JUNIPER NETWORKS
WIRELESS LAN SOLUTION
Deliver Secure, Scalable, and Reliable Campus Mobility While Maximizing Performance and Minimizing Cost of Ownership
Wireless LAN Solution Overview

Juniper Networks® wireless LAN (WLAN) solution provides secure, scalable connectivity for mobile users and every one of their Wi-Fi enabled devices. Combined with unprecedented reliability and unified management, Juniper provides the most dependable infrastructure for the mass deployment of mission critical mobility applications, including voice, video, telemetry, and location services.

With a comprehensive family of the most intelligent and advanced controllers, access points, and management tools, Juniper enables nonstop indoor and outdoor mobility for enterprises of all sizes, from small retail operations to the largest campuses. With Juniper’s WLAN solution, organizations can build end-to-end, high-performance wireless infrastructures that deliver a seamless, secure, and reliable mobility experience regardless of where, when, or how users access the network.

This brochure provides an overview of how Juniper’s WLAN solution helps organizations rapidly plan, configure, and manage WLAN infrastructures and mobility services for even the most demanding users and applications in industries such as healthcare, education, manufacturing, and hospitality.
Challenges
As users become increasingly mobile, wireless has moved from simply being a convenience to the primary means of network access. In order to effectively respond to this challenge, organizations need to rapidly expand their wireless LAN infrastructures to provide sophisticated mobile users with ubiquitous, secure, and uninterrupted connectivity.

This unstoppable shift to widespread user mobility has put pressure on IT departments to redefine the role of the network-centric wired network, its architecture, and how it is managed. The network must now become more user-centric, with new architectures that meet the unique challenges of mobility such as high quality voice, reliable connectivity while roaming, location awareness, and device security.

IT is also working on unifying its wired and wireless networks, which is becoming more challenging as users demand access from any location using mobile devices of all sorts, including personal smartphones, PDAs, and tablets. With this comes the need for a more unified security and policy management approach that simplifies the complexity of network access and provides a uniform user connectivity experience.

Trends
The WLAN market is experiencing tremendous growth and this is in evidence everywhere, especially by the widespread use of smartphones and tablets in business and in application-specific Wi-Fi equipped devices in key industries such as healthcare, education, and retail.

Mobile devices now allow doctors and nurses to access patient records at the point of care. Retail staff can perform price checks on the store floor, and students are always connected whenever and wherever they are on campus.

The growth of wireless access and devices is so rapid in education, in fact, that many institutions are seeing the number of daily sessions double every six months as the quantity of “always on” devices per student increases.

Additionally, the industry is experiencing further growth in remote enterprise users who want to access corporate resources from wherever they are, whether it’s from another corporate site, from home, at an airport, in a hotel, or as a guest at a customer’s site.

This is giving rise to a greater focus on security and scalability, along with the need for simplifying deployment and maximizing the quality of the mobile experience within service-level agreements.
Juniper Networks Solution for Wireless LANs

Juniper’s comprehensive wireless LAN solution delivers an evolved architecture that is designed specifically for mobility, with the highest and most advanced levels of reliability, scalability, and security available in the industry. Juniper’s new network is simpler to configure and manage, with unified services that lower the cost of ownership, increase user and IT efficiency, and improve overall business results.

With Juniper’s WLAN solution, organizations can build high performing wireless networks, deliver superior quality voice for hundreds of users, and scale WLANs across the enterprise and beyond—in indoors, outdoors, and across campuses—without compromising security or manageability.

In addition, the wireless LAN management services that Juniper offers include the most sophisticated three-dimensional planning capabilities available, making it easy to design a wireless deployment outdoors and in multilevel or multi-tenant buildings. Juniper’s comprehensive wireless management capabilities unify infrastructure, security, and services management, and they make it possible to cost effectively provide optimized nonstop wireless coverage that scales with user demand.

The Juniper solution also incorporates embedded location awareness for any Wi-Fi device, a distinct advantage in industries such as healthcare, where quickly finding a doctor or a critical piece of medical equipment can save lives.

Figure 1: The Juniper Networks wireless LAN architecture
Reliability: Seamless Roaming and Nonstop Application Availability
Juniper brings the same reliability to wireless networks as is expected from today’s wired networks. With nonstop wireless connectivity, enterprises can confidently mobilize mission critical applications, such as:

- **Logistics**: Hands-free, voice-assisted pick lists give staff precise packing instructions, enabling them to move about freely.
- **Manufacturing**: Assembly machines talk to one another and supervisors stay connected, all wirelessly.
- **Patient Care**: Records are retrieved easily at the point of care, critical-care medical equipment is located wirelessly, and Internet access is made available for both patients and guests.
- **Education**: Students can find wireless access everywhere—in dorms, in labs, and outdoors—enabling ubiquitous connectivity over hundreds of acres across campuses.
- **Hospitality**: Hotels can offer tiered services for guests, with free wireless in lobbies and guest rooms, and pay-for-access options in conference rooms.

Juniper’s highly distributed mobility architecture delivers fast seamless roaming and nonstop availability. Its proven 99.999% voice-grade reliability and consistent voice quality, along with an unmatched hitless failover capability, results in zero dropped calls even under failure conditions—collectively, an industry achievement that is equaled by none.

