

Technical Specification - Software

Class	Feature	Description	Default Profile	IPv6 Profile	Layer3 Profile	Ipran Profile
Ethernet basic	Jumbo frame	Maximum jumbo frame size	9600	9600	9600	9600
	Unicast MAC	MAC address capacity	122880	73728	73728	65536
		MAC learning rate (SW)	> 4000pps			
		MAC learning rate (HW)	> 10Gbps			
		Blackhole MAC address capacity	128	128	128	128
	Multicast MAC	MAC address capacity	2048	1024	1024	2048
	VLAN	VLAN IDs	4094	4094	4094	4094
		VLAN instances	4094	4094	4094	4094
		VLANs to enable statistics	256	256	256	256
	VLAN mapping	Maximum mapping table	64	64	64	64
		Maximum rules number	3072	3072	3072	3072
	EVC	Maximum EVC number	4094	4094	4094	4094
	Link aggregation	Maximum member number per group	No limitation			
	(Static & LACP)	Maximum group number	64	64	64	64
		Load balance key mode	static/dlb/rr/resilient/self-healing			
		Convergence time	< 50ms			
	VLAN classification	Maximum rule number	4096	4096	4096	4096
		Maximum group number	1	1	1	1
		MAC based rule capacity	512	384	512	512
		IPv4 based rule capacity	448	256	1024	512
		IPv6 based rule capacity	32	256	0	0
		Protocol based rule capacity	7	7	7	7
Ethernet ring protection	STP	Convergence time	< 30s			
	RSTP	Convergence time	< 1s			
	MSTP	MSTP instance number	64			
		Convergence time	< 1s			
	ERPS	Maximum domain number	16			
		Ring number	1 Primary ring/domain			
			2 Sub ring/domain			
		Maximum protection instance number per ring	64			
		Switchover time	< 50 ms			
	G.8031	Group number	256	N/A	N/A	16
		Switchover time	< 50 ms	N/A	N/A	< 50 ms
	G.8032	Rings	128	N/A	N/A	16
		Maximum member ports per Ring	256	N/A	N/A	32
		Switchover time	< 50 ms	N/A	N/A	< 50 ms
Ethernet OAM	CFM(802.1ag)	Maximum session number	512			
		Maximum domain number	8			
		CCM interval types	7			
		CCM minimum interval	3.3ms			
		Maximum LM number	256			
		Maximum LCK number	24			
		Maximum MIP number	40			
		Maximum down MEP number	1024			



