CT510-10G High-Speed LANforge-FIRE File-IO Traffic Generator

The CT510-10G is an excellent choice for testing high-performance File-IO servers, such as NFS, CIFS and iSCSI. The CT510-10G consists of a single 1U multicore-processor system with a dual 10 Gigabit Fiber NIC. The system can read at least 15Gbps of data if the file server is fast enough. The CT510-10G supports up to 2000 concurrent File-IO connections. Each connection can be NFSv3, NFSv4 or CIFS. At least 10 concurrent iSCSI connections are supported. NFSv3, NFSv4 and CIFS supports IPv6. Each connection appears as a unique PC to the file server, with it's own MAC, IP, routing table, and File-IO transport session(s). Additional systems can be clustered for increased traffic generation capacity.

The CT510-10G 1U rackmount chassis fits into a standard rack and is about 14 inches deep. It supports standard VGA, Keyboard, and Mouse interfaces for easy console/desktop access to the system. The rackmount chassis is relatively noisy, so it is better for a data center deployment than a desktop environment. Other form factors better suited for traveling or desktop use are also available. VoIP, Armageddon and WanLink features are priced separately. Please communicate your preferences to your sales representative. No additional hardware or software is required, but you may wish to manage the system using the LANforge GUI on a separate machine.
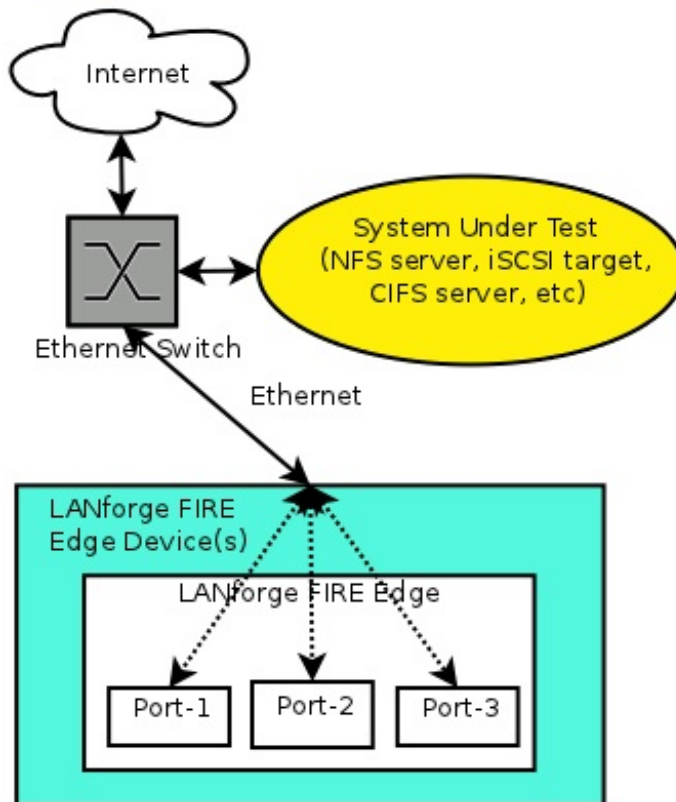

NOTE: This product may have a different hardware configuration than the system pictured above.
Refer to your official quote for details.

Example Network Diagram

LANforge FIRE File-IO Traffic Generator.

LANforge FIRE supports multiple Ethernet interfaces. To the System Under Test, it appears as if each virtual and physical interface is a separate PC or network appliance generating independent stateful traffic streams.

Thousands of 802.1Q and MAC-VLAN virtual interfaces are also supported. LANforge can send traffic between any two interfaces, including two interfaces on the same machine. Each physical and virtual interface can be configured on the same, or on different IP subnets. When used for File-IO, each LANforge endpoint can be on it's own virtual interface. Each virtual and physical interface appears to be a separate PC from the perspective of the System Under Test.

In the configuration on the left, the System Under Test is acting as a file-server. The LANforge FIRE Edge is one or more of the LANforge ports connected to the file servers. Each LANforge interface acts as a unique File-IO client. Using multiple systems can increase total throughput and total number of File-IO clients.

Quick Start Guide

1. Connect Management ethernet port to Management network or management PC. If connecting directly to a PC, an ethernet cross-over cable should be used. Or, connect VGA, Keyboard, and Mouse to the chassis and manage it locally.

2. Connect one or more traffic generating ports to the downstream side of the device under test. This usually is considered the 'client' side of the network.

3. Connect one or more traffic generating ports to the upstream side of the device under test.

4. Connect power plug to a standard US or European AC power source.

5. If managing remotely, install the LANforge-GUI on a separate management PC or Laptop. Windows and Linux GUIs are supported: Select the correct one from the CDROM or Candela Technologies Download page and install it.

6. The CT510-10G should now boot. If DHCP is enabled on the Management network, the CT510-10G will automatically acquire an IP address. If DHCP is not available, the IP address will be set to 192.168.1.101 by the LANforge scripts.

