# SmartNA-XL™ Bypass

## High Speed Bypass Technology for Real Time Security and Availability

**DATA SHEET**

# Network Critical
### The Window to your Network™

Security tools must have direct access to network traffic in order to protect infrastructure, secure confidential information and manage the ever-changing threat environment. The challenge is maintaining network availability when a direct connected tool goes down taking the link with it. Only the SmartNA-XL™ chassis protects network security and availability by allowing redundant hot and standby tool connections that keep traffic flowing and secure even if one of the tools goes off line. Highly flexible bypass options and simple deployment in a modular 1 RU chassis make the SmartNA-XL™ the clear leader in network security tool access and visibility.

Here is how it works: The TAP is connected real time to network links and passes traffic through to the security tools and back into the network with no delay. There is a "heartbeat" packet that is passed between the TAP and the tool that assures the security tool is fully operational.

If the tool goes down or is taken off line, heartbeat stops and the TAP automatically bypasses the tool sending traffic directly through to the network. As soon as the heartbeat returns, the TAP automatically resumes normal operation directing traffic through the tool and back into the network. Redundant tools can be placed in "stand-by" mode so if the primary security tool is bypassed, traffic will flow through the stand-by security tool keeping the link active and secure.

The SmartNA-XL™ with bypass modules can also save CapEx by helping your security tools

**Bypass TAPs with heartbeat technology provide real time network security without sacrificing network reliability or availability. Network Critical's SmartNA-XL™ with 10G Bypass module provides the high speed performance needed to connect security tools and protect network traffic in real time.**

perform more efficiently. Filtering data that is not needed can help tools operate more efficiently potentially reducing the number of tools required to manage traffic. Furthermore, the SmartNA-XL™ has increased rule capacity that allows the simple deployment of complex, overlapping filter designs. Filter rules are independent and can be applied to any port. Protect all links with fewer tools, faster access and greater efficiency.

The SmartNA-XL™ chassis offers five slots to integrate a wide variety of TAP modules that safely connect tools while protecting network reliability and availability. Even if power fails, your network traffic will continue to flow. Modular, customizable TAP modules with a total of twenty 1/10Gbps SFP/SFP+ ports can be utilized providing network input and tool connection ports anywhere on the system. The powerful non-blocking backplane allows traffic to flow at 10Mbps to 10Gbps. In addition to the four front facing 1Gbps/10Gbps module slots, there is a rear slot for a 40Gbps module that allows stacking of units for scalability.

The SmartNA-XL™ also provides flexibility in TAP modes as well, enabling you to utilize more specialized tools to protect against an ever widening threat landscape. Add scalability to flexibility - your network design may only require one or two modules today. With the SmartNA-XL™, you can easily add modules and connect systems to grow your visibility platform as you network grows.

The SmartNA-XL™ is managed by Network Critical's patented Drag-n-Vu™ Graphical Web Interface that makes deployment and change-management simple and accurate. Advanced features such as aggregation, filtering, load balancing and port mapping save OpEx by reducing planning, configuration and tool management.

Your network depends on maintaining secure access to relevant, reliable data and protecting that data from malicious threats. Network Critical's SmartNA-XL™ enables organizations to manage and protect the flow of information securely, efficiently and reliably.



