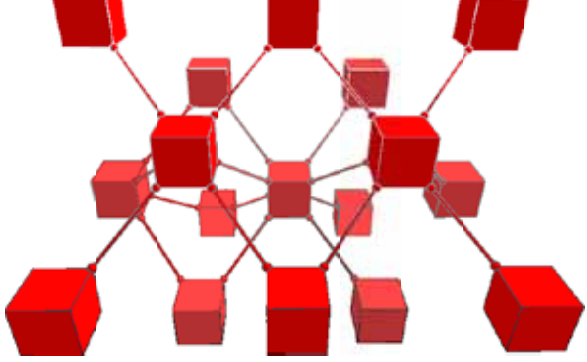


The future of the store:  
**Branch on Demand**<sup>™</sup>



## Extending access to corporate resources across the organization

For the last several years, retailers have adopted wireless LANs (WLANs) for improving access to company information, enhancing customer service, and increasing distribution efficiency.

Although many of these WLANs originally operated as standalone networks in stores, warehouses, or distribution centers, today they are integral parts of company-wide networks that encompass locations from the largest headquarters to the smallest store.

Today's WLANs carry innumerable sets of data, everything from inventory and transaction system traffic to enterprise resource planning (ERP) business applications to a wide range of task management, marketing, merchandising, customer service, and website applications. Because this traffic is mission-critical, these WLANs require the same centralized management and enterprise-level security as their wired counterparts.

## Rethinking the branch model

Classic virtual private networks (VPNs) that connect networks in stores and warehouses to corporate networks generally add cost, complexity, and confusion to each location. The extra infrastructure needed requires support and maintenance in locations that lack IT staff and is difficult to deploy, configure, and secure consistently— even by skilled IT teams. With classic branch network architectures, branch offices or remote locations represent roughly 20 percent of IT infrastructure but typically require 80 percent of IT's maintenance resources. This is because that 20 percent of IT infrastructure represents nearly 100 percent of the customer's brand experience, and they often drive the retailer's entire business.

In retail, as the branch goes, so goes the business. Network services provided to remote locations depend less on the size of the location and more on the functions being performed at that location. This can greatly complicate operations for retailers with hundreds or thousands of stores and few people at each location.

# The solution

Aerohive's Branch on Demand™ is a cloud-enabled networking solution for remote locations that simplifies provisioning, management, security, and troubleshooting for remote deployments.

The solution leverages the cloud to provide a zero-touch, auto-provisioned branch network, complete with wired and wireless connectivity. Branch on Demand is ideal for a wide range of retail environments, such as stores, kiosks, and distribution centers. With costs as low as \$99 per branch per year, retailers can achieve significant CAPEX and OPEX savings while maintaining visibility into remote networks, meeting security objectives and compliance standards, and increasing productivity.

## Fast, easy configuration and deployment

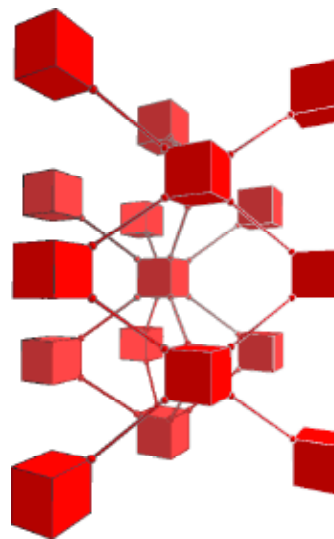
Store and warehouse employees don't need to be tech-savvy to install and configure the Aerohive Branch on Demand solution. Anyone can simply plug in an Aerohive branch router, wait a few minutes for provisioning to be completed, and immediately have secure wired or wireless access to necessary resources.

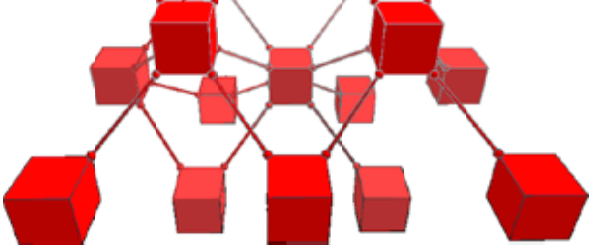
Aerohive eliminates the need for console cables, technical certification, or individual truck rolls to bring a site online. To expand wireless service in a branch, the Aerohive system uses self-organizing, mesh-capable access points that discover one another as they are added or removed, and adjust to the environment using Aerohive's Cooperative Control Architecture.

