

L3 Managed Gigabit Switch with 10G uplink

24-Port Gigabit RJ-45 + 4 Ports 10G SFP+

AI-L3-XGS2404

airlive®



Rich L3
Features

L3 DHCP
Server/Relay

L3 DHCP
Snooping

ACL, ERPS

L3 OSPF Routes
Support

IPv4/v6 L3
Static Route

10G SFP+
Uplink

Overview

Rich L3 Features

The AI-L3-XGS2404 series offers high performance hardware 24x port 1G RJ-45 and 4x 10G SFP+ ports, IP routing. Static route, OSPF, and RIP provide dynamic routing by exchanging routing information with other Layer 3 switches and routers. With the AI-L3-XGS2404 series, customers could easily achieve a Policy-based Route (PBR), which is important when they need a Switch-to-switch application and short network heal time.

AirLive AirCore Support, use AI to Cloud manage your switch.

AirCore—a proprietary Intelligent Network Management system by AirLive. Use AirCore to save time on remote management of a switch, use features like Auto-recovering, Intelligent Topology and Real-time self-healing. AirCore is Cloud-based with a One-touch configuration, Remote-monitoring and Elastic scaling. It has an Auto-Pilot function for Automated topology discovery and self-healing (Auto-recovering). In case of a failure the system will give an auto-alarm via SMS to mobile or email. Almost all AirLive switches are supported by AirCore.



10/100/1000M RJ-45 Port

Console Port

10G SFP+

Features

- Rich Layer 3 Features
- Fully L2 features provide easier manageability, security and QoS
- Support STP/RSTP/MSTP (ERPS) Support Loop Detection and self-healing, support remote loopback monitoring and control
- Support IPV4/ IPV6, RIP V1/V2, OSPF V2
- Support multiple VLAN division, Voice, VLAN, MAC VLAN, Surveillance VLAN, Protocol VLAN, Private VLAN and more
- Support IP address+ MAC address +VLAN+ port binding, DHCP Snooping, IP source
- Clear Statues display including traffic, CPU, per-port status
- Easy management; Support WEB, TELNET, CLI, SSH, SNMP, RMON management.

Major Specifications

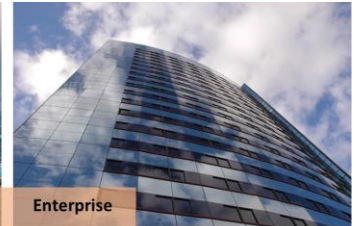
- 24 x 10/100/1000Mbps RJ-45 Ports
- 4 x 10G SFP+ Fiber Long Distance
- L3 DHCP Server/Relay
- L3 DHCP Snooping
- IPv4/IPv6 L3 static route
- OSPF Routes dynamic routing
- Surge Protection 6KV, ESD Protection 6KV
- Authentication: 802.1x, AAA
- DHCP Snooping prevents unauthorized router installed

Applications of Layer-3 Switches

- Layer3 Switches are widely used in data centers and universities, factories and enterprises. Where there is a very big setup of computer networking. Owing to its features like static and dynamic routing and its fast-switching speed than a router, it is used in LAN connectivity for interconnection of several VLAN and LAN networks.
- The AI-L3-XGS2404 has the skills to offload the overloaded routers. This can be done by configuring a layer-3 switch, each with a main router in a wide area networking scenario so that the switch can manage all the local level VLAN routing.
- The layer-3 switch in combination with a number of layer-2 switches supports more users to connect on the network without the need for implementation of an extra layer-3 switch and more bandwidth. Thus, it is widely implemented in universities and small-scale industries. In case if the number of end users on a network platform increases, then without any enhancement of the network, it can be accommodated in the same running scenario easily.
- A layer-3 switch is smart enough to handle and manage the routing and traffic controlling of locally connected servers and end devices utilizing its high bandwidth.



