

Wi-Fi Service Delivery Platform

A Carrier-Class Solution for Deploying Large Scale, Public WLAN Networks

“Together, Sun and Pronto are able to offer service providers a complete, carrier-grade solution for the public Wi-Fi market.”
- Jasbir Singh,
President & CEO



System Highlights

Pronto's OSS software in combination with Sun Netra products and Sun One software stack creates a scalable, robust solution for Wi-Fi Service Delivery. The net result is a flexible, scalable platform that will enable operators to offer creative service offerings and lower ongoing operational costs.

- **Increase ARPU:** By bundling Wi-Fi with existing DSL, cellular and other services, operators can increase revenue per subscriber.
- **Rapid ROI & Time-to-Market:** The Wi-Fi solution allows operators to enter the market quickly with low upfront capital costs and gradually expand their network over time, leading to a faster return on investment and time-to-market.
- **Reduced Deployment & Ongoing Operational Costs:** Pronto's remote plug-n-play provisioning and management of edge devices enable operators to significantly save on deployment and ongoing operational costs. As all provisioning and management of edge devices can be conducted from a centralized NOC, expensive truck rolls and maintenance calls are avoided.
- **Interoperable with Leading Edge Elements:** Pronto's OSS is an open platform that seamlessly integrates with leading vendors' network equipment, thus enabling operators to build hotspot networks with the most suitable equipment offered by their preferred vendors.
- **Integration with Legacy Systems:** Pronto's OSS is an open, modular platform that utilizes Webservices for integration into third party billing, CRM and NMS systems.
- **Unlimited Scalability:** Pronto's OSS leverages application server clustering and a load-balanced architecture, thus enabling operators to scale by simply adding more servers to their existing infrastructure.

Industry Overview

The Wi-Fi revolution is here. An explosion of Wi-Fi enabled devices for home and business has seeded the public Wi-Fi market, and Intel's Centrino™ Mobile Technology campaign is creating broad customer awareness among users. Gartner Dataquest forecast that by 2007, the market for public hot spots will be worth more than \$9 billion and more than 35 million will utilize nearly 160,000 hot spots worldwide.

Partner Overview

Pronto Networks provides a carrier-class Operation Support System (OSS) that enables network operators to cost-effectively deploy and manage large scale, public Wi-Fi networks. Pronto's software handles provisioning, configuration, authentication, access control, security, pre-paid and post-paid billing, and roaming settlement for large public WLAN networks, in addition to remotely managing and updating multi-vendor hardware and Wi-Fi switches. Pronto Networks is privately funded by Intel Capital and Draper Fisher Jurvetson. Intel's investment is an early part of the \$150 million that Intel Communications Fund plans to invest to help accelerate the worldwide adoption of Wi-Fi, or 802.11 wireless networks.

Solution Overview

The Sun and Pronto Wi-Fi solution enables Service Providers to bring carrier-grade Wi-Fi services to their subscribers. The Sun and Pronto Wi-Fi platform provides a tightly integrated platform that enables real-time authentication, service authorization, subscriber management, billing mediation, customer care, roaming settlement, and network management, all in a single platform for optimal efficiency.

The Sun Microsystems and Pronto solution has a multi-tier architecture comprised of two major elements: the Wi-Fi OSS and edge devices, the Hotzone Gateway and Hotspot Controller. The Pronto OSS runs on the robust Solaris™ Operating Environment and Java System Application Server and is deployed at the operator's NOC. The OSS performs the following key functions:

- **Plug-n-Play Provisioning of Edge Devices:** enables remote provisioning, monitoring and management of multi-vendor edge devices
- **Subscriber Management:** allows for bulk provisioning of existing users as well as NOC managed user provisioning. Provides real-time session, subscriber and network information. Includes customer care functionality, including subscriber self-care, incident tracking and account adjustment and refund.
- **Service Creation:** enables definition of different service plan profiles, including usage-based, flat rate plans, peak/off-peak billing, and location-specific plans. Handles multiple payment options, including credit cards and pre-paid cards, and allows definition of different Classes of Service.

Solution Overview Continued....

