Nexus 8610

Universal Signaling & Bearer Traffic Simulation for Faster Time to Market

- Fully Automated Network Node & Service Verification
- For All Traffic Load Conditions & Operational Scenarios
- Real Traffic Mix Generation
- Support for New Services & Technologies (e.g. 2G, 3G, LTE, NGN, IMS, PSTN)
- Full Functionality Verification Before Going Live
- With TTCN-3 Test Language Support

NEXUSTELECOM
NETWORK AND SERVICE INVESTIGATION

Testing 3rd Generation Network Compliance

Progressive liberalization and technical advances in the telecommunications market present ever-changing challenges to both manufacturers of network elements and operators of communications networks. As 3G and IMS empowered networks emerge, it is important to have powerful and flexible testing facilities in place to test new service provisioning technologies at the right time under the right performance conditions; Nexus8610's proven architecture operates at very high rates of complex transactions simulation to thoroughly verify the functioning of any network elements under test.

Key Features

- RNC-UMSC / MGW-MGC load testing
- 100'000 active mobile subscribers per IuCS interface performing 300 LUP/s
- 250'000 active mobile subscribers per IuPS interface performing up to 250'000 parallel PDPs
- Handovers betweens IuPS and Gb, IuCS and GSM
- Speech recognition and voice quality analysis
- Carrier-grade quality verification and assurance
- Testcases built on user data from real USIMs / SIMs available in the system's simcard server
- Compliant to 3GPPP, ANSI, ETSI, IETF and ITU-T

Network operators demand high-quality network elements to guarantee reliable network operation. The Nexus8610 Traffic Simulation System provides full scale extensive testing of such core network equipment to verify that specifications are met under all conditions. In all phases of the network element product life cycle, from development and system integration, to installation, maintenance and fault clearance, the Nexus8610 system unfolds its benefits by thoroughly testing the network elements in all its complexity. The Nexus8610 system supports a wide range of test methods for testing core network equipment, including:

Interworking and Interoperability Testing

Testing the interworking between different applications provided by the SUT (System Under Test). This allows simulating the interoperation of the SUT with other vendors' network elements.

Load and Stress Testing

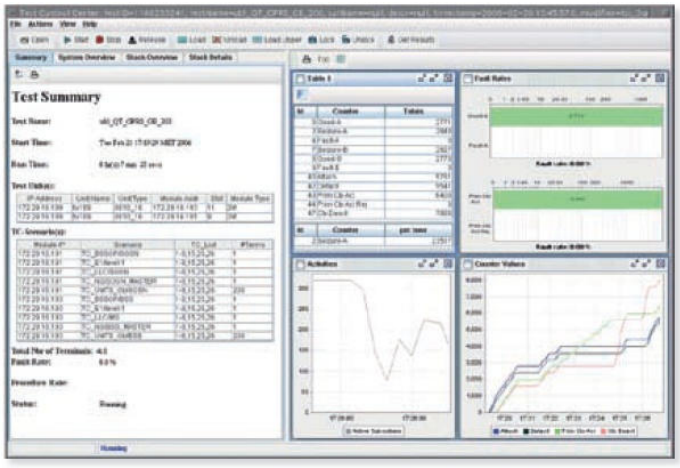
Testing the behavior of the SUT under load conditions, including overload recovery and load protection procedures. This means simulating and sustaining several 100k active PDP contexts per RNC by the Nexus8610 system.

Robustness and Stability Testing

«Carrier-grade» quality assurance and long-term stability testing of the SUT. This means hundreds of hours of continuous testing on multiple interfaces such as IuCS, SIP, RTP, etc.

Acceptance and Regression Testing

Automated and repetitive testing to verify that the original functionality is maintained when new features are integrated through software upgrades by the SUT vendors.

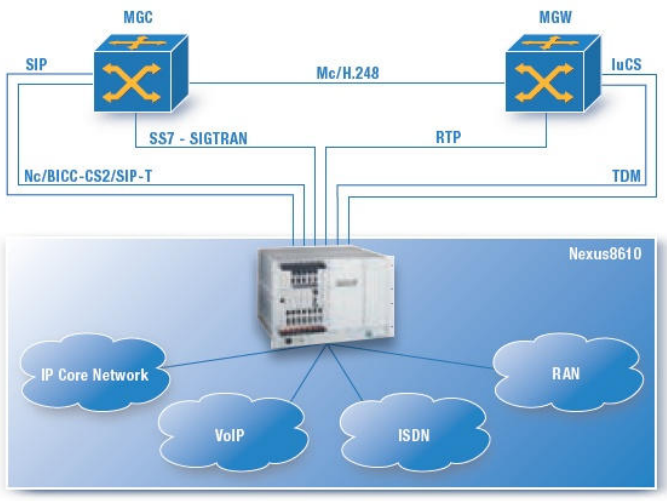


Nexus8610 Test Control Center

Nexus8610 Deployment Examples

Features

- Fully scalable, multi-user test platform for simulating user behavior on multiple interfaces (ETH, STM-1, E1 / T1) and multiple protocols simultaneously: IuPS, Gb, Gn, Gi, IuCS, GSM-A, ISUP, SIP, RTP / RTCP, SIP-T, H.248, SIGTRAN, MAP, CAP, IN
- No limitations in scalability of number of interfaces
- Complex call scenarios built upon a comprehensive set of testing features, including:
    - Speech path verification
    - Speech quality analysis (PESQ, PAMS) and voice recognition
    - Audio record - playback and audio monitor
    - Data throughput variations and verification
- 3G / 2.5G / 2G Mobile Radio Access Network and Core Network simulation, including:
    - Handover verifications
    - Quality Of Services testing
    - Location services testing
    - Using real authentication and ciphering algorithms
- Automated testing for 24x7 operation of the system
- Expedites testing and reduces training through intuitive operation, using «Ready to go» test cases
- Compliant to 3GPP R6, R5, R4 and R99.



