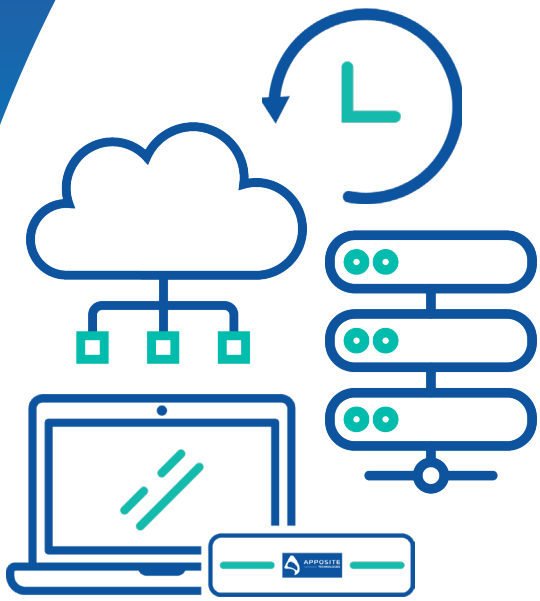
APPOSITE TECHNOLOGIES

Netropy® Network Emulators



WAN Emulation Made Easy

- ✓ Simulate bandwidth, latency & jitter, loss
- ✓ Profile live networks and import into WAN simulation
- ✓ Replay capture files as background traffic
- ✓ Change WAN impairments and view results in real time
- ✓ Configure via browser or automate with API
- ✓ Available in hardware and virtual appliances and in AWS

Apposite Technologies makes it easy to test the performance of applications over the wide-area network by offering high-precision network emulation appliances with unmatched ease-of-use.

Apposite's Netropy network emulators offer advanced capabilities to benchmark, troubleshoot, and optimize the performance of critical applications. Netropy's unique, high-performance Emulation Engine enables high-precision emulation of up to 30 separate WAN links to model complex network topologies or run multiple concurrent tests.

Each path is configured with its own bandwidth, latency, loss and other impairments. Endpoints can be assigned to the appropriate path by IP address range, VLAN, or any other packet identifier,.and application port number.

Netropy models are available with up to 4 separate Emulation Engines per unit, and capacities up to 100 Gbps. Netropy is also available in a software version, NetropyVE, that runs as a virtual machine in virtual test environments and a cloud version, NetropyCE, that is available in the AWS Marketplace.

Netropy network emulators are configured and managed through an intuitive, browser-based interface for easy operation, or through a fully RESTful API for integration with test automation tools.

FEATURES

Easy to Use: Netropy network emulators are quick to install, intuitive to configure, and easy to operate. The Netropy GUI provides the responsiveness of an application with the convenience of a standard web browser.

Multiple Links: Simulate up to 30 separate WAN links through each Emulation Engine.

Multiple Engines: Take advantage of multiple Emulation Engines in the N91, 10G2 and 10G4 models for concurrent testing or multi-user environments.

Packet filtering: Assign endpoints to different paths by IP address, VLAN, or any other packet identifier.

Bandwidths up to 100 Gbps: Accurately simulate links from 100 bits per second up to 100 Gbps.

Latency up to 20 sec.: Emulate delay and jitter of 10 seconds or more in each direction, in increments of 0.01 ms.

Flexible interfaces: The N61 and N91 are available with copper or SFP ports. The 10G1 and 10G2 offer 1/10 Gbps dual rate SFP+ ports for easy integration into 1 or 10 Gbps networks.

Loss & Corruption: Set random, burst, or periodic packet loss. Test the effect of corruption on voice and video applications.

Capture & Replay: Record the delay and loss charactertistics of the production network as they vary second-by-second and replay them through the Netropy emulator.

Background Utilization: Test how applications run over a congested network without costly traffic generators or a rack full of client machines using Netropy's unique background utilization and PCAP replay features.

Traffic Monitor: View and download up to 24 hours of throughput graphs and link statistics.

Automated Testing: Automate testing using the fully RESTful API.

Unsurpassed Precision: Test with confidence — the high-precision Netropy Emulation Engine e sures accurate and reproducible results.

Priced Right: Get the functionality and performance you need at a price you can afford.

Application Lifecycle Testing

Network design:
Build "what-if" scenarios to choose between private lines, internet VPNs, and wireless and satellite networks to connect offices across the globe, then determine how much bandwidth to purchase to ensure critical applications perform as needed.

