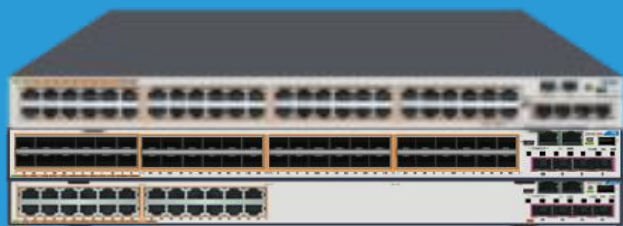


ZXR10 5950-E Series

Innovative L3 Full Gigabit Box Switches Datasheet

ZTE

Overview

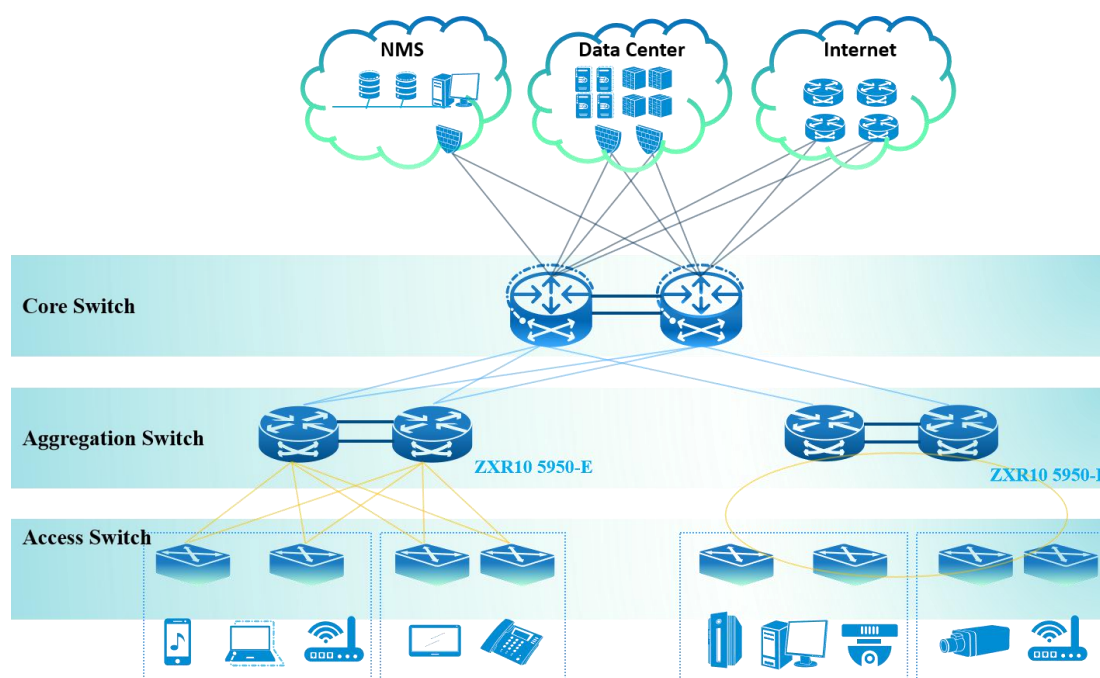


The ZXR10 5950-E series is an innovation L3 full gigabit routing box switch for enterprise users. It is based on SDN architecture, and supports NETCONF/YANG and VSC(Virtual Switch Cluster) technology to form an independent entity in logic, thus constructing a new type of intelligent network with high reliability, scalability and manageability.



Application Scenarios

The ZXR10 5950-E series switches can provide high-density gigabit access and 10 gigabit uplink interfaces. They can be widely used in campus network aggregation access, office informatization, IDC gigabit access and other scenarios. They can also provide high-bandwidth, high-reliability solutions for industrial enterprise users such as finance, transportation, energy and government affairs.





Highlights

➤ Abundant Virtualization Technologies

NETCONF/YANG and VSC can simplify network management

- ZXR10 5950-E series supports NETCONF/YANG, which reduces network faults caused by manual configuration errors, improves the efficiency of using configuration tools to upgrade system software, and offers good scalability so that different vendors can define protocol operations for their devices to achieve unique management functions.
- Real-time non-blocked and stacked bandwidth reaches 160Gbps to eliminate bandwidth bottlenecks between VSC systems.
- The high reliability of N+1 backup ensures no cluster system fault will be caused by a single device, thus reducing service interruption.

