

The series that focuses on why

Graceful Shutdowns

5 Tips to Shutdown pfSense Gracefully

Overview

With any electronic appliance, it is important to develop good habits which improve product longevity and decrease potential downtime. These habits then transform into best practices.

At Netgate®, we're continually identifying best practices. This *Why To Series* of documents is our way of relaying those practices to you.

This edition focuses on graceful shutdowns of your pfSense® Security Gateway. An abrupt power loss to the firewall can potentially cause data corruption, depending on what activities are happening in pfSense behind the scenes. Just as you wouldn't shut down a system during an update, you don't want to pull the power on a pfSense firewall while a backup is being performed, a log file written, or a config file is being updated.

An abrupt shutdown can be caused in a number of ways. The most common causes are a power outage, pulling the power cord out directly, or accidentally turning off a power strip. "Dirty" power can also cause intermittent power loss.

Here are 5 simple tips to ensure a graceful shutdown to develop good habits and best practices.

1) Use an Uninterruptible Power Supply

Our best recommendation is to ensure you have your pfSense firewall attached to a UPS. A UPS will not only prevent an abrupt shutdown, it will also work to clean up "dirty" power as mentioned above. The UPS should be rated to keep the firewall powered on long enough for a graceful shutdown to occur.

One of the packages that can be installed with pfSense is the NUT package. Network UPS Tools (NUT) is a package that "provides support for monitoring of Uninterruptible Power Supplies. It supports UPS units attached locally via USB or serial, or remote units via the SNMP protocol, the APCUPSD protocol or the NUT protocol.

The NUT package can be configured to initiate a graceful shutdown of your pfSense firewall if a loss of power is detected by the UPS.

2) From the Console

If you don't use the serial or video console, you should. It has a powerful menu with many invaluable options to make quick changes to pfSense. Options **5 and 6** from the console menu are used to **Reboot system** (option 5) and **Halt system** (option 6). Confirmation is required to ensure you really do want to turn off your firewall.

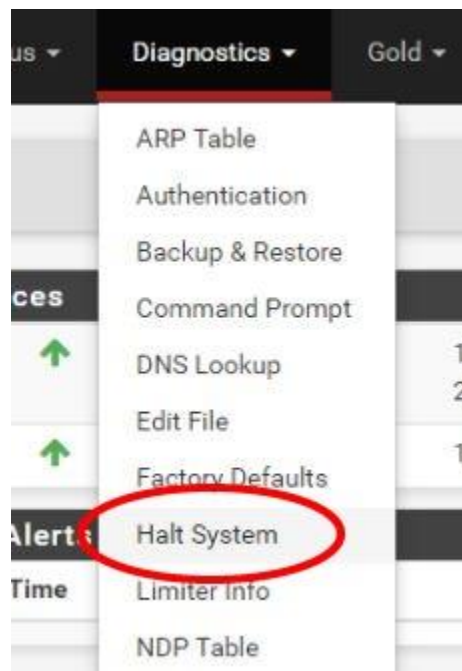
Both of these options will ensure a graceful shutdown that allows pfSense to close out all of the files and prevents system software corruption.

```
0) Logout (SSH only)          9) pfTop
1) Assign Interfaces         10) Filter Logs
2) Set interface(s) IP address 11) Restart webConfigurator
3) Reset webConfigurator password 12) PHP shell + pfSense tools
4) Reset to factory defaults  13) Update from console
5) Reboot system            14) Enable Secure Shell (sshd)
6) Halt system              15) Restore recent configuration
7) Ping host                16) Restart PHP-FPM
8) Shell

Enter an option: █
```

3) The Diagnostics Menu

From the webGUI, the **Diagnostics** menu provides easy access to the same **Halt System** and **Reboot** options. These also ensure a graceful shutdown. The **Halt System** option is shown below and **Reboot** is further down on the same menu.



4) The Square Red Button

The Netgate® SG-4860 1U, SG-8860 1U, and XG-2758 1U systems all have a square red button on the back of the system. If you are running pfSense, a quick **press and release** of the red button will perform a graceful shutdown. Do not press and hold the red button or it will perform an abrupt shutdown.

To turn the system back on, press and release the red button again.



Note: Older systems had a small, round, gray button that performs the same function as the square red button. If you do not have either button on the back of the 1U system, you will need to rely on steps 1 and 2 above to perform a graceful shutdown.

5) Not the Power Supply Rocker Switch

In short, do not use the rocker switch to turn off the pfSense Security Gateway. The only time this is acceptable is if your firewall has locked up.

Beginning March 2016, the 1U power supplies have a rocker switch on the back of the system. The rocker switch can be horizontal, as shown below, or it could be vertical in roughly the same location.



Turning off the rocker switch of the power supply abruptly turns off power to the system just as pulling a power cord would.

Summary

This concludes this *Why To Series* edition on Graceful Shutdowns. Remember to use these methods to prevent abrupt power loss to your Netgate firewalls running pfSense software. This is a good habit and best practice that applies to more than just pfSense Security Gateways.

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.

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