

Overview of the Cisco Regional WAN Solution

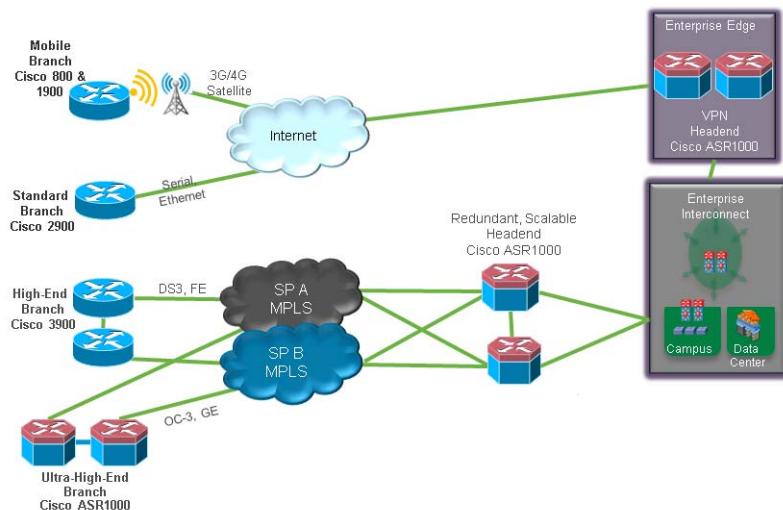
Every enterprise with more than one location has at least one remote site. Extending the enterprise network to this remote branch office has long been one of the more difficult challenges for the IT organization. The Cisco® Regional WAN (RWAN) solution architecture provides a set of pretested deployment recommendations to address some of the challenges with remote branch-office environments.

The RWAN solution includes the network services in the remote branch office and the aggregation necessary to connect to those sites. The RWAN also is one of the most exciting areas in the next-generation enterprise network. In the RWAN, industry trends such as cloud computing, virtual desktops, videoconferencing, bring-your-own devices, and secure access meet the real world.

Every network is different, so RWAN solution guides are tailored to the needs of your remote office deployments. These guides provide consistent recommendations for the most common branch-office sizes as depicted in Figure 1:

- Mobile branch office: Third- and fourth-generation (3G and 4G, respectively) wireless WAN (WWAN) as a primary connection in a mobile environment
- Standard branch office: Most typical remote branch offices connected to headquarters or regional sites
- High-end branch office: Large branch offices with many users, services, and high-availability requirements
- Ultra-high-end branch office: Extremely large branch offices that combine the features of a remote office, campus environment, and even aggregation capabilities for other remote offices

Figure 1 RWAN Sizing



What Problems Does the Regional WAN Solution Address?

Traditionally, the WAN architecture and connectivity to remote branch offices has been an important topic for IT groups. Crafting the proper quality-of-service (QoS) policy and ordering the correct bandwidth from the local service provider are old problems. However, several recent technology trends that are led by a desire to reduce costs and operate more efficiently across the organization are pushing these same networks to be more intelligent and flexible in the way they respond to some new application challenges and user expectations.

The Cisco RWAN solution outlines a tested architecture to deliver new capabilities in a secure and scalable manner with tight service and application integration. The RWAN solution addresses some of these new-world challenges, which include:

- Discovering applications on the WAN and providing appropriate application level QoS
- Intelligently using the bandwidth for primary and secondary network connections
- Assessing, deploying, and monitoring the performance of the network for rich-media applications such as Cisco TelePresence® conferencing and other high-definition business video
- Improving application and virtual desktop response times while reducing bandwidth costs through intelligent wide-area application acceleration
- Implementing new higher-bandwidth WWAN (4G) networks as cost-effective backup connections
- Simplifying the deployment and management of large complex branch-office networks to make it easier to handle new services with a lean IT staff

What Is New with the Regional WAN?

Enterprise applications evolve constantly, and that means that the enterprise networks that support them must evolve to keep up. That is why the Regional WAN solution constantly expands to include the newest technologies that are deployed in an enterprise environment.

