

Brocade Open Mobility Solutions

HIGHLIGHTS

- A robust wired network foundation is required for a successful wireless network solution.
- Open standards are required to ensure interoperability across all network components.
- With the rapid advancements in wireless technology, it is essential to have a wired network that can be depended on, providing the underlay for multiple wireless network generations and vendor transitions.
- Scalability is essential to supporting the growth in wireless connectivity without having to “rip and replace.”
- Extensive interoperability testing is performed with wireless networks to ensure compatibility and enable partnership with leading vendors for integration and joint technical support.
- An open, best-of-breed multivendor approach with Brocade Open Mobility offers an efficient and cost-effective solution.

Best-in-Class, Open Network Foundation for Your Wireless LAN

The use of wireless network connectivity is ubiquitous in businesses and institutions today. The expansion of wireless networks in recent years has been phenomenal. The rapidly growing use of smartphones, tablets, and other wireless devices—coupled with broad acceptance of Bring Your Own Device (BYOD)—is forcing businesses and institutions to offer wireless connectivity to employees and guests virtually everywhere.

The Effortless Network[®] enabled by the Brocade[®] Campus Fabric technology provides the ideal foundation for wireless network solutions. Brocade delivers the best-in-class open wired network underlay infrastructure upon which to deploy a Wireless Local Area Network (WLAN). Committed to delivering open and secure multivendor wired and wireless network solutions, Brocade continues to invest in and develop engineering and testing partnerships with industry-leading WLAN vendors to achieve these goals.

The Importance of Wired and Wireless Solutions

End-user connectivity may be changing, but the importance of and dependence on the wired network has never been greater. What is changing is the nature of the wired network. While wireless networks might change the nature of the network edge, they are very dependent on the wired network for access, aggregation, and core. All wireless Access Points (APs) connect into Ethernet ports on a wired

network, forming a complete wireless network solution. As the demands of the wireless network increase, so does the dependence on a high-performance wired network. A wired network that does not provide adequate performance, flexibility, and scalability to grow with wireless network requirements leads to an inefficient and frequently unacceptable solution—or it leads to a solution that is short-lived and must be replaced before its end of life.

“We quickly realized that we also needed to invest in our wired network as well. We had an outdated infrastructure with legacy devices throughout all of our campuses. We were experiencing oversubscription; speed, connectivity, and latency issues; and packet loss. Different colors from the secondary palette can be used to play with variation within different documents or within the same document.”

— Patrick Gittisriboongul, Director of Educational Technology and Information Services, Huntington Beach Union High School District

Several advances in wireless technology have pushed wired networks to their limit:

- Increased speed of wireless devices from 802.11a to 802.11n to 802.11ac, and now to 802.11ac Wave 2
- Increased number of devices supported by each AP
- Real-time latency-sensitive applications for voice (Voice over Internet Protocol [VoIP]) and video (such as surveillance and digital signage, as well as YouTube, Netflix, Facebook, and others)

“Here are some key considerations when shopping for new switches in this era of skyrocketing wireless use. These include supporting the increased bandwidth, uplink and downlink port capacity, compatible cabling, upgradability and power distribution.”

— Dan Conde, ESG, Network Computing Blog, May 8, 2015

Network bandwidth and latency are obvious factors in the success of a wired network, but other important features and capabilities also make the difference in usability and longevity:

- **Support for high-speed uplinks (10 GbE/40 GbE):** Most APs today support only 1 GbE connections to a switch, but when multiple APs are connected to the same switch, higher-speed uplinks are needed to keep up with the combined wireless throughput. Brocade Campus Networks' ability to deliver 40 GbE for the price of 10 GbE allows organizations to protect their network against obsolescence for many years.
- **Full Power over Ethernet Plus (PoE+) support:** Many locations do not have power outlets for APs, so the use of PoE is essential, because it is much simpler and more cost-effective than using power injectors. Switches need to support PoE (up to 15 watts), PoE+ (up to 30 watts), or perhaps more with Power over HDBaseT (PoH) (up to 95 watts).

