

Candela Technologies - Stateful IP Traffic Generators and Network Emulators



sales@candelatech.com
support@candelatech.com
+1 (360) 380-1618 [PST, GMT -8]

Network Testing and Emulation Solutions

□ Candela Technologies

- Solutions Solutions
 - TR-398 Automated WiFi Issue 4 + mesh
 - TR-398 Automated WiFi Issue 3 + mesh
 - TR-398 Automated WiFi Issue 2 - Virtual Stations
 - Home in a Box
 - CI/CD Automated WiFi Testing
 - Large Venue WiFi
 - WiFi Mesh Testing
 - WiFi Mass Transit
 - Internet Gaming WiFi
 - WiFi Test House
 - WiFi-6e
 - WiFi-7
 - InterOp
- Products Products
 - Systems/Prices
 - WiFi Traffic Generators
 - RF Enclosures
 - Programmable Attenuators
 - Stateful Traffic Generators

- WAN/Network Impairment
- Features Features
 - All Features
 - Network Emulation
 - Network Load Testing
 - WiFi Testing
 - WiFi Test Reports
 - Screenshots
 - Comparisons
 - RFC Support
- Support Support
 - Successes
 - Support
 - Contact
 - News!
 - Distributors
- Library Library
 - Documentation and Guides
 - Installation Guides
 - GUI Users Guide
 - CLI Users Guide
 - Scripts Users Guide
 - Attenuator Users Guide
 - FIRE Cookbook
 - WiFIRE Cookbook
 - ICE Cookbook
 - Scripting Cookbook
 - Various Techniques
 - LANforge Videos
 - WiFi Information
 - LANforge Debugging
 - All example reports
 - All PDFs & PPTs
 - All Diagrams
 - FAQs
 - Blog
 - Courses
- Open-source Open-source
 - All Projects
 - ICE-Cap
 - Ath10k CT Firmware
 - Virtual WiFi
 - XORP
 - VOCAL2
 - Ben's Blog
- Downloads Downloads

- Release Features
- Quick Start Instructions
- Current LANforge Release
- Previous LANforge Releases



Network Test Equipment

- Traffic Generation
- Network Emulation
- WiFi Performance
- IoT Device Test
- App Performance
- Core Network Load
- Automation
- Custom Testbeds

image/svg+xml

NetworkTesting andEmulation Industries Solutions Results Services Tests Products

Test Core Networks

- LANforge in the Cloud
- Traffic Generation
- Load Testing

Network Impairment

- Emulate many network types
- DSL, Satellite, WiSP
- Packet latency and jitter
- Duplicate packets
- Re-Order packets
- Corrupt packets

Branch Office

L2-7 Traffic Generation

- IPv4/6, TCP, UDP
- iPerf, TrafficGen
- Ping, DNS, SMTP

- IP ToS (QoS) support
- VOIP: SIP/RTP
- HTTP, HTTPS, FTP, Curl
- Captive Portal

LANforge can cluster

- Scale-out traffic generation
- Scale-out user emulation
- Centralized Management
- Test Users and Groups

Emulating Servers

- DHCP Servers
- RADIUS Servers
- SIP Servers
- FTP/HTTP Servers
- Other Internet Servers

Throughput Testing

- Smartphones
- Tablets
- PCs
- Dev Boards
- Application Specific Devices
- Virtual Machines

Stability and Performance

- Multi Station Emulation
- L2-7 Traffic Generation
- Real-world use cases in lab
- Real-world environments
- DFS Testing
- Automation & REST APIs

Emulate 100s of Clients

- **64-200** clients per radio
- 802.11a/b/g/n/ac/ax modes
- MAC and PHY level controls
- 802.11r/k/v/u/w

- Hotspot 2.0
- Captive Portal
- SISO, MIMO, MuMIMO
- State machine errors
- Corruptions

AP Emulation

Create different AP types

Test IoT devices

- Performance
- Functionality
- Roaming/Range
- Tolerance to interference

Edge Network

Test Applications

- Gaming
- Stock Trading
- Web Browsing
- Video Streaming
- AR/VR
- IoT Applications

Test IoT Devices

Medical Equipment

Consumer Electronics

Home Automation

Industrial/Robots

Retail:

- PoS Terminals
- Scanners
- Printers

Transportation:

- Cars
- Planes
- Automobiles

Test WiFi Deployments

- Stadiums
- Malls
- Schools
- Coffee shops
- Airports
- Large public venues

image/svg+xml

WiFi AP & Controllers IoT Devices 70 WiFi Device Emulation WiFi Network Emulation Network Impairments Edge Network Internet Apps WiFi Deployment Testing Cluster Traffic Generation Branch Office Core Network Server Emulation WiFi Probe

Industries

- Service Providers
- Healthcare
- Financial
- Gaming
- IoT
- Transportation
- Government
- Consumer Electronics
- Network Equipment Maker
- Silicon Vendors

Solutions

- WiFi AP Performance
- Custom WiFi Testbeds
- Controller Testing
- Mesh Network Testing
- Inflight Connectivity
- Internet Gaming
- Large Public Venue Testing
- Testing Large Enterprise Networks

Results

- Executive style test reports
- Throughput
- Connection Rates
- VOIP/Video Quality

