



Cisco Borderless Networks: A Next-Generation Architecture That Delivers the New Workplace Experience

The New IT Challenge

Today, IT organizations are being pushed from two different directions. From one direction, evolving business models are pushing new projects into the IT organization. These projects demand that IT manage larger and more complex projects with the same resources and headcount. From the other direction, IT consumerization is empowering users, which in turn introduces new risks that IT must manage and balance. But IT consumerization also presents powerful new tools, which could lead to big productivity gains for the organization, if harnessed properly.

The Cisco® Borderless Network Architecture is designed to help IT balance demanding business challenges and changing business models promoted by the influx of consumer devices into the business world. Borderless networks help IT evolve its infrastructure to deliver seamless, secure access in a world with many new and shifting borders.

New Business Models

As people embrace new technologies as part of their daily lives, a second shift is occurring. A new generation of customers and employees is entering the workforce. This new generation is multimedia savvy and socially connected. They bring highly mobile, highly portable video devices into the workplace or business, and they come with the expectation that video will be part of their interaction with employees, customers, and partners. Thus, IT must deal not only with new devices and usage models, but also with changing business practices that place huge new demands on the core infrastructure.

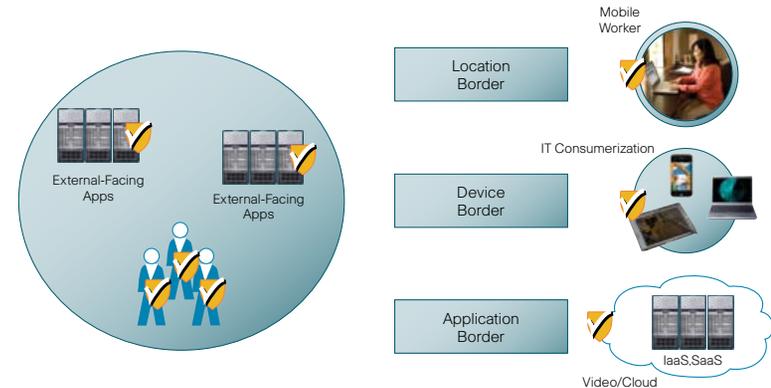
In today's modern workplace, it is increasingly common that primary business resources, including data centers, applications, employees, and customers, are all outside the traditional business perimeter. Extending business borders around all these people and resources taxes your IT department. IT simply cannot scale when every project is an exception to traditional IT design and management practices. IT needs a better way to scale and manage users and customers in any location, given those users may be using virtually any device to access almost any application located anywhere in the world.

Cisco's Borderless Network Architecture empowers IT to efficiently manage access from multiple locations, from multiple devices, and to applications that can be located anywhere.

Removing Location and Device Borders

The research firm In-Stat estimates that by 2012 more than 1.3 billion Wi-Fi devices will have reached the market. There is a dramatic shift occurring toward ubiquitous wired and wireless access, but many organizations still treat wired and wireless networks as separate entities. Cisco's Borderless Network Architecture provides the framework to unify wired and wireless access, including security, access control, and performance management across many different device types.

Figure 1 Shifting Business Borders



Enabling Secure Access, Anywhere, with Any Device

Another primary shift is in how and where users access information. In the past, data and applications were housed on premises, and users were also generally on premises. Today, many organizations tap into talent pools all around the world. Workers might be full-time remote employees or contractors. Applications might be hosted off-site or even in the cloud. But traditional IT still treats these crucial resources as internal entities.

With Cisco's Borderless Network Architecture, IT can unify its approach to securely delivering applications to users in a highly distributed environment. The crucial element to scaling secure access is a policy-based architecture that allows IT to implement centralized access controls with enforcement throughout the network, from server, to infrastructure, to client.

A New Technical Architecture

At the heart of borderless networks is a new technical architecture based on three important principles:

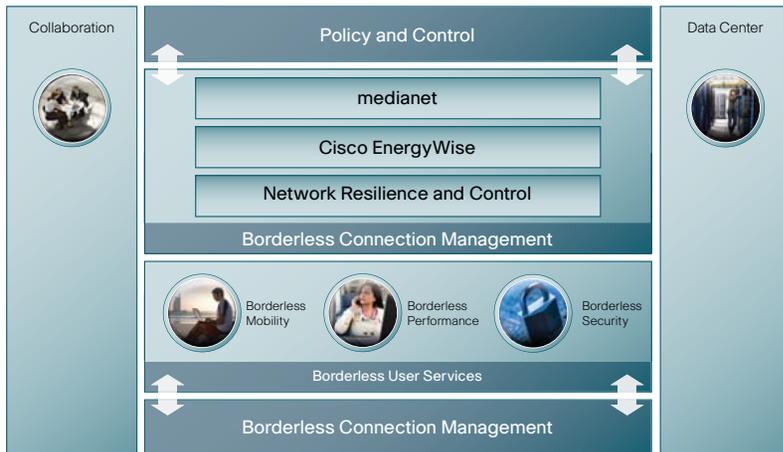
- Decoupling hardware from software
- Unifying compute, storage, and network
- Policy throughout the unified system

