



Nomadix Service Engine *Hospitality Application*

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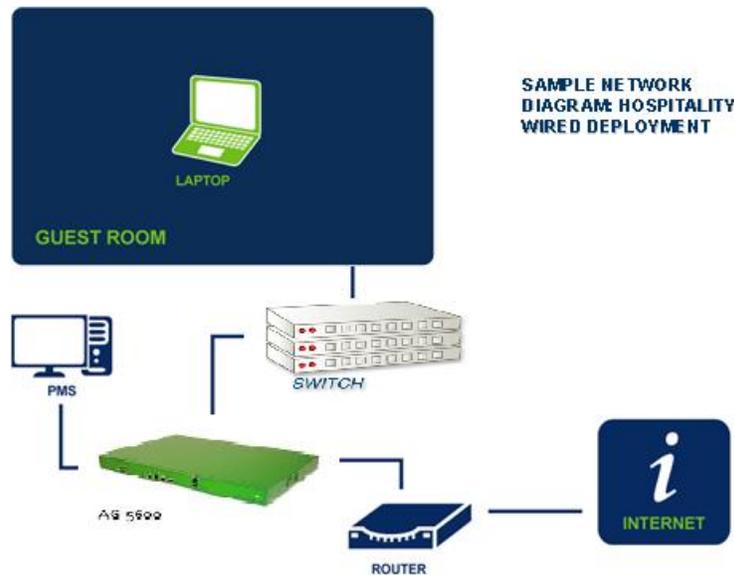
White Paper

Introduction

Nomadix offers its Nomadix Service Engine (NSE) software on our family of Access Gateways which provide a full suite of features and functionality tailored for hotels deploying wired or wireless (Wi-Fi) High-speed Internet Access (HSIA) for their guests.

Nomadix recommends the **AG 5600** running the NSE for deployment in mid to large hotels. For smaller HSIA deployments at properties less than 250 rooms, Nomadix offers the NSE running on the **AG 3100** delivering all the benefits of the NSE but on a more cost effective platform, for hotels wishing to deploy HSIA in lobby areas, meeting rooms or to a small number of guest rooms. In addition to the NSE Core features, Nomadix offers a series of Modules to further enhance the service offering. Two modules are of particular interest in hospitality:

- Hospitality Module:** Provides a wide range of Property Management System (PMS) interfaces to enable in-room guest billing for HSIA service. This module also includes 2-Way PMS interface for in-room billing in a Wi-Fi enabled network. The Module also uses “Bill Mirror” functionality for posting of billing records to multiple sources. The NSE supports billing over a TCP/IP connection to select PMS interfaces.



Additional Modules are applicable in a Hospitality deployment including Routed Subscriber, and High-Availability.

The NSE provides a range of features needed for the successful deployment of HSIA in a hotel. The following key areas are addressed by the NSE deployed on a Nomadix Access Gateway:

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Customer Acquisition

- Nomadix' patented Dynamic Address Translation (DAT) functionality offers a true “plug and play” solution by providing transparent broadband network connectivity covering a variety of PC configurations (static IP, DHCP, DNS, and proxies) for guests. There are Zero Configuration changes to the guest's PC are required in order to get connected to the network.
- DAT greatly reduces provisioning and technical support costs and enables hotels to deliver an easy to use, customer-friendly service.

Service Provisioning

- Portal Page Redirection (PPR) intercepts the browser's home page request and replaces it with a destination URL designated by the hotel. This allows anyone to access the network and be directed to a Web site to establish an account, select a service plan, or pay for services.
- Home Page Redirection (HPR) allows the administrator to redirect the user after access has been purchased.
- The NSE also offers redirection capabilities at session termination to provide a complete service and/or venue branding opportunity.

Access Control and Authentication

- The NSE running on the AG 5600 blocks traffic to the Internet until the guest has signed up for the HSIA service creating an additional level of security in the network. The hotel can create a “walled garden” allowing guests to only access certain predetermined Web sites before they have paid for service. This enables the hotel to generate revenue from partner sites or applications providing a mechanism to link guests to affinity programs.
- The hotel can then determine what content is available for free, for a fee or permanently blocked through the URL Filtering feature.
- In addition to supporting the secure Browser-based Universal Access Method, Nomadix simultaneously supports Port-based Authentication using IEEE 802.1x and authentication mechanisms used by Smart Clients by companies such as Boingo Wireless, and iPass. Nomadix products enable multiple authentication models providing the maximum amount of flexibility to the guest and to the hotel by supporting any type of client entering their network and any type of business relationship on the back end.

Advanced Security

- Guests can use a Virtual Private Network (VPN) Client to establish a secure tunnel through Nomadix' patented translation technology back to their corporation for doing work while away from the office.
- The AG 5600 features Nomadix' patent-pending iNAT functionality that creates an intelligent mapping of IP Addresses and their associated VPN tunnels allowing multiple

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tunnels to be established to the same VPN server creating a seamless connection for all the users at the hotel. This allows several employees of the same corporation to simultaneously VPN back to their corporation.

- The NSE software allows tracking logs to support Lawful Intercept initiatives.

Billing Plan Enablement

- Nomadix supports the widest variety of industry standard Property Management Systems for direct billing to the guest's room bill.
- The NSE offers a 2-Way PMS feature can query most popular PMS systems for confirmation of the name and room number of the hotel guest for billing in a wireless network where a physical association between the user and room number doesn't exist. This will allow the hotel to seamlessly deploy wireless networks and still be able to bill directly to the room.
- A wide variety of simultaneous billing methods, including free billing, by minute, hour, day, week and month can be offered as well as post-paid plans allowing the guest to only be charged for the time used.
- Multiple NSE-enabled devices can send copies of credit card and PMS billing records to a number of external servers that have been previously defined by the system administrator. Additionally, if the primary and secondary servers are down, the AG 5600 can store up to 2,000 billing records.
- XML (eXtensible Markup Language) is used by the NSE for room and user administration. The XML interface allows the AG 5600 to accept and process XML commands from an external source. XML commands are sent over the network to the AG 5600 which executes the commands and returns data to the system that initiated the command request. XML allows greater flexibility for creating and enhancing AG 5600 installations.

Bandwidth Management

- The NSE allows the administrator to manage the bandwidth for subscribers, defined in Kbps (Kilobits per seconds) for both upstream and downstream data transmissions. Depending on the individual guest's needs, they can increase or decrease their bandwidth by the minute, or on an hourly, daily or weekly basis.
- Alternatively, the NSE also allows the administrator to sell premium plans to users wishing to obtain a public IP address (IP Upsell).

Service Presentation

- The NSE allows subscribers to self-select services and upgrade their bandwidth and billing options—all in real-time through the product's Information and Control Console (ICC).
- The patent-pending ICC is a HTML page pushed to each guest's computer without requiring any additional software installation.

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- The ICC also allows hotels to send custom messages and advertising directly to their guests, and empowers them to upgrade their bandwidth in real-time. For PMS and credit card accounts, the ICC displays a dynamic “time” field to inform subscribers of the time remaining on their account or the time that has expired.

Summary

The AG 5600 and AG 3100 are dedicated network devices running a real-time operating system. These platforms, running the NSE offer unmatched reliability, scalability and full features needed to deploy cost effective, profitable HSIA for the Hospitality industry.