Broadcom BCM56440	Broadcom BCM56846	Broadcom BCM56440	Broadcom BCM56643	Broadcom BCM56643	Broadcom BCM56440	Marvell Prestera 98CX8296	Broadcom BCM56850	Broadcom BCM56340	
MPLS TP MPLS TP frame work	ZOS-MPLS-TP-IETF, ZOS-MPLS-TP-ITU, ZOS-MPLS-TP-IETF-ITU	RFC 5921		XP 1.0	XP 1.3	Yes	Yes		No	No	Yes	No	Yes	No	No	Yes	No	No	No	
MPLS Generic Associated Channel	ZOS-MPLS-TP-IETF, ZOS-MPLS-TP-ITU, ZOS-MPLS-TP-IETF-ITU	RFC 5586	"ACH TLV may be included in the ACH message"; section 3: not supported	XP 1.0	XP 1.3	Yes	Yes		No	No	Yes	No	Yes	No	No	Yes	No	No	No	
Requirements of an MPLS Transport Profile	ZOS-MPLS-TP-4ETF	RFC 5654	MM-S.TP MMST support P24P resurpost pain*. section 2.1 in officiationus/lee for MR-ST-P72MP tunnel supportConceterated Segment, defention action, the support of MS-PW with MR-ST-P3 tunnel section for MS-PW with MR-ST-P3 Dynamic Control plane based provisioning of MR-TS TP unnel, section 1.14 flap point, 2.5 standards are avoiding for this feature and official section of the sec	XP 1.0	XP 1.3	Yes	Yes		No	No	Yes	No	Yes	No	No	Yes	No	No	No	
MPLS Transport Profile Data Plane Architecture	ZOS-MPLS-TP-IETF	RFC 5960	Section support other than data link section, section 3.2 only data link section support is provided with the control plane support only in the tunnel head node Multi segment Pseudo wires, section 3.3: MS-PW support exists in ZebOS for MPLS, but is not integrated with MPLS-TP	XP 1.0	XP 1.3	Yes	Yes		No	No	Yes	No	Yes	No	No	Yes	No	No	No	
Operations, Administration and Maintenance Framework for MPLS-based Transport Networks	ZOS-MPLS-TP-IETF	RFC 5860		XP 1.0	XP 1.3	Yes	Yes		No	No	Yes	No	Yes	No	No	Yes	No	No	No	
MPLS On-demand Connectivity Verification and Route Tracing	ZOS-MPLS-TP-IETF	RFC 6426	ITU Carrier Code (ICC) identifiers are not supported	XP 1.0	XP 1.3	Yes	Yes		No	No	Yes	No	Yes	No	No	Yes	No	No	No	
Proactive Connectivity Verification, Continuity Check and Remote Defect indication for MPLS Transport Profile	ZOS-MPLS-TP-IETF	draft-ietf-mpls-tp-cc-cv rdi-03.bt	Sections 3.8.2 – 3.8.4 Defect entry criteria, defect entry consequent action, and defect ext criteria are not supported. When the assistion is in DOWN or NIT state, mercapage should be transmitted as that of one per second, section 3.5.1 messages are transmitted per the configuration of the section of th	XP 1.0	XP 1.3	Yes	Yes		No	No	Yes	No	Yes	No	No	Yes	No	No	No	
MPLS-TP Identifiers	ZOS-MPLS-TP-IETF	RFC 6370		XP 1.0	XP 1.3	Yes	Yes		No	No	Yes	No	Yes	No	No	Yes	No	No	No	
Packet Loss and Delay Measurement for MPLS Networks	ZOS-MPLS-TP-IETF	RFC 6374	Unidirectional measurement, dyadic measurement, loss and delay measurements to and from an intermediate node and measurements from different transmit and neceive nodes is not supported, sections 2.6, 2.7, 2.9.5, and 2.9.6: RFC 6375 supports only hand responses by default, therefore measurement from different transmit and receive nodes are not supported	XP 1.0	XP 1.3	Yes	No	Only control-plane implementation is available. Data-plane support is not available.	No	No	No	No	No	No	No	No	No	No	No	
Packet Loss & Delay Measurements for MPLS-TP networks	ZOS-MPLS-TP-IETF	RFC 6375		XP 1.0	XP 1.3	Yes	No	Only control-plane implementation is available. Data-plane support is not available.	No	No	No	No	No	No	No	No	No	No	No	
MPLS Fault Management Operations, Administration, and Maintenance (OAM)	ZOS-MPLS-TP-IETF	RFC 6427		XP 1.0	XP 1.3	Yes	Yes		No	No	Yes	No	Yes	No	No	Yes	No	No	No	
MPLS Transport Profile Lock Instruct and Loopback Functions	ZOS-MPLS-TP-IETF	RFC 6435		XP 1.0	XP 1.3	Yes	Yes	Only control-plane implementation is available. Data-plane support is not available.	No	No	Yes	No	Yes	No	No	Yes	No	No	No	
MPLS Transport Profile (MPLS- TP) Linear Protection	ZOS-MPLS-TP-IETF	RFC 6378		XP 1.0	XP 1.3	Yes	Yes	1+1 protection switching scheme is not supported	No	No	Yes	No	Yes	No	No	Yes	No	No	No	1+1 protection switching scheme is not supported.
MPLS TP identifiers following ITUT coneventions	ZOS-MPLS-TP-ITU	draft-ietf-mpls-tp-itu-t- identifiers-03		XP 1.0	XP 1.3	Yes	Yes	nos aupponid	No	No	Yes	No	Yes	No	No	Yes	No	No	No	
MPLS TP OAM based on Y1731		draft-bhh-mpls-tp-oam- y1731-08	The Client Signal Fail (CSF) protocol, sections 4.9 and 5.9: not supported	XP 1.0	XP 1.3	Yes	Yes	Parial: x86-MPLS- SWFWDR Only control-plane implementation is available for LM, 1DM and 2DM. Data-plane support is not available.	No	No	Yes	No	Yes	No	No	Yes	No	No.	No	LM, 1DM and 2DM. Data-plane support is not available.
MPS TP ITU-T based Linear Protection Switching	ZOS-MPLS-TP-ITU	ITU-T Recommendation G.8131/Y.1382 (2007) - Amendment 1	T-MPLS SNC protection, section 7.2: no support for MPLS-TP sub-LSP, therefore no LPS support for SNC	XP 1.0	XP 1.3	Yes	Yes	1+1 protection switching scheme is not supported on the MPLS-SWFWDR.	No	No	Yes	No	Yes	No	No	Yes	No	No	No	1+1 protection switching scheme is not supported.