➤ Powerful Service Transmission Capability

Transmitting multiple services including WLAN, Internet, voice, video and other data services

- Comprehensive L2/L3 multicast protocols including PIM-SM, PIM-DM, PIM-SSM, MLD, IGMP snooping, filtering, proxy, fast leave, and MVR (Multicast VLAN Registration) to facilitate the deployment of these services. With IPTV control, operators can apply different CAC (Channel Access Control) rules for users of packages.
- Support comprehensive L3 functions including RIP, OSPF, ISIS, BGP, MCE, MPLS.
- Support MCE (Multi-VPN-instance Customer Edge) to run multiple VPN instances without running MPLS, relieving pressure on the PE (Provider Edge) equipment.

➤ Enhanced Reliability and Multi-Dimensional Security

Enabling fast system recovery from any link or node fault

- Support the smart Ethernet ring protection function, which complies with RFC3619 and ITU.T G.8032 standards. The function can be implemented in both closed-ring and open-ring topologies. Multiple instances can be configured to realize load-balancing. The switchover time can be kept below 50ms.



ZXR10 5950-E Series Innovative L3 Full Gigabit Box Switches

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- ZESS (ZTE Ethernet Smart Switch) and LACP (Link Aggregation Control Protocol) can help guarantee the reliability of the uplink connection.
- Support multiple authentication modes, such as 802.1x, Radius and TACACS+. 802.1x supports the functions of specific MAC bypass, VLAN delivery, guest VLAN, portal authentication, and dynamic ACL delivery. It also supports authentication on the same physical port for multiple users of different domains to ensure the security of the entire network.
- CPU overload protection and DDoS attack prevention ensure that network equipment will not stop working in case of attacks, thereby realizing uninterrupted services.
- With technologies like DHCP snooping and IP source guard, user validity can be guaranteed. The DAI (Dynamic ARP Inspection) function can help effectively mitigate the damage of ARP attacks.
- MFF (MAC Forced Forwarding) realizes L2 separation and L3 intra-communication.
- Support SSH-based user management to avoid password theft and device hijacking.
- Innovative two-way ACL function. Users can not only classify and limit traffic at both the ingress and egress, making ACL control more flexible and comprehensive.
- Based on IDE (independent detection engine) of the dual-core CPU, using the virtual multi-threading technology and sending protocol packets at a high rate ensures the isolation between protocol calculation and forwarding, accelerates the detection speed of the protocol machine BFD/CCM, and improves the reliability of the device forwarding plane.

➤ Comprehensive IPv6 Features

Supporting IPv6 unicast routing protocols and IPv4-to-IPv6 tunnel technologies

- Support IPv4/v6 dual-stack and hardware-based IPv4/v6 full speed forwarding.
- Rich IPv6 unicast routing protocols: RIPng, OSPFv3, IS-ISv6 and BGP4+.
- Rich IPv6 multicast features: MLD v1/v2, MLD snooping and PIMv6, etc.
- Rich IPv4-to-IPv6 tunnel technologies: IPv6 manual tunnel, 6-to-4 tunnel, ISATAP tunnel and IPv4-compatible automatic tunnel, etc.
- ACL, QoS, multicast and network management in IPv6 network can fully support the smooth upgrade of the network from IPv4 to IPv6.



ZXR10 5950-E Series Innovative L3 Full Gigabit Box Switches

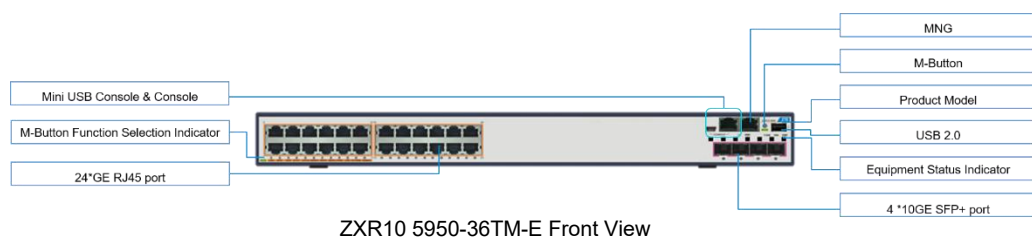
➤ Easy Maintenance and Deployment

Instant troubleshooting by reading indicators on the front panel without login via a terminal