The latest additions to the RWAN solution include:

- The latest tested deployment recommendations for Cisco Performance Routing (PfR)
- Tested recommendations for Bring Your Own Device (BYOD) challenges
- Enhancements to your branch availability with 4G LTE Wireless WAN
- Best practices for the deployment of virtual desktop infrastructure (VDI) in the branch
- New ways to secure your branch web access with Cisco Cloud Web Security (CWS)
- How to scale your WAN optimization with Cisco WAAS and AppNav
- How to embrace the latest trends in Unified Collaboration

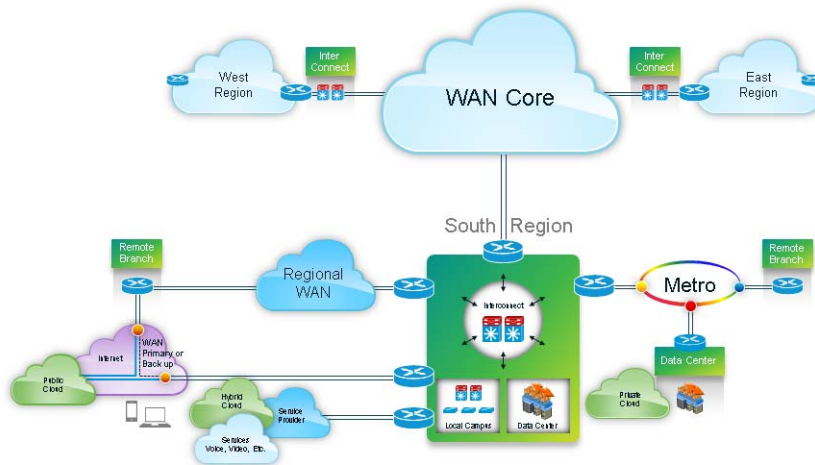
Relationship to Next-Generation WAN Architecture

The Next-Generation WAN (NGWAN) is an end-to-end architecture that provides foundation building blocks for next-generation enterprise networks. The hierarchical design provides the scalability required by large enterprises that can be extended and replicated throughout multiple regions and topologies. This consistency leads to ease of deployment, maintenance, and troubleshooting.

The architecture comprises five core modules (Figure 2):

- Regional WAN: Used to connect branch offices and aggregate remote locations
- Metro: Used to connect remote offices and data centers across metro transport models
- WAN core: Used to interconnect regional networks and data centers within a country, theater, or globally
- Enterprise edge: Used to connect the enterprise network to other external networks and services
- Enterprise interconnect: Connects all WAN, campus, and data center network modules together

Figure 2 NGWAN Architecture



Benefits of the Regional WAN Solution

When you use a proven and validated solution from Cisco, you have a head start in planning your network upgrades. The RWAN solution has been specifically designed and tested to make deploying next-generation services and applications easier on the network planners. The RWAN solution gives you an advantage when you must deploy the latest exciting service in your branch-office environment. Beyond the obvious benefits of having a tested and optimized set of configurations built by the technology experts, the RWAN solution also provides:

- Recommended deployment scenarios for some of the most popular network services and applications that are popular today
- A constantly evolving set of tested configurations that grows as new technologies are introduced and as customers look for helpful recommendations in different areas
- Deployment recommendations for the RWAN environment that are designed to merge into the broader NGWAN solution with complementary guidance across the corporate network
- Solutions designed by the experts who design and build these next-generation technologies today
- Feedback and guidance from a broad set of network architects from a wide range of companies that face these same deployment challenges that feeds into the creation of every RWAN solution
- Increased productivity and lower risk when venturing into new areas with a trusted guide

The Cisco Advantage in the Regional WAN Solution

No one in the industry has more experience building networks, including regional-office networks, than Cisco. In today's world of IT technologies, no other company continues to innovate and create capabilities at the same pace to make rolling out these new services easy and manageable. Whether you face a daunting virtual desktop rollout, new cloud-based applications, or a constrained WAN budget, the Cisco Regional WAN solution can provide suggestions to solve your problems.

No other network company talks to more IT professionals in a broader range of environments than Cisco. That broad exposure directly influences the RWAN testing and recommendations. The solution guides are tested using real-world configurations and lessons learned from your peers at companies that face the same challenges all around the world.

Where to Go for More Information

The Cisco Regional WAN documentation and deployment guides are located with the entire Next-Generation WAN solution set in the Cisco Design Zone. Design Zone is a one-stop-shop for tested and validated recommendations from the Cisco experts in a variety of network environments. For more information, visit:

http://www.cisco.com/en/US/solutions/ns340/ns414/ns742/ns816/landing_overall_wan.html#-Overview