Ethernet Traffic Emulators

CATALOG

KEYSIGHT

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Introduction

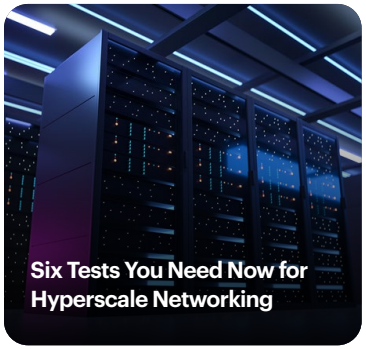
Ethernet traffic emulation — from pre-silicon validation to network deployment

Explore our comprehensive portfolio of Ethernet traffic emulation solutions built to validate networking systems from early design to full deployment at hyperscale traffic levels. Whether you are debugging pre-silicon ASICs, validating networking equipment protocol conformance, or stressing data center networks using AI workloads, Keysight emulators deliver realistic, hyperscale Layer 2 to 7 traffic across physical, virtual, and cloud environments. With a broad selection of L2/3 and L4/7 emulation software solutions, scalable hardware accelerators, and cellular traffic emulators, our comprehensive library of Ethernet traffic emulation resources will help you make informed decisions and choose the right products for your application.

AI-scale traffic emulation

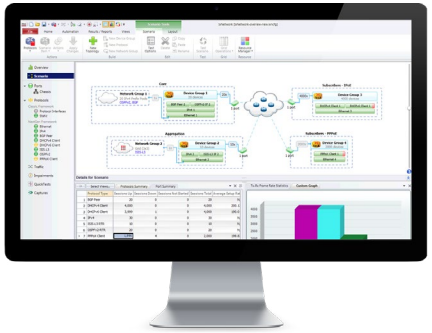
As AI workloads and cloud-native architectures reshape data center networks, realistic traffic emulation of AI workloads is critical for effective performance validation and system testing. Whether you are testing ASICs pre-silicon or benchmarking switches and networks at terabit scale, you need the right tools and test strategies to ensure performance, interoperability, and resilience.

Here are a few examples of the resources you will find to help you select the Ethernet traffic emulation solutions for you:



Protocol and Load Test L2 – 3 Emulation Software

Keysight Layer 2 to 3 protocol and load test solutions enable rigorous validation of networking technologies during ASIC development and in the design and deployment of AI-scale data centers. Designed for performance, scale, and flexibility, our L2 to 3 emulation tools support early design validation, protocol conformance, and real-world traffic emulation across physical, virtual, and cloud environments. Our Ethernet and protocol emulation software packages, including IxNetwork, IxANVL, and IxVerify, help ensure your network infrastructure performs as expected. Explore our protocol and load test portfolio to find the right solution for your application.



IxNetwork

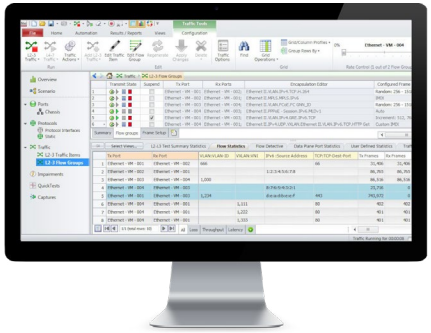
Emulates millions of devices at L2 and L3 to stress physical, virtual, and AI-native networks

Explore

IxANVL

Automated emulation of multinode networks to stress and validate L3 control protocols

Explore



IxVerify

Emulate Ethernet traffic up to 1.6T to validate pre-silicon ASIC and SoC designs in an EDA emulator

Explore

IxNetwork

Layer 2 – 3 testing for physical, virtual, and AI data center networks

Keysight IxNetwork software delivers comprehensive Layer 2 and Layer 3 network validation across physical, virtual, and cloud environments. It scales to hyperscale traffic levels with protocol-accurate emulation, including software-defined networking (SDN), virtual private networking (VPN), RoCEv2, and broadband services, supporting full line-rate encrypted and lossless AI network testing. Designed for next-generation data centers, IxNetwork enables lossless RDMA verification, supports MACsec with dynamic key rotation, and emulates congestion control for testing AI training and inference workloads. Python and REST APIs across hardware and virtual editions streamline CI / CD test automation. Select the license you need based on protocol support and subscription type. Request a quote for one of our popular configurations today.

Learn more about IxNetwork

Hyperscale ready

Emulate millions of flows and routes across physical chassis, virtual machines, and cloud platforms at full line rate to support large-scale, high-throughput testing.

Realistic traffic emulation

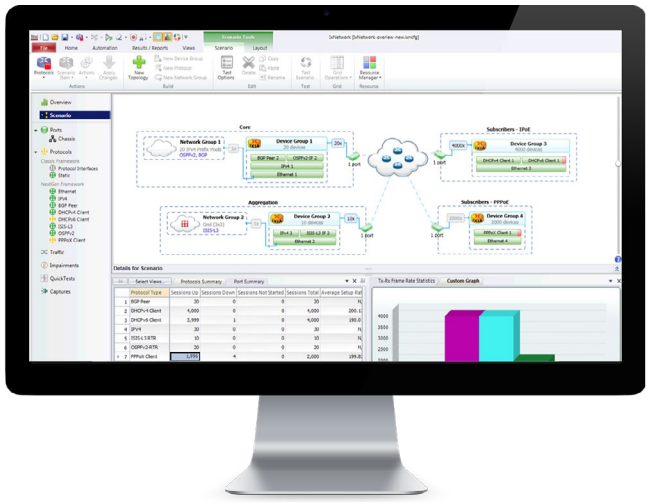
Generate realistic Layer 2 to 3 network traffic, including encrypted VPNs, SDN, RoCEv2, congestion management, and AI workload patterns.

