

Test Coverage

IxANVL Test Suites	Target Protocols	Reference Specification	Test Cases/Req. Test Interfaces
IPv6 Test Suites			
IPv6 Core	IPv6	RFC 2460, 2464, 8200	126 / 2
	IPv6CP	RFC 2472	17 / 1
	ICMPv6	RFC 4443	46 / 2
IPv6 Advanced	NDP	RFC 4861	228 / 2
	Generic Packet Tunneling	RFC 2473	46 / 2
	AutoConfig	RFC 4862	37 / 2
	V6oV4	RFC 4213, 2529, 3056, 3068	66 / 2
	PMTU	RFC 1981, 8201	10 / 1
	IP Router Alert	RFC 2711	13 / 2
DHCPv6	DHCPv6 Client	RFC 3315	103 / 1
	DHCPv6 Server	RFC 3315	141 / 2
DHCPv6 Client PD	DHCPv6 Client Prefix Delegation	RFC 3633 RFC 8415	24 / 1
IPv4 Test Suites			
IPv4	IPv4	RFC 791, parts of 1122, 1812	70 / 2
	ICMP	RFC 792, parts of 1812	32 / 2
ARP	ARP	RFC 826	61 / 2
		RFC 1027	
DHCPv4	DHCPv4 Client	RFC 2131	90 / 2
	DHCPv4 Server	RFC 2131	74 / 2
Routing Test Suites			
IP RIP	RIP	RFC 2453	53 / 2
	IPGW	RFC 1812, 1122	18 / 2
RIPng	RIPng	RFC 2080	60 / 2
OSPF Core	OSPF	RFC 1583, 2328	312 / 3
OSPF Extensions	Opaque LSA, NSSA, DB Overflow, Stub Router Ext	RFC 2370, 3101, 1765, 3137	56 / 3
	OSPF TE	RFC 3630	54 / 2
OSPFv3	OSPFv3	RFC 5340, parts of RFC 2328	328
OSPF-GR	OSPFv2-GR	RFC 3623	56 / 2
VRRP	VRRP	RFC 3768	83 / 2
		RFC 5798	
BGP4 Core	BGP	RFC 4271	217 / 3
BGP4 Extensions	BGP-OSPF, Communities, Route Flap Damping, Route Reflection, Route Refresh, Confederations	RFC 1403, 1997, 2439, 2918, 4456, 5065, 1771, 4360	150 / 3
BGP Plus	BGP+ with IPv6	RFC 4271, 4760, 2545	236 / 3
OSPFv3-AF	Support of Address Families in OSPFv3	RFC 5838	37 / 2
BGP 4-Byte AS	4-byte AS for BGP and BGPPlus	RFC 4893	52 / 3
ISIS	ISIS	RFC 1195, 3719, 5303, 5309	237 / 2
ISIS-TE	ISIS-TE	RFC 3784	31 / 1
ISISv6	ISISv6	ISO/IEC 10589:1992(E)	220/2
		RFC 1195	
		RFC 3719	
ISIS-MT	ISIS-MT	RFC 5308	105 / 3
		RFC 5120, 5303, 5309	
VRRPv6	VRRPv3 over IPv6	RFC 5798	77 / 2
BFD	BFD Base, BFD Generic, BFD-v4v6-1hop for OSPFv2/v3, ISIS, BFD-BGP, BFDv6-BGPPLUS, BFD-MPLS	draft-ietf-bfd-base-09.txt, draft-ietf-bfd-generic-05.txt, draft-ietf-bfd-v4v6-1hop-09.txt, draft-ietf-bfd-mpls-07.txt	178 / 3

IxANVL Test Suites	Target Protocols	Reference Specification	Test Cases/Req. Test Interfaces
MPLS Test Suites			
MPLS	Label Encapsulation	RFC 3032	59 / 2
RSVP-TE	RSVP-TE	RFC 3209, draft-ietf-mpls-rsvp-lsp-tunnel-07	87 / 3
RSVP-TE	RSVP-TE P2MP	RFC 4875	48 / 3
LDP	LDP	RFC 3036	329 / 3
mLDP	mLDP P2MP	draft-ietf-mpls-ldp-p2mp-10	97 / 4
LSP-Ping-Tr	LSP Ping and Traceroute	RFC 4379	128 / 2
VCCV	Pseudo wire VCCV	RFC 5085	70 / 2
L2VPN (PWE3)	PWE3-Control	RFC 4447	69 / 2
	PWE3-Encapsulation	RFC 4448, 4618, 4717, 4385, 4623	78 / 2
VPLS	VPLS	RFC 4762	58 / 4
VPLS-BGP	VPLS with BGP AD and signaling	RFC 4761	46 / 4