Application validation:
See how applications perform prior to roll-out and avoid unpleasant surprises and panic fixes later.

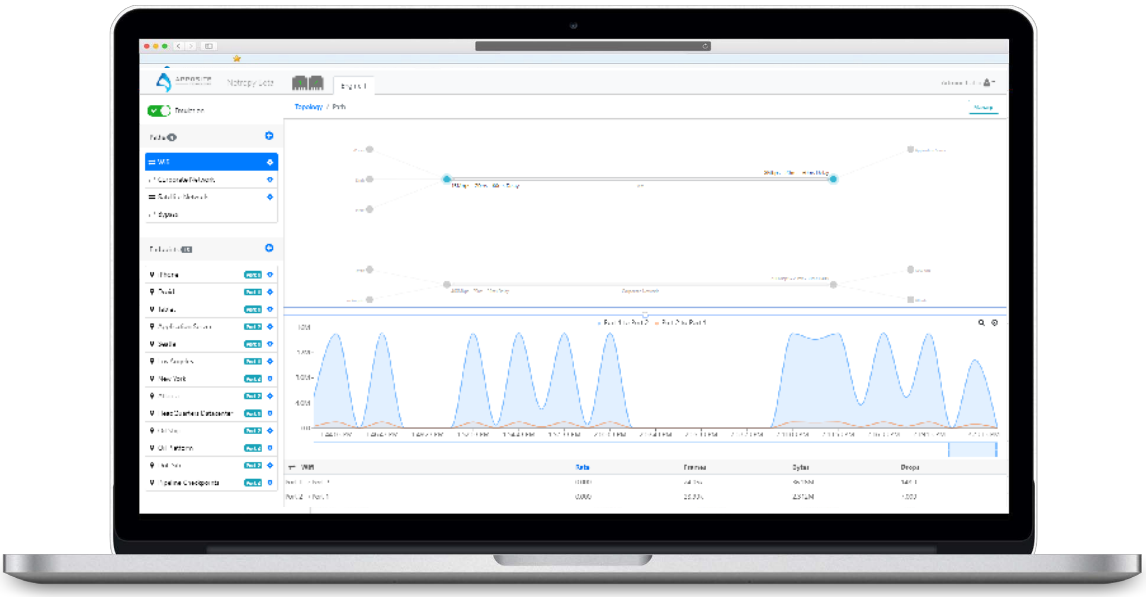
Vendor selection:
Compare products from different vendors to select the one that works best on your network.

Tuning:
Adjust application settings to optimize performance and ensure a world-class user experience for every end user.

Optimization:
Analyze the benefits of WAN acceleration and SD-WAN products to optimize the existing infrastructure.

Troubleshooting:
Pinpoint the cause of reported problems and complaints, then validate potential solutions without disrupting the production network.

USER INTERFACE



PRODUCTS

NEW!

Netropy Mini-G

Portable 1 Gbps WAN Emulator

Netropy N61

Emulate complex networks up to 1 Gbps

Netropy N91

Four separate 1 Gbps emulation engines

Netropy 10G1

Emulate links up to 10 Gbps

Netropy 10G2

Two separate 10 Gbps emulation engines

Netropy 10G4

Four separate 10 Gbps emulation engines

Netropy 100G

100 Gbps Emulator, supports 25 & 40 Gbps

Netropy 100G2

Two Separate 100 Gbps emulation engines

MULTI-LINK EMULATIONS

Each Emulation Engine can simulate up to 30 separate WAN links. Each Netropy unit contains up to 4 independent Emulation Engines, depending on the model.

Emulate multi-site networks:
Model a full enterprise network of regional, branch, and local offices, telecommuters, and partners, all connected to headquarters or a centralized datacenter.

- View applications as they will be seen by different end users
- Verify the operation of application servers with concurrent users

Side-by-side benchmarking:
Run separate tests side-by-side.

- View the effects of different conditions on application responsiveness
- Compare products from different vendors
- Tune application settings
- Analyze the benefits of acceleration and optimization products

High scalability:
Simulate thousands of separate clients for testing cloud-based applications, mobile apps and gaming.

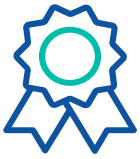
Isolate individual applications:
Segregate traffic from different devices and apply impairments to specific applications.

Concurrent testing:
Test a matrix of conditions by running multiple emulations in parallel.