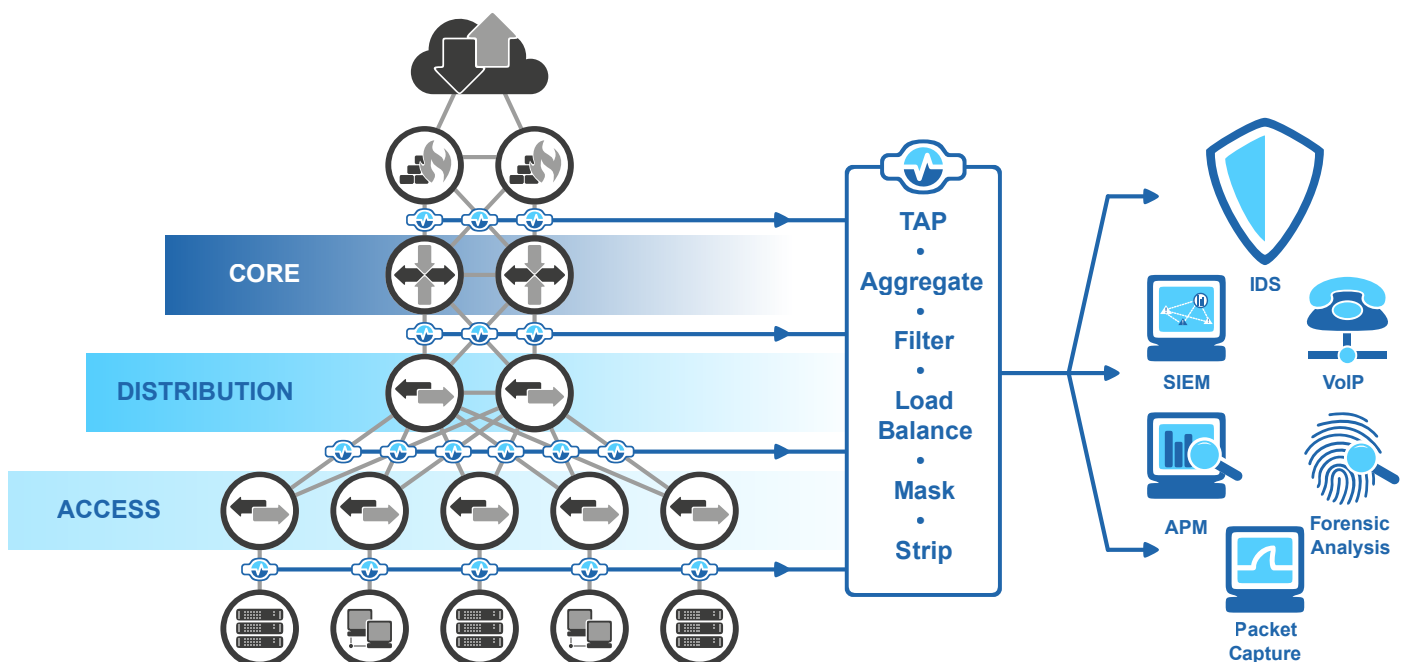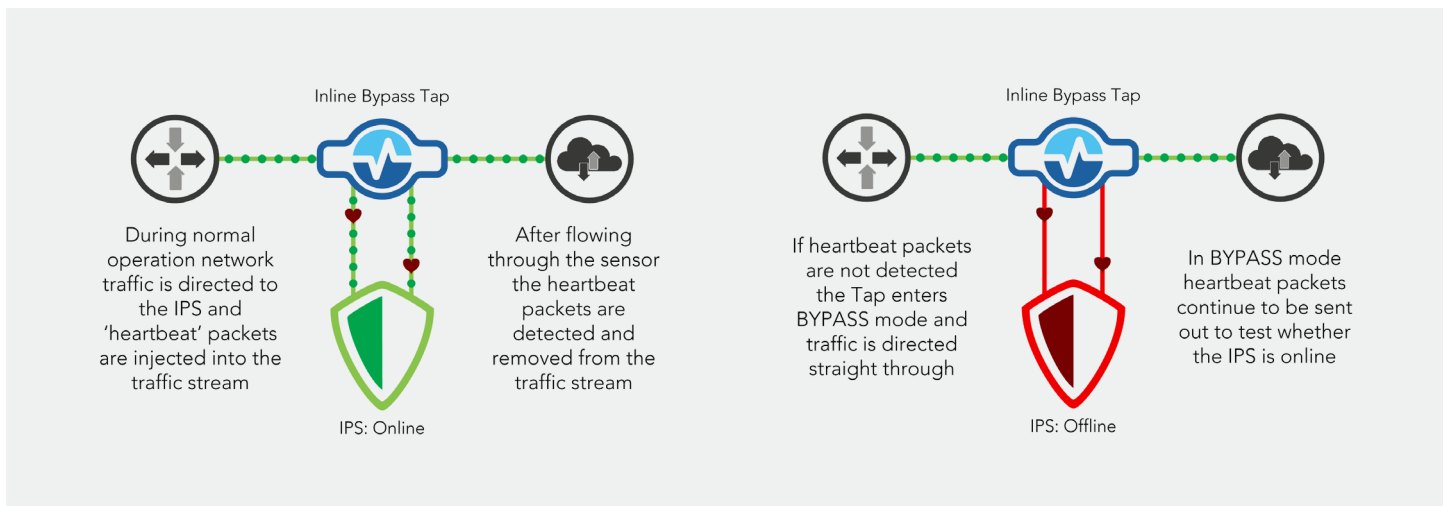| KEY FEATURES | BENEFITS |
|---|---|
| Powerful, flexible 1G/10G/40G modular TAP & Packet Broker system; custom access solutions for new high speed networks while also supporting lower speed legacy tools | Compatible with all major manufacturers' security and monitoring tools, including protocol analyzers, probes, and IPS, NGFW, DLP, UTM, SIEM |
| PacketPro™ advanced packet manipulation: Packet Slicing, Header Stripping, Payload Masking | Primary access solution for all packet capture, performance monitoring, lawful interception and forensic analysis applications |
| Passive Fiber Optic 10 Gigabit TAP modules | Zero latency, no point of failure |
| Bypass 10 Gigabit TAP modules - automatic tool bypass, no point of failure | Bypass module sends traffic to backplane for filtering of live traffic and mapping to any other port |
| Dual hot-swappable power supplies | Ensuring reliability and resiliency |

