RAISECOM
Raisecom Technology Co., Ltd

Datasheet

ISCOM3000X series switches

L3 10 Gigabit Ethernet Switch

The ISCOM3048XF-4Q, promoted by Raisecom, is a new-generation 10 Gbit/s Ethernet switch. It adopts a route switching software platform based on the Linux OS, and a high-performance hardware platform.

Featuring high reliability, high security, easy maintenance, simple administrator, etc. and adopting advanced OAM technologies, the ISCOM3048XF-4Q can fully meet the carriers' requirements. The ISCOM3048XF-4Q also supports abundant IPv4/IPv6 unicast/multicast routing protocols and Intelligent Stacking Framework (ISF) technology.

With these features, it can be widely applied to various scenarios. For example, it can function as a converging device on a Metropolitan Area Network (MAN) or campus network, and 10-gigabit access in the Internet/Enterprise Data Center (IDC/EDC).

ISCOM3048XF-4Q

Highlights >>

High capacity, high density

1U standard chassis, easy to be installed on the cabinet, saving room, with a switching capacity of 1.28Tbps.

Downlink interfaces: forty-eight 10G SFP+ fiber interfaces.

Uplink interfaces: four 40G QSFP interfaces.

ISF Stacking

ISF technology: multiple ISCOM3048XF-4Q switches are connected with uplink ports to set a stack, which functions as a virtual switch. Compared with traditional networking technologies, ISF has great advantages in reliability, scalability, management, and maintenance.

High reliability: A stack consists of a master switch, a backup switch, and several slave switches. The backup switch takes over services when the master switch fails, improving the device-level reliability. And the link-level reliability is also improved through cross-device link aggregation. In most cases, the fault switching time between the master switch and the backup switch or between L2 link and L3 link is less than 250ms.*

High scalability: you can hot swap the switch when it fails, which reduces the impact of service interruption on customers. When the customer requires capacity expansion, you can easily expand the number of interfaces, bandwidth, and processing capability without interrupting the services by adding a switch to the stack. In this case, the performance of the stacking system doubles, which meets the capacity expansion requirements of high performance and high interface density on the core switching devices by the new-generation campus network.

Easy operation administration and maintenance: after the stack is established, multiple physical switches can be virtualized as one logical switch which can be managed through a single IP address. You can log in to the stacking system through any member switch to uniformly manage and configure all member switches in the stack. Meanwhile, it supports intelligent upgrade. When one switch is added to the stack, the master switch will automatically upgrade it, which greatly reduces the operation and maintenance cost.

Strong service capabilities

Support ready IPv4 L2/L3 multicast protocols: IGMP Snooping, MVR, VLAN copy, IGMP Proxy, IGMP filter, L2 multicast monitoring, IGMPv1/v2/v3, PIM-SM multicast routing protocols, meeting the requirements of multi-terminal HD videos monitoring and video conference access.

Support rich IPv4 routing protocols: RIP, OSPF, ISIS, BGP, VRRP and so on, meeting the requirements of enterprise