Performance and Scalability: Intelligent, Distributed, and Unmatched
Juniper delivers high performance and scalability through a highly distributed, intelligent WLAN architecture that allows offloading of encryption, packet inspection, and packet forwarding from centralized controllers to the access points. This leverages the additive processing capacity that comes with every access point added to the network, and it reduces the demand for expensive high capacity controllers.

As a result of sophisticated controller capacity management and access point load balancing, Juniper allows enterprises to do more with less, ensuring the most efficient path for real-time applications. Innovations such as transparently steering users to the least used wireless bands, access points, and controllers also recover 30-40% more usable capacity that results in optimized bandwidth and resource utilization.

Security: Location-Aware User- and Device-Centric
For today’s mobile world, Juniper takes security to the next level, providing mobile users with a seamless, secure, and easily managed roaming experience as they constantly move between locations, as well as between wireless, wired, remote, and cellular data networks.

Juniper’s WLAN security moves beyond identity-based networking where users experience the same consistent level of service wherever they are, to a mobility-centric architecture which delivers location- and role-based secure connectivity wherever users go. Juniper combines physical locations with trusted user profiles to allow secure access to the network on a global level, wherever users need to be connected and from whatever device they prefer to use.

Juniper allows enterprises to control different levels of access for restricted and controlled use, with privileges that can be adjusted continually as the state of the user changes. New authorization attributes are dynamically applied based on where users are and what they are doing.
For instance, schools and universities can adjust the bandwidth of high volume users to prevent bandwidth abuse, or allow teachers to block Internet access during a test. In a government building, WLAN access can be restricted until an employee passes through standard security checks at a building entrance.

In addition, Juniper manages the wired and wireless security profiles of users and their devices together as one, providing users with the same role-based privileges as they roam seamlessly between wired and wireless access.

Juniper’s advanced capabilities also manage security at the mobile device level, allowing users to securely access corporate resources both in and out of the office via the device of their choice, with push-and-wipe capabilities that automatically update device software as well as empty its content if lost or stolen.

For guest provisioning, Juniper has powerful tools that offer secure temporary access, allowing for individual control levels depending on a guest profile and location. Juniper also makes it easy for non-IT to securely provision guest privileges, without any threats to the integrity of the network.

**Unified Management: Centralized, Intelligent, and Cost-Effective**

In today’s world where WLAN management plays an increasingly key role in an enterprise’s wireless LAN strategy, Juniper provides a breadth of management services that are more comprehensive than those found anywhere else. This results in better service quality, faster troubleshooting, and better utilization of resources.

Juniper’s WLAN solution provides a unified management approach for the wireless infrastructure, wireless security, and mobility services. And it uniquely brings together services that are typically siloed, such as radio frequency (RF) management, location data, user roaming and utilization history, and real-time session information.

Juniper’s WLAN solution enables enterprises to plan, configure, deploy, monitor, and optimize wireless LANs across multiple sites from a single, centralized management console.

- **Intelligent radio frequency (RF) planning.** Juniper’s powerful management capabilities help organizations create the optimal design and layout of a high capacity nonstop wireless infrastructure. Three-dimensional modeling of the wireless airspace generates a blueprint with the exact mounting point and optimal configuration for each access point.

- **Easy, efficient configuration and deployment.** Juniper allows for the easy deployment of services through a single, consolidated point that increases configuration efficiency. Deployment can occur offline for hundreds of controllers and access points spread over multiple sites, and then be easily pushed out without any lost sessions.

- **Centralized and real-time monitoring, reporting, and optimization.** Through a single, centralized monitoring dashboard, real-time information is available on network status, traffic patterns, user connectivity, and access point and controller status, with automatic alarms when any issue occurs. Juniper’s wireless LAN management consolidates and correlates session, status, security, and services information such as voice and location data in one centralized view. This eases troubleshooting significantly, as it provides access to any required data for quick, effortless resolution of issues.
Reliable, Secure, and Manageable Enterprise Mobility
For mobility enterprises can count on, Juniper Network has the most reliable, secure, and manageable wireless LAN solution on the market. Over 6,000 companies, including some of the world’s largest universities, hospitals, hotel chains, and Fortune 1000 enterprises, take advantage of Juniper’s nonstop wireless availability and the simplicity of unified infrastructure, security, and services management.

The Juniper Network Wireless LAN Solution

<table>
<thead>
<tr>
<th>PRODUCT</th>
<th>BENEFITS</th>
</tr>
</thead>
</table>
| Juniper Networks WLC Series Wireless LAN Controllers | • Seamless integration of reliable, scalable, and secure wireless LANs with existing wired infrastructures for nonstop availability  
• Ideal for installations of any size, from small branch offices to the largest businesses and university campuses |
| Juniper Networks WLA Series Wireless LAN Access Points | • High-performance, reliable mobility indoors and outdoors for any Wi-Fi device  
• Reduced latency, massive scalability, and high performance for wireless VoIP, location services, and video  
• Complete access point, mesh, and bridging services |
| Wireless LAN Management | • Advanced wireless planning, configuration, and deployment tools  
• Unified infrastructure, security, and services management  
• Real-time location awareness and access control for all users and devices  
• Easy guest access provisioning for nontechnical staff |

About Juniper Networks
Juniper Networks is in the business of network innovation. From devices to data centers, from consumers to cloud providers, Juniper Networks delivers the software, silicon and systems that transform the experience and economics of networking. The company serves customers and partners worldwide. Additional information can be found at www.juniper.net.