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| KEY FEATURES | BENEFITS |
|---|---|
| Intelligent and intuitive Drag-n-Vu™ user interface for fast, error-free configuration | Dashboard provides at-a-glance views of key performance indicators. Provision new tools quickly and easily, eliminating SPAN port contention |
| Secure SNMP monitoring for integration into Network Management Systems | Real-time alerting |
| Full configuration upload/download | Simplifying deployment of multiple systems |
| Hot-swap TAP modules - easy re-configuration and expansion to meet evolving network demands | Flexible provision of new tools quickly and easily |
| L2-4 Packet filtering, VLAN Tagging, Load Balancing | Manipulation of traffic for monitoring requirements |
| Fastfail™ Copper Gigabit TAP modules | No point of failure, batteries not required |
| Key enabler with regulations such as SOX, HIPAA, and PCI-DSS | Meets compliancy requirements |

## BYPASS TAP TECHNOLOGY

Inline Bypass Tap

During normal operation network traffic is directed to the IPS and 'heartbeat' packets are injected into the traffic stream

After flowing through the sensor the heartbeat packets are detected and removed from the traffic stream

IPS: Online

Inline Bypass Tap

If heartbeat packets are not detected the Tap enters BYPASS mode and traffic is directed straight through

In BYPASS mode heartbeat packets continue to be sent out to test whether the IPS is online