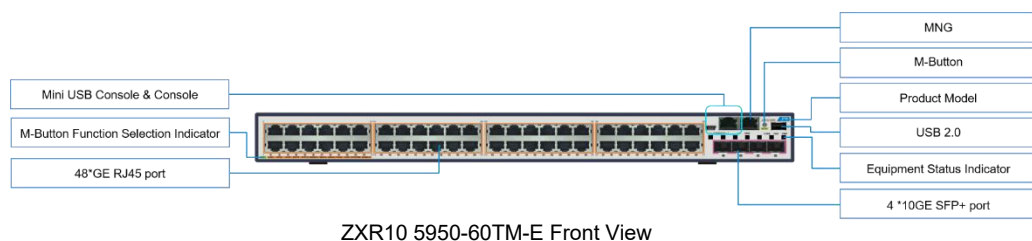
- The ZXR10 5950-E series supports zero configuration deployment. Batches of similar equipment can be upgraded and configured at one time thus reducing the total work of Maintenance and Deployment.
- The alarm functions can help engineers make quick judgments and accelerate failure processing.
- Dying gasp function. When the device is power off, a notification will be sent to the peer device, so the administrator can make corresponding adjustments quickly to reduce the network interruption time.
- The innovative M-Button function enables the network administrator to obtain important device information including port/memory/CPU status in case of network faults, thereby allowing for instant troubleshooting and minimizing OPEX.
- The ZXR10 5950-E series supports hotfix, which ensures the upgrade of switches without interruption.

Physical Interfaces and Structure

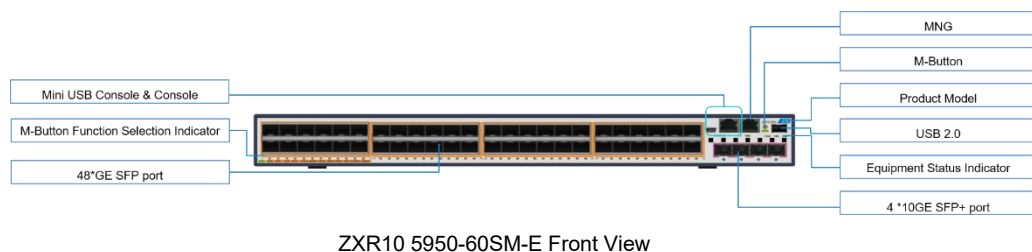
ZXR10 5950-36TM-E: 36-Port Gigabit Secure & Reliable Routing Switch



ZXR10 5950-60TM-E: 60-Port Gigabit Secure & Reliable Routing Switch



ZXR10 5950-60SM-E: 60-Port Gigabit Secure & Reliable Routing Switch





ZXR10 5950-E Series Innovative L3 Full Gigabit Box Switches

Technical Specifications- Physical

	5950-36TM-E	5950-60TM-E	5950-60SM-E
Dimensions (H*W*D)	44mm*442mm*440mm	44mm*442mm*440mm	44mm*442mm*440mm
Fixed Port	24*GE RJ45 4*10GE SFP+	48*GE RJ45 4*10GE SFP+	48*GE SFP 4*10GE SFP+
Sub card	N/A	N/A	N/A
Extended card	8*GE SFP / 8*10GE SFP+ / 2*40GE QSFP+ / 2*40GE Mini SAS		
Weight	< 8.95kg	< 8.95kg	< 8.95kg
Management Port	1 GE MNG, 1 RJ45 Console, 1 Mini USB Console		
Power Type	AC1+1/DC1+1/HVDC1+1	AC1+1/DC1+1/HVDC1+1	AC1+1/DC1+1/HVDC1+1
AC Power Supply	Rated Voltages: 100V-240V, 50Hz-60Hz		
DC Power Supply	48V±20%	48V±20%	48V±20%
Redundant Power Input	Y	Y	Y
Dying Gasp (AC Power)	Y	Y	Y
Max Power Consumption	<62W	<71.7W	94.4W
Heat Dissipation	98 BTU/h	108 BTU/h	138 BTU/h
Operating Environment Humidity	10%-90%		
Active/standby Redundancy and Switchover	Y	Y	Y
Operating Temperature	-5°C to +50°C		
MTBF/MTTR	>400,000 hours/<30 minutes		



