



Ray Layer 2 Cloud Managed Switches

Layer 2 access switches with 1G SFP uplinks, designed for branch deployments

PRODUCT OVERVIEW

The Ray L2+ and L3 cloud managed PoE switches addresses the most demanding enterprise applications by combining the simplicity of the Ray Platform with powerful switching hardware.

To satisfy high-bandwidth applications and the deployment of high-speed 802.11ax/wifi-6 access points, CCTV etc., the Ray switch provides multigigabit ports, stacking, and modular 10/40G uplinks. Designed for the digital workplace, the Ray L2 PoE Switch Series is optimized for today's mobile and IoT needs.

Ray Switches are cloud Managed Gigabit L2 PoE+ Switches featuring **intelligent PoE** functions to improve the availability of critical business applications. They provide IPv6/IPv4 dual stack management and built-in L2+/L4 Gigabit switching engine along with **8/24/48** 10/100/1000 BASE-T ports featuring IEEE802.3af/at and **multiple 1G or 10G Gigabit SFP ports**.



The Ray Switches has wire-speed backhaul bandwidth capacity with built-in 1 GbE uplinks, robust QoS and IPv6. In addition, it provides high performance, enterprise-level QoS, advanced security strategies and rich layer 2 management features.

The switch series features a variety of power options designed to meet the diverse needs of large enterprise networks. PoE+ models deliver power across all access ports for wireless APs, security cameras, and other IoT devices.

The switches are easy to deploy, use and manage using Ray Platform. It further offers centralized security and external captive portal support.

With all these advanced features, the PoE Switch is an ideal choice for branch and campus deployments.



RSL2-8P 8-Ports 2 SFP L2+ Cloud Managed PoE+ Switch



RSL2-24P 24-Ports 4 SFP L2+ Cloud Managed PoE+ Switch



RSL2-24X 24-Ports 4 SFP L2+ Cloud Managed PoE+ Switch with 10G (SPF+)

Cloud Managed Switches

Simplicity has been a core principle of Ray and Ray L2 PoE Access switches are built from the ground up for cloud management and are managed through an elegant, intuitive cloud interface.

By providing a complete, powerful set of management functions over the cloud, Ray Platform eliminates the need for proprietary command line configuration interfaces which take time and are prone to human errors.

Zero-touch provisioning

For rapid deployment across sites, to bring up a Ray switch, simply plug it in to the Network. No more CLI for switch configuration or port management.

Add or replace switches without having to send a technician on-site. Switches automatically download their current configuration as soon as they are connected to the network. Additional or replacement switches can be sent to remote offices and installed by non-technical staff, saving thousands of dollars in time and travel expenses.

Simplified Management & Operations

The Ray Platform makes it easy to manage a single switch, or thousands of distributed switches, from a single interface along with your Access Points and other Ray products.

The Ray Platform makes it simpler than ever to quickly provision and reconfigure switch ports with security, QoS, and other parameters. All Layer 2 and Layer 3 features including VLAN, Security and authentication features can be configured from the Ray Platform.

Ray Platform

- gives administrators granular visibility into their network
- Role-based administration
- Firmware upgrades
- Remote diagnostics
- Receive notifications via App or Email in Realtime if any switch fails or goes offline, before users complain.

Intuitive Visualizations

The Ray dashboard provides unified policies, event logs, and monitoring, which make it easy to manage and grow scale network deployments.

Audit Logs & Diagnostics

Ray Audit keeps track of every configuration change in your network with our detailed event and change logs.

Ray also includes several remote diagnostic features, from network connectivity and cable integrity tests to latency measurement tools. For deep client troubleshooting, administrators can even perform per-port remote pcap packet captures without any additional probes or hardware on-site.

Architecture

Ray switch operates with a split-plane architecture, where silicon-based switching and data forwarding are separated from software-based control and management. By decoupling the underlying switching logic from control, each unit is able to deliver wire speed switching even when advanced software features such as Layer 7 host and OS fingerprinting are enabled.

