

## JetNet 6524G / 6524G-DC24 / 6524G-DC48

### Industrial 24-Port Gigabit Stackable Layer 3 Managed Ethernet Switch



- 24-port 10/100/1000 BaseT with 4 Gigabit SFP combo ports
- 2 10G backplane for stacking up to 8 units with 192 ports and 384G bandwidth
- Supports IP, VLAN & Multicast routing
- IP Routing protocol supports RIP v1 / v2, OSPF v1/v2
- Supports L3 Multicast, PIM-DM and PIM-SM, DVMRP, IGMP v1/v2/v3
- Virtual Redundant Router Protocol (VRRP) for gateway redundancy
- Supports LLDP and JetView Pro i<sup>2</sup>NMS for network auto-topology visualization and efficient group management
- 802.1s Multiple Spanning Tree Protocol and 802.1w RSTP for network redundancy and MSR member mode
- Supports 512 VLANs, GVRP/GMRP, protocol VLAN
- 802.3ad LACP, up to 6 trunk groups, unicast and multicast load balance
- Supports L2 / L3 / L4 ACL (access control list)
- IEEE 802.1x Port-Based Authentication, RADIUS and TACACS client, SSH, SSL, TLS, Port binding
- FAN-less design with -40~65°C wide operating temperature (JetNet 6524G-DC)

Industrial Intelligent NMS
Rackmount PoE Plus Switch
Industrial PoE Plus Switch
Industrial 12-24V PoE Switch
Industrial PoE Switch
Rackmount L3/L2 Switch
Gigabit Managed Switch
Managed Ethernet Switch
Entry-level Switch
Wireless Outdoor AP
Embedded PoE/Router Computer (LINUX)
Industrial Communication Computer (WIN/LINUX)
Ethernet/PoE/Serial Board
Ethernet I/O Server
Media Converter
Serial Device Server
SFP Module
Din Rail Power Supply

## Overview

The JetNet 6524G is a 19-inch Gigabit Stackable Layer 3 Managed Switch, equipped with 24 10/100/1000 Base-TX ports including 4 Gigabit SFP combo ports delivering maximum throughput and flexibility for high-density and ultra high-speed connection. With stacking cable installation, up to 8 units can be stacked together, allowing building a single-IP manageable device and simultaneously providing 40G backplane across full duplex stacking links. The flexible interface design allows JetNet 6524G to provide up to 192 Gigabit ports per stack and 384G bandwidth for building intelligent large-scale networks.

In addition to the 90-264VAC power-based JetNet 6524G model, Korenix provides the JetNet 6524G-DC series, which support 24V or 48V power inputs and feature a FAN-less design with -40~65°C wide operating temperature for severe industrial applications.

### Easy Stack Management

The simplified stack management interface of JetNet 6524G allows users to manage up to 192 ports of the switches through single console interface or remotely manage them through single IP address. Besides, administrators can benefit from the stacking interface by

easily configuring the precedence of each stack member. By assigning different precedence to different stack members, users can choose the management (Master) unit of the stack. If a stack member's precedence is assigned to be disabled, this stack member will always be a slave unit.

### Triple Layer 3 Routing (IP, VLAN and Multicast routing)

The JetNet 6524G IP routing layer contains the IP forwarding layer, Address Resolution Protocol (ARP) mapping layer and Routing Tables. With IP forwarding table, the JetNet 6524G provides wire speed IP and VLAN inter-routing. A single JetNet 6524G allows users to configure multiple IP subnets and assign them to the physical interface. The routing table can be updated according to the routing information defined by configured static route or learnt by dynamic Routing Protocols.

The dynamic Routing Protocols supported by JetNet 6524G are RIPv1, v2, OSPFv1 and V2. Aiming to route multicast streams such as movies, videos, industrial automation streams through different subnets, in addition to IP and VLAN routing, the

dynamic multicast routing protocols, such as PIM-DM and PIM-SM, DVMRP, IGMP v1/v2/v3, are needed. Korenix JetNet 6524G outstands from other layer 3 switches by its multicast routing feature. With IGMP snooping and IGMP router port selection protocols,