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	access and carrying aggregation services. Support richer voice, video, and data applications. Support IPv6 capabilities, such as MLD Snooping, MLDv1/v2, PIM-SMv6, RIPng, OSPFv3, and BGP4+.*
High reliability	Support STP, RSTP, and MSTP. RSTP and MSTP can implement millisecond-level protection switching and ensure network reliability. In addition, the ISCOM3048XF-4Q supports multi-process RSTP (MRSTP). The MSTP topology computation can be conducted independently in different process, which reduce the impact on the network caused by single device failure and facilitates capacity expansion and independent management on interfaces. Support LACP and MLACP. Support Ethernet Ring Protection Switching (ERPS), which complies with the ITU-T G.8032 standard. Provide a fault switching time less than 50ms. G.8032 supports link detection based on physical interfaces or end-to-end link detection based on CC. Support loop detection to avoid access loops at the user side. Support VRRP, which not only implements the backup of routing devices but also the backup of uplink links. Support redundant power supplies: double AC, double DC, or a mix of AC and DC. Support dual-system and dual-configuration-file redundancy backup.
Various security guarantees	Support IEEE802.1x-based interface authentication and MAC authentication, which implements the dynamic distribution of VLAN user policies. Support various AAA modes, such as RADIUS and TACACS+. Support port secure MAC and MAC address limit to prevent attacks from illegal users. Support various ACL policies to control packet forwarding flexibly. Support DHCPv4/v6 Snooping and Option 82/18/37 to avoid DHCP attacks. Support DAI and IP Source Guard to prevent ARP flooding attacks and IP attacks. Support broadcast storm to ensure the stability of the network. Support lightning protection for the power supply and all Ethernet electrical interfaces, and reduce hardware investment for customers.
Individualized QoS	Support complex traffic classification. Support classifying traffic according to the customized fields in the packet. Support rich scheduling policies, such as SP, WRR, SP+WRR, DRR, and SP+DRR. Support a flow-based dual-rate three-color CAR and HCAR. Support statistics based on traffic.
IPv6 Ready	Meet the requirement of IPv6 networking and support IPv6 remote management through Telnet or SNMP. Support IPv6 ACL, DHCPv6 Snooping, RA Snooping, and Option18/37 to ensure the network security. Support MLD Snooping to ensure the IPv6 multicast monitoring.
Full suite OAM & SLA	Support point-to-point IEEE802.3ah link monitoring. Support end-to-end hardware IEEE802.1ag to implement 3.3ms CC monitoring.* Support rich SLA, Y.1731 which can monitor the network performance of the L2/L3 data flow.*
Advanced management system	Support SNMP, RMON, Telnet, and SSH. Support friendly WEB management to increase the usability of the device. Support automatic configuration and loading. The administrator can put the configuration file set in advance to the FTP/TFTP server for automatic loading while the switch is booting, thus simplifying the management and

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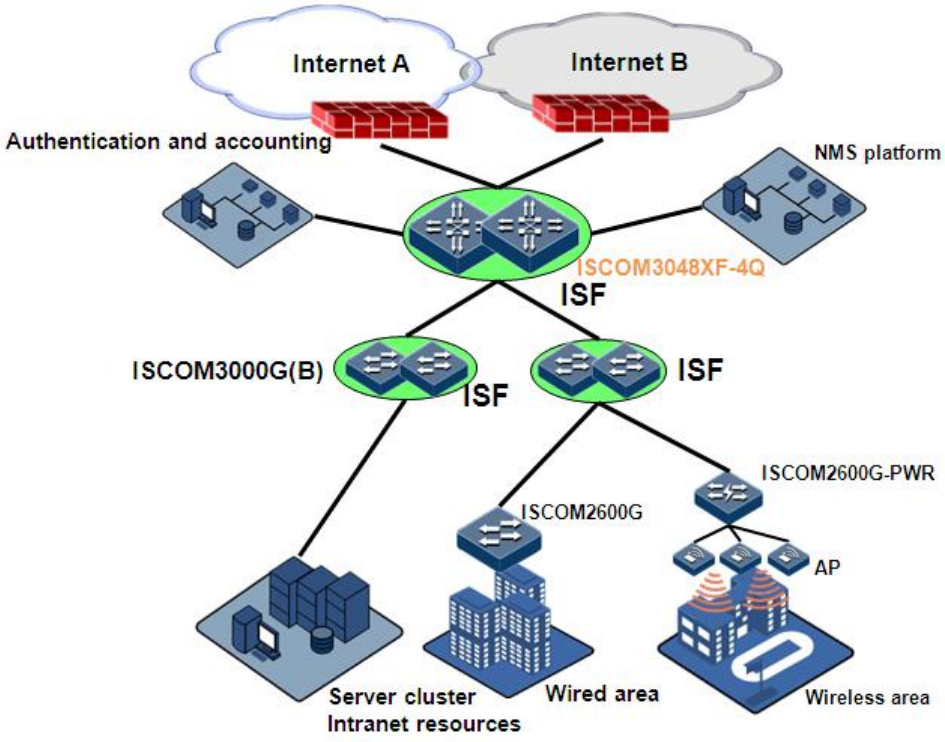
maintenance.

