



## Secure Voice and Data over Wi-Fi

### Overview

#### Situation

*Wireless LANs, or Wi-Fi, has become common in many enterprises. However, many existing WLAN solutions fall far short of fulfilling the security, Quality of Service (QoS), performance, mobility, and management requirements of an enterprise. In particular, the need to secure calls over the wireless infrastructure demands that the networks be capable of a layered security approach.*

#### Solution

*Juniper Networks and Meru Networks provide a complete solution to securely enable the use of wireless voice and data in enterprises, branch and remote offices. By combining Juniper's comprehensive security platform with Meru's system-wide air traffic intelligence, enterprise organizations are able to meet the strictest standards for secure voice and data mobility.*

#### Customer Value

*Wireless users enjoy the freedom of anytime, anywhere connectivity, while enterprise network managers remain certain that the corporate network is protected by Juniper's Secure and Assured Networks solution.*

### Situation

As workforce mobility continues to become the norm rather than the exception, Wi-Fi technology is quickly becoming the primary means of connectivity for voice and data communications. *Beyond* basic applications such as email and Internet access, WLANs are also supporting productivity tools, including: voice, video and web conferencing in densely populated work environments across the entire organization. Formerly used in back office applications such as just-in-time inventory management or manufacturing flexibility, they are now found in conference rooms, executive offices and even across entire campuses to carry data as well as mission-critical applications such as voice. With this wireless freedom extending throughout the enterprise, the network must be Secure and Assured in order to provide the confidence that business will carry on.

### Solution

Juniper Networks and Meru Networks jointly deliver a solution that allows the benefits of wireless VoIP campus-wide mobility with the security and reliability of a wired network.

Juniper and Meru overcome the critical challenges involved in implementing and managing a scalable wireless local area network (WLAN) infrastructure at enterprise headquarters, campuses, multi-tenant facilities and branch offices. Specifically, Juniper's "security zones" are seamlessly extended to the wireless domain over Meru WLAN infrastructure, enabling end-to-end media-independent security. For enterprise, this joint solution provides significant benefits, including:

- Save costs: Buy network security products once (no need to buy WLAN specific security products or modules, like firewalls, VPNs, IDPs, etc)
- Better user experience - enterprise users have the same access and policies that apply regardless of how they connect
- Better Control - Security administrators have centralized view of security policies, etc.

## Solution Components

### Juniper Networks Firewall / IPSec VPNs (NS 5GT, NS 208)

IPSec VPNs provide complete LAN access and are an excellent solution for remote or branch offices, fixed telecommuters and partner sites when the user has a managed corporate device and is coming from a trusted network.

### Juniper Networks SSL VPNs

SSL VPNs operate at the application layer and provide selected access to specific resources. They are an excellent solution for mobile employees, consultants as well as business partners where the user is accessing the network via a non-corporate device from an untrusted network.

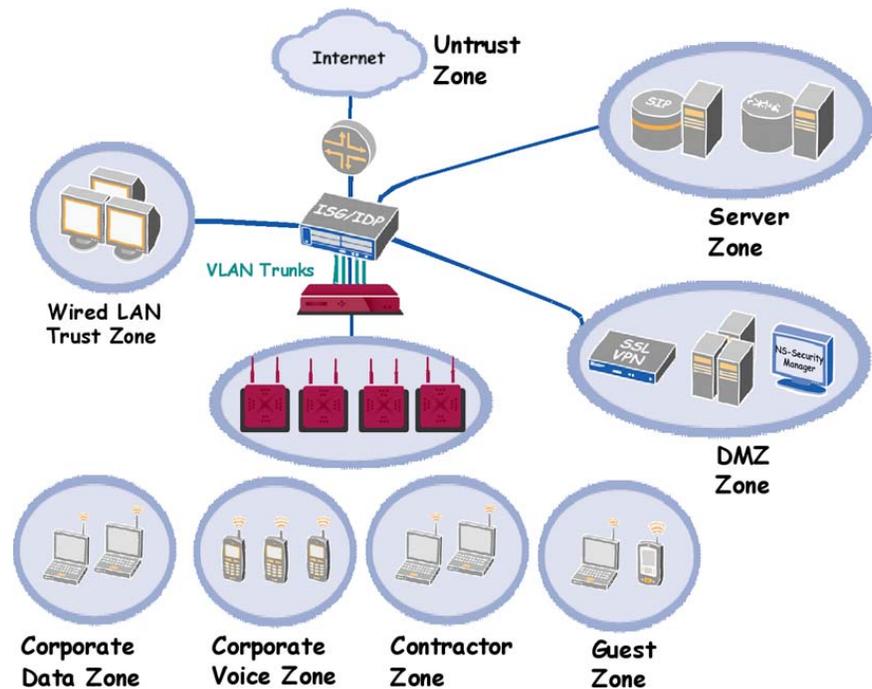
### Juniper Networks Intrusion Detection and Prevention Products (ISG/IDP)-