VIEW IMPACT OF NETWORK CONDITIONS

Throughput
Test bulk data applications: File transfer, network storage, remote back-up / disaster recovery

Responsiveness
Test interactive applications: File sharing (CIFS), virtual desktop (VDI), database applications, CRM, ERP, remote access, web, cloud computing, SAAS



Quality
Test real-time applications: VoIP, video, IPTV

About Apposite Technologies

Apposite Technologies makes WAN emulation easy by offering professional-quality network emulation tools at affordable prices. Apposite's award-winning Netropy and Linktropy WAN emulation appliances simulate bandwidth, latency, loss, congestion, and other network impairments with fine-grained precision to provide accurate simulations of any type of wide-area network. Netropy and Linktropy WAN emulators are widely deployed by leading enterprises, application and equipment developers, telecoms carriers, and government and military organizations around the world. Apposite Technologies – WAN Emulation Made Easy

Specifications	NEW! Mini-G	N61	N91	10G1	10G2	10G4	100G	100G2
Capacity								
Ethernet Ports	2 RJ45 1 Gbps	2 SFP or 2 RJ45 1 Gbps	8 SFP+ or 8 RJ45 or 4 SFP+ & 4 RJ45 1 Gbps	2 SFP+ or 2 RJ45 1 Gbps / 10 Gbps	4 SFP+ 1 Gbps / 10 Gbps	8 SFP+ 1 Gbps / 10 Gbps	2 QSFP28+ 100 Gbps	4 QSFP28+ 100 Gbps
Max. Agg. Throughput	2 Gbps	2 Gbps	8 Gbps	20 Gbps	40 Gbps	80 Gbps	198 Gbps	396 Gbps
Emulation Engines	1 @ 1 Gbps	1 @ 1 Gbps	4 @ 1 Gbps	1 @ 10 Gbps	2 @ 10 Gbps	4 @ 10 Gbps	1 @ 100 Gbps	2 @ 100 Gbps
Maximum Packet Rate	3 million pps	3 million pps	12 million pps	29 million pps	59.5 million pps	119 million pps	44 million pps	88 million pps
Maximum Frame Size	9 KB	9 KB	9 KB	9 KB	9 KB	9 KB	9 KB	9 KB
Form Factor	Desktop	1U	1U	1U	2U	2U	2U	2U
Emulation Capabilities								
Packet Classification	IP source & destination address range (IPv4 or IPv6), VLAN, TCP or UDP port number, IP ToS, MAC address, MPLS label, or any other packet contents							
Bandwidth	100 bps – 100 Gbps in 1 bps increments (depending on model)							
Delay	0 ms – 10, 000 ms or greater in each direction in 0.01 ms increments; constant, uniform, normal distributions; replay recorded loss, accumulate & burst							
Loss & Corruption	Random, burst, periodic, BER, Gilbert-Elliott, or recorded loss; data corruption; network outage							
Background Utilization	0 – 100% in increments of 0.1%; PCAP replay							
Queuing & Prioritization	RED or tail drop queue management; priority or round robin queuing							
Additional Parameters	Packet Reordering, Packet Duplication, MTU and Fragmentation, Queue Depth, Framing Overhead							
Interfaces								
Management	1 x Gigabit Ethernet, 1 x RS-232 serial console							
Power Supply	Single	Single	Single	Single	Redundant	Redundant	Redundant	Redundant
Security	SSL and SSH for secure management; per-user locking of engine configuration							
Warranty & Support								
Hardware Warranty	Hardware warranty is included with product license							
Support & Maintenance	Support is included with product license and software maintenance							
Ordering Information								
Part Number	NMiniG-1G-P	N61-1G	N91-1G	N10G1-10G	N10G2-10G	N10G4-10G	N100G-100G	N100G2-100G
Product License 1-Yr	NMiniG-1G-S1YR	N61-R1YR	N91-R1YR	N10G1-R1YR	N10G2-R1YR	N10G4-R1YR	N100G-R1YR	N100G2-R1YR
Product License 3-Yr	NMiniG-1G-S3YR	N61-R3YR	N91-R3YR	N10G1-R3YR	N10G2-R3YR	N10G4-R3YR	N100G-R3YR	N100G2-R3YR
Port Options	N/A	N61-SFP	N91-SFP N91-C4S4	N10G1-SFP	N/A	N/A	N/A	N/A

APPOSITE
TECHNOLOGIES

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