



**JAR:**emulate

high precision **network** emulators

[www.jarotechnologies.com](http://www.jarotechnologies.com)





JAR:emulate WAN emulators provide precision network simulation to ensure your software and business critical applications will perform as required when deployed.



Reduce the need for endless development and test cycles by testing on a simulated network with all the characteristics of your customer's network, and then deploy with confidence.

Use JAR:emulate to performance test under the wide variety of network characteristics your software will be required to perform on; identify, trouble shoot and resolve related issues before these become customer facing problems.

The JAR:emulate series provides multiple independent emulation links that can be tailored to your exact requirements through a simple 'drag and drop' user interface. No programming or deep technical expertise is required. Open XML protocol ensures full integration with automated testing. Ensure application performance via a real time reporting suite, traffic analyser, traffic record / playback and advanced filtering.

## Accurately Simulate

VoIP	Satellite	Cloud	ADSL
Microwave	OC-3	3G	4G
T1	E1	T3	E3
2G	WiMAX	DSL	XDSL
WiFi	RoIP	GPRS	Dial Up

## Under Real Network Conditions

Busy Peak Times	Limited Bandwidth
Long Distance	Information Corruption
Jittery Connections	De-sequencing of Data
Duplication of Data	Network Traffic Bursts
Fragmentation of Data	Partial or Total Outage
Traffic Re-routing	Back-up Switch-overs

### Application Performance:

Determine how your software will perform for the end user on their network before deployment; trouble shoot and resolve issues before the need for re-work, release delay or failure

### Optimization:

Adjust application and software settings under replicated network characteristics to optimize performance for different user groups

### Trouble Shoot:

Investigate reported problems and test resolutions without disrupting production traffic

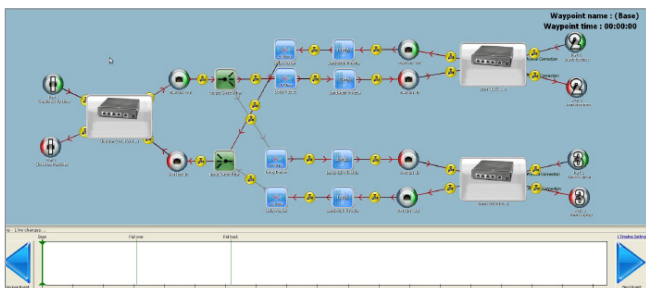
### Network Design:

'What if' scenario building to evaluate network changes - evaluate different topologies and technologies before expensive implementation. For example evaluate WAN Acceleration Technology: Determine how different WAN optimisation products will perform under the best/average/worst conditions of your network.

## Features

### Virtual Routing

The virtual routing feature allows each physical port on the emulator to act as a dedicated router, transforming the capabilities provided and allowing users to simulate multiple network segments. Each network segment can be interconnected using its own unique bi-directional impairments to simulate data center connections, consumer networks or remote office environments. As you would expect each virtual router provides fully configurable DHCP (or Static) IP addresses, routing tables, ARP and ICMP services. Using JAR:emulate's flexible nature you can simulate link fail overs in routed networks or create routing problems to see how your infrastructure copes.

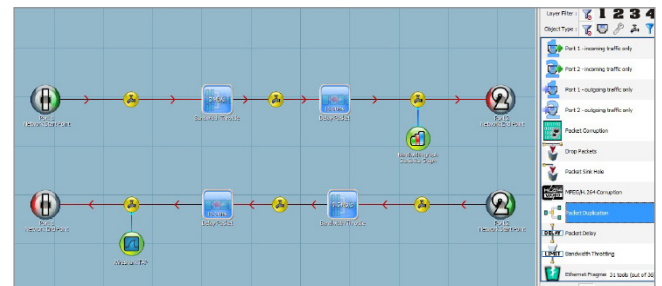


Simulate routed networks with switchable links

### Easy Emulation - Maximum Control

JAR:emulate marries control with ease of use: emulation is carried out by visualising the movement of data packets through your chosen WAN topology. Packets enter via a physical port, pass through the required impairments, and exit through another physical port.

To aid design JAR:emulate provides an intuitive range of on-screen objects representing different features, such as physical ports, bandwidth throttles and packet corrupters. These are simply 'drag and dropped' to form your desired network emulation map.



Visualise your emulated network

### Remote Wireshark

JAR:emulate's flexibility extends to Wireshark, the award winning protocol analyser.

