

# ACCELERATE APPLICATION READINESS WITH AN ACCURATE, CONTROLLABLE AND REPEATABLE TEST NETWORK

Redesigned from the ground up and drawing on over 15 years of experience in the field, the new NE-ONE Enterprise edition (formerly known as INE Enterprise and INE Ultra) is leading the way in Network Emulation. Backed by ISO 9001:2015 certification for the development and provision of Software Defined Test Network products and associated support you can be sure of a quality product that's made to the highest standards.





Whether you're rolling out an enterprise business critical application like SAP or SharePoint, consolidating data centers, evaluating SD-WAN, VDI or WAN Optimization products, moving to the Cloud, or testing a new mobile app, NE-ONE Enterprise provides organizations with a way to create real-world network conditions in which to analyze, predict and verify application performance before deploying into potentially challenging network environments.

The insight NE-ONE Enterprise provides allows businesses to effectively manage their digital products and brand, reducing deployment costs and risk, mitigating remediation expense and the impact on resources at the same time as improving quality.

# **FAST, FLEXIBLE AND EASY DEPLOYMENT**

With a range of platforms and models to choose from you can decide on the best features that are right for your organization. Choose from our ready-to-use Hardware or Virtual Appliances, both of which are available in a number of models to suit your needs. Certified Partner Ready for VMware's vSphere, NE-ONE Enterprise provides easy integration with your existing environment while leveraging the scalability and cost benefits of virtualization. Openstack and KVM support is available too.



# Inline, Sophisticated Routing or Both

Directly connect your test equipment inline (Layer 2) or configure to route (Layer 3) and impair traffic in VLAN and multi-IP configurations such as routeron-a-stick. At the same time other traffic, not under test, can flow through the test network unimpaired.



### Every Port to Every Port Connectivity

"Route" traffic from port-to-port or port-tomulti-port, including both physical and Soft Ports, without any limitations on connectivity. This includes "routing" in bridged networks.



# Network Address Translation (NAT)

Configure Static or Dynamic NAT, including Port Forwarding, on any port to mimic real-world devices including firewalls and routers. NAT is performed after a network impairment is applied to a packet which means that multiple devices under test can experience different network conditions.



### **Continuous Network**

Deploy on the edge of the production network allowing users to test application performance from their usual location but as if they were physically at another location.



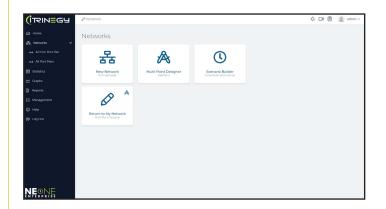
# **1** Enterprise Management

Optionally integrate the NE-ONE Enterprise into organization-wide LDAP single-sign for authenticating users against their existing login credentials. Add the NE-ONE Enterprise into standard security and monitoring systems using built-in SNMP support.



### **Soft Ports**

Use the Port Manager to create hundreds of new Soft Ports as subdivisions of physical ports. Soft Ports can be used in a number of ways including allocating users their own Soft Ports allowing them to create their own test networks that are entirely independent from other users on the same NE-ONE appliance. Alternatively use Soft Ports to create large-scale test networks with hundreds of devices connected removing the need to purchase expensive multiport appliances that cannot scale-up.





### **Operational Scaling**

NE-ONE Enterprise's multi-user design, Soft Ports and scenario sharing capabilities protect your investment and enables you to scale-out to support multiple teams and scale-up the number of concurrent tests, thereby lowering the total cost of ownership, environmental footprint and system management overhead, while conducting more complete tests or more tests in parallel.

### **EASE-OF-USE**

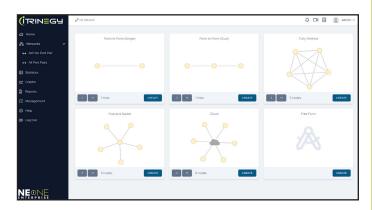
At the heart of NE-ONE is its intelligent user interface which is designed to make setting up and running a real-world test network achievable in a few minutes. NE-ONE eliminates the need to spend hours learning complex tools with cumbersome tabular interfaces and scripting. Instead, just use your preferred browser (no plug-in required) and choose from the Network Topology Wizard, Scenario Builder or built-in templates to get started.