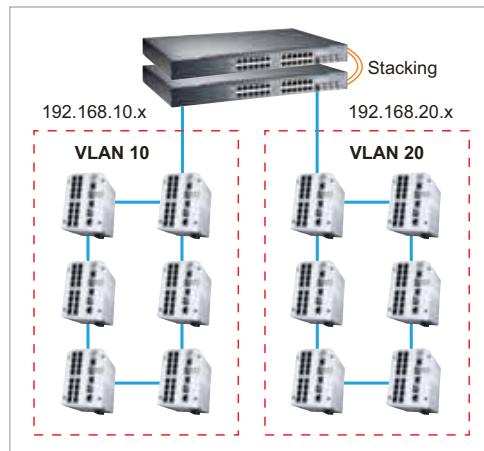
the JetNet 6524G acts as an access level switch or aggregated switch, so that the clients can be divided into different subnets for wire speed routing and for exchanging routing information with other L3 routers/switches.

## What is Layer 3 Switch

Layer 3 means the 3rd level of the OSI 7 layers. It is known as IP layer. Layer 3 switch is also known as Multi-Layer switch which includes the wire-speed layer 2 MAC switching and layer 3 IP routing capabilities.

Some scenes can be planned for the layer 3 switch/router in the network topology.

1. The hosts located in different Broadcast domains cannot communicate by themselves.
2. VLAN-enabled switches cannot forward traffic across VLAN boundaries by themselves.
3. Each IP Subnet is single broadcast domain.
4. The unknown target destination address can be directed to default gateway.
5. Users in different IP Subnet/VLAN cannot access the same Public Server.
5. HTTP, FTP, Video, Movie... cannot be directed to target users through remote service provider.



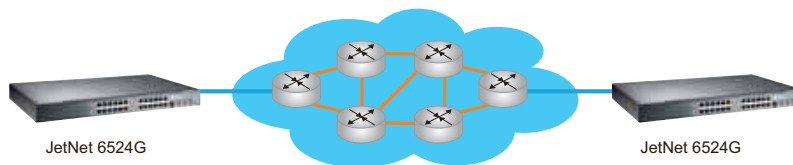
## Routing Protocol

Routing is the process of moving packets through an internetwork, such as the Internet. To Route traffic, a router or layer 3 switch needs to know the destination IP address, the sources IP it can learn from, the possible routes. Besides, it should find the best route, maintain and verify routing information.

If the next hop address is known or assigned by IT manager or service provider, the static route can direct the correct routing request to the connected interface. If not, the dynamic routing protocol is needed.

The dynamic routing protocol includes unicast routing and multicast routing protocols. The unicast routing protocol includes hop based or distance vector based protocols. RIP is the typical hop based protocol, where the less hops path is always the best route. OSPF is a typical distance vector based protocol, where the lowest cost is the best route path.

To route multicast services, like movies, videos, industrial automation streams, the multicast routing and related protocols are needed. The DVMRP, PIM-DM, PIM-SM are supported by JetNet 6524G series.



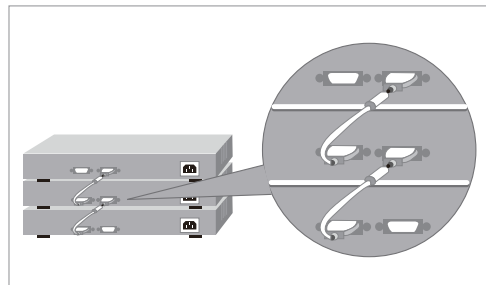
- Static Route
- Dynamic IP Unicast Routing
- Dynamic IP Multicast Routing

## Advantage of the Stack Management

The Stack Management feature provides abundant advantages for management. It simplifies the management interface, reduces the number of IP addresses needed in a network, uses a single out-of-band console interface to control whole stack as one switch and single configuration file.

When the New unit joins or leaves, and/or a stack cable accidentally disconnects, the existed traffic transmission will not face any topology recovery problem. Only when the master switch of the stack fails, the stack will be recovered within a short time.

JetNet 6524G is capable of supporting up to 8 switches per stack with maximum 192 gigabit ports per stack. The JetNet 6524G equips dual 10G interfaces as the backplane between the units. As a result, the 40G backplane decreases the bottleneck effects when the



inter-switching traffic is heavy.

With the high volume stacking capability, secured stack cable, 10G stack backplane, users can easily and flexible expand the gigabit port volume without changing environment.