7. Start the LANforge-GUI on the management PC, or the CT510-10G console if managing locally, and click the 'Discover' button. It should find the CT510-10G appliance and add the IP address to the drop-down box in the Connect widget. Press 'Connect' and you will be connected to the CT510-10G.

8. Select the Layer 3, Layer 4 and other LANforge-FIRE related tabs in the GUI to see existing traffic connections and to modify them or add new ones. You can also view a real-time report of the test with the 'Display' button for some traffic types.

9. LANforge can send Layer 3 traffic types between any two physical ports, so one can send traffic between port eth0 and eth1, eth0 and eth2, eth3 and eth4, etc. Use the Port Mgr tab in the GUI to configure the IP addresses for the interfaces as appropriate for your network and cabling.

10. Any modifications take place immediately after you click 'Submit'.

LANforge-FIRE File-IO Related Screen Shots

File-IO Connections

File-IO Create/Modify Screen

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Software Features

1. Supports real-world protocols:

    1. Layer 2: Raw-Ethernet.

    2. 802.1Q VLANs.

    3. PPPoE: Integrated PPPoE support.

    4. Layer 3: IPv4, IPv6, UDP/IP, IGMP Multicast UDP, TCP/IP.

5. Layer 4: FTP, HTTP, HTTPS, TFTP, SFTP, SCP

6. Layer 4: TELNET, PING, DNS, SMTP, NMAP (via add-on script).

7. File-IO: NFSv3, NFSv4, CIFS, iSCSI.

2. Supports up to 2000 concurrent connections with base license package.

3. The CT510-10G hardware is able to generate up to 10Gbps on each port, depending on protocols mix and speed of the network under test. Supports at least 500 VoIP (SIP, RTP) calls if appropriate licenses are purchased.

4. Hardware supports over 30,000 TCP connections on a single machine, but the CT510-10G license package includes licenses for 2000 connections. Contact sales for additional licenses.

5. Supports real-world compliance with ARP protocol.

6. Supports ToS (QoS) settings for TCP/IP and UDP/IP connections.

7. Uses publicly available Linux and Windows network stacks for increased standards compliance.

8. Utilizes libcurl for FTP, HTTP and HTTPS (SSL), TFTP and SCP protocols.

9. Supports file system test endpoints (NFS, CIFS, and iSCSI file systems, too!). File system mounts can use the virtual interface feature for advanced testing of file server applications.

10. Supports custom command-line programs, such as telnet, SMTP, and ping.

11. Comprehensive traffic reports include: Packet Transmit Rate, Packet Receive Rate, Packet Drop %, Transmit Bytes, Receive Bytes, Latency, Jitter, various Ethernet driver level counters, and much more.

12. Supports generation of reports that are ready to be imported into your favorite spread-sheet.

13. Allows packet sniffing and network protocol decoding with the integrated Wireshark protocol sniffer.

14. GUI runs as Java application on Linux, MAC and Microsoft Operating Systems (among others).

15. GUI can run remotely, even over low-bandwidth links to accommodate the needs of the users.

16. Central management application can manage multiple units, tests, and testers simultaneously.

17. Includes easy built-in scripting for iterating through rates and packet sizes, with automated reporting. Also supports scriptable command line interface (telnet) which can be used to automate test scenarios. Perl libraries and example scripts are provided!

18. Automatic discovery of LANforge data generators simplifies configuration of LANforge test equipment.

19. LANforge traffic generation/management software is supported on Linux and MS Windows.

Hardware Specification

1. High-End Intel Multi-Core 1U rackmount server.

2. Operating System: Fedora 64-bit Linux with customized Linux kernel.

3. 4 built-in 10/100/1000 Ethernet interfaces, one of which should be used for management.

4. 1 IPMI port.

5. High-availability Ethernet hardware bypass option available.

6. One Quad-Core Intel E3 v2 processor, 3.6+Ghz

7. 1 PCIe x16 slot (2-6 port 10/100/1000, 1-2 port 10G fibre, etc)

8. 8 GB or more RAM.

9. 40 GB or larger Hard Drive.

10. Solid State Drive option available.

11. Standard US or European power supply (automatically detects EU v/s US power).

12. Weight: 18 lbs or 8.2 kg.

13. Dimensions: 17 x 14 x 1.75 inches (14-inch deep 1U rackmount server)   Metric: 432 x 356 x 44 mm.

14. Power Supply: Fixed 350W AC

15. Estimated Power Usage: 1.4 Amps @ 120 VAC under load, 0.7 Amps idle.

16. ROHS compliant.

List Price: $21,655   List Price with 1 Year support (17%): $25,336

Additional Feature Upgrades

Unless otherwise noted in the product description, these features usually cost extra:

- WanPaths (LANforge-ICE feature set)

- Virtual Interfaces: MAC-VLANs, 802.1Q VLANs, WiFi stations, etc

- FIRE Connections: Base FIRE license includes 1000 active connections.

- LANforge-ICE Network Emulation.

- VOIP: Each concurrent call over the included package requires a license.

- Armageddon: Each pair of ports requires a license if not already included.

- External battery pack: 12+ hours for CT520, CT523, CT92X and other platforms.

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