zpe

CASE STUDY

Remote Resilience:

How Two People Keep 200+ Sites Running for a West Coast Credit Union

How can two people keep 200 branches online without long workdays or disruptions?

ZPE Cloud helps two tech pros deliver enterprise-grade uptime and infrastructure resilience at scale, without ever leaving the NOC. This is the story of how cloud-orchestrated automation and out-of-band management help even the smallest teams support distributed operations all in a day's work.

Background

To better serve educators and families across California, a leading financial institution needed to guarantee 24x7 uptime of their mission-critical infrastructure. This is essential for customer satisfaction, operational continuity, and regulatory compliance. Meeting this requirement called for deploying an out-of-band management solution.

The Challenge

Their IT team faced several operational and technical hurdles:

- **Limited IT Staff:** Two people managing a 200-site network.
- **Manual Troubleshooting:** Even minor issues required costly and time-consuming troubleshooting on-site.
- **Security Risks:** ATMs in public, unsecured locations needed secure access without exposing IPs or relying on VPNs.
- **Compliance Demands:** Logging, auditing, and secure access controls were essential to meet financial industry regulations.

Real-World Pain Points

- **Firmware Upgrade Failure Recovery:**
  A Cisco router failed to reboot after a software upgrade. Using ZPE's Nodegrid Serial Console, the IT admin accessed the CLI remotely, discovered that log files had filled the disk, deleted the logs, and successfully reloaded the device using the old image. The upgrade was then reapplied successfully via remote session.
- **Unexpected Serial Console Failures:**
  In some cases, the serial console itself becomes unresponsive. With ZPE's integration with smart PDUs, IT admins can remotely power-cycle devices via ZPE Cloud, gain low level access to the device, and restore service instantly.

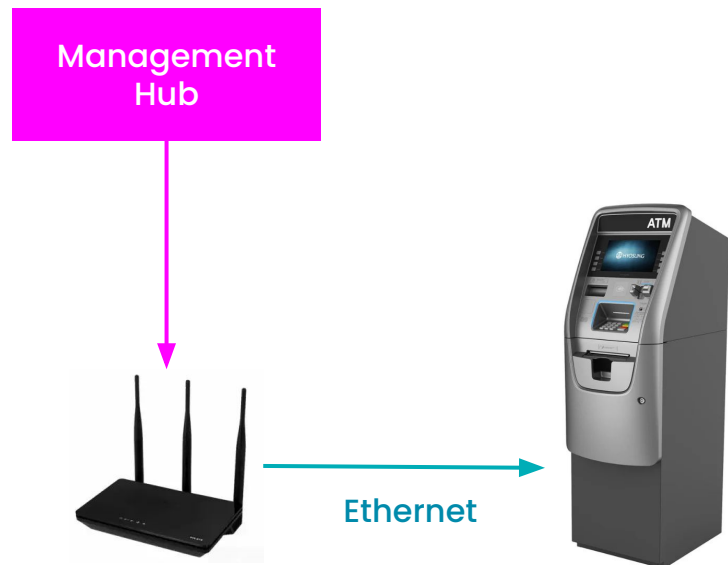**These are real-world issues that don't show up in lab tests or digital twin models.**
With over 200 sites, even a 2–3% failure rate could mean multiple truck rolls and hours of unscheduled downtime.
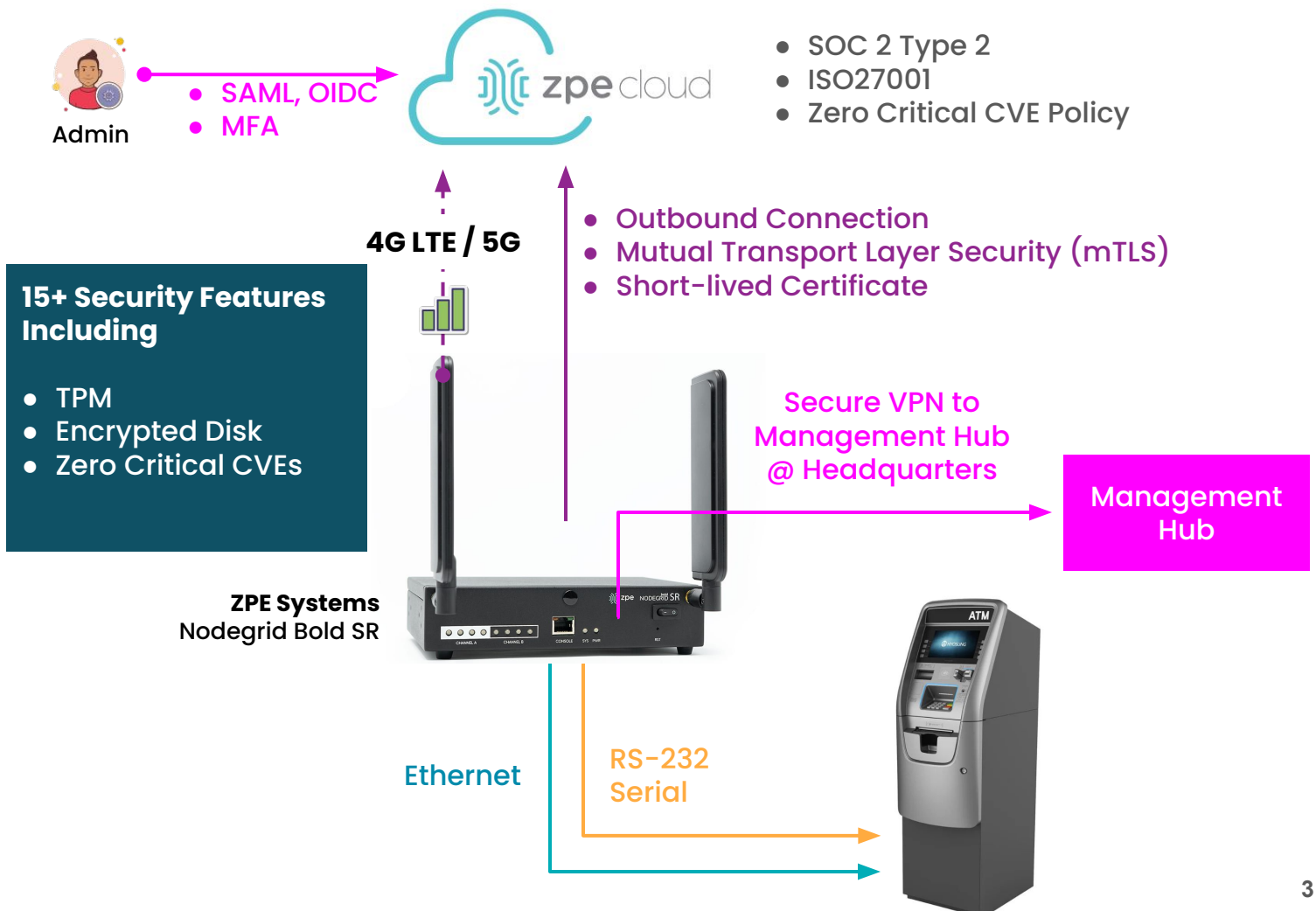
Network Diagram

