



HighPoint Out of Band RAID Solution

"A Convergence of Networking and RAID"

HighPoint RocketRAID 3000 Series

HighPoint Technologies, is the RAID expert in providing advanced storage solutions to the industry that include controller IC's and storage host adapters.

HighPoint's storage solutions offer the performance and advance data protection features needed for enterprise, SMB and SOHO environments. Recognizing the changes in the industry towards more complicated storage environments because of the digital information, the growth of the Internet, HighPoint's addressed the storage needs for different vertical storage segments with a tiered product line approach where "One Size Does Not Fit All".

HighPoint's storage solutions are classified into three product segments - RocketRAID (3000, 2000 and 1000) Series of SATA RAID controllers. The RocketRAID Series of SATA RAID controllers offers the most robust connectivity with (Internal, External and Hybrid) connectors and connections to various bus types (PCI-Express, PCI-X and PCI).

The RocketRAID 3000 Series of hardware RAID controllers have the, performance, reliability and stability needed for enterprise storage environments.

RocketRAID 3000 Series Feature Highlights

The RocketRAID 3000 Series of hardware RAID controllers have the following advance features to deliver the performance, reliability and stability needed for enterprise storage environments.

Hardware Features

Specification

Processor Engine:

Intel IOP341 at 800MHz with Multiple ADMA engines

Cache Memory:

256MB of DDR-II with ECC (533MHz)

Dedicated LAN Port: (RocketRAID 3522 series and above)

Dedicated LAN for OBM (Out of Band) Management

Dedicated Connectors:

Internal or External mini-SAS ports for secure connections

Bus Speed:

PCI-Express x8 (x16 slot compatible)

Design for Apple Macintosh:

Design for Mac Pro Quad Core / Mac Pro Eight Core, Power Mac G5 Dual/Quad Core, Xserve Xeon Quad Core

RAID Functionality

Specification

Create/Delete/Initialization:

Creating RAID storage in host adapter BIOS or through web GUI, RAID GUI or CLI (Command Line Interface)

Hot Spare: Have a drive on universal standby to help rebuild redundant RAID array when they become degraded

Hot Swap: The ability to add/remove a drive when the system is still powered on

Auto Rebuilding: Automatic rebuilding of degraded RAID array when a new disk is inserted in RAID controller

RAID Management & Monitoring

Specification

RocketRAID Out of Band (PreOS): Remotely access host adapter to troubleshoot and monitor RAID array before booting to Operating System

RocketRAID InBand (In the OS): RAID management and maintenance of RAID array in the Operating System

Array Verification: Verification of redundant RAID arrays for errors, disk scrubbing to eliminate bad sectors and bad sector reallocation

Storage Health Inspector (SHI): Monitoring individual hard drive SMART status and drive temperature. SMART failures and temperature failures are recorded in Event Log

Event Log History: All RAID arrays events (Information, Warnings and Errors) are recorded in the Event Log history to alert users of problem or potential problems

Event Notifications

Specification

SNMP:
(RocketRAID 3522 series and above) (Simple Network Management Protocol) A popular protocol for network management for collecting information from and configuring the RAID array

SMTP: (Simple Mail Transport Protocol). is the network protocol used to send email across the Internet with (Information, Warnings or Errors) on the RAID array

Local Alarm: Buzzer to alert users that an unusual event has occurred on the RAID array

LED: SATA hard drive activity, present and failure LED to let users know drive activity and drive failure in rackmount chassis.

A Convergence of Networking with RAID

By converging networking with HighPoint's RAID Solutions a revolutionary breakthrough is available for mid-level storage solution providers to offer mission critical storage at an affordable price point.

HighPoint's Out of Band RAID solutions will enable Small to Medium Business (SMB) to deliver enterprise class storage with a relatively small total cost of ownership (TCO).

HighPoint Makes It Possible?

HighPoint's Out of Band RAID Solutions makes it possible for the storage to be accessed "**Out of Band**" by allowing a system administrator to monitor, manage and **remotely** access the storage whether it is up and running or if it has crashed and down. Remote management functions are possible.

What is Out of Band?

