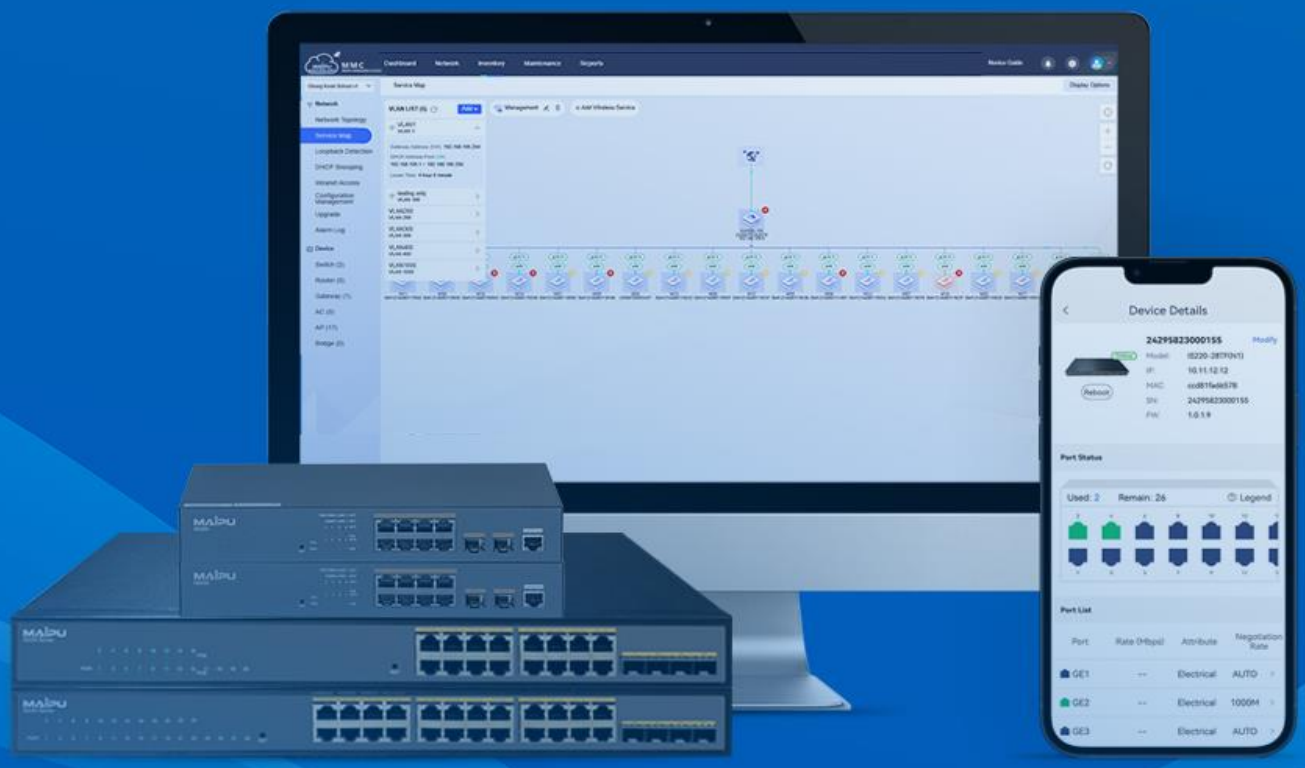
MAIPU

MMC

IS660 Series

L3 Cloud Managed Core Switch



Overview

IS660 series switch is a high-performance stackable L3 core routing switch developed by Maipu. It is applied in SMB campus network and easy to deploy Layer3 switching solution that offers enhanced security and 10GE/40GE uplinks, RIP/OSPF/BGP/IS-IS, L2&L3 Multicast, VST stacking enabled and flexible management.

IS660 series switch can be used as L3 core devices on large-sized campus networks. They can also be used as core devices on small and medium-sized campus networks. The switches help build highly reliable enterprise campus networks that are easy to expand and manage.