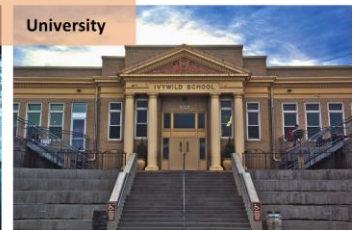
Factory



Enterprise



Data Center



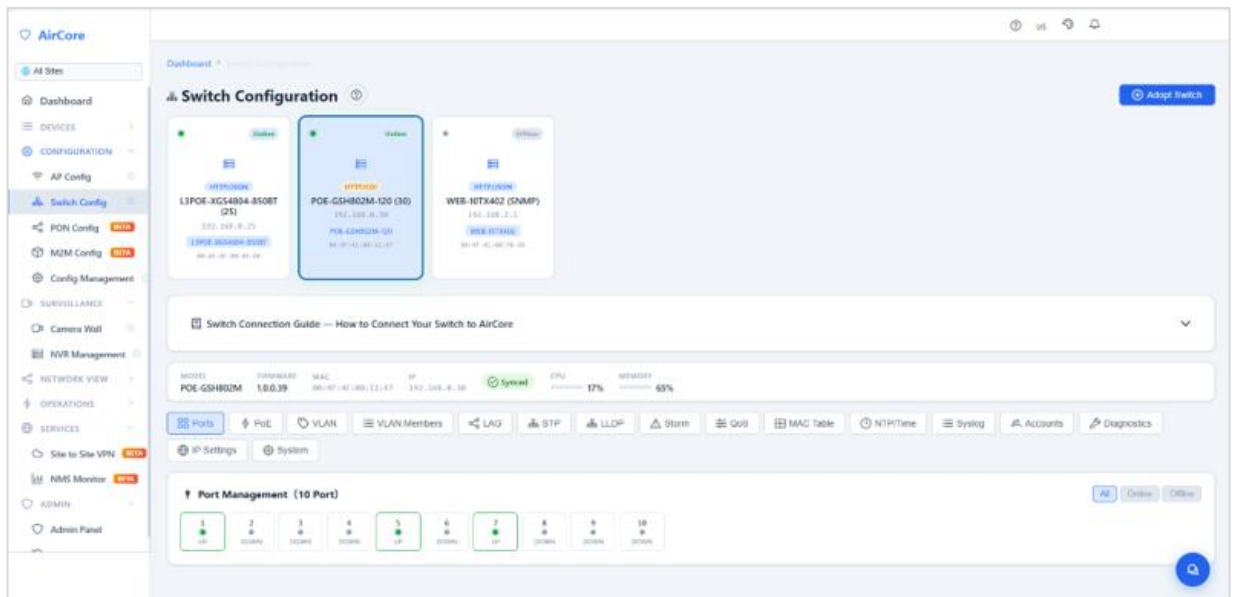
University

AirLive AirCore AI Support

A virtual engineer to assist SI/MIS to find where a problem is if any; AirLive built-in AI analysis function helps to analysis and report a problems. Able to expand devices and functions in the future.

An easy to interface to control the different AirLive switches, setup ports, PoE, VLAN, VLAN member, LAG, STP, LLDP And more all via AirLive AirCore from a remote location

The software is designed by AirLive. AirLive provides AirCore as a Free charge commercial service & management facility for Distributor and SI. AirCore also supports the AirLive Wireless products, IP Camera's and Telecom Solutions.

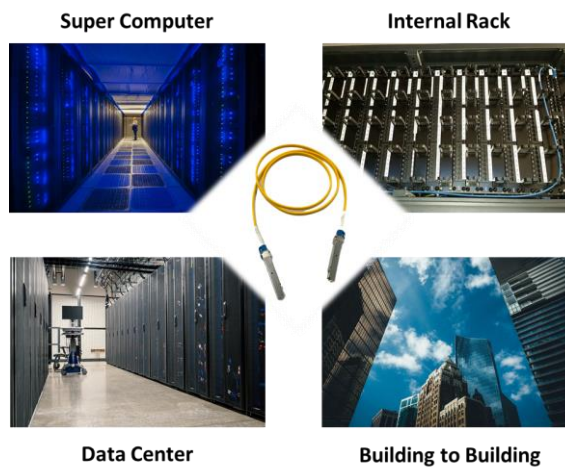


10G Performance and Scalability

With high switching capacity, the AI-L3-XGS2404 support wire-speed L2/L3 forwarding and high routing performance for IPv4 and IPv6 protocols.