Technical Specifications - Performance

	5950-36TM-E	5950-60TM-E	5950-60SM-E
Memory Size	2G Bytes	2G Bytes	2G Bytes
Flash Size	512M Bytes	512M Bytes	512M Bytes
Port Switching Capacity	288Gbps	336Gbps	336Gbps
MAC Table	128k	128k	128k
Routing Table	IPv4:32K, IPv6:16K		
Packet Buffering Capacity	4.5MB	4.5MB	4.5MB
Number of QoS Priority Queues	8	8	8
ACL-Based SVLAN	Y	Y	Y
ACL Filtering for Multicast Traffic	Y	Y	Y
Rate Limiting Error (Accuracy)	<5%	<5%	<5%
Rate Limiting Granularity of Ingress Port	8Kbps	8Kbps	8Kbps
IEEE 802.3x Full-Duplex Traffic Control Protocol	Y	Y	Y
ARP Entry (Static/Dynamic)	32K	32K	32K



Service Specification

ZXR10 5950-E Series Switches

L2 Features	• IEEE 802.1p (COS) and IEEE 802.1q (VLAN) • IEEE 802.1d (STP)/ 802.1w (RSTP)/ 802.1s (MSTP) • IEEE 802.3ad (LACP) • IEEE 802.3z (1000Base-X) / 802.3ab (1000BaseT) • IEEE 802.3ae (10Gbase) • IEEE 802.3ba (40Gbase) • Regular QinQ and selective QinQ • Port mirroring and traffic mirroring • PVLAN • GVRP • LLDP
L3 Features	• IPv4 routing protocols: static routing, policy based routing , RIP, OSPF, BGP, and IS-IS • DHCP server/relay/proxy, DHCP snooping • IPv6 routing protocols: static routing, policy based routing , RIPng, OSPFv3, IS-ISv6, and BGP4+ • MCE
MPLS	• LDP, VPLS, VPWS, MPLS L3 VPN
Multicast	• IGMPv1/v2/v3 snooping, IGMP proxy, IGMP filter and fast leave • PIM-SM, PIM-DM, PIM-SSM • Controllable multicast and CAC channel access control • Administratively scoped multicast/ IPTV, MVR • MLD v1/v2, MLD snooping, PIMv6 • MSDP
QoS	• Traffic classification based on L2 headers, L3 protocols, L4 protocols, and 802.1p priority • 8 hardware-based queues per port • Queue scheduling algorithms, such as SP, WRR and SP+WRR • Congestion avoidance mechanisms, such as tail drop, WRED • Port-based traffic policing/shaping
Security	• Standard ACL,VLAN ACL, link ACL, extended ACL, mixed ACL and IPv6 ACL • Time-period ACL configuration and bidirectional ACL • 802.1x authentication and 802.1x server • MAC authentication and portal authentication • AAA/ RADIUS and TACACS+ authentication for login users • SSHv2 • CPU-based anti-attack services • STP root guard, BPDU guard and IP source guard • MFF • Dynamic ARP Inspection • uRPF (unicast Reverse Path Forwarding)
Reliability	• Redundant power supply • Hot plugging • LACP • MC-LAG • Ethernet Ring Protection Switching (ERPS) • ZTE Ethernet Switch Ring (ZESR/ZESR+) • LLDP and LLDP-MED



ZXR10 5950-E Series Innovative L3 Full Gigabit Box Switches

ZXR10 5950-E Series Switches

Device Management	• CLI, Telnet, SSHv2, local and remote (RADIUS/TACACS+) user authentication • Out-band management interface • SNMP v1/v2/v3 • Mirroring and RSPAN • RMON • NTP • sFlow and IPFIX • Zero-touch configuration and fast batch inspection • Dying gasp power-off alarming • NETCONF/YANG
Enhanced Features	• M-BUTTON • Zero-touch deployment • Hotfix • Portal

Ordering Information

• Mainframes

5950-36TM-E	ZXR10 5950-36TM-E Switch (1*Expansion Card, 2*Power Supply Module)
5950-60TM-E	ZXR10 5950-60TM-E Switch (1*Expansion Card, 2*Power Supply Module)
5950-60SM-E	ZXR10 5950-36CM-E Switch (1*Expansion Card, 2*Power Supply Module)

• Power modules

59-PWR-AC20	ZXR10 5950-E AC/HVDC Power Module
59-PWR-DC20	ZXR10 5950-E DC Power Module

• Expansion Cards

5950-8XG-SF	8*10GE SFP+ Optical Port Expansion Card
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