Solution Brief

High Availability

The difference between failure and failover

Benefits

- Increased network uptime for maximum efficiency and productivity
- Eliminate the firewall as a single point of failure in your network
- Seamless, automatic failover without network disruption, all transparent to end users
- A cost-effective solution for firewall redundancy without expensive annual licensing
- Perform necessary, timely maintenance and security updates with little or no downtime

Executive Overview

Network administrators are expected to manage network resources to ensure optimal operations without degradation or disruption of services. Failure of **non-redundant equipment** in a critical system can cost thousands - even hundreds of thousands - in **lost revenue**, decreased productivity, and customer dissatisfaction. Your network needs to be reliable and a single point of failure can potentially lead to disastrous consequences.

Proprietary firewall companies would like to sell you specialty equipment, along with expensive licenses, providing a solution for you while putting a healthy commission check in their pocket. Then a year later, you have to **repurchase** the **software licenses** to run equipment you've already purchased. What's worse, smaller companies may have to redirect a large portion of their IT spend just to maintain this proprietary solution.

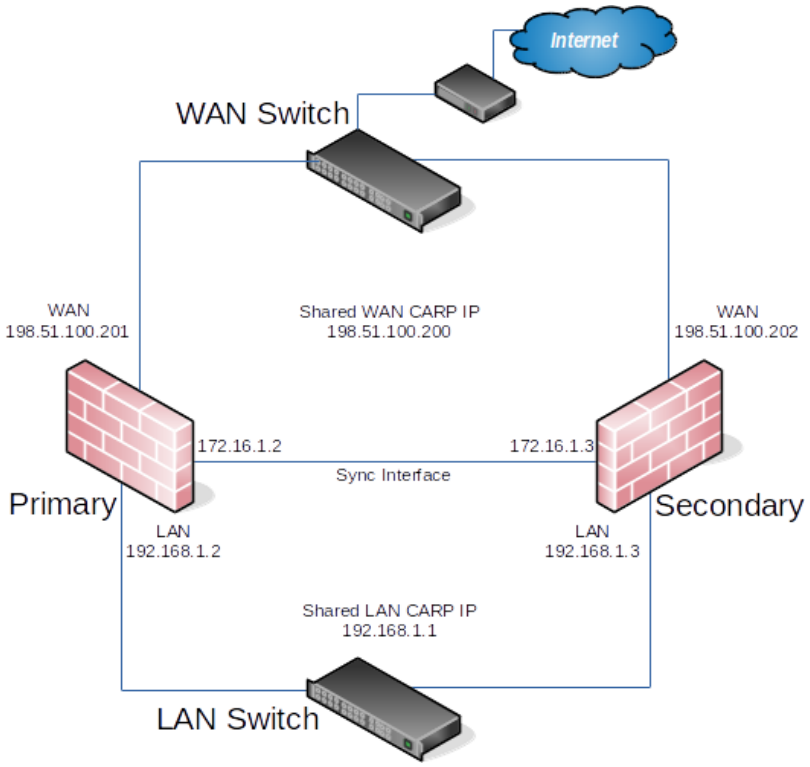
pfSense® software running on a High Availability (HA) pair of Netgate® Security Gateways provides a simple, **affordable solution**. Since pfSense is open source, there are no software licensing fees.

Here's How It Works

Netgate offers our 1U rackmount units in a HA configuration. HA is a combination of **two identical units**, creating an active/passive cluster. These units can be purchased together as an HA pair or they can be purchased separately. Configuration of the units is identical.

Best Practice: Systems should be identical to set up as HA for ease of configuration, maintenance, and management.

To configure the HA cluster, you will need a **switch** on each side (WAN and LAN) of the firewalls as outlined in the diagram below. This can be accomplished with a single managed switch though that single switch then has the potential to be the single point of failure.



A total of **three ports on each device** will be used for the HA configuration. Each firewall will use a WAN port, a LAN port, and a third port between the two devices that will act as a sync interface to carry the heartbeat and sync the state information between the two devices.

These interfaces will all have unique IP addresses. In addition to these IP addresses, the two firewalls will have a ***shared*** or ***Virtual IP (VIP)*** **address** on both the WAN and the LAN interfaces. The VIP makes the two systems appear as one to the rest of the network.

The **Common Address Redundancy Protocol** (CARP) is the protocol used to allow multiple hosts on the same network to share these VIP address and prevents IP address conflicts.

Complete instructions for HA cluster configuration can be found in the product documentation for your system at www.netgate.com.

Summary

Seasoned system administers will tell you that **eliminating single points of failure** in your network is considered a best practice, even if your system isn't mission critical. Network outages are costly and time consuming. A High Availability cluster eliminates your firewall/router as a single point of failure and provides you or your customer with peace of mind.

Additional Resources

https://doc.pfsense.org/index.php/High_Availability

https://www.netgate.com/docs/reference/highavailability/index.html

About Netgate

Netgate, the open-source secure networking company, delivers superior value firewall, VPN, and routing solutions. With over 1 million active pfSense installations – businesses, educational institutions, and government agencies around the world depend on Netgate for cloud or premises, enterprise ready, secure networking solutions.

Find out more at www.netgate.com