

Brocade HyperEdge Architecture for Flexible Campus Networks

HIGHLIGHTS

- Brocade® HyperEdge® Architecture employs three key design principles—consolidated management, shared network services, and scale-out networking—to radically simplify campus network design, streamline application deployment, reduce management complexity, and save operational costs.
- Brocade has developed unique enabling technologies, Mixed Stack and Switch Port Extender¹, to achieve the benefits of the HyperEdge Architecture design principles. The Brocade ICX® Series of high-performance fixed switches embody these enabling technologies with flexible distributed chassis configuration deployment options. These powerful deployments deliver equivalent or better functionality than large rigid modular chassis systems, but with significantly lower costs and carbon footprints.
- These innovative HyperEdge Architecture implementation options remove the complexity of legacy campus architectures by collapsing unnecessary network layers and removing legacy protocols such as the Spanning Tree Protocol (STP), providing investment protection for future upgrades.

Enhanced Campus Network Flexibility that Reduces Complexity and Cost

Today's campus networks are critical for business connectivity to customers, vendors, and partners. At the same time, to ensure business agility and competitiveness, the campus network must support new applications, cloud-based services, and mobile users. However, after decades of limited innovation, legacy campus networks remain rigid, complex, and costly to maintain. Organizations are learning the hard way that these networks were not built to meet today's business challenges and user demands. The campus network for today and tomorrow should be flexible, easy to manage, and cost-effective. The Effortless Network® is the Brocade vision to meet these objectives, enabled by the Brocade HyperEdge Architecture as the cornerstone of delivering on that vision.

Brocade HyperEdge Architecture

The Brocade HyperEdge Architecture increases organizational agility by bringing the campus network into the modern era. This evolutionary architecture removes the complexity of legacy campus architectures by collapsing unnecessary network layers and removing legacy protocols such as spanning tree with inactive links. HyperEdge Architecture integrates innovative new features with existing network technologies to streamline application deployment, simplify management, and reduce operational costs.

¹ Switch Port Extender support will be available in a future release.

HyperEdge Architecture Key Design Principles

Brocade employs three key design principles to influence development of the HyperEdge Architecture solution for modernizing and simplifying the network to achieve better business agility and productivity.

- Consolidated management: Reduces unnecessary network layers to create large HyperEdge management domains that eliminate individual switch touch points to ease maintenance time and costs.
- Shared network services: Allows premium and entry-level switches that share a common HyperEdge management domain to share advanced Layer 2 and Layer 3 (L2/L3) services to achieve lower price-per-port functionality.
- Scale-out networking: Integrates high-performance fixed form factor switches to create a single logical device independent of physical location by scaling ports when and where needed across the campus.

HyperEdge Architecture Implementation Options

Brocade leverages the HyperEdge Architecture to implement a flexible distributed chassis configuration using the Brocade ICX Series of high-performance fixed switches instead of bulky rigid modular chassis systems. Customers can mix and match individual switches with the features and capabilities needed to meet specific requirements at each location and then combine them using either the Mixed Stack or Switch Port Extender enabling technologies to create a customized, distributed chassis designed for their requirements. (See Figure 1.)

HyperEdge Mixed Stack Deployment

The Mixed Stack enabling technology, offered for the Brocade ICX 6xxx Switches, integrates premium Brocade ICX 6610 and entry-level Brocade ICX 6450 Switches that collapse the network access and aggregation layers into a single HyperEdge domain that shares services while reducing management touch points and network hops across fewer network layers as compared to legacy three-tier designs.

Mixed stacking provides all the benefits of traditional stacking, in which all switch members are alike, all links within the stack are active (no STP), and management is accomplished from a single IP address. However, by adding the unique capability to share network services between switches, a HyperEdge Mixed Stack becomes unique and powerful. HyperEdge shared services enables the extension of premium switch services to all ports of all members of the stack, including entry-level switches. This capability provides two distinct advantages: significant per-port cost reduction and long-term investment protection.

HyperEdge Switch Port Extender Deployment

The Switch Port Extender enabling technology, offered for the Brocade ICX 7xxx Switches, integrates the premium Brocade ICX 7750 Switch, the midrange Brocade ICX 7450 Switch, and the entry-level Brocade ICX 7250 Switch that collapse the network access, aggregation, and core layers into a single HyperEdge domain that shares services while reducing management touch points and network hops in a single layer design across the entire campus network.

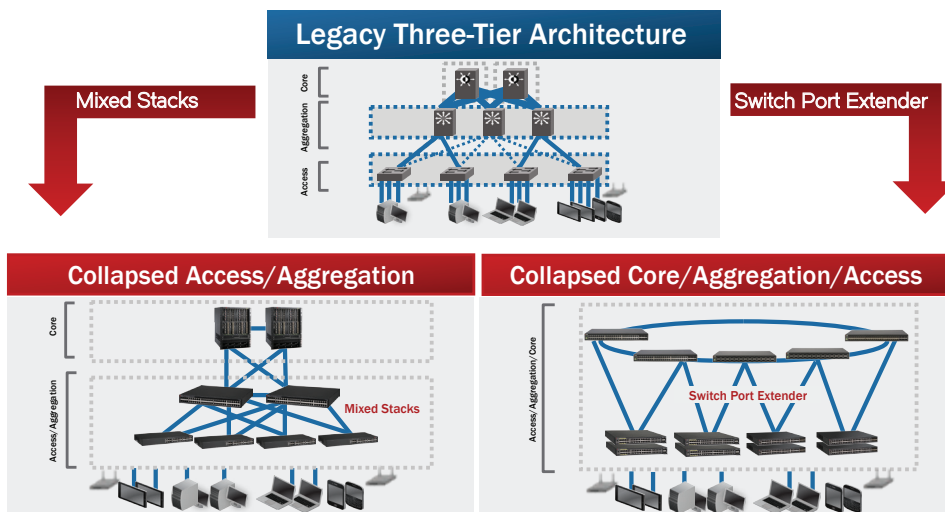


Figure 1: Simplifying legacy three-tier architectures with Brocade HyperEdge Architecture implementation options.

These powerful deployments deliver equivalent or better functionality than large rigid modular chassis systems but with significantly lower costs and carbon footprints. Switch Port Extender offers a level of flexibility, ease of deployment, and total cost of ownership unmatched by traditional access, aggregation, and small-core chassis solutions.

The innovative Brocade ICX switches implement their distributed chassis design deployments using standard-based optics and cabling interface connections, ensuring maximum distance between campus switches: up to 80 kilometers (km)—and minimum cabling costs: up to 50 percent lower than incumbent solutions. This cabling flexibility delivers ports to locations where they are needed on the campus at a fraction of the cost. The distributed chassis future-proofs campus networks by allowing networks to easily and cost-effectively expand in scale and in capabilities.

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

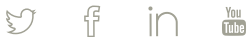
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