

Hawkeye – Active Network Monitoring Platform

Problem: Preventing Network Problems and Ensuring a Consistent User Experience

Network services are critical to an organization's survival in today's highly IT-centric and distributed environments. However, bottlenecks, latency, Wi-Fi issues, and other hard-to-pinpoint network issues can seriously compromise a company's network performance, business operations, and brand reputation.

Whether you are operating your own network or a service provider delivering network services, having a reliable way to continuously verify network performance and digital experience of your end users is key to ensure business continuity.

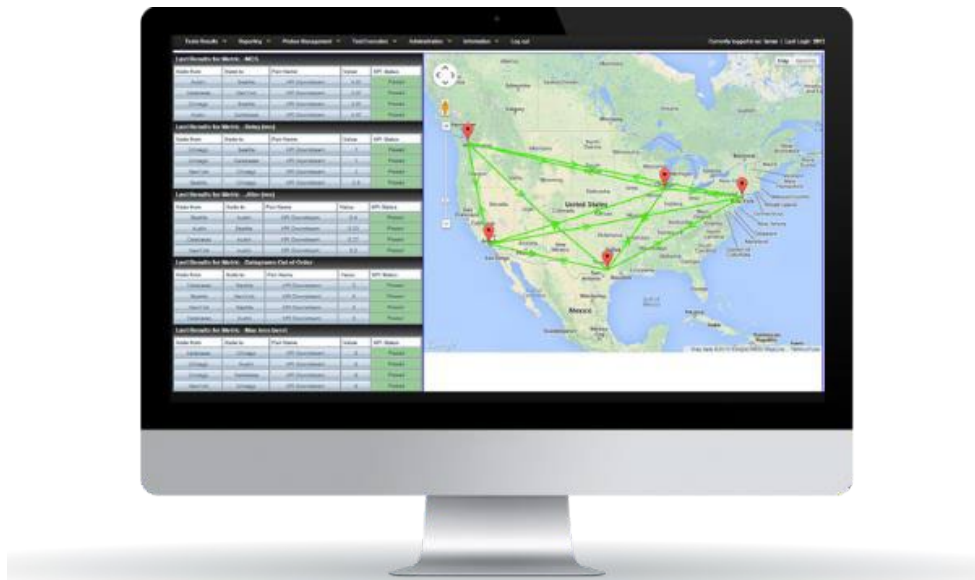
Solution: Proactively Monitor Network Performance with Active Monitoring

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. The agents provide both remote-site end-user perspectives on network performance — offering network managers a proactive way to detect, diagnose, and fix issues. Measurements range from network quality to user experience, enabling network operators to improve overall uptime and detect network performance issues before they impact end users.

Easy to deploy and simple to use, Hawkeye helps IT ensure peak network performance with proactive insight.

Highlights




- Get superior visibility into your live networks with Hawkeye's advanced network and application testing technology.
- Save IT staff time by leveraging industry-leading library with hundreds of application tests that enable assessment of network throughput, class of service, unified communications, Wi-Fi connectivity tests, and much more.
- Understand the performance of your entire network and services with cost-effective active probe distribution that delivers expansive network coverage.
- Greenlight your service with pre-launch assessments by emulating real application traffic up to line rate for any network scenario over wired and wireless devices to see how it performs.
- Be a troubleshooting wonder by firing off quick validation tests with clear demarcation points and advanced Wi-Fi expert tools to find network and application issues almost



Key Features

- Web-based platform for multi-user access, test scheduling, data storage, and real-time analysis.
- Deploy endpoints with turnkey hardware or software endpoints.
- Verify your virtual infrastructure with software and virtual endpoints.
- Generate synthetic monitoring traffic on up to 10G links.
- Verify, monitor, and diagnose your user experience on wireline and wireless network.
- Take control of your last mile deliveries.
- Verify fixes put in place in your network in real-time with pass / fail metrics.
- Proactively detect network or application faults quicker with continuous interval testing throughout the days/weeks/months.
- Leverage machine learning to quickly pinpoint outliers and prioritize fixes.