MPLS-TP Ring Protection Switching (MRPS)	ZOS-MPLS-TP-IETF, ZOS-MPLS-TP-IETF-ITU	draft-helvoort-mpls-tp- ring-protection- switching-03 txt	Section 3.1.2: p-t-p wrapping protection scheme for link and node failures	XP 1.0	XP 1.3	Yes	Yes		No	No	No	No	No	No	No	No	No	No	No	

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				Zeb0	OS XP										ZebIC					
Feature	SKU	Standard	Sub-features not supported	Version first supported	Previous version validated	ZebOS-XP 1.4	Forw	varder Support				Data pla	ne integration							Comments
									ZebIC 2.	1 (ZebOS version	7.10.1)	ZebIC 3.1	(ZebOS-XP ver	sion 1.1)	ZebIC 3.2 (ZebOS- XP version 1.2)	ZebIC 4.0 (ZebOS-XP version 1.3)	ZebIC 4.	1(ZebOS-XP vers	sion 1.4)	
								Comments	PMC-Sierra	Broadcom BCM56846	Broadcom BCM56440	Broadcom BCM56846	Broadcom BCM56440	Broadcom BCM56643	Broadcom BCM56643	Broadcom BCM56440	Marvell Prestera 98CX8296	Broadcom BCM56850	Broadcom BCM56340	
Multi Segment Pseudowire (PW)	ZOS-XP-STATIC-VC	RFC 5659	Below sections are not supported 7, 8, 9.2, 9.3, 10, 11, 12	XP 1.3	No	No	No		No	No	Yes	No	Yes	No	No	Yes	No	No	No	MS-PW only for MPLS- TP is supported on 56440, dynamic signalling of MS-PW is not supported.
Encapsulation Methods for Transport of Ethernet Over MPLS Networks	ZOS-MPLS-TP-IETF, ZOS-MPLS-TP-IETF-ITUT	RFC 4448	Only sections 4.1, 4.2, 4.3, 4.4.1 are supported	XP 1.3	No	No	No		No	No	Yes	No	Yes	No	No	Yes	No	No	No	
Segment Routing																				
Segment Routing Framework	ZOS-XP-SR	draft-ietf-spring- segment-routing-03 draft-ietf-spring- segment-routing-mpls- 01	IGP-Adjacency Segment BGP Peering Segments Binding Segment	XP 1.3	XP 1.3	Yes	Yes	N/A									No	No	No	
OSPF Segment Routing Extens	ZOS-XP-SR	draft-ietf-ospf-segment- routing-extensions-04 draft-ietf-ospf-prefix- link-attr-04	SID/Label Binding Sub-TLV Adjacency Segment Idensfier	XP 1.3	XP 1.3	Yes	Yes	N/A									No	No	No	

				Zohy	OS XP												ZebiC										
Feature	SKU	Standard	Sub-features not supported	Version first supported	Previous version validated	ZebOS-XP 1.4	Comment										Data plane inte	gration									
i								ZebiC :	2.1(ZebOS version	n 7.10.1)		ZebIC 3.1 (ZebOS-XP Versio	n 1.1)		z	SebIC 3.2 (ZebOS-	XP version 1.2)			ZebIC4.0 (ZebOS-X	P version 1.3)		ZebiC -	4.1(ZebOS-XP ver	sion 1.4)	
								PMC-Sierra	Broadcom BCM56846	Broadcom BCM56440	Broadcom BCM56846	Broadcom BCM56440	Broadcom BCM56643	Marvell Prestera CX 8248/8234	Marvell Prestera 98CX8129	Broadcom BCM56850	Broadcom BCM56643	Marvell Prestera 98CX8296	Marvell Prestera 98CX8129	Broadcom BCM56850	Broadcom BCM56440	Marvell Prestera 98CX8296	Marvell Prestera 98CX8129	Marvell Prestera 98CX8296	Broadcom BCM56850	Broadcom BCM56340	Comments
Multicast								Winpath-3	Trident+	katana	Trident+	Katana	Triumph3	Lion	Hooper	Trident2	Triumph3	Lion2	Hooper	Trident2	Katana	Lion2	Hooper	Lion2	Trident2	Helix4	
P Multicast MIS	ZOS-XP-MRIBO	RFC 5132	ipMcsatSamRangeTable	XP 1.3	XP1.3	Yes																					í
Protocol-Independent Multicast (PIM)																											
Protocol Independent Multicast - Sparse Mode (PIM-SM)	ZOS-XP-PIM4 ZOS-XP-PIM5	RFC 4601		XP 1.0	XP1.3	Yes		No	Yes	Yes	Yes	Yes	Yes	No	No	Yes	Yes	No	No	Yes	Yes	No	No	No	Yes	Yes	
Embedded-Rendezvous Point for IPv6 PM-SM	ZOS-XP-PIM4 ZOS-XP-PIM6	RFC 3996		XP 1.0	XP1.3	Yes		No	Yes	Yes	Yes	Yes	Yes	No	No	Yes	Yes	No	No	Yes	Yes	No	No	No	Yes	No	
Multicast Address	ZOS-XP-PIM4 ZOS-XP-PIM6	RFC 3956		XP 1.0	XP1.3	Yes		No	Yes	Yes	Yes	Yes	Yes	No	No	Yes	Yes	No	No	Yes	Yes	No	No	No	Yes	No	
Bootstrap Router (BSR) Mechanism for PIM	ZOS-XP-PIM4 ZOS-XP-PIM6	RFC 5059		XP 1.0	XP1.3	Yes		No.	Yes	Yes	Yes	Yes	Yes	No	No	Yes	Yes	No	No	Yes	Yes	No	No	No	Yes	Yes	
Administratively Scoped Boundaries	ZOS-XP-PIM4 ZOS-XP-PIM6	RFC 2365		XP 1.0	XP1.3	Yes		No	Yes	Yes	Yes	Yes	Yes	No	No	Yes	Yes	No	No	Yes	Yes	No	No	No	Yes	No	L
Static Rendezvous Point Configuration				XP 1.0	XP1.3	Yes		No	NA	N/A	N/A	NA	NA	No	No	NA	NA	No	No	NA	N/A	No	No	No	NA	No	L
Source-Specific Multicast for IP	ZOS-XP-PIM4 ZOS-XP-PIM6	RFC 4607		XP 1.0	XP13	Yes		No	Yes	Yes	Yes	Yes	Yes	No	No	Yes	Yes	No	No	Yes	Yes	No	No	No	Yes	Yes	L
Source-Specific Protocol- Independent Multicast in 232/8	ZOS-XP-PIMA ZOS-XP-PIMS	RFC 4608		XP 1.0	XP1.3	Yes		No	Yes	Yes	Yes	Yes	Yes	No	No	Yes	Yes	No	No	Yes	Yes	No	No	No	Yes	No	
