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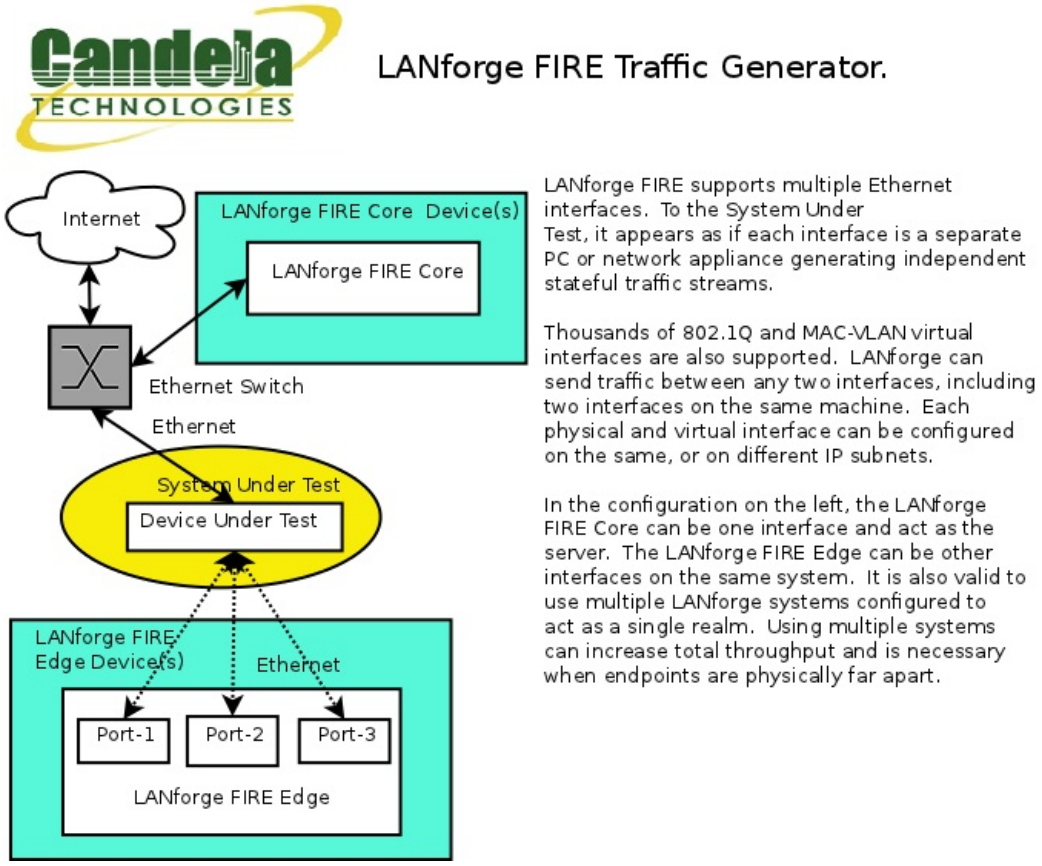
CT503-100G High-Speed LANforge-FIRE Traffic Generator

The CT503-100G is an excellent choice for testing high-performance networks and firewalls. The CT503-100G consists of a single 2U multicore-processor system with a dual 100 Gigabit Ethernet NIC. The system can generate and receive about 50Gbps to itself (about 200 Gbps total across the backplane). 10 Gigabit Ethernet interfaces and other network ports are available as add-on options. Additional systems can be clustered for increased traffic generation capacity.

The CT503-100G 2U rackmount chassis fits into a standard rack and is about 13 inches deep. It supports standard video, Keyboard, and Mouse interfaces for easy console/desktop access to the system. The rackmount chassis fans are 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. No additional hardware or software is required, but you may wish to manage the system using VNC on a separate machine to manage the LANforge system.