Enhanced Features

Designed for Reliability & Environmental Efficiency

The Ray switch family was designed for reliable operation in network closet environments prone to high temperatures and limited ventilation.

Based on proven switching silicon, Ray is able to deliver highly reliable products with exceptional mean time between failure (MTBF) ratings.

Finally, the highly integrated designs of Ray switches result in power and cooling savings in large deployment environments of 30-60% when compared with similar managed Gigabit switches.

Campus Edge

Ray switches are ideal for small- and large-scale campus deployments, where reliability, scalability, and manageability are top priorities.

Cloud Platform enables IT admins control port access policies, apply VLANs, toggle port power and more.

10 GbE cable SFP+ ports with link aggregation provide long range connectivity to aggregation switches.

Dimensions & Interfaces

Model	Physical Dimensions (mm)	Weight	100/1000 Base-T	100/1000 Base-SFP	10GE (SFP+)	Fan
RSL2-8P	340 x 43.6 x 200	2.7KG	8	2	N.A.	1
RSL2-24P	440 x 43.6 x 260	4.2KG	24	4	N.A.	2
RSL2-24X	440 x 43.6 x 318	4.2KG	24	0	4	2

Performance



	RSL2-8P	RSL2-24P	RSL2-24X
Switching Capacity	20Gbps	56Gbps	128Gbps
Forwarding rate	14.88Mpps	41.7Mpps	95Mpps
MAC Address	8K	16K	16K
Jumbo Frame	10K	12K	10K
ACL Table	1408	2048	512
VLAN Table	4K	4K	4K
Queues per port	8	8	8

Power Options & Specifications

Model	Power Supply	IEEE 802.3af POE	IEEE 802.3at POE+	PoE output	Cooling
RSL2-8P	100~240VAC, 50~60Hz 144W	15.4 W	30W	124W	Passive
RSL2-24P	100~240VAC, 50~60Hz 390W	15.4 W	30W	370W	Active
RSL2-24X	100~240VAC, 50~60Hz 420W	15.4 W	30W	370W	Active



Model	
RSL2-8P	<ul style="list-style-type: none"> › Ray L2+ Cloud Managed Switch › 8 Port 10/100/1000T 802.3af/at PoE+ Ports › 2 Port Gigabit SFP › 124 watts PoE Power Budget
RSL2-24P	<ul style="list-style-type: none"> › Ray L2+ Cloud Managed Switch › 24 Port 10/100/1000T 802.3af/at PoE+ Ports › 4 Port Gigabit SFP › 370 watts PoE Power Budget
RSL2-24X	<ul style="list-style-type: none"> › L2+ Cloud Managed Switch › 24 Port 10/100/1000T 802.3af/at PoE+ Ports › 4 Port Gigabit 10G SFP+ › 370 watts PoE Power Budget

Specifications

Indicator	› LED
Network Media Support	› 10BASE-T: UTP category 3,4,5 cable≤100m › 100BASE-TX: UTP category 5, 5e cable≤100m › 1000BASE-T: UTP category 5e, 5 cable≤100m › 1000BASE-X: MMF, SMF
Management Interface	› Management via RJ45 Console CLI › Management via Web browser › Management via Telnet › Cloud Management via Web › Configuration Import & Export through HTTP/TFTP › SNMP / NTP › Web/SSL (IPv4/IPv6) › SSH (IPv4/IPv6) › SNMP Trap › Public & Private MIB interface › RMON 1,2,3,9 › Ping, Trace Route › Syslog (IPv4/IPv6) › SNT/NT (IPv4/IPv6) › Dual IMG, Multiple Configuration Files › Port Mirror, CPU Mirror, RSPAN › OAM EFM › VCT, DDM › ULDP (like Cisco UDLD) › LLDP/LLDP MED
Firmware Update	› Automatic firmware upgrades with scheduling control › Firmware upgrade by HTTP/TFTP protocol through Ethernet network
Log Integration	› SNMP v1, v2c, v3 Integration › SYSLOG Integration (Remote & Local)
Cloud Management	
Single Pane of Glass	"Single Pane of Glass" feature to centrally cloud manage all the switches along with other Networking components like Wi-Fi Access Point and Gateways across multiple locations on a single Cloud UI.
Provisioning	The Ability to Add/Remove the Switch.
Statistics of Each Switch	The Status of the Switch in Realtime.
Statistics of Each Individual Switch Port on a Switch	› Port Status › Link Status › Isolation Status › Tx Packets › Rx Packets › Speed › Power Ability › Power Supply Status › Storm Control
Quality of Service (QoS)	
Class of Service	› 8 Priority Queues Per Port › 802.1p › CoS › DSCP Priority › IP Precedence › Port Based › IPv4 QoS › IPv6 QoS › Bandwidth Control › Flow Redirect › Classification based on ACL, VLAN ID, COS, TOS, DSCP › Policing Based on Port and VLAN › Single Rate single barrel double color for Policing › Remark DSCP, COS/802.1p, Precedence, TOS › SP, WRR, SWRR, DWRR for Scheduling › Match the IP fragmentation of a message