Overview of Source-Specific Multicast (SSM)	ZOS-XP-PIMA ZOS-XP-PIMS	RFC 3569		XP 1.0	XP1.3	Yes		No	Yes	Yes	Yes	Yes	Yes	No	No	Yes	Yes	No	No	Yes	Yes	No	No	No	Yes	Yes	
Protocol Independent Multicast - Dense Mode (PM-DM): Protocol Specification (Revised)	ZOS-XP-PIM4 ZOS-XP-PIM6	RFC 3973		XP 1.0	XP1.3	Yes		No	Yes	Yes	Yes	Yes	Yes	No	No	Yes	Yes	No	No	Yes	Yes	No	No	No	Yes	Yes	İ
Anycast-RP Using Protocol Independent Multicast (PM)	ZOS-XP-PIM4 ZOS-XP-PIM6	RFC 4610		XP 1.0	XP13	Yes		No	Yes	Yes	Yes	Yes	Yes	No	No	Yes	Yes	No	No	Yes	Yes	No	No	No	Yes	No	
Support for More than 32 PM Interfaces	ZOS-XP-PIM4 ZOS-XP-PIM6 ZOS-XP-PIM4			XP 1.0	XP1.3	Yes		No	Yes	Yes	Yes	Yes	Yes	No	No	Yes	Yes	No	No	Yes	Yes	No	No	No	Yes	Yes	
Bidirectional Protocol Independent Multicast	BDR ZOS-XP-PMS- BDR	RFC 5015		XP 1.1	XP1.3	Yes		No	No	No	No	No	No	No	No	No	No	No	No	No	1						
PIM MIB for IPv4 PIM ECMP	ZOS-XP-PM4 ZOS-XP-PM4 ZOS XP-PM5	RFC 5060 06- RFC 6754		XP 1.0 XP 1.2	XP1.3	Yes		No	N/A N/A	N/A	N/A N/A	N/A	N/A	No	No	NA	N/A	No	No	N/A N/A	N/A	No	No	No	Yes	No No	
PM-Sparse-dense mode support	XP-PM6	RFC 6393		XP 1.2	XP1.3 XP1.3	Yes			N/A		N/A					NA				NA					No Yes	No Yes	
Group To RP Mapping	ZOS-XP-PIM4- BIDIR ZOS-XP-PIM6-	RFC 6226		XP 1.2	XP1.3	Yes																			Yes	Yes	
MSDP	BDR																										
	ZOS-XP-PM4-	RFC 3618	SA Filtering and Policy	XP 1.3	XP1.3	Yes	N/A																		Yes	No	
MSDP MIB	ZOS-XP-PIM4- MSDP	RFC 4624	Encapsulated Data Packets madpMeshGroupTable	XP 1.3	XP1.3	Yes	N/A																		No	No	
IGMP/MLD Multicast Listener Discovery																											
(MLDv2) for IPv6	ZOS-XP-MLD	RFC 3810	MLD snooping limited support	XP 1.0	XP1.3	Yes		No	Yes	Yes	Yes	Yes	Yes	No	No	Yes	Yes	No	No	Yes	Yes	No	No	No	Yes	No	
Internet Group Management Protocol, Version 3	ZOS-XP-IGMP	RFC 3376		XP 1.0	XP1.3	Yes		No	Yes	Yes	Yes	Yes	Yes	No	No	Yes	Yes	No	No	Yes	Yes	No	No	No	Yes	Yes	
Considerations for ICMP and MLD Sneoping Switches	ZOS-XP-IGMP ZOS-XP-MLD	RFC 4541	An administrative control can be provided to resulting to be floored to other point. 240(5-39) (CADP develop because Amprils to metal point. 240(5-39) (CADP develop because Amprils to metal point. 240(5-39) (CADP develop because Amprils and Amprils and Amprils The last should be both they find the Campril of the CADP developed to the CADP of the CADP of the CADP of American State of the CADP between the cape (CADP of CADP of the CADP of the CADP of the properties.) Cathering the cape of the CADP of the properties.	XP 1.0	XP1.3	Yes		No	Yes	Yes	Yes	Yes	Yes	No	No	Yes	Yes	No	No	Yes	Yes	No	No	No	Yes	No	
IGMPMLD-based Multicast Forwarding ("IGMPMLD Proxyling")	ZOS-XP-IGMP ZOS-XP-MLD	RFC 4605		XP 1.0	XP1.3	Yes		No	Yes	Yes	Yes	Yes	Yes	No	No	Yes	Yes	No	No	Yes	Yes	No	No	No	Yes	No	L
IGMPV3MLDv2 and Multicast Routing Protocol Interaction	ZOS-XP-IGMP ZOS-XP-MLD	RFC 5186		XP 1.0	XP1.3	Yes		No	Yes	Yes	Yes	Yes	Yes	No	No	Yes	Yes	No	No	Yes	Yes	No	No	No	Yes	Yes	
Multicast Group Membership Discovery MB	ZOS-XP-IGMP	RFC 5519		XP 1.3	No	No		No	No	No	No	No	No	No	No	No	No	No	No	No	<u> </u>						
Using IGMPv3 and MLDv2 for Source-Specific Multicast VR-VRF Infrastructure - Mi	ZOS-XP-IGMP ZOS-XP-MLD	RFC 4604		XP 1.0	XP1.3	Yes		No	Yes	Yes	Yes	Yes	Yes	No	No	Yes	Yes	No	No	Yes	Yes	No	No	No	Yes	No	
	unn-d3t			XP 1.0	XP1.3	Yes		No	No	Yes	No	No	No	Yes	No	No	No	No	Yes	No							
PM-SM-4		1		XP 1.1 XP 1.2	XP1.3 XP1.3	Yes Yes	 	No No	No No	Yes	No No	No No	No No	Yes	No No	No No	No No	No No	Yes Yes	No No							
PBS-SMr4 PBS-DMr4																											
PBS-SM-4 PBS-SM-6 PBS-SM-6 PBS-SM-6				XP 1.3	XP1.3	Yes		No	No	Yes	No	No	No	Yes	No	No	No	No	Yes	No							
PIN-SMH PIN-DMH PIN-SMHG PIN-DMHG IGMPV2				XP 1.3 XP 1.4	XP1.3 XP1.3	Yes Yes		No	No	Yes	No	No	No	Yes	No	No	No	No	Yes	No							
PBS-SM-4 PBS-SM-6 PBS-SM-6 PBS-SM-6				XP 1.3	XP1.3	Yes		No No No No	No No No No	No No No No	No No No	No No No	No No No No	No No No No	No No No No	Yes Yes Yes Yes	No No No No	No No No No	No No No No	Yes Yes Yes Yes	No No No No	No No	No No No No	No No No No	Yes Yes Yes Yes	No No No No	



				ZebHA					
Feature	SKU	Standard	Sub-features not supported	SSO	HA-GR	Version first supported	Previous version validated	Zeb-HA 1.1	Comments
Bridge	TOO VE HOLL III					2			
Bridge VLAN	ZOS-XP-NSM-HA			Yes	NA	ZebHA 1.1	No	Yes	Basic functionality tested.