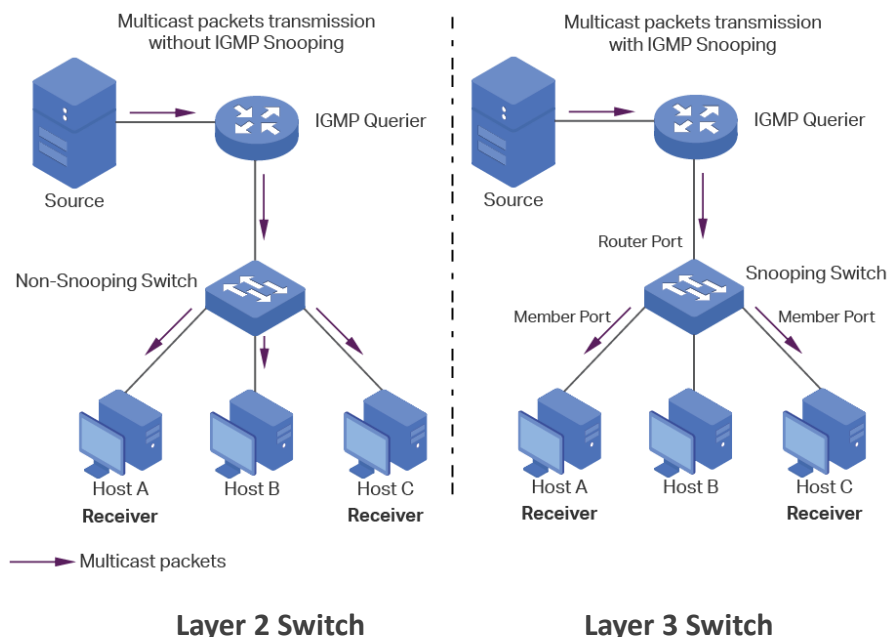
The 10 Gigabit Ethernet connectivity of AI-L3-XGS2404 is accomplished via a hot-pluggable 10 Gigabit SFP+ transceiver which supports distance up to 300 meters over multimode fiber and 10 to 40km over single-mode fiber (The distance depends on the optical module chosen).

10G SFP+ Connect Applications



Strong L3 IGMP Snooping Multicast

L3 multicast protocols is compliant with IGMPv1/v2/v3 and supports abundant multicast features such as IGMP v2/v3 snooping and fast leave. With Multicast VLAN Register (MVR), multicast receiver/sender control and illegal multicast source detect functions; the AI-L3-XGS2404 fiber series provides a great application experience for the customer.



L3 OSPF Routes Management

Open shortest path first (OSPF v2) is a link-state routing protocol that is used to find the best path between the source, which is generally used in the same routing domain. Here, routing domain refers to an autonomous system (as), which refers to a group of networks that exchange routing information through a unified routing policy or routing protocol. In this as, all OSPF routers maintain the same database describing the as structure, which stores the state information of the corresponding links in the routing domain. It is through this database that OSPF routers calculate their OSPF routing tables.

As a link state routing protocol, OSPF transmits link state multicast data LSA (link state advertisement) to all routers in a certain area, which is different from distance vector routing protocol. The router running distance vector routing protocol passes part or all of the routing tables to its neighboring routers.

Routing >> OSPF

State ☐ Enable

ID (A.B.C.D)

Apply

OSPF List

☐

Area

Destination IP Prefix

Network Mask

0 results found.

Add

Delete

L3 DHCP Snooping Support

Prevention against illegal Router(DHCP Server) attacks or sending DHCP information.

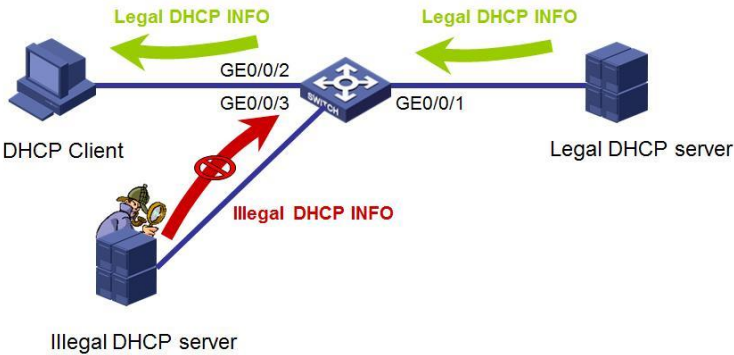
DHCP Snooping Configuration

Snooping Mode

Enabled

Port Mode Configuration

Port	Mode
*	<>
1	Trusted
2	Untrusted
3	Trusted
4	Trusted
5	Trusted
6	Untrusted
7	Trusted
8	Trusted
9	Trusted
10	Trusted