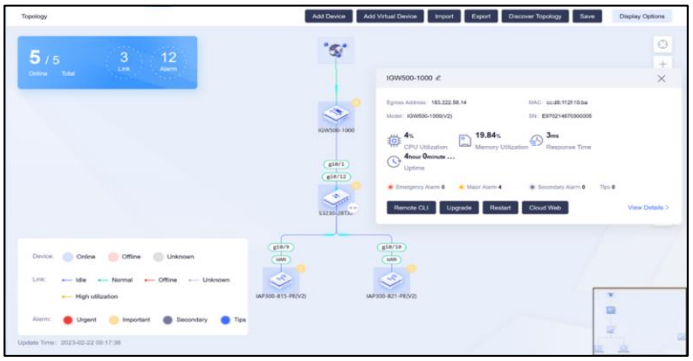
IS660 series switch includes IS660-04, IS660-06 two models.

Model Name	Specification
 **IS660-04(N1)**	● Dual Control Engine Slots ● Four Service Slots ● Dual Power Slots ● One FAN Array Slots ● Maximum 1G interfaces: 192 ● Maximum 10G interfaces: 64
 **IS660-06(N2)**	● Dual Control Engine Slots ● Dual Switching Engine Slots ● Four Service Slots ● Four Power Slots ● Dual FAN Array Slots ● Maximum 1G interfaces: 192 ● Maximum 10G interfaces: 128 ● Maximum 40G interfaces: 32

Key Features

- **Cloud Based Management**

The IS580 series switch support cloud management by the MMC (Maipu Managed Cloud), the switches can be quickly deployed and configured from the cloud, reducing the installation cost. With cloud management, IT staff can remotely access and manage switches from anywhere with an internet connection, making it easier to troubleshoot.



- **High-Density Interfaces Line Cards**

IS660 series provide maximum 192*1GE, 128*10GE, 32*40GE interfaces. The port combination fully satisfies the interface density requirement of campus network scenarios.

- **Highly Reliable Enterprise-class Hardware Design**

IS660 has enterprise-class reliability and stability to ensure long-term service continuity. Redundant MPUs work in 1+1 hot backup mode. Redundant SFUs work in 1+1 balance mode. Redundant power supplies support work in N+1 hot backup and redundant fan trays design.

- **Intelligent stacking technology**

IS660 series switch supports Maipu VST stacking function. Two IS660 supporting stacking feature are combined to form a virtual switch logically. VST stacking system improves the device-class reliability by redundant backup among multiple member devices and improves the link-class reliability by the link aggregation function across devices.

- **High availability**

IS660 series switch not only supports the traditional STP/RSTP/MSTP spanning tree protocol, but also supports the G.8032 international standard G.8032 protocol issued by ITU-T. This standard can realize 50ms millisecond fast protection switching of Ethernet ring network.

IS660 also supports Virtual Router Redundancy Protocol (VRRP), which implement backup of uplinks. One switch can connect to multiple aggregation switches through multiple links, significantly improving the reliability of access devices.

- **Perfect security policy**

IS660 series switch provides various security policies such as user authority/identity authentication, port security, port rate limitation, port monitoring, ACL, loopback detection, and 802.1X authentication; provides various protect mechanisms for user access and network security. It has perfect security function design and supports MAC+IP+VLAN binding and 802.1X authentication security policies, and anti-network storm attack, anti DOS/DDOS attack, anti ARP attack, and anti-network protocol packet attack security technologies. In this way, the attacks and virus can be prevented, and it is more suitable for large-scale, multi-service and complicated-traffic networks.

- **Advanced QoS**

IS660 series switch supports eight queues per port and the queue scheduling policies such as SP, RR, WRR, and WDRR; rich priority mappings including 802.1p, COS, DSCP; Kbps-level port traffic rate restriction and carriers can limit the rate according to the time period; Tail Drop and RED packet loss algorithm.