AI data center optimization

Validate lossless data center networks with zero-packet-loss RDMA, MACsec encryption, dynamic key rotation, and AI workload congestion scenarios.

Automation ready

Leverage consistent APIs and user interfaces for automated test execution across hardware and virtual environments, accelerating CI / CD workflows.



Protocol support	**IPv4/IPv6 routing, switching (Layer 2), timing, encryption, MPLS and VPN, AVB, TSN, MPLS, Multicast VPN, carrier Ethernet, data center Ethernet, broadband / authentication, SDN, RDMA, RoCEv2**
License types	**Perpetual, subscription — 1 year**

View popular configurations

IxANVL

Automated Layer 3 protocol testing across standards, stacks, and vendors

Keysight IxANVL software delivers automated, standards-based protocol conformance and interoperability testing with minimal hardware requirements. Designed for multilayer protocol qualification, it emulates large multinode Layer 2 and Layer 3 environments to validate devices under real-world network conditions. IxANVL supports fast automation, flexible scripting, and an intuitive interface, enabling efficient regression testing and new stack qualification for Ethernet, IP, routing, MPLS, VPN, and more. Easily extend the platform with new protocols and test suites as standards evolve, optimizing your development workflow and accelerating time to market. Choose a license based on the protocol support and license subscription type required. Request a quote for one of our popular configurations today.

Learn more about IxANVL

Multinode emulation

Simulate complex Layer 2 and Layer 3 multinode networks and L3 control protocols, enabling L3 protocol validation and performance analysis under realistic conditions.

Protocol support

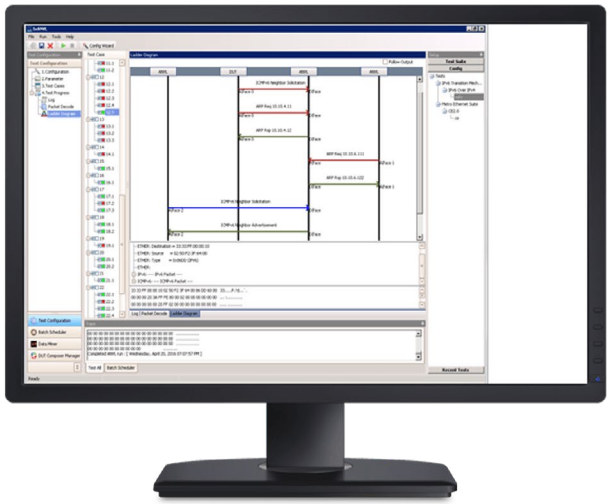
Test comprehensive protocols, including IPv4 / IPv6 routing, bridging, Multiprotocol Label Switching, virtual private networks, TCP / IP, carrier Ethernet, and automotive Ethernet.

Software-based solution

Run powerful, automated conformance testing on standard PCs with supported Ethernet interface cards, no chassis or specialized hardware needed.

Adaptable platform

Easily add protocols, interfaces, and test suites as industry standards evolve; automate workflows using scripting and a user-friendly GUI.



Protocol support	**Automotive — IPv4, automotive — IPv6, segment routing, IPv4, IPv4 routing, IPv6 routing,TCP / UDP, IPSecv4, IPv6, PPP, MPLS, carrier Ethernet, SDN, bridging, ISIS-SRv6, binary framework, source framework, automotive IPv4 / IPv6 binary, automotive TC8 L2 binary, DHCPv6 client**
License options	**Perpetual, subscription**

View popular configurations

IxVerify

Purpose-built Ethernet emulation for pre-silicon ASIC verification

Keysight IxVerify delivers fast, deterministic emulation of large-scale Ethernet network traffic to validate routing and switching ASICs before hardware is available. Built for pre-silicon and early bring-up environments, IxVerify integrates into simulation and hardware emulation platforms to verify packet forwarding, buffer behavior, protocol compliance, and control-plane logic under realistic, high-scale traffic conditions. This flexible, virtual test solution empowers chip architects and designers to identify functional and performance issues earlier, accelerating tapeout schedules and reducing costly silicon respins. Choose a license based on your required interfaces, protocol support, and design software emulation. Request a quote for one of our popular configurations today.

Learn more about IxVerify

Early design verification

Emulate Ethernet traffic to verify routing, switching, and buffering logic in RTL and gate-level ASIC designs.

Workflow integration

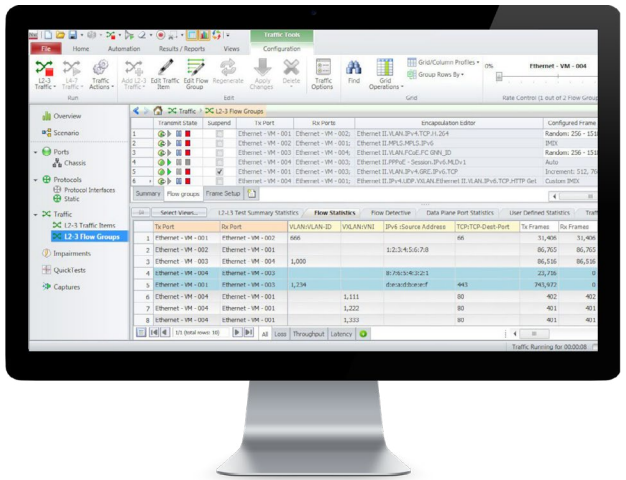
Integrates with simulation and emulation platforms supporting Universal Verification Methodology automation and continuous regression testing.

