



▶ *E-Guide*

Choosing the best cloud-controlled and cloud-managed WLAN product

In this E-Guide:

Confused about which cloud-controlled and cloud-managed WLAN products to buy for your company? It all depends on your needs.

Andrew Froehlich is a 15-year expert on wired and wireless network design. Ahead in this e-guide, he:

- Compares leading WLAN products
- Outlines the benefits of using best cloud-controlled and cloud-managed WLAN products
- Reveals what qualities to look for when evaluating options

Editor's note

This series on wireless LAN controllers examines some of the leading vendors in this segment. Companies selected were based on research data from TechTarget surveys, interviews and reports from other respected research firms, including Gartner.

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Cloud-controlled WLANs offer many benefits over locally managed wireless LANs, and the market is responding, with a swelling number of WLAN vendors. While some enterprise-class WLAN vendors are head and shoulders above the rest in the cloud-controlled WLAN space, each implements unique features that optimize its products for a variety of use cases.

What's the difference between a cloud-managed WLAN and a cloud-controlled WLAN? Generally, admins configure and manage a cloud-controlled WLAN entirely from the cloud, with access points (APs) remaining on location. Admins configure and manage a cloud-managed WLAN partly from the cloud and partly through on-site equipment.

Here, we evaluate products from five leading vendors: Aerohive, Aruba, Cisco, Extreme and Ruckus Networks. To help you determine which WLAN products are the best fit for your organization, we will examine each vendor's offerings based on physical environment, application support, cutting-edge features, Layer 7 visibility and control, and point-to-point versus end-to-end products.

Physical environment factors

Wireless signals are sensitive to physical obstructions and interference from other devices attempting to operate over the same Wi-Fi channel. Any vendor can deploy a WLAN in the

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typical office environment, with cubicles and drywall barriers. But vendors that focus on optimal wireless connectivity are better for industrial facilities, or environments with metal obstructions and equipment that regularly moves around.

Ruckus excels in these deployments, as the company custom-builds its wireless chips and antennas to provide the strongest wireless signal in harsh physical environments. Its cloud-controlled hardware is identical to its locally managed hardware, however. Compared with others on the list, both Extreme and Ruckus were relatively late in offering their own cloud-managed Wi-Fi architecture.

The Ruckus platform, called Cloud Wi-Fi, officially launched in mid-2016. Ruckus also offers private cloud network options, and a host of service providers sell Ruckus private cloud services to customers. Extreme's ExtremeCloud also launched mid-2016 and features cloud-managed WLAN APs, as well as the ability to manage several of its most popular Ethernet switches.

Some vendors incorporate Bluetooth radios in wireless access points for wireless tracking, and this may be valuable for users deploying in a retail environment. It allows the WLAN to trace user movement through access points by tracking Bluetooth beacon messages that are received by customers' smartphones. Aerohive, Aruba, Cisco Meraki and Ruckus are well-known and highly popular in the retail space because of Bluetooth radios.

Application architectures

It doesn't matter which vendor companies with remotely served applications choose -- either over the internet or through VPNs -- because any of the cloud-controlled options will be

reliable. However, vendor choice makes a big difference for companies with locally served applications.

Companies with mission-critical applications served from a local data center should look at cloud-controlled vendors that continue to operate in the event of an internet outage -- that is, products that operate in the event of a loss of communication to the cloud controller. Aruba touts this capability, as does Aerohive. By contrast, some of the WLAN features used in Cisco Meraki, ExtremeCloud and Ruckus Cloud Wi-Fi products will not function when internet outages occur.

Keep in mind, however, that other wireless functions, like authentication servers, must also be localized in order for wireless-connected users to work uninterrupted during an internet outage.

Cutting-edge features

Aruba and Meraki should be at the top of the list for companies that need the latest and greatest WLAN product features. Meraki is innovative and rolls out new firmware features faster and easier than its competitors. This includes unique methods to monetize wireless hotspots and the ability to authenticate networks through users' social network accounts.

Aruba almost matches Meraki with its cloud-controlled products and new features. Most of these align with integration and third-party tools, including Microsoft Teams and support for third-party security tools from companies such as Intel, Palo Alto and MobileIron.

Layer 7 visibility and control

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Each of the top enterprise-class vendors offers some level of Layer 7 application visibility and control. This enables the controller to identify wireless data, categorize it into applications, and then subject it to content filtering and quality-of-service or bandwidth restrictions.

Cloud-managed WLAN technologies from Aruba and Ruckus offer some Layer 7 visibility and reporting, but Aerohive and Meraki are more robust. Meraki uses a special packet-processing engine to look deep into each packet for wireless data traffic classification and categorization. Meraki also has an easier-to-understand platform. Like Apple, Meraki spends time developing its user-friendly GUI.

The best cloud-controlled WLAN product for any organization depends on its needs.

Point or end-to-end offering

What about companies with multiple branch offices that need to deploy a wireless network and manage branch network equipment, like routers, firewalls and switches, from a single interface? Both Aerohive and Meraki offer cloud-controlled security appliances and switches that allow for this, while Aruba, Extreme and Ruckus each offer cloud-managed WLAN access points and switches, but don't currently offer a dedicated firewall appliance.

The right cloud-managed WLAN products

The best cloud-controlled WLAN product for any organization depends on the organization's needs. Ruckus' private cloud services work well in harsh environments with many physical

obstructions. These environments would most likely fare better with a locally managed WLAN architecture.

Other than that, the four cloud-controlled vendors that will likely be at the top of any list are Aerohive, Aruba, Extreme and Meraki. As the pioneer in the cloud-based wireless networks space, Meraki tends to have a better-rounded portfolio and can be a good fit in most environments. Aerohive also is a strong contender, but it tends to innovate at a slower pace than other vendors.

Traditionally, Aerohive observes what bleeding-edge companies like Meraki or Aruba are doing successfully and adds it to its product later. Finally, Aruba and Extreme have both emerged as strong vendors in the cloud-controlled space due to the speed with which they roll out updates. Both are cloud WLAN vendors to watch.

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