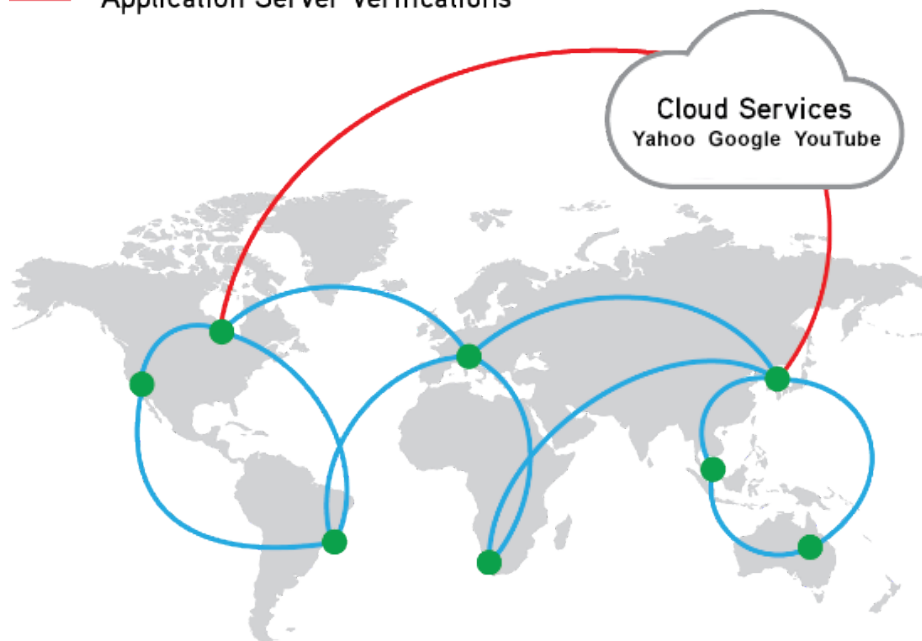
Hawkeye solution components

Hawkeye Console			<ul style="list-style-type: none"> • Provided as a virtual appliance (Linux Operating System) • Web-based, deployed in NOC, data center, or cloud • North-bound interfaces, APIs for easy integration
Hardware Endpoints			<ul style="list-style-type: none"> • Completely turnkey, lightweight, portable • Autodiscovery and registration, automatic upgrades • Up to 10G wireline and Wi-Fi 6 connectivity
Software Endpoints	<p>Windows Linux Max OS</p>	<p>VM Container Android</p>	<ul style="list-style-type: none"> • Low-footprint software, load into any device • Fully compatible with virtual environments • Ethernet or Wi-Fi and mobile

Deploy Hawkeye Solution

- Deploy Hawkeye on premise web server in central location (NOC, data center, etc.)
- Strategically deploy software and hardware endpoints to cost-effectively reach any network location:
 - Customer premises
 - Mobile devices – Wi-Fi or Cellular
 - Remote sites and head offices
 - Network aggregation points (PEs)
 - Core network, MPLS routers
 - Data centers
 - Virtual machines and servers
 - In public cloud locations (Amazon, Azure...)

- Site to Site Service Probing
- Application Server Verifications



Plan and Design Your Monitoring Capabilities

- Define locations network performance requirements toward data centers, private or public cloud, software-as-a-service
- Define synthetic monitoring scenarios (IP transport performance, Speed test & throughput tests, web server performance, Voice/Video, Teams and Office 365, etc.)
- Build large topology test (full mesh) with one click










