

# HP ProCurve Networking Mobility Infrastructure Solution

## White Paper



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## Introduction

According to Gartner Research, wireless local area networks (WLANs) will continue on an unabated growth path in 2004 and beyond. Declining WLAN equipment prices, improvements in WLAN security, and increased integration with wired LAN networking platforms were cited as primary reasons for this growth. Gartner implores companies to recognize that wireless functionality has become a core part of every enterprise network and can no longer be regarded as an elective technology<sup>1</sup>.

Organizations finally have the opportunity to provide their workforces and business partners with access to valuable information anytime, anywhere without security risks. By simplifying wireless and wired deployment through converged technology, companies can significantly increase productivity and save costs through unified and robust communications. This paper highlights the HP ProCurve Networking Mobility Infrastructure solution, which enables reliable, secure wireless connectivity, increases workforce productivity, and reduces operational costs.

## Why network mobility?

WLANs present a host of benefits and challenges to every organization. Wireless networks are creating efficiencies and reducing costs for not only corporate enterprises, but also a wide array of targeted industries, such as healthcare, education and manufacturing. Although there are advantages and obstacles unique to each industry, there are generically applicable benefits for any organization seeking to deploy WLAN capabilities.

- **Increased workforce productivity:** Increased productivity is the most commonly cited advantage of wireless network connectivity. Yet contrary to the common misconception, the productivity gleaned by WLAN deployments extends far beyond laptop users checking e-mail during meetings. In fact, WLAN productivity gains can and should be quantified. In a recent study conducted by Intel, employees who upgraded to wireless connectivity realized a productivity gain of more than two hours per week, easily paying for the cost of the upgrades in the first year. The study also revealed a more profound benefit: wireless mobility rapidly and positively changes the way employees work and gives them more control over their jobs<sup>2</sup>. With users always on the network, problems can be solved in real-time and overall collaboration is improved. This applies not only to a company's campus workforce, but also mobile and remote employees, guests, partners and suppliers.
- **Improved network operations and reduced costs:** A WLAN can extend a network to areas that were previously unattached to the enterprise infrastructure, such as warehouses and distribution centers. It can also bolster network functionality and enable the use of new applications, such as Voice over WLAN (VoWLAN) and Instant Messaging. By extending the enterprise infrastructure and improving network operations, user and business productivity is enhanced, network management is simplified, and site operation costs can be reduced.

Despite the multitude of benefits, there are also several challenges to deploying an effective WLAN. First and foremost, WLANs present entirely new network security challenges and new intrusion possibilities that must be addressed. There is also a desire to leverage wired LAN security systems already existing on the network. In order to ensure the latest in proven, interoperable security features, companies must implement standards-based mobility solutions.

Deploying a WLAN seamlessly and economically so that it does not adversely affect network operations or business productivity can also be troublesome, as many wireless solutions are not

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<sup>1</sup> Gartner Research, "Wireless LAN Predictions for 2004," November 19, 2003

<sup>2</sup> Intel, "Effects of Wireless Mobile Technology on Employee Productivity," November 2003

designed to integrate into existing infrastructures. Companies need to make sure their WLAN deployments do not come at the expense of existing technology investments or add to the overall cost and time associated with network management.

Companies should also consider vendor longevity, since many providers have point products that do not offer a complete solution or the ability to adapt to an ever-changing technology marketplace. With full integration of LAN and WLAN offerings from incumbent networking vendors, Gartner predicts a serious dropout of WLAN startup switch vendors, with at least 60 percent not expected to survive more than a few years<sup>3</sup>.