Complex traffic emulation

Model congestion, multicast, and flow control to evaluate ASIC behavior under realistic network conditions.

Full-stack tests

Verify Layer 2 and 3 control and data plane logic, including protocol compliance, forwarding accuracy, and congestion management algorithms.



Number of interfaces	**20 to unlimited**
Protocol support	**Ethernet, MACsec, PTP / gPTP, TSN**
EDA emulators supported	**Synopsys Emulator, Cadence Emulator, Siemens Emulator**
License options	**Subscription — 1 year**

View popular configurations

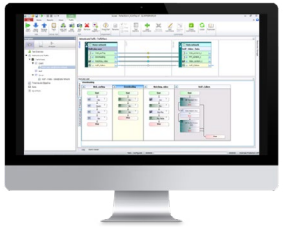
Protocol and Load Test L4 – 7 Emulation Software

Keysight L4 / L7 application and network test solutions help you validate the performance, resilience, and user experience of services running across network infrastructure. Keysight AI Data Center Builder delivers enhanced AI workload emulation that reveals the true performance of AI data center environments when tested with specific AI training models and parameters. Use Keysight IxLoad for high-scale, stateful traffic to stress firewalls, VPNs, and application delivery controllers (ADCs). Keysight IxChariot provides lightweight, endpoint-based application emulation with KPI measurements for packet loss, jitter, delay, MOS, and video performance, used extensively in testing SD-WAN and wireless networks. For full topological validation, Keysight Fabric Emulator simulates entire Ethernet networks with fine-grain control. Keysight Elastic Network Generator provides a software engine with an open, industry-standard API for creating complex emulated traffic scenarios that can be deployed on Keysight hardware or containerized software agents. Select the tool that matches your test environment, traffic profile, and validation goals.

AI Data Center Builder

Emulate AI training workloads so you can optimize AI data center performance and reliability

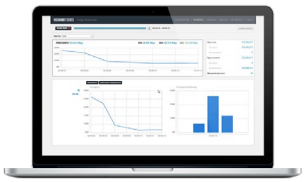
Explore



IxLoad

Application and security performance testing for on-premises and cloud networks

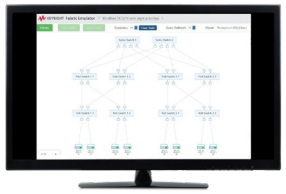
Explore



IxChariot

Endpoint-based voice, video, and data benchmarking for preproduction and production networks

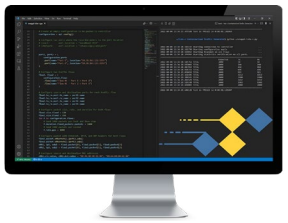
Explore



Fabric Emulator

Realistically emulate data center ethernet networks on a single hardware appliance

Explore



Elastic Network Generator

Traffic generation system designed for CI / CD development environments

Explore

Keysight AI Data Center Builder

Accelerate design and deployment of AI network infrastructure

Keysight AI (KAI) Data Center Builder is an emulation solution that helps you plan and validate your AI infrastructure before you deploy it. Model network architectures, simulate realistic workloads, and test throughput and congestion-handling scenarios across compute nodes, switches, and interconnects. KAI Data Center Builder gives you visibility into system-level performance, enabling smarter design choices to maximize efficiency and reliability. Whether you are validating new topologies or evaluating network upgrades, KAI Data Center Builder helps you do it faster, at lower risk, and with greater insight. Select a model bundled with a hardware accelerator, or choose a software-only option. Request a quote for one of our popular configurations today.

Learn more about AI data center emulation solutions

Workload emulation

Simulate AI training and inference traffic patterns to evaluate how your network handles realistic, bursty workloads across GPUs, switches, and interconnects.

Performance benchmarking

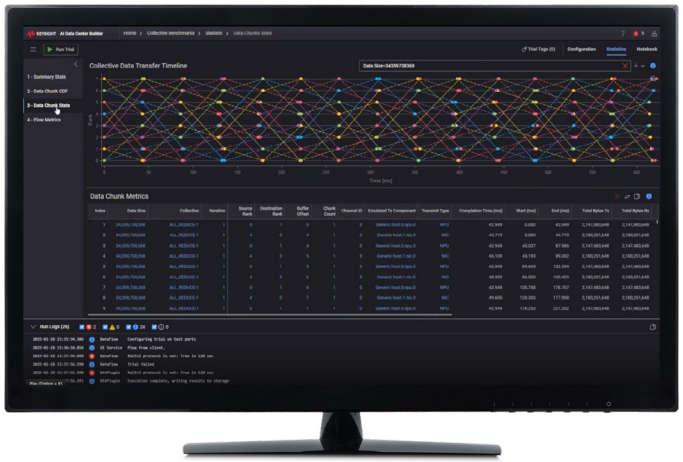
Run system-level benchmarks to assess the impact of AI model parameters, network parameters, and their interactions at scale.

