

Core Switch Dual-Core Hot Standby



Overview

Schneider 140CPU67060 dual-machine hot standby system: building Schneider Electric's 140CPU67060 dual hot-standby control system delivers robust fault-tolerance.

Key Takeaways

Dual-core or dual-processor core switches with hot standby provide high availability and seamless failover, ensuring minimal network downtime. Overview of Dual-Core Hot Standby

A dual-core or dual-management module core switch typically includes two independent processors or management modules: one active and one standby. The hot standby module continuously monitors the active module and is ready to take over immediately if a failure occurs, ensuring uninterrupted network services. This architecture is essential in enterprise and data center environments where downtime can impact critical applications.

Redundancy Mechanisms

- **Active/Standby Mode:** One processor handles all control-plane operations while the standby remains synchronized and ready to assume control instantly. This is the most common configuration for modular switches like Cisco 6500, Aruba CX 6400, and 8400 series.
- **HSRP (Hot Standby Router Protocol):** For Layer 3 redundancy, HSRP allows multiple switches to present a single virtual IP to hosts. If the active switch fails, the standby switch automatically assumes the virtual IP, maintaining gateway availability for multiple VLANs.

- **Dual-Homing Servers:** Servers can be connected to both core switches, providing path redundancy. If one switch fails, traffic seamlessly reroutes through the second switch .

Benefits

- **High Availability:** Millisecond-level failover ensures minimal disruption to network services .
- **Fault Tolerance:** Continuous monitoring and health checks detect failures proactively, allowing the standby module to take over without manual intervention .
- **Scalability:** Dual-core switches support multiple VLANs and large-scale enterprise networks while maintaining redundancy .
- **Simplified Maintenance:** Hot standby allows software upgrades or maintenance on the active module without affecting network operations .

Implementation Considerations

- Ensure both modules are identically configured and synchronized.
- Use trunk links between switches for VLAN propagation and HSRP failover.
- Monitor processor health and system logs to predict potential failures.
- Understand that active/active processor modes are less common; most dual-core switches operate in active/standby mode for reliability .

Conclusion

Implementing a dual-core hot standby core switch setup provides robust redundancy, high availability, and seamless failover for critical network infrastructure. Combining dual-management modules with HSRP and dual-homed servers ensures continuous operation, reduces downtime, and enhances overall network resilience .

Article Content

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When the switch powers up and both supervisor modules are present, the supervisor module that comes up first enters the active

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This document is for preliminary research. Verify specifications against current standards, product documentation and project requirements.

