

INFRASTRUCTURE PRACTICE

Law Firm's Totally Redundant and Secure Infrastructure

This law firm's decision to move into a new office space in Manhattan preempted the decision to at the same time design and implement a totally redundant and secure infrastructure. This customer required a network solution provider that could both work to meet their project timeline and fully understand the technologies being deployed.

When a company moves into a new office space while upgrading its infrastructure to be totally redundant and secure, they often realize that they do not have the staff in house to complete a project like this in the allotted amount of time. All the various technical aspects of a project such as this allows a solutions provider such as ACR to augment the customers internal staff and provide the expertise and resources required for a successful move and implementation.

This customer had a number of challenging requirements for this project. First, they had specified a time frame in which the new infrastructure had to be online and usable by their lawyers. This may not sound like anything out of the ordinary, but taking into account that there was a great deal of construction taking place at the same time the infrastructure was being installed, the potential for disaster becomes much greater. Second, in order to meet the customer's redundancy and security requirements ACR was tasked with designing and implementing a redundant firewall and redundant internet connectivity.

The collapsed core of this new network was designed utilizing two Cisco catalyst 6506 switches with MCFCs as the core of the network. The closet IDFs were designed utilizing a stack of Cisco catalyst 3548x1 switches. These switches were connected together with the gigastack gbic technology to help reduce cost. The closet IDFs were designed with redundant downlinks to the 6509 core switches via gigabit Ethernet fiber.

The requirements for the redundant firewall were met by installing two Cisco Pix firewalls. These two firewalls were installed in a Active/Standby configuration. The requirement for the redundant internet connectivity was met by installing two Cisco 3640 routers, each with its own T1 connection to the internet, The BGP routing protocol was configured for internet redundancy and the HSRP and OSPF protocols were configured for router redundancy.

In order to provide maximum use of all gigabit downlinks, ACR recommended splitting each floor into two distinct VLANs in order to forward traffic over both gigabit Ethernet downlinks. This was accomplished by configuring the core MSFCs in an odd/even configuration. One of the 6509s was configured as the root of the spanning tree for the odd VLANs and the other 6509 was configured as the root of the spanning tree for each other for redundancy. The layer 3 redundancy was accomplished utilizing the Cisco technology known as Hot Standby Routing Protocol. Again, we configured one MSFC as the active Layer 3 router for the odd VLANs and the other MSFC as the active Layer 3 router for the even VLANs. ACR worked directly with the internet provider to configure and test the internet routing redundancy.

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The final piece of this installation was to test the overall redundancy and resiliency of this new infrastructure. ACR engineers performed exhaustive tests to confirm that internal routing redundancy, firewall redundancy, and internet routing redundancy all worked as originally designed.

The results of this project demonstrate the ability of ACR to provide the experience, knowledge, and resources necessary to make a project such as this succeed—from design and implementation through to migration, documentation and support.

ACR was retained by this customer for post installation support and remains their trusted advisor for new projects.

The Challenge:

- Design and implement a new secure and redundant infrastructure for a law firm’s corporate office.
- Design and implement a fully redundant and scalable Gigabit Ethernet LAN.
- Design and implement a redundant Firewall and internet connectivity solution

The Solution:

The following comprised the comprehensive solution to the stated challenges:

Two senior level engineers were positioned onsite for a two week period to complete the infrastructure design and implementation for the new secure and resilient corporate network.

The Benefit:

In choosing ACR as a solutions partner, this customer was able to realize the following:

No need to find and retain full-time staff with the skills and knowledge necessary to complete this one-time project. Ability to retain ACR on a contract basis to maintain the new infrastructure.

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