Application >>

Campus networking

The ISCOM3048XF-4Q, ISCOM2600G, and ISCOM3000G(B) series switches working together can provide an integrated solution for campus network. In this solution, the ISCOM3048XF-4Q can serve as an aggregation device in the large and medium-sized campus or a core switch in the small and medium-sized campus, providing 10 Gbit/s access and 40 GE uplink capabilities. The ISCOM3048XF-4Q supports ISF, which facilitates capacity expansion and management.



MAN networking

The ISCOM3048XF-4Q and ISCOM2600 together can provide a MAN access/aggregation solution. The ISCOM3048XF-4Q serves as the edge device, forming a MAN aggregation ring. It is connected to multiple access rings through the downlink 10 Gbit/s interfaces and forms an 80 GE aggregation ring after aggregating services through the uplink 40G*2 interfaces. In this cascaded ring network, the reliability of the access/aggregation devices is ensured. As a result, users are provided with high bandwidth and high reliability services.

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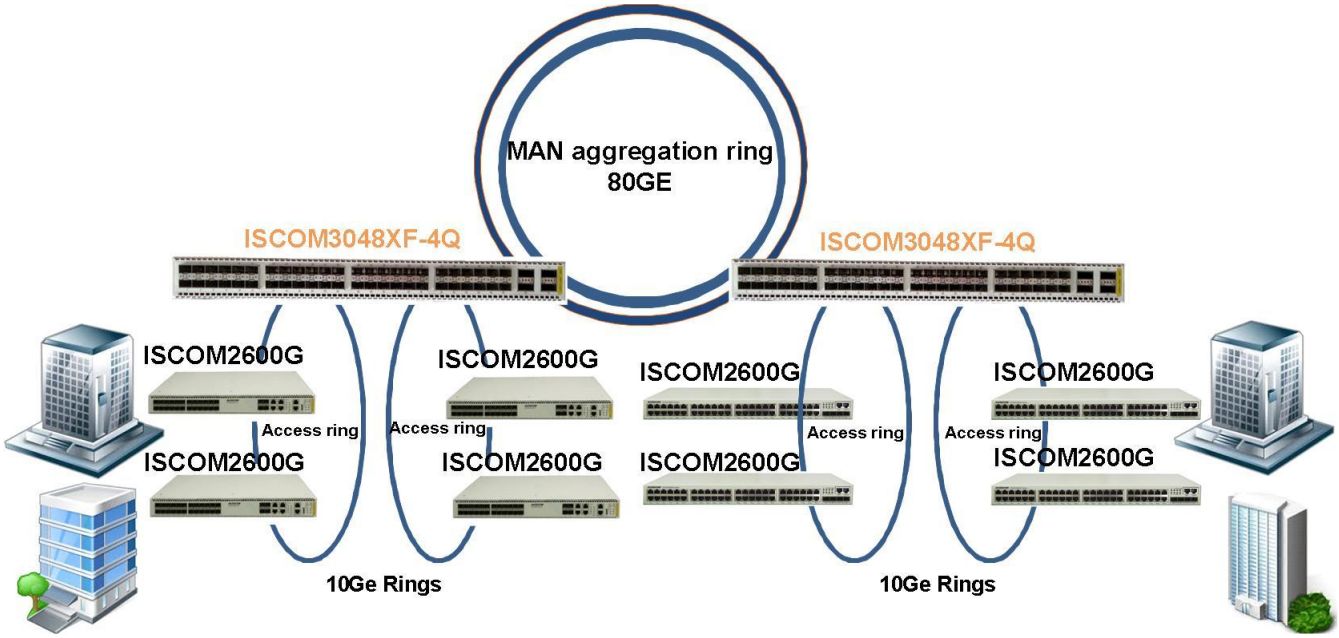
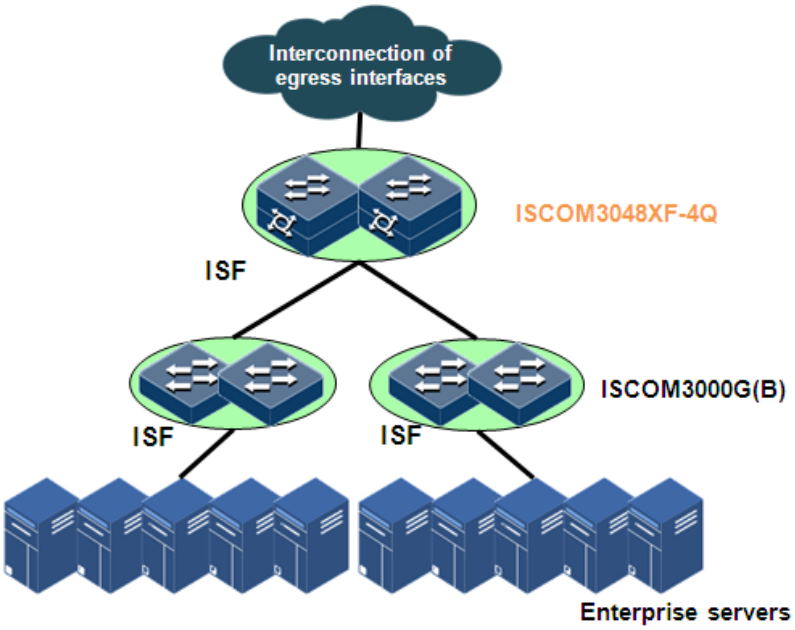