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

Example Network Diagram



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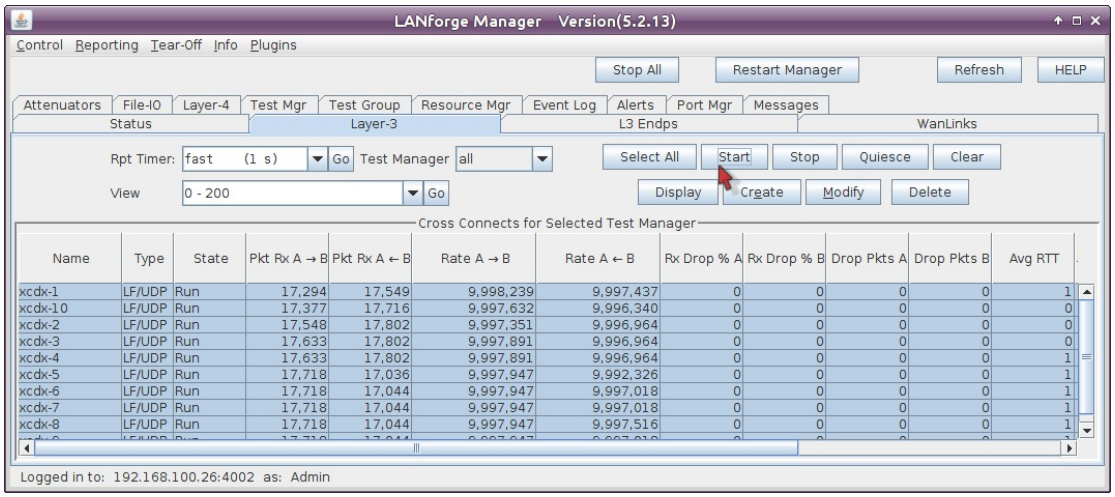
Quick Start Guide

1. Connect Management Ethernet port to Management network or management PC. If connecting directly to a PC. Or, connect monitor, 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 or VNC on a separate management PC or Laptop. Windows, MAC, and Linux GUIs are available to download from the LANforge system's html page.
6. The CT503-100G should now boot. If DHCP is enabled on the Management network, the CT503-100G 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 CT503-100G server if managing locally, and click the 'Discover' button. It should find the CT503-100G appliance and add the IP address to the drop-down box in the Connect widget. Press 'Connect' and you will be connected to the CT503-100G.
8. Select the Layer 3, Armageddon, Layer 4-7 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, Armageddon and most other 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.