Juniper Networks IDP provides comprehensive and easy to use protection against current and emerging threats at both the application and network layer. Using industry recognized stateful detection and prevention techniques, Juniper Networks IDP provides zero day protection against worms, Trojans, spyware, keyloggers, and other malware.

### Meru Access Points

Meru Access Points provide leading Wi-Fi performance for 802.11b, 802.11g and 802.11a clients. Deployed wherever Wi-Fi coverage is required, they work in conjunction with Meru Controllers to deliver the highest toll quality voice over Wi-Fi service, excellent data client performance, self-healing and rogue AP detection.

Meru Wireless LAN Controllers (MC500, MC1000, MC3000)- Meru Controller provides centralized management and control of Meru APs. Meru Controllers intelligently manage the RF air space to deliver a WLAN that is as reliable as the wired network. Intelligent management of client access ensures the highest performance for dense voice and data applications, delivering a true converged voice and data WLAN.



## Key Features/Benefits of Joint Solution

### High Quality Voice and Highly Scalable Data over Wireless

Voice over Wi-Fi is increasing rapidly in popularity, with IDC reporting that over 100 million Wi-Fi enabled phones will be available by 2010<sup>1</sup>. While many enterprises recognize the value of voice over wireless and, more importantly, converged data and voice over wireless, they have been reluctant to deploy it on a broad scale because of the inherent challenges. Employing its patent-pending Air Traffic Control technology, Meru efficiently manages over-the-air traffic to deliver predictable bandwidth and reliable performance, even in dense user environments. Moreover, with Meru's Virtual Cell feature, multiple Meru APs act as one powerful, wide-ranging AP, providing seamless handoffs, as users roam in and out of the range of various physical access points.

### No Wireless Expertise Needed for Secure and Easy WLAN Deployment

The Meru WLAN system takes the hard work out of the WLAN deployment by eliminating the need for costly site surveys, recurring AP configurations, and on-going air security surveys. With Meru's Virtual Cell feature, enterprise organizations can install APs without worrying about the RF interference (within and across wireless cells) that plague wireless performance. Meru WLANs also provide the ability to continuously scan the airwaves for rogue APs (i.e., low cost, consumer-grade products typically installed by employees without the knowledge of IT). By actively searching

## Meru Networks Key Differentiators

### Highly Scalable

*By coordinating channel access, Meru minimizes unnecessary RF contention to deliver high-performance service to large numbers of users*

### True Voice and Data Convergence

*Meru provides up and downstream Quality of Service (QoS) to enable you to deploy WLANs with voice and data over a single wireless infrastructure*

### Eliminate Complex RF Site Surveys

*Meru's contention management and Virtual Cell Technology make single-channel deployments possible—no more expensive and laborious channel planning*

### Seamless Handoff Across APs

*Meru's Virtual Cell Technology makes handoffs and load balancing transparent to clients—the infrastructure rather than the client now has control over roaming*

### True b/g Performance

*Only Meru can give 802.11g clients full performance in mixed b/g networks*

for these devices and automatically blocking unsafe traffic, Meru provides the first level of security against wireless security threats.