Figure 1. Wireless deployment without the HP ProCurve Mobility Infrastructure solution

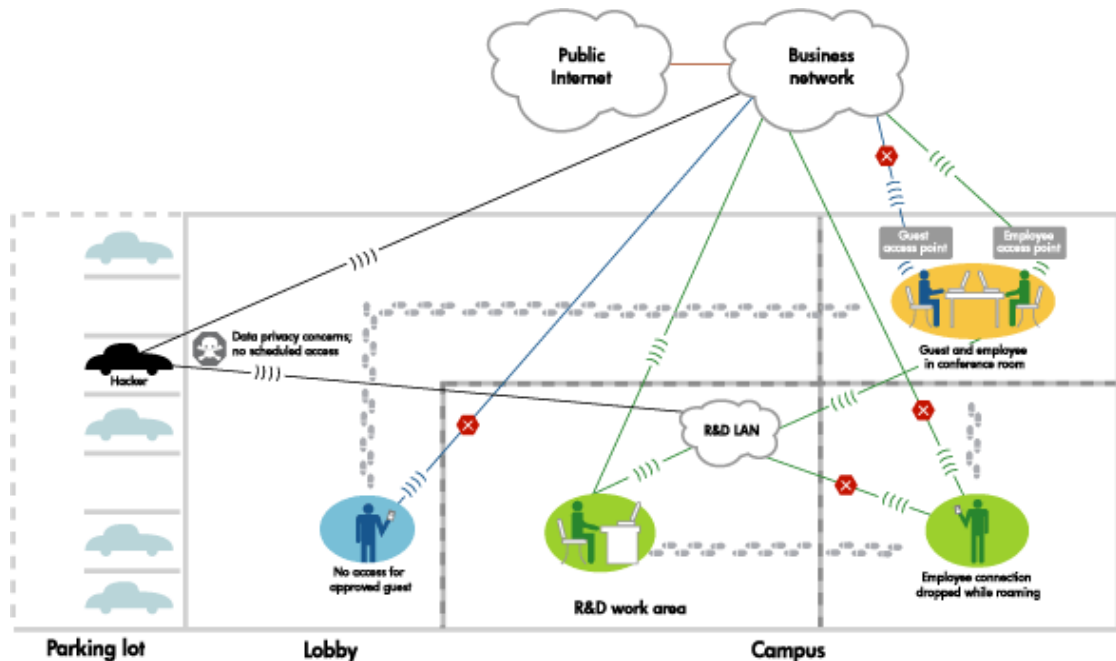


Figure 1 illustrates a typical corporate campus network today and the various obstacles to deploying a robust, secure WLAN infrastructure. The three primary types of end-users are presented: the unwanted user (i.e. a hacker), the approved guest and the employee.

Unfortunately, typical corporate networks render it too easy for unwanted users to get onto the WLAN. Most wireless extensions to networks today are still protected by Wired Equivalent Privacy (WEP) encryption, which has known data privacy issues. Therefore, an unwanted user in the parking lot may be able to “sniff” the radio frequency (RF) for passwords or corporate information, thus jeopardizing the security of the network. This problem is exacerbated further by the inability to schedule access to the WLAN (i.e. after 5 p.m., no WLAN access is permitted in the lobby area). Since points of network access remain vulnerable after work hours, it is even easier for an unwanted user to attempt network infiltration.

Although unwanted users can readily enter many existing wireless infrastructures, enabling guest access to a network for job applicants, suppliers visiting for meetings, business partners or commissioned consultants is often unreasonably complicated. Most of today’s WLANs cannot be easily configured to provide secure guest connectivity to the network across many points of access.

<sup>3</sup> Gartner Research, “Wireless LAN Predictions for 2004,” November 19, 2003

Most vendor options require the network administrator to individually configure each point of access – and often times require changes to the authentication system – for every potential guest. The amount of cumbersome configuration and customization required often results in information technology (IT) management not allowing any guest access to the network, which limits guest productivity and collaboration with the company.

Of course, employees are the primary users of wireless networks and it is highly advantageous to control WLAN access by specific employee classification. For example, a company may wish to restrict access to the research and development (R&D) LAN to R&D employees only. Unfortunately, such policy control is not easily achievable in today's wireless solutions. Policy control for most WLAN offerings today is limited to granting access based on the user ("who"), yet it is desirable to also limit access based on specific resources ("what"), time of day ("when"), and physical location ("where"). Using the previous example, the company may decide that R&D employees should only have access to the R&D LAN within the R&D work area during normal business hours, providing additional assurances for control of sensitive information. This level of policy control is not possible today for the vast majority of WLANs.