Port based VLANs		IEEE 802.1Q (2005)		No	NA NA				
IP Subnet-based VLANs		IEEE 802.1Q (2003)		No	NA NA				
Private VLAN				No	NA NA				
VLAN Classifier		IEEE 802.1v		No	NA				
Spanning Tree									
STP	ZOS-XP-L2-xSTP-HA	IEEE 802.1D (2004)		Yes	NA	ZebHA 1.1	No	Yes	Basic functionality tested. With complex scenarios and topologies still some issues are open.
MSTP	ZOS-XP-L2-xSTP-HA	IEEE 802.1Q (2005): Clause 13		Yes	NA	ZebHA 1.1	No	Yes	Basic functionality tested. With complex scenarios and topologies still some issues are open.
RSTP	ZOS-XP-L2-xSTP-HA	IEEE 802.1D (2004): Clause 17		Yes	NA	ZebHA 1.1	No	Yes	Basic functionality tested. With complex scenarios and topologies still some issues are open.
RPVST+		Cisco version of Spanning tree/Rapid spanning tree		No	NA				
Disable Spanning Tree on specific instance	ZOS-XP-L2-xSTP-HA			Yes	NA	ZebHA 1.0	No	No	Not tested
Support for 64 MSTP Instances	ZOS-XP-L2-xSTP-HA			Yes	NA	ZebHA 1.0	Yes	Yes	Scalability not tested.
MIB-II		RFC 1213		No	NA NA				
Definition of Managed Objects for Bridges		RFC 4188		No	NA NA				
Definition of Managed Objects for Bridges with Traffic Classes, Multicast Filtering and Virtual LAN Extensions		RFC 4363		No	NA				
Definitions of Managed Objects for Bridges with RSTP		RFC 4318		No	NA				
		draft-malhotra-mstp							
MSTP MIB		mib-01.txt		No	NA				
LACP									
Link Aggregation	ZOS-XP-L2-LACP-HA	IEEE 802.1AX-REV- D3.1		Yes	NA	ZebHA 1.1	No	Yes	LACP SSO basic functionality tested. Many issues are open/To be fixed and to be retested.
LACP MIB		IEEE 802.1AX-REV- D3.1		No	NA				
BGP									
BGP	SSO: ZOS-XP-BGP-HA- SSO HA-GR: ZOS-XP-L3-HA- GR	RFC 4271		Yes	Yes	ZebHA 1.1	No	Yes	Basic BGP SSO and HA-GR functionality tested. All BGP sub features Scalability has Issues to be addressed and to be re-tested.
BGP Community Attributes	SSO: ZOS-XP-BGP-HA- SSO HA-GR: ZOS-XP-L3-HA- GR	RFC 1997		Yes	Yes	ZebHA 1.0	Yes	Yes	Functionality tested.
BGP Route Flap Damping	SSO: ZOS-XP-BGP-HA- SSO HA-GR: ZOS-XP-L3-HA- GR	RFC 2439		Yes	Yes	ZebHA 1.0	Yes	Yes	Functionality tested.
BGP Route Reflection	SSO: ZOS-XP-BGP-HA- SSO HA-GR: ZOS-XP-L3-HA- GR	RFC 4456		Yes	Yes	ZebHA 1.0	Yes	Yes	Functionality tested.
BGP Route Server Update for BGP MPLS VPN for IPv4				No	No				
Using a Link State Advertisement Options Bit to Prevent Looping in BGP/MPLS IP Virtual Private Networks		RFC 4576		No	No				
Autonomous System Confederation for BGP	SSO: ZOS-XP-BGP-HA- SSO HA-GR: ZOS-XP-L3-HA- GR	RFC 5065		Yes	Yes	ZebHA 1.0	Yes	Yes	Functionality tested.
Carrying Label Information in BGP		RFC 3107		No	No				
Capabilities Negotiation with BGP-4	SSO: ZOS-XP-BGP-HA- SSO HA-GR: ZOS-XP-L3-HA- GR	RFC 2842		Yes	Yes	ZebHA 1.0	Yes	Yes	Functionality tested.
Application of BGP-4 in the internet		RFC 1772		No	No				
Protection of BGP Sessions via the TCP MD5 Signature Option	SSO: ZOS-XP-BGP-HA- SSO HA-GR: ZOS-XP-L3-HA- GR	RFC 2385		Yes	Yes	ZebHA 1.0	Yes	Yes	Functionality tested.



			ZebHA					
	RFC 4760		No	No				
SSO: ZOS-XP-BGP-HA- SSO HA-GR: ZOS-XP-L3-HA- GR	RFC 3392		Yes	Yes	ZebHA 1.0	Yes	Yes	Functionality tested.
SSO: ZOS-XP-BGP-HA- SSO HA-GR: ZOS-XP-L3-HA- GR	RFC 2918		Yes	Yes	ZebHA 1.0	Yes	Yes	Functionality tested.
SSO: ZOS-XP-BGP-HA- SSO HA-GR: ZOS-XP-L3-HA- GR	RFC 4360		Yes	Yes	ZebHA 1.0	Yes	Yes	Functionality tested.
	RFC 4781		No	No				
SSO: ZOS-XP-BGP-HA- SSO HA-GR: ZOS-XP-L3-HA- GR	RFC 5291		Yes	Yes	ZebHA 1.0	Yes	Yes	Functionality tested.
SSO: ZOS-XP-BGP-HA- SSO HA-GR: ZOS-XP-L3-HA- GR	RFC 4893		Yes	Yes			No	Not tested. Not in the initial BGP-HA-GR/HA-SSO scope
SSO: ZOS-XP-BGP-HA- SSO HA-GR: ZOS-XP-L3-HA- GR	RFC 4486		Yes	Yes	ZebHA 1.0	Yes	Yes	Functionality tested.
SSO: ZOS-XP-BGP-HA- SSO HA-GR: ZOS-XP-L3-HA- GR	draft-ietf-l3vpn- as4octet-ext- community-03.txt		Yes	Yes				Not tested. Not in the initial BGP-HA-GR scope
SSO: ZOS-XP-BGP-HA- SSO HA-GR: ZOS-XP-L3-HA- GR	RFC 5292		Yes	Yes	ZebHA 1.0	Yes	Yes	Functionality tested.
	draft-ietf-grow-bgp- gshut-03		NA	NA				
SSO: ZOS-XP-BGP-HA- SSO HA-GR: ZOS-XP-L3-HA- GR			Yes	Yes				Not tested. Not in the initial BGP-HA-GR scope
SSO: ZOS-XP-BGP-HA- SSO HA-GR: ZOS-XP-L3-HA- GR			Yes	Yes				Not tested. Not in the initial BGP-HA-GR scope
SSO: ZOS-XP-BGP-HA- SSO HA-GR: ZOS-XP-L3-HA- GR			Yes	Yes	ZebHA 1.0	Yes	Yes	Functionality tested for IPv4 Internal and External Distance Only. Not tested per AFI
	RFC 4273		No	No				
			No	No				
SSO: ZOS-XP-OSPF-HA- SSO HA-GR: ZOS-XP-L3-HA- GR	RFC 2328		Yes	Yes	ZebHA 1.1	No	Yes	Basic OSPFv2 SSO and HA-GR functionality tested. All OSPFv2 sub features Scalability has Issues to be addressed and re-tested.