IDC/EDC networking

For the super large IDC, the ISCOM3048XF-4Q serves as the 10 Gigabit ToR switch. For the EDC, the ISCOM3048XF-4Q can work together with the ISCOM3000G(B) series switches to provide a solution. The ISCOM3000G(B) series switches stack together through the 10 Gbit/s interfaces, serving as the gigabit ToR, to access the gigabit server. The ISCOM3048XF-4Q switches stack together through the 40 Gbit/s interfaces, serving as the core devices, to aggregate the downlink ISCOM3000G(B) switches.



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Key Features >>

Device	ISCOM3048XF-4Q
Port type	Uplink: 4x40GE QSFP Downlink:48x10G SFP+
Management interface	1 out-of-band interface, 1 Console interface
Switching capacity	1.28Tbps
Packet forwarding rate (Mpps)	960
Dimensions (mm)	440x420x43.6
Weight (kg)	9
MAX Power consumption (W)	240
Voltage range	100–240 VAC, -32 to -72 VDC
Hardware	● Dual Power Supply, supporting AC/DC Power options ● Dual fan card with 4 fans, 3:1 Redundancy protection ● Working temperature: 0–45°C ● Relevant humidity: 10%–90% RH (non-condensing) ● Lightning protection level (service interface/ power interface): 6 kV in common mode
Packet forwarding	● MTU (13KB) ● DLF control
MAC	● MAC address table (128K), static MAC address table (1024) ● blackhole MAC ● MAC addresses limits based on the interface ● Port security MAC
VLAN	● Dot1Q (4094 VLANs) ● Basic QinQ, flexible QinQ, protocol-based VLAN ● VLAN mapping (1:1, inner and outer VLAN mapping)
Multicast	● L2 multicast table (24K), static L2 multicast table (1K) ● IGMPv1, v2, v3 protocol ● IGMP Snooping, MVR, IGMP VLAN copy ● IGMP Proxy ● IGMP Filter
ACL	● MAC ACL (400), IP ACL (400), IPv6 ACL (128) ● User defined ACL (128) ● ACL combination based on VLAN/CoS/MAC/EtherType/IPv4/IPv6/L4 protocol
QoS	● Trust mode: port-priority/CoS/ DSCP ● Priority mapping: cos-mapping/dscp-mapping /dscp-mutation-mapping ● Scheduling (8 queue/port): SP/WRR/SP+WRR/DRR/SP+DRR ● Congestion control: Tail Drop/WRED ● Policy (action: marking, mirror, statistic, policer)