Since all Aerohive devices, both routers and APs, use the same HiveOS network operating system, expanding the network is seamless, simple, and requires no additional wiring. Automatic discovery and inter-device communication can take place over the air or over a cable attached to an Ethernet switch, depending on the retailer's branch network configuration.

Classic branch office deployment requires pre-provisioning of devices for functions such as WAN IP configuration for the branch router WAN port, LAN subnet addressing, DNS and DHCP settings, and static IP addressing for printers or cash registers.

With the Aerohive Branch on Demand solution, however, pre-configuration is unnecessary, because the Aerohive Cloud Services Platform automatically redirects every Aerohive device to HiveManager.





To get started, administrators simply:

- Create a configuration
- Provide parameters for branch routers to acquire the configuration
- Set the IP address range for the branch network
- Wait for remote users to plug in devices

## Centralized management and visibility

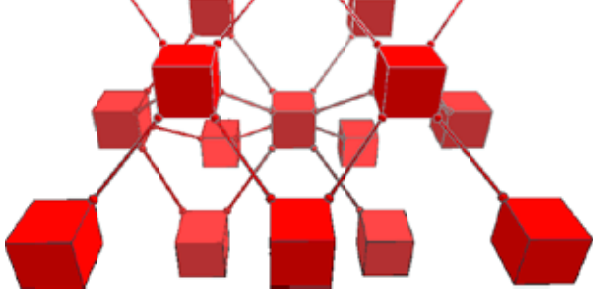
With hundreds or thousands of store locations, both wired and wireless networks have to be easy to manage, maintain, and monitor. Typical remote solutions require multiple consoles for managing remote connectivity, security, and troubleshooting.

Unlike these solutions, HiveManager provides a centralized interface for everything from integrated IP Address Management to auto-provisioning and consistent policy deployment across all Aerohive devices. An administrator can manage thousands of devices as easily as one. Administrators also have the ultimate control over access to resources. They can define which users and devices can access the network as well as provide access to specific local and remote resources for each connected user based on identity, device, location, and time.

The Aerohive branch routers support wired and wireless access with secure authentication, including 802.1X, captive web portal, and Aerohive Private Pre-Shared Key. Administrators can configure customized access based on user identity and device type to apply firewall policies, VLAN assignments, tunnel permissions, and QoS to users or devices.

## Optimized application performance

The Aerohive architecture distributes all data forwarding and control mechanisms out to the Aerohive APs and routers, which eliminates the cost of deploying additional equipment such as a WLAN controller at each site, and minimizes bottlenecks that can occur when such equipment is used across a WAN link. Network security and performance enhancement services, such as real-time packet prioritization, WLAN airtime fairness, and policy-based QoS are also distributed to individual Aerohive devices to minimize latency.



## Consistent security and compliance

The Payment Card Industry Data Security Standard (PCI DSS) recognizes wireless LANs as public networks and assumes that they are exposed to public vulnerabilities and threats. Smart cyber-criminals can configure servers, laptops, printers, and other devices to exploit weaknesses in point-of-sale (POS) terminals or other store systems, even if there is not a wireless network deployed. As a result, almost any environment is susceptible to attack.

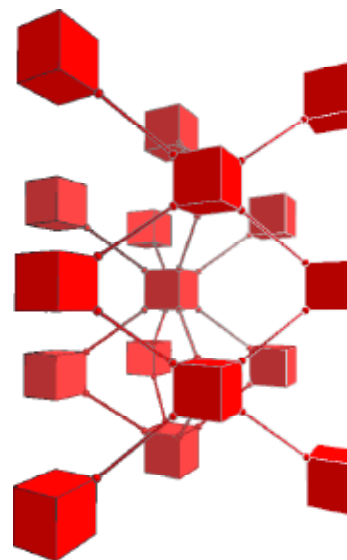
Aerohive's patent-pending Private Pre-Shared Key (PSK) system generates and manages separate pre-shared keys for every WLAN client. This enables multiple users, each with a unique key, to access the same WLAN, providing one-to-one authentication and strong encryption. Clients cannot eavesdrop on each other in a Private PSK system, and network access can be revoked on a per-client basis.

Aerohive Branch on Demand solutions also use a patented N-Way Cloud Proxy feature to provide enterprise-class security at a low price point. With Cloud Proxy, an administrator can use a cloud-based security service, such as Websense or Barracuda Online, and route all remote web traffic through the service before sending it to its final destination. Integrated spectrum analysis and wireless intrusion prevention (WIPS) and mitigation also aid an administrator in meeting compliance requirements as well as plan for future expansion and remote troubleshooting.

