



Netropy™ Network Emulators

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

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 15 separate WAN links to model complex network topologies or run multiple concurrent tests.

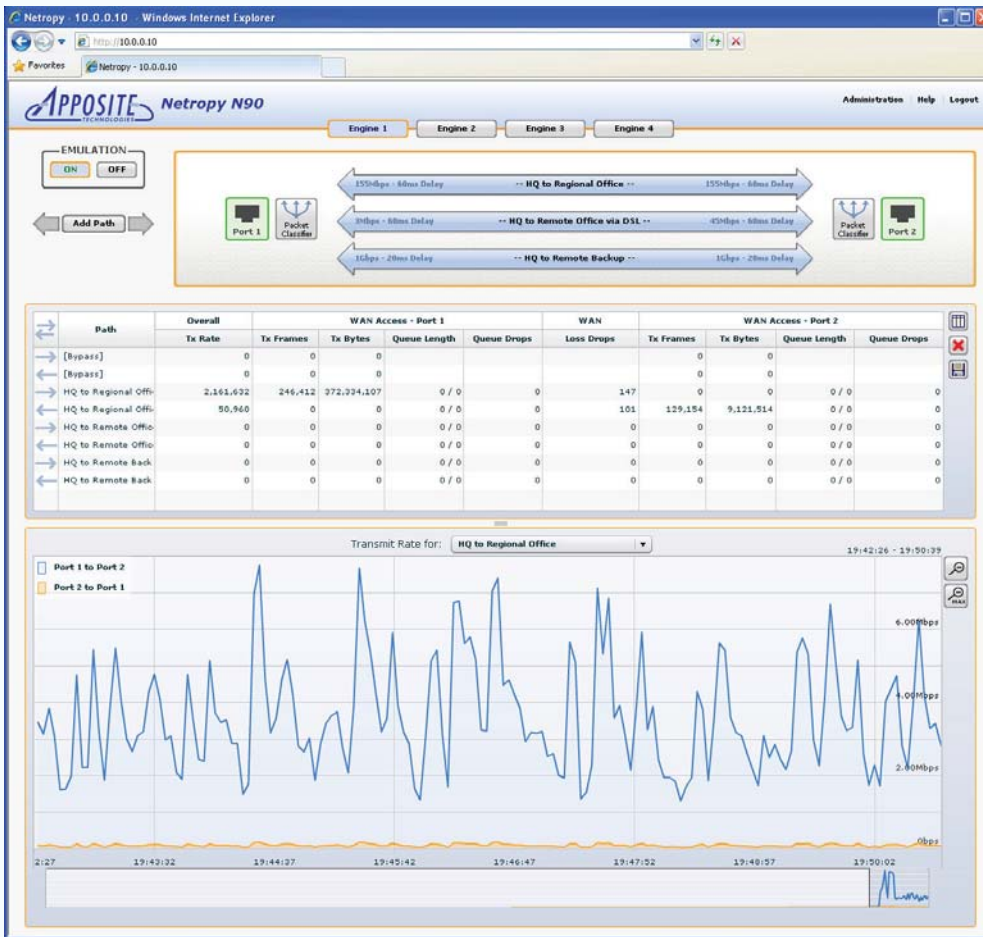
Each link is configured with its own bandwidth, latency, loss and other properties. Packets can be assigned to the appropriate link by IP address range, VLAN, application part number, or any other packet contents.

The Netropy network emulator is configured and managed through an intuitive, browser-based interface for easy operation, or through a comprehensive command line interface for integration with test automation tools.

Simulate

- > Bandwidth
- > Latency & Jitter
- > Loss
- > Congestion

USER INTERFACE



View Impact of Network Conditions

- **Throughput** of bulk data applications: File transfer, network storage, remote back-up / disaster recovery
- **Responsiveness** of interactive applications: File sharing (CIFS), virtual desktop (VDI), database applications, CRM, ERP, remote access, Web 2.0, Cloud computing, SAAS
- **Quality** of real-time applications: VoIP, video, IPTV

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 for different end users.