- Real Application Performance
- Roaming Performance
- Packet Captures

Services

- Test as a Service
- Custom Testbeds
- Automation
- Custom Scripts and GUI Development
- Custom Test Plans
- Vendor Selection
- Expert Analysis

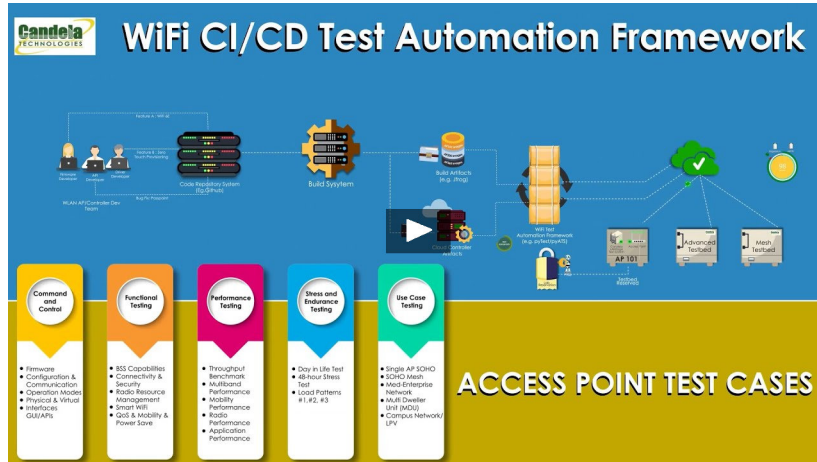
Tests

- Performance
- Connectivity
- Functional
- Conformance
- Scale & Stress
- Real-world deployment use cases
- Security
- Application Performance

Products

- WiFi Client Emulators
- Traffic Generation
- Network Impairments/Emulators
- RF Enclosures
- Programmable Attenuators
- DFS/Noise Generators

LANforge 5.4.6 Released!



image/svg+xml

TR-398 Wifi Testbed The TR-398 test plan qualifies the performance of WiFi APs. CandelaTech LANforge provides an automated solution.

image/svg+xml

Openclipart

2013-08-09T07:51:00Sports arena.

<https://openclipart.org/detail/181702/arena-by-lekamie-181702>

lekamie

arena

bowl

circle

football

nfl

pit

ring

stage

superbowl

venue

worldnews

Large Venue Wifi Testbed Stadium networks handle thousands of users. Candela LANforge systems can do large scale over the air testing.

image/svg+xml

Icon_home_remixofdynamitt

Icon_home_remixofdynamitt

WiFi Mesh Testing Emulate mesh node areas with isolation chambers while LANforge emulates clients stations. Use graphical controls to emulate physical distance.

image/svg+xml

Mass Transit WiFi Mesh Test WiFi coverage for a transportation system. LANforge emulates hundreds of roaming users in small spaces for long duration.

image/svg+xml

Openclipart

Testing Internet Gaming Isolate and test one network variable at a time, all emulated by LANforge: RF stability, RF performance, and upstream network conditions.

- [Introduction](#)



- WiFi Test House Introduction (short)



- WiFi Test House Introduction



- WiFi CI/CD Test Automation Framework



- 20 Years in 200 Slides



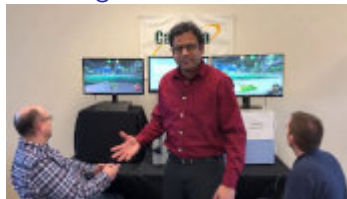
- CI/CD Pipeline



- TR-398 Demo



- Gaming Test Demo



- WiFi Mesh Test Demo



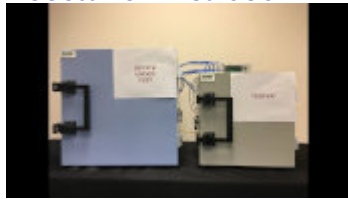
- Transportation Demo



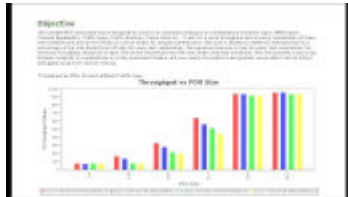
- Inflight Entertainment



- Access Point Testbed



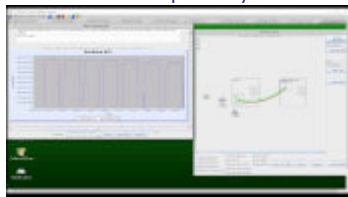
- WiFi AP Dataplane



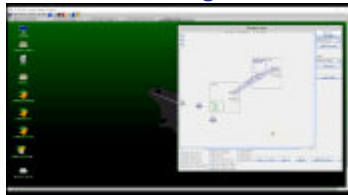
- AP Receiver Sensitivity



- AP Client Capacity



- AP Rate vs Range



- [Access Point Roaming](#)



Candela Technologies, Inc., 2417 Main Street, Suite 201, Ferndale, WA 98248, USA
www.candelatech.com | sales@candelatech.com | +1.360.380.1618

Candela Technologies, 2417 Main Street, Suite 201, Ferndale, WA 98248, USA
www.candelatech.com | sales@candelatech.com | +1.360.380.1618

[Facebook](#) | [LinkedIn](#) | [Blog](#)