IPS: Offline

CORE

DISTRIBUTION

ACCESS

TAP
•
Aggregate
•
Filter
•
Load Balance
•
Mask
•
Strip

IDS

SIEM

VoIP

APM

Forensic Analysis

Packet Capture

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| PRODUCT SPECIFICATIONS | |
|---|---|
| Ports | Management ports: 1x Ethernet, 1x Serial<br>User definable: (Copper, SMF, MMF, SFP/SFP+ options available) Max 10Gb: 16<br>Max 40Gb: 2 |
| Slots | 1x 40G Module, 4x 1G/10G Modules |
| Power | AC: 100V to 240V, DC: -42V to -63V, 30W (No modules present) |
| Authentication & Authorization | Local, RADIUS, TACACS+ |
| Physical | Dimensions (mm): 450 (w) x 44 (h) x 450 (d), Mass: 2.2 Kg |
| Management | CLI via SSH & Serial, Web UI via HTTPS, SNMP v1/v2c/v3 |
| Standards & Protocols | IEEE 802.3 10BASE-T, IEEE 802.3u 100BASE-TX, IEEE 802.3ab 1000BASE-T, IEEE 802.3z 1000BASE-X, IEEE 802.3ae 10GBASE-X |
| MTU | 10240 bytes (untagged), 10244 bytes (802.1q tagged) |
| Environment | RoHS Compliant, Operating temperature: 0°C to 40°C, Operating relative humidity: 20% to 80% non-condensing, Storage relative humidity: 15% to 85% non-condensing, Storage temperature: -20°C to 70°C |
| Compliance | Emissions: EN55022 class A, Immunity: ESD: EN61000-4-2, Radiated: EN61000-4-3, EFT/Burst: EN61000-4-4, Surge: EN61000-4-5, Conducted: EN61000-4-6, Power frequency magnetic field: IEC 61000-4-8, Voltage dips & interruptions: IEC 61000-4-11, Harmonics: EN 61000-3-2, Flicker: EN 61000-3-3, Safety: EN60950-1 |

| SELECTED PART NUMBERS (MORE MODULE TYPES ARE AVAILABLE ON REQUEST) | | |
|---|---|---|
| 5555 | SmartNA-XL Chassis, 5 Module Bays, Drag-n-VU, Dual AC PSU | |
| 5556 | SmartNA-XL Chassis, 5 Module Bays, Drag-n-VU, Dual DC PSU | |
| 5551 | SmartNA-XL Module, [4] 10G Ethernet RJ-45 | Available 2021 |
| 5552 | SmartNA-XL Module, [4] 10G Ethernet SFP+ | |
| 5550 | SmartNA-XL Module, [2] 40G Ethernet QSFP+ | Available 2021 |
| 5611 | SmartNA-XL V-Line Bypass Module, (4) 10/100/1000 Ethernet | |
| 5621 | SmartNA-XL V-Line Bypass Module, (2) SX Optical, (2) 10/100/1000 Ethernet | |
| 5622 | SmartNA-XL V-Line Bypass Module, (2) LX Optical, (2) 10/100/1000 Ethernet | |
| 5631 | SmartNA-XL V-Line Bypass Module, (2) 10/100/1000 Ethernet, (2) 1GbE SFP | |
| 5641 | SmartNA-XL V-Line Bypass Module, (2) SX Optical, (2) 1GbE SFP | |
| 5642 | SmartNA-XL V-Line Bypass Module, (2) LX Optical, (2) 1GbE SFP | |
| 5841 | SmartNA-XL V-Line Bypass Module, [2] MMF Optical, [2] 10G Ethernet SFP+ | |
| 5842 | SmartNA-XL V-Line Bypass Module, [2] SMF Optical, [2] 10G Ethernet SFP+ | |
| 5583 | SmartNA-XL TAP Module, (2) SR Optical Split, (2) SFP+ | |
| 5584 | SmartNA-XL TAP Module, (2) LR Optical Split, (2) SFP+ | |
| 5901 | SmartNA-XL Packet Processor | Available 2021 |

# BYPASS TAP TECHNOLOGY DIAGRAMS

V-Line TAP Monitors the Inline Tool with Heartbeats



Network                              Network

Inline Tool: Active
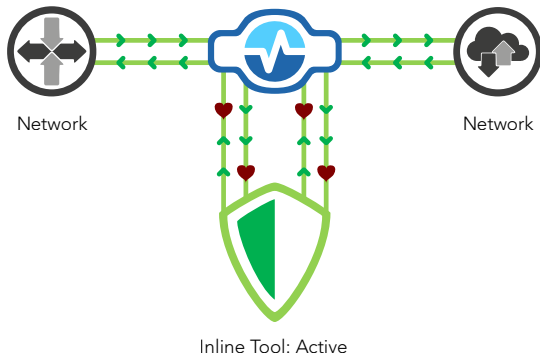
### V-Line Single Tool Bypass

This mode allows a bidirectional flow of live network traffic to be passed through a single Inline tool. The tool throughput status is monitored via heartbeat packets. While heartbeat flow is present the tool is considered Active and network traffic is sent to it for inspection.