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		Maximum up MEP number	1024			
		Maximum LMEP number	1024			
IPv4 unicast	ARP	ARP capacity	16384	8192	20480	8192
	IPv4	FIB	60K	36K	60K	32K
	ECMP	ECMP group	240 (Share with IPv6)			
	PBR	Policy route map	64			
		Policy based routing ACE	1024	512	1024	512
	OSPF	Maximum static neighbors	256			
		Maximum summary address	2048			
IPv4 multicast	IPMC	Multicast routing table	2048	1024	2048	1024
		Multicast routing downstream interfaces	4096	2048	5120	2048
	IGMP snooping	Maximum groups number	2048			
		Maximum member number	8192			
	MVR	Maximum group number	2048	1024	2048	1024
		Maximum member number	4096	2048	4096	2048
IPv6 unicast	Host route	NDP capacity	4096	8192	1024	2048
	IPv6	FIBv6	4096	16384	1024	2048
		ECMP group	240 (Share with IPv4)			
IPv6 multicast	IPMC	Multicast routing table	256	512	0	0
		Number of interfaces that support multicast routing table	512	1024	0	0
	MVR v6	Maximum entry number	256	512	0	0
		Maximum member number	512	1024	0	0
IP tunnel	IP tunnel	Tunnel peer capacity	8	8	8	8
QoS	Per-port queue number	Unicast queue	8			
		Multicast queue	1			
		Monitor queue	1			
	Packet buffer	System packet buffer capacity	36MByte	36MByte	36MByte	36MByte
	Granularity	Policer granularity	0~2M: 10K	0~2M: 10K	0~2M: 10K	0~2M: 10K
			2M~100M: 40K	2M~100M: 40K	2M~100M: 40K	2M~100M: 40K
			100M~1G: 80K	100M~1G: 80K	100M~1G: 80K	100M~1G: 80K
			1G~2G: 120K	1G~2G: 120K	1G~2G: 120K	1G~2G: 120K
			2G~4G: 250K	2G~4G: 250K	2G~4G: 250K	2G~4G: 250K
			4G~10G: 500K	4G~10G: 500K	4G~10G: 500K	4G~10G: 500K
			10G~40G: 1000K	10G~40G: 1000K	10G~40G: 1000K	10G~40G: 1000K
			40G~100G: 2000K	40G~100G: 2000K	40G~100G: 2000K	40G~100G: 2000K
			>100G: 4000K	>100G: 4000K	>100G: 4000K	>100G: 4000K
		Queue shape granularity	0~2M: 10K	0~2M: 10K	0~2M: 10K	0~2M: 10K
			2M~100M: 40K	2M~100M: 40K	2M~100M: 40K	2M~100M: 40K
			100M~1G: 80K	100M~1G: 80K	100M~1G: 80K	100M~1G: 80K
			1G~2G: 500K	1G~2G: 500K	1G~2G: 500K	1G~2G: 500K
			2G~4G: 1000K	2G~4G: 1000K	2G~4G: 1000K	2G~4G: 1000K
			4G~10G: 2000K	4G~10G: 2000K	4G~10G: 2000K	4G~10G: 2000K
		Port shape granularity	10k	10k	10k	10k
	Flow entry	Ingress port QoS ipv4 flow entries	6126	6126	6126	6126
		Ingress port QoS ipv6 flow entries				

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		Ingress port QoS flow stats entries	6144	6144	6144	6144
ACL	IPv4 ACL	Ingress port acl for IPv4	5949	5949	5952	5952
		Ingress VLAN acl for IPv4				
		Egress port acl for IPv4	1901	1901	1952	1952
		Egress VLAN acl for IPv4				
	IPv6 ACL	Ingress port acl for IPv6	5949	5949	5952	5952
		Ingress VLAN acl for IPv6				
		Egress port acl for IPv6	1901	1901	1952	1952
		Egress VLAN acl for IPv6				
	MAC ACL	Ingress port acl for MAC	5949	5949	5952	5952
		Ingress VLAN acl for MAC				
		Egress port acl for MAC	1901	1901	1952	1952
		Egress VLAN acl for MAC				
	ACL flow stats	Ingress acl flow stats entries	5949	5949	5952	5952
		Egress acl flow stats entries	2048	2048	2048	2048
	CoPP	CoPP rules	4072	4072	4076	4076
		CoPP flow stats entries	4072	4072	4076	4076
Security	IP source guard	IPv4 maximum rules number	2048	1024	2048	1024
		IPv6 maximum rules number	1024	2048	0	1024
		Maximum entries	512	512	512	512
	MAC based 802.1X	Maximum entries	512	512	512	512
	DHCP-snooping	Maximum bound entry	4096			
IPFIX	IPFIX	Ingress IPFIX entries	65536			
		Ingress IPFIX resource	2048			
Reliability	BFD	Maximum session number	share 256			
	S-BFD	Maximum session number				
	VRRP	Maximum group number	255			
	Smart link	Maximum group number	16			
		Maximum instance number	64			
		Switchover time	<50ms			
	Monitor link	Maximum group number	16			
		Maximum up-link number per group	24			
		Maximum down-link number per group	24			
Metro	MPLS	Maximum MPLS FTN number	N/A	N/A	N/A	share with ipv4 route
		Maximum MPLS ILM number	N/A	N/A	N/A	12288
	VPWS	Maximum VPWS number	N/A	N/A	N/A	1024
	VPLS	VSI number	N/A	N/A	N/A	64
		VPLS MAC learning number	N/A	N/A	N/A	share with non-mpls mac
	LDP	Maximum label number	N/A	N/A	N/A	12288(Share with static entries)
Virtual Network features	VARP	Virtual IP number per Port	15	15	15	15
	VXLAN	VXLAN tunnel	24576	24576	24576	4096
		VNI	4092	4092	4092	2000
		VTEP peer	1024	1024	1024	128