Data flow visualization

Analyze tail latency, identify bottlenecks, and learn how topology and component decisions impact performance across the entire system.

Network optimization

Identify design flaws early to reduce the number of physical test iterations, accelerating validation and reducing time to deployment.



Protocol support	**RDMA, RoCEv2**
Collective operations supported	**AllReduce, AllGather, ReduceScatter, AlltoAll, broadcast, gather, unidirectional ring, bidirectional ring, halving-doubling AllReduce, Parallel, and PXN AlltoAll**
Compatible hardware	**AresONE-M, AresONE-S**

View popular configurations

IxLoad

Application-layer testing for multiplay, security, and cloud networks

Keysight IxLoad validates Layer 4 to 7 application and security performance across physical, virtual, and cloud-native environments. It emulates voice, video, and data traffic, encrypted traffic, and cyberattack scenarios at scale, enabling rigorous testing of firewalls, ADCs, and load balancers. A virtual edition enables scalable testing without requiring hardware endpoints, while APIs enable CI / CD integration for automated release testing. When hyperscale loads are required, hardware accelerators deliver this scale in a compact hardware footprint. Both virtual and hardware-accelerated versions share a unified software architecture, enabling asset reuse across multiple lab or production environments. Select your IxLoad license based on your protocol support needs. Request a quote for one of our popular configurations today.

Learn more about IxLoad

Multiservice user emulation

Simulate millions of users running voice, video, messaging, and encrypted traffic, mirroring real-world usage across access, edge, and cloud networks.

Full-stack security validation

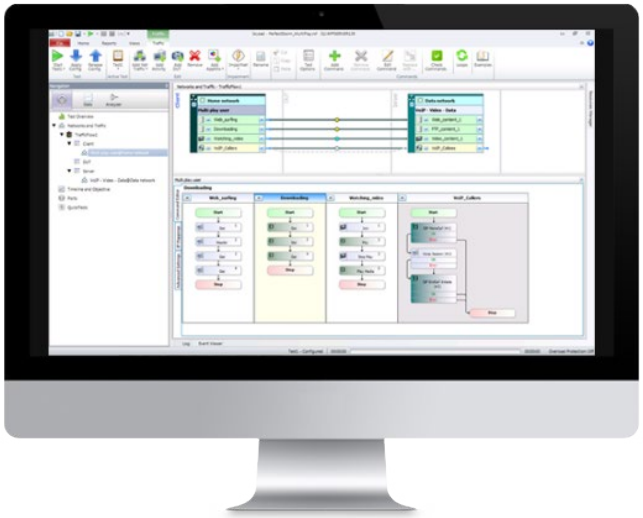
Validate firewalls, ADCs, and load balancers with realistic application mixes, encrypted sessions, and negative / malformed traffic.

High-volume workloads

Deliver high-scale Layer 4 to Layer 7 traffic with precise session control to validate hyperscale data centers and cloud-native infrastructure performance.

Unified test architecture

Enable consistent asset deployment and automation across hardware, virtual machines, and cloud platforms for agile, scalable testing.



Protocol support	**Tier 1 — data protocols** **Tier 2 — data and storage protocols** **Tier 3 — data, storage, voice, video, and security protocols**
License options	**Perpetual, subscription — 1 year**

View popular configurations

IxChariot

Endpoint-based voice, video, and data benchmarking for preproduction and production networks

Keysight IxChariot is a lightweight, software-based solution for validating application performance across wired, wireless, and cloud networks. IxChariot is installed on endpoints. It emulates applications at scale to measure throughput, latency, jitter, packet loss, and quality of experience for voice, video, and data applications. With a rich library of pre-built application scripts, IxChariot helps assess the readiness and reliability of networks and client-server systems in lab or production environments. Deploy it across distributed endpoints to test from virtually any location and scale performance assessments across multiple sites and user groups. Select the configuration that aligns with your deployment environment and testing scope. Request a quote for one of our popular configurations today.

Learn more about IxChariot

Application traffic emulation

Simulates real application flows, such as HTTP, VoIP, video, and file transfer, using a comprehensive library of pre-built test scripts.

Distributed endpoint agents

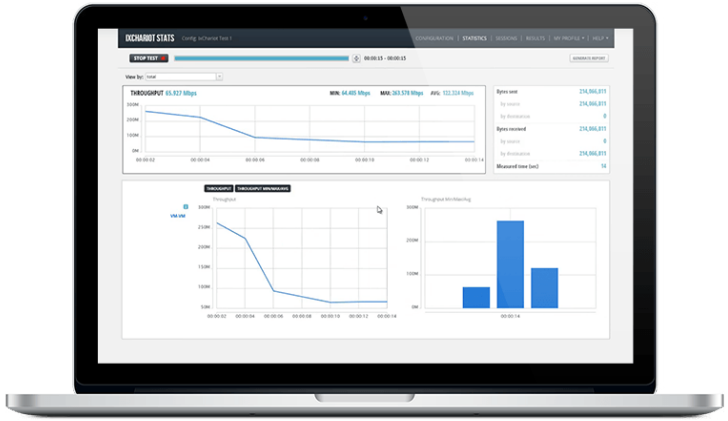
Deploy endpoint agents across laptops, mobile devices, servers, and virtual machines to test performance anywhere in the network, without specialized hardware.

