



ISCOM3000XF series switches

The ISCOM3000XF series switches, which adopt the world-leading hardware structures, are the 10Gbit/s switches developed by Raisecom. They are 1U high with 48 downlink 10Gbit/s optical interfaces and 4 or 6 uplink 40Gbit/s interfaces. Besides, they are small in size and large in capacity, support Intelligent Stacking Framework (ISF), and feature high reliability, easy operation and maintenance, easy management, and high security, thus applicable to multiple scenarios, such as 10Gbit/s access in the data center, core or aggregation layer in campus network, and MAN aggregation layer.



ISCOM3048XF-4Q



ISCOM3048XF-6Q

Highlights >>

Large capacity and high density	<p>1U standard chassis, small size, large capacity, 1.28T or 1.44T switching capacity, L2/L3 full wire-speed forwarding</p> <p>Provide 48 downlink 10Gbit/s SFP+ interfaces and 4 or 6 uplink 40Gbit/s high-performance QSFP+ interfaces. Each QSFP+ interfaces can be used as four 10 Gbit/s SFP+ interfaces, offering flexible networking capabilities to meet the high-density access requirements of the 10 Gbit/s server.</p>
ISF	<p>Support Raisecom ISF, through which multiple devices can be virtualized into one device, simplifying topology and management and facilitating expansion.</p> <p>The stacking devices back up each other, improving device-level reliability. Through cross-device link aggregation, traffic load balancing can be implemented and bandwidth can be improved. As a result, link-level reliability is enhanced.</p> <p>The service interface can be multiplexed into stacking interface, for constructing a stacking system and expanding stacking devices. Meanwhile, cross-region long-distance stacking is also supported.</p> <p>Provide flexible networking modes. Support ring-type stacking topology and link-type stacking topology.</p>
Reliable protection modes	<p>Provide pluggable dual power modules for 1+1 redundant backup. Support mixing of AC and DC power modules.</p> <p>Support redundant configurations of pluggable fan modules, improving device-level reliability.</p> <p>Support STP/RSTP/MSTP, enhancing link redundancy and avoiding loops.</p> <p>Support ring network protection switching (ITU-T G.8032): single ring, intersecting ring, and tangent ring, with sub-50ms protection switching.</p> <p>Support manual link aggregation, LACP, MC-LAG, and cross-device link aggregation in stacking mode.</p>
Powerful service supporting capabilities	<p>Complete routing functions: static route, RIPv1/2* and OSPFv2*.</p> <p>Provide comprehensive multicast functions.</p>

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Support IGMP, MLD, and PIM-SM*.

Support IGMP MVR, IGMP Snooping, MLD snooping, IGMP filtering, and IGMP Proxy.

Support IPV6 and IPV4.

Complete security guarantee

Directly discard the illegal packets which mismatch the binding entries by establishing and maintaining the DHCP Snooping table. Ensure the legacy of DHCP server based on the feature of DHCP Snooping trusting interface.

Support multiple access control and user authentication technologies, such as dynamic ARP detection, dot1x, RADIUS, TACACS+, IP Source Guard, and secure MAC, improving the security of the network and the device.

Support abundant ACL strategies, which can be based on source MAC address and destination MAC address, source IP address and destination IP address, source interface and destination interface, or protocol.

Support broadcast storm control, enhancing network security.

Support loop detection to prevent loops, ensuring the stable operation of the entire network.

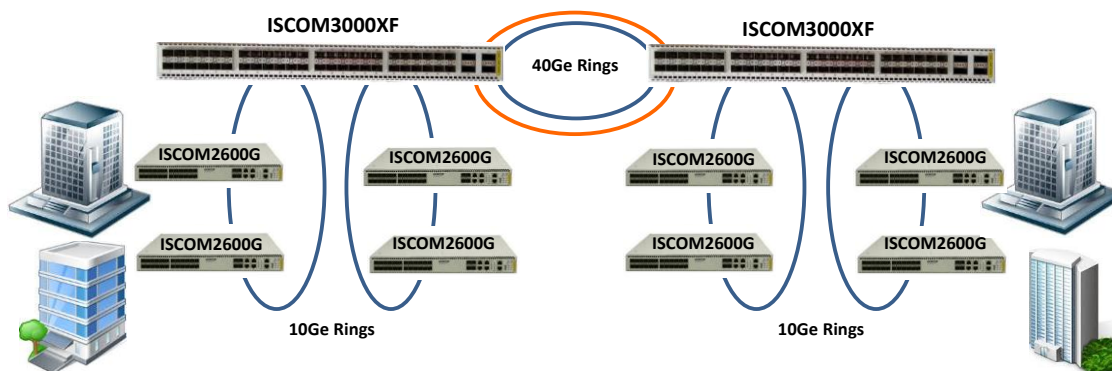
Strict front-rear air duct, energy-efficient

Adopt a strict front-rear air duct to improve heat dissipation efficiency, which meets the design requirements of the machine room in the data center.

Front-rear and rear-front air ducts are supported by combination of different fans and power modules.