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	● Shaping: per port/queue ● Bandwidth guarantee: CIR/CBS/EIR/EBS, MEF/RFC 4115, color aware ● CAR: based on ingress (128) ● HCAR: based on ingress (128) ● Performance statistic: based on ingress (64)
Security	● AAA: user, DOT1X (based on port or MAC), RADIUS, TACAS+ ● PPPOE+ ● DAI and IPSG based on DHCP binding table ● Storm control: broadcast, multicast, DLF
Reliability	● LACP (max groups = port number/2,max member = down link number), MLACP ● STP/RSTP/MSTP(64 instance), MRSTP(Multi-process RSTP) ● port backup ● Loopback detection ● G.8032 v1/v2 (64 rings, < 50ms)*
IPv4	● Vlanif (256) ● Vlanif IPv4 address (1 master,15 slave) ● ARP IPV4 (16K), static ARP IPV4 (1K) ● DHCP Server, DHCP Relay, DHCP Client, DHCP Snooping, DHCP Option (61, 82) ● Proxy ARP
IPv6	● ARP IPV6 (8K), static ARP IPV6 (1K) ● NDP ● RA Snooping ● DHCPv6 Option (18,37) ● MLD Snooping/Proxy/Filter ● IPV6 management: Telnet(10 sessions), SSH(10 sessions), TFTP/FTP, SNTP/NTP, SNMP, and RADIUS
IPv4 Routing	● IPv4 Routing Entry (16K), IPv4 static/default routing (512) ● RIPv1/v2 ● OSPFv2 ● BGP4 ● ISIS* ● IPv4 Multicast Routing Entry (16K) ● PIM-SM ● IGMPv1/v2/v3 ● ECMP (8 MAX devices) ● Policy Routing ● VRRP (255 sessions)
IPv6 Routing	● Ipv6 Routing Entry (8K), IPv6 static/default routing (512) ● RIPng* ● OSPFv3*

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	●	BGP4+*
	●	ISISv6
	●	IPv6 Multicast Routing Entry (8K)
	●	PIM-SMv6*
	●	MLDv1/v2*
OAM	●	IEEE802.3ah EFM
	●	IEEE802.1ag CFM (CC 3.3ms)*
	●	SLA: ITU-T Y.1731 (LM/DM/SLM)*
	●	L2 loopback (swap MAC)
	●	IPv4/v6 Ping/Traceroute
	●	BFD for VRRP, static route, OSPF, BGP, PIM-SM(DR,ASSERT Winner)*
System management	●	Console CLI, SNMPv1/v2/v3, telnet (10 sessions), SSHv1/v2 (10 sessions)
	●	RMON
	●	LLDP
	●	DDM
	●	Alarm management, syslog management
	●	Automatic configuration
	●	Mirror (based on port or flow, 4 groups)
	●	RSPAN
	●	Backup system
ISF stacking	●	Max four devices stacking
	●	Merge and split of stacking devices
	●	1(master) : 1(backup) : n(slave)
	●	linear/ring stacking
Certification	●	UL/FCC

*roadmap

Ordering Information >>

ISCOM3048XF-4Q-AC/DC/ D	48x1000M/10G SFP+ + 4x40G QSFP+, dual AC/DC power. Air flow design: front-to-back.
ISCOM3048XF-4Q-AC_DC*	48x1000M/10G SFP+ + 4x40G QSFP+, AC plus DC power. Air flow design: front-to-back.
ISCOM3048XF-4Q-F-AC/DC/ D	48x1000M/10G SFP+ + 4x40G QSFP+, dual AC/DC power. Air flow design: back-to-front.
ISCOM3048XF-4Q-F-AC_DC*	48x1000M/10G SFP+ + 4x40G QSFP+, AC plus DC power. Air flow design: back-to-front.

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