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V-Line TAP Automatically Bypasses the Inactive Tool



Network                              Network

Inline Tool: InActive
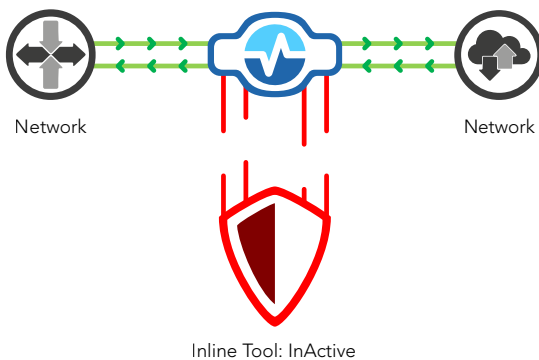
### V-Line Single Tool Bypass

When heartbeat flow is blocked, due to link failure or throughput latency, the tool is considered InActive, and is Bypassed. Live network traffic continues to pass uninterrupted across the TAP, and the tool continues to be monitored by heartbeats. When heartbeat flow is restored the tool is considered Active again and is placed back Inline.

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V-Line Card: Breakout/Aggregation TAP Mode



Network                              Network

Tool 1        Tool 2        Tool 3        Tool 4
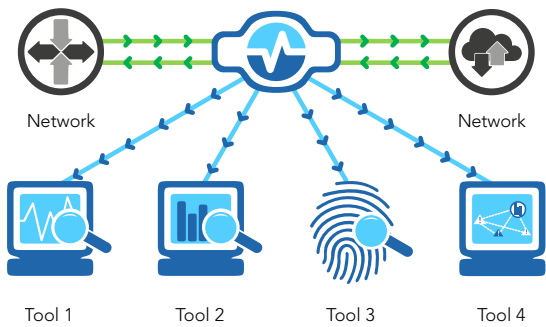
### Breakout/Aggregation TAP Mode

If V-Line functionality is not required, the module also offers some basic breakout and aggregation capabilities.

One port pair on the V-Line module can function as a TAP pair to monitor a live network link, and the remaining ports may then be independently used for traffic output to Off-line monitoring tools. This mode supports optional packet slicing between 16-9216 bytes before output to the tools.
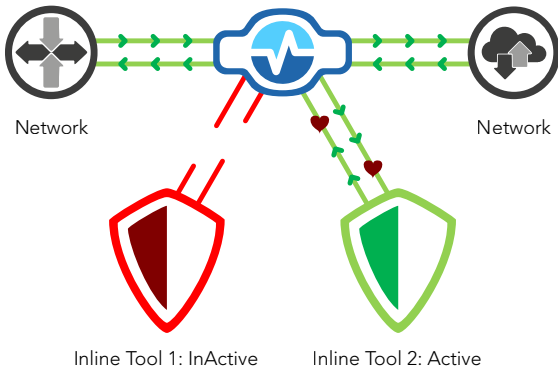
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V-Line Card: Dual Parallel Bypass TAP mode



Network                              Network

Inline Tool 1: Active        Inline Tool 2: Standby
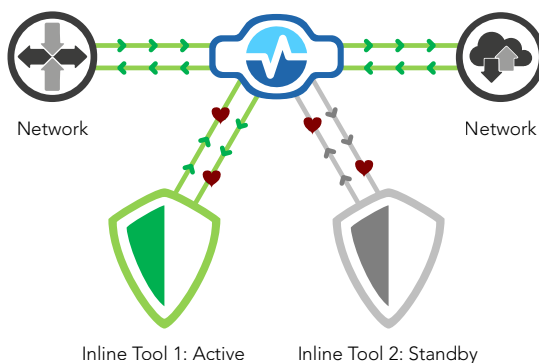
### V-Line Dual Tools, in Parallel

