

# JetNet 6524G

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



- 24-port 10/100/1000 BaseT ports with 4 Gigabit SFP combo ports
- 2 10-G stacking CX4 connectors, up to 8 units stackable
- Support IP, VLAN & Multicast routing
- IP Routing protocol supports RIP v1 / v2, OSPF v1/v2
- Support L3 Multicast, PIM-DM and PIM-SM, DVMRP , IGMP v1/v2/v3
- Virtual Redundant Router Protocol (VRRP)
- 802.1s Multiple Spanning Tree Protocol and 802.1w RSTP
- Support 512 VLANs, GVRP/GMRP, protocol VLAN
- 802.3ad LACP, up to 6 trunk groups, unicast and multicast load balance
- Support L2 / L3 / L4 ACL (access control list)
- IEEE 802.1x Port-Based Authentication, RADIUS and TACACS client, SSH, SSL, TLS, Port binding

### Overview

JetNet 6524G, the 19-inch 24 ports Gigabit Stackable Layer 3 Managed Ethernet Switch, is equipped with 24 10/100/1000 Base-TX, 4 optional Gigabit SFP combo to the last 4 ports and it supports 2 10Gigabit CX4 Connector. With the installation of stacking cable, up to 8 units can be stacked together, and the backplane of the stacked JetNet 6524Gs is 40G. JetNet 6524G supports up to 192 Gigabit ports and 384G bandwidth.

#### Stack Management

The stacked JetNet 6524G management interface allows users to manage through single console interface or remotely manage through single IP address. Using one IP to manage all 192 ports is available and easy for administrators. The stack management feature also allows users to configure the precedence of each stack member. By assigning different precedence to different stack members, users could choose the management (Master) unit of the stack. If the precedence of one stack member is disabled, this stack member will always be a slave unit.

#### Layer 3 Routing

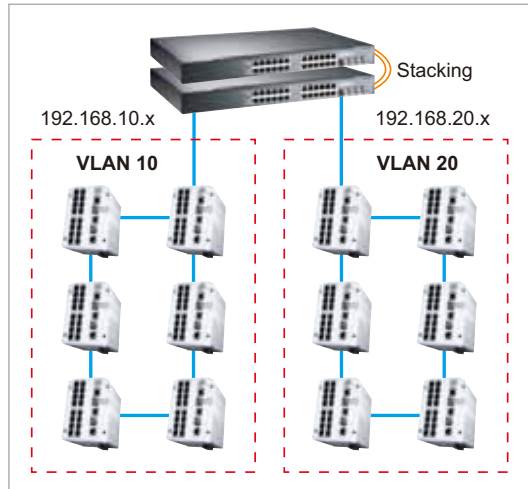
JetNet 6524G IP routing layers include the IP forwarding layer, Address Resolution Protocol (ARP) mapping layer, and Routing Tables. With IP forwarding table, the JetNet 6524G provides wire speed IP and VLAN inter-routing. One JetNet 6524G allows users to configure multiple IP subnets, and it assigns the IP subnets to the physical interface. The routing table is updated according to the routing information defined by configured static route or learnt by dynamic Routing Protocols. The dynamic Routing Protocols JetNet 6524G supports are RIPv1, v2, OSPFv1 and V2.

Multicast forwarding and Routing are also important in industrial environment. JetNet 6524G supports IGMP snooping for layer 2 multicast filtering, IGMP router port selection. Dynamic multicast routing protocols to route multicast streams through different subnets, include the IGMPv1,v2,v3, DVMRP, PIM-DM, PIM-SM. With these abundant features, JetNet 6524G acts as access switch or aggregated switch so that the clients can be divided into different subnets for wire speed routing and exchange 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 include the wire-speed layer 2 MAC switching and layer 3 IP routing capability. There are some scenes that need to plan the layer 3 switch/router in the network topology.

1. The hosts located in different Broadcast domain 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, etc can not be directed to target users through remote service provider.



- Industrial PoE Switch
- IP67/68 Ethernet Switch
- Rackmount Managed Switch
- Gigabit Switch
- Redundant Switch
- Entry-Level Switch
- Networking Computer
- Communication Computer
- Ethernet I/O Server
- Serial Device Server
- Media Converter
- Multiport Serial Card
- SFP Module
- Din Rail Power Supply

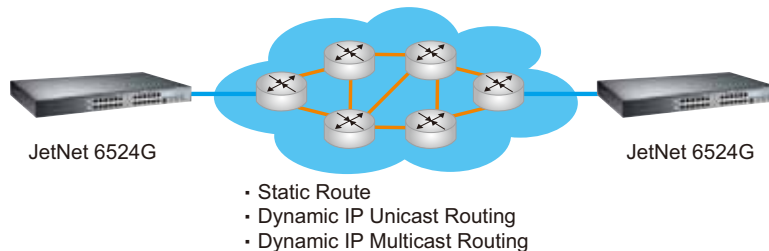
## Routing Protocol

Routing is the process of moving packets through an networks, such as the Internet. To Route traffic, a router or layer 3 switch needs to know the destination IP address or sources that IP it can learn from the possible routes to 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 required.

