

# Wireless Network Quality of Service

**WHITE PAPER**

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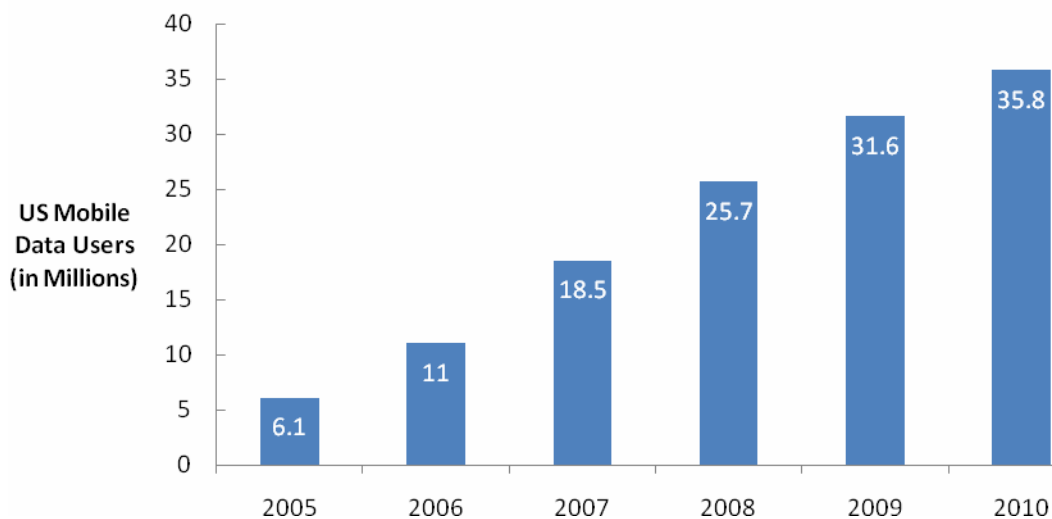
## Overview

The Yankee Group estimates that over 39% of the US workforce — 51 million workers — are mobile (spending 20% or more of their time away from the primary workspace)<sup>1</sup>. The Yankee Group further estimates that there are 11 million US workers who are mobile data users, with this market growing by 3x through 2010<sup>2</sup>.

A key challenge faced by enterprise IT management is how to ensure the productivity of this growing population of mobile workers. The opportunity that enterprise mobility offers to organizations is significant. More time in the field meeting customers, prospects and partners can equate to stronger business relationships and increased revenue potential. But mobility in today's enterprise environment is not a simple task. Successful mobile deployments require IT management to take a holistic approach managing all elements of the mobile deployment, including applications, wireless networks and devices.

### Growth of the Mobile Workforce

Source: Yankee Group, 2006



One of the most common failures in mobile deployments is an element entirely out of the hands of enterprise IT management – constrained bandwidth on the public wireless networks. While there are management tools that allow control over bandwidth usage on private (managed) networks, most mobile workers rely on at least one and often more than one cellular data network to access their corporate information and applications. To keep their mobile workers productive, enterprises are looking to Quality of Service (QoS) tools to ensure that mission-critical applications and data operate efficiently regardless of the wireless network in use. When

<sup>1,2</sup> Yankee Group, "Optimize Enterprise Productivity Through Mobility: Choosing the Right VPN Solution," December 2006, p.1

implemented properly, QoS capabilities help prevent non-critical applications from impeding mission-critical applications, keeping the mobile worker productive even during peak periods.

A QoS solution provides two key benefits for any organization with a large mobile workforce. First, it increases productivity by freeing up wireless network bandwidth and prioritizing mission-critical applications to ensure they are accessible. Secondly, it offers IT management a way to optimize the wireless networks their mobile workers may use.

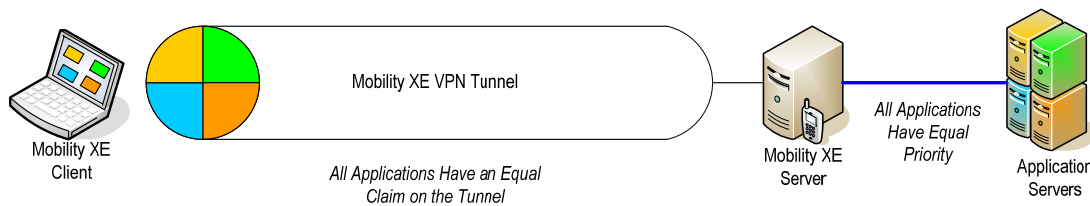
## Mobility XE QoS

NetMotion Wireless' mobile VPN, *Mobility XE*, has a robust suite of features that help workers stay productive by insulating applications from coverage gaps and other service disruptions. It enables seamless roaming between wireless networks and helps IT departments maintain security and enterprise control over their mobile workers, devices and networks.