L3 VPN	L3 VPN	RFC 4364	101 / 3
MPLS-TP-Y1731-CC-LD	MPLS-TP-Y1731-CC-LD	RFC 5586 (GACH), draft-bhh-mpls-tp-oam-y1731-06.txt, ITU-T-REC Y.1731-200605-I	85 / 1
MPLS-TP-IETF-CC-CV-LD	MPLS-TP-IETF-CC-CV-LD	RFC 5586 (GACH), draft-ietf-mpls-loss-delay-01, draft-ietf-mpls-tp-on-demand-cv-02, draft-ietf-mpls-tp-cc-cv-rdi-03	210 / 1
MPLS-TP-G.8031-APS-Y.1731	MPLS-TP-G.8031-APS-Y.1731	G.8031_Y.1342-2006-06	140 / 2
Multicasting Test Suites			
IGMP	IGMPv2	RFC 2236	49 / 2
	IGMPv3	RFC 3376 RFC 4604	169 / 2
DVMRP	DVMRP	draft-ietf-idmr-dvmrp-v3-07	66 / 3
PIM	Dense Mode	draft-ietf-pim-dm-new-v2-04	162 / 3
	Sparse Mode, SSM	RFC 4601, draft-ietf-pim-sm-bsr-12	327 / 3
PIMv6	Sparse Mode	draft-ietf-pim-sm-v2-new-12, draft-ietf-pim-sm-bsr-12	283 / 3
MLD	MLDv1	RFC 2710	98 / 2
	MLDv2	RFC 3810	202 / 2
Transport Test Suites			
TCP Core	TCP	RFC 793, 1122, 2460	179 / 2
TCP Advanced	Slow Start, Congestion Control, PMTU Disc, MD5	RFC 2001, 2581, 1191, 2385, 2463, 1981	57 / 1
TCP High Performance	Ext for High Performance, Selective Ack	RFC 1323, 2018	48 / 1
UDP	UDP	RFC 768, 1122	35 / 1
VPN Test Suites			
IPSec AH	MD5, SHA	RFC 4301, 4302	58 / 2
IPSec ESP	MD5, SHA, DES, 3DES, Blowfish, AES	RFC 4301, 4303, 2403, 2404, 2405	72 / 2
IPSec IKE	ISAKMP, IKE	RFC 2407, 2408, 2409	373 / 2
IPSec AH / IPv6	MD5, SHA, IPSecv6	RFC 4301, 4302	66 / 2
IPSec ESP / IPv6	MD5, SHA, DES, 3DES, Blowfish, AES	RFC 4301, 4303, 2403, 2404, 2405, 2406	74 / 2
IPSec IKE / IPv6	ISAKMP, IKE	RFC 2407, 2408, 2409	384 / 2
IKEV2	IKEV2, DES, 3DES, AES-128, 256, 192, MD5, SHA, DH-768, 1024, 1536, 2048, 3072, AES_GCM_128, AES_GCM_256	RFC 7296	296 / 2
L2TP	L2TP	RFC 2661	105 / 1
PPTP	PPTP	draft-ietf-pppext-pptp-02	55 / 1
IKEV2-IPV6	IKEV2-IPV6	RFC 4306, RFC 5996	204 / 2

IXANVL Test Suites	Target Protocols	Reference Specification	Test Cases/Req. Test Interfaces
Automotive Ethernet Test Suites			
Supported automotive test specifications: OPEN Alliance TC11 specification—TC11_TestSpecification_Switch_V1.0_final-2019.pdf OA_Automotive_Ethernet_ECU_TestSpecification_Layer_3-7_v3.0_final.docx OA_Automotive_Ethernet_ECU_TestSpecification_Layer_2_v3.0 AUTOSAR Acceptance Tests 1.1 AUTOSAR Testability Protocol and Service Primitives 1.1—execution by using the latest stub protocol AUTOSAR Specification of TCP/IP Stack V1.1.0 R4.1 Rev2 AUTOSAR Example for a Serialization Protocol (SOME/IP) V1.1.0 R4.1 AUTOSAR Specification of Service Discovery V1.2.0 R4.1 Rev 3			
AUTO-ETH-ARP	AUTO-ETH-ARP	RFC 826	52 / 1
AUTO-ETH-DHCP-SERVER	AUTO-ETH-DHCP-SERVER	RFC 2131 RFC 2132	74 / 1
AUTO-ETH-DHCPV4-CLIENT	AUTO-ETH-DHCPV4-CLIENT	RFC 2131, RFC 2132	90 / 1