Another challenge is session persistence. Some networks today allow users' connections to persist as they move around, as long as they do not move outside of the given subnet to which the access points are connected. However, the connection is dropped once the user moves beyond a given subnet, as there is no session persistence or roaming capability from subnet to subnet. This diminishes the productivity benefits for users, such as those on corporate campus sites who regularly roam from building to building.

## HP ProCurve Mobility Infrastructure Solution Overview

The HP ProCurve Mobility Infrastructure solution is a complete offering designed to address all of the shortcomings and challenges presented above. It combines HP ProCurve products, services, and support to enable reliable, secure, wireless connectivity (Figure 2). Not only does HP ProCurve supply all necessary hardware (wireless clients, access points, switches), software (network management tools), enabled applications (seamless roaming, access to network services), services, and support (site assessment and deployment partners, lifetime warranty) to implement and maintain a robust WLAN, it also supports third party authentication systems, clients, switches, and access points for maximum flexibility and cost savings.

Figure 2. HP ProCurve Mobility Infrastructure solution framework



The HP ProCurve Mobility Infrastructure solution renders it easy and cost-effective to implement secure WLAN capabilities by providing:

- Reliable wireless connectivity - anytime, anywhere
- Industry-leading, enterprise-class security
- Flexibility and choice of deployment approach
- Ease of use and ease of maintenance
- The ability to leverage existing network infrastructure investments
- Adaptability for future change and growth
- Best-in-class affordability, support and warranty
- Superior return on investment

## Command from the center with control to the edge

Based on the HP ProCurve Networking Adaptive EDGE Architecture™, the HP ProCurve Mobility Infrastructure solution provides intelligence at the edge of the network where the user connects, enforcing security and bandwidth allocation policies, enabling appropriate network connectivity when and where needed, and maintaining session persistence as mobile users move across subnets.

Whereas most wireless offerings are only able to provide network control and access based on the user (“who”), the HP ProCurve Mobility Infrastructure solution also defines and enforces network connectivity based on accessible resources (“what”), time of day (“when”), and physical location (“where”). HP ProCurve switches can immediately recognize who the user is and the types of services

and access he or she is authorized to have, thus personalizing the network at the point of entrance. This also means that any unauthorized traffic is stopped at the point where it is trying to connect, not after it has entered the infrastructure, making the network less vulnerable to attack.

By providing centralized control of wireless access and security policies, the HP ProCurve Mobility Infrastructure solution also decreases operational costs and increases the productivity of IT management. Previous WLAN strategies have required policy implementation and modification at every edge device in varying physical locations. With simplified system management capabilities, the HP ProCurve Mobility Infrastructure solution provides centralized visibility, configuration and modification for a widespread WLAN deployment.

## Interoperability and industry standards

Because the HP ProCurve Mobility Infrastructure solution is standards-based and interoperable with any vendor's authentication systems, clients, switches and access points, companies can leverage existing site infrastructure investments without sacrificing security or functionality. According to renowned industry pundit Stan Schatt of Giga Research, for large enterprises and companies with decentralized organizations, this equates to greater network flexibility, management and security that supersede disparate or proprietary networking tools<sup>4</sup>. The ability to reap the benefits of a secure WLAN without overhauling the entire network infrastructure can provide huge cost savings.

## Seamless roaming

The HP ProCurve Mobility Infrastructure solution is designed to enable mobile users to move from one location to another, preserving the connection and application as appropriate across wireless zones. The infrastructure is unique in that it securely tunnels network connections from access point to access point and subnet to subnet as users roam. Many WLANs today do not offer session persistence or roaming capability between subnets.