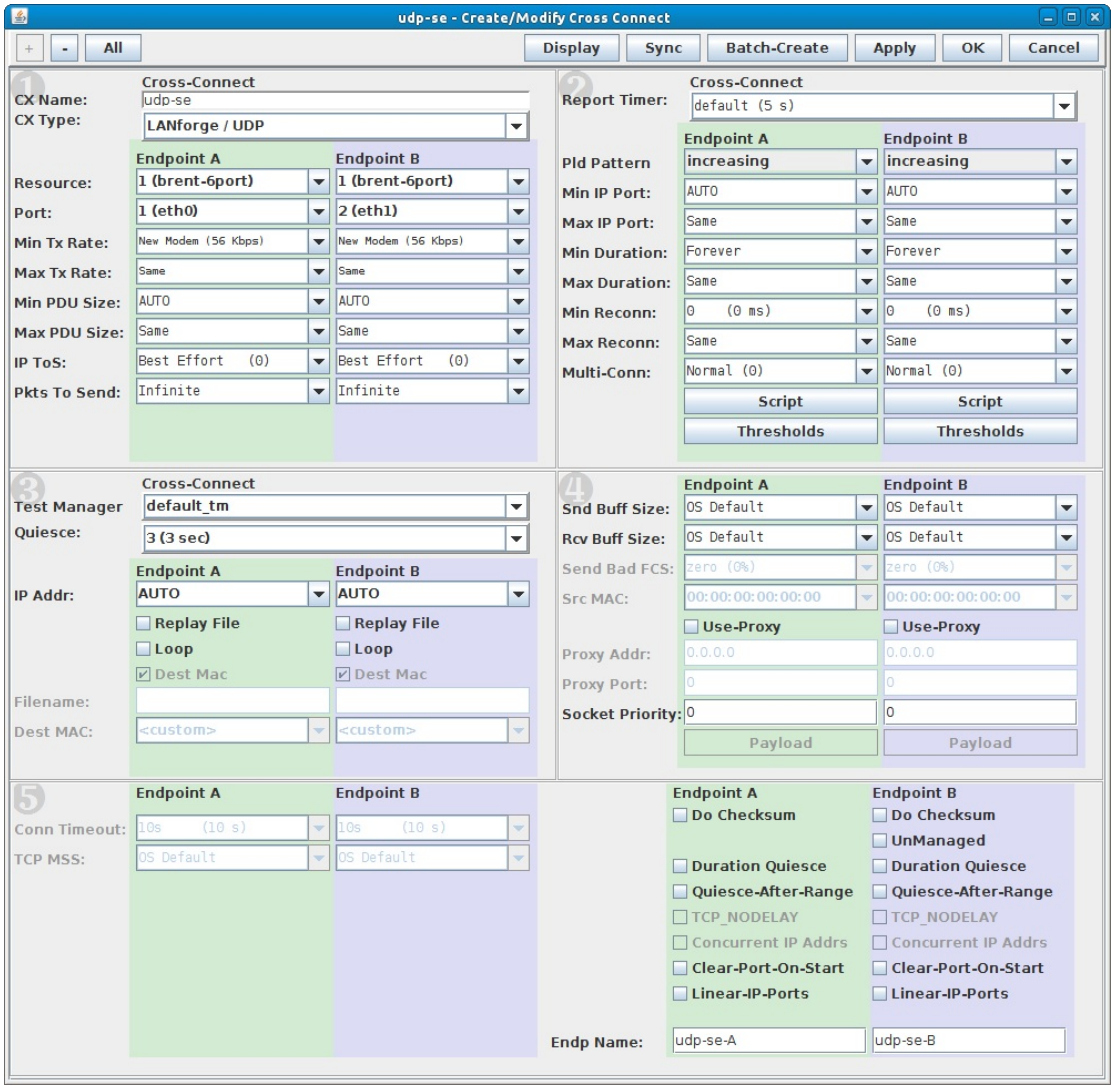
10. Any modifications take place immediately after you click 'Submit'.

LANforge-FIRE Related Screen Shots

Layer 3 (Ethernet, UDP, TCP) Connections



Layer 3 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 4-7: FTP, HTTP, HTTPS, TFTP, SFTP, SCP
    6. Layer 3: Armageddon accellerated UDP/IP (line speed on appropriate hardware).
    7. Layer 4-7: TELNET, PING, DNS, SMTP, NMAP (via add-on script).
    8. File-IO: NFSv3, NFSv4, CIFS, iSCSI.
2. Supports up to 1000 concurrent TCP connections with base license package.
3. The CT503-100G is able to generate up to 100Gbps on each port, depending on protocols mix and speed of the network under test.
4. Hardware supports over 200,000 stateful TCP connections on a single machine, but base license package includes licenses for 1000 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.

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Hardware Specification

1. High-End Intel 24 Core 2U rackmount server.
2. Operating System: Fedora Linux with customized Linux kernel.
3. Supports 2 full-height PCIE NICs and two half-height PCIE NICs. Additional Ethernet interface for management is built-in.
4. Optional NICs include: 6-port 10/100/1000, 2-port 10g (multi-gig), 2-port 100g qsfp and more.
5. 128 GB RAM.
6. 960GB+ NVMe storage.
7. Redundant power supplies (automatically detects EU v/s US power).
8. Weight: 20.4 lbs or 9.3 kg.
9. Dimensions: 17 x 13 x 3 inches (13-inch deep standard 2U rackmount server) Metric: 432 x 330 x 76 mm.
10. ROHS compliant.

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.
- VoIP-Mobile Audio Quality Testing using POLQA/PESQ.

- Mobile-Mobile Audio Quality Testing using POLQA/PESQ.
- Armageddon: Each pair of ports requires a license if not already included.
- RF Chambers for WiFi testing.
- External battery pack: 12+ hours for CT520, CT523, CT92X and other platforms.

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