- **IPv4&IPv6 Dual-stack ability**

IS660 series switch comes with IPv4/IPv6 dual-stack platform which provides hardware-based IPv4/IPv6 wire-speed forwarding and IPv4/IPv6 Layer3 routing protocols (RIPng, OSPFv3, BGP4+ and IS-IS for IPv6). With these IPv6 features, the IS660 can be deployed on a pure IPv4 network, a pure IPv6 network, or a shared IPv4/IPv6 network, helping achieve IPv4-to-IPv6 transition.

- **Free Licensing Policy**

Maipu always insists on “One-time investment” free license policy, the standard features and advanced features will be never divided to different version. For any new firmware version, Maipu will share to customers without extra charge. Compared with other manufacturers, Maipu free license policy can better protect users' short-term and long-term investment.

Technical Specifications

Product Model	IS660-04	IS660-06
Version	N1	N2
Product configurations		
Device Structure	Chassis & Modular Design	
Switching Capacity	1.28Tbps	2.56Tbps
Physical Port	Rack/modular distributed structure design	
Control Engine Slots	2	2
Switching Engine	N/A	2
Service Slots	4	4
Power Slots	2	4
Fan Slots	1	2
Console Port	2 (RJ45+USB)	
Out-band Interface	1*RJ45	
Hot Swap	Yes	
Power Redundancy	Supports power supply redundancy (1+1)	
MTBF	>200000 hours	
Physical index		
Dimension (W×D×H)	441×434.8×222mm	441×434×488mm
Power supply		
Power Input	AC 100-240V, 50-60Hz	
Power Module	AD500M-HS0F: 500W Power	AD1600-1D005M: 1600W Power AD800-1D005M: 800W Power
Environment		
Working Temperature	0℃～45℃	
Power Surge	±6KV@1.2/50us	
Anti-static	Contact Electrostatic:≥6KV Air Electrostatic:≥8KV	
Humidity	10～90%, non-condensing	
Software Features		
Standard L2 protocol	LAN Features	Port Type UNI/NNI, Port Speed, Port MTU, Switch Port, Port Loopback, Port Energy Control, Port Isolation, Loopback interface, Null interface
		MAC address aging time, Mac address learning on| off, Mac address learning limitation, Mac address VLAN bunding, MAC debug
		VLAN, VLAN PVID, VLAN interface, VLAN Tag/Untag, VLAN Trunk, MAC VLAN, Protocol VLAN, Subnet VLAN, Super VLAN, Voice VLAN, VLAN Debug, QINQ, Selective QINQ, VLAN Mapping
		STP/RSTP/MSTP, BPDU Guard, Flap Guard, Loop Guard, Root Guard, TC Guard
		G.8032(ERPSv1&v2)
		Static Multicast, IGMP Snooping, IGMP Snooping Proxy, MVR, MLD Snooping