AUTO-ETH-DHCPV6-CLIENT	AUTO-ETH-DHCPV6-CLIENT	RFC 3315	104 / 1
AUTO-ETH-DHCPV6-SERVER	AUTO-ETH-DHCPV6-SERVER	RFC 3315	141 / 1
AUTO-ETH-ICMP	AUTO-ETH-ICMP	RFC 792, RFC 1122	21 / 1
AUTO-ETH-ICMPV6	AUTO-ETH-ICMPV6	RFC 2463, RFC 4443	24 / 1
AUTO-ETH-IP	AUTO-ETH-IP	RFC 791, RFC 1122, RFC 894 AUTOSAR_ATS_IPv4.pdf	29 / 1
AUTO-ETH-IPV4-ACONF	AUTO-ETH-IPV4-ACONF	RFC 3927	56 / 1
AUTO-ETH-IPV6	AUTO-ETH-IPV6	RFC 2460 and RFC 2464	80 / 1
AUTO-ETH-IPV6-AUTOCONFIG	AUTO-ETH-IPV6-AUTOCONFIG	RFC 4862	34 / 1
AUTO-ETH-IPV6-MLD	AUTO-ETH-IPV6-MLD	RFC 2710	46 / 1
AUTO-ETH-IPV6-NDP	AUTO-ETH-IPV6-NDP	RFC 4861	83 / 1
AUTO-ETH-TCP-ADVANCED	AUTO-ETH-TCP-ADVANCED	RFC 793, RFC 2001, RFC 1191, RFC 2385, RFC 2463, RFC 1981, RFC 813, RFC 896 and AUTOSAR_SWS_Tcplp.pdf (AUTOSAR Specification of TCP/IP Stack V1.1.0 R4.1 Rev2) AUTOSAR_ATS_TCP.pdf	63 / 1
AUTO-ETH-TCP-CORE	AUTO-ETH-TCP-CORE	RFC 793, RFC 1122, RFC 2460 and AUTOSAR_SWS_Tcplp.pdf (AUTOSAR Specification of TCP/IP Stack V1.1.0 R4.1 Rev2) AUTOSAR_ATS_TCP.pdf	177 / 1
AUTO-ETH-IPV6-MLDV2	AUTO-ETH-IPV6-MLDV2	RFC 3810	85 / 1
SOMEIP-SERVER	SOMEIP-SERVER	Example for a Serialization Protocol (SOME/IP) V1.1.0 R4.1 Rev 3, Document ID 637. AUTOSAR_TR_SomeIpExample.pdf Specification of Service Discovery V1.2.0 R4.1 Rev 3, Document ID 616: AUTOSAR_SWS_ServiceDiscovery.pdf	105 / 1
AUTO-ETH-IPV6OV4	AUTO-ETH-IPV6OV4	RFC 4213, RFC 2529	37 / 1
AUTO-ETH-UDP	AUTO-ETH-UDP	RFC 768 and AUTOSAR_SWS_Tcplp.pdf (AUTOSAR Specification of TCP/IP Stack V1.1.0 R4.1 Rev2) AUTOSAR_ATS_UDP.pdf	35 / 1
TC8-AUTO-ETH-IPV4-ACONF	TC8-AUTO-ETH-IPV4-ACONF	OpenAlliance v3.0 test specification	56 / 1
TC8-AUTO-ETH-UDP	TC8-AUTO-ETH-UDP	OpenAlliance v3.0 test specification	74 / 1
TC8-AUTO-ETH-ARP	TC8-AUTO-ETH-ARP	OpenAlliance v3.0 test specification	52 / 1
TC8-AUTO-ETH-DHCPV4-CLIENT	TC8-AUTO-ETH-DHCPV4-CLIENT	OpenAlliance v3.0 test specification	90 / 1

IxANVL Test Suites	Target Protocols	Reference Specification	Test Cases/Req. Test Interfaces
TC8-SOMEIP-SERVER	TC8-SOMEIP-SERVER	OpenAlliance v3.0 test specification	117 / 1
TC8-AUTO-ETH-TCP-CORE	TC8-AUTO-ETH-TCP-CORE	OpenAlliance v3.0 test specification	197 / 1
TC8-AUTO-ETH-TCP-ADVANCED	TC8-AUTO-ETH-TCP-ADVANCED	OpenAlliance v3.0 test specification	71 / 1
TC8-AUTO-ETH-IP	TC8-AUTO-ETH-IP	OpenAlliance v3.0 test specification	53 / 1
TC8-AUTO-ETH-ICMP	TC8-AUTO-ETH-ICMP	OpenAlliance v3.0 test specification	21 / 1
TC8-SOMEIP-ETS	TC8-SOMEIP-ETS	OA_Automotive_Ethernet_ECU_TestSpecification_Layer_3-7_v3.0_final.docx	146 / 1
TC11	ARP, VLAN, Filtering, QoS, General, Diagnostic	TC11_TestSpecification_Switch_V1.0_final-2019.pdf	161 / 4