- **Long-distance stacking:** This feature makes it much easier for organizations to take the switch to the APs, while taking advantage of the simplified management and performance that stacking offers.
- **Simplified management, scalability, and distributed services:** Brocade Campus Fabrics simplifies the management of campus networks and allows advanced Layer 3 services to be distributed to entry-level switches, providing flexibility and investment protection.
- **Open standards:** Open standards allow organizations to choose the wireless network that best fits their needs, while knowing that their wired network will be compatible. They also know that their wireless network supports the wireless technologies that might be developed within the life of the wired network.
- **Integration of wired and wireless networks:** Partnering with the wireless network vendor ensures compatibility and seamless integration of the combined network. With Brocade, organizations can use a single set of tools for both wired and wireless networks, to provide consistent security and policy management for all users—whether they connect via wire or wirelessly—thus avoiding potential single-vendor lock-in.

“What most people don't realize is if you don't have a good wired infrastructure, your wireless infrastructure's not going to function. So that was the big reason for making sure we had the access level with the Brocade wired infrastructure to be able to support our new wireless infrastructure.”

— Luke Saintignan, Systems and Network Administrator, Kilgore College

Best-of-Breed

No single best wireless network solution is right for every environment. Every business has unique requirements based on different factors such as number of users and devices, network traffic load patterns, distance, coverage, Radio Frequency (RF) environment, application uses, prioritization, management, security, and cost. A multivendor network strategy can help provide the flexibility that organizations require in order to find the wireless and wired network solution that meets their requirements.

“That's the kind of performance we need to expand our wireless deployment and support exponential increases in data traffic. Now we're ready for it. Brocade always seems to know what I need.”

— J.W. Windberry, Network Manager, City of Chattanooga

In addition, the current lifecycle for wireless network technologies is much shorter than it is for wired Ethernet networks. It is much more likely that today's wireless networks will be upgraded two or three times over the life of the wired network. When that happens, the acquisition of wired and wireless networks will be out of sync. Selecting the best-of-breed for each type of network becomes the most effective course of action to prepare for future wireless upgrades.

Some vendors are building their WLAN controllers into their LAN switches. For example, if an organization upgrades its WLAN technology two years from now, it is likely to deploy new controller technology (and new switch/controller

hybrids). It might even have to deploy a completely different solution that does not use the integrated controllers that it is currently paying for. Brocade offers a best-of-breed, scalable, open, automated network underlay for any wireless network solution. Brocade networks can easily be paired with any standards-based wireless network to provide an optimal wired and wireless network solution.

Open Standards for Interoperability

Supporting wireless mobility means continually addressing new devices in a rapidly advancing industry. Brocade believes that standards compliance is the best way to do that. Compliance with open standards lets Brocade work with the best-of-breed vendors that are critical to a wireless network, such as the high-caliber companies that are part of the Brocade partner ecosystem.

Because a multivendor strategy is inherently an open-standards strategy, vendors must continue to innovate to create competitive advantage, driving new advances that result in higher performance and higher-value solutions. Brocade has built a reputation for innovating high-performance networking solutions that address the needs and requirements of network infrastructures both now and in the future. At the core of this reputation is the Brocade commitment to open standards solutions.

“Because Brocade supports open standards, they integrate with other providers’ switches so that we don’t have to rip out everything and lose our investments. Our total cost of ownership will be less than half the cost of rival switches.”

— J.W. Windberry, Network Manager,
City of Chattanooga

Scalable Future-Proof Solutions

Wireless technology is one of the biggest drivers of network growth. The ability to cost-effectively scale the capacity and capabilities of a Brocade wired infrastructure to support wireless network expansion is a significant value.

The Brocade Campus Fabric technology and Brocade campus network switches help businesses meet growing wireless performance needs with a variety of scaling options. The Brocade design integrates switches from multiple families in across multiple physical locations into a single, logical, centrally-managed device, reducing administration time and speeding resource deployment. After switches are installed, the Brocade Ports-on-Demand feature lets organizations upgrade ports from 1 GbE to 10 GbE simply by activating a software license. Other switches offer optional modules that can replace 1 GbE ports with 10 GbE or 40 GbE as needed. Brocade Campus Fabric technology also extends the advanced services of Brocade premium switches to entry-level switch ports deployed in the same domain. This is an exceptionally cost-effective way to simply and easily scale switching capabilities.

As organizations’ wireless environments evolve to take advantage of next-generation devices, their power needs might need to scale, too. Brocade offers PoE, PoE+, and PoH for wireless APs, video cameras, IP phones, or digital signage, as well as the burgeoning Internet of Things, so that businesses can build out their power delivery infrastructure along with their campus networks. Only Brocade offers all of these capabilities, to future-proof the wired network, rather than requiring customers to implement the “rip-and-replace” strategy of legacy vendor solutions.

