Meeting expectations of Wi-Fi services just keeps getting more challenging. Not only do users expect easy access and high-speed performance, but also uniform QoE for data and, increasingly for VoWiFi, 4K video, real time gaming and other applications. In dense environments, like MDUs, those expectations are particularly hard to meet. At the same time, service providers are looking for ways to manage CAPEX and OPEX and monetize network investments. Casa Systems brings a fresh approach to meeting managed Wi-Fi’s toughest challenges.
A Fresh Approach to Wi-Fi’s Toughest Challenges

Today’s Solutions.....

...are just an overlay approach to delivering wireless connectivity and as such, only add to an already costly architecture. Overlay solutions add additional overhead and complexity that negatively impacts performance, scale and manageability. Existing solutions may involve multiple vendors to deliver end-to-end control and management, driving up OPEX and reducing subscriber quality of experience (QoE).

These solutions also do not deliver the necessary control and service differentiation needed to stand out from the competition. Providers need solutions that enable rapid response to customer issues and changing market dynamics, and which provide service deployment agility for minimum time to revenue. Increasingly, Wi-Fi solutions need to address more than simple access and integrate into a more dynamic application ecosystem.

On average, there will be seven Wi-Fi enabled devices per household by 2017, according to a recent study released by Strategy Analytics. It is clear that the explosive growth in Wi-Fi data is rapidly outpacing both Fixed Line and Mobile transport data. In fact, according to a recent Cisco Systems’ Visual Networking Index (VNI) report, Wi-Fi traffic will comprise 52 percent of total global managed by 2019. Wi-Fi traffic growth has created a constant and immediate need for increased coverage and effective resource management.

Providers need Wi-Fi solutions that enable resource management across access points, regardless of AP vendor. Lack of multi-vendor AP management creates issues that are exacerbated as Wi-Fi network growth explodes. Dynamic radio resource management is required to deliver the subscriber QoE needed to be competitive both today and tomorrow. Best effort Wi-Fi will continue to lose competitive footing as consumers and enterprises become both more dependent upon, and more demanding of, Wi-Fi access.

It’s clear that now is the time to look to highly scalable, easily manageable, and incredibly cost effective solutions to address these challenges.

Casa Systems WLAN Solution

Casa Systems’ WLAN solution is designed from the ground up with all these challenges in mind. Leveraging engineering strength, deep knowledge of the edge domain, and the latest technologies, Casa’s WLAN solution delivers maximum scalability, flexibility and performance at an industry-leading Total Cost of Ownership (TCO).

Casa’s WLAN solution ends the separation between DOCSIS and Wi-Fi layers present in traditional overlay networks. By combining the Wireless LAN Controller (WLC) and Wireless Access Gateway (WAG) functionality, the need for L2 to be established from all of the Access Points (APs) is eliminated. This not only enhances the scalability of the WLC / WAG elements, but it also takes advantage of the significant improvement in scale provided when deploying Casa’s WLAN solution.

Casa Systems’ WLAN Solution Components

- **WCS – WLAN Core Service**
  - Control Plane Processing
  - WLAN Controller
  - Unified Management GUI
  - Zero touch plug-and-play provisioning
  - vCPE Service Chaining
  - Runs on COTS / Hypervisor
  - SON / RRM Optimization

- **WES – WLAN Edge Service**
  - Data Plane Processing
  - Wi-Fi AP / Device Termination
  - vCPE Policy Enforcement
  - Flexible Deployment Options
    - Integrated with CMTS, independent or hybrid
    - Edge 10 ideal for on-premise deployment
    - Edge 100 for larger scale
    - Virtualized on Casa’s Acxyom™ ultra-broadband edge platform
A Fresh Approach to Wi-Fi’s Toughest Challenges

Wireless Edge Service When Integrated with CMTS

- Multi-vendor AP management and control
- Variety of WES options available, either integrated with CMTS to re-use existing architecture, independent or hybrid
- WES services also available as VNF on Casa’s Axcyom ultra-broadband edge platform
- COTS x86 WLAN core services
- Independent scaling of control and data planes

Perfectly Suited for Hospitality Environments

- Integration of Wi-Fi and DOCSIS reduces cost, enables insight to entire guest communication experience
- Works with a variety of access points
- Centralized remote management for control from any location
- Advanced SON features simplify AP provisioning and management
- Radio Resource Management captures network data and uses it to dynamically manage QoE based on the service provider’s parameters