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

To route multicast services, such as 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.

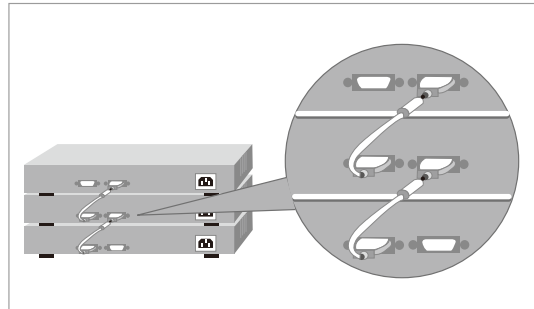


## Advantage of the Stack Management

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

When one New unit joins, leaves or when one stack cable accidentally disconnects, the existed traffic transmission will not be affected with no topology recovery problem. When the master switch of the stack fails, the stack will also recover immediately.

JetNet 6524G supports up to 8 switches per stack, maximum 192 gigabit ports per stack. JetNet 6524G is equipped with dual 10G interface as the backplane between the units. Thus, 40G backplane and less header wasted must decrease the bottleneck effects



when inter-switching traffic is heavy.

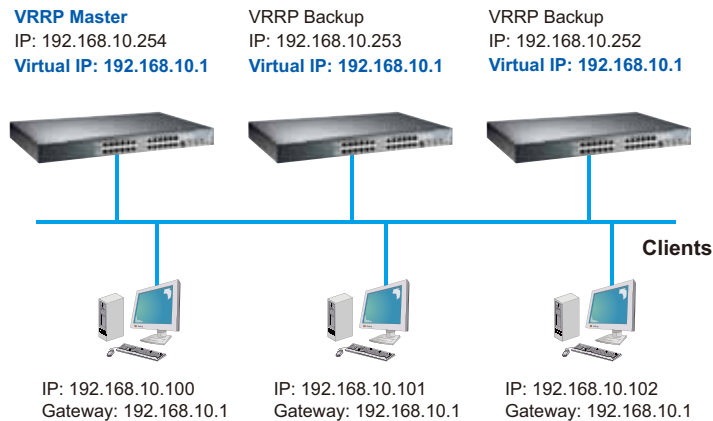
With high stackability, secured stack cable, and 10G stack backplane, users can easily and flexibly expand the gigabit port volume without changing environment.

## VRRP (Virtual Router Redundancy Protocol)

When the source host and the destination host are not in the same segment/subnet, the source host sends data to 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 failures, the backup VRRP router will start up immediately. The TCP connection would not be terminated within short failover time, and the hosts would not be aware of the failure of default gateway. The VRRP is a standard protocol and it ensures the highly reliable environment.



## Specification

### Technology

#### IEEE Standard:

IEEE 802.3 10Base-T, IEEE 802.3u 100Base-TX and 100Base-FX, IEEE 802.3ab 1000Base-TX, 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 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

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

**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

**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 client, RADIUS server and accounting

**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:** IEEE 802.1s MSTP

### Layer 3 Routing Support

**IP Routing:** 512 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 DC inputs

### Power Requirements

**Power:** 100-240V AC power input or 12/24/48VDC

**Power Consumption:** Max. 50 Watts

### Mechanical

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

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

**Weight:** 3.5 kg with package

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|--------------------------|
| Industrial PoE Switch    |
| IP67/68 Ethernet Switch  |
| Rackmount Managed Switch |
| Gigabit Switch           |
| Redundant Switch         |
| Entry-Level Switch       |
| Networking Computer      |
| Communication Computer   |
| Ethernet I/O Server      |
| Serial Device Server     |
| Media Converter          |
| Multiport Serial Card    |
| SFP Module               |
| Din Rail Power Supply    |



### Environmental

**Operating Temperature:** -10 ~ 55°C

**Operating Humidity:** 10% ~ 90% (non-condensing)

**Storage Temperature:** -40 ~ 70°C

### Regulatory Approvals

**EMI:** FCC Class A, CE/EN55022. Class A, EN61000-2-2 Class A, EN61000-2-3, VCCI Class A, CISPR Class A

**EMS:** EN61000-4-2, EN61000-4-3, EN61000-4-4, EN61000-4-5, EN61000-4-6, EN61000-4-11

**Safety:** CSA/NRTL (UL1950, CSA22.2.950); TUV/GS(EN60950)

**Shock:** IEC60068-2-29

**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

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

Includes:

- JetNet 6524G (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**

**SFPGXLX10:1000Base-LX single-mode SFP transceiver 10Km, -10~70°C**

**SFPGHLHX30:1000Base-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**