	HARDWARE			VIRTUAL		SOFTWARE
	Vision E1S	XR3000	IxProbe	VM	Container	Software
					 	  
CORE CAPABILITIES						
Network Monitoring	✓	✓	✓	✓	✓	✓
Application & Web Monitoring	✓	✓	✓	✓	✓	✓
Cloud Monitoring	✓	✓	✓	✓	✓	
Inline Monitoring			✓			
Wi-Fi Monitoring		✓				✓
Packet broker functionalities	✓					
SPECIFICATION DETAILS						
	4*10G (SFP+), 6*1G BASE-T, 2*1G BASE-T for management	6*GE, 2*10G (SFP+), Wi-Fi 2,4Ghz, 5Ghz, AC, Wifi 6	2*1G	OVA, QCOW, AWS, Azure, Ethernet and virtual interfaces	Ethernet, Virtual	

Figure 1. Hawkeye endpoints

Select Test Types Among Pre-Calibrated Tests in Hawkeye Library

Hawkeye supports a variety of service level agreement (SLA) and quality of experience (QoE) objectives, including:

- Speed test from site to site with advanced configuration on traffic profiling
- Advanced Bandwidth availability or verification with bit blasting or TCP-based testing
- Class of service (COS) implementation validation with oversubscription scenarios
- IP network SLA verification (one-way delay, jitter, loss)
- Unified communications tests (Teams, Zoom)
- Office 365 applications
- Real-time streaming verification
 - Mean opinion score (MOS) for voice – G711, G729, AMR ...
 - Media delivery index (MDI) for video streaming
- Echo tests (ICMP, TCP, UDP) and path discovery to any interface on the web
- User experience tests (downloading web pages, etc.)

- DNS response time
- Netflix, YouTube, and any Dash/Adaptive streaming test
- Multicast video
- Remote destination port opening verification
- Wi-Fi monitoring

Create Target Thresholds for Different Tests

- Adjust applications, test variables, and thresholds based on trial data to match expectations of the network and its performance
- Auto-learn baseline thresholds based on machine learning algorithms
- Thresholds are the baseline to decide if tests are passing or failing

Leverage Path Discovery for Troubleshooting

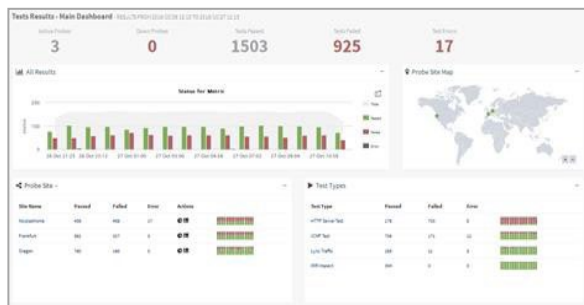
- Advanced Topology discovery from Keysight endpoints to any remote location
- Hop-by-hop discovery
- Path discovered based on specific application settings
- Powerful and intuitive result display
- Quick troubleshooting tools – identify nodes with loss or long delay
- Geolocation on each identified public node