### *Extending Identity-Driven Access to the Wireless LAN*

Juniper's Netscreen VPN Appliances provide advanced identity-driven access allowing administrators to easily deploy a network that securely supports, employees, contractors, and guests, all with different network access rights. As an example, an employee may be able to access all network resources, while the contractor can use email only and guests can only access the Internet. Meru extends this identity-based access to the WLAN using VLANs to support up to 16 separate networks on a single Meru AP. User traffic can be directed to separate VLAN or Ethernet ports on the Netscreen appliance based on the network name (SSID) or authentication method, including: 802.1x WLAN, VPN login or captive web portal.

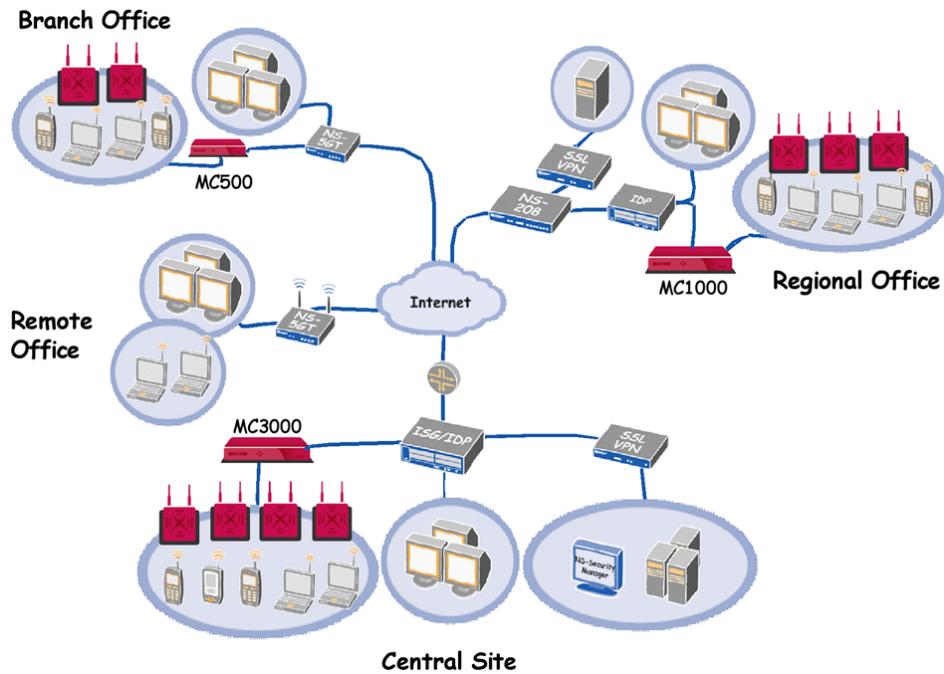
### *Secure and Assured Networks*

With the proliferation of wireless devices on the wireless network and with the knowledge that these wireless devices most likely spend time connected to other wireless and wired networks, a layered approach to security is required. The solutions to secure your network and applications must include protection from "trusted" devices and users. Beyond the tunneling and authentication above, total security must encompass Intrusion Protection for applications, protection from Denial of Service attacks, anti-virus protection, and URL web filtering in order to protect your network from the variety of attacks that could bring down both the data and phone networks. Juniper Networks security products provide the layered protection to Secure your network and Assure it is there when you need it.

## About Meru

Meru Networks is a global leader in Wireless Voice over IP (VoIP) infrastructure solutions. With its innovative, award-winning Air Traffic Control technology that brings the benefits of the cellular world to the wireless LAN environment, Meru's WLAN System is the only solution on the market that offers the reliability, scalability, and security necessary to deliver converged voice and data services over a single WLAN infrastructure.

## Secure & Assured Architecture for Voice and Data over Wi-Fi



## Layered Security Across the Solution

