



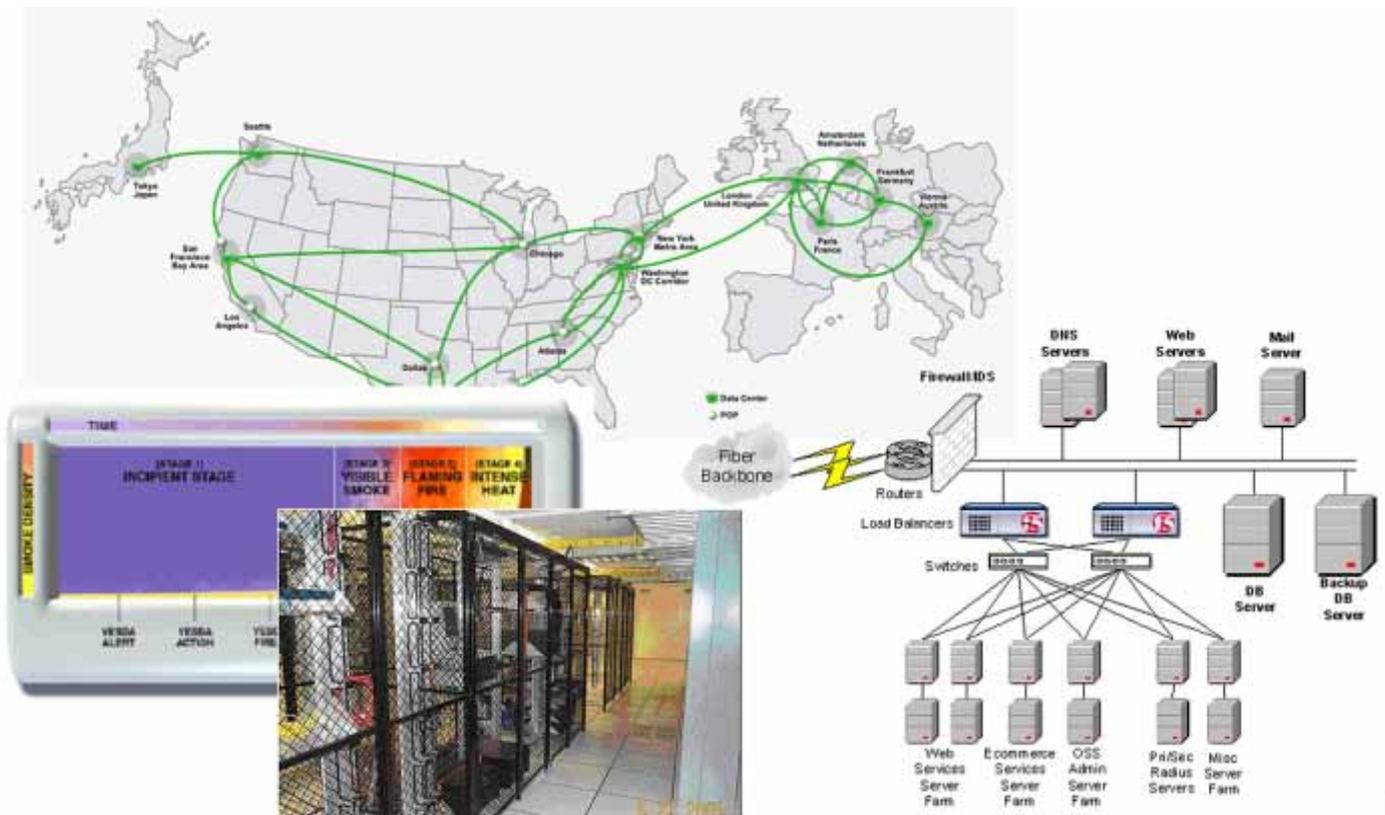
# Pronto's Managed Services Platform – A UniFi OSS Case Study

## Introduction

One of the largest installations of Pronto's UniFi Product suite is its Managed Services Platform (MSP). A Software as a Service (SaaS) offering to Wireless Internet Service Providers (WISPs), the MSP allows multiple service providers to offer uniquely branded, white-labeled, WiFi and WiMax service offerings to users in enterprises, metro, hospitality, retail, and other WLAN vertical markets.