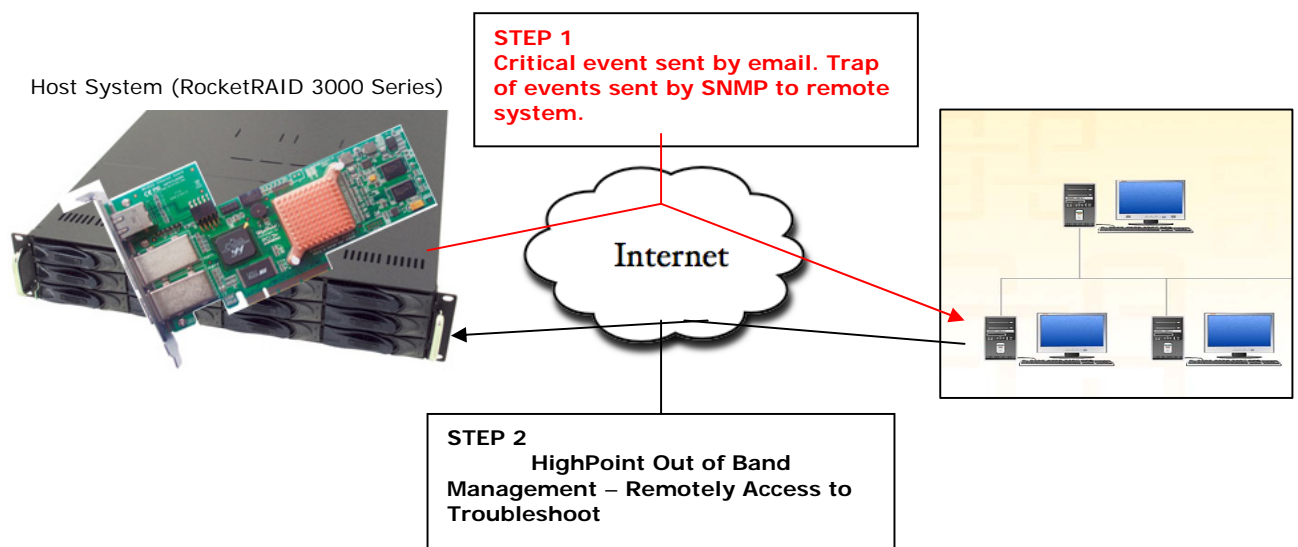
The term **Out of Band** is the use of a dedicated management channel for device maintenance. It allows a system administrator to monitor and manage the storage by remote control regardless of whether the machine is powered on.

HighPoint Out of Band RAID Solution in Action

Problem: Host system with RocketRAID 3000 Series controller; a critical event has occurred on the RAID array; email notification sent to remote system and traps are sent by SNMP to remote system.

Solution: The administrator can remotely access the host system with HighPoint Out of Band RAID Solution in PreOS mode (when system has crashed and can't boot into OS) and also when the system can boot into OS. The HighPoint Out of Band RAID solution let users check the Event Logs for every event on the RAID array and troubleshoot it remotely.

Advantages and Benefits: The administrator can remotely access the array to troubleshoot without having to make a house call. With an accelerated response time customer satisfaction is improved.



Benefits of Out of Band RAID Solution

Some of the benefits of Out of Band include reduced IT and support cost. SMB's are often not able to provide the level of support that some larger organizations are capable of providing. SMB's become more efficient in their use of IT investments by utilizing HighPoint's Out of Band RAID solutions to simplify management and for storage recovery. The HighPoint Out of Band RAID solution allows IT personnel to access, control, and manage a company's storage even when the entire system is down.

Connection with Security

Advances in the HighPoint Out of Band RAID Solutions allows users to connect remotely over a LAN (Local Area Network) or WAN (Wide Area Network). Users are able to access the storage from any system in the world that is connected to the internet. With authentication, authorization and encryption technologies users are able to connect safely and securely.

Improving Staff Performance

The HighPoint Out of Band RAID Solution has the additional benefit of improving staff member performance by allowing them to manage and troubleshoot any storage issue remotely across multiple networks. By eliminating the travel time for a service call staff members are better able to service customer's needs by responding to their request immediately.

Accelerated Response Time

In mission critical storage environments it is essential to diagnosis and resolve problems immediately with less storage downtime as possible. The HighPoint Out of Band RAID Solution can dramatically shorten this response time with immediate action with remote access to troubleshoot resolve the issue. System Administrators are able to take action immediately when alerts, alarms, and warnings are sent remotely.