Enterprise scalability

Assess network quality with simultaneous connections across campuses, branches, and cloud environments to ensure a consistent end-user experience.

Live performance testing

Measure real-time user experience in production or pre-deployment without disrupting operations.



Device pairs	**1 to 500**
Protocol support	**TCP, UDP, RTP, IPv4, IPv6, IP multicast, VoIP, video**
License options	**Perpetual**

View popular configurations

Fabric Emulator

Realistically emulate data center Ethernet networks on a single hardware appliance

Keysight Fabric Emulator is a software-defined platform that emulates complex, multi-switch Ethernet-based data center topologies. It enables engineers to validate adjacent switches, network interface cards (NICs), data processing units (DPUs), and high-performance interconnects for network infrastructure during design, validation, and pre-deployment stages. It emulates realistic traffic patterns, congestion, and failure conditions to help chipmakers, hyperscale cloud providers, and system integrators reduce risk, accelerate development, and validate large-scale network performance in the lab. Select a model based on the number of concurrent hardware switches you need to achieve your desired scale, typically one or two. Request a quote for one of our popular configurations today.

Learn more about our Fabric Emulator

Realistic topology emulation

Emulate entire two- or three-tier Clos network topologies with programmable oversubscription, Layer 2 switching, Layer 3 routing, and configurable port speeds.

Configurable data plane

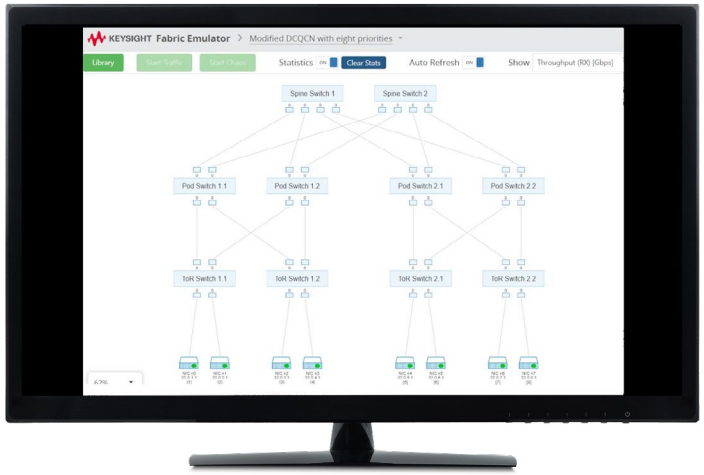
Test realistic load balancing and routing using five-tuple or three-tuple hashing, with configurable quality-of-service and explicit congestion notification.

Impairment testing

Simulate congestion, packet drops, and background load up to 1 Tbps to observe system behavior under failure and stress conditions.

Scenario experimentation

Analyze network response to congestion and failures using controlled background traffic, packet loss simulation, and multitier chaos experiments.



View popular configurations

Elastic Network Generator

Traffic generation system designed for CI / CD development environments

Keysight Elastic Network Generator is a software-defined platform that creates scalable, time-varying traffic flows and protocol sessions to validate infrastructure performance under realistic and evolving conditions. Designed for continuous integration workflows, the platform enables engineers to evaluate routing behavior, scaling limits, and multivendor interoperability in both physical and virtualized topologies, using the industry-standard Open Traffic Generator API. It integrates with IxNetwork and Keysight hardware accelerators to deliver comprehensive, full-stack validation from protocol layers through application workloads. Select a license bundle based on your test requirements and the number of seats required for your lab environment. Request a quote for one of our popular configurations today.

Learn more about our Elastic Network Generator

Dynamic load testing

Generate variable traffic, topologies, and protocols to test infrastructure scalability, routing behavior, and performance under changing network loads.

Network protocol validation

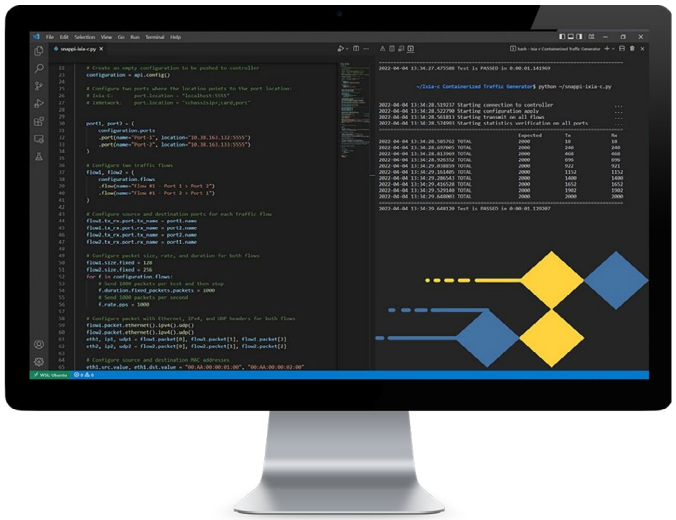
Re-create complex traffic profiles and path diversity to assess performance, fault recovery, and routing efficiency across multivendor environments.

Software-defined emulation

Run on common, off-the-shelf hardware, in virtualized environments, or on cloud platforms with API control for flexible, scalable, real-time network condition emulation.