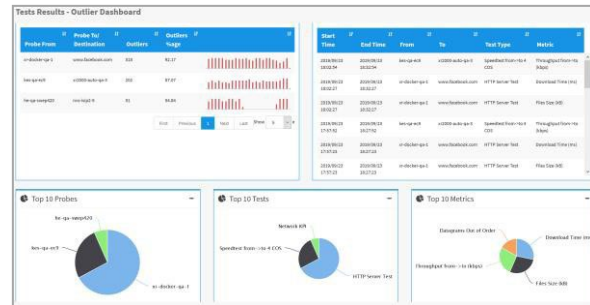
Path discovery

Analyze Results

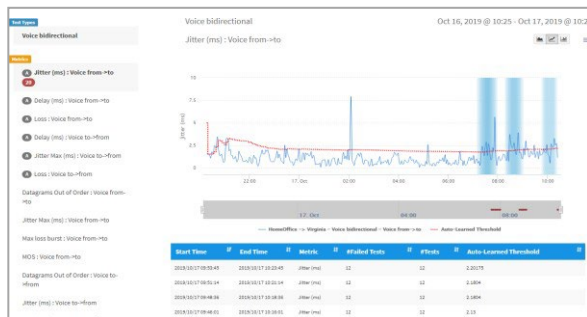
- Use different result levels and granularity to get quick and efficient results and understanding
- Ensure every team member can get to required data with simple pass/fail metrics and detailed test reports
- See results in real time in geographic dashboards
- Quickly spot network problems with outlier dashboard
- Run tests and look at single instance results or group of tests results
- Run trend reports on historical data and analyze network behaviors
- Export and send reports via email to share results between teams
- Activate alarms on critical paths
- Get notified by email, SNMP traps, customized notifications
- Reporting engine creates reports and dashboards based on the results stored in the database
- Schedule daily automatic reports to follow critical networks
- Receive automatic emails with comprehensive reports



Main dashboard



Outliers dashboard



Time series analytics

Ordering Information

Hardware

XR3000-AC

Keysight XR3000 Active Hardware Endpoint; integrated hardware endpoint for Hawkeye or IxChariot; AC unit. requires adjunct or previous purchase Hawkeye or IxChariot Licenses

IXPR-CU3

Keysight IxProbe Copper - 10/100/1000M. 1G Intelligent in-line probe with auto speed negotiation, CLI, Web GUI or SNMP management, and Hawkeye endpoint software. (2) front facing in-line RJ45 network ports. Managed in band via network link IP adoption or via rear management port. Includes: (1) RJ45 Cat5 cable, (1) wall mount clip, and (1) power supply and 2m power cord. Wall, desktop, or rack mountable. Pre-loaded Hawkeye Endpoint software requires license and activation via Hawkeye server.

SYSE1S-AC

Keysight Vision E1S System AC Chassis with fixed (4) 10G SFP+ ports and (6) 1G RJ-45 ports; Contains two redundant AC power supplies and integrated redundant fan units. Includes (1) license for NetStack, PacketStack, AppStack and (3) user seat license for central management with Hawkeye. Seats are not additive (max 3 users per Hawkeye server). Synthetic monitoring is not included. Optional licenses available for additional user seat licenses and synthetic monitoring.

Software licenses

920-2401

Hawkeye, 10 Endpoint Solution Bundle Includes: Hawkeye central management system, 10 endpoint (sw or hw) registration & use, 30 pairs node to node test license, no real services tests, and 1 user seat license

920-2402

Hawkeye, 25 Endpoint Solution Bundle Includes: Hawkeye central management system, 25 endpoint (sw or hw) registration & use, 75 pairs node to node tests license, 5 concurrent real services tests (requires XR2000 or XRPI2), and 2 concurrent user seat licenses

920-2403

Hawkeye, 50 Endpoint Solution Bundle Includes: Hawkeye central management system, 50 endpoint (sw or hw) registration and use, 150 pairs node to node test license, 10 concurrent real services tests (requires XR2000 or XRPI2), and 2 concurrent user licenses

920-2404

Hawkeye, 100 Endpoint Solution Bundle Includes: Hawkeye central management system, 100 endpoint (sw or hw) registration & use, 300 pairs node to node tests license, 25 concurrent real services tests (requires XR2000 or XRPi2), and 5 concurrent user licenses

920-2405

Hawkeye, 200 Endpoint Solution Bundle Includes: Hawkeye central management, 200 endpoint (sw or hw) registration & use, 1200 pairs node to node tests license, 50 concurrent real services tests (requires XR2000 or XRPi2), and 5 concurrent user licenses

920-2406

Hawkeye, 400 Endpoint Solution Bundle Includes: Hawkeye central management system, 400 endpoint (sw or hw) registration & use, 1800 pairs node to node tests license, 100 concurrent real services tests (requires XR2000 or XRPi2), and 10 concurrent user licenses



Keysight enables innovators to push the boundaries of engineering by quickly solving design, emulation, and test challenges to create the best product experiences. Start your innovation journey at www.keysight.com.

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