### **Network Topology Wizard**

The Network Topology Wizard eliminates the need to manually draw and configure the number of links or nodes required to create the test network. Simply select from a choice of ready-made network templates including Point-to-Point, Multi-Point, Hub & Spoke or Cloud and the test network is created for you in seconds.

For advanced users the Free-Form Network
Designer allows you to draw out your network
topology within the web browser. Drag and drop
nodes and circuits onto the canvas and add routing
and impairments between them to mimic the realworld network.





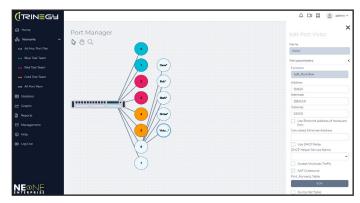
### **Out-of-the-Box Test Networks**

NE-ONE Enterprise comes pre-installed with a wide range of different network types and example profiles for LAN, WAN, Cloud, Satellite, Mobile, DSL and WiFi saving you time having to create them from scratch. Simply select your required environment and run your test. Of course, you can adjust any of the parameters or add your own custom settings.



# **Port Manager**

Use the Port Manager to create Soft Ports from physical ports or Soft Ports from other Soft Ports and assign settings to the new port including IP Address, Mask, Gateway, DHCP forwarder, accept multicast traffic and NAT settings. Furthermore create Port Pairs with a friendly name and allocate to one or more users.





### **Advanced Packet Handling**

Classify, route, filter and selectively impair traffic by any packet field within any protocol layer (2-7) using a Wireshark®-like syntax. Bridge and/or route traffic via the emulator enabling you to mimic the complexity of your real world network. Easily add your own protocols.



# Satellite Links and Constellations

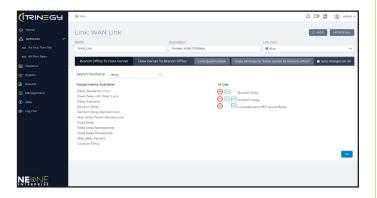
For satellite networks mimic make-before-break switching to emulate the handover capability at the IP level in order to reproduce the time delay required in transmission while beams and satellites are being transitioned.

### **EASE-OF-USE**



# **Superior Real-World Impairments**

Apply one or more impairments from categories that include bandwidth, congestion, latency, packet loss, errors, fragmentation, reordering, duplication and more! With more than 100 parameters to choose from NE-ONE combines realism and accuracy in a Software Defined Test Network that allows you to test applications over a range of controllable and repeatable scenarios.





# Cisco QoS Class of Service Handling & Taffic Shaping

Model Cisco's (and other similar) QoS class of service and traffic shaping algorithms to test an application's ability to work with Cisco QoS classes, with or without traffic shaping.



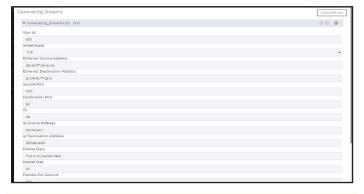
# Congestion

Easily create and vary network congestion to make a link appear that it is carrying more data than it can handle typically resulting in queuing delay, packet loss or the blocking of new connections.



### **Traffic Generation**

Generate both internal and external traffic using real packet flows to create load in the network to simulate certain network conditions for another application. The traffic generation itself can be adjusted via numerous parameters, such as VLAN id, UDP/TCP, source address, destination address, TTL, packet data, packet size, packets per second and bits per second.

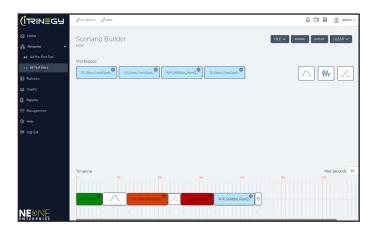


### **EASE-OF-USE**



# **Network Scenario Builder & Player**

The unique Network Scenario Builder & Player, along with the scenarios themselves, are one of the key features available across the NE-ONE family that allow for a fully automated test network. Providing almost unlimited possibilities for recreating what happens in the real-world it lets you easily create time-based network scenarios to test how applications handle variations in network quality and availability. Rapidly create a chronological network experience by combining different and/or other scenarios together to be run over time.

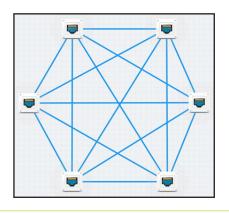


The realism of the network experience can be further enhanced by adding built-in intelligent transitions between each element. Transitions define how NE-ONE will handle the changes, for example a variable transition from a 3G to 4G network or perhaps a momentary outage between the change.