- **AAA:** provides Radius AAA and 802.1x support as well as multiple authentication options through external sources, including Radius, SIM, SMS, MSN Passport, etc.
- **Billing and Mediation:** enables rating and billing mediation into existing postpaid billing systems, including XML, AAA, and IPDR formats and supports pre-paid billing.
- **Network Management:** allows real-time viewing and management of the Wi-Fi network edge elements. Manages real-time session quality and network information. Stores all subscriber and network (QoS) Quality of service data for customer care and network maintenance. Provides ability to set alert thresholds for edge elements and generate automatic email alerts.
- **Roaming Services:** manages roaming agreements with major aggregators, including iPass, GRIC and Boingo and offers Inter-WISP roaming. Provides integrated clearing, settlement and reconciliation.

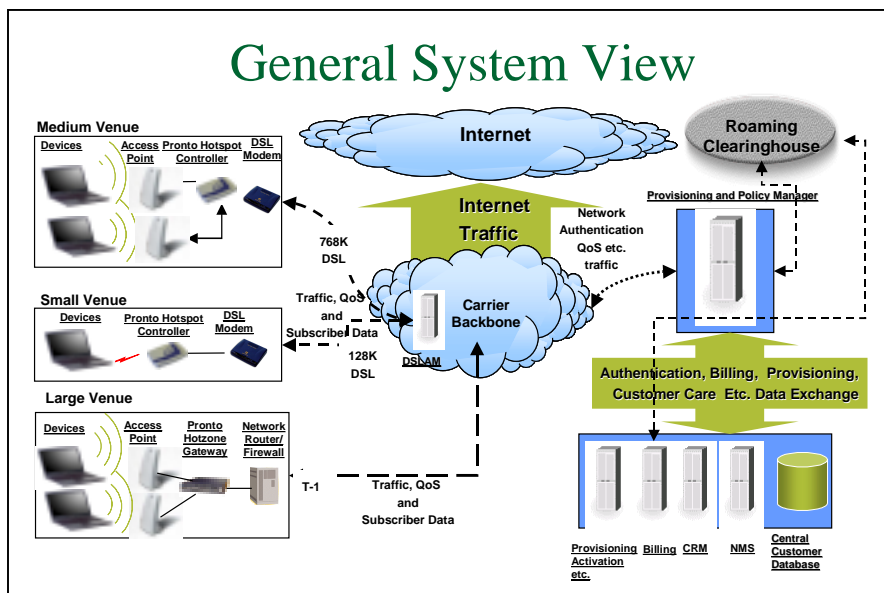
The Pronto Hotzone Gateway is located at the edge of the network in large venues, such as hotels, convention centers, and airports, where access, class of service and QoS is managed for up to 2000 simultaneous sessions. The Pronto Hotspot Controller is located at smaller venues, such as restaurants and retail stores, where access is managed for up to 100 concurrent users.

Key features of the Hotspot Gateway /Hotspot Controller include:

- **Build in Firewall and Access Gateway:** controls access to the internet and collects and delivers subscriber and subnet details
- **DHCP / NAT Server:** supports DHCP, static IP addresses, and PPPoE on the Internet side and performs network address translation
- **Built-in Web Server:** provides secure registration and login, walled garden support and customized branding for location
- **Multiple SSIDs:** enables multiple service providers to share same infrastructure at one location
- **SOAP/XML Interface:** enables monitoring and management of network elements, distributed over WAN, sometimes behind NAT and firewalls

The Sun Advantage

The Wi-Fi Service Delivery Architecture is built using Sun's scalable network computing platform, including its Java™ technology, carrier-grade Netra™ systems and storage products, running on the robust Solaris™ Operating Environment and sun One Application Server to provide cost-effective, scalable framework. Sun Netra 20 and 1280 systems power the Solaris based application and access management servers providing a highly reliable, scalable and interoperable solution that is easily integrated into a network operators' infrastructure. The end result is a solution that can manage all the data communication, session tracking, authentication, financial tasks, and interfaces to back office systems that coordinates all service parameters within a deployed Wi-Fi Network.



Questions?

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