	RFC 4750		No	No				
	RFC 1370		NA	NA				
SSO: ZOS-XP-OSPF-HA- SSO HA-GR: ZOS-XP-L3-HA- GR	RFC 5250		Yes	Yes				Not tested separately. Not in the initial OSPF SSO / HA-GR scope Not sure about the support.
	RFC 3630		No	No				
SSO: ZOS-XP-OSPF-HA- SSO HA-GR: ZOS-XP-L3-HA- GR	RFC 3509		Yes	Yes				Not in the initial OSPF SSO / HA-GR scope
HA-GR: ZOS-XP-L3-HA- GR	RFC 1765		No	Yes				Not tested. Not in the initial OSPF SSO / HA-GR scope
SSO: ZOS-XP-OSPF-HA- SSO HA-GR: ZOS-XP-L3-HA- GR			Yes	Yes	ZebHA 1.0	Yes	Yes	Functionality tested.
HA-GR: ZOS-XP-L3-HA- GR	RFC 1793		No	Yes				Not tested. Not in the initial OSPF HA-GR scope
	HA-GR: 205-VP-30P-HA-GR: 205-V	SSO: ZOS-XP-BGP-HA- SSO: ZOS-XP-BGP-HA- HA-GR: ZOS-XP-BGP-HA- SSO: ZOS-XP-BGP-HA- HA-GR: ZOS-XP-BGP-HA- SSO: ZOS-XP-BGP-HA- SSO: ZOS-XP-BGP-HA- SSO: ZOS-XP-BGP-HA- SSO: ZOS-XP-BGP-HA- GR: ZOS-XP-BGP-HA- SSO: ZOS-XP-BGP-HA- GR: ZOS-XP-BGP-HA-	SSO: 205-XP-8GP-HA- SSO: 205-XP-8GP-HA- RFC 2918 SSO: 205-XP-8GP-HA- RFC 2918 SSO: 205-XP-8GP-HA- RFC 4781 SSO: 205-XP-8GP-HA- RFC 4781 SSO: 205-XP-8GP-HA- RFC 4781 SSO: 205-XP-8GP-HA- RFC 4781 SSO: 205-XP-8GP-HA- RFC 4883 RFC 4883 RFC 4883 SSO: 205-XP-8GP-HA- RFC 4883 RFC 4886 RFC 4781 SSO: 205-XP-8GP-HA- RFC 4886 RFC 4886 RFC 4886 SSO: 205-XP-8GP-HA- RFC 4887 RFC 4886 RFC	RFC 4750 No SSC 205-XP-8GP-HA- SSC 205-XP-8GP-HA- RFC 3392 Yes SSC 205-XP-8GP-HA- RFC 3392 RFC 4781 Yes SSC 205-XP-8GP-HA- RFC 4781 No RFC 4781 No RFC 4781 No RFC 4781 No SSC 205-XP-8GP-HA- SSC 205-XP-8GP-HA- SSC 205-XP-8GP-HA- SSC 205-XP-8GP-HA- SSC 205-XP-8GP-HA- RFC 4893 Yes SSC 205-XP-8GP-HA- SSC 205-XP-8GP-HA- SSC 205-XP-8GP-HA- RFC 4895 RFC 4895 Yes SSC 205-XP-8GP-HA- SSC 205-XP-8GP-HA- SSC 205-XP-8GP-HA- RFC 4781 No RFC 4893 Yes RFC 4893 Yes SSC 205-XP-8GP-HA- SSC 205-XP-8GP-HA- SSC 205-XP-8GP-HA- SSC 205-XP-8GP-HA- SSC 205-XP-8GP-HA- RFC 4781 No RFC 4781 No RFC 4781 No No SSC 205-XP-8GP-HA- SSC 205-XP-8GP-HA- RFC 4781 Yes RFC 4893 Yes RFC 4893 Yes Yes RFC 4893 Yes NA SSC 205-XP-8GP-HA- SSC 205-XP-8GP-HA- RFC 4893 Yes RFC 4893 Yes NA R	RFC 4760 No	SSC 200-199-60P-44-	SSC 2053/P30P4-N-	PSC 2003 PSC 2010



GR PE-CE Extensions for OSPPv2 No No No No No Provilizad treatment of Specific OSPPv2 Packets and Congestion Avoidance HA-GR ZOSXP-L3-HA- GR RFC 4222 Yes Yes Ves OSPF sasiability to 1000 Neighbors, 100000 Routes and 500 Notes SSO ZOS-XP-CSPF-HA- SSO ZOS-XP-CSPF-HA- RFC 4277 No No No SSO ZOS-XP-CSPF-HA-	Not tested. Not in the initial OSPF HA-GR scope Functionality tested. Performance testing not done. Not seated. Not in the initial OSPF SSO / HA-GR scope Not in the initial OSPF SSO / HA-GR scope
SSO	Performance testing not done. Not tested. Not in the initial OSPF SSO / HA-GR scope
SSO Yes Yes Yes No No No No No No No N	Not in the initial OSPF SSO / HA-GR scope
Prioritized treatment of Specific OSPFv2 Packets and SSO, ZOS.XP-OSPF-HA-SON RFC 4222 Yes Yes Yes OSPF Scalability to 1000 Neighbors, 100000 Routes and SOO Notes No No No SOO Notes Specific OSPF Scalability to 1000 Neighbors, 100000 Routes and SOO Notes No No No SOO Notes See The Provided Customer Edge Protocol for BGPMIPLS IP VPN SSO, ZOS.XP-OSPF-HA-	Not tested.
GR OSPF Scalability to 1000 Neighbors, 100000 Routes and 5000 Noo No No No Sophistic State Provides/Customer Edge Protocod for BGPMPLS IP VPN SSO; ZOS-XP-OSPF-HA-	Not tested.
SOD Nodes OSPF as the ProviderCustomer Edge Protocol for BGPMPLS IP VPN SSC: ZOS-XIP-OSPF-HA-	
SSO: ZOS-XP-OSPF-HA-	
SSC. ZOS.XP-QSPF-HA-	
Passive Interface Support for OSPFv2 SSO Yes Yes ZebHA 1.0 Yes Yes GR	Functionality tested.