Queue Scheduling	› SP (Strict Priority) › WRR (Weighted Round Robin) › SP+WRR › DSCP & CS
Bandwidth Control	› Port based Rating Limiting: (Ingress, Egress) › Flow based Rating Limiting: (Ingress, Egress)
Action of Flows	› Mirror (to supported interface) › Rate Limit › QoS Remark
Layer 3	
Layer 3 Capabilities	› DHCP Server › DHCP Relay › DHCP Interface Relay › DHCP L2 Relay › Static Routing › Policy Based Routing
IPv6	
IPv6	› Dual IPv6/IPv4 stack › IPv6 Web/SSL › IPv6 SNT/ (Simple Network Time Protocol) › IPv6 Telnet / SSH › IPv6 Ping/Traceroute › IPv6 TFTP › IPv6 RADIUS/TACACS+ › IPv6 SNMP
Layer 2	
Access Control List (ACL)	› IPv4/IPv6 IP-based ACL › MAC-based ACL › IPv4/IPv6 IP-based ACE › MAC-based ACE › Management Access List › MAC-IP ACL › User-Defined ACL › Time Range ACL › L2+/L3/L4 › IPv6 Support
IGMP Snooping	› IGMP Authentication › IGMP Snooping v1/v2/v3 › MLD Snooping v1/v2 › MVR › Up to 256 multicast groups) › Internet Group Management Protocol (IGMP) limits bandwidth-intensive multicast traffic to only the requesters; it supports 4000 multicast groups (source-specific multicasting is also supported) › IGMP querier used to support a Layer 2 multicast domain of snooping switches in the absence of a multicast router › IGMP snooping for multicast filtering
LACP	› Static Trunk › IEEE 802.3ad LAG › 8 Groups / 8 Ports (RSL2-8P) › 16 Groups / 8 Ports (RSL2-24P)
Spanning Tree	› IEEE 802.1D -Spanning Tree › IEEE 802.1w -Rapid SpanningTree › IEEE 802.1s -Multiple Spanning Tree › BPDU Guard › STP Root Guard › Loop Detection › STP BPDU Guard, › BPDU Filtering › BPDU Forwarding
L2 Ring Protection	› MRPP › ERPS (G.8032) › Loopback Detection › Fast Link