Support hardware monitoring to detect temperature change. The fan can automatically adjust its rotational speed as the temperature changes, thus conserving energy, reducing noise, and prolonging the life.

Application scenarios >>



MAN

The ISCOM3000XF devices and ISCOM2600G devices comprise a MAN access/aggregation solution in which the ISCOM3000XF devices serve as MAN edge devices and forms MAN aggregation rings. The ISCOM3000XF connects multiple access rings through its downlink 10 Gbit/s interfaces and form a MAN 80GE aggregation ring through uplink interface 40G*2 aggregation. In this case, the reliability of the access/aggregation devices can be ensured by the cascading ring network, providing users with high-bandwidth and highly reliable services.

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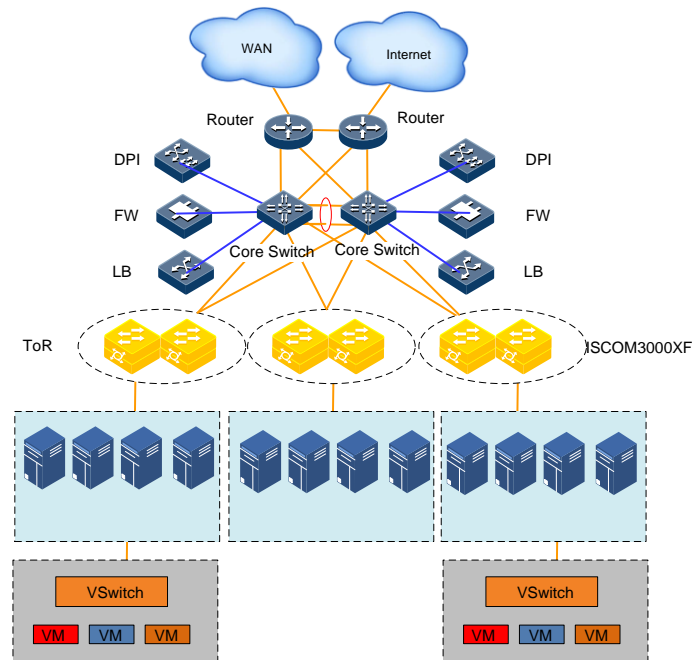
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Data center access

The ISCOM3000XF can be used in the data center, providing a high-density 10 Gbit/s access solution in which the ISCOM3000XF connects a 10 Gbit/s server through its downlink 10 Gbit/s interface and is aggregated to the upper-layer device through 40 Gbit/s interface link aggregation. Accessing the server through stacking is convenient for maintenance and improving reliability.

Key features >>

Item	ISCOM3048XF-4Q	ISCOM3048XF-6Q
Interface	Uplink: four 40 Gbit/s QSFP+ interfaces. Each can be used as four 10 Gbit/s SFP+ interfaces. Downlink: forty-eight 10 Gbit/s SFP+ interfaces, can be used as 1000 Mbit/s SFP interfaces	Uplink: six 40 Gbit/s QSFP+ interfaces. Each can be used as four 10 Gbit/s SFP+ interfaces. Downlink: forty-eight 10 Gbit/s SFP+ interfaces, can be used as 1000 Mbit/s optical SFP interfaces
Switching capacity (Tbps)	1.28Tbps	1.44T
Packet forwarding	960Mpps	1080Mpps

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rate (Mpps)

- 128K MAC addresses

MAC address management

- MAC address learning and aging
- Static, dynamic, and blackhole MAC entries
- Secure MAC
- 4K VLANs

VLAN

- Basic QinQ and selective QinQ
- VLAN Mapping
- MAC/protocol/IP subnet/interface-based VLAN.
- GVRP

Jumbo frame

13KB

ISF virtualization

- ISF, virtualizing multiple devices into one device, up to 8 stacking devices
- Linear and ring topologies
- Manual and automatic merge
- MAD
- Master-slave election mode
- Link aggregation, LACP, and MC-LAG
- STP/RSTP/MRSTP

Reliability

- VRRP and BFD For VRRP
- BFD For static route/OSPF
- ERPS (G.8032)
- Interface backup
- Loop detection
- DHCP Client, DHCP Relay, and DHCP Snooping

DHCP

- DHCPv6 Client and DHCPv6 snooping
- DHCP Server and Option43
- DHCP Snooping option61, 82/DHCP Relay option82

IP routing

- Static route, RIPv1/2*, RIPng*, OSPFv2*, OSPFv3*, ECMP, and routing policies
- Static Layer 2 multicast
- IGMP v1/v2/v3, MLD, and PIM-SM*

Multicast

- IGMP v1/v2/v3 Snooping and IGMP MVR
- IGMP VLAN-Copy
- IGMP filtering
- IGMP Proxy