SSO: ZOS.XP-OSPF-HA- SSO HA-GR: ZOS.XP-LS-HA- GR RFC 5185 Yes Yes ZebHA 1.0 Yes Yes	Functionality tested.
OSPF Multi instance extensions draft-acee-ospf-multi-instance 21.txt No No	
OSPF database exchange Summary List Optimization in OSPFv2. SSO: ZOS:XP-OSPF+H-SO- SSO: HA-GR: ZOS:XP-OSPF+H-GR: SSO: ASP-OSPF-H-GR: AS	Not tested.
SSO: 205 XP GSPF-HA- SSO HA-GR: 205 XP GSPF-HA- SSO HA-GR: 205 XP L3-HA- GB Yes Yes ZebHA 1.0 Yes Yes	Functionality tested.
BFD trigger for OSPFv2 No No	
SSD: 20S.XP-0.3PF-HA- SSD SSD HA-GR: 20S.XP-1.3+HA- GR	
IP FRR: OSPF-LFA Support for OSPFv2 RFC 5286 No No	
SSOZ ZDS.XP-OSPF-HA- SSO HA-GR: ZDS.XP-L3-HA- GR ZDS.XP-L3-HA- GR R	Not tested.
ISIS STATE OF THE	
Dynamic hostname exchange Mechanism for IS-IS ZOS-XP-L3-HA-GR RFC 2763 No Yes IS-IS Extension in support of Generalized MPLS ZOS-XP-L3-HA-GR RFC 4205 No Yes	Not tested Not tested
IS-IS Extension in support of Generalized MPLS	Not tested Not in the initial ISIS / HA-GR scope Not tested
BHD Ingger for IS-HS	Not sure about this support in HA-GR. Not tested Not in the initial ISIS / HA-GR scope
	Basic functionality tested for multiple level
Three-Way handshake for IS-IS Point to Point Adjacencies ZOS-XP-L3-HA-GR RFC 3373 No Yes	type Not tested
18-IS extension for Traffic Engineering ZOS-XP-L3-HA-GR RFC 3784 No Yes	Not tested
IS-IS extension in support for generalized MPLS ZOS-XP-L3-HA-GR RFC 4205 No Yes	Not tested Not in the initial ISIS / HA-GR scope
Point to Point Operation over LAN in Link State Routing ZOS-XP-L3-HA-GR RFC 5309 No Yes	Not tested
Multi Topology Routing in IS-IS ZOS-XP-L3-HA-GR draft-lef-lois-wy-multi-topology-11.txt No Yes	Not tested Not in the initial ISIS / HA-GR scope
IS-IS Cryptographic Authentication 2OS-XP-L3-HA-GR RFC 3567 No Yes	Not tested
IS-IS Exponential Back-off of SPF 20S-XPL3-HA-GR No Yes	Not tested



Part				ZebHA					
Property	IS-IS Extended Use of Overload Bit for BGP Convergence	ZOS-XP-L3-HA-GR			Yes				Not tested
Company Comp	Passive interface support for IS-IS	ZOS-XP-L3-HA-GR		No	Yes	ZebHA 1.1	No	Yes	Basic functionality tested.
Secure Securi Securi Securi Secure Securi S	IS-IS Transiesnt Blackhole Avoidance	ZOS-XP-L3-HA-GR	RFC 3277	No	Yes				Not tested
Marchanter Marc	Use of OSI IS-IS for routing in TCP/IP and Dual Environments		RFC 1195	No	Yes	ZebHA 1.1	No	Yes	Dual Environments
Company Comp	Management Information Base for IS-IS	ZOS-XP-L3-HA-GR	draft-ietf-isis-wg-mib-	No	Yes				
Part	LDP		US.LAX						
March Carbon Marc	LDP Applicability	SSO HA-GR: ZOS-XP-MPLS-	RFC 3037	Yes	Yes	ZebHA 1.1	No	Yes	Basic functionality tested
Month Mont	Definition of Managed Objects for MPLS LDP		RFC 3815	No	No				
Separation Properties Pro	Label Distribution Protocol	SSO HA-GR: ZOS-XP-MPLS-	RFC 5036)	Yes	Yes	ZebHA 1.1	No	Yes	issues still Open /to be fixed. To be re-tested.
No.	Support for LDP TCP-MDS	SSO HA-GR: ZOS-XP-MPLS-		Yes	Yes	ZebHA 1.1	No	Yes	Basic functionality tested
No Profess	RSVP								
No.	Use of RSVP with IETF Integrated Services	ZOS-XP-MPLS-HA-GR	RFC 2210	No	Yes	ZebHA 1.1	No	Yes	Basic functionality tested
September Sept	RSVP Traffic Engineering	ZOS-XP-MPLS-HA-GR	RFC 2702	No	Yes	ZebHA 1.1	No	Yes	Basic functionality tested
Processing Summer for Exercisors is RSVP for LSP 206-VPAPILS-HA-GR RFC 2010 No No Ves 246H 1.1 No Ves Basic functionally sealed and some processing fluids 206-VPAPILS-HA-GR RFC 2010 No No Ves 246H 1.1 No Ves Basic functionally sealed and some processing fluids 206-VPAPILS-HA-GR RFC 2010 No No No Ves 246H 1.1 No Ves Basic functionally sealed and some processing fluids No No Ves Basic functionally sealed and some processing fluids No No Ves Basic functionally sealed and some processing fluids No No Ves Basic functionally sealed and some processing fluids No No Ves Basic functionally sealed and some processing fluids No No Ves No No Ves No No No No No No No N								Yes	
Table	RSVP-TE: Extensions to RSVP for LSP Tunnels	ZOS-XP-MPLS-HA-GR	RFC 3209	No	Yes	ZebHA 1.1	No	Yes	Basic functionality tested
Part	Applicability Statement for Extensions to RSVP for LSP Tunnels	ZOS-XP-MPLS-HA-GR	RFC 3210	No	Yes	ZebHA 1.1	No	Yes	-
## 15 TE Management Information Base PRC 3912 No No No No No No No No No	Fast Reroute Extensions to RSVP-TE for LSP Tunnels	ZOS-XP-MPLS-HA-GR	RFC 4090	No	Yes	ZebHA 1.1	No	No	
Calculating IGP Routes Over Traffic Engineering Turnish RFC 2005 RFC 2005 No	RSVPv1 - Message Processing Rules	ZOS-XP-MPLS-HA-GR	RFC 2209	No	Yes	ZebHA 1.1	No	Yes	Basic functionality tested
Resource Reservation Protocol 20S-XP-MPLS-HA-GR RFC 220S RFC 427S	MPLS TE Management Information Base		RFC 3812	No	No				
Resource Reservation Protocol SyPA-MPLS-HA-GR RPC 2205 RPC	Calculating IGP Routes Over Traffic Engineering Tunnels		RFC 3906	No	No				
Composition methods for Transport of Ethernet Over	Resource Reservation Protocol	ZOS-XP-MPLS-HA-GR	RFC 2205	No	Yes	ZebHA 1.1	No	Yes	For ALL MPLS RSVP HA-GR many issues still Open /to be fixed. To be re-tested.