This mode allows a bidirectional flow of live network traffic to be passed through two identical Inline tools, in parallel, in an Active/Standby configuration. The throughput status of each tool is monitored independently via heartbeat packets. While heartbeat flow is present the tool is considered Active and network traffic is sent to it for inspection. Only one tool is required at any one time so the second Active tool is held in Standby.

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V-Line Card: Dual Parallel Bypass TAP mode



Network    Network

Inline Tool 1: InActive    Inline Tool 2: Active

**V-Line Dual Tools, in Parallel**

When heartbeat flow is blocked, due to link failure or throughput latency, the tool is considered InActive, and is Bypassed, and the Standby tool takes over.

V-Line Card: Dual Parallel Bypass TAP mode



Network    Network

Inline Tool 1: Standby    Inline Tool 2: Active
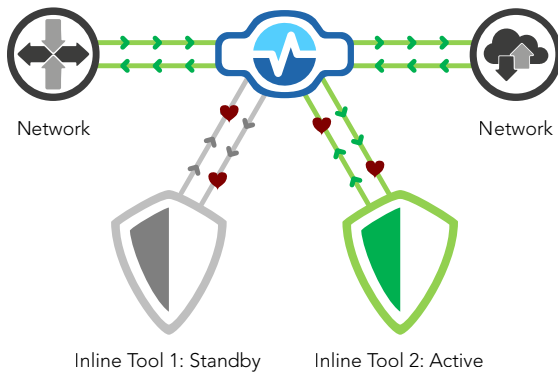
**V-Line Dual Tools, in Parallel**

The InActive tool continues to be monitored by heartbeats. When heartbeat flow is restored the tool is considered Active again and is held in Standby.

V-Line Card: Dual Parallel Bypass TAP mode



Network    Network

Inline Tool 1: InActive    Inline Tool 2: InActive
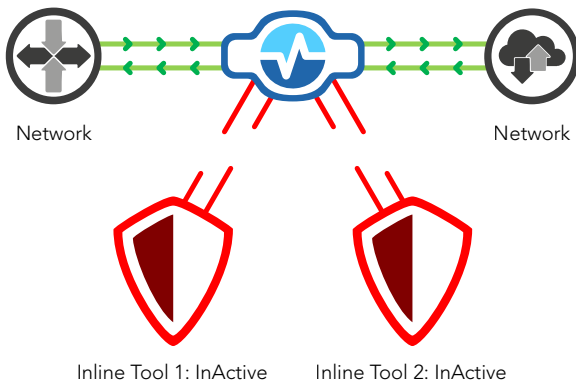
**V-Line Dual Tools, in Parallel**

If both Inline tools are considered InActive, the live network traffic continues to pass uninterrupted across the TAP, and the tools continue to be monitored by heartbeats. When heartbeat flow is restored the tools are considered Active again and are placed back Inline.
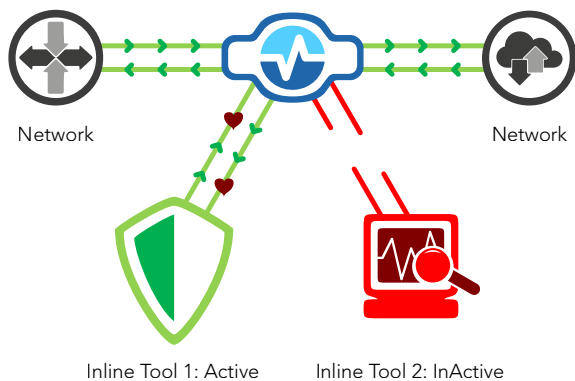
V-Line Card: Dual Series Bypass TAP mode