System Under Test: MGC / MGW

Circuit Switched Testing – UMTS / GSM / PSTN

- Simulating the UTRAN on the IuCS interface, the GERAN on the GSM-A interfaces and the PSTN on the SS7 interfaces
- Performing all combinations of 2G / 3G handover verifications
- Traffic load generation by simulating hundreds of thousands of mobile users simultaneously
- Testing voice channels with speech quality analysis and speech path verification
- Testing of Interactive Voice Response (IVR) systems

Packet Switched Testing – UMTS / GPRS / GSM

- Simulating the UTRAN on the IuPS interface, the GERAN on the GPRS Gb interface and the PDN on either the GPRS Gn or the GPRS Gi interface
- Simulating the PS Core Network (CN) on IuPS and GPRS Gb interfaces for testing radio access network (RAN)
- Performing all combinations of 2G / 3G handover verifications
- Traffic load generation by simulating hundreds of thousands of mobile users simultaneously
- Verification of payload throughput

Media Gateway Testing – NGN / VoIP

- Simulating Mobile, PSTN and PDN users and the IP Core Network
- Traffic load generation by simulating hundreds of thousands of users simultaneously
- Testing the payload handling of the MGW under load using various types of codecs
- Testing voice channels with speech quality analysis and speech path verification
- Testing of Interactive Voice Response systems.

System Components

Nexus8610 Test Control Unit (TCU)

The Nexus8610 system software and applications run on a SUN workstation. The system software uses Solaris as the operating system software and a Sybase database to store all data.

Nexus8610 Test Unit (TU3)

The test applications are executed on test modules in the Test Unit. Each module has its own CPU resources and physical interface to the Network Element(s) under test, facilitating scalability and multi user operation. Test modules are available for Fast Ethernet, Gigabit Ethernet, STM1 / OC3c and E1 / T1.

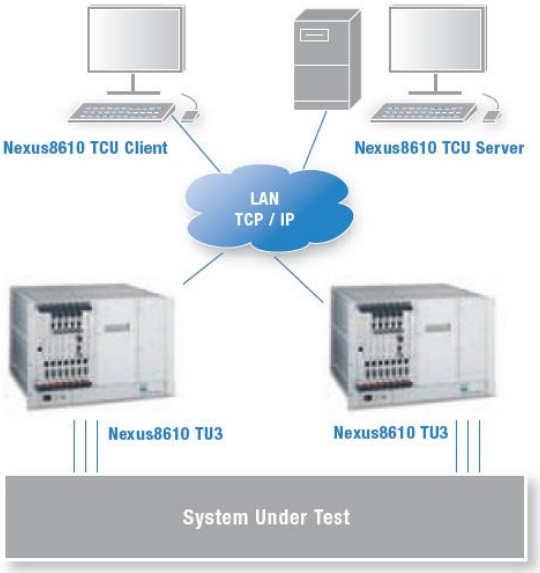
Optimized Test Case Composer

The Nexus8610 test system comes with predefined sets of «ready to go» test cases for each application. With the test case edition it is easy to modify the initial set of test cases or generate new ones – in a matter of minutes. The test case library uses the same notation as technical specifications (e.g. 3GPP, ITU-T). Test cases are written according to standards and still provide the flexibility to freely define messages of the simulated subscribers.

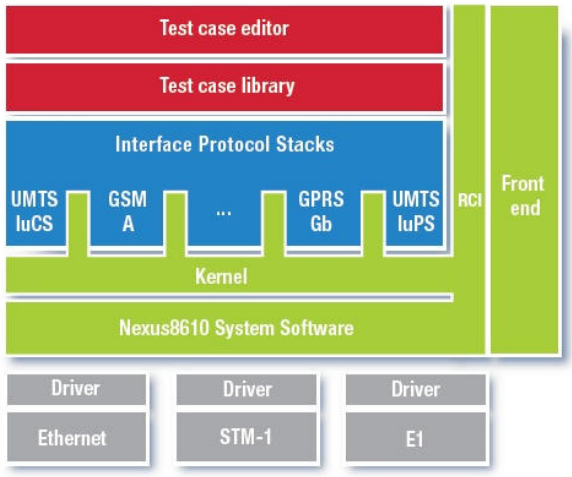
Since the Nexus8610 Traffic Simulation System is a scalable multi-user solution, the number of TCUs for multiple concurrent users and the number of test units (TU3) can be freely combined with no limitations imposed by the system architecture.

Interested?

Contact us directly. We'll be glad to show you more!
Or visit the Nexus8610 website at www.Nexus8610.com.



Nexus8610 System Components



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