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How to Implement a Firewall with Better Throughput



To help keep municipal networks highly secure, a robust firewall is the first line of defense.

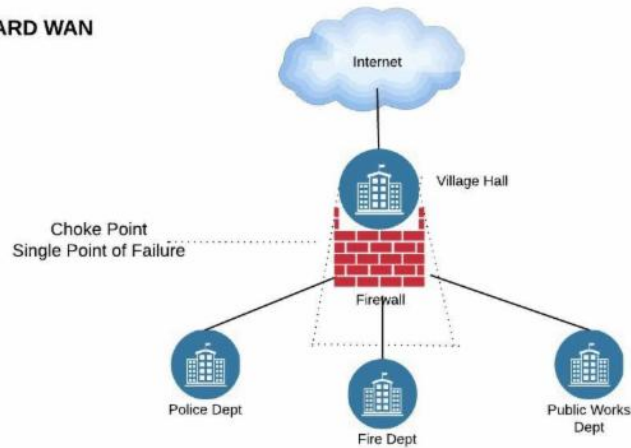
Premises-Based and Network-Based Firewalls

All messages entering or leaving your network pass through the firewall which examines each message and blocks those that do not meet the specified security criteria. The two main firewall options available are premises-based and network-based firewalls.

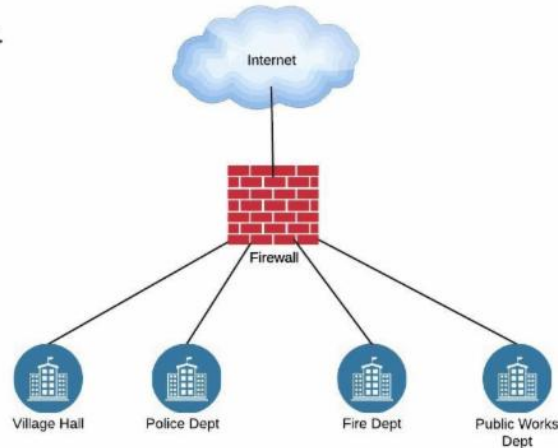
A premises-based firewall is a firewall installed on your site that controls incoming and outgoing network traffic and determines whether to allow it.

A network-based firewall is a firewall installed in your service provider's central office, and provides all the same security functions.

STANDARD WAN



NETWORK FIREWALL



Benefits of Network-Based Firewall in a Multi-Site Municipality

Increased Network Speed and Throughput

If your district WAN consists of a 1 Gig connection at each site and you have a premises firewall at the Village HQ, all other locations are limited by the speed of the network connection at headquarters; it is a choke point. In the illustration above, if each location and the Village HQ has a 1 Gig connection, all four sites are sharing 1 Gig total, even though they may each have their own 1 Gig fiber.

With a network-based firewall, each location can utilize the full bandwidth available to it. If each location has a 1 Gig connection, it can have the full 1 Gig; it is no longer governed by the speed of the HQ connection.

Important will be to size the new network-based firewall correctly. It is highly recommended that municipalities fully configure a firewall with intrusion prevention, next generation firewall, and unified threat management. Each of those functions inspects the traffic more deeply and impacts total throughput. The premises firewall may have performed acceptably by providing 1 Gig of throughput because it only had 1 Gig of bandwidth. With 3 locations and a HQ that want to utilize their full 1 Gig of bandwidth, a firewall that can provide up to 4 Gig of throughput is required. That is a much more robust and expensive firewall, but can be a far more cost-effective solution than increasing the bandwidth to 4 Gig at the HQ.

Other Benefits

- There is a substantial savings because the link to the Village HQ can remain 1G
- The single link from HQ is no longer a single point of failure for the entire network, each location has direct internet access
- Network engineers centrally manage security policies and user permissions and IT resources can focus on other issues
- No over-subscription; municipalities can have full bandwidth to the internet

NexGen has Engineers to Help You

NexGen's engineers can help you with all of your technology upgrades, provide you with multiple quotes, and provide all the information you need for your E-Rate documentation.

NexGen is a telecom and network engineering firm specializing in advanced IP voice and data, cloud services, network analysis, network optimization, wireless, and structured cabling. We create customer solutions by designing, installing, and maintaining their systems. For more information, contact Jack Bush at 847-459-1220 or jbush@sandgcom.com.

About NexGen / S&G Communications

Our engineers provide design and implementation of IP phone systems and network services from all the leading carriers. We also offer WiFi services, cloud services, network analysis and network optimization services.

Our technicians install voice and data cabling, fiber optic cabling, racks, cabinets, under-floor tray systems, wireless access point installation, and more.

Our installers are certified, union technicians. By using quality products and certified technicians, we can provide you with an infrastructure capable of supporting all applications designed for today's standards.

Training and Service - As a provider of premier IP phone systems, we offer free on-site training and a suite of post-implementation services to help you successfully maintain your system.

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