PACKET RAID

MULTI-PORT 40G, 10G AND 1G ETHERNET AND SDH RECORDER

· · · 40G LAN · · · 10G LAN · · · 10G WAN · · · 10G POS · · · 1G LAN · · · RAW · · ·

Comprehensive Platform

PacketRAID is a high speed multi-format data recorder purpose-designed for use in test labs and network security applications. It offers a single-platform solution to a wide range of test and monitoring requirements, combining ease of use with excellent performance and reliability.

Record LAN and WAN

PacketRAID's 4 ports are each capable of operating independently. They support LAN ethernet at both 10Gb/s and 1Gb/s, and WAN ethernet (ethernet over SDH/SONET) at 10Gb/s.

PacketRAID also supports native 40Gb/s ethernet recording by combining all four ports together in firmware.

Other options are also available, including STM64c POS and raw bit level capture / replay if required, and the port count can also be increased up to 8 or even higher to offer excellent port density.

Replay Anything

PacketRAID can replay in all the formats it can record in, including raw mode, making it an extremely flexible tool for testing. And the replay format does not need to be the same as the original record format—for example, ethernet recorded as 40Gb/s LAN can be replayed as 10Gb/s WAN.

And because the ports use pluggable SFP/SFP+ transceivers, the physical presentation can change too—so traffic recorded off multi-mode fibre at 850nm can be replayed over single-mode fibre at 1310nm or 1550nm and vice-versa.

Huge Fast Storage

Each recorder comes equipped with a 48TB SSD RAID array which delivers extremely high performance, allowing full line rate recording across all ports at any speed. The use of SSDs also means that it is possible to record and replay concurrently without impacting performance.

PacketRAID delivers superb functionality and performance in an open, flexible, standard 2U platform.

Open Platform

PacketRAID is built on standard Linux, and offers a completely open platform to users. Full administrative (root) access is provided, and customers can install their own software and applications as required. There are even spare PCIe slots available.

Accessible Data

All packet captures are stored as standard files on a Linux XFS partition, and have no special requirements for access. The partition can be shared via NFS or SMB to make the recordings available to other servers, and the GUI provides an import/export capability for copying and retrieving recordings to and from archive storage.

Support and Warranty

PacketRAID comes with a comprehensive 12-month RTB hardware warranty and support package including regular software and library updates and technical assistance with problem solving. This is designed to ensure that the customer can obtain maximum value from the recorder from the outset.

An enhanced support package is also available that includes on-site training and consultancy to assist with integrating the platform into existing frameworks, or developing new software to take advantage of the performance that it offers.

We aim to be very flexible: please contact us to discuss other options such as on-site or overseas support if this might be required.
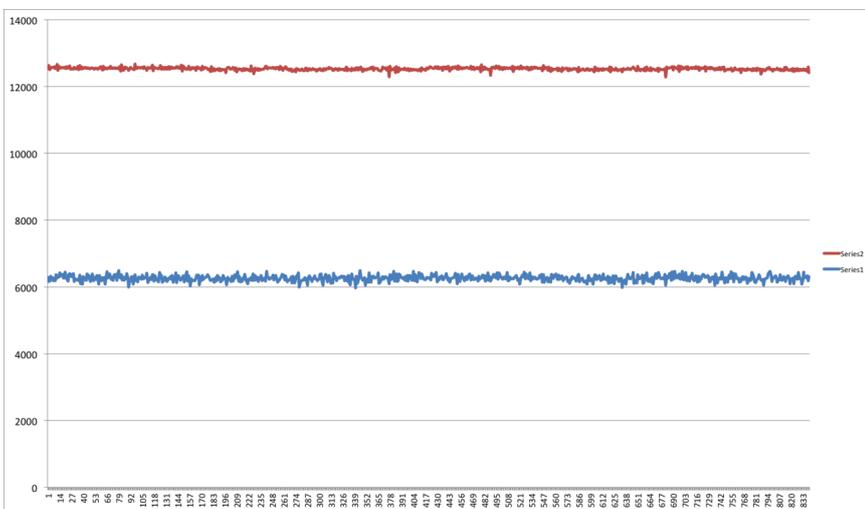
The graph to the left shows sustained dual thread write performance across the whole of the storage array—this is typically over 6GB/s per thread, or approaching 12GB/s (>90Gb/s) aggregate sustained.

Read performance is comparable, and it is possible to mix reads and writes. Overall performance remains steady as the number of read and write threads increases.

Single thread performance is approximately 10GB/s read and write on a CentOS 6u7 kernel.

Packet Analysis

The PacketRAID server offers huge I/O and processing performance, combined with a large amount of RAM. This makes it an ideal platform on which to analyse recordings once made, or to process other large sequential datasets. Combined with it's 10G or 40G network connectivity and generous volume of storage, it can readily form the core of a comprehensive high-throughput capture and analysis system.

Remote Automation

PacketRAID provides command-line access as well as a fully featured JSON API, allowing all aspects of its operation to be controlled by scripts or applications either locally or over a network. This greatly enhances its flexibility, enabling it to be integrated into software frameworks such as Jenkins and used in automated testing and analysis.

Sample scripts are provided for BASH and Python.

Platform Specifications

CPU	Dual 8-core hyper-threaded Xeon v3 3.2GHz
RAM	256GiB 1867MHz ECC DDR4
Storage	48TB removable SSD in RAID0+0/50/60
PSU	Dual hot-swap 1KW PSUs
Management	IPMI BMC controller
Network	Dual 10GbE / 40GbE NIC
Empty Slots	3 x Gen3 x8 FHFL, including 2 double width
OS	Standard Linux kernel with XFS filing system
Software	PacketRAID record, replay and monitoring applications and GUI
Form Factor	2U rackmount
Ports	4 x 10G with pluggable SFP+ transceivers
Formats	40G LAN, 10G LAN, 1G LAN and 10G WAN as standard, STM64c POS and raw optional
Control	GUI, command-line or JSON API