Network    Network

Inline Tool 1: Active    Inline Tool 2: Active
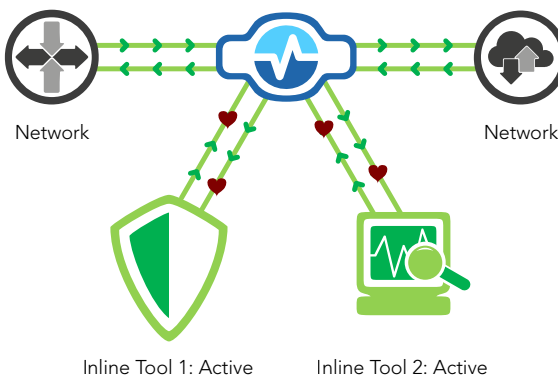
**V-Line Dual Tools, in Series**

This mode allows a bidirectional flow of live network traffic to be passed through two different Inline tools, in series. The throughput status of each tool is monitored independently via heartbeat packets. While heartbeat flow is present the tool is considered Active and network traffic is sent to it for inspection.

**V-Line Card: Dual Series Bypass TAP mode**

Network

Network

Inline Tool 1: Active    Inline Tool 2: InActive

**V-Line Dual Tools, in Series**

When heartbeat flow is blocked, due to link failure or throughput latency, the tool is consid-ered InActive, and is Bypassed. Live network traffic continues to pass uninterrupted across the other tool, and both tools continue to be monitored by heartbeats. When heartbeat flow is restored the tool is considered Active again and is placed back Inline.

**V-Line Card: Dual Series Bypass TAP mode**
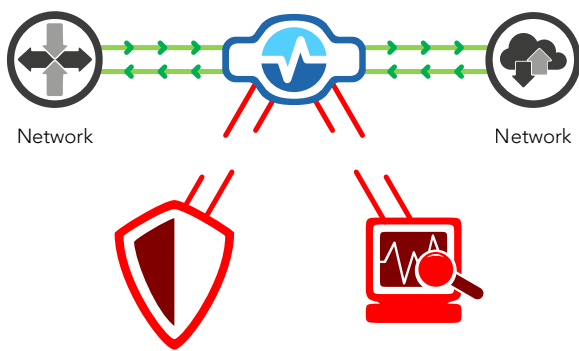
Network

Network

Inline Tool 1: InActive    Inline Tool 2: InActive

**V-Line Dual Tools, in Series**

If both Inline tools are considered InActive, the live network traffic continues to pass uninterrupted across the TAP, and the tools continue to be monitored by heartbeats. When heartbeat flow is restored the tools are considered Active again and are placed back Inline.

**V-Line Card: Egress Mode**

TAPs & Packet Brokers systems

Tool 1    Tool 2    Tool 3    Tool 4
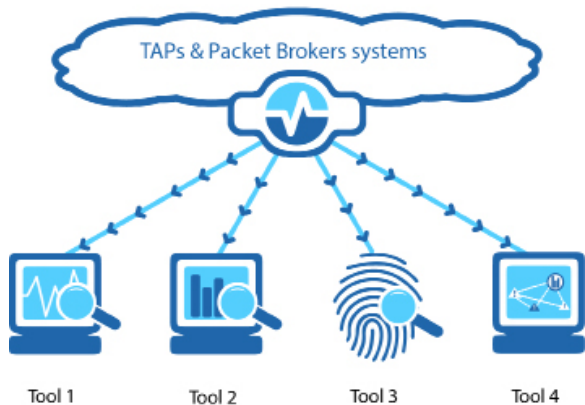
**Egress Mode**

Egress mode allows the card to be used as additional egress/monitor ports for traffic from elsewhere within the system. TAP and Bypass functions are disabled in this mode, but each front port supports optional packet slicing between 16-9216 bytes before output to the tools.

For more information about the SmartNA-XL™ Bypass system, please visit www.networkcritical.com
For quotes and inquiries, please contact sales@networkcritical.com