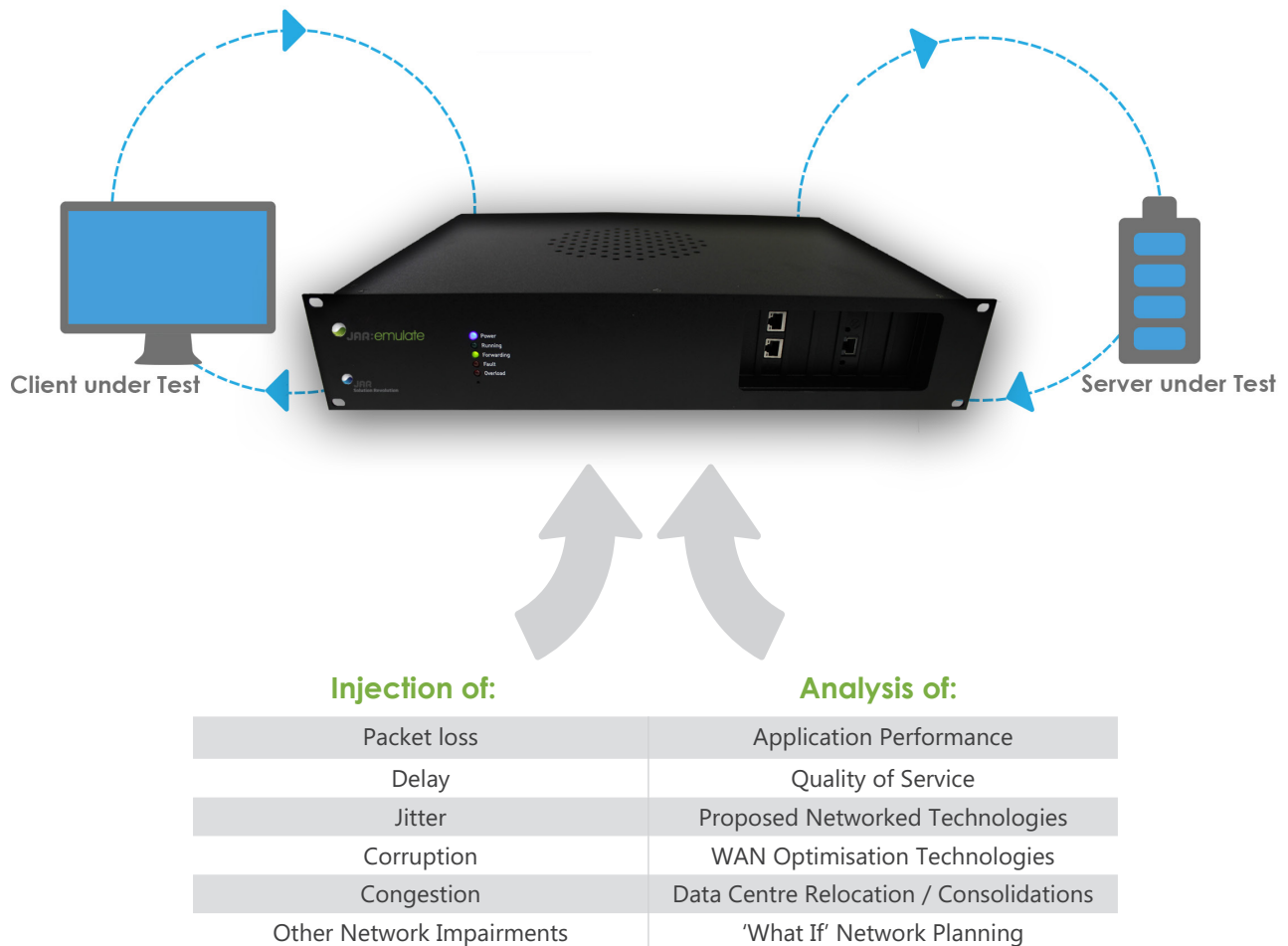
Through Wireshark JAR:emulate provides packet and stream capture and detailed analysis of all traffic passing through your emulation. Perform root cause issue analysis and ensure test repeatability by replaying recorded network traffic until resolution.

### Reporting

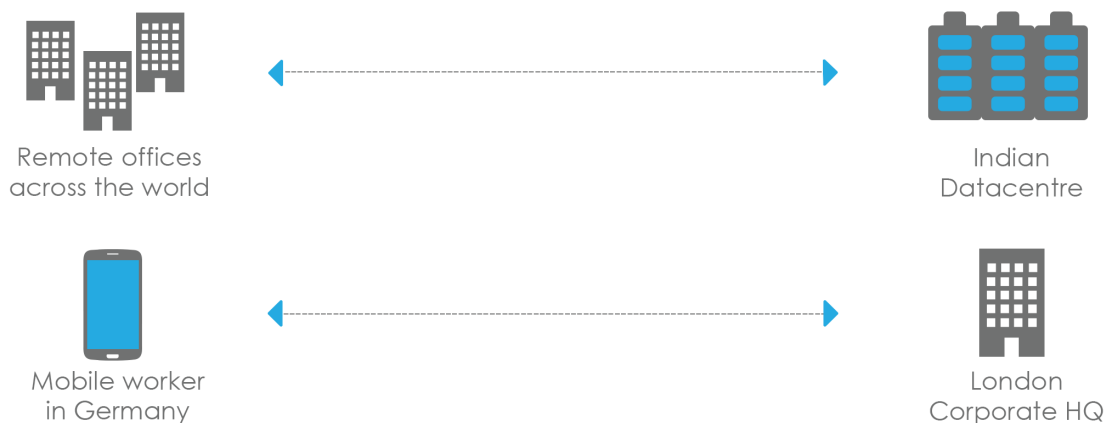
Reporting is an essential part of understanding how your software is coping under different network conditions - what's working, what's not and crucially why.