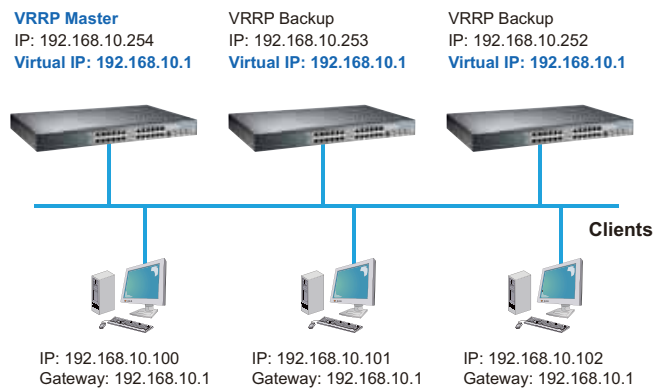
## VRRP (Virtual Router Redundancy Protocol)

When the source host and the destination host are not on the same segment/subnet, the source host sends the data to the default gateway first. The hosts must have their own IP, subnet mask and default gateway. The VRRP (Virtual Router Redundancy Protocol) is also known as default gateway redundancy.

With VRRP, the hosts can continuously direct traffic to the default gateway without changing default gateway

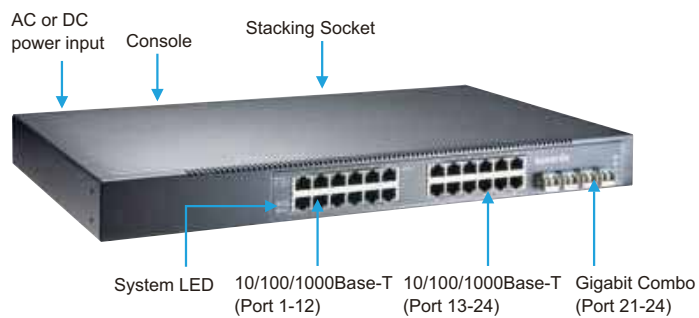
configuration.

Once the VRRP master failure happens, the backup VRRP router activates immediately. The TCP connection will not be terminated within short failover time, the hosts will not aware the default gateway failure. The VRRP is a standard protocol and ensures the high reliability of the environment.

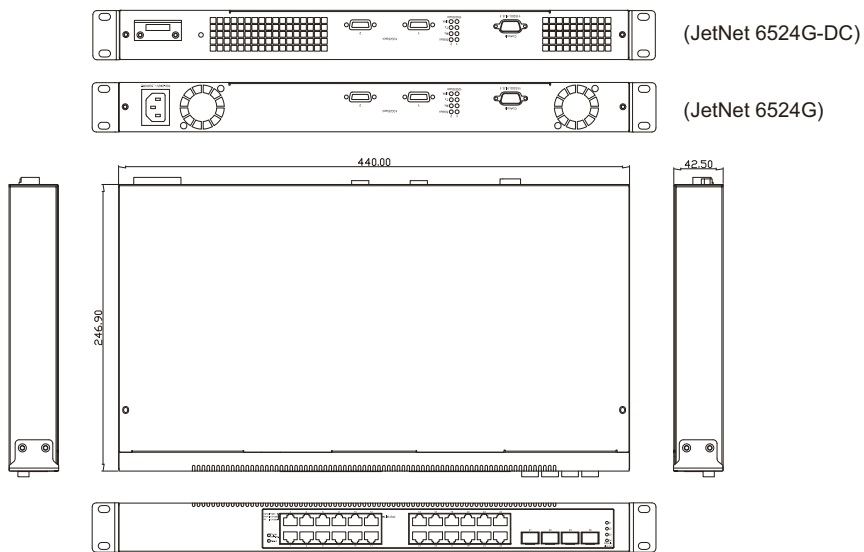


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## JetNet 6524G Appearance



## Dimensions (Unit = mm)



## Specification

### Technology

#### IEEE Standard:

IEEE 802.3 10Base-T, IEEE 802.3u 100Base-TX and 100Base-FX, IEEE 802.3ab 1000Base-T, IEEE 802.3z 1000Base-SX, IEEE 802.3x Flow Control and Back-pressure, IEEE 802.1p class of service, IEEE 802.1Q VLAN, IEEE 802.1D-2004 RSTP, IEEE 802.1s MSTP, IEEE802.3ad LACP, IEEE802.1X Port based Network Access Control, IEEE802.1v Protocol-based VLAN

#### RFC Documents:

RFC791 IP, RFC768 UDP, RFC 793 TCP, RFC 783 TFTP, RFC 854-859 TELNET, RFC 1157 SNMP, RFC 1213 MIB-II, RFC 1215 Traps, RFC 1493 Bridge MIB, RFC 1757 RMON, RFC 1866 HTML, RFC 2068 HTTP, RFC1112 IGMP V1, RFC2236 IGMP V2, RFC1058 RIPv1, RFC1723/2453 RIPv2, RFC1583 OSPF, RFC2328 OSPFv2

### Performance

#### Switch Technology:

Store and Forward Technology, 88Gbps Switch Fabric.