Some of the current network and service highlights of the Pronto MSP:

- 100+ WISPs worldwide on single platform
- WiFi, WiMAX, and wireline networks
- 1000+ hotels and resorts
- 50+ citywide mesh WiFi deployments
- Dozens of airports
- Dozens of enterprise campuses
- 1500+ retail locations
- Approx 40 million user sessions per day
- More than 2 million unique users per month
- Millions of credit card users processed to date
- 400,000+ prepaid users per month
- Networks of more than 20,000 Access Points



Managed Services Platform



## Business Challenge

Deploying technologies such as WiFi Hotspots for Public WLAN access presents unique opportunities and challenges for service providers. New access technologies, coupled with consumer demand for mobile broadband access, provides service providers with the opportunity to offer services that range from simple high-speed wireless Internet access to VPN to complex multi-party business applications.

Challenges for service providers range from scalability, flexibility of service offerings, time-to-market, and uncertainty over the growth of subscribers. On these fronts, service providers would prefer the flexibility of determining hotspot viability, coupled with the right service offering that matches the subscriber's requirements. While the need for access is understood, consumer behaviors, usage patterns, and associated price points and service details are still nascent, and thus, in a state of flux.

In addition, carriers need to minimize investments, conserve cash flow, and decrease operating costs, as they contemplate new deployments. Software vendors such as Pronto have invested in developing portions of the infrastructure software solution, and it makes sense for carriers to leverage this investment and use a best-of-breed approach in providing a solution to subscribers. Additionally, it enables service providers to focus efforts on acquisition of subscribers, determining viability of the hotspots and hotzones, and creation of new services, while deferring the backoffice installation and operations costs.

## Pronto's MSP

Hosted at data centers in San Jose California, and with Network Operations personnel in Pleasanton California and Bangalore India, the MSP currently serves more than a thousand hotspots and dozens of metro hotzones.

WISPs on the Pronto MSP deploy services to many different market segments and different sizes. The Pronto MSP serves WISPs in the Americas, Europe, Asia, and Australia.

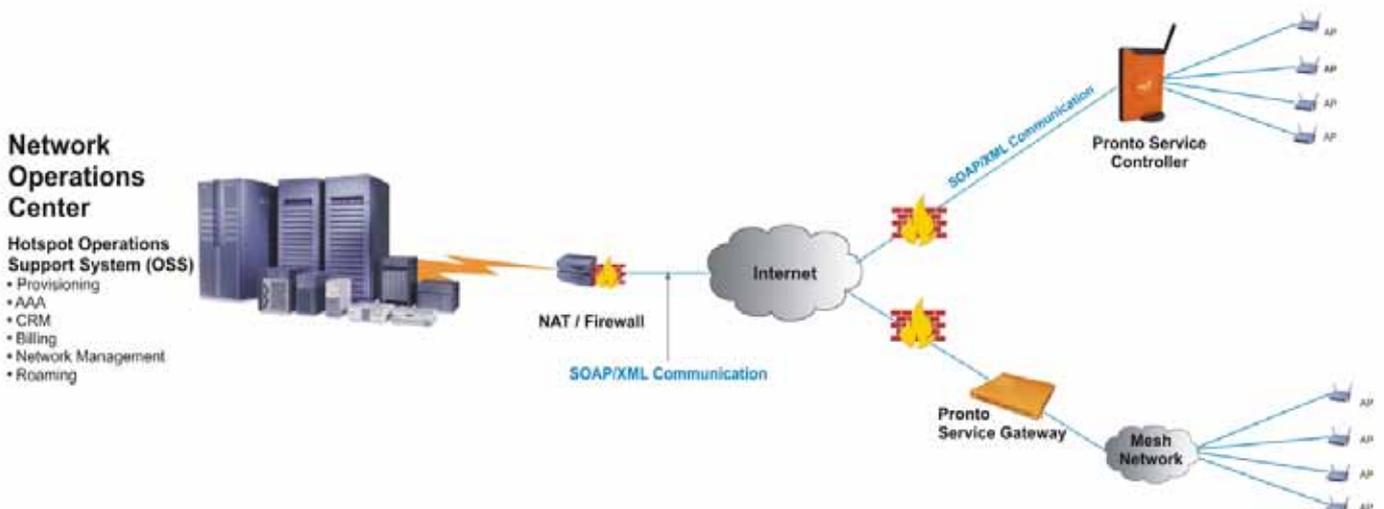
The MSP as of early 2009 consists of:

- WISP Servers (4), OSS Servers (2), Customer Registration Servers (2)
- Radius Servers (2), replicated Database Servers (multiple)
- Service Assurance Module Server
- Maintenance Server (SMTP, Remote Diagnostics etc.)
- F5 Load Balancers

The initial MSP deployment was on a 3-Server configuration, and it has scaled to a dozen Linux servers today.