Network management

Feature			Description
Type	Sub type	Feature	
Ethernet basic features	Ethernet	Interface	Ethernet interface operating modes(full duplex, half duplex, and auto-negotiation)
			Ethernet interface operating rates
			Jumbo frame
			Port-xconnect
		Flow-control	Flow-control tx/rx
		Storm-control	Port based storm-control
			VLAN based storm-control
		Port-block	Port-block(know-unicast/unknow-unicast/know-multicast/unknow-multicast/broadcast)
		Port-isolate	L2/L3/All port-isolate
			Uni-direction isolate
		L2 protocol tunnel	L2 Protocol Tunnel(support CDP/CFM/DOT1X/LLDP/SLOW-PROTO/STP/VTP)
		Forward mode	Store-and-forward
			Cut-through
	VLAN	VLAN access mode	Access/Trunk
			Default VLAN
		VLAN classification	VLAN classification (port based/mac based/ip based/protocol based)
		QinQ	Basic QinQ
			Selective QinQ
			VLAN Mapping(1:1 VLAN Translation)
			VLAN Mapping(N:1 VLAN Translation)
		VLAN statistics	VLAN Statistics
		Private VLAN	Private VLAN
		Voice VLAN	Voice VLAN
		Guest VLAN	Guest VLAN
	MAC	MAC address table	Automatic learning and aging of MAC addresses
			Clear FDB based on PORT+VLAN
			Hardware learning
			Static and dynamic MAC address entries
			Blackhole MAC
		MAC flapping detect	MAC flapping detect
		Port bridge	Port Bridge
	LAG	Link aggregation	Static-LAG & LACP
			Static load balance (SLB)
			Dynamic load balance (DLB)
			Round-robin load balance (RR)
			LAG self-healing
			Weighted link aggregation
Ethernet ring protection features	STP	STP	Spanning-tree protocol
		RSTP	Rapid spanning-tree protocol
		MSTP	Multi-instance spanning-tree protocol
		Spanning-tree protocol protection	BPDU filter/guard
			Root guard
			Loop guard



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			Anti TC-BPDU attack
	ERPS	ERPS	Single ERPS ring
			Tangent ERPS rings
			Intersecting ERPS rings
			Compatible with RRPP
	G.8031	G.8031	G.8031 Ethernet linear network protection
	G.8032	G.8032	G.8032 v1/v2
			Single ring
			Sub ring
	Loopback detect	Loopback detect	Loopback-detection
Layer2 multicast	Layer2 multicast	IGMP snooping	IGMPv1/v2/v3 snooping
			Fast leave
			Static IGMP snooping group
IPv4 forwarding		MVR	MVR (Multicast VLAN registration)
	ARP	ARP	Static and dynamic ARP entries
			Aging of ARP entries
			Gratuitous ARP
		ARP proxy	Basic ARP-proxy
			Local ARP-proxy
	IPv4 unicast routing	IPv4 static routes	IPv4 static routes
			Blackhole routes
			Co-work with IP SLA
			Virtual routing and forwarding (VRF)
			uRPF check
		RIP	RIP v1/v2
		OSPFv2	OSPF v2
		IS-IS	IS-IS
			IS-IS Extensions for segment-routing
		BGP	IBGP
			EBGP
		Route policy	Route-map
			IPv4 prefix-list
		PBR	Policy-based routing (PBR)
		ICMP	ICMP redirect
			ICMP unreachable
		ECMP	ECMP(SLB)
			ECMP(DLB)
			ECMP(RR)
			ECMP self-healing
		IP unnumbered	IP unnumbered
	IPv4 multicast routing	IGMP	IGMP v1/v2/v3
			IGMP-proxy
			IGMP SSM mapping
		PIM	PIM-SM
			PIM-SSM
IPv6 forwarding	IPv6 basic protocol	ICMPv6	ICMPv6
		NDP	NDP