In today’s world of Infrastructure as a Service (IaaS), Brocade offers a unique subscription model that provides ultimate technology and growth scalability. Brocade Network Subscription, which enables organizations to acquire network infrastructure with pay-as-you-go flexibility, allows customers to purchase Brocade networks with select wireless vendors’ network equipment. With Brocade Network Subscription, organizations can refresh their network infrastructure and simply add or subtract capacity without capital expenditure.

Brocade supports the transition to the New IP with an open Software-Defined Networking (SDN) environment and a unique hybrid port mode that can concurrently run OpenFlow version 1.3 and traditional networking flows. Combined with SDN controllers such as the Brocade SDN Controller and applications such as Brocade Flow Optimizer, this enables customers to build tomorrow’s infrastructure without disrupting today’s business. Delivering a wireless solution requires comprehensive planning that should include a strong focus on an organization’s wired infrastructure. The Brocade Campus Fabric technology and Brocade Campus Network switches provide the foundation for delivering a secure, high-quality wireless experience that meets business needs for the long term.

“It feels like one seamless embedded network solution rather than discrete wired and wireless solutions that we had to make work together. We were pleasantly surprised at how quickly and easily the changeover was completed. It didn’t seem like a complete rip-and-replace with two brand new solutions. It went very smoothly and was a really good experience.”

— Rosie Quelch, Network Manager,
Isle of Wight College

Joint Wired/Wireless Support Services

By their nature, all networks are comprised of hardware and software from multiple vendors. Brocade is committed to supporting customer networks, no matter whose equipment and applications the customer runs over its network. Brocade joins in partnership with multiple wireless network vendors to provide a single point of contact for technical support for questions and problems. Brocade works closely with these partners to ensure that Brocade products interoperate. Brocade support organizations are trained to work with its partners to resolve customer issues. Contact Brocade to see if your wireless network vendor offers this integrated support option.

“The two vendors’ solutions work well together, and I knew that in the event of a problem, I wouldn’t have any finger-pointing down the road....Brocade support is unparalleled.”

— Jennifer Miranda, Director of IT,
Westmark School

Conclusion

Brocade offers a robust, flexible network underlay that is open, future-proof and simplified. Brocade open standards-based solutions ensure multivendor interoperability and eliminate vendor lock-in. Industry-leading performance, full PoE support, and upgradability provide customers with a future-proof infrastructure that will enable them to grow and expand their networks for the future without having to use a “rip-and-replace” strategy. Brocade scale-out architecture with Brocade Campus Fabric technology simplifies the network and reduces the Total Cost of Ownership (TCO). Brocade Open Mobility Solutions provide the best-of-breed network underlay for any wireless network.

About Brocade

Brocade networking solutions help organizations achieve their critical business initiatives as they transition to a world where applications and information reside anywhere. Today, Brocade is extending its proven data center expertise across the entire network with open, virtual, and efficient solutions built for consolidation, virtualization, and cloud computing. Learn more at www.brocade.com.

Corporate Headquarters

San Jose, CA USA
T: +1-408-333-8000
info@brocade.com

European Headquarters

Geneva, Switzerland
T: +41-22-799-56-40
emea-info@brocade.com

Asia Pacific Headquarters

Singapore
T: +65-6538-4700
apac-info@brocade.com



© 2016 Brocade Communications Systems, Inc. All Rights Reserved. 05/16 GA-SB-5805-00

ADX, Brocade, Brocade Assurance, the B-wing symbol, DCX, Fabric OS, HyperEdge, ICX, MLX, MyBrocade, OpenScript, The Effortless Network, VCS, VDX, Vplane, and Vyatta are registered trademarks, and Fabric Vision and vADX are trademarks of Brocade Communications Systems, Inc., in the United States and/or in other countries. Other brands, products, or service names mentioned may be trademarks of others.

Notice: This document is for informational purposes only and does not set forth any warranty, expressed or implied, concerning any equipment, equipment features, or service offered or to be offered by Brocade. Brocade reserves the right to make changes to this document at any time, without notice, and assumes no responsibility for its use. This information document describes features that may not be currently available. Contact a Brocade sales office for information on feature and product availability. Export of technical data contained in this document may require an export license from the United States government.

BROCADE 