## Unified wired and wireless policy

Remote locations require policies for users and all types of devices with the assurance of access, regardless of access medium. With HiveManager, an administrator can create customized access policies, based on identity and device type, which in turn can assign firewall, tunneling, network, and queuing permissions to any user/device regardless of the user's location or access medium. HiveManager also provides complete visibility for:

- Users and devices connected to any Aerohive network device
- Permissions assigned to each user/device
- Historical device reporting, even if it moves between wired and wireless access environments



# Wi-Fi case study with Macaroni Grill



## CHALLENGES

- Required compliancy with Payment Card Industry Data Security Standard (PCI DSS) requirements and other security capabilities, including rogue access point detection and mitigation
- Needed a solution that is easy to manage and doesn't require technical staff to be present at restaurant locations for trouble-shooting and resolving Wi-Fi issues
- Required a solution that could grow with restaurant's needs

## RESULTS

- In the restaurants, Wi-Fi end users are mainly area directors, who are mobile and constantly on site at the various locations
- Macaroni Grill is using Aerohive's Private Pre-Shared Key (Private PSK) feature, which lets guest, legacy and hard-to-manage wireless LAN clients use strong encryption and authentication
- Macaroni Grill is able to perform rogue access point scans, which will indicate immediately if there's been a network security breach
- Aerohive's Client Health Score monitoring feature provides a color-coded dashboard that tells Stafford at a glance about the "health" of clients connected to the Wi-Fi network

## Q&A with Drew Stafford VP Information Technology Macaroni Grill

### **What problems were you facing with your previous Wi-Fi environment?**

Due to a private equity acquisition, we were in the process of re-engineering the entire infrastructure. We had to build everything that a standalone company would need to operate.

### **What were the most important factors for you in choosing a new Wi-Fi management solution?**

It needed to be easy to manage and implement, with an ease of support by non-technical employees. Security compliance was also a critical factor for us and played a major role when selecting a Wi-Fi vendor.

### **What was the installation process like?**

Once the management device was configured, all access points were delivered directly to the restaurants for installation. It was plug and play.

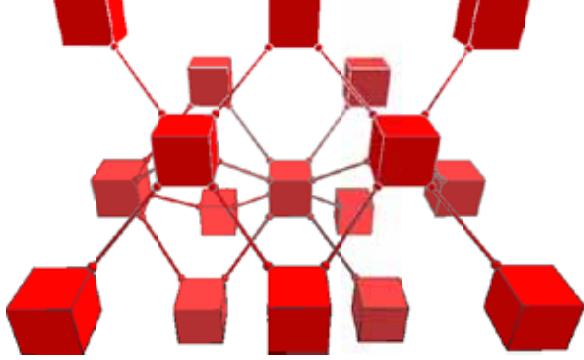
### **How has the solution changed your business?**

Wireless is one less thing to worry about. The access points are in view of the restaurant management team and help troubleshoot WLAN issues because of the different color indicator lights on the APs. These devices have also helped to nail down security compliance of rogue access points, or misconfigured DSL modems from the local carriers.

## Branch on Demand: End to end wireless access for retail

Aerohive Branch on Demand solutions now make it easier and more cost-effective for retailers to implement wireless access everywhere—from the home office to stores, distribution centers, and standalone locations, such as kiosks.

**For more information about the Branch on Demand solution for retail, visit <http://www.aerohive.com/solutions/verticalmarkets/retail.html>.**



## About Aerohive

Aerohive Networks reduces the cost and complexity of today's networks with cloud-enabled, distributed Wi-Fi and routing solutions for enterprises and medium sized companies including branch offices and teleworkers. Aerohive's award-winning cooperative control Wi-Fi architecture, public or private cloud-enabled network management, routing and VPN solutions eliminate costly controllers and single points of failure. This gives its customers mission critical reliability with granular security and policy enforcement and the ability to start small and expand without limitations. Aerohive was founded in 2006 and is headquartered in Sunnyvale, Calif. The company's investors include Kleiner Perkins Caufield & Byers, Lightspeed Venture Partners, Northern Light Venture Capital and New Enterprise Associates, Inc. (NEA).



Corporate Headquarters  
Aerohive Networks, Inc.  
330 Gibraltar Drive  
Sunnyvale, California 94089 USA  
Phone: 408.510.6100  
Toll Free: 1.866.918.9918  
Fax: 408.510.6199  
info@aerohive.com  
www.aerohive.com

EMEA Headquarters  
Aerohive Networks Europe LTD  
Sequel House  
The Hart  
Surrey, UK GU9 7HW  
+44 (0)1252 736590  
Fax: +44 (0)1252711901