## Guest access

The HP ProCurve Mobility Infrastructure solution also provides robust guest services at corporate campuses that are easy to implement and effectively facilitate collaboration with suppliers, partners and other campus visitors. It enables simultaneous guest and trusted user access, allowing concurrent wireless connectivity for users with different access privileges. And with zero-configuration access, users are given network access regardless of device configuration, provided they have the correct authentication credentials and access rights. The HP ProCurve Mobility Infrastructure solution also offers customizable guest logon pages, which can be predefined by IT management.

## HP ProCurve Mobility Infrastructure Solution Deployment Scenario

Establishing an effective WLAN infrastructure can be an extremely complex undertaking. The HP ProCurve Mobility Infrastructure solution reduces this complexity by offering complete, robust and secure WLAN capabilities, which are easily integrated into a network regardless of the existing infrastructure. The solution not only includes hardware and software, but also the services, support and tools necessary to enable a successful, cost-effective WLAN deployment. This comprehensive solution delivers secure, persistent, dependable, wireless connectivity to resources, allowing employee work to proceed uninhibited by physical location. As a result, technology and operational costs are reduced, user and IT management productivity is increased, and collaboration with visitors is enhanced.

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<sup>4</sup> Giga Research, "HP Might Have the Solution to Tame the WLAN Tower of Babel," September 30, 2003

In contrast to the deployment scenario presented in Figure 1, Figure 3 illustrates a typical corporate campus WLAN after deploying the HP ProCurve Mobility Infrastructure solution. All of the challenges highlighted in the previous scenario have been addressed. Guests and employees are granted secure, appropriate network access, while unwanted users are prevented from accessing the WLAN.

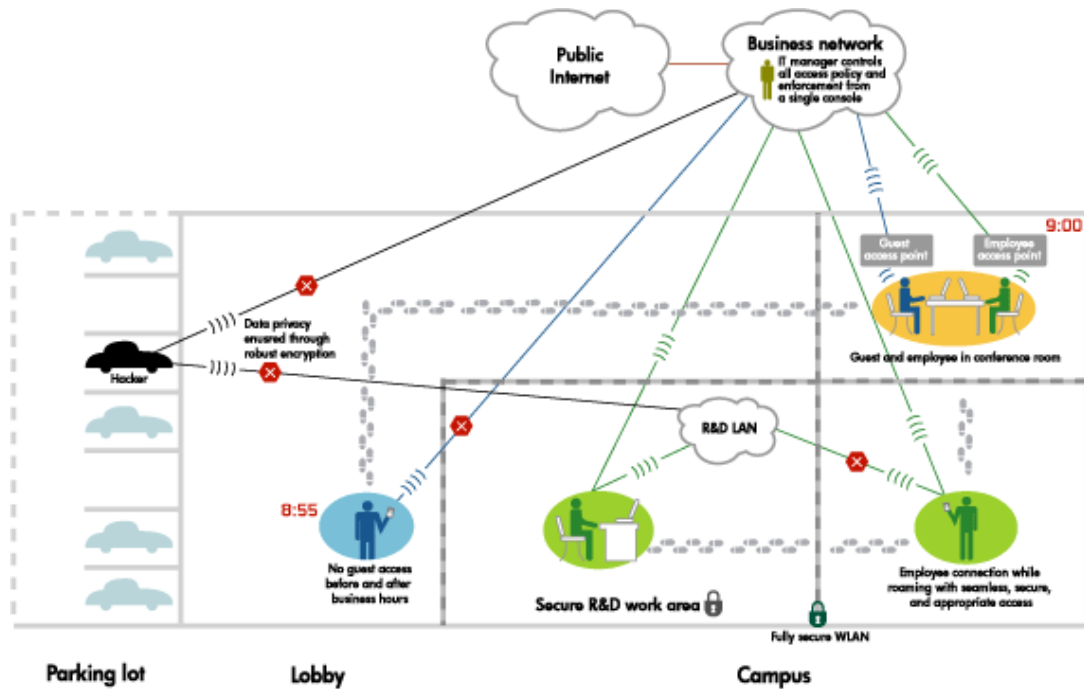
The advanced data privacy capabilities of the HP ProCurve Mobility Infrastructure solution ensure unwanted users cannot “sniff” or capture any company data in the RF spectrum. The ability to schedule access via centralized control (i.e. before 9 a.m., no WLAN access is permitted in the lobby area) eliminates the possibility of a hacker attempting to gain access outside normal business hours.

