

Ixia SNMP Inline Probe – ISIP

Problem: Service Providers and System Integrators Cannot Always Manage Customer Premise Connectivity

System Integrators (SI) and large service providers (SP) face a significant challenge when managing connectivity to client sites when they do not control the final mile infrastructure. This occurs with many System Integrators who do not own telecommunications infrastructure and with Service Providers who have to use alternative providers (who may even be competitors) for the final mile connectivity.

This lack of control and resultant visibility prevents the SI/SP from:

- Offering proactive monitoring
- Speedily identifying the source of connectivity problems and rapidly fixing them
- Understanding traffic levels
- Offering documented evidence of conformance with agreed Service Level Agreements (SLAs)

Solution: Increase Visibility of Final Mile Connectivity and Service Assurance Parameters Using ISIP

Ixia's ISIP is a low cost, high performance device designed to be placed between a telecommunications provider copper termination point (be it a cable modem or NTU) and a customer's firewall or router. With inbuilt 'fail to wire' capabilities any power failure of the device will not impact connectivity. "Self Discovery" of IP Address and auto configuration allows ISIP to be mailed to a client site and easily installed by non-technical staff, by simply inserting into a communications link and connecting to a power source. Self discovery takes less than 2 minutes.

All communication to ISIP is via the network ports. There are no separate management interfaces. Only "trusted" source IP addresses can be used to communicate with ISIP.

Highlights

- **Differentiate your managed services vs. competition**
- **Be proactive in monitoring key customer sites** by using ISIP inbuilt heartbeats or SNMP polling
- **Increase customer satisfaction through rapidly identify faults and fixing them** by polling ISIP to determine link status
- **Offer higher speed (and higher revenue) connectivity to customers** through monitoring of traffic statistics
- **Offer SLA performance statistics** by polling traffic statistics or by using the inbuilt Hawkeye capabilities
- **Offer Tier Services to end customers**
- **No additional ports or management interfaces required** – purely inline
- **IP address self discovery and configuration** – removes the need for 'truck roll' to client site. No client site set up required
- **Full integration with Hawkeye**
- **Fully secure standards based** SNMP management
- **Inbuilt Fail to Wire** does not degrade end user reliability

ISIP has the following capabilities:

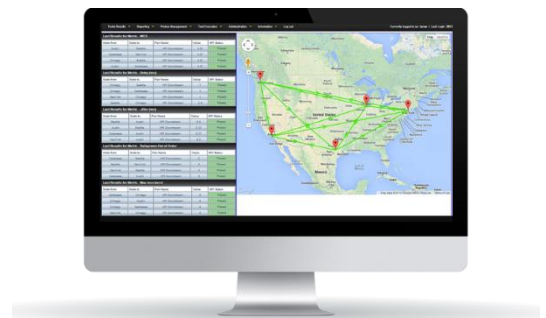
Inline Real Traffic Monitoring

- **Real time link status reporting** – ISIP issues SNMP heartbeats which can be used to determine status of the client connectivity. Frequency of heartbeats can be pre-configured.
- **Status changes via SNMP traps** – V2 and V3 SNMP supported for the notification of status changes.
- **Traffic statistics** – Full range of traffic statistics are available using SNMP GET commands or via the GUI.
- **Heartbeats** – ISIP issues SNMP heartbeats which can be used to determine status of the client connectivity. Frequency of heartbeats can be pre-configured.