		LACP Link aggregation, LACP Port Priority, LACP Load Balance, LACP Rate Monitor, LACP Debug
		ULFD, Track, Loop Detection
VPN Technology	MPLS L3 VPN	LDP, MPLS BGP L3 VPN, MPLS OAM
Standard L3 protocol	Routing Protocol	Static Route, Static Route v6, RIP v1/v2, RIPng, OSPFv2, OSPFv3, BGP, BGP4+, ISIS, ISISv6, VRRP, Policy Route, IP-VRF, Route Map
	BFD	BFD with Static| RIP|OSPF|BGP|ISIS
	L3 Multicast	IGMPv1/v2/v3, PIM-SM, PIM-SSM
	DHCP	DHCP Server, DHCP Client, DHCP Relay, DHCP Snooping, DHCP Option43/60/82, DHCP Per VLAN
Stacking	VST	VST Member, VST Domain, VST Member Priority, VSL Channel
	MAD	MAD LACP, MAD Fast-hello
Network security	Port Security	Port Security On aging |deny |permit |violation |ACL
	Network Security	IP Source Guard, DHCP Snooping, Host Guard, Dynamic ARP Inspection
	Access Control List	Standard IP ACL, extended IP ACL, standard MAC ACL, extended MAC ACL, Standard Hybrid ACL, extended Hybrid ACL, Standard IPv6 ACL, extended IPv6 ACL
	Anti-attack	Anti-attack detect |drop |flood| log, CPU Protection
	AAA	Authentication, Authorization, Accounting, Radius, TACACS, 802.1x, Portal
QoS	Flow Classification	802.1P priority, DSCP priority
	Traffic Speed Control	Rate Limit, Traffic Shaping
	Congestion Management	SP, RR, WDRR, SP+WRR
	Congestion Avoidance	Tail-drop, RED, WRED
Management	Network Management	SNMP v1/v2/v3, MIB, RMON, SYSLOG, DNS, CLI, Telnet, FTP/TFTP, Debug
	Network Monitoring	SPAN, s-Flow, LLDP, IP-SLA
IEEE Standard	IEEE 802.3 (10BASE-T) IEEE 802.3u (100BASE-T) IEEE 802.3z (1000BASE-X) IEEE 802.3ab (1000BASE-T) IEEE 802.3ae (10G BASE-X) IEEE 802.1x (port authentication) IEEE 802.3ad (Link Aggregation) IEEE 802.3x (Flow Control) IEEE802.3az (Energy Efficient Ethernet) IEEE 802.1d (STP) IEEE 802.1Q (Virtual LAN) IEEE 802.1w (RSTP) IEEE 802.1s (MSTP) IEEE 802.1p (Cos priority)	

Order Information

Model	Description	
IS660-04 Host		
IS660-04	N1 Version: IS660-04 chassis, two control engine slots,4 service slots, one fan slot, two power slots.	
ISM66-MPUB	N1 Version: ISM66-MPUB Control Engine, supporting active/standby backup function (one is mandatory, 1+1 redundancy is optional)	
FAN-05C-01B	V21 Version: FAN-05C-01B Fan Module for IS660-04	
AD500M-HS0F	V21 Version: AD500M-HS0F,500W AC power module	
IS660-04 Line Cards		
ISM66-16XGEF-EA	N1 Version: 16-port 10G SFP+ optical interface	
ISM66-24GET24GEF4XF-EA	N1 Version: 24-port 1000M Base-T electric interface, 24-port 1000M SFP optical interface,4-port 10G SFP+ optical interface	
ISM66-48GEF4XGEF-EA	N1 Version: 48-port 1000M SFP optical interface,4-port 10G SFP+ optical interface	
ISM66-48GET4XGEF-EA	N1 Version: 48-port 1000M Base-T electric interface,4-port 10G SFP+ optical interface	
IS660-06 Host		
IS660-06	N2 Version: IS660-06 chassis, two control engine slots, two switching fabric slots, four service slots, two fan slot, four power slots.	
ISM66-MPUE	N2 Version: ISM66-MPUE Control Engine, supporting active/standby backup function (one is mandatory, 1+1 redundancy is optional) For IS660-06	
ISM66-SFUA	N2 Version: ISM66-SFUA Standard Switching Engine, supporting active/standby backup function (one is mandatory, 1+1 redundancy is optional)	
ISM66-SFUB	N2 Version: ISM66-SFUB Enhanced Switching Engine, supporting active/standby backup function (one is mandatory, 1+1 redundancy is optional)	
FAN-11A-01	V21 Version: FAN-05C-01B Fan Module For IS660-04	
AD1600-1D005M	V22 Version: AD1600-1D005M,1600W AC power module	
AD800-1D005M	V21 Version: AD800-1D005M,800W AC power module	
IS660-06 Line Cards		
ISM66-8QXGE-EB	N2 Version: 8-port 40G QSFP+ optical interface (Note: Configure 2*ISM66-SFUB Switching Engines)	
ISM66-32XGEF-EB	N2 Version: 32-port 10G SFP+ optical interface (Note: Configure 2*ISM66-SFUB Switching Engines)	
ISM66-16XGEF4QXGE-EB	N2 Version: 16-port 10G SFP+ optical interface, 2-port 40G QSFP+ optical interface (Note: Configure 2*ISM66-SFUB Switching Engines)	
ISM66-16XGEF-EB	N2 Version: 16-port 10G SFP+ optical interface (Note: Configure 2*ISM66-SFUA Switching Engines)	
ISM66-24GET24GEF4XF-EB	N2 Version: 24-port 1000M Base-T electric interface, 24-port 1000M SFP optical interface,4-port 10G SFP+ optical interface (Note: Configure 2*ISM66-SFUA Switching Engines)	
ISM66-48GEF4XGEF-EB	N2 Version: 48-port 1000M SFP optical interface,4-port 10G SFP+ optical interface (Note: Configure 2*ISM66-SFUA Switching Engines)	
ISM66-48GET4XGEF-EB	N2 Version: 48-port 1000M Base-T electric interface,4-port 10G SFP+ optical interface (Note: Configure 2*ISM66-SFUA Switching Engines)	
Stacking Cable		
10G Stacking Cable	SFP-STACK-15	High speed stacking cable, SFP+ to SFP+,10Gbps, L=1.5m
	SFP-STACK-30	High speed stacking cable, SFP+ to SFP+,10Gbps, L=3.0m
	SFP-STACK-50	High speed stacking cable, SFP+ to SFP+,10Gbps, L=5.0m