L3 VLAN IP Routing Interface Management

The AI-L3-XGS2404 provides 3 layers of VLAN interface, which is used to communicate with network layer devices. VLAN interface is a network layer interface, which can be configured with IP address. Before creating VLAN interface, the corresponding VLAN should be created first. With the help of VLAN interface, switches can communicate with other network layer devices.

Routing >> IPv4 Management and Interfaces >> IPv4 Interface

IPv4 Interface Table

	Interface	IP Address Type	IP Address	Mask	Status
☐	MGMT VLAN	Static	192.168.0.89	255.255.255.0	Valid

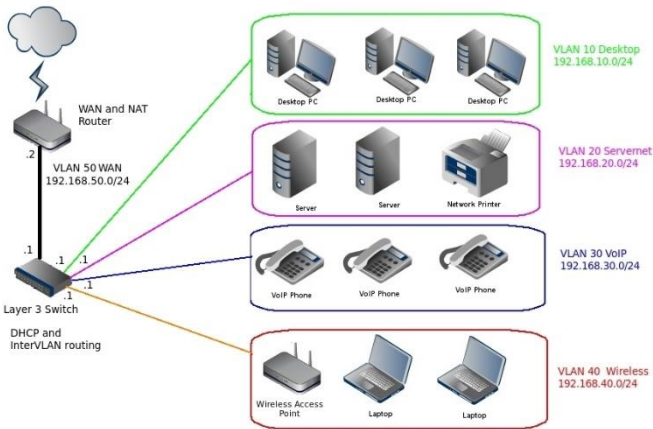
[Add](#) [Delete](#)

Routing >> IPv4 Management and Interfaces >> IPv4 Routes

IPv4 Routing Table

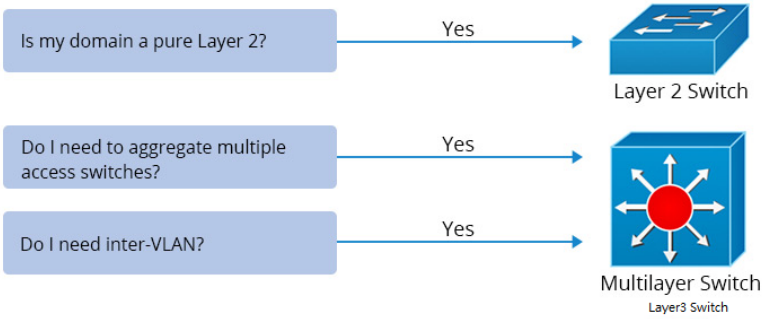
	Destination IP Prefix	Prefix Length	Route Type	Next Hop Router IP Address	Metric	Administrative Distance	Outgoing Interface
☐	0.0.0.0	0	Default	192.168.0.185	1	1	MGMT VLAN*
☐	192.168.0.0	24	Directly Connected				MGMT VLAN*

[Add](#) [Edit](#) [Delete](#)



Layer 2 vs Layer 3 Switch

The layer 2 and Layer 3 differs mainly in the routing function. A Layer 2 switch works with MAC addresses only and does not care about IP address or any items of higher layers. Layer 3 switch, or multilayer switch, can do all the job of a layer 2 switch and additional static routing and dynamic routing as well. That means, a Layer 3 switch has both MAC address table and IP routing table and handles intra-VLAN communication and packets routing between different VLANs. There is also layer 2+ (layer 3 Lite) switch that adds only static routing. Other than routing packets, layer 3 switches also include functions that require to understand the IP address information of data entering the switch, such as tagging VLAN traffic based on IP address instead of manually configuring a port. Layer 3 switches are increased in power and security as demanded.



