



Flareon Ultra Server I/O Adapters with SolarCapture Pro software power next-generation scalable network security appliances

Introduction

Reservoir Labs was seeking a partner company to provide advanced high-performance network adapters and the software necessary to enable the reliable capture and processing of 20Gbps network streams. Because the partner’s solution would be embedded into Reservoir’s appliances, the products not only needed to perform today, but also demonstrate a robust security product roadmap.

R-Scope®, by Reservoir Labs, is a sensor that enables real-time network visibility providing unprecedented levels of situational awareness at speeds up to 20 Gbps with R-Scope® PACE™ and 100 Gbps with R-Scope® DOMINATE™. The turn-key, enterprise-ready, 1U appliances seamlessly integrates into IT operations equipping teams of all sizes with the easy-to-use tools required to defend against today’s and tomorrow’s cyber attacks.

Specifically, R-Scope provides deep network visibility, advanced situational awareness, and real-time security event detection by extracting cyber-relevant data from network traffic. R-Scope leverages the richness of the Bro open-source analytics language, is architected to connect to major SIEM systems, and incorporates the most advanced threat intelligence technologies available. R-Scope is commercially available in compact, ready-to-deploy packages that fit into any environment.

SolarCapture™ Pro optimizes network security applications by utilizing Solarflare’s Flareon™ adapter or ApplicationOnload™ Engine (AOE) platforms to capture packets at the highest rates. SolarCapture Pro features advanced capabilities such as kernel bypass for lossless packet capture performance, PTP clock synchronization, precision hardware packet time stamping support, and simulta-

neous capture and host delivery of packets. Further, SolarCapture Pro includes support for the industry standard libpcap API, easing the effort required for integration with partner applications and accelerating time to market for partner supplied solutions. Integration between R-Scope and SolarCapture Pro was greatly simplified through the availability of the standard libpcap library included with SolarCapture Pro. The integration simply required a re-compilation of the applications using the SolarCapture Pro libpcap libraries. This significantly reduced the amount of time and engineering effort a proprietary API would have necessitated.

Internally, the R-Scope PACE appliance utilizes multiple processor sockets with 20 Hyper-Threaded CPU cores, two Solarflare Flareon Ultra SFN7122F adapters and redundant power supplies. Reservoir then runs multiple simultaneous instances of various applications to optimize the use of all available CPU cores. SolarCapture Pro is then used to capture network packets, and distribute them across available CPU cores to the different application instances using the Application Clustering feature. Application Clustering provides additional benefit beyond standard RSS scaling by allowing Reservoir Labs to define their application architecture and steer traffic across specific processor cores for optimal system performance.

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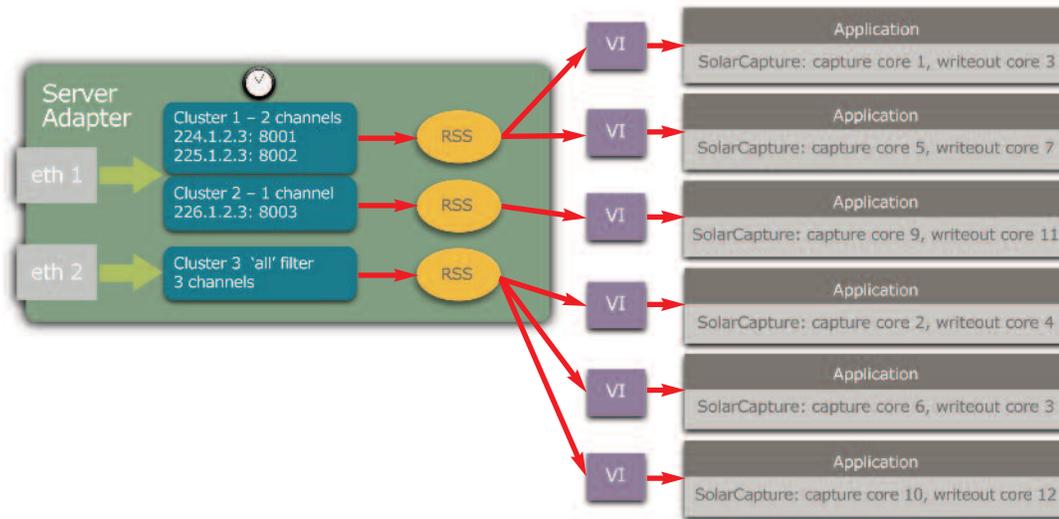


Figure 1. Application Clustering example, steering traffic to specific applications and processing cores

Summary

- Solarflare’s industry-leading Flareon server I/O adapters provide the performance required to meet the needs of high-speed network capture and processing.
- The adapters provide the high-performance capture platform required for security, while freeing precious CPU cycles for use by the core security application.
- Integration of SolarCapture Pro and the security application is simplified through the use of a replacement libpcap library.
- Application Clustering provides the flexibility required to scale by allowing the use of multiple simultaneous instances of security applications, and flexible flow steering to CPU cores.
- As security appliance vendors select component suppliers they not only consider Solarflare's network adapter and software security roadmap, but also their corporate stability and commitment to OEMs as long-term technology partners.