Before

Management Hub

Pain Points

- Difficult, lengthy Initial Site Bring-up
- Costly Site Recovery & Troubleshooting (Truck Rolls)
- Configuration Mismanagement

Ethernet

After - With ZPE Systems

Centralized SaaS Management

Admin

- SAML, OIDC
- MFA

zpe cloud

- SOC 2 Type 2
- ISO27001
- Zero Critical CVE Policy

4G LTE / 5G

- Outbound Connection
- Mutual Transport Layer Security (mTLS)
- Short-lived Certificate

15+ Security Features Including

- TPM
- Encrypted Disk
- Zero Critical CVEs

Secure VPN to Management Hub @ Headquarters

Management Hub

ZPE Systems
Nodegrid Bold SR

Ethernet

RS-232 Serial

The Solution: Nodegrid Gen 3 Serial Console

The credit union deployed ZPE Systems' Nodegrid Gen 3 Serial Console across its branches and ATM sites. Each device connects to the serial and management ports of Cisco routers and Fortinet firewalls, creating a secure, out-of-band (OOB) management path.

Key Features Implemented:

- **Secure Remote Access:** Encrypted, certificate-based access via ZPE Cloud with Zero Trust Network Access (ZTNA).
- **Out-of-Band Management:** 4G/5G failover ensures access even during primary network outages.
- **Zero-Touch Provisioning (ZTP):** Simplified deployment and configuration without staging or on-site IT presence.
- **Centralized Management:** Visibility and control of all vendor devices – through one browser window – using ZPE Cloud.
- **Granular RBAC & Logging:** Role-based access control and full activity logging for compliance and auditing.

Scalability Without Additional IT Staff

The credit union successfully scaled from 40 to over 200 branches without increasing their IT headcount. This was only possible using ZPE Cloud, which provides secure out-of-band access to all remote locations as well as the ability to launch scripts for both initial provisioning and recovery to a golden image.

This Automation Ensures:

- **Consistency across all deployments**
- **Faster recovery from failures**
- **Reduced manual effort**
- **Significant time and resource savings**

Quantifiable ROI: Over $1M in Annual Savings

Using the **ZPE ROI Calculator**, the credit union **estimated over $1 million in annual savings across 200 remote sites**. This calculation was based on real-world parameters, including:

- **$1,500** average cost per truck roll
- **$1,200** per hour cost of downtime
- **4.38** hours average outage duration
- **50%** reduction in outage time using ZPE's remote management and cellular failover
- **2** on-site upgrades avoided per site annually
- **$240/year** for on-demand cellular backup
- **$2,000** per Nodegrid device, depreciated over 36 months

These savings come from **reduced truck rolls, minimized downtime**, and **avoided secondary MPLS/ethernet costs**, demonstrating that ZPE's solution is *not just operationally effective, but financially strategic.*

Lessons Learned and Best Practices

Through their deployment of ZPE Systems' Nodegrid Serial Console Gen 3, they uncovered several key lessons that can benefit other organizations with distributed IT infrastructure:

- **Start with High-Risk Sites:** Begin deployment at locations with the highest risk of downtime or those that are hardest to reach.
- **Automate with Golden Images:** Use ZPE Cloud's centralized script launching to standardize provisioning and recovery.
- **Pair with Smart PDUs:** Enables remote power cycling of unresponsive devices.
- **Use Out-of-Band for More Than Emergencies:** Valuable for routine maintenance, upgrades, and audits.
- **Plan for Scale Early:** Design for growth from the beginning to avoid operational bottlenecks.
- **Track ROI Continuously:** Use tools like the ZPE ROI Calculator to measure and communicate impact.

ZPE Systems' Nodegrid Serial Console and ZPE Cloud are ideal for any organization with distributed IT infrastructure. Industries such as retail, banking, healthcare, logistics, and education can benefit from centralized and automated out-of-band management. Whether managing hundreds of branches, clinics, warehouses, or campuses, Nodegrid gives organizations a simple and secure way to ensure normal operations.

Organizations can choose between ZPE Cloud for centralized SaaS-based management or Nodegrid Manager for on-premises control.

Call or visit our website to experience Nodegrid in action, and explore savings you never thought were possible.

Email Sales@zpesystems.com for more information.