Test ecosystem integration

Combine with IxNetwork and Keysight hardware accelerators for end-to-end testing from protocol layers through application-level workload performance.



Number of concurrent users	**1 to 16**
Emulated interfaces	**IPv4 (ARP / PING reply), IPv6 (NDP / PING reply)**
Emulated device routing	**BGPv4, BGPv6, ISISv4, ISISv6 (L1 and L2), RSVP P2P LSPs**
Traffic engines supported	**Docker container, UHD400T white box switch, Keysight IxOS-based hardware accelerators**
License options	**Subscription — 1 year**

View popular configurations

Hardware Accelerators for Protocol and Load Test

Keysight hardware accelerators for protocol and load test enable the validation of high-speed Ethernet networks used in data centers. From benchtop traffic generators with deep analysis of Ethernet bit-error rate and forward error correction (FEC) to hyperscale traffic generators, these systems support full Layer 1 to 7 testing from 1GE to 1.6T network speeds. Emulate AI workloads, validate 800GE and 1.6T interconnects, emulate network congestion, and perform standards-compliant conformance tests, all with scalable, lab-optimized hardware. Choose a platform based on your required port count, interface speed, form factor, and protocol support. Use a metronome timing system to keep multiple test hardware in sync. Explore our broad portfolio, from fixed-function appliances to modular chassis systems, to find the right solution for Ethernet validation, artificial Intelligence / machine learning (AI / ML) networking, and synchronization test at scale.

	AresOne	Interconnect network performance test	Novus ONE PLUS	Ultra-high density	Multirate test systems	Novus modules	CloudStorm
Ports	**2 to 16**	**2 to 4**	**4 to 16**	**12 to 32**	**2 to 4**	**4 to 32**	**2 to 8**
Interface speed (range)	**10GE to 800GE**	**100GE to 1600GE**	**100 MbE to 10GE**	**10GE to 400GE**	**50GE to 800GE**	**100 MbE to 100GE**	**10GE to 100GE**
Interface	**OSFP800, QSFP-DD800, QSFP-DD, OSFP**	**OSFP800, OSFP1600**	**SFP+**	**QSFP-DD, QSFP-DD800, QSFP28, QSFP+, SFP28**	**OSFP800, coaxial, QSFP-DD800, QSFP-DD**	**QSFP28, SFP+**	**QSFP28, QSFP+, SFP+**
	Explore	Explore	Explore	Explore	Explore	Explore	Explore

AresONE

Scalable, high-performance Ethernet validation from 100GE to 800GE

Keysight AresONE systems provide high-density Layer 1 to 3 Ethernet test solutions for validating performance, scale, and physical-layer integrity. Supporting speeds up to 800GE, AresONE enables traffic generation and analysis across a range of development stages, from ASIC bring-up to data center deployment. These platforms combine protocol coverage with physical-layer insight, including FEC error injection and signal quality monitoring. Choose a compact 400GE model, a high-performance stress-test model, or a full 800GE validation system based on your required port count, interface, and network speed requirements. Request a quote for one of our popular configurations today.

Learn more about AresONE

Up to 800GE validation

Validate high-speed Ethernet networks with flexible fan-out options and full-rate traffic generation from 100GE to 800GE.

Layer 1 – 3 protocol stack

Test from Layer 1 through Layer 3 with clean signaling, FEC validation, and protocol-accurate traffic, including SmartNIC emulation.

Scalable, compact units

Choose from 2- to 16-port chassis options with stackable architecture and field upgrades to meet evolving lab and production needs.

FEC-aware testing

Built-in FEC error injection and receiver insight tools help validate FEC logic and analyze link robustness under real-world conditions.

Ports	**2 to 16**
Interface speed modes	**800GE, 400GE, 200GE, 100GE, 50GE, 25GE, 10GE**
Interface	**OSFP800, QSFP-DD800, QSFP-DD, OSFP**

View popular configurations

Interconnect and Network Performance Test

Test interconnects and emulate traffic up to 1.6T per port

Keysight interconnect and network performance testers deliver ultra-high-speed traffic generation for validating the bandwidth, latency, and stability of copper and optical interconnects in AI clusters and data center networks. Available in 800GE and 1600GE models, these testers emulate realistic traffic profiles and congestion control protocols to characterize the performance of switches, cables, and accelerators in AI / ML environments, with detailed metrics from PHY and link-layer error correction algorithms. With 1.6T support in both benchtop and rack-mount form factors, these systems give network equipment developers and data center operators the insight needed to optimize interconnects for AI workload processing. Request a quote for one of our popular configurations today.

Learn more about interconnect and network performance testers

1.6T traffic generation

Test next-gen AI network components, interconnects, and cables at 800GE and 1600GE line rates, including FEC and bit error rate (BER) analysis.

AI training emulation

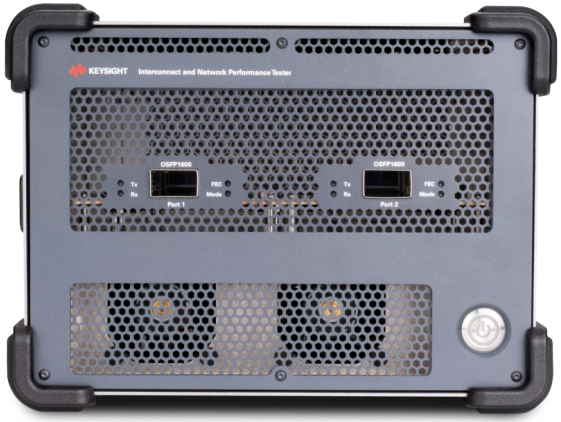
Emulate bursty, realistic data flows that reflect AI training and inference workloads across accelerators and interconnects.