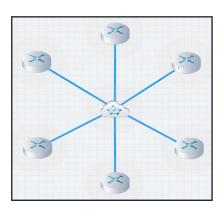


### **Cloud Networks**

Cloud, hub-and-spoke, meshed and partially meshed networks that have multiple links between nodes can be difficult to draw out using regular tools. Thankfully, NE-ONE Enterprise's Cloud Feature simplifies this task and accelerates the test setup as it lets you easily define, in a single object, the network quality, conditions and routing between each node in the network.









# Geolocation Network Latency Calculator

Imagine you need to emulate a link from New York to London but you're unsure of what latency to use. NE-ONE comes with a catalogue of over 42,000 locations, so simply choose the required start and end point locations and NE-ONE will calculate and insert the base latency for you.



### **User-Defined Protocol Definitions**

Add your own custom-built private, prototype or even secret protocols without any involvement from iTrinegy, which is particularly useful for organizations working in sensitive or secure environments.

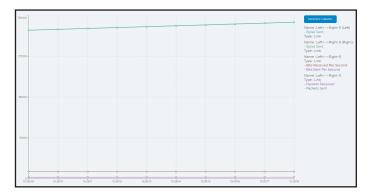
### **RAPID ANALYSIS**

One of the most important elements of the NE-ONE Enterprise is its range of analysis features providing you with a clear view of application performance over the test network, saving you valuable time.



### **Graphs & Statistics**

Analyze the test network in real-time to identify and resolve potential application performance issues to ensure service level compliance before deployment. Easily see what is happening to packet flows at any point in the test network and get easy and fast visibility into your application's performance using built-in graphs including an export data feature for offline analysis in other tools.



fort Pair	NAME	TYPE	STATUS	NETWORK NAME	DESCRIPTION	REPORTING CAPTURE	PACKET	BITS RCVD PER SEC	BITS SENT PER SEC	PACKETS ROVD PER SEC	PACKETS SENT PER SEC	BYTES RCVD PER SEC	BYTES SENT PER SEC	PACKET RCVD
tairs		HW Port	UP	System	005056b159cf	D .	9 0 0	1568	1568	2	2	196	196	205497
		HW Port	UP	System	005056816467	0 .		1508	1568	2	2	196	196	205482
	[0] ~ [Port Output]	Link	UP	System		8 .	900	0	0	0	0	0	0	0
	[i] [Port Output]	Link	UP	System		B .	200	0	0	0	0	0	0	0
nt	left	Node	UP	WAN		D .	S 0 0	7840	7840	8	10	980	980	774364
	right	Node	UP	WAN		0 .		7840	7840	0	10	900	980	774364
	letsright-0	Link	UP	WAN	lett	8 .	50 0 0	1568	1568	2	2	196	196	193591
	leftright-0	Link	UP	WAN	right	D .	200	1560	1560	2	2	196	796	193591
	(left) (0)	Link	UP	WAN		D .	900	1568	3136	2	4	196	392	193591
	(left) (Port Output)	Link	UP	WAN		0 0	9 0 0	1568	3136	2	4	196	392	193591
	prompt Et	Link	UP	WAN		0 .	50 0 0	1568	3136	2	4	196	392	193591
	[right] ~ [Port Output]	Link	UP	WAN		D .	2	1568	3136	2	4	196	392	193591



# Packet Capture

Full packet capture, in PCAP format, at any point in the test network provides pervasive application visibility, analysis and troubleshooting for use with other tools, including Wireshark®, enabling rapid debug of application performance issues.



### Reports

NE-ONE's built-in expert knowledge provides comprehensive understanding of the end-to-end performance of applications and how and who they interact with over the network. Its powerful, intelligent and interactive reports empower you to know if an application is Network Ready, validates planned changes and accelerates troubleshooting performance problems in production applications.

**Configuration Report:** Lists all settings including nodes, links, routing, bandwidth and impairments about the configuration of a Test Network.

**Test Report:** Provides all of the information from the Configuration Report together with graphs that show how much data was transferred across each Link and Node.

**Applications Reports:** Using expert knowledge the Applications Report automatically predicts applications that are sensitive to latency and bandwidth. Each application is given a Network Ready score indicating if the application is expected to work, is borderline or is most likely to experience issues.