Active Traffic Simulation and Monitoring

- Hawkeye quickly and effectively validates network performance, isolates problems, and proactively detects issues by running scheduled verification tests on any site using wireline or wireless connections. Using a combination of hardware and software agents called Performance Endpoints, Hawkeye simulates application traffic and sends key performance metrics to a central console for fast action. ISIP comes pre-provisioned with a Hawkeye End Point and provides remote site end users perspectives on network performance, empowering Service Providers and System Integrators with proactive ways to detect, diagnose, and fix issues. Measurements range from network quality to user experience and Wi-Fi monitoring, enabling administrators to improve overall network uptime and detect network performance issues before they impact end users. Easy to deploy and simple to use, Hawkeye lets IT get straight to assessing networks and applications. Key functionality includes:

- Web-based platform for multi-user access, test scheduling, data storage, and real-time analysis
- Interwork with other Hawkeye endpoints.
- Inject real traffic into the network continuously based on schedules, between nodes or in a mesh
- Verify fixes put in place in your network in real-time with Pass/Fail
- Find network or application faults quicker with interval testing throughout the day, the week, the month
- Track services and network trends proactively based on time-of-day, day-of-week of services
- Ability to “Group” Endpoints allows Service Providers/System Integrators to segment their entire customer base into Customer Groups simplifying visualization of key customer environments

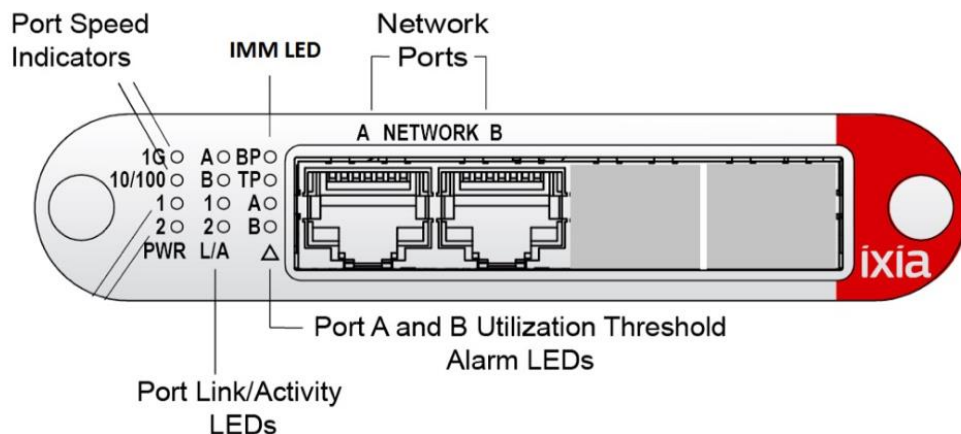


- Key Hawkeye capabilities that can be executed with the Hawkeye end points on ISIP include:
 - Speed test from site to site with advanced configuration on traffic profiling
 - Bandwidth availability or verification with TCP-based testing
 - IP network SLA verification (one-way delay, jitter, loss)
 - Unified communications tests (Skype for Business) – Microsoft Certified
 - Voice over IP calls (G711, G729...) with MOS score
 - Class of service (COS) implementation validation with oversubscription scenarios
 - IP network SLA verification (one-way delay, jitter, loss) with COS verification

- Real-time streaming verification
 - Mean opinion score (MOS) for voice
 - Media delivery index (MDI) for video streaming
- Server response time for transactional applications emulating user profile
- Voice over IP calls (G711, G729...) with MOS score – volume calls verification

ISIP Hardware Functional Details

- **Self assignment of IP addresses** – In Inline Management Mode (IMM) ISIP will discover the IP address of the client router and adopt this as its own IP address. Traffic to and from the client site router/firewall continues to flow transparently with only traffic from Trusted IP addresses acted upon by ISIP. Trusted IP addresses are defined in advance by the SI/SP. Up to 16 Trusted IP Addresses are supported.
- **Fail to Wire** – Each ISIP has its own internal relays that switch in the event of power failure. This means that a failure of the power supply feeding ISIP or the failure of an internal power supply does not impact client connectivity and hence reduce system reliability.
- **Heartbeats** – ISIP issues SNMP heartbeats which can be used to determine status of the client connectivity. Frequency of heartbeats can be pre-configured.
- **Link Fault Detect (LFD)** – An option to mirror the status of network links across the device. The status of the SP link (Network port A) is mirrored to Port B. This allows the customer site router/firewall to be aware of a network device failure.
- **Easy to Use GUI** – Easy to use GUI simplifies set up and avoids configuration errors by SI/SP staff.
- **SNMP Traps** – V2 and V3 SNMP supported for the notification of status changes.
- **CLI/SSH Supported.**
- **Traffic Statistics** – Full range of traffic statistics are available using SNMP GET commands or via the GUI.
- **Traffic Threshold Alerts** – Sends alerts if traffic passes defined thresholds