TC8-AUTO-ETH-L2	TC8-AUTO-ETH-L2	OA_Automotive_Ethernet_ECU_TestSpecification_Layer_2_v3.0	70/16
PPP Test Suites			
PPP	LCP, PPP, PPP in HDLC Authentication (PAP, CHAP)	RFC 1661, 1662	111 / 2
IPCP	IPCP	RFC 1332	37 / 1
VJ	VJ Compression	RFC 1144	19 / 2
PPPoE	PPP over Ethernet	RFC 2516	48 / 2
Multilink PPP	MPPP Multi-class Extension	RFC1717, 1990, RFC 2686	75 / 2
Carrier Ethernet Test Suites			
MEF9	MEF9	MEF1, MEF9, Iometrix Test Plan version 1.4	247 / 6
EtherCFM	Ethernet CFM	IEEE P802.1ag/D8.1 2007	246 / 3
EtherOAM	Ethernet OAM	IEEE 802.3-ah-2004	166 / 3
MEF OAM	MEF21 OAM	MEF 21 Abstract Test Suite for UNI Type 2	187 / 2
Service OAM	Y.1731	ITU-T Y.1731 05/2006, IEEE P802.1ag/D8.1 June 8, 2007	106 / 2
Provider BB	PBB	IEEE 802.1ah D4.2 2005	55 / 2
MEF Service OAM	MEF Service OAM	ATS for UNI Type 2 Part 3 - Service OAM	157 / 2
CE2.0	CE2.0	CARRIER ETHERNET 2.0 TEST PLAN - PART 1: SERVICES ATTRIBUTES - Version 1.0 CARRIER ETHERNET 2.0 TEST PLAN - PART 2: TRAFFIC MANAGEMENT - Version 2.0	635 / 6
MEF ELMI	MEF ELMI	D00063_004 ATS for UNI Type 2 Part 2 ELMI TC MEF 16	239 / 2
G8031	G.8031 1:1 protection	Ethernet Automatic Protection Switching – ITU-T G8031/Y.1342	283 / 3
G_8265_1	G_8265_1	IEEE 1588 Conformity Test Suite for Frequency Synchronization in Telecommunications Networks, Draft Version 2.0	348 / 1
Bridging Test Suites			
STP	802.1d	IEEE Std. 802.1D-1998	53 / 3
RSTP	802.1w	IEEE Std. 802.1D-2004	126 / 4
EAPOL	802.1x, MD5, TLS, TTLS	IEEE 802.1x-2004	83 / 3
MSTP	802.1s	IEEE 802.1Q-2005	247 / 4
LLDP	LLDP	IEEE 802.1AB 2005 IEEE Std 802.1AB-2016	131 / 3

IxANVL Test Suites	Target Protocols	Reference Specification	Test Cases/Req. Test Interfaces
DCBX	DCBX	DCB Capability Exchange Protocol Specification (Rev 1.0), DCB Capability Exchange Protocol Base Specification (Rev 1.01)	92 / 1
Mcast Snooping	IGMP/MLD Snooping	RFC 4541	42 / 3
VLAN	802.1q, GMRP, GVRP	IEEE Std. 802.1Q-2005	161 / 4
LACP	802.3ad	IEEE Std. 802.3-2005 Clause 43	118 / 4
QinQ	QinQ	IEEE 802.1ad- 2005	127 / 2
MVRP/MMRP	MVRP, MMRP	IEEE Std 802.1ak-2007 IEEE Std 802.1Q™-2005/Cor 1-2008	321 / 3
SDN Test Suites			
OPENFLOW_1.0	OPENFLOW_1.0	OpenFlow Switch Specification Version 1.0.0 (Wire Protocol 0x01) and OpenFlow Switch Errata v1.0.1	194 / 5
OPENFLOW1.3	OPENFLOW1.3	OpenFlow Switch Specification Version 1.3.2 (Wire Protocol 0x04)	528 / 6
Segment Routing Test Suites			
ISIS-SR	ISIS Segment Routing	RFC 8667 RFC 7794	99 / 3
BGP4 SR-TE	BGP SR-TE Policy	draft-ietf-idr-segment-routing-te-policy-08	78 / 3
ISIS SRv6	ISIS SRv6	draft-ietf-lsr-isis-srv6-extensions-08	84 / 3
OSPFv2 SR	OSPFv2 Segment Routing	RFC 8665	73 / 3