Reconfigurable Frame Processor, Next Generation (RFP-NG)

Redefining 1G-100G network monitoring, control and visibility

APPLICATIONS

MantisNet software enables advanced full line rate processing for core and mobile network deployments; mid-span or at the edge

- Network optimization
- Deep protocol parsing and filtering
- Continuous survey and monitoring
- Clean up heavily over- encapsulated traffic
- Operational troubleshooting, anomaly detection and Fault Isolation
- Traffic management: filtering, aggregation and load balancing
- Network event detection
- Active remediation: filtering and quarantine, de-encapsulation, encapsulation, time stamping
- Automation, tool chaining and mirroring

BENEFITS

- Improved visibility and manageability.
- Increased performance, utilization, efficiency, and reliability.
- Provide the ability to programmatically monitor and deliver real-time, standardized network intelligence.
- Generate high-resolution quantitative details, flow records and statistics.
- Stream telemetry (operational) data in a highly efficient, easily consumable fashion.
- Support orchestration and service level assurance.
- Integrate with new and existing network management frameworks, enables innovative service offerings.
- Investment protection: Reduced OpEx and CapEx for development, test, operations and maintenance.

PRODUCT OVERVIEW

The Reconfigurable Frame Processor-Next Generation (RFP-NG) software provides network intelligence, visibility and traffic engineering capabilities for complex network traffic and speeds from 1G to 100G and beyond. The RFP-NG consists of (P4) software applications running on white box switches or software defined networking (SDN) platforms. It provides software-controlled connectivity, instrumentation, monitoring and visibility across the most complex network deployments without the need to replace existing infrastructure or deploy separate management or monitoring equipment.

The solution provides advanced instrumentation, traffic management and improved operational efficiencies and risk reduction for operations teams suppor-test labs, production networks, cloud infrastructure and data centers.

PRODUCT DESCRIPTION

The MantisNet Reconfigurable Frame Processor-Next Generation (RFP-NG) software provides all the advanced connectivity, traffic shaping and management capabilities required for improving the performance, reliability and security of today's test or production networks. MantisNet's RFP-NG network intelligence and visibility solution is a YANG model driven network telemetry system that provides data-plane control, flow aware, load-balancing, traffic shaping and filter capabilities.

The addition of a programmable data plane, advanced instrumentation, and embedded match-action processing provides the ability to generate complex event counters, and time-series data as well as providing a real-time control channel that allows the system to insert, delete, and modify entries providing hooks to perform run-time tasks, such as real-time analytics and traffic shaping at 1/10/25/40/50/100G network speeds.

With programmable access, through open RESTful APIs with the software, to all control plane traffic, advanced instrumentation, and telemetry services via in-band network telemetry and out-of-band network telemetry channels - real-time visibility and control is now achievable. The application of data science tools and techniques is now within the realm of possibility; with the ability to instrument the network to support new workloads and manage them via both existing tools and analytic workflows combines the best of today's tools and tomorrows capabilities.

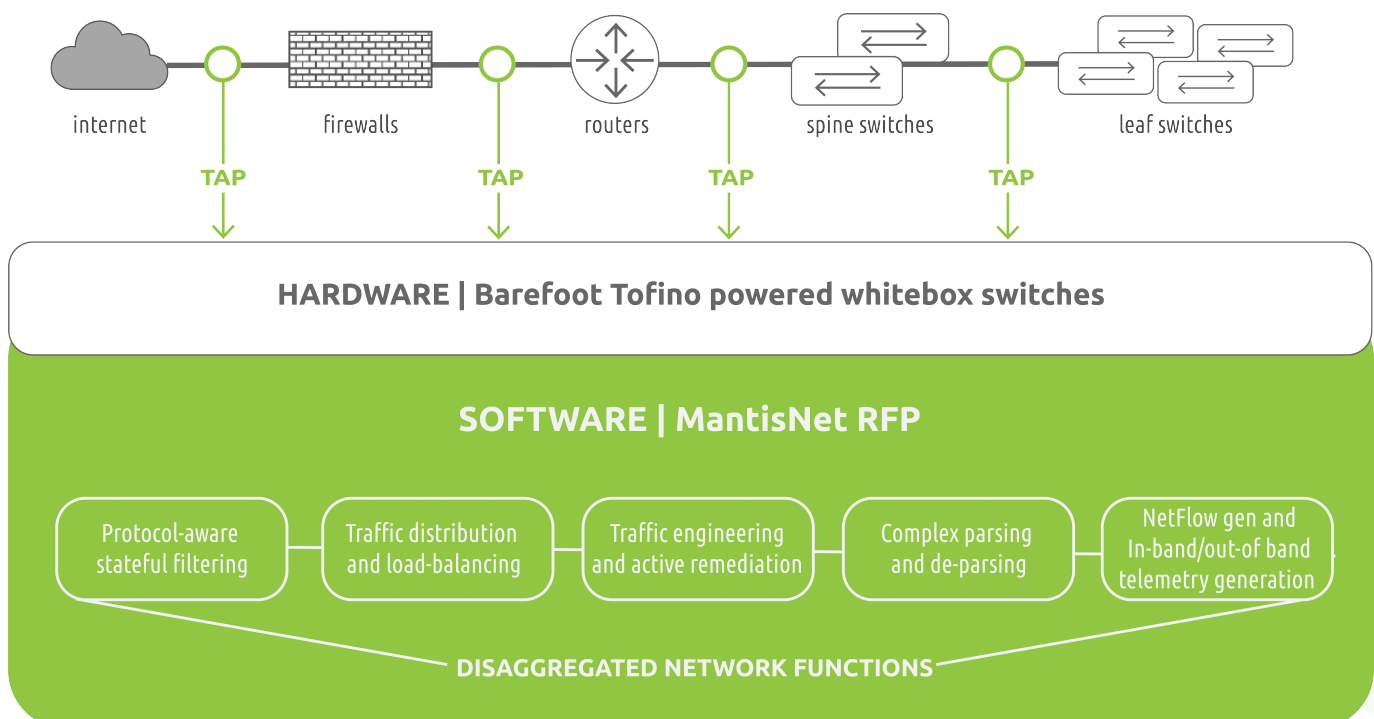## OPEN MANAGEMENT ARCHITECTURE AND TECHNICAL FEATURES