Example ISIP Screen Shots

The dashboard shows a network diagram with 'Port A' and 'Port B' connected to a central 'ISIP' device. Below the diagram is a table with the following data:

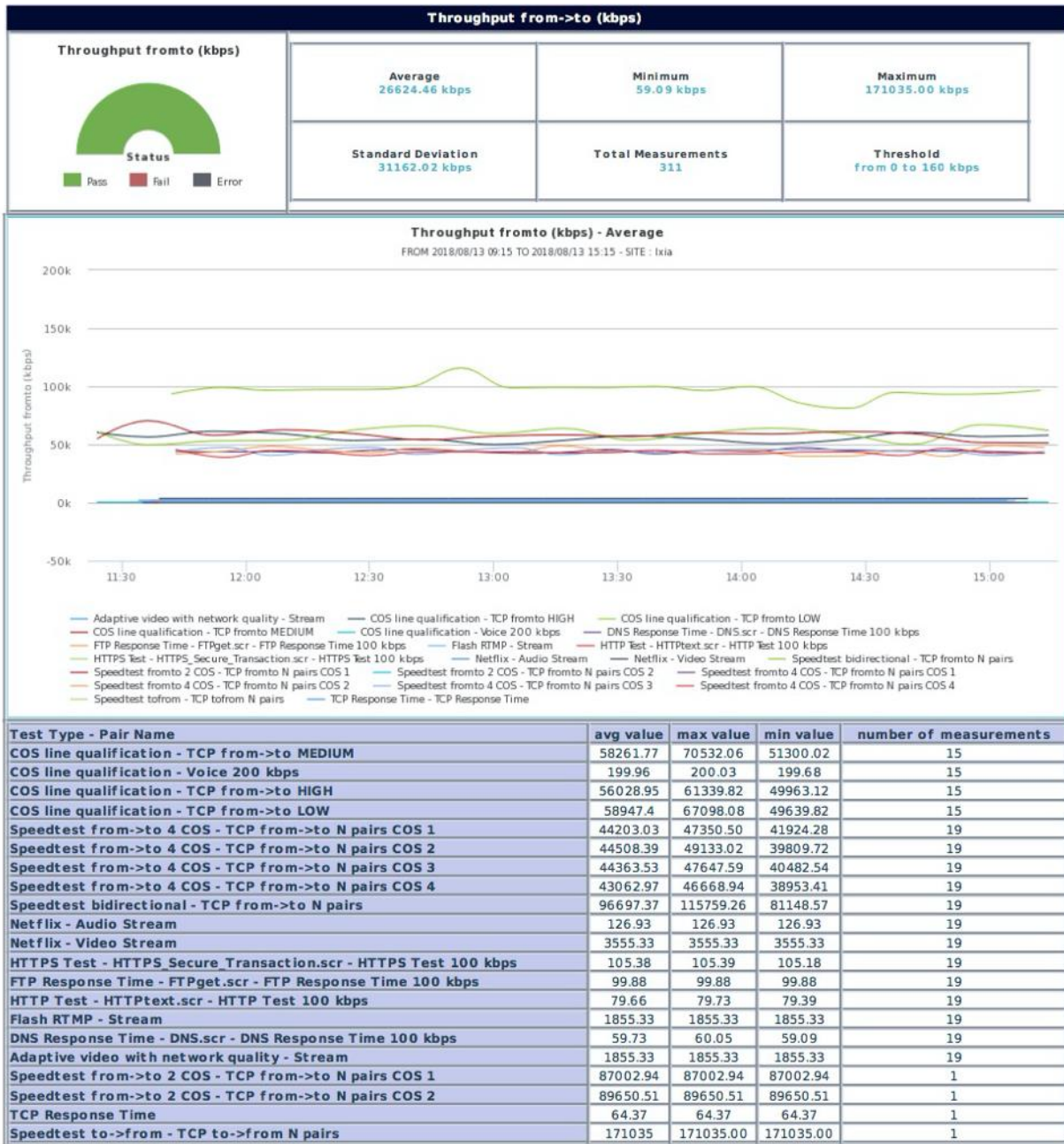
Device Information	
Model	ISIP-CU3: Inline SNMP Probe Copper
Serial Number	300015
MAC Address	00:04:5F:8C:E5:F3
IP Version	IPv4
IP Address	10.38.164.192
Date	2000-02-16 01:23:47

