

# Network Performance Enforcement Solutions

## Overview

Never drop a user session again, regardless of how much traffic is running on your network.

Stop reserving 50% of your expensive network bandwidth to handle peak traffic loads. Put that bandwidth back to productive use.

These are just two of the major benefits that Saisei's industry-first Network Performance Enforcement software solutions offer to service providers and large enterprises alike. These solutions bring order, predictability and fairness – aka “Net Neutrality,” – to all users, applications and devices that are under Saisei's domain.

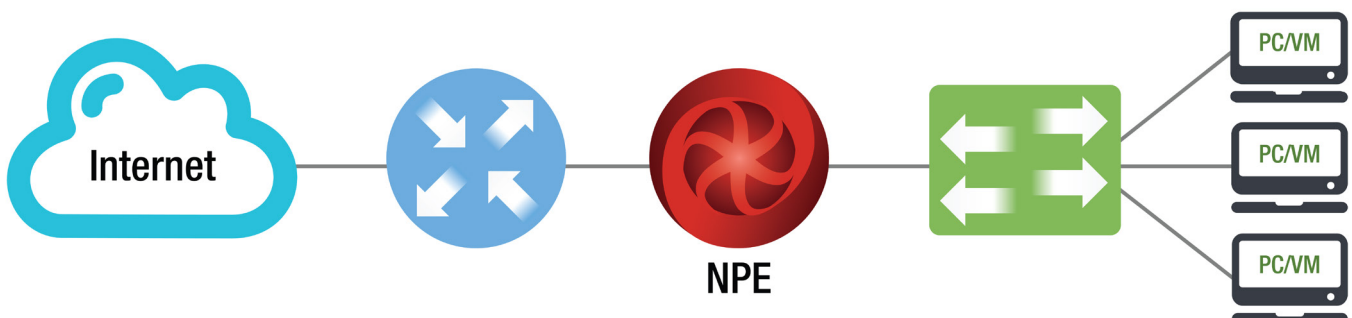
Based on patented flow-engine technology that literally changes the way that chaotic, routed TCP/IP networks behave, Saisei's FlowVision™, FlowEnforcer™, and FlowCommand™ virtual appliances run on commodity x86 processors, either as VMs under Hypervisor control or on dedicated x86 servers in the forwarding plane. Unlike all other existing networking and analytics devices, Saisei's next-generation solutions have been specifically designed to handle the massive data realities of mobile, cloud and IoT (the Internet of Things).

Capable of concurrently monitoring 5 million concurrent flows on a 10Gb link 20 times per second, and evaluating and/or taking action on those flows across policies based on more than 30 metrics, the Saisei solution combines unprecedented real-time host, user, group, and application-level network visibility and policy enforcement.

## Key Capabilities

- Monitors & controls millions of data flows per second in-line on the network
- Provides application & user level visibility into data flows
- Analyzes and reports on application health in real-time
- Rich database that tracks L2-L7 information, including application, application meta data, user, GeoIP, BGP AS, and is extensible for custom fields
- Enables simple policy enforcement based on the same rich information base, with the flexibility to design and enforce host, user and application level policies
- Patented TCP/IP state awareness and flow management provides fine grained traffic management capabilities
- Real-time flow analytics enable flow policies to auto-adjust to changing network conditions
- Map reduces flow data to make it easier to integrate high volumes of flow data into 3rd party data analysis tools
- Managed via open API's – REST & Python

## Typical FlowCommand™ Deployment Scenario



# Key Benefits

## TAMES CHAOTIC NETWORK BEHAVIOR

- Reduces user service calls by 99%
- Delivers predictable, guaranteed performance levels for all flows, including latency-sensitive data, such as VoIP and video

## DELIVERS MASSIVE CAPEX AND OPEX SAVINGS

- Lets service providers monetize all installed reserve bandwidth
- Slashes cost-per-bit for enterprises and defers new network bandwidth purchases by 12-24 months
- Allows incident/event investigation in real time looking at actual flows

## DETECTS AND PREVENTS SECURITY RISKS

- Real-time flow analysis security risks identified with risk mitigation controls instantly implemented
- Stops data exfiltration; blocks and reports suspicious traffic

## REDEFINES REAL-TIME VISIBILITY, ANALYTICS AND RESPONSE

- Sub-second DPI analysis
- Instant drill-down to any aspect of an active flow for troubleshooting

## ELIMINATES THE NEED FOR NUMEROUS, EXPENSIVE EDGE TECHNOLOGIES

- Traditional WAN Optimization compression and Packet Shaping are now obsolete
- Offers a number of better/faster/deeper/cheaper new Best Practices for flow-based security compared to Next-Gen Firewalls

## PREPARES NETWORKS FOR BIG DATA LOADS OF MOBILE, CLOUD AND IoT

- Monitors and enforces bandwidth and security policies for 5 million flows (per 10G link) in under 1 second running on commodity processors and hardware
- Scales to 1B external hosts in initial release

# Key Real-Time Enforcement and Visibility Capabilities

## VISIBILITY & POLICY CONTROL

- Dynamic Application Detection
- Application Classification
- Flow-Rate Monitoring
- TCP Flow Health Monitoring
- Application Policy Control
- User Policy Control
- Host Policy Control
- Behavior-Based Flow Control
- Application Health Scores

## NETWORK

- Port/Interface
- Policy-Based Routing
- Span/Tap Ports
- VLAN
- IPv4/IPv6

## MANAGEMENT

- SSHv2
- REST
- SNMP
- Python
- GUI/CLI
- Radius Signaling

# System Performance & Scaling

Link Performance	Cores per Interface	Max Flows per Interface	Max Hosts Internal/External	CPU Cores/Memory (Single Instance)
<100 Mbps (shared)	Shared	10,000	10,000/None	1 (shared)/64 MB
1 Gbps (Internet mix)	1	64,000	100,000/1,000,000	4/16 GB
1 Gbps (line-rate)	2	100,000	100,000/10,000,000	8/64 GB
10 Gbps (Internet mix)	4	1,000,000	1,000,000/10,000,000	12/256 GB
10 Gbps (line-rate)	6	5,000,000	10,000,000/1,000,000,000	15/512 GB

# Saisei FlowCommand™ Software & Hardware

Software Host Type	Supported
Ubuntu 14.04	Yes
Centos 6.5/KVM	Yes
VMware/ESXi5.5	Yes

x86 Platform*	Intel NIC's
XEON/Haswell Class VT-D & IOMMU	82599 (10Gbps) / 82576
Intel Rangley 4/8 Core	i210/i211/i354

\*Platform requires minimum of 1 GigE port for Management port and 2 GigE for Data plane