Switching Capabilities	<ul style="list-style-type: none"> › Auto-Negotiation › Crossover Detection › Loopback direction › Unidirectional Link Detection (UDLD) › 802.1ab Link Layer Discovery Protocol (LLDP) › Ethernet Ring Protection Switching (ERPS) optimizes recovery under redundancy and failover conditions
VLAN	
VLAN	<ul style="list-style-type: none"> › Management VLAN › Voice VLAN › Surveillance-VLAN › Q-in-Q (Double Tag) › 802.1v Protocol VLAN › MAC-Based VLAN › Port-based and 802.1Q tag-based VLANs › Management VLAN › Protocol-based VLAN › IP subnet-based VLAN › Dynamic VLAN assignment using RADIUS server along with 802.1X client authentication › Q-in-Q (VLANs transparently cross over a service provider network while isolating traffic among customers) › Generic VLAN Registration Protocol (GVRP) and Generic Attribute Registration Protocol (GARP) enable automatic propagation and configuration of VLANs in a bridged domain › 802.1Q VLAN and trunking support for up to 4,094 VLANs › Private VLAN › Protocol VLAN › MAC VLAN › Normal QinQ, Selective QinQ, Flexible QinQ › VLAN Translation, N:1 VLAN Translation
Security	
Authentication	<ul style="list-style-type: none"> › RADIUS Authentication, Authorization, Accounting › TACACS+ Authentication › IEEE 802.1X port-based authentication › IEEE802.1x AAA
DHCP	<ul style="list-style-type: none"> › IPv4/IPv6 DHCP Client › IPv4/IPv6 DHCP Relay › DHCP Option 82 › DHCP Option 37/38 › IPv4/IPv6 DHCP Server › IPv4/IPv6 DHCP Snooping, Detection and Blocking
Other Security Features	<ul style="list-style-type: none"> › Sticky MAC, MAC Whitelisting › IP-MAC port binding › MAC filtering › Static MAC Address › Port Isolation › DoS/DDoS attack prevention › ARP inspection › IP source guard › Storm control support › Broadcast/unknown unicast/unknown multicast › Secure Management Interfaces (SSH, SSL, SNMP v3)] › Storm Control based on packets and bytes › Port Security, MAC Limit based on VLAN and Port › Anti-ARP-Spoofing, Anti-ARP-Scan, ARP Binding › ND Snooping › DAI

Green Energy	
Green Energy	<ul style="list-style-type: none"> › IEEE 802.3az (Energy Efficient Ethernet) › Fanless › LED Shut-off
Standards	
Standards	<ul style="list-style-type: none"> › IEEE 802.3 10BASE-T › IEEE 802.3u 100BASE-TX/100BASE-FX › IEEE 802.3z Gigabit SX/LX › IEEE 802.3ab Gigabit 1000BASE-T › IEEE 802.3x flow control and back pressure › IEEE 802.3ad port trunk with LACP › IEEE 802.1D Spanning Tree Protocol › IEEE 802.1w Rapid Spanning Tree Protocol › IEEE 802.1s Multiple Spanning Tree Protocol › IEEE 802.1p Class of Service › IEEE 802.1Q VLAN Tagging › IEEE 802.1x Port Authentication Network Control › IEEE 802.1ab LLDP › RFC 768 UDP › RFC 793 TFTP › RFC 791 IP › RFC 792 ICMP › RFC 2068 HTTP › RFC 1112 IGMP version 1 › RFC 2236 IGMP version 2 › RFC 3376 IGMP version 3 › RFC 2710 MLD version 1 › RFC 3810 MLD version 2 › IEEE802.3ah › IEEE 802.1ag
Physical Characteristics	
Operating Temperature	0°C ~ 50 °C
Storage Temperature	-40 °C ~ 70 °C
Operating Humidity	10% ~ 90% non-condensing
Storage Humidity	5% ~ 90% non-condensing
Surge Protection	Common mode ±6KV Differential mode ±4KV
MTBF	>50000 hour

Model	Product information
RSL2-8P	L2 Gigabit Intelligent Ethernet PoE Switch with 8*10/100/1000Base-T and 2*100/1000Base-SFP ports, 100-240VAC Power Input. 30w POE+ Supported. PoE output 124w
RSL2-24P	L2 Gigabit Intelligent Ethernet PoE Switch with 24*10/100/1000Base-T and 4*100/1000Base-SFP ports, 100-240VAC Power Input. 30w POE+ Supported. PoE output 370w
RSL2-24X	Ray L2+ Cloud Managed Switch 24 Port 10/100/1000T 802.3af/at PoE+ Ports 4 Port Gigabit 10G SFP+ 370 watts PoE Power Budget

Ray Pte. Ltd.

ray.life | sales@ray.life

Suite #09-01, 20 Collyer Quay, Singapore 049319

