

# Spirent Attero-V

## Virtual Ethernet Network Emulator

### Key Highlights

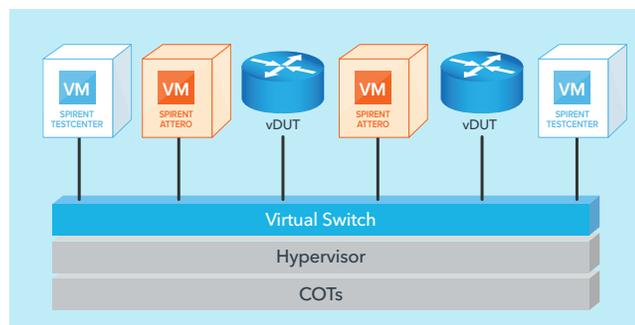
- Virtual Machine (software) based Network Emulation fully integrates into your virtual environment. No need for any hardware other than your host server
- No need to benchmark freeware emulators to find the optimum configuration. Attero-V gets tests up and running quickly and offers superior performance and less user configuration over freeware
- Run impairment tests on both virtual and physical interfaces. Add impairments between VNF appliances or take impaired signals to the outside world on the physical interface of your server
- Extensive filtering capability to target impairments to specific traffic and protocols. For example, filter on traffic with a specific Vlan ID or of a particular protocol. Use wildcards and ranges to filter a selection of IP addresses or a complete subnet
- Powered by technology from Calnex Solutions—proven experts in Network Emulation with a range of Attero physical products from 100 Mb/s to 100 Gb/s

### Emulate the 'Real Network' in Your Virtual Lab Environment

Spirent Attero-V is a virtual impairments tool that extends and complements the capabilities of the Spirent range of virtualization products and solutions. Attero-V is used to benchmark and optimize the performance of virtual network functions (VNF) and end-to-end virtualised applications by accurately applying real-world network conditions such as latency and dropped packets.

Attero-V is run and controlled as a Virtual Machine (VM) by your chosen hypervisor and can be used to filter and impair specific traffic flows—all within the virtual environment. The impaired traffic can be routed to the next VNF in the virtual service chain or to the outside world via the host's physical network interface.

Attero-V supports the two most popular virtual platform environments, VMware and Linux/KVM, and its floating license system means you can run Attero-V over a number of hosts on a shared basis for efficient use of resources. If you need to scale up to address multiport applications, simply add a new license.



### Applications

As tried and tested physical network components like routers, switches, and firewalls are re-developed and migrated to the virtual environment, Attero-V ensures that the same robust functional and performance requirements are met. What's more, it can be used either stand-alone or in combination with the Spirent TestCenter Virtual or Spirent Avalanche Virtual to rigorously test the performance of cloud-enabled networks and services, including:

- Voice/Video
- Mobile Subscriber Network
- Cloud Computing and Data Center
- Network acceleration and optimization



## About Spirent Communications

Spirent Communications (LSE: SPT) is a global leader with deep expertise and decades of experience in testing, assurance, analytics and security, serving developers, service providers, and enterprise networks.

We help bring clarity to increasingly complex technological and business challenges.

Spirent's customers have made a promise to their customers to deliver superior performance. Spirent assures that those promises are fulfilled.

For more information, visit: [www.spirent.com](http://www.spirent.com)

AMERICAS 1-800-SPIRENT  
+1-800-774-7368  
[sales@spirent.com](mailto:sales@spirent.com)

US Government & Defense  
[info@spirentfederal.com](mailto:info@spirentfederal.com)  
[spirentfederal.com](http://spirentfederal.com)

EUROPE AND THE MIDDLE EAST  
+44 (0) 1293 767979  
[emeainfo@spirent.com](mailto:emeainfo@spirent.com)

ASIA AND THE PACIFIC  
+86-10-8518-2539  
[salesasia@spirent.com](mailto:salesasia@spirent.com)

## Technical Specifications

<b>Supported hypervisors</b>	VMware ESXi 5.5. Linux Host running KVM/QEMU (LibVirt)
<b>Packaging</b>	Software is available in OVA and qcow2 formats
<b>VM specification</b>	Requires 2 CPU cores and minimum of 256 MB RAM (1 GB recommended) Virtual Network Interfaces Supported: <ul style="list-style-type: none"> <li>• E1000 and Virtio (for Linux Environment)</li> <li>• E1000 and VMXNET3 (for VMware Environment)</li> </ul> Port Speed—100 M, 1 G, 10 G.
<b>Impairment profiles</b>	Two individually configured impairment profiles in each direction (1 profile is filtered, 1 profile is unfiltered) Impairments can be applied to all profiles simultaneously
<b>Traffic filters</b>	Extensive set of filters with ranges and wildcards to inject targeted impairments: <ul style="list-style-type: none"> <li>• Class of Service (CoS) identifiers/levels— VLAN (P), MPLS (EXP) and IP (DSCP)</li> <li>• Ethernet (Layer 2) and/or IP (Layer 3) parameters.</li> <li>• VLAN ID, IP/MAC addresses, MPLS labels, TCP/UDP port, etc</li> <li>• GTPv2 control message types</li> <li>• Other Layer 2 to Layer 7 protocols</li> <li>• Proprietary traffic and protocols</li> </ul> Create filter manually or generate a filter from existing pcap file
<b>Impairments</b>	Delay/Latency: <ul style="list-style-type: none"> <li>• <b>Setting resolution:</b> 1ms</li> <li>• <b>Max value:</b> Determined by RAM allocated to VM.</li> </ul> Lost/Dropped Packets: <ul style="list-style-type: none"> <li>• Rate from 0.00001% to 99.99999% of packets</li> </ul>
<b>Statistics and results</b>	Port and Profile based counts and rates Impaired packet counts Status indicators for Link and packet health
<b>Minimum server requirements</b>	<ul style="list-style-type: none"> <li>• 32-bit Hardware and O.S. with Virtualization Technology enabled</li> <li>• Windows license required to run Attero-V Client (Windows 7 or 8/8.1)</li> </ul>
<b>Automation/ remote control</b>	Integrated script recorder for Tcl, Perl, or Python API

## Related Products

**Spirent TestCenter™ Virtual** is the industry-leading solution that optimizes the performance of new cloud-enabled network services and innovations like SDN and NFV. TestCenter Virtual creates testing topologies to run on both control plane and data plane to stress simulated, virtualized network functions.

**Spirent Avalanche Virtual** is the industry's only 'all-in-one' cloud test solution designed to test and measure the Performance, Availability, Security and Scale (PASS) of virtualized network infrastructure and applications deployed in the Cloud.

The Attero family of physical Ethernet Network Emulators (**Attero-X**, **Attero-Lite**, **Attero-100G**) use dedicated hardware impairment engines to provide nanosecond accuracy and full line rate traffic throughput. Apply delay, jitter and packet corruptions to selected traffic or capture 'real network' jitter profiles and replay these in the test lab. Available with interfaces ranging from 100 Mbps to 100 Gbps.