Dashboard view

The statistics page displays the following data:

	PORT A	PORT B
Port Peak Rate	100	0
Port Peak Time	2000-04-19 19:26:24	----- --:--:--
Reset Peak Rate	Reset	Reset
Port Current Utilization	0	0
Port Rx Total Packets	384,840	6,995
Port Rx Total Bytes	40,475,452	694,237
Port Rx Broadcast Packets	177,492	156
Port Rx CRC Errors	0	0
Port Rx Undersized Packets	0	0
Port Rx Oversized Packets	0	0
Port Rx Dropped Packets	0	0
Port Tx Total Packets	23,119	383,468
Port Tx Total Bytes	4,899,251	40,194,112
Port Tx Broadcast Packets	234	177,240
Reset Statistics	Reset	Reset

Example Traffic Statistics



Example Hawkeye Throughput Test Reports

Specifications

Operating	<p>Operating:</p> <ul style="list-style-type: none"> • Operating Temperature: 0°C to 40°C • Relative Humidity: 10% min, 95% max, non-condensing <p>Non-Operating:</p> <ul style="list-style-type: none"> • Non-Operating Storage Temperature: -10°C to 70°C • Relative Humidity: 10% min, 95% max, non-condensing
Mechanical	<ul style="list-style-type: none"> • Dimensions: 0.9" high x 9.4" deep x 4" wide • Weight: 0.73lbs (0.33kg)
Connectors	<ul style="list-style-type: none"> • Network Ports: (2) RJ45, 8-pin connectors
Power Supply	<ul style="list-style-type: none"> • AC Power Input: 100-240VAC, 47-63Hz, 0.3A@120VAC • Output: 1.5A @ 12VDC • Power Dissipation 65 BTU/Hr 19W • C13/C14 receptacles on two power 'bricks' with local power cords
Certifications	<ul style="list-style-type: none"> • Safety: UL 60950, cUL 60950, CE, CB • Emissions and Immunity: FCC, EN, ICES-003 Class A • Environmental: RoHS, WEEE, Fully IEEE 802.3 compliant
Hawkeye Key Capabilities	<ul style="list-style-type: none"> • Reporting • Graphing • Test Scheduling • Threshold alerts – via SNMP, Email or SOAP API to MySQL database • Map integration • OSS Integration • Multi-tenant capabilities via Groups • Node to Node tests including: <ul style="list-style-type: none"> ○ TCP/IP throughput (one way and bidirectional) ○ UDP throughput ○ KPIs (OWD, Jitter, MOS scores, delay variation, voice QOS, Video QOS and packet loss) ○ Simulation of NETFLIX, YOUTUBE, SKYPE4B performance ○ TCP and HTTPS response times ○ Speed tests

Ordering Information

ISIP-CU3

IXIA SNMP Inline Probe, 10/100/1000Mbps

RK-8V2

Eight-Slot Rack Mount Frame

Activation of Hawkeye Endpoint requires appropriate Hawkeye license.
See Hawkeye datasheet for more information.

Learn more at: www.keysight.com

For more information on Keysight Technologies' products, applications or services, please contact your local Keysight office. The complete list is available at: www.keysight.com/find/contactus

