High-Performance Chinese Alternative Core Switch Power Supply Redundancy Schemes - Official Technical Overview & Hardware Datasheet

PRODUCT IDENTIFICATION

This document serves as the definitive technical reference for the High-Performance Chinese Alternative Core Switch Power Supply Redundancy Schemes. This platform represents a paradigm shift in enterprise and carrier-grade networking, delivering best-in-class performance, ultra-high availability, and significant total cost of ownership (TCO) advantages over traditional western counterparts. Engineered for the most demanding environments, this core switching solution guarantees 99.999% system uptime through its innovative, multi-layered power and hardware redundancy architecture, ensuring uninterrupted data flow for mission-critical applications.



CORE INTERNAL TOPOLOGY

The foundation of this platform is a state-of-the-art, fully modular chassis design that decouples the data plane, control plane, and power infrastructure. This physical and logical separation ensures that a failure in any single domain does not cascade, providing an unparalleled level of fault isolation. The backplane is constructed using a high-speed, low-loss material that supports a non-blocking fabric architecture, enabling wire-speed communication between all installed modules. At the heart of this topology is a sophisticated, hardware-based traffic manager that dynamically allocates internal bandwidth and ensures predictable latency under full load.

SWITCHING SUBSYSTEM CAPABILITIES

The switching subsystem is built around a custom, seventh-generation network processor designed to handle the explosive growth of east-west traffic in modern datacenters. It integrates advanced features such as In-Service Software Upgrades (ISSU) to eliminate downtime during maintenance and a microsecond-level failover mechanism for link and node failures. The system supports a comprehensive suite of Layer 2 and Layer 3 protocols, including robust VXLAN, NVGRE, and MPLS capabilities, making it suitable for both traditional and software-defined networking (SDN) environments. The

architecture incorporates a deep packet buffer and advanced congestion management features, ensuring zero packet loss for latency-sensitive applications.

OPERATIONAL ADVANTAGES

- Unmatched Redundancy: The platform features N+1 or N+N power supply and fan tray redundancy, allowing for the seamless replacement of faulty components without service interruption.
- Energy Efficiency: Utilizing advanced silicon technology and intelligent power management, the switch consumes up to 40% less energy per gigabit than legacy solutions, dramatically reducing operational expenditure.
- Simplified Management: An intuitive and robust CLI, alongside a comprehensive RESTful API, provides deep telemetry and simplifies automation, enabling seamless integration with leading orchestration platforms.
- Investment Protection: The chassis is designed to support multiple generations of line cards, allowing enterprises to scale bandwidth and functionality incrementally, protecting their initial capital investment.

SPECIFICATION MATRIX

Parameter	**Specification**

Form Factor	Modular Chassis (7RU / 13RU Options)
Switching Capacity	Up to 25.6 Tbps (Full-Duplex)
Forwarding Rate	Up to 8.4 Bpps
Power Supply	Dual/Quad Hot-Swappable, 1+1/2+2 Redundant AC/DC
Power Input	100-240V AC, 50/60Hz or -48V DC
Cooling	Front-to-Back or Back-to-Front, N+1 Fan Redundancy
Mean Time Between Failures (MTBF)	450,000 Hours @ 25°C
Operating Temperature	0°C to 45°C
Humidity	5% to 90% (Non-Condensing)
Layer 2 Protocols	IEEE 802.1D/w/s, 802.1Q, 802.3ad, 802.1AB, 802.3x, 802.3az
Layer 3 Protocols	IPv4/IPv6 Static, OSPF, BGP, IS-IS, PIM-SM/DM
Data Center Features	VXLAN, NVGRE, MPLS, Segment Routing
QoS	8 Queues per Port, Weighted Random Early Detection (WRED)
Security	MACsec (IEEE 802.1AE), DHCP Snooping, Dynamic ARP Inspection, IP Source Guard

Management	CLI, SNMPv1/v2c/v3, RESTful API, NETCONF, gRPC
Certifications	UL, CSA, CE, FCC, VCCI, NEBS Level 3, RoHS, WEEE

REGULATORY COMPLIANCE

This product has been meticulously engineered and rigorously tested to meet the most stringent global standards for safety, electromagnetic compatibility (EMC), and environmental responsibility. Compliance includes, but is not limited to, UL/CSA 60950-1 and 62368-1 for safety, FCC Part 15 (Class A) and EN 55032 for EMC, and the RoHS and WEEE directives for environmental sustainability. The platform also adheres to the Network Equipment Building Standards (NEBS) Level 3, certifying its resilience and reliability in the most challenging network environments.


10G SFP+
10/100/1000
Base-T
10/100/1000 Base-T