These design principles are exposed through innovations across Cisco's routing, switching, wireless, security, application optimization, and network management products. With these principles in mind, Cisco is implementing a five-phase plan to deliver a next-generation architecture that delivers seamless, secure, reliable communications to any device, in any location, accessing any resource.

Cisco's Borderless Network Evolution

Cisco's Borderless Network Architecture is implemented as a five-phase plan that moves from baseline services to advanced policy management and integration that ultimately delivers the borderless experience for users.

Figure 2 Borderless Network Architecture



The first phase of the borderless network evolution establishes critical borderless network services that serve as the foundation for advanced collaboration and rich-media applications. These services include medianet and Cisco EnergyWise, connection management, and resilience and control services.

The second phase focuses on borderless user services, including mobility services, security services, and application performance services. These services simplify the user experience, creating a seamless user experience while enhancing IT's control over highly distributed and mobile client devices.

The third phase implements borderless policy, enabling IT to implement unified policies that govern how users access the network from different devices and locations.

The fourth phase provides a borderless integration framework, extending borderless network services to third-party devices and systems through open APIs and partnerships.

The final phase delivers the borderless experience, combining user and network services, policy, and integration together to realize the anytime, anywhere experience that is borderless networks.

A Platform for Business Innovation

The Cisco Borderless Network Architecture is delivered through innovations across Cisco's routing, switching, wireless, security, application optimization, and network management portfolios. These platforms deliver the next-generation borderless network and user services necessary to deliver transparent mobility; rich multimedia services; and a unified, secure, policy-driven infrastructure for wired and wireless access.

Building a Medianet Infrastructure

Borderless networks provide the foundation for advanced rich-media communications and provide primary network elements that enable the network to automatically detect

and enhance the performance of devices and applications with rich-media capabilities. It is this foundation that enables next-generation applications, including real-time language translation, resource transcoding, and network-based video indexing, that are essential to delivering a superior experience to users regardless of device or location.

Managing Your Global Energy Footprint

Cisco is committed to helping your organization reduce its global energy footprint. Cisco EnergyWise services are implemented across Cisco's routing, switching, and wireless portfolios, providing measurement, monitoring, and control of energy usage from network devices and network-attached IT devices. When combined with Cisco's Network Building Mediator, organizations can take a whole-facility approach to energy management that can quickly add up to substantial operational savings and reduced environmental impact.

What Are the Benefits of a Cisco Borderless Network Architecture?

The Cisco Borderless Network Architecture addresses primary business and IT challenges, enabling organizations to embrace new business models and processes with confidence. It uses the power of the network to provide:

- A robust network platform capable of delivering real-time collaboration experiences to any device
- Transparent mobility with location services for anytime, anywhere communications
- Security for devices both on the local network and across cloud services
- Sustainability and reduced energy costs for efficient and cost-effective business operations
- Optimized application performance for video and Web 2.0 services
- Policy-based access control and identity-aware networking to enable access and collaboration while protecting business-critical applications
- Compliance with current and future government and industry regulatory requirements

Why Cisco Borderless Network Architecture?

In addition to the technology benefits already cited, some additional benefits of adopting a Cisco Borderless Network Architecture include:

- **Relevance:** Cisco works in nearly every major industry to help ensure technology solutions fit the specific needs and requirements of each business.
- **Operations:** Cisco delivers well-tested, thoroughly documented solutions that reduce time to deployment and help you lower systems integration costs.
- **Professional and support services** encourage borderless network innovation by taking an architectural approach to delivering IT-based solutions. Services from Cisco and our partners provide planning, design, and implementation services, as well as award-winning technical services and optimization, so that your network is robust and secure and helps you to meet industry and regulatory compliance requirements, while also supporting collaboration needs, sustainability goals, and reduced operating costs.

Additional Resources

- The Cisco Borderless Network Architecture: <http://www.cisco.com/go/borderless>
- Cisco professional and support services: <http://www.cisco.com/go/services>