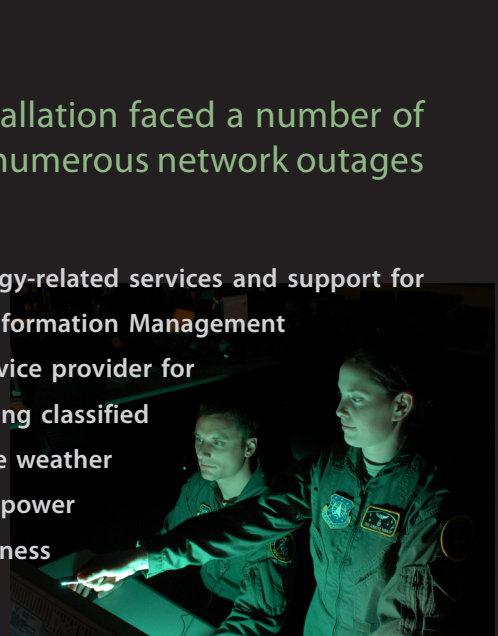


## Case Study

# MRV Out-of-Band Power Management Boosts Military Installation Uptime

A large U.S. Department of Defense (DoD) installation faced a number of power related challenges, which were causing numerous network outages and effecting network availability.

All of its Information Management and Information Technology-related services and support for this installation are the responsibility of the Directorate of Information Management (DOIM), which acts as the federal information technology service provider for the region. With the demands placed upon a network carrying classified government data, uptime was imperative. The region's volatile weather patterns, native wildlife and a limited staff made adding remote power management solution a requirement to improve responsiveness and reduce overall operating costs.



## Background

While the base's physical location is ideal for keeping watch over the region, the rural geography presented unique challenges for IT staff, as a large network locations were scattered throughout the jungle terrain. Sending technicians to these sites every time the network encountered an issue was inefficient for a team that simply did not have the staff to cover all locations. Very often outages occurred unexpectedly, leaving the staff little time to restore vital services and equipment to full operation.

Furthermore, the tropical climate exposed the network to a series of atypical hazards such as the indigenes wildlife. When a snake found its way into one of the network locations and caused a power outage, DOIM sought options for a more efficient power management system that would give the IT staff the ability to troubleshoot the widely dispersed network from a central location.

Local climate issues also raised another issue – how to execute a rapid shut down in the event of a potentially catastrophic event. During hurricane season, it's often the case that significant systems will be powered down proactively in anticipation of a power outage. The base's network management systems needed to provide the 15-person IT staff the ability to rapidly shut down facilities gracefully across the entire base instantaneously.

Drawing on its previous experience implementing a new fiber optic backbone network, DOIM went back to its trusted vendor partner MRV Communications for a out of band power management solution. (More information on the optical backbone network implementation please see case study titled Military Base Swaps SONET for LambdaDriver WDM for Backbone Network at [mrv.com](http://mrv.com).)

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### MRV Solution

While DOIM could have managed its power with a number of solutions, it had a pre-existing relationship with the team at MRV and was able to quickly familiarize itself with the vendor's out-of-band power management products that offered a unique combination of complete remote device management and the standards-based security features necessary for smooth integration into a federal government-operated network.

DOIM deployed both the LX 4000T and LX 1004T console servers to its remote locations. The LX 4000T Series is available in eight-, 16-, 32-, or 48-port models with single/dual power supply options, an optional internal modem and dual Ethernet ports providing IT administrators a wide range of connectivity options to perform secure remote management of network equipment, servers and physical infrastructure. The LX-1004T Console Servers are compact four-port devices with v.92 or GSM\GPRS modem versions to choose from.

All LX Series devices contain MRV's unique trigger-action capability, which enables IT to pre-set thresholds for various factors on each console server. When the environmental conditions reach the pre-set threshold, the base's network administrators were alerted and equipment was automatically powered down to avoid damage. The automated combination of sensor and power management offered a level of granularity to network management that appealed to DOIM.

Additionally, the LX devices chosen for the base offer the highest levels of standards-based security features necessary for federal government applications, including FIPS 140-2 and have the ability to run any authentication, such as RADIUS, TACACS and LDAP to fit seamlessly into any network architecture.

### Implementation

The first step in the power management implementation was DOIM speaking with MRV through its trusted partner Advanced Integrated Technologies Corporation (AITC), an end-to-end technology and business process outsourcing services

### LX Series Console Servers

The LX Series Console Servers are offered in a number of configurations from 4 to 48 serial ports, AC/DC redundant power options, and integrated v.92/GSM-GPRS modem. The devices support rich security and management functionality in addition to featuring distributed clustering and automation capabilities, encryption and security certifications.

- **Wide Range of Applications —**  
Enterprise data centers, Remote/branch offices, Telco central and remote facilities, Utilities, Test and development labs
- **Remote console connectivity —**  
Access equipment via IP or modem to device serial console ports from any location
- **24 x 7 Lights out management —**  
provide for unmanned, remote service, or automated testing
- **Automated Notification & Actions —**  
Reduce response time and increase system availability and simplifies operations
- **Power, Environmental, Infrastructure Management —**  
Monitor and control resources remotely via a single management interface
- **Industry-leading security —**  
High level of encryption and secure access methods including FIPS 140-2 Certification
- **Ease of Configuration —**  
CLI, SNMP, and Web based management interfaces
- **Connectivity via Ethernet, Serial, dial-up and/or cellular modem**
- **Multi-level user profiles —**  
allow user experience customization or manage equipment sharing



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company with experience serving the government sector.

Each switching center and wiring closet on the base was configured with an LX Console Server with dual power supplies and modems, which enabled IT to integrate them seamlessly into the network and run them on a "lights out" basis, remotely managing the network without needing to be on site.

In addition to the console servers, DOIM added an LX Series intelligent power distribution unit (PDU) to the solution at each site, which enabled network administrators to monitor and control power sources to individual devices. This gave them the ability to cycle the power for specific devices; a dramatic improvement compared to their previous solution where all devices connected to the power source had to be shutdown as whole which actually contributed to overall downtime. The JITC-approved MRV management system in each location is managed through a single IP-based, user-friendly user interface. Additionally, MRV's commitment to advanced feature sets such as IPv6 appealed to DOIM further supporting government communications directives.

### Success!

The main goals of this project were to maximize uptime while utilizing existing staffing. That goal has been met by giving the IT team a new set of tools which enabled them to become more proactive to imminent weather challenges and to react very quickly in the face of a problem. With its new Out of Band Networking power management solution, staffers can take the upper hand on Mother Nature and shut down vital base operations from their central consoles. The solution has removed a large burden from the team, freeing them up to work on other tasks further enhancing the operation of their network.

MRV has more than 50 offices throughout the world. Addresses, phone numbers and fax numbers are listed at [www.mrv.com](http://www.mrv.com). Please e-mail us at [sales@mrv.com](mailto:sales@mrv.com) or call us for assistance.

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