Routed Access—An Option for Resilient Services

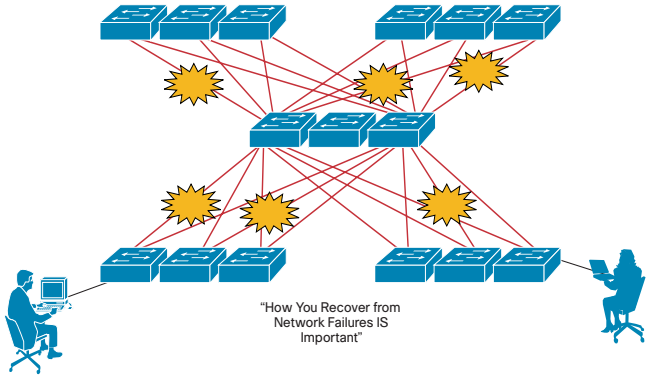
At-A-Glance

Why Should I Care about Routed Access?

Networks have become critical for the success of an enterprise. Applications and their ability to operate efficiently within the network greatly affect the productivity of your workforce and the corporation's ability to increase profitability. A network that delivers resiliency and deterministic recovery from failures has become standard equipment for today's enterprise company.

A Routed Access solution provides maximum benefits for enterprises seeking to either increase the availability of their network or decrease the complexity of their current network infrastructure. As real-time applications become more prevalent and enterprises expect their employees to be able to connect anywhere or anytime, the availability of the network becomes more critical than ever. Network availability can directly affect the profitability of an enterprise by providing the foundation for employees to be as productive and collaborative as possible. Reducing network complexity can allow IT teams to provide a higher level of service for users and focus on supporting new applications that can help grow the business.

Figure 1. Network Failures Can Be Critical



What Problems Need to be Solved?

Real-time media-rich applications are promoting the need for highly resilient and available networks. These applications, which enable employees to be more productive and communicate more effectively, require high levels of reliability in the network. Network latency, delay, and outages greatly affect application performance and usability, thereby directly affecting the enterprise and its workforce.

Network complexity often results in networks that are difficult to manage and maintain. Multiple layers of protocols within the network make finding, isolating, and fixing network-related issues both time consuming and expensive.

Routed Access

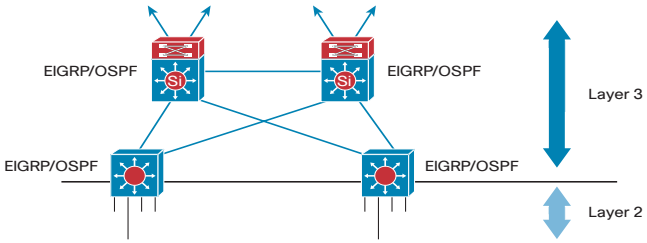
Routed Access uses routing protocols such as Enhanced Interior Gateway Routing Protocol (EIGRP) and Open Shortest Path First (OSPF) in the wiring closet to provide increased network reliability and faster time to resolution for network issues. By utilizing the intelligence and resiliency capabilities of Cisco routed protocols such as EIGRP, routing in the access layer or wiring closet delivers the mechanisms that enable a network to recover from failure in a deterministic way without having to fine tune multiple protocols or devices. Cisco EIGRP delivers convergence times less than 200 ms with fewer configuration commands for an industry-leading routed access solution. The inherent deterministic recovery from failure helps ensure that your network remains available for your critical communication applications.

Using one set of protocols for both the wiring closet and network core greatly reduces the complexity of troubleshooting issues within the network. Common tools used to troubleshoot network issues can be used across the entire network. Fewer protocols mean that there is less to get right in terms of configuration and management.

The Cisco Catalyst 3560, 3750, 4500, and 6500 Series Switches can be used to implement a Routed Access solution. All of these switches can provide routing services for the wiring closet. In addition, the capability to operate as an EIGRP stub is included in the most basic level of software, so no extra costs are associated with migrating to a Routed Access solution.

Routed access networks allow enterprises to effectively implement and scale applications such as IP Communications and e-learning networkwide. Utilizing routing protocols at the access layer provides the level of application response and reliability demanded by interactive real-time applications.

Figure 2. Routing to the Edge—Layer 3 Distribution with Layer 3 Access



What are the Benefits of Routed Access?

Implementing a Routed Access solution results in increased network availability, decreased network complexity, ease of network troubleshooting, fewer resources spent on training, and fewer protocols within the network. All of these benefits directly relate to the operation and maintenance of a LAN. Increased network availability results from the network recovering from failures in a more deterministic way. The burden of troubleshooting is eased by the fact that Layer 3 protocols are now used throughout the network, and a single command set only needs to be utilized. Network administrators need only be fluent in Layer 3 protocols and commands, thereby greatly decreasing training time. In addition, network complexity can be greatly reduced because fewer protocols are required and deterministic recovery from failure can be fully realized. Resources used to manage and maintain a network can sometimes be reduced as network outages decrease and troubleshooting is simplified.

Distributing intelligence to the edge of the network delivers:

- Faster convergence times, greatly enhancing networks for real-time applications
- Simplified troubleshooting using fewer protocols and common tools
- Decreased network complexity by standardizing on one set of protocols for resiliency
- The ability to load balance traffic by design; load balancing traffic helps increase network resiliency and lower network recovery
- Reduced network downtime and increased network availability to lower operating expenses and help ensure workers are working
- New collaborative peer-to-peer traffic and applications that run more efficiently

Why Cisco?

Cisco Systems® is leading the way in providing intelligent networking solutions that better enable real-time applications such as IP Communications and collaborative peer-to-peer applications. With decreased network convergence times, reduced troubleshooting complexity, and higher availability, your network becomes your best competitive tool. Cisco provides a unique combination of products, technology, and experience that enables you to build your network so that your business can grow, innovate, and maximize productivity.

C45-340512-00 03/06