Congestion analysis

Measure switch behavior, link jitter, queue depth, and latency under realistic, high-scale traffic scenarios.

Flexible form factor

Lightweight, office-quiet chassis and rack-mount options enable 1.6T silicon, optics, and cable testing anywhere.



Form factor	**Benchtop, rack mount**
Ports	**2 to 4**
Interface speed modes	**1600GE, 800GE, 400GE, 200GE, 100GE**
Interface	**OSFP800, OSFP1600**

View popular configurations

Novus ONE PLUS

Compact, all-in-one Ethernet testing for L2 – L7 validation

Keysight Novus ONE PLUS systems combine high-performance Layer 2 to 7 traffic generation and analysis in a fixed, all-in-one chassis for validating Ethernet devices and network infrastructure with fewer configuration steps. Built for streamlined setup and high throughput, Novus ONE PLUS delivers comprehensive testing of switching, routing, and application-layer performance, all from a compact, standalone platform. Novus ONE PLUS features predefined high-density port counts in a single enclosure for rapid deployment, turnkey labs, and efficient test coverage in QA or production environments. If custom port configurations are required, consider the XGS chassis paired with Novus modular generators, which allow for custom port configurations across multiple test modules. Request a quote for one of our popular configurations today.

Learn more about Novus ONE PLUS

Fixed, high-density chassis

Each system provides a complete, self-contained test bed with up to 16 ports in a single chassis, no modules or add-ons required.

Layer 2 – 7 test capabilities

Emulate control plane protocols, generate realistic application traffic, and validate inline performance for switches, routers, and security appliances.

Simplified deployment

Streamline setup with preconfigured port layouts and a unified software interface, compatible with test automation and software-driven validation workflows.

Enterprise scalability

Designed for repeatable, large-scale testing with minimal setup overhead for high-throughput lab environments.

Form factor	**Appliance**
Ports	**4 to 16**
Interface speed modes	**10GE, 5GE, 2.5GE, 1GE, 100 MbE**
Interface	**SFP+**

View popular configurations

Ultra-High Density

Space-efficient Ethernet network test appliances

Keysight ultra-high-density traffic emulator platforms deliver purpose-built Ethernet validation at scale, supporting up to 32 ports of 100GE traffic generation or 16 ports of 400GE generation. Designed for space-constrained, high-capacity environments, they combine Layer 1 to 3 traffic emulation, per-port statistics, and automation-ready APIs to accelerate system verification. Whether validating open networking devices or large-scale data center networks, these solutions enable precise and repeatable testing in fast-evolving network deployments. Choose a model based on the number of ports, interface speed, and interface type you need. Request a quote for one of our popular configurations today.

Learn more about ultra-high-density emulators

Compact port design

Maximize rack efficiency with 32×100GE in 1U, 16×400GE in 2U, or 12x100GE in a fixed chassis for a dense, power-efficient test setup.

Independent control

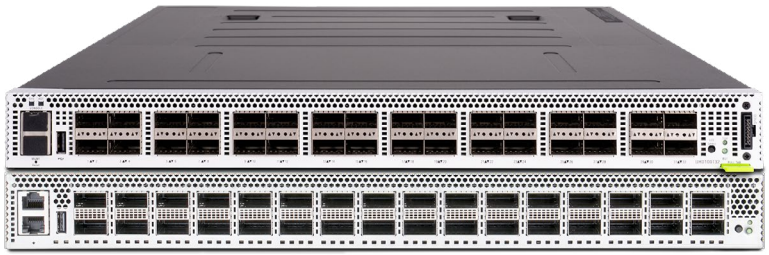
Separate control and test planes to simplify automation, reduce host system load, and streamline scaling in large-scale test environments.

High-density emulation

Deliver full line-rate traffic across 100GE and 400GE ports, enabling high-density testing of open-networking and large-scale networks.

Network timing accuracy

Measure network latency precisely under load with nanosecond accuracy and hardware-level compensation for reliable timing analysis.



Ports	**12 to 32**
Interface speed modes	**400GE, 200GE, 100GE, 50GE, 40GE, 25GE, 10GE**
Interface	**QSFP-DD, QSFP-DD800, QSFP28, QSFP+, SFP28**

View popular configurations

Multirate Test Systems

Versatile FEC and BERT test platforms for 800GE interconnect validation

Keysight multirate test systems provide high-performance, lane-accurate Ethernet validation from 50GE through 800GE in a compact, lab-friendly footprint. Combining pulse amplitude modulation (PAM4) BER analysis, real-time FEC analysis, and Layer 1 to 2 traffic generation, these systems enable testing across multiple speeds and interfaces without recabling or manual lane remapping. Multirate platforms help research and development and production test engineers accelerate debugging, validate silicon, transceiver, and cable / retimer performance, and ensure multilane interoperability, including standards compliance when combined with an oscilloscope-based compliance suite. Choose a model by the number of ports, interface speeds, and interface types you need. Request a quote for one of our popular configurations today.