JAR:emulate can be shipped with built in reports such as packet loss, bandwidth, TCP operations, web client operations, etc.

Test Applications or new technologies before deployment,  
under the exact conditions of the end user network:



## Emulating (for example)



## Specifications

### Management

Drag and Drop User Interface	Live reporting, Graphs, exports, etc.
Wizards and many built-in emulation maps	Wireshark integration
Fully visualise your emulations	Snapshot reports
Open XML for test automation	Customisable end of emulation reports
Windows / Linux CLI (local and SSH)	

### Reporting

### General

Up to 64Gb of storage capacity	Emulate virtual routers; full gateways
Rugged 2U rack or desktop units	Full protocol support (ARP, ICMP, IGMP, etc)
Real time changes, Change impairment settings in real-time	Configure routing / forwarding tables
Time-Line; Automate real time changes	

### Virtual Routing

### Device Operation

Bridged Mode	Input switch objects to select input switching
Virtual Routing	Output switch objects to select outputs
Link fail over and back-up simulations	Physical Port drop and outage simulation

### Link Failure Simulation

### Link Disruption

Bandwidth Throttling	Generic Filter (bitmasks,etc)
Ethernet Fragmentation	IP and MAC Addresses
Delay / Latency	TCP, UDP, RTP, etc.
Packet Duplication	IP Protocol
Jitter	Packet counting
Bit Error's	RTP Filters
Packet Reordering	MPLS / VLAN / QOS filtering
Accumulate and Burst	IPTV / VOIP Corruption / Filtering

### Filtering

### Modification

Generic Modifier	Capture traffic
Change any bit, byte or sequence of bytes	Real-time Wireshark integration
Correct Checksums	Download Wireshark PCAP files

### Packet Analysis

### Standards

TIA.921	RTP Filtering
G.1050	MPEG Video corruption and filtering

### Video / Audio

### Interfaces

Up to 12 Ports	Background traffic
Mix speeds and RJ45 / Copper	Link contention ratio emulation
'Any port to Any Port emulation' connect any port, stream or packet to any other port	Traffic record and replay

### Load Generation



**JAR**

[www.jartechnologies.com](http://www.jartechnologies.com)

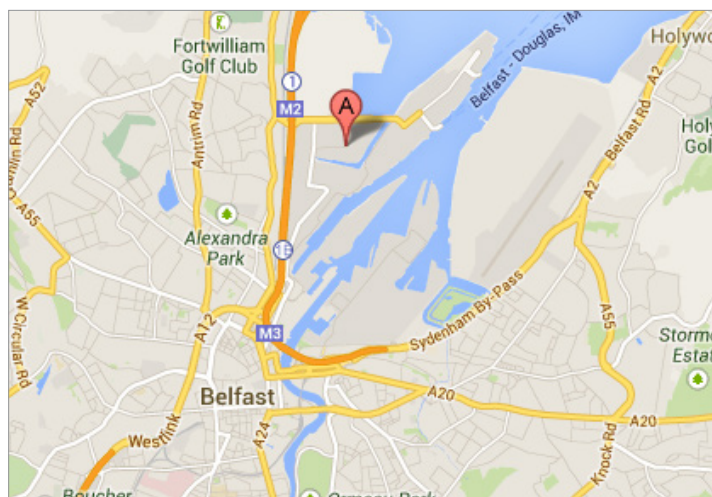
## About JAR Technologies

JAR is a leading provider of Web and Application Testing Tools for the Application Performance and Quality Assurance market.

With a wide spectrum of experience and expertise from developing the **'World's first hybrid WAN Emulator'** to offering cloud based web load testing tools, JAR are committed to providing revolutionary and flexible bespoke solutions for our partners and their customers.

For more information on JAR:emulate, including more detailed information on the product range and feature set please visit [www.jartechnologies.com](http://www.jartechnologies.com)

If you would like to discuss how JAR:emulate can benefit your company or are simply interested in finding out more please use the contact details below to get in touch.



### Contact Us

**T:** +44 (0)28 9023 3322

**E:** [info@jartechnologies.com](mailto:info@jartechnologies.com)



**JAR** JAR Technologies, BT3 Business Centre, 10 Dargan Crescent, Duncrue Road, Belfast, Co Antrim, BT3 9JP  
**T:** +44 (0)28 9023 3322 **W:** [www.jartechnologies.com](http://www.jartechnologies.com) **E:** [info@jartechnologies.com](mailto:info@jartechnologies.com)