Encapsulation methods for Transport of Enemet Over MPES Networks RPC 4488 Yes NA ZebHa 1.1 No Yes Basic functionality tested. Structure-Aware TDM Crout Emulation Service over packed without Settlewind. RPC 5086 No No NA I 1 <td>RSVP-TE for Point to Multipoint TE Label Switched Paths</td> <td></td> <td>RFC 4875</td> <td>No</td> <td>No</td> <td></td> <td></td> <td></td> <td></td>	RSVP-TE for Point to Multipoint TE Label Switched Paths		RFC 4875	No	No				
MRLS Networks STRICTURE-Marked TDM Circuit Emulation Service over gooded reducted Metanot. RFC 0866 RFC 4553 No No NA S S S S S S S S S S S S S S S S S S	L2VPN								
Structure-Aware TDM Circuit Emulation Service over against antificate Methods RFC 5086 RFC 5453 No No NA Service Service Agnostic Time Division Multiplexing Over Packet RFC 5453 No No NA Service Service Agnostic Time Division Multiplexing Over Packet RFC 5453 No No NA Service Service Agnostic Time Division Multiplexing Over Packet RFC 5453 Service Agnostic Time Division Multiplexing Over Packet RFC 5455 Service Agnostic Time Division Multiplexing Over Packet RFC 5455 Service Agnostic Time Division Multiplexing Over Packet RFC 5455 Service Agnostic Time Division Multiplexing Over Packet RFC 5455 Service Agnostic Time Division Multiplexing Over Packet RFC 5455 Service Agnostic Time Division Multiplexing Over Packet RFC 5455 Service Agnostic Time Division Multiplexing Over Packet RFC 5455 Service Agnostic Time Division Multiplexing Over Packet RFC 5455 Service Agnostic Time Division Multiplexing Over Packet RFC 5455 Service Agnostic Time Division Multiplexing Over Packet RFC 5455 Service Agnostic Time Division Multiplexing Over Packet RFC 5455 Service Agnostic Time Division Multiplexing Over Packet RFC 5455 Service Agnostic Time Division Multiplexing Over Packet RFC 5455 Service Agnostic Time Division Multiplexing Over Packet RFC 5455 Service Agnostic Time Division Multiplexing Over Packet RFC 5455 Service Agnostic Time Division Multiplexing Over Packet RFC 5455 Service Agnostic Time Division Multiplexing Over Packet RFC 5455 Service Agnostic Time Division Multiplexing Over Packet RFC 5455 Service Agnostic Time Division Multiplexing Over Packet RFC 5455 Service Agnostic Time Division Multiplexing Over Packet RFC 5455 Service Agnostic Time Division Multiplexing Over Packet RFC 5455 Service Agnostic Time Division Multiplexing Over Packet RFC 5455 Service Agnostic Time Division Multiplexing Over Packet RFC 5455 Service Agnostic Time Division Multiplexing Over Packet RFC 5455 Serv	Encapsulation methods for Transport of Ethernet Over MPLS Networks	ZOS-XP-LDP-HA-SSO	RFC 4448	Yes	NA	ZebHA 1.1	No	Yes	Basic functionality tested.
Structure-Agnostic Time Division Multipleasing Over Packet RPC 4553 No No NA NA NA NA NA NA N	Structure-Aware TDM Circuit Emulation Service over		RFC 5086	No	NA				
No			RFC 4553	No	NA				
Mail Segment Fleedowline RFC 559 No No No No No No No N	Control Protocol Extensions for Setup of TDM Pseudowires in MPLS Networks		control-protocol-	No	NA				
Paudowire MBL Paudowire MRC SPN Management Information RPC 5602 No	Segmented Pseudowire		draft-letf-pwe3- segmented-pw-13.txt	No	NA				
Pasudowire Redundancy	Multi Segment Pseudowire								
Base	Pseudowire over MPLS PSN Management Information								
Pasudowire Redundancy	Base								
Pseudowire Redundancy Redun	Etnemet Pseudowire Management Information Base			NO NO	N0				
Ower an MPLS PRN	Pseudowire Redundancy		Redundancy(RFC 6718) draft-ietf-pwe3- redundancy-bit-03.txt	No	NA				
Pseudowire Enulation Edge-to-Edge Control Word for use or an MPL S Port of Signalling RFC 4385 No NA L L C C VPLS using LDP Signalling RFC 4762 No No No L L C	Pseudowire Emulation Edge-to-Edge Control Word for use over an MPLS PSN		RFC 4385	No	NA				
Order all note 2- PSA	Pseudowire Emulation Edge-to-Edge Control Word for use		RFC 4385	No	NA				
VPLS using BGP for Signalling and auto-discovery RFC 4761 No NA Pseudowire Setup and Maintenance using LDP ZOS-XP-LDP-HA-SSO RFC 4447 Yes NA ZebHA 1.1 No Yes Basic functionality tested.									
			RFC 4761	No	NA				
Provisioning, Auto-Discovery and Signalling in LEVPN RFC 6074 No NA	Pseudowire Setup and Maintenance using LDP	ZOS-XP-LDP-HA-SSO				ZebHA 1.1	No	Yes	Basic functionality tested.