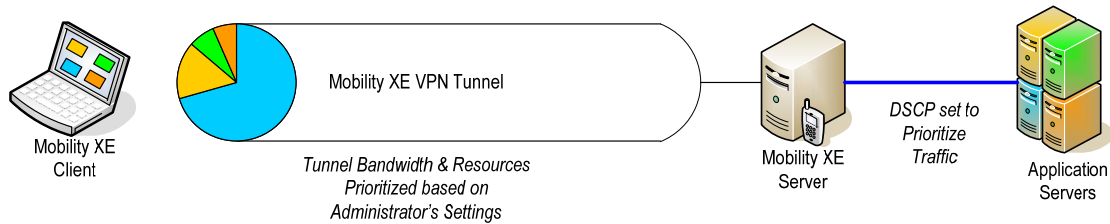
Mobility XE also provides advanced QoS capabilities that let IT managers control mobile worker access to applications and data. Using QoS policies, administrators can shape the data traffic transmitted through Mobility XE's secure VPN tunnel by designating which applications and processes receive bandwidth based on network, device, user, user group and more.

## Without QoS

Without QoS, all applications have equal claim on the network resources between the client and the Mobility XE server. Mission-critical and non-critical applications, OS updates, antivirus updates, NetBIOS, etc., all compete for available bandwidth. In particular, real-time applications (RTAs) such as VoIP and video are even more susceptible to constrained bandwidth than traditional "data" applications. Without a way to prioritize RTAs ahead of other applications and processes, their quality is greatly diminished, leading to latency and jitter. Real-time data flows are especially challenging for IT departments to control as they use any available port to connect, making it impossible to know in advance which ports to block/allow and set QoS policies on



## With QoS



Using QoS policies that are centrally administered and automatically deployed, Mobility XE can set the traffic shaping priorities for each application using any wireless network. This allows mission-critical application traffic to supersede all other data traffic, ensuring mobile worker productivity. Non-critical applications only receive bandwidth as it becomes available. And because QoS policies can be enforced based on application name, they are particularly well-suited for managing RTAs even though the ports they use may change.

## Field Service Example

A field service organization has 5 key applications: Billing, Systems Management for Remote Devices, Corporate IM, a Web-based CRM application and E-mail. The field technicians carry laptops throughout the day, and use them occasionally at home and in a branch office. The laptops have a number of background applications which have been installed by the operating system or other applications, such as Windows Update, antivirus updates, and software from printer manufacturers that automatically updates printer drivers.

The field technicians typically spend 32 hours a week in the field and 8 hours at a regional office. While in the field they are connected via a wireless carrier's data network. At the regional office they connect via an in-building wireless LAN.

*QoS Solution using Mobility XE:* Using Mobility XE's policy management module, the IT managers specify Quality of Service priorities for each application. They give the Billing application and Remote Device Systems Management application the highest priority – as these are the applications essential for an on-site field technician. A moderate priority is given to Web CRM, corporate Instant Messaging, and E-mail. All other applications are given a background priority –the lowest setting. This set of policies prevents the field technician's productivity from being disrupted because some non-essential application is siphoning off bandwidth.

Furthermore, if a zero-day attack (virus or worm) infects a laptop, it cannot disrupt the operations on the device because it is only allocated available bandwidth with all the other non-named applications running at lowest priority. In addition, as soon as a system administrator

learns of the attack, the QoS policy can be quickly updated to block the attacking virus or worm and automatically pushed out to all the field devices, preventing further spread.

QoS settings are created and managed centrally via Mobility XE's management console and enforced on the remote devices. Should the settings need to be changed, they are modified once (at the server) and automatically sent out to all subscribed clients.

Furthermore, QoS policy settings can be defined to behave differently depending on the time of day, the device, the user, etc. The field service organization, for example, might want certain applications set to background priority when connected to cellular data networks but upgraded to high priority when on the corporate Wi-Fi – or executives may want E-mail set to high priority when using Windows Mobile smartphones.

## Device to DMZ

Mobility XE's QoS policies are enforced from the mobile device to the DMZ, regardless of which wireless (or wired) networks are in use. Whereas QoS settings implemented by a wireless carrier in their network or as part of a WLAN are only active within the discrete network, usually representing a portion of the path between the mobile device and the Mobility XE server. As a mobile deployment expands and workers connect to available wired, Wi-Fi, or cellular data networks, maintaining control over the users' access to applications and data ensures their continued productivity as well as maintains security for the enterprise.

## Conclusion

Quality of Service capabilities are one of the final building blocks for a successful mobile deployment. By implementing policies to govern access to enterprise data, IT management can better manage and enhance the productivity of their workers and protect their organizations from virus attacks. QoS gives IT managers complete power over their entire mobile deployment by letting them shape and control traffic across any network that their users may connect to. QoS also lets IT management meet the ever growing population of mobile workers head on with tools that make even the largest deployment manageable.

## Learning More

If you are a NetMotion Wireless customer, please see Tech Note 2212 on Configuring Quality of Service. If you are not a NetMotion Wireless customer, please see our website, <http://www.netmotionwireless.com> or contact [sales@netmotionwireless.com](mailto:sales@netmotionwireless.com) for more information.

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