The HP ProCurve Mobility Infrastructure solution also enables guest access without reconfiguring each individual access point. When a guest arrives in the lobby before 9 a.m., no access is possible. However, when the guest is called into the conference room at 9 a.m., scheduled guest access is enabled, increasing meeting productivity and collaboration.

In addition, WLAN connectivity in the R&D work area can now be completely secured. The HP ProCurve Mobility Infrastructure solution can assign policy attributes to employee classifications centrally and enforce those policies at every connection point, thus granting R&D LAN access to R&D employees only. Policy control extends beyond the “who” to facilitate access based on “what,” “where,” and “when.” Access to the R&D LAN is not only limited to R&D employees, but also the physical confines of the R&D work area and the time of day the LAN is accessed.

Finally, the HP ProCurve Mobility Infrastructure solution provides session persistence across subnets. As R&D employees roam to various buildings or conference rooms, their connection persistence is maintained and productivity is enhanced. No time or effort is spent re-authenticating, re-connecting or re-loading applications. And per the centrally dictated policy, the R&D employee does not have access to the R&D LAN while in the conference room.

Figure 3. Wireless deployment with the HP ProCurve Mobility Infrastructure solution



## Mobility Infrastructure Solution Services

HP ProCurve Networking understands it is imperative to have a WLAN implemented quickly and effectively, and recommends organizations utilize an HP ProCurve Elite Partner to assess, deploy and maintain an HP ProCurve Mobility Infrastructure solution that best fits their unique needs. HP ProCurve Elite Partners, trained in HP ProCurve Mobility Infrastructure solutions, offer services designed to integrate a new WLAN solution into an existing network.

HP ProCurve Elite Partners have a comprehensive understanding of networking and offer a broad suite of product and application services, including systems integration and network design, installation, configuration and optimization, in addition to network lifecycle support. HP ProCurve Elite Partners are required to have achieved the highest level of certification in network solutions planning and design as recognized by Hewlett-Packard. Committed to excellence, quality and integrity, HP ProCurve Elite Partners are the deployment vendors of choice for HP's most demanding customers.

With an HP ProCurve Elite Partner, organizations are assured of having a dependable partner and advisor to deliver best-in-class solutions that will effectively address IT requirements and business needs.

## Summary

Based on the Adaptive EDGE Architecture, the HP ProCurve Mobility Infrastructure solution provides robust, secure, affordable WLAN capabilities with command from the center and control to the edge. It is designed to enable mobile users to move from one location to another, preserving the connection and application as appropriate from access point to access point and subnet to subnet as users roam.

With a persistent, dependable connection to the corporate network, employee work can proceed uninhibited by physical location, improving user productivity and overall collaboration.

In addition to enhanced workforce productivity, the HP ProCurve Mobility Infrastructure solution provides superior return on IT investment (RoIT). Based on industry standards, the solution offers the latest in security features to protect information assets and increase network availability. IT administration resources are optimized through a vastly simplified deployment process and rich, centralized policy management capabilities. And since the infrastructure is fully interoperable with any vendor's authentication systems, clients, switches and access points, companies are able to leverage existing site infrastructure investments and reduce deployment costs.

## For more information

To learn more about HP ProCurve Networking solutions, contact your local HP sales representative or visit the company's website at: [www.hp.com/go/hpprocurve](http://www.hp.com/go/hpprocurve).

For a list of HP ProCurve Elite Partners that can provide HP ProCurve Mobility Infrastructure solutions, go to [www.hp.com/go/hpprocurve](http://www.hp.com/go/hpprocurve).

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