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- MLD snooping
- Immediate leave of multicast members
- Rate limiting in the ingress and egress directions of the interface
- Two-Rate Three-Color CAR
- 8 queues supported by each interface
- SP, WRR, DRR, SP+WRR, and SP+DRR
- QoS & ACL**
 - WRED, tail drop congestion avoidance mechanism, and interface shaping
 - MAC ACL, IP ACL, IPv6 ACL, and user-defined ACL
 - Layer 2–Layer 4 packet filtering based on source/destination MAC address, source/destination IP address, source/destination interface ID of TCP/UDP, protocol, and VLAN
 - Drop, Remark, Redirection, Mirror, Statistic, and CAR
 - Hierarchical user management and password protection
 - CPU protection and anti-ARP attack
 - Dynamic ARP inspection (DAI)
 - DHCP Snooping binding table
 - IP Source Guard
- Security**
 - CPU protection
 - IEEE 802.1x authentication based on interface and MAC
 - AAA, Radius, TACACS+, etc.
 - Interface isolation, secure MAC, and blackhole MAC
 - Storm control
 - SSH2.0
 - ISF
 - SNMPv1/v2c/v3 and network management system
 - Syslog and hierarchical alarms
- Management and maintenance**
 - Hardware monitoring and optical module DDM
 - RMON
 - Console, Telnet, and SSH
 - Out-of-band interface management
 - Port mirroring and RSPAN
 - Dual systems

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	<ul style="list-style-type: none"> ● IEEE802.3ah OAM 	
Environment requirements	<ul style="list-style-type: none"> ● Temperature: 0–45°C ● Humidity: 10%–90% (non-condensing) 	
Dimensions	440 (width) × 420 (depth) × 43.6 (height)	444 (width) × 420 (depth) × 44.4 (height)
Power supply/fan	<ul style="list-style-type: none"> ● Pluggable dual power supplies (dual AC, dual DC, and AC+DC) ● AC: rated 220 VAC, 100–240 VAC, 5 A, 50/60 Hz ● DC: rated -48 VDC, -36 to -72 VDC, 10 A ● Pluggable fan box, automatic speed adjustment of the fan 	
Anti-thunder	<ul style="list-style-type: none"> ● AC: 6 KV in common mode and 6 KV in differential mode ● DC: 2 KV in common mode and 1 KV in differential mode 	
Maximum power consumption	240 W	260 W

(Note: the features marked* are being planned)

Ordering information >>

Models

Description

ISCOM3048XF-4Q-AC/D

Four 40 Gbit/s QSFP+ interfaces; forty-eight 10 Gbit/s SFP+ interfaces; Air is drawn at the interface side and exhausted at the power side; pluggable dual power supplies (dual AC); 2 pluggable fan modules.

The power module and fan module of the corresponding air direction are included.

ISCOM3048XF-4Q-DC/D

Four 40 Gbit/s QSFP+ interfaces; forty-eight 10 Gbit/s SFP+ interfaces; Air is drawn at the interface side and exhausted at the power side; pluggable dual power supplies (dual DC); 2 pluggable fan modules.

The power module and fan module of the corresponding air direction are included.

ISCOM3048XF-4Q-AC_DC

Four 40 Gbit/s QSFP+ interfaces; forty-eight 10 Gbit/s SFP+ interfaces; Air is drawn at the interface side and exhausted at the power side; pluggable dual power supplies (1 DC + 1 AC); 2 pluggable fan modules.

The power module and fan module of the corresponding air direction are included.

ISCOM3048XF-6Q-AC/D

Six 40 Gbit/s QSFP+ interfaces. Forty-eight 10 Gbit/s SFP+ interfaces. Air is drawn at the interface side and exhausted at the power side; pluggable dual power supplies

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ISCOM3048XF-6Q-DC/D

(dual AC); 2 pluggable fan modules.

The power module and fan module of the corresponding air direction are included. Six 40 Gbit/s QSFP+ interfaces. Forty-eight 10 Gbit/s SFP+ interfaces. Air is drawn at the interface side and exhausted at the power side; pluggable dual power supplies (dual DC); 2 pluggable fan modules.

ISCOM3048XF-6Q-AC_DC

The power module and fan module of the corresponding air direction are included. Six 40 Gbit/s QSFP+ interfaces. Forty-eight 10 Gbit/s SFP+ interfaces. Air is drawn at the interface side and exhausted at the power side; pluggable dual power supplies (1 DC + 1 AC); 2 pluggable fan modules.

The power module and fan module of the corresponding air direction are included.

Power and fan models

Description

RPA1351-220S12

ISCOM3000X AC power module; air is drawn at the interface side and exhausted at the power side; applicable to the ISCOM3048XF-4Q and ISCOM3048XF-6Q.

RPD1301-48S12

ISCOM3000X DC power module; air is drawn at the interface side and exhausted at the power side; applicable to the ISCOM3048XF-4Q and ISCOM3048XF-6Q.

FANS332

ISCOM3000X fan module, air is drawn at the interface side and exhausted at the power side; applicable to the ISCOM3048XF-4Q.

FANS335

ISCOM3000X fan module; air is drawn at the interface side and exhausted at the power side; applicable to the ISCOM3048XF-6Q.

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