WHITE PAPER

Auto-Failover Solutions

Redundant WAN Service for Business

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fusion

Overview

Fusion offers several WAN redundancy options for customers who require Voice, MPLS, or DIA services. While the Fusion network is engineered to exceed all SLA targets, the characteristic failure point for any customer network is the local access circuit. Our redundant WAN solution allows customers to eliminate this single point of failure from their network without assuming the financial and technological burden of a complex, multi-carrier solution. By leveraging Fusion's extensive portfolio of carrier-partners our customers are able to install redundant circuits to any location utilizing diverse underlying carriers and access mediums.

Combining this physical redundancy and diversity with our network-based intelligent routing options, makes possible a reliable, fully automated failover solution. One that can be implemented during any network-impacting event. Our standard offering includes three options that provide varying levels of service to meet a diverse range of our customers' technical and financial requirements. These application-specific solutions are engineered to provide an unparalleled level of network reliability for any situation.

Three Standard Redundancy Options:

1. On-Net To On-Net Redundancy

Features:

- Fully automatic failover to backup circuit with very low failover time
- Seamless to end-users
- Fully implemented and managed by Fusion
- Dual on-net links keep MPLS and voice traffic internal to the Fusion Network
- All services continue to function during a network-impacting event
- Public IP addresses continue to be accessible from the Internet
- QoS can be implemented on the backup circuit to provide consistent experience

This option utilizes two Fusion On-Net circuits for the redundant WAN links. These circuits are ideally provisioned from diverse network providers and to diverse Fusion Points of Presence (POPs). By coordinating the CPE and the Provider Edge routers, automatic failover is configured utilizing a dynamic routing protocol. This protocol handles the re-routing of customer traffic over the backup link upon primary link failure, and back to the primary link upon service restoration. This process is fully automated and can be completed in less than one second. Since both circuits are On-Net to Fusion, we are able to maintain the same Quality of Service (QoS) across both links. This option is ideal for Cloud Voice or UC customers, as well as those utilizing MPLS and DIA services. It can also be implemented for customers who rely on external access to their site/network from the Internet, as the customer's public LAN IP addresses will also route over the failover circuit.

2. On-Net To VPN Redundancy

Features:

- Fully automatic failover to backup circuit with low failover time
- Seamless to end-users
- Fully implemented and managed by Fusion
- IPSec VPN tunnel encrypts traffic to Fusion over the backup circuit
- All services continue to function during network-impacting event
- Public IP addresses continue to be accessible from the Internet

This option provides additional access circuit flexibility to our customers. It utilizes one Fusion on-net circuit and one IPSec VPN tunnel via off-net Internet access for the redundant links. The off-net Internet access can be almost any type of access circuit (e.g. Ethernet, T1, DS3, DSL, Cable, 3G/4G). This provides for a diverse physical path over a low-cost Internet service. An IPSec VPN tunnel is overlaid on the off-net DIA to establish a secure WAN connection back to the Fusion IP/MPLS network that emulates an on-net link's routing capabilities. Between the Customer Premise Equipment (CPE) and the Fusion routers automatic failover is configured by utilizing a dynamic routing protocol, typically iBGP. This protocol handles the re-routing of customer traffic over the backup link upon primary link failover, and back to the primary link upon service restoration. This process is fully automated. This option not only provides highly-available Voice and MPLS services similar to the first option, but is also ideal for customers who rely on external access to their site/network from the Internet as the customer's global (public) LAN IP addresses will also route over the failover circuit. However, unlike the first option, since the second circuit is off-net, Fusion cannot provide the same QoS offering on the failover link. During normal network operation QoS on the primary link would operate normally.

3. On-Net To 3rd Party DIA Redundancy

Features:

- Fully automatic failover to backup circuit
- Fully implemented and managed by Fusion
- Voice and Internet access function during network-impacting event

The last option utilizes one Fusion on-net circuit and one off-net Internet access circuit. Again, the off-net access can be almost any type of access circuit (e.g. Ethernet, T1, DS3, DSL, Cable, 3G/4G). As with the previous option, this service provides a diverse physical path. Where this solution differs from the others is in both the method of failover and the services that are maintained over the redundant path. Failover with this option is achieved using the Cisco SLA feature on the CPE. The CPE actively monitors the state of the primary circuit, and upon detection of a circuit failure will begin routing traffic over the off-net DIA by performing Network Address Translation off your Fusion-assigned global (public) IP addresses to the 3rd party provider's global (public) IP address. This process is fully automated and provides for Internet access as well as Fusion Voice services to the fail over, but does not automatically allow inbound connections to be established on the failover link (i.e. to your internally-hosted Exchange server or Web server). This solution is ideally suited for the SMB customer that requires their Voice and Internet access to be highly-available, but does not require external access to their site. Similar to the previous option, since the second circuit is off-net Fusion cannot provide the same QoS offering on the failover link. During normal network operation QoS on the primary link would operate normally.

Creating Customized Solutions. Fusion will work with our customers to choose the correct solution, oversee its implementation and testing, and manage the service throughout its lifetime. This eliminates the costly and time-consuming need for an outside consultant to provide and manage this solution.

About Fusion

Fusion is a leading provider of integrated cloud solutions to small, medium and large businesses. Fusion's advanced, proprietary service platform enables the integration of leading edge solutions in the cloud, including cloud voice, cloud connectivity, cloud storage and security. Fusion's innovative yet proven cloud solutions lower our customers' cost of ownership, and deliver new levels of security, flexibility, scalability and speed of deployment.

Learn more at www.fusionconnect.com.