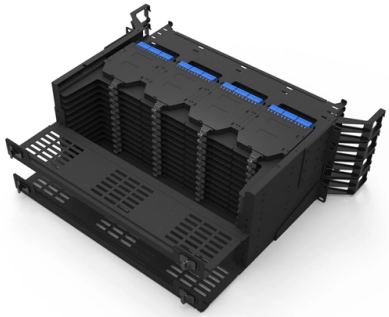
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Dual-core switch with dual-machine hot standby



Overview

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

Key Takeaways

A dual-machine hot standby setup uses two core switches where one actively handles traffic while the other remains synchronized and ready to take over instantly in case of failure.Overview

In a dual-machine hot standby architecture, two core switches (or nodes) are configured such that:

• Primary switch handles all active traffic and network operations.

• Secondary switch remains on standby, continuously synchronized with the primary to ensure data consistency.



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• Failover occurs automatically when the primary switch fails, minimizing downtime and service disruption . This setup is widely used in SDWAN, IP bearer networks (IPRAN), industrial control systems, and critical enterprise networks to maintain high availability .

Key Mechanisms

• Data Synchronization The primary and standby switches maintain real-time synchronization of configuration, routing tables, and session states. Common methods include replication-based techniques such as database replication or file synchronization .

• Automatic Failover The standby switch monitors the health of the primary. Upon detecting a failure or anomaly, it immediately takes over the active role. Failover time depends on detection latency, resource preparation, and service startup, typically designed to be millisecond-level in industrial systems .

• Split-Brain Prevention To avoid both switches acting as primary simultaneously, mechanisms like floating IPs, heartbeat signals, or gateway coordination are used. The system determines which node is master and which is standby based on connectivity and state information .

• Service Continuity In network applications, the management platform ensures that service configurations are applied to both nodes, allowing seamless traffic handling during failover . In industrial control systems, control logic execution continues without interruption .

Practical Considerations

• Redundancy Channels: Dedicated links between the two switches for synchronization and heartbeat monitoring.

• Health Monitoring: Continuous monitoring of CPU, memory, and interface status to predict potential failures .

• Configuration Management: Ensure both switches have identical configurations and firmware versions to prevent inconsistencies during failover.

• Testing: Regular failover drills to verify that the standby switch can take over without service disruption.

Applications

• Enterprise Networks: Core routers or switches in data centers to maintain uptime.

• Carrier Networks: SDWAN or IPRAN core nodes for uninterrupted service delivery .

• Industrial Automation: Controllers in 24/7 operations like smart grids or petroleum refining . By implementing two core switches in a dual-machine hot standby configuration, organizations achieve high availability, fault tolerance, and minimal service interruption, ensuring critical systems remain operational even during hardware or software failures.

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Article Content

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The invention discloses a method for implementing a dual-machine hot standby system based on the third state. It introduces a third

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Configuring Dual-System HSB on Firewalls

Procedure Choose System > High Availability > Dual-System Hot Standby. Click Edit and configure the dual-system HSB function of

Using Elipse E3/Elipse Power Hot Standby in machines with

The same settings must be replicated in all computers involved in the application, in the Elipse servers, and in the

What is Hot Standby in PLC?

The hot standby system is used to provide a high level of redundancy and decreased downtime. One CPU acts as

Hot Standby Configuration

In this mode, the two devices use the hot-standby channel to transmit the information that must be synchronized and the status entry

Research on redundant control mode of coordinated controller

The dual CPU hot standby redundancy system with switchable input and output is essentially a system in which two sets of PLC of

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What''s more, by adopting the design of the dual-mode redundancy system, the fault-tolerant design of the dual-machine hot standby

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