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

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

Multi-Link Emulations

Each Emulation Engine can simulate up to 15 separate WAN links. Each Netropy unit contains up to 4 independent Emulation Engines, depending on 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.

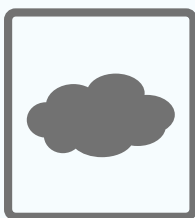
- View applications as they will be seen by different end users
- Verify the operation of application servers with concurrent users

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

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

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



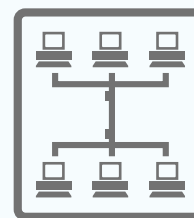
INTERNET



WIRELESS



SATELLITE



TERRESTRIAL

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 15 separate WAN links with each Emulation Engine.

Multiple Engines: Take advantage of multiple Emulation Engines in the N90 and 10G2 models for concurrent testing or multi-user environments.

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

Bandwidths up to 10 Gbps: Accurately simulate links from 100 bits per second up to 10 Gbps.

Flexible capacity: Pay only for the bandwidth that you need to emulate now, and upgrade later if you ever need to emulate higher speed links.

Latency up to 10 sec.: Emulate delay and jitter up to 10 seconds, in increments of 0.1 ms, with a constant, normal, or uniform distribution.

Flexible interfaces: The N60 and N90 are available with copper or fiber ports. The 10G2 offers 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 characteristics 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 feature.

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

Automated Testing: Automate testing using the comprehensive command line interface.

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

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

Everything You Need: Everything is included. No additional hardware, software, or training required.



NETROPY N60

Emulate complex networks up to 1 Gbps.

NETROPY N90

Four separate 1 Gbps Emulation Engines, ideal for concurrent testing or multiple users.



NETROPY 10G2

The highest levels of performance with two 10 Gbps Emulation Engines.



Specifications	Netropy N60	Netropy N90	Netropy 10G2
Capacity			
Max. Links Emulation Speed	2 Mbps, 10 Mbps, 45 Mbps, 100 Mbps or 1 Gbps	10 Mbps, 45 Mbps, 100 Mbps, or 1 Gbps	1 Gbps or 10 Gbps
Max. Aggregate Throughput	2 Gbps	8 Gbps	40 Gbps
Emulation Engines	1 @ 1 Gbps	4 @ 1 Gbps	2 @ 10 Gbps
Maximum Packet Rate	1 million pps	12 million pps	17 million pps
Maximum Frame Size	9 KB	9 KB	9 KB
Emulation Capabilities			
Packet Classification	IP source & destination address range (IPv4 or IPv6), VLAN, TCP or UDP port number, MAC address, MPLS label, or any other packet contents		
Bandwidth	100 bps – 10 Gbps in 1 bps increments (depending on model and license)		
Delay	0 ms – 10, 000 ms. in 0.1 ms increments; constant, uniform, normal distributions; replay recorded loss;		
Loss & Corruption	accumulated burst, random burst, periodic, BER, or recorded loss; data corruption		
Background Utilization	0 – 100% in increments of 0.1%		
Queuing & Prioritization	Drop Tail, RED queue management; Prioritization by IP ToS or VLAN PCP		
Additional Parameters	Packet Reordering, Packet Duplication, MTU and Fragmentation, Queue Depth, Framing Overhead		
Interfaces			
Emulation	2 Gigabit Ethernet (copper or SFP)	8 Gigabit Ethernet (8 copper, 8 SFP, or 4 of each)	4x SFP/SFP+ 1/10 Gbps auto-negotiate
Management	1 x Gigabit Ethernet, 1 x RS-232 serial console		
Security	SSL and SSH for secure management; per-user locking of engine configuration		
Warranty & Support			
Hardware Warranty	1 year included	1 year included	1 year included
Support & Maintenance	1 year included	1 year included	1 year included

About Apposite Technologies

Apposite Technologies makes WAN emulation easy by offering professional-quality network emulation tools at affordable prices. Apposite's 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**

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