	Provisioning, Auto-Discovery and Signalling in L2VPN		RFC 6074	No	NA				

NA - HA_GR is Not Applicable for these modules

										ZebIC											
Feature	SKU	Standard	Features not supported							Data plane i	ntegration										Comments
				ZebIC 2.1	(ZebOS vers	sion 7.10.1	Ze	blC3.1 (ZebO	S-XP version 1	1.1)	ZebIC3.2 (ZebOS-XP v	ersion 1.2)	Zeb	C 4.0 (ZebO	S-XP version	1.3)	ZebIC 4	1 (ZebOS-XP v	ersion 1.4)	
				PMC- Sierra	Broadcom BCM56846	Broadcom BCM56440	Broadcom BCM56846	Broadcom BCM56440	Marvell Prestera CX 8248/8234	Marvell Prestera 98CX8129	Broadcom BCM56850	Marvell Prestera 98CX8296	Marvell Prestera 98CX8129	Broadcom BCM56850	Broadcom BCM56440	Marvell Prestera 98CX8296	Marvell Prestera 98CX8129	Marvell Prestera 98CX8296	Broadcom BCM56850	Broadcom BCM56340	
				Winpath-3	Trident+	Katana	Trident+	Katana	Lion	Hooper	Trident2	Lion2	Hooper	Trident2	Katana	Lion2	Hooper	Lion2	Trident2	Helix4	
Quality of Service (QoS)																					
DiffServ Field in IPv4/IPv6 Headers	ZOS-XP-QOS	RFC 2474		Yes	Yes	Yes	Yes	Yes	No	No	Yes	No	No	Yes	Yes	No	No	No	Yes	No	
Architecture for Differentiated Services	ZOS-XP-QOS	RFC 2475		Yes	Yes	Yes	Yes	Yes	No	No	Yes	No	No	Yes	Yes	No	No	No	Yes	No	
Assured Forwarding PHB Group	ZOS-XP-QOS	RFC 2597		No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	
Expedited Forwarding PHB (Per-Hop Behavior)	ZOS-XP-QOS	RFC 3246		No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	
Optional policy attributes:												No	No							No	
Assign matching traffic flow to a specific queue	ZOS-XP-QOS			Yes	Yes	Yes	Yes	Yes	No	No	Yes	No	No	Yes	Yes	No	No	No	Yes	No	
QoS Access Control Lists (ACL	Ls) Permit/De	eny for Inbou	ind/Outbound IP	traffic base	d on:																
Type of Service (TOS) or DiffServ (DS) DSCP field	ZOS-XP-QOS			Yes	Yes	Yes	Yes	Yes	No	No	Yes	No	No	Yes	Yes	No	No	No	Yes	No	
Source IP address	ZOS-XP-QOS			Yes	Yes	Yes	Yes	Yes	No	No	Yes	No	No	Yes	Yes	No	No	No	Yes	No	
Destination IP address	ZOS-XP-QOS			Yes	Yes	Yes	Yes	Yes	No	No	Yes	No	No	Yes	Yes	No	No	No	Yes	No	
TCP/UDP source port	ZOS-XP-QOS			Yes	Yes	Yes	Yes	Yes	No	No	Yes	No	No	Yes	Yes	No	No	No	Yes	No	
TCP/UDP destination port	ZOS-XP-QOS			Yes	Yes	Yes	Yes	Yes	No	No	Yes	No	No	Yes	Yes	No	No	No	Yes	No	
IP Protocol Number	ZOS-XP-QOS			Yes	Yes	Yes	Yes	Yes	No	No	Yes	No	No	Yes	Yes	No	No	No	Yes	No	
QoS Class of Service (CoS) dir	ect user con	figuration of	the following:																		
IP DSCP to Traffic Class Mapping	ZOS-XP-QOS			No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	
Interface Trust Mode: 802.1p, IP DSCP, or Untrusted	ZOS-XP-QOS			Yes	Yes	Yes	Yes	Yes	No	No	Yes	No	No	Yes	Yes	No	No	No	Yes	No	
Police Rate (SRTCM/TRTCM)	ZOS-XP-QOS			Yes	Yes	Yes	Yes	Yes	No	No	Yes	No	No	Yes	Yes	No	No	No	Yes	No	
Interface Traffic Shaping Rate	ZOS-XP-QOS			Yes	Yes	Yes	Yes	Yes	No	No	Yes	No	No	Yes	Yes	No	No	No	Yes	No	
Minimum and Maximum Bandwidth Per Queue	ZOS-XP-QOS			No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	
WRR/WFQ/SP Scheduling Per Queue	ZOS-XP-QOS			Yes	Yes	Yes	Yes	Yes	No	No	Yes	No	No	Yes	Yes	No	No	No	Yes	No	
WRED Queue Depth Management	ZOS-XP-QOS			Yes	Yes	No	Yes	No	No	No	Yes	No	No	Yes	No	No	No	No	Yes	No	

		Z	ebIC			
Feature	SKU	Standard	Features not supported	Version	Data plane integration	Comments
Hierarchical QoS (HQoS)					Broadcom BCM56850	
					Trident2	
Quality of Service (QoS)						
DiffServ Field in IPv4/IPv6 Headers	ZOS-XP-HQOS	RFC 2474			Yes	
Architecture for Differentiated Services	ZOS-XP-HQOS	RFC 2475			Yes	
Assured Forwarding PHB Group	ZOS-XP-HQOS	RFC 2597			No	
Expedited Forwarding PHB (Per-Hop Behavior)	ZOS-XP-HQOS	RFC 3246			No	
Optional policy attributes	ZOS-XP-HQOS					
Assign matching traffic flow to a specific queue	ZOS-XP-HQOS				Yes	
QoS Access Control Lists (ACLs	s) Permit/Deny for Inb	ound/Outboun	d IP traffic based or	n:		
Type of Service (TOS) or DiffServ (DS) DSCP field	ZOS-XP-HQOS				Yes	
Source IP address	ZOS-XP-HQOS				Yes	
Destination IP address	ZOS-XP-HQOS				Yes	
TCP/UDP source port	ZOS-XP-HQOS				Yes	
TCP/UDP destination port	ZOS-XP-HQOS				Yes	
IP Protocol Number	ZOS-XP-HQOS				Yes	
QoS Class of Service (CoS) dire		of the following	g:			
IP DSCP to Traffic Class Mapping	ZOS-XP-HQOS				No	
Interface Trust Mode: 802.1p, IP DSCP, or Untrusted	ZOS-XP-HQOS				Partial	Untrust not supported, By Default L2 ports are CoS trusted and L3 Ports are DSCP trusted. We can configure L2 ports as DSCP Trusted.
Police Rate (SRTCM/TRTCM)	ZOS-XP-HQOS				Yes	
Interface Traffic Shaping Rate	ZOS-XP-HQOS				No	
Minimum and Maximum Bandwidth Per Queue	ZOS-XP-HQOS				Yes	
Traffic shaping per queue	ZOS-XP-HQOS				Yes	
WRR/WFQ/SP Scheduling Per Queue	ZOS-XP-HQOS				Yes	WFQ Not Supported

		Z	ebIC		
WRED Queue Depth Management	ZOS-XP-HQOS			Yes	
Hierarchical Queueing (HQoS)					
1 Level Queuing hierarchy	ZOS-XP-HQOS			Yes	
2 Level Queuing hierarchy	ZOS-XP-HQOS			Yes	
3 Level Queuing hierarchy	ZOS-XP-HQOS			Yes	

			ZebIC				
Feature	SKU	Standard	Features not supported	Version	Data plane integration		Comments
Open-Flow (OFL)					Broadcom BCM56850	Broadcom BCM56846	
					Trident2	Trident+	
Open-Flow							
Open-Flow allows Controller to access or manipulate the forwarding plane of network device using flow-rules configuration.	ZOS-XP-OFL	ONF Open-Flow 1.3.4	1. Flow-rules for MPLS/QoS/MCAST 2. Hybrid mode 3. Programming flow- rules using Broadcom's OFDPA APIs		Yes	Yes	