Learn more about multirate test systems

Multispeed port flexibility

Supports OSFP800, QSFP-DD, and coaxial interconnect interfaces from 50GE to 800GE, no reconfiguration required.

Real-time FEC analysis

Monitor RS-544 (KP4) FEC performance with symbol error density, burst tolerance, and lane margin to quickly identify weak links and retimer issues.

Enhanced BERT debug

Use FEC-aware bit error distribution for precise error visualization and accelerated receiver and retimer debugging without physical FEC hardware.

Lab instrument integration

Integrate with Keysight benchtop oscilloscopes for PAM4 eye, jitter analysis, and synchronized compliance testing via shared triggers.

Ports	**2 to 4**
Interface speed modes	**800GE, 400GE, 200GE, 100GE, 50GE**
Interface	**OSFP800, coaxial, QSFP-DD800, QSFP-DD**
Protocol support	**Ethernet**

View popular configurations

Metronome Timing System

Precision synchronization for multiplatform network and device testing

The Keysight metronome timing system (MTS) provides a common time, frequency, and phase reference across network test platforms. Designed to synchronize large-scale test environments, MTS supports up to 48 chassis using Metronome-STAR topology, including modular XGS systems and standalone appliances such as Keysight Novus ONE PLUS and AresONE. The system distributes synchronization from GNSS, 10 MHz, and other clock sources, delivering nanosecond accuracy across multichassis setups. Compatible with IxOS and other Keysight network test applications, MTS ensures consistent, repeatable timing for validating the real-world performance of Ethernet, time-sensitive networking, 5G, and AI data center networks. Request a quote for one of our popular configurations today.

Learn more about metronome timing systems

Scalable synchronization

Synchronize up to 48 test chassis in a single test bed, including modular XGS systems and standalone appliances like AresONE, for large-scale test environments.

Workflow integration

Integrates with Keysight network test software to support timing synchronization in traffic generation, latency measurement, and protocol conformance applications.

Precision timing reference

Achieve nanosecond accuracy in local setups and distributed configurations, with cable lengths up to 200 m supported with metronome extenders.

Flexible topologies

Choose from single-level, Metronome-STAR, or GPS-based distributed topologies, flexible architectures that scale from local labs to globally distributed test beds.

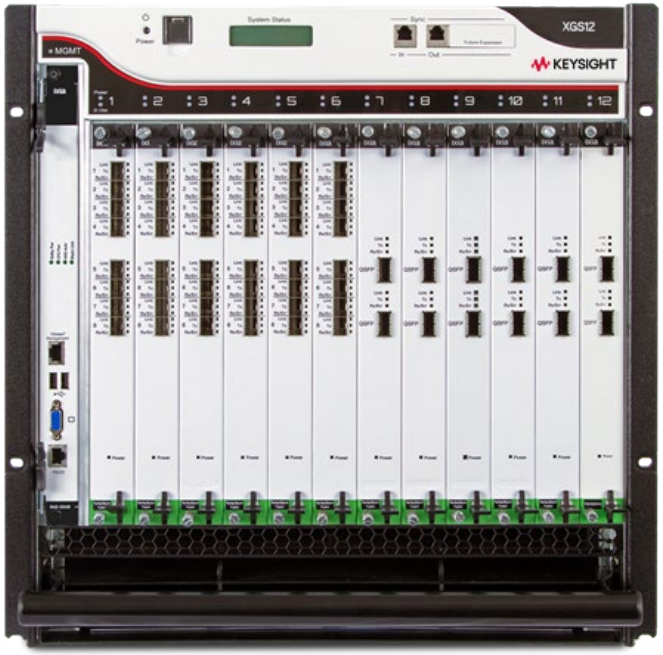
View popular configurations

XGS Chassis and Modules

Modular network test solutions for high-scale, multiuser test labs

The Keysight XGS chassis platform is designed from the ground up for dense, multiuser environments like network equipment test labs and large-scale system validation. With a full crossbar backplane, enterprise-grade power and cooling, and flexible module compatibility, XGS supports a wide mix of test workloads across 10GE to 800GE and is compatible with many Keysight emulation software solutions, including IxLoad and IxNetwork. It is designed to house up to 12 line cards in a shared system with lab-wide resource scheduling, making it ideal for teams that need to run concurrent, high-throughput test sessions. Choose your chassis based on the number of slots needed, and select from the Novus and CloudStorm modules for Ethernet load generation needs.

See catalog



Novus modules

Flexible, high-density L2 – L7 validation for evolving network environments

CloudStorm

Cloud-scale application delivery and network security test platform

Keysight Support Services

Explore the services that are right for you

Keysight Support Services can reduce your learning curve, enhance your uptime, guarantee the accuracy of your testing equipment, and provide the expertise you require, precisely when and where you need it.

Maximize your instrument uptime, quickly optimize your test measurements, and get the answers you need at our fastest available times. KeysightCare curated support plans bundle critical services with prioritized response and turnaround times. **High-performance instruments include one year of KeysightCare Assured.**

Explore support services

Calibration

Ensure your test system performs to specification and meets local and global standards.

Repair

Restore equipment to original functionality and specifications with trained technicians.

KeysightCare

Innovate at speed with curated support plans and prioritized response and turnaround times.

Education

Make measurements quickly with eLearning and in-house, instructor-led training.

Keysight Support

Get 24x7 access to service requests, case management help, and technical articles.

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.