40G Stacking Cable	QSFP-STACK-10	QSFP DAC stacking cable, QSFP to QSFP, 40Gbps, 1.0 meters length
	QSFP-STACK-30	QSFP DAC stacking cable, QSFP to QSFP, 40Gbps, 3 meters length
	QSFP-STACK-50	QSFP DAC stacking cable, QSFP to QSFP, 40Gbps, 5 meters length
SFP Module		
1.25G Dual-Core SFP	MP-S85123-3CDLM	1.25G SFP 850nm 550m LC DDM Multi-mode
	MP-S31121-3CDL20	1.25G SFP 1310nm 10-20Km LC DDM Single-mode
1.25G BIDI SFP	MP-B35121-3CDL20	1.25G SFP Tx1310/Rx1550nm 10-20Km LC DDM Single-mode
	MP-B53122-3CDL20	1.25G SFP Tx1550/Rx1310nm 10-20Km LC DDM Single-mode
10G Dual-Core SFP+	MP-S851X3-NCLM	10G SFP+ 850nm 300m LC DDM Multi-mode
	MP-S311X2-NCL10	10G SFP+ 1310nm 10Km LC DDM Single-mode
	MP-S311X2-NCL20	10G SFP+ 1310nm 20Km LC DDM Single-mode
10G BIDI SFP+	MP-B231XL-3CD10	10G SFP+ Tx1270/Rx1330nm 10Km LC DDM Single-mode
	MP-B321XL-3CD10	10G SFP+ Tx1330/Rx1270nm 10Km LC DDM Single-mode
10G Copper	SFP-XGEA	V1, SFP-XGEA, 10GBASE-T RJ45, 30m
40G QSFP+	QSFP-M1-M768C8	40G QSFP+, 850nm, 100m, MPO, DDM, Multi-mode
	QSFP-M3-M768C8	40G QSFP+, 850nm, 300m, MPO, DDM, Multi-mode
40G QSFP+	QSFP-S1-L768C3	40G QSFP+, 1310nm, 10km, LC, DDM, Single-mode

MAIPU CLOUD REGISTRATION

Maipu values and appreciates comments you may have concerning our products or this document. Please address comments to:

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