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	IPv6 unicast routing	PMTU	PMTU
		IPv6 static routes	IPv6 static routes
		RIPng	RIPng
		BGP4+	BGP4+
		OSPFv3	OSPF v3
		IS-IS	IS-IS
		VRRP v3	VRRP v3
	IPv6 multicast routing	MLD v1/v2	MLD v1/v2
		MLD v1/v2 snooping	MLD v1/v2 snooping
		MVR6	MVR6
		PIM-SM v6	PIM-SM v6
	IP tunnel	IPv6 over IPv4 tunnel	IPv6 over IPv4 tunnel
		6to4 tunnel	6to4 tunnel
		ISATAP tunnel	ISATAP tunnel
	IPv6 service	DHCPv6	DHCPv6 relay DHCPv6 snooping
		IPv6 route policy	IPv6 Prefix-list
Device reliability features	BFD	BFD	BFD for Static route
			BFD for OSPFv2
			BFD for VRRP/Track
			BFD for PBR
	VRRP	VRRP	VRRP
			Track for VRRP
	Smart link	Smart link	Multi-instance
			Load balance
			Multi-link
	MLAG	MLAG	Monitor-link
			MLAG basic
Ethernet OAM	EFM	EFM (802.3ah)	MLAG orphan port
			Auto detection
			Network fault detetion
			Network fault handle
	CFM	CFM (802.1ag)	Remote loopback
			Hardware CCM detect
			MAC Ping
QoS features	QoS	Traffic classification	MAC Trace
			Latency and jitter measure
			Traffic classification based on COS/DSCP (Simple classification)
		Traffic behaviors	Traffic classification based on ACL (Complex classification)
			Traffic classification based on inner header of the tunnel packets
			Queue scheduling
			Remark the priority fields(COS/DSCP) of the packet based on ACL
			Remark the priority fields(COS/DSCP) of the packet based on table map
			Flow redirection
			Flow mirror
		Traffic policing	Traffic policing based on direction(in/out) of port
			Traffic policing based on direction(in/out) of VLAN
			Traffic policing based on direction(in/out) of flow

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			Traffic policing based on direction(in/out) of aggregated flow
		Traffic shaping	Queue based traffic shaping
			Port based traffic shaping
		Congestion management	SP (Strict priority)scheduling
			WDRR (Weighted deficit round robin)scheduling
			SP + WDRR mixed scheduling
		Congestion avoidance	Tail drop (TD)
			Weighted random early detection (WRED)
		Traffic statistics	Packet counts and bytes statistics based on traffic classification
			Packet counts and bytes statistics based on the color after traffic policing
			Forwarded and discarded packet counts and bytes statistics
		ECN (Explicit congestion notification)	ECN tags based on tail drop
			ECN tags based on WRED
Virtual Network	VARP	Virtual gateway	VARP(Virtual-ARP)
			VARP subnet
	Tunnel	VxLAN	Manual configure VxLAN tunnel
			VxLAN distributed gateway
			VxLAN active-active access
			Overlay network based on VxLAN
			L2 protocol packet passthrough
			Edit DSCP in VxLAN outer header
			Edit ethertype in VxLAN inner header
			BGP EVPN
			Support to enable/disable overlay split horizon per-VNI
		GRE tunnel	GRE tunnel
		NVGRE tunnel	NVGRE tunnel
		GENEVE tunnel	GENEVE tunnel
	DCB	DCBX	LLDP support DCBX TLV
		PFC	PFC
Metro features	IPRAN	LDP	LDP
		MPLS forwarding	MPLS forwarding
		VPWS	VPWS
		VPLS	VPLS
		MPLS OAM	MPLS OAM
		MPLS statistics	MPLS statistics
		L2VPN	L2VPN
		L3VPN	L3VPN
		ACL	MPLS ACL
		QoS	MPLS QoS
		SR	MPLS-based segment-routing
Security and management	System security	SSH	SSH v1/v2
			RSA Key generation
		RADIUS	RADIUS
		TACAS+	TACAS+
		AAA	Authentication
			Authorization
			Accounting
		Dot1x	Port based dot1x



