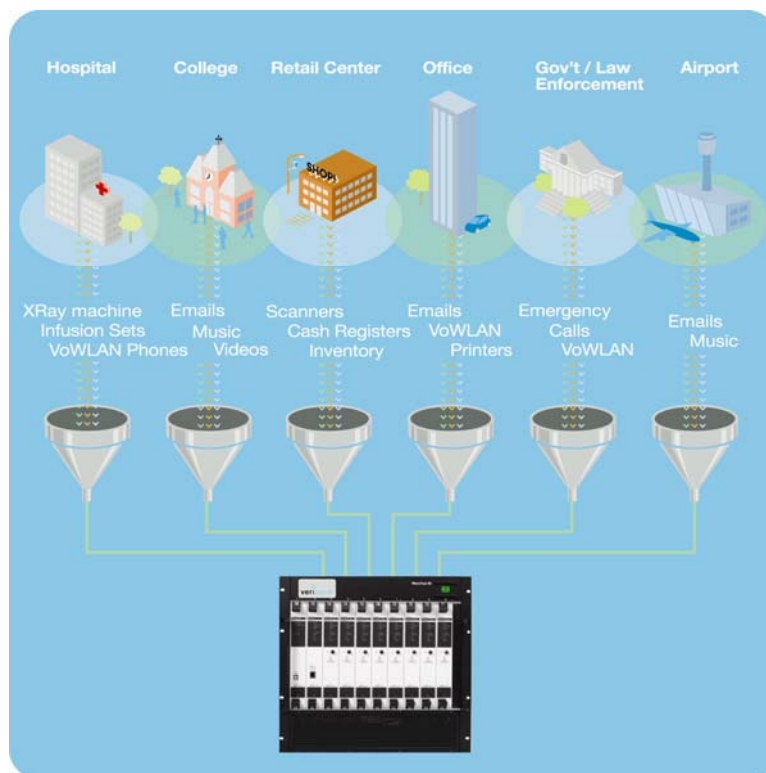


## WiMix™ - Real-World Deployment Test

WiMix™ Real-World Deployment Test offers network developers, QA engineers, installers and IT staff the capability to accurately determine how well business applications will perform in different usage situations, such as education, retail, corporate office, hospital and carrier networks. Application Performance metrics provide the means for determining whether the system measures up to desired quality levels. These metrics precisely quantify the results, define a Service Level Agreement (SLA) in terms of quality thresholds, and compare actual measured test results to the desired SLA's.

Wireless networks present a whole new set of challenges that can dramatically impact application-level performance and functionality, thereby significantly affecting the end-user experience. At the same time, overcoming these challenges has become increasingly critical as people become more dependent on wireless services to stay productive and meet business needs. This requires a quality tool that must not only test the deployment scenarios effectively but also report the results of the test in a useful manner – i.e., report application-level metrics that quantify the user experience.

Using WiMix, it is easy to model real-world deployment scenarios and study the end-users' actual quality-of-experience. Creating "what if" scenarios to effectively plan for changes or added services, makes this an ideal solution for network managers, service providers and network equipment vendors.



Representative usage profiles and traffic mixtures from various network environments

### Benefits

- Ready to use traffic models representing virtually all WLAN network applications with their associated user mix and behavior characteristics.
- Create unique usage models to fit a particular network behavior
- Effectively ensure the performance of critical wireless applications before rolling them out on the production network.
- Establish an application certification process for different wireless network deployments
- Discover WLAN equipment design flaws affecting application performance early in the development cycle
- Reproduce intermittent performance problems in the lab to ease troubleshooting and improve service levels
- Identify and fix security holes in WLAN deployments exposed by complex interaction of different client and application security schemes
- Dramatically reduce test and support costs, and increase test/debug/fix cycle efficiency thereby improving time-to-market



## Test Description

The WiMix Real-World Deployment Test accurately replicates the complex interaction of clients, servers and traffic profiles in wireless LAN's. By creating usage profiles and traffic mixtures that were found to be representative in various network environments, the test measures and reports key application layer metrics that affect end-user Quality of Experience (QoE).

The networks replicated include: health-care, education, airports, warehouses, retail, hot spots, and service provider managed services.

## Test Results and Metrics

- The WiMix test provides both real-time results and final test results and metrics. These results can be exported in a comma separated value (.CSV) file format or HTML to facilitate results analysis and reporting.
- Automatically generated PDF test reports provide executive summaries, including comprehensive graphs, a description of the test, the significance of the results, and detailed results for drill-down analysis
- Results include metrics directly affecting the user experience, such as:
  - Total intended load, offered load and achieved load
  - Percentage of traffic flows of traffic types that satisfied the SLA
  - Percentage of clients of each client type that satisfied the SLA
  - VoIP MOS scores, Video MDI scores, HTTP/FTP Goodput levels, FTP file transfer times, etc.

### CLIENT CONTROL

- 802.11 PHY data rate or 802.3 link speed
- WMM QoS or VLAN tag
- WMM admission control
- Security schemes
- Transmit power level and frame error ratio
- MAC address (auto/manual)
- SSID
- IP address (DHCP/static)
- Probe behavior

### SERVER CONTROL

- 802.3 link speed
- VLAN ID
- MAC address (auto/manual)
- IP address (DHCP/static)

### TRAFFIC CONTROL

- Distinct SLA threshold per traffic type
- Source server
- Traffic load
- Traffic flow rate
- Traffic direction
- User priority per 802.11e/802.1D
- Multicast video/voice
- HTTP (1.0, 1.1): GET, POST
- SIP signaling (enable/disable)
- VoIP codec types – G.711, G.729, G.723
- MPEG-2 transport stream
- FTP: USERNAME, PASSWORD, GET, PUT, file size
- TCP, UDP

### TEST CONTROL

- WiMix real-world deployment model
  - Airport
  - Health care
  - Retail
  - Warehouse
  - Education
  - Hot Spot
  - Service provider
- WiMix view selection (i.e., client-based or traffic-based view)
- Client-based WiMix view:
  - Client type
  - Traffic type
  - Percentage of specific types of clients in mix
    - Number of clients per AP (or)
- Test duration (hours, minutes and seconds)
- Traffic-based WiMix view:
  - Traffic type
  - Client type
  - Percentage of specific types of traffic in mix
    - Traffic level per AP (or)
- Number of trials, WaveTest™ port selection, etc.

## Minimum Requirements

Veriwave Test System	1 x Veriwave WaveTest 90™ or WaveTest 20™ system 1 x WaveBlade™ WiFi (WBW1000) 1 x WaveBlade™ Ethernet (WBE1000)
VeriWave Software	Veriwave L4-L7 Stateful Client Generation Package
Host Computer	X86-based PC with 1GHz processor and 256MB RAM Windows XP SP2, or Linux (2.6 or higher kernel level)