- Separation of data and control plane allows optimum scaling flexibility; multiple sizes of edge servers and cloud based core server enable a variety of deployment models
- Leverage existing infrastructure for more rapid, less intrusive deployment
A Fresh Approach to Wi-Fi’s Toughest Challenges

Solve Tough MDU Challenges

- AP independent solution with RRM across all APs, assuring optimization of private and public networks
- Radio Resource Management captures network data and uses it to dynamically manage QoE based on service providers’ parameters
- Enables segregation of traffic, e.g., for OTT or IoT and integration into management systems for enhanced service offerings to tenants
- Advanced SON features simplify AP provisioning and management
- Lower latency enabled by splitting control and data planes for better voice, video and data support

Enables and Simplifies Multiple “Networks” in a Single Location

Casa Systems’ WLAN solutions are ideal for high-density environments such as hospitality properties, multi dwelling units (MDUs) and campuses where multiple network deployments are needed to support both public and private access.

- SSID: Private-xyz
  - Private Per Residence Network
  - Deploy Managed Service
    - IP TV
    - Streaming Services
    - WLAN/LAN Management
- SSID: Hotspot
  - Walled Garden Services
  - MSO Managed Wi-Fi Network
  - Custom Captive Portal / Login Screen / Splash Page
  - Hotspot 2.0
- SSID: Private-Community
  - Community Wi-Fi Network
  - Custom Captive Portal / Login Screen Splash Page

Multiple Use Cases

Casa Systems WLAN solutions were built from the ground up to be deployed in almost any environment. Our approach to wireless solutions enables deployment flexibility, as well as functions for a variety of market segments, including:

- HomeSpot
- Community and Campus Hotspot
- MDU / MTU
- Hospitality
- Speciality
- Public Hotspots

Our fresh approach gives service providers many options for affordable pursuit of new revenues.

Deployment Flexibility

Casa Systems WLAN solutions are modular and configurable to adapt to not only greenfield, but also more challenging brownfield deployments

- CableLabs SON support for a variety of 3rd Party APs (indoor or outdoor)
- WES integrated with CMTS or stand alone

Such deployment flexibility enables the right solution for a myriad of scenarios.
A Fresh Approach to Wi-Fi’s Toughest Challenges

WLAN Edge Service

The WES is Casa’s access gateway service engine and was designed for deployment flexibility. Depending on which gateway is deployed, the solution will support up to 1M active devices and can support up to 100k managed APs.

The WES supports the following Data Plane services:

- VLAN and SoftGRE based traffic segregation per SSID
- CableLabs Wi-Fi management standards
- Integration with 3rd Party Services
  - DHCP
  - Captive Portal
  - AAA
  - DNS
  - Provisioning Services
  - Billing Services
  - Management Services
- CGNAT
- Dynamic Rate Limiting & QoS
- L2 & L3 Roaming
- Integration with major CM/AP vendors (indoor & outdoor applications)
  - Arris
  - CastleNet
  - CBN
  - Cisco
  - Sagemcom
  - Technicolor
  - uBee

WLAN Core Services

Casa’s WCS can be deployed on a “white box” server, where RRM and SON features enabling smooth scaling to meet rising demand, network efficiency and optimization, and QoE management.

The WLC supports the following Control Plane services:

- Dynamic/Adaptive Radio Resource Management
- AP & UE Management & Monitoring
- AP Provisioning

Additionally, the WCS offers the following features via a GUI front end (NMS):

- Reporting & Charting on fault, performance, etc.
- Remote diagnosis and trouble shooting
- System Maintenance and Firmware Upgrade
- Real time Network view integrated with Google Maps
About Casa Systems, Inc.

Casa Systems has defined a new category of software-centric Ultra Broadband network edge devices that allow cable and mobile service providers to intelligently and cost-effectively scale their networks to meet gigabit demands today. Based on disruptive technologies to target the growing market opportunity in interactive digital video and broadband IP services, Casa Systems provides market-leading, DOCSIS 3.1-enabled CCAP and CMTS products, universal EdgeQAM and intelligent video processing solutions for broadcast and unicast services, as well as MobileEdge small cell and managed Wi-Fi solutions. #UltraBroadband #GigabitSpeeds #DOCSIS3.1

For more information, please visit us at http://www.casa-systems.com.