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			MAC based dot1x
			Guest VLAN
		ACL	MAC/IP ACL
			Basic mode ACL
			Port-group ACL
			VLAN-group ACL
			IPv6 ACL
			ACL UDF
			Time range
		ARP inspection	ARP inspection
		IP source guard	IP source guard
		Port Security	Limitation on MAC address learning on interface
		VLAN Security	Limitation on MAC address learning on VLAN
		Control plane policy (CoPP)	Black list / White list
			Rate limit
		CPU traffic limit	CPU traffic limit
		Prevent DDOS attack	Prevent DDOS attack (ICMP Flood/Smurf/Fraggle/LAND/SYN Flood)
		Login filter	Telnet/SSH ACL filtering
			Telnet/SSH IPv6 ACL filtering
		Link flapping detection	Link flapping detection
	Network management	DHCP	DHCP server
			DHCP relay
			DHCP snooping
			DHCP client
			DHCP option 82
			DHCP option 252
		RMON	RMON
		sFlow	sFlow v4/v5
		IP SLA	IP SLA
		IPFIX	IPFIX
		Latency/Buffer monitor	Latency monitor
			Buffer monitor
		EFD	Elephant flow detection
		NTP	Network time protocol (NTP)
		PTP (IEEE 1588 Precise time protocol)	Transparent clock (TC)
			Boundary clock (BC)
		Errdisable	Errdisable detection and recovery
		DNS	Static DNS Client
		LLDP	LLDP
Configuration and maintenance	Terminal services	Command line interface	Configurations through CLI (Command line interface)
		Help information	Banner configuration
			Help information in English
		Terminal service	Vty terminal service
			Console terminal service
	Configuration management	Management interface	Inband management interface and configuration
			Outband management interface and configuration
		User privilege management	Privileged user priority and privileged commands
		SNMP	Network management based on SNMP v1/v2c/v3



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			Public and private MIB
			Public and private trap
		WEB	Configuration and management based on WEB UI
		RPC-API	Configuration and management based on RPC-API
		Smart config	Smart config(Automatically configuration when system start)
		OVSDb	Configuration and management based on OVSDb
		system profile configuration	Change the system specifications by choose different STM profiles
		License control	Feature configuration based on license
		Restore factory default configuration	Restore factory default configuration
		File system	File system(support directory and file management)
	File system	Upload and download	Upload and download files through FTP or TFTP
			Upload and download files through Xmodem
	Debugging and maintenance	Debug	Per-module debug features
			ICMP debug
		BHM	Software process monitor: Beat heart monitor
			Hardware watch dog
		Log & alarm	CPU usage display and alarm
			Memory usage display and alarm
			Device temperature, PSU, FAN status display and alarm
			User operation logs
			Management of logs, alarms, and debugging information
		VCT	Virtual cable test
		system diagnostics	Detailed diagnostic-information collection
		Reboot	Manual reboot
			Schedule reboot
			Reboot Information logging
		Network diagnostics	Ping
			IPv6 Ping
			Traceroute
		Mirror	Port mirror
			Flow mirror
			Remote mirror
			Multi-destination mirror(m:n)
			Use CPU as mirror source
			Use CPU as mirror destination and analyze packet
			ERSPAN
		CPU statistics	To CPU / From CPU packets statistics
		L2 Ping	Layer2 network connectivity detection - L2Ping (MAC Ping/Trace)
		UDLD	Unidirectional link detection
		Unidirectional	Unidirectional forwarding of the fiber
		Loopback	Port loopback
			Hardware loopback (Internal/External)
		System time	Time configuration
			Timezone
	Version upgrade	System soft ware upgrade	Upgrade with the local image file
			Upgrade with the remote TFTP server
		Uboot upgrade	Online upgrade uboot