**Application Performance Report: Predicts how** the application will perform over a range of latencies and provides application transactional metrics collected during the test.



#### **POWERFUL INTEGRATION\***

NE-ONE Enterprise provides a rich multi-layered programmable architecture, allowing control of everything from individual packets to the automation of the entire Software Defined Test Network. Power users can choose from a number of ways to connect external tools or applications that allow the creation of custom applications or the automation of repetitive tasks.



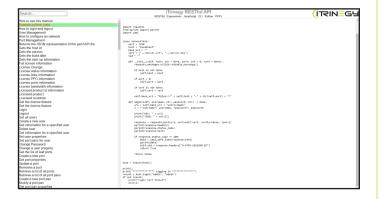
### **Advanced CLI/API**

A CLI for scripting routine tasks and integration with other products you can orchestrate and automate changes in the network conditions dynamically.



### **RESTful API**

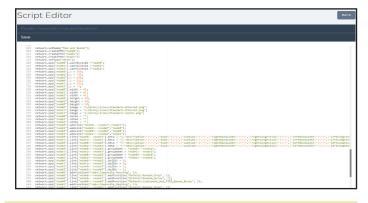
NE-ONE's RESTful APIs are the foundation that provides a modern and scalable way for our customers and partners to integrate more quickly and with less complexity. Every GUI operation has a RESTful API equivalent that enables easy integration therefore reducing complexity and development time.



# **</>> Embedded Javascript Engine**

The embedded Javascript Engine allows you to create powerful, high precision models or simulations or networks that change dynamically, either individually or together.

- Timer controlled changes to the Software Defined Test Network
- Handling of user generated events to change the state of the Software Defined Test Network
- · Rapid changes to parameters
- Modeling specific and complex network simulations



# **{}**

# Packet Engine Programming Language (PEPL)

At the lowest layer we have the Packet Engine Programming Language (PEPL) allowing programmatic manipulation of packets, analysis of all traffic flows, actions, including new impairment and routing functions, on a per packet basis. You can create your own Soft Ports, impairments, classification and routing functions using the same tools we use.

<sup>\*</sup> To use any of the above features iTrinegy customers must purchase the Integration feature pack.

#### MORE REASONS TO CHOOSE AN NE-ONE ENTERPRISE NETWORK EMULATOR



### **Training**

iTrinegy offers both instructor-led and self-paced on-demand technical training built on practical learning objectives that are relevant to the installation, configuration and operation of the NE-ONE Enterprise. Develop your team's expertise and increase productivity through either online or on-site standard and bespoke courses.



### Professional Services

iTrinegy's Professional Services offers world-class support, training, and consulting to help you get the most from your NE-ONE investment. Whether it's providing fast answers to questions, advising on best practice, assisting with implementation or training internal teams, iTrinegy's Professional Services can help. For more information about iTrinegy's Professional Services, contact your iTrinegy Representative.



### **Protecting Your Investment**

The speed at which technology changes is almost impossible to predict but iTrinegy's customers can be assured that their investment is protected by our continuous development program and the release of significant product upgrades each year.

Since 2006 we have concentrated our focus on the design, production, and creation of Network Emulation technology, and this is a focus that iTrinegy proudly maintains to this day. As a result, you can be confident that your investment in our products is for the long-term.

To learn more about the NE-ONE Enterprise Edition please visit www.itrinegy.com to find these and other resources:

# **NE-ONE Family Datasheets:**

- **NE-ONE Family Brochure**
- **NE-ONE Family Virtual Appliance Brochure**
- NE-ONE Family Impairments & Transitions Data Sheet
- NE-ONE Family Impairments & Transitions Guide

### **NE-ONE Enterprise Datasheets:**

- **NE-ONE Enterprise Datasheet**
- NE-ONE Enterprise Hardware Appliance **Technical Specifications**
- NE-ONE Enterprise Network Objects Explained

#### **Case Studies:**

- Cisco SD-WAN Proof of Concept testing at Testing Center of Excellence
- Enaire Analogue to IP-based Comms Migration
- Helyx Virtual Test Lab in the Cloud
- NATS Move to Voice over Internet Protocol (VoIP) systems
- Sectra Testing of encrypted telephony devices over networks
- UK MOD Testing of apps/devices before field trials or deployments

Please contact your iTrinegy representative for further information.