**System Throughput:** 148,800pps for 100M Fast Ethernet, 1,488,100 pps for Gigabit Ethernet

**Transfer packet size:** Typical: 64 bytes to 1536 bytes,

**Jumbo Frame:** Up to 9,216bytes.

**MAC Address:** 8K

**Stacking:** Physical stack up to 8 Units per stack

**Stacking Backplane:** 40Gigabit

**Bandwidth per Stack:** Up to 384Gbps

**IP Routing:** IPv4 routing at wire speed

### Management & Security

**Configuration:** Cisco-Like CLI, Telnet, Web, SSL, SSH, TLS, Backup/Restore, Dual Firmware images, Admin password, Port Speed/Duplex control, status, statistic, MAC address table display, Static MAC, Aging time, BOOTP/DHCP Client, Warm reboot, Reset to default, Ping, traceRoute, SysLog, JetView Protocol

**Jumbo Frame Enable/Disable:** up to 9,216KBytes

**LLDP:** Link Layer Discovery Protocol to advertise system/port identity and capability on the local network

**Stack Management:** Configure the precedence of each stack member, choose the master or slave of the stack.

**SNMP:** SNMP v1, v2c, v3 and Traps

**SNMP MIB:** MIB-II, Bridge MIB, VLAN MIB, SNMP MIB, RMON, Radius, RIP, OSPF, VRRP, Diffserv, PIM, DVMRP, and Private MIB

**SNTP:** Simple Network Time Protocol to synchronize time

**Port Mirroring:** Online traffic monitoring

**Port Trunk:** Static Trunk and 802.3ad LACP , Up to 6 Trunk Groups, 8 ports per trunk

**Storm Control:** Broadcast, Unicast and Multicast storm control for each port

**VLAN:** IEEE802.1Q, GVRP/GMRP. Up to 512 VLANs

**Protocol VLAN:** 802.1v Protocol based VLAN

**Quality of Service:** Four priority queues per port, IEEE802.1p COS and IP TOS/Precedence/DSCP

**IGMP Snooping:** IGMP Snooping V1/V2 for multicast Filtering, 256 dynamic groups, 16 router ports

**GMRP:** GARP Multicast Registration Protocol

**Port Security:** Assign authorized MAC to specific port

**IP Security:** IP security to prevent unauthorized access

**802.1x:** Port based Network Access Control

**RADIUS:** Remote Authentication Dial In User Service

**Access Control List:** Permit/Deny layer 2/3/4 access control lists

**DHCP Relay Agent:** Relay the DHCP request and Reply when they are not on the same physical subnet

### Network Redundancy

**Rapid Spanning Tree Protocol:** 802.1w RSTP, compatible with Legacy STP

**Multiple Spanning Tree Protocol:** IEEE802.11s MSTP, each MSTP instance can include one or more VLANs

**Multiple Super Ring Member mode:** Ring member of MSR single ring

### Layer 3 Routing Support

**IP Routing:** 128 IP network routes, 32 IP for each port

**IP Multi-Netting:** More than one IP on a network interface

**Virtual LAN Routing:** Incorporates both 802.1Q bridging and Routing function

**Routing Information Protocol:** Hop-based IP routing protocol, supports RIPv1 and RIPv2

**Open Shortest Protocol First:** Link state based IP routing protocol, supports OSPFv1 and OSPFv2

**IGMP:** The multicast group membership discovery protocol, support IGMP v1,v2 and v3.

**PIM-DM:** Multicast routing protocol, short of Protocol Independent Multicast -Dense Mode

**PIM-SM:** Multicast routing protocol, short of Protocol Independent Multicast – Sparse Mode

**DVMRP:** Hop-based multicast routing protocol, short of Distance Vector Multicast Routing Protocol

**ICMP Router Discovery:** Help find the better route

**VRRP:** Short of the Virtual Router Redundancy Protocol.

Automatically backup routing route to specific router

### Interface

**Number of Fixed Gigabit Ports:**

10/100/1000Base-TX: 24 x RJ-45

1000Base-X: 4 x SFP with Hot Swappable, combo with last 4 10/100/1000Base-TX ports