YANG model driven network telemetry for both Out-of-Band Network Telemetry (ONT) and In-Band Network Telemetry (INT) information. This allows for the collection and reporting of network state, without requiring intervention of the control plane. ONT can be delivered over the management interface and Inband Network Telemetry (INT) can be delivered as added/inserted into the header fields that are then interpreted as network "metadata".

- Supports In-band and Out-of-Band Network Telemetry (INT & ONT):
- Yang model driven (OpenConfig or IETF) supporting standardized encoding (JSON, ProtoBuf...)
- Supports open APIs (NETCONF/RESTful/gRPC/CLI) for integration with network components and automation/orchestration solutions

BANDWIDTH, PROGRAMMABILITY & ADVANCED INSTRUMENTATION:

Stateful behavioral packet processing and Finite State Machine (xFSM) constructs is now possible:

- Multiple programmable match-action tables, parser/de-parser and filters based on rules, pattern matching or offset
- High resolution flow forwarding
- Flow masking, the ability to recognize a flow and mask it from the data
- Deep packet filter matching with the ability to filter protocols based on inner fields
- Filtering based on MAC, VLAN, IPv4/6, L4, TCP flags, and tunneling protocols
- Rule-based stripping and tagging

- Capture / parse on ingress port identification
- Dynamic parsing and de-parsing/de-encapsulation of complex headers: MPLS, GRE, GTP, VN-TAG, Q-in-Q, RSPAN, VXLAN, GENEVE ...
- Counters: counters for port statistics and traffic integrity monitoring
- Matching filters
- ACL-by-ACL filters,
- Timers
- Time Stamping: PTPv2

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HARDWARE DEPLOYMENT OPTIONS

The RFP-NG software is deployed on white box switches that are powered by the Intel/Barefoot Tofino chipset.

Examples:

Edge-corE NETWORKS   **STORDIS**

PERFORMANCE	Wedge 100BF-32X	APS series BF2556X-1T
Throughput	3.2 Tbps	2.0 Tbps
Forwarding Rate	4.7 Bpps	3.0 Bpps
IPFIX Probe	1:1 sampling, t.b.d flows/sec export rate	1:1 sampling, t.b.d flows/sec export rate

MANAGEMENT		
Management Interface	1 x RJ-45 serial console port to BMC 1 x RJ-45 1000BASE-T management port	1 x RJ-45 1000BASE-T management port
Device Management	YANG Model driven NETCONF, REST API, GUI	YANG Model driven NETCONF, REST API, GUI
Enforcement Rule MGMT	NETCONF, REST API, GUI	NETCONF, REST API, GUI
Enforcement Rule Statistics	NETCONF, REST API, GUI	NETCONF, REST API, GUI
Copy Rule Management	NETCONF, REST API, GUI	NETCONF, REST API, GUI

PHYSICAL		
Ports	(32) 40/100G,(64) 50G,(128) 10G/25G	(16) 1G, (8) 40/100G,(16) 50G,(80) 10G/25G
Dimensions	(WxDxH): 20.03 in x 17.32 in x 1.73 in	(WxDxH): 17.26 in x 18.11 in x 1.69 in
Power Supplies	2 x 90 to 240 VAC at 50-60 Hz or 2 x 48 VDC	2 x 120 to 240 VAC at 47-63 Hz or 2 x 40 VDC
Power Consumption	465W Typ	106W Typ 490W Max
Ventilation	Front-to-back or back-to-front	Front-to-back or back-to-front
Regulatory Compliance	FCC, CE, RoHS, UL, IEC, CSA, UL, IEC, ISTA	FCC, CE, RoHS, UL, IEC, CSA, UL, IEC

ABOUT MANTISNET

MantisNet develops Software Defined Network (SDN) and Network Function Virtualization (NFV) network intelligence solutions that provide businesses and governments real-time network monitoring solutions, for 100G speeds and beyond. MantisNet's solutions better enable network teams to monitor, manage and engineer the increase in network traffic flows they're experiencing compared to the preceding generation of packet brokers, firewalls, load balancers and event management solutions.

MantisNet combines end-to-end visibility, wire-speed network monitoring and protocol analysis (from L2 to L7) with the ability to perform real-time traffic engineering and remediation against operational issues, security threats, fraud, and malicious activities, either manually or autonomously. Our solutions are deployed at leading telecom, service providers, NEM labs and government sites. We work to make network intelligence actionable for a broad range of DevOps, network and application performance testing, streaming analytics, and cyber security applications.

For more information, visit www.MantisNet.com

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