Some of the vertical segments supported by the Pronto MSP include:

- Enterprise Campuses – Businesses, Universities
- Hospitality – Hotels, Convention Centers, etc.
- Retail – Coffee Shops, Service Centers, Restaurants, Grocery stores, Supermarkets
- Citywide WiFi – Metro Mesh AP deployments

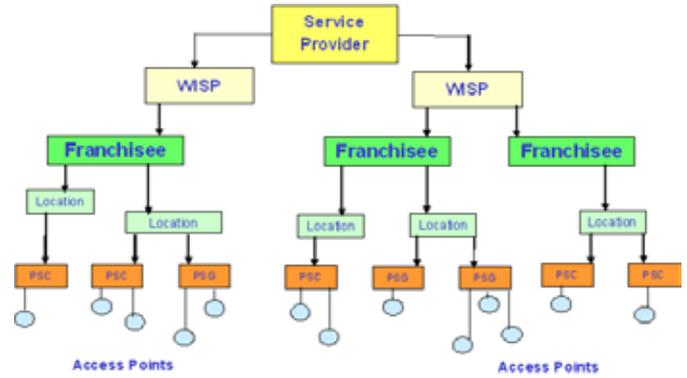


In the MSP model, Pronto provides the back office operations functions, including network monitoring, 24/7-customer service, billing and revenue distribution, reports, and system maintenance.

Based on the size of the location, a Pronto Service Controller (PSC) or Pronto Service Gateway (PSG) is deployed at the location.

### OSS Partitioning for WISPs

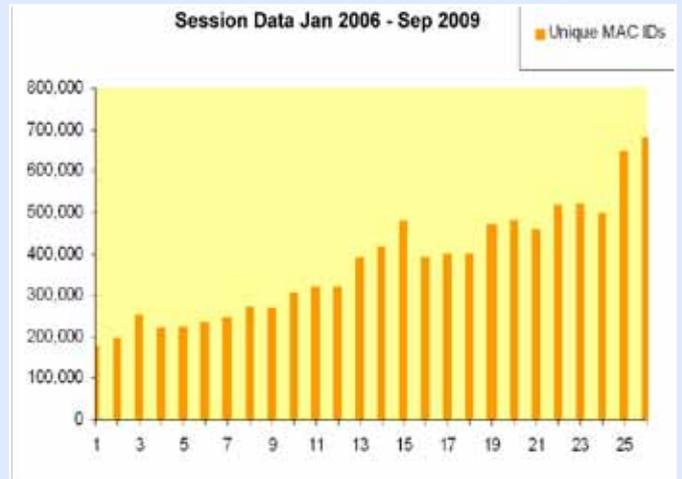
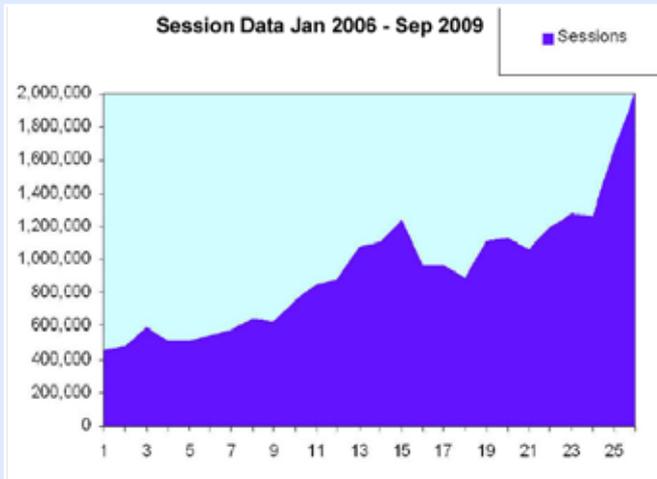
The Pronto MSP offers an organization structure that enables multiple ISPs to share the same instance of the UniFi OSS. Each WISP has its own virtual access into the UniFi OSS. A schematic of the hierarchy is shown here.



There is no limit to the number of WISPs supported in a single OSS, and the number of APs, PSCs, and PSGs that can be supported are in the thousands. The MSP is deployed in a multi-server configuration that provides a high degree of network reliability and service availability.

### Usage Growth in the MSP

The following table shows the growth in the number of user sessions in the Pronto MSP over the last three years. This includes data from all the WISPs in the network. A session is defined as a user logs in to the network and is logged out of the network, thus creating an access history detail record. As the chart nearby indicates, volume on the Pronto MSP has grown from approx 15,000 per day to close to 60,000 per day in September of 2009.



The number of unique customers in the MSP database has increased threefold from 128,000 in January of 2006 to more than 2 million in September of 2009.



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