**Stacking:** 2 x 10Gigabit CX4 Screw type Connector

#### Cables:

100 Base-TX: 2/4-pair UTP/STP Cat. 5 cable (100m)

1000 Base-T: 4-pair UTP/STP Cat. 5 cable (100m)

Stacking Cable: CX4 type stacking cable

**Diagnostic LED** for Ethernet, SFP and Stacking Ports

**RS232 Console:** DB-9 Connector

**Power:** 1 sets of AC or 2 DC inputs

### Power Requirements

#### Power:

JetNet 6524G: 100-240V/1.4A, 47~63Hz AC power input

JetNet 6524G-DC24: 24V(18-36V) DC input

JetNet 6524G-DC48: 48V(36-60V) DC input

**Power Consumption:** Max. 50 Watts

Industrial  
Intelligent  
NMS

Rackmount  
PoE Plus  
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Industrial  
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Industrial  
12-24V  
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Gigabit  
Managed  
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Industrial  
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Ethernet/PoE/  
Serial Board

Ethernet  
I/O Server

Media  
Converter

Serial Device  
Server

SFP Module

Din Rail  
Power Supply



### Mechanical

**Installation:** 19-inch, 1U Rack Mount

**Dimension:** 44mm(H) x 438mm (W) x 237mm (D)

**Weight:**

4.5 kg with package (JetNet 6524G)

3.9 kg with package (JetNet 6524G-DC)

### Environmental

**Operating Temperature:**

-10 ~55°C (JetNet 6524G)

-40 ~65°C, FAN-less (JetNet 6524G-DC)

**Operating Humidity:** 10% ~ 95% (non-condensing)

**Storage Temperature:** -40 ~ 85°C

### Regulatory Approvals

**EMI:** FCC Class A, EN55022, EN61000-3-2, EN61000-3-3

**EMS:** EN55024 (IEC 61000-4-2, IEC 61000-4-3,

IEC 61000-4-4, IEC 61000-4-5, IEC 61000-4-6,

IEC 61000-4-8, IEC 61000-4-11)

**Shock:** IEC60068-2-27

**Vibration:** IEC60068-2-6, IEC60068-2-36

**Free Fall:** IEC60068-2-32

**Warranty:** 3 years

## Ordering Information

**JetNet 6524G 24-Port Gigabit Stackable Layer 3 Managed Ethernet Switch, 100-240VAC power input x1**

Includes:

- JetNet 6524G (without SFP transceivers)
- Rack Mount Kit
- Document CD
- AC Power Cord

**JetNet 6524G-DC24 24-Port Gigabit Stackable Layer 3 Managed Ethernet Switch, 24VDC Power input x2, no AC**

Includes:

- JetNet 6524G-DC24 (without SFP transceivers)
- Rack Mount Kit
- Document CD

**JetNet 6524G-DC48 24-Port Gigabit Stackable Layer 3 Managed Ethernet Switch, 48VDC Power input x2, no AC**

Includes:

- JetNet 6524G-DC48 (without SFP transceivers)
- Rack Mount Kit
- Document CD

**JNSC-CX405M-S: JetNet CX4 Stacking Cable, L: 0.5M, Screw Type**

**JNSC-CX410M-S: JetNet CX4 Stacking Cable, L: 1.0M, Screw Type**

## Optional Accessories

**SFPGSX:1000Base-SX multi-mode SFP transceiver,550m, -10~70°C**

**SFPGSX2:1000Base-SX plus multi-mode SFP transceiver,2Km, -10~70°C**

**SFPGSX10:1000Base-LX single-mode SFP transceiver 10Km, -10~70°C**

**SFPGSX30:1000Base-LHX single-mode SFP transceiver,30Km, -10~70°C**

**SFPGXD50:1000Base-XD single-mode SFP transceiver, 50Km, -10~70°C**

**SFPGZX70:1000Base-ZX single-mode SFP transceiver, 70Km, -10~70°C**