

Server rack switching to backup network



Overview

Data Center Server Rack Guide (2026): Types, Design, Airflow, PowerLearn everything about data center server racks—definitions, rack types, airflow design.

Key Takeaways

To switch a server rack to a backup network safely, use redundant power supplies, rack-mounted ATS devices, and proper UPS configurations to ensure uninterrupted operation. Power Redundancy and Backup

Server racks often rely on dual power sources to maintain uptime. Each server or network device may have redundant internal power supplies, with one connected to the primary source and the other to a backup UPS or generator . This ensures that if the primary source fails, the secondary source immediately takes over without downtime. Rack PDUs or multi-circuit PDUs can distribute power from both sources to the equipment, allowing load sharing and preventing overloads . A rack-mounted Automatic Transfer Switch (ATS) is critical for single-corded devices. It monitors the primary power source and automatically switches to the backup source if a disruption occurs, providing seamless continuity for sensitive IT equipment . Modern ATS units often include remote monitoring and management features, enabling IT staff to track power status and configure preferences.

UPS Considerations



When connecting a server rack to a backup network, UPS systems act as a bridge during power interruptions. They provide short-term power to allow servers to continue running or shut down gracefully if the outage is prolonged . If the server room already has a UPS, care must be taken to avoid connecting additional UPS units in a way that could create conflicts or complicate emergency shutdown procedures . In some cases, UPS units can be placed in bypass mode, effectively acting as power distribution devices while maintaining safety and fire compliance.

Network Switching

For network failover, ensure that the server rack is connected to redundant network paths. This can involve dual network interfaces on servers, switches, or routers, each connected to separate network segments or backup switches. When the primary network fails, traffic automatically reroutes through the backup network, minimizing downtime. Combining network redundancy with power redundancy ensures that both connectivity and uptime are maintained during maintenance or unexpected outages.

Best Practices

- Use dual power supplies on all critical devices and connect them to separate PDUs or UPS sources .
- Install a rack-mounted ATS for single-corded devices to automate switching between primary and backup power .
- Configure UPS maintenance bypass to allow safe servicing without shutting down equipment .
- Ensure network redundancy with dual NICs, switches, or routers to maintain connectivity during primary network failures.
- Monitor power and network status remotely to detect issues early and respond proactively. By combining these strategies, a server rack can safely switch to a backup network and power source, maintaining uptime and protecting critical IT infrastructure.

Article Content

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Learn everything about data center server racks—definitions, rack types, airflow design, power integration, cable

best practices

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