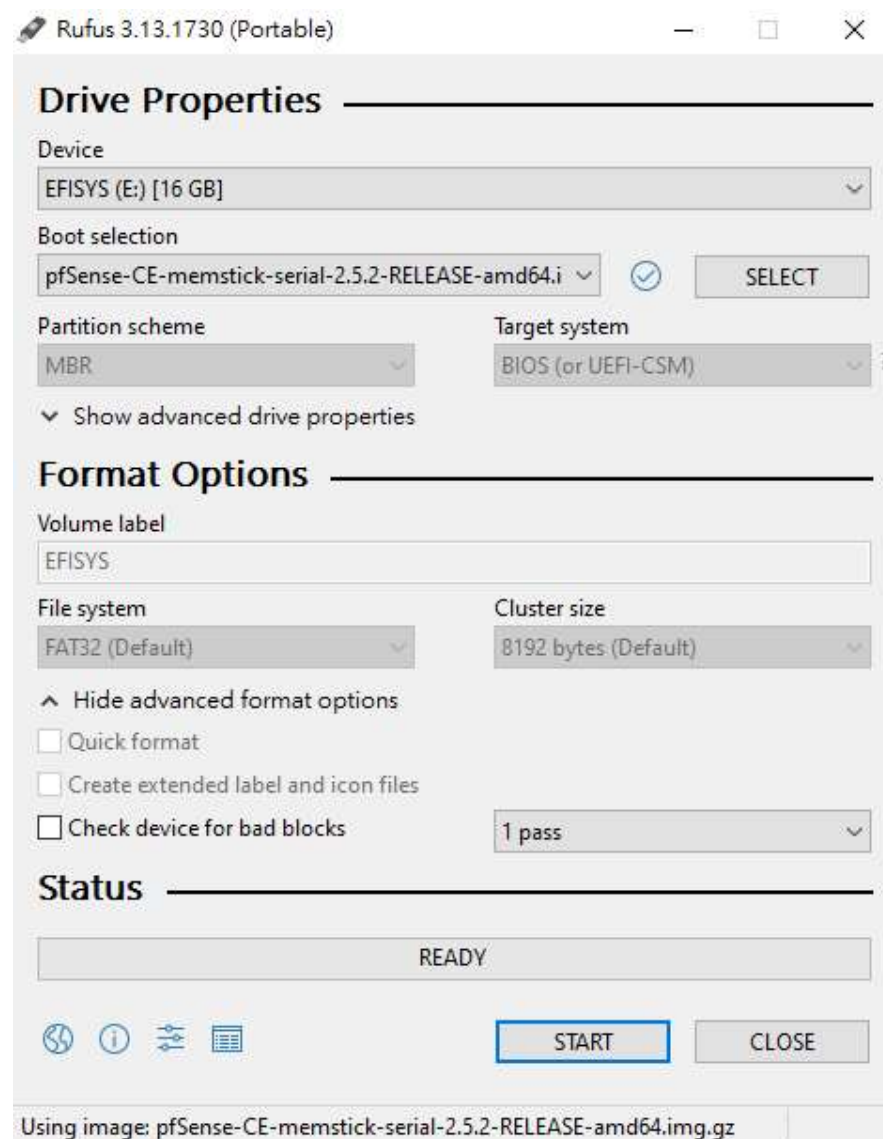# AAEON PfSense User Guild

PfSense is an open source OS based on FreeBSD, customized for firewall and router functions. It can be easily deployed through WebUI as firewall, router, wireless access point, DHCP server, DNS server and VPN.
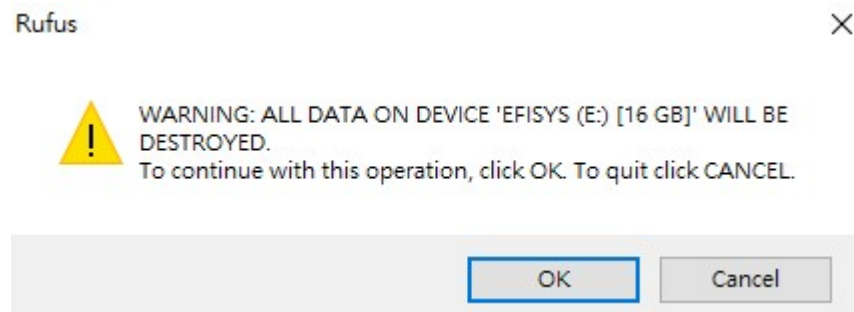
Necessary items:
- PfSense ISO: pfSense-CE-memstick-serial-2.5.2-RELEASE-amd64.img
  https://www.pfsense.org/download/
- Create bootable USB tool: Rufus
  https://rufus.ie/en/

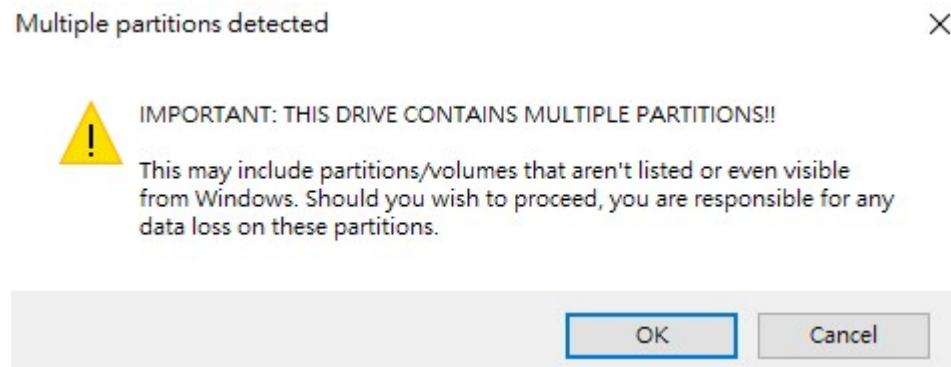## 1. Create PfSense Installation USB

Step1. Click "SELECT" to choose image file and click "START" to create pfsense installation USB.

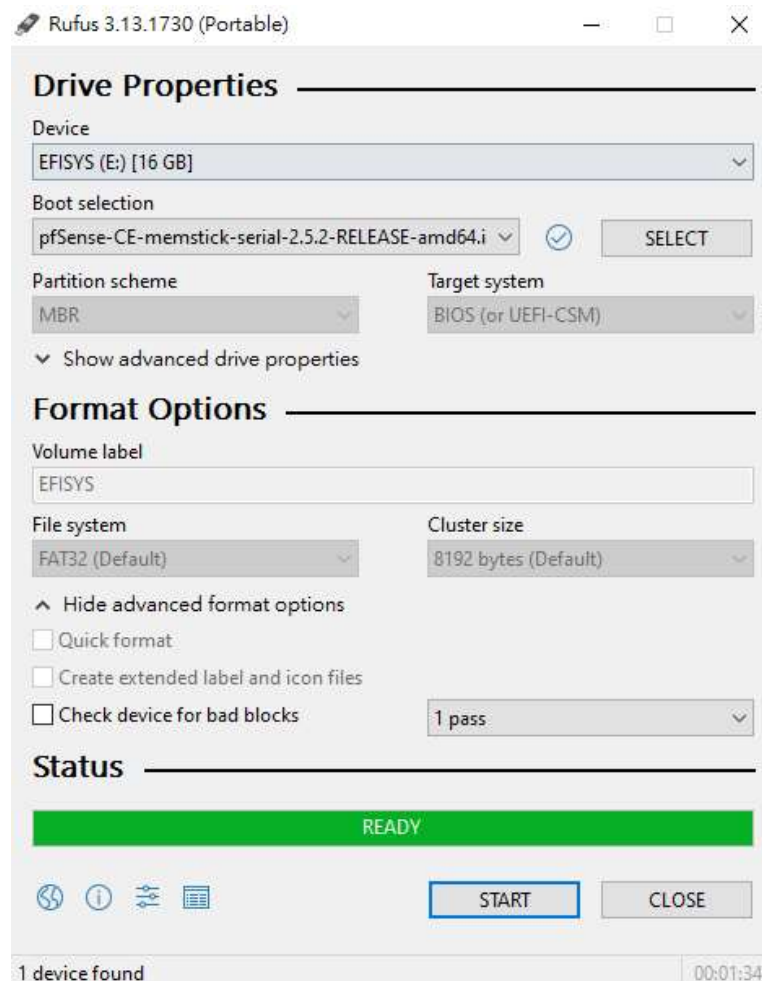Step2. Click "OK" to the next.

Step3. Click "OK" to the next.

Step4. Finish.

2. Install PfSense

Step1. Press "Enter".

Step2. Type "vt100" to start the installation process.

Step3. Press "Enter" to accept copyright and distribution notice.

Step4. Choose "Install pfSense" and press "Enter" to the next.

Step5. Press "Enter" to the next.

Step6. Choose "Auto (ZFS)" and press "Enter" to the next.

Step7. Press "Enter" to the next.

Step8. Choose "stripe" and press "Enter" to the next.

Step9. Press "space" to choose the storage device you want to install and press "Enter" to the next.

Step10. Choose "YES" and press "Enter" to the next.

Step11. Begin installing.

Step12. Choose "No" and press "Enter" to the next.

```
pfSense Installer
qqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqq




            lqqqqqqqManual Configurationqqqqqqqqqk
            x The installation is now finished.   x
            x Before exiting the installer, would x
            x you like to open a shell in the new x
            x system to make any final manual     x
            x modifications?                      x
            tqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqu
            x          < Yes >        < No  >     x
            mqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqj
```

Step13. Choose "Reboot" and press "Enter" to finish the installation.

※**Remember to remove the USB after you press "Enter"**

```
pfSense Installer
qqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqq




            lqqqqqqqqqCompleteqqqqqqqqqqqk
            x Installation of pfSense    x
            x complete! Would you like   x
            x to reboot into the         x
            x installed system now?      x
            tqqqqqqqqqqqqqqqqqqqqqqqqqqqqu
            x    <Reboot>   <Shell >     x
            mqqqqqqqqqqqqqqqqqqqqqqqqqqqqj
```

Step14. PfSense initial interface as shown below.

```
Starting CRON... done.
pfSense 2.5.2-RELEASE amd64 Fri Jul 02 15:33:00 EDT 2021
Bootup complete

FreeBSD/amd64 (pfSense.home.arpa) (ttyu0)

pfSense - Netgate Device ID: f5844f74919eab95a404

*** Welcome to pfSense 2.5.2-RELEASE (amd64) on pfSense ***

 WAN (wan)       -> igb0       ->
 LAN (lan)       -> igb1       -> v4: 192.168.1.1/24

 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. Set interface(s) IP address

There are two modes for WAN settings, one is static IP and the other is DHCP.

Static IP:

Step1. Type "2" and press "Enter" to set interfaces IP address.

```
Starting CRON... done.
pfSense 2.5.2-RELEASE amd64 Fri Jul 02 15:33:00 EDT 2021
Bootup complete

FreeBSD/amd64 (pfSense.home.arpa) (ttyu0