Item	Layer 2 Switch	Layer 3 Switch
Routing Function	Mac address only	Supports higher routing such as static routing and dynamic routing
VLAN Tagging Based on IP Address	No	Yes
Inter-VLAN	No	Yes
Using Scenario	Pure Layer 2 domain	Aggregate multiple access switches

Model	AirLive AI-L3-XGS2404
Hardware • Device Interface: 24 x 10/100/1000M RJ-45 Ports 4 x 10G SFP+ Ports 1 x RJ-45 Console Port • Standard - IEEE 802.3: Ethernet MAC Protocol - IEEE 802.3u: 100BASE-TX Fast Ethernet - IEEE 802.3ab: 1000BASE-T Gigabit Ethernet - IEEE 802.3z: 1000BASE-X Gigabit Ethernet (optical fiber) - IEEE 802.3az: Energy Efficient Ethernet - IEEE 802.3ad: Standard method for performing link aggregation - IEEE 802.3x: Flow control - IEEE 802.1ab: LLDP/LLDP-MED (Link Layer Discovery Protocol) - IEEE 802.1p: VLAN Tag LAN Layer QoS/CoS Protocol Traffic Prioritization (Multicast filtering function) - IEEE 802.1q: VLAN Bridge Operation - IEEE 802.1ad: QinQ - IEEE 802.1x: Client/Server Access Control and Authentication Protocol - IEEE 802.1d: STP - IEEE 802.1s: MSTP - IEEE 802.1w: RSTP • LED Indicators: - Electrical port indicator, optical port indicator, power input indicator, system running indicator • Lighting Surge Protection: - Lightning protection: 6KV, Air discharge: 8KV, Surge: Common mode 6KV, Differential mode 2KV, Power supply: Common mode 6KV, Differential mode 2KV • Mechanical - Solid metal 19" 1U rack-mountable, Fan-less Power • Power Input: AC100~240VAC • Switch Power Usage: max. 27W	Switch Architecture Performance • Switching Performance - Bandwidth: 128Gbps - Packet Forwarding Rate: 95.232Mpps - Package Buffer: 12Mbit - MAC Address: 16K - Jumbo Frame: Up to 10K - VLANs: VLAN range 1-4094, maximum active VLAN is 4K - MTBF: 100000 hour • Software Function L3 • IPv4: Support IPv4 Static Routes • IPv6: Support IPv6 Static Routes • Address Resolution Protocol (ARP): Static ARP • RIP: Support V1/V2 • OSPF: Support V1/V2 • Software Function L2 • Port Function: - Port Switch Configuration, Port Description Configuration, Port Speed Configuration, Port Duplex Configuration, Port Flow Control Configuration, Error Disabled Recovery, Fiber Module (DDM) • Link Aggregation: - Support IEEE 802.3ad LACP, Static Trunk, Max 8 Group, Max 8 Ports/Group, Traffic Load Balancing • Storm Control: - Support Broadcast Suppression, Unknown Multicast, Unknown Unicast • Port Mirroring: - Support Port mirroring, RSPAN (remote port mirroring), Mirroring 4 sessions port-based (Many to One) • Port Isolation: - Supported • Port Rate-limit: Supported • VLAN: - Support Surveillance VLAN (16 OUI Mode (Auto/Manual)), Voice VLAN (16 OUI Mode (Auto/Manual)) - QinQ (IEEE 802.1ad) Basic, GARP VLAN Registration Protocol (GVRP), 4096 Static VLAN, 8 groups Protocol-based, 256 MAC-based, IEEE 802.1Q Tagged-based, Hybrid VLAN, protocol-based VLAN, MAC address-based • MAC Address: - Supports Dynamic Address, Static MAC address, Filtering MAC Address, MAC address Black Hole, MAC address learning limit, • Spanning Tree: - Support STP (IEEE 802.1d), RSTP (IEEE 802.1w) and MSTP (IEEE 802.1s) protocol - Support BPDU Filter, BPDU Guard, Auto Edge Port, • ERPS (Ethernet Ring Protection): Supported

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Model	AirLive AI-L3-XGS2404
• LLDP: Support LLDP, LLDP MED • Multicast: Support Common - 256 Multicast Groups, - Immediate Leave, - Static/Forbidden Router Port, - Static/Forbidden Forward Port, - 128 profiles Filtering, - Throttling, IGMP Snooping, IGMP v1/v2, IGMP v3 Basic (BISS), IGMP v2/v3 Querier, MLD Snooping, MLD v1/v2, Multicast VLAN Registration (MVR) - IPv4 • QoS: Support Trusted QoS, Queue Scheduling (WRR, WFQ, Strict Priority, Hybrid(WRR+SP or WFQ+SP)), Class of Service, Port-based, 802.1p, IP TOS Precedence, IP DSCP, Rate Limit Port-based (Ingress/Egress) • ACL: Support ACL Type L2/L3/L4, 512 MAC, based, 512 IPv4-based, 512 IPv6-based, Access Rules 1024 IPv6 • IPv6 Host: Support Auto Configuration, Static IPv6 Address and Prefix Length, Static IPv6 Default Gateway, IPv6 Neighbor Discovery (ND), IPv6 Duplicate Address Detection, ICMPv6 • IPv6 Application: Support HTTP/HTTPS, TELNET, SSH, SNMP, TFTP, Syslog, PING, DHCPv6 DHCP • DHCP: Support DHCP server, DHCP relay, BootP/DHCP client, DHCP snooping, DHCP relay option82, DHCP snooping option82, Requirements for Remote-ID (Access Switch Identifier), Requirements for Circuit-ID (Access port identifier). IP Pool, Static Binding Security • AAA Authentication: Support 8 TACACS+, 8 RADIUS • Authentication Manager: Support IEEE 802.1X, MAC Auth, Web Auth, Guest VLAN, Port-based, Host-based • Account Manager: Support Local Authentication, 8 Multiple User Account, Multi-Level Security (Manager/Operator), Password Recovery Procedures • Management Access: Support Management VLAN, 256Management ACL • SSL: Support SSLv2, SSLv3, TLSv1 • Port Security: Support 256 Dynamic Lock • CPU Defense Engine, DoS Prevention, DHCP Snooping (with Option 82), Dynamic ARP Inspection, 256 IP Source Guard, IP/MAC/Port Binding (IMPB), Dynamic VLAN Assignment Diagnostics • Syslog (RFC3164): Support Local RAM, Local Flash, 8 Remote Server • System Diagnostics: Support CPU Utilization, Memory Utilization, Port Utilization, Technical Support Log • Port Diagnostics: Support Cable Test, Fiber Module Status • Network Diagnostics: Ping Test, Traceroute • UDLD: Supported	Management • Manager Access: Support CLI 3 sessions Console, 3 sessions Telnet (RFC854), WebUI HTTPS, SSH v1/v2 • Manager IP: Support DHCP Client, DNS Client • Time Management: Support SNTP, Local • SNMP: Support V1/V2C/V3, • SNMP MIB: Support RFC1213 MIB-II, RFC1493 Bridge MIB, RFC2674 Bridge MIB Extensions, RFC1215 Generic Traps MIB, RFC2819 RMON MIB (Groups 1, 2, 3 and 9), RFC2737 Entity MIB, RFC3635 Ethernet-Like MIB, RFC2863 Interface MIB, SNMP-Community-MIB, SNMPv3-MIB • RMON: Support 32 entries / type RMON Management • Firmware Management: Support Firmware Upgrade/Backup, Dual Images, Configuration Download/Backup, Multiple Configurations • Configuration Management: Support Upload and Download (TFTP (RFC783), HTTP, UART), Save, Restart, Factory Defaults Environment • Operating Temperature: 0°C to +45°C • Storage Temperature: -40°C to +70°C • Working Humidity: 10%~90%, non-condensing • Storage Humidity: 5%~95%, non-condensing Standard package of Switch • Product size: 43.9 x 19.0 x 4.45 cm(L*W*H) • Package size: 49.7 x 26.5 x 8.5 cm(L*W*H) • Package Weight: N.W: 1.95kg; G.W: 2.55kg • Package content: Switch x 1, QIG x 1, Power cord x 1, Rack ear x 1 Standard carton package • Quantity: 5 pcs / 1 carton • Dimensions 51.0 x 47.0 x 29.5 cm (L*W*H) • Weight 13.75kg (G.W) • Ordering Information • Model: AI-L3-XGS2404 • Name: L3 Managed Gigabit Switch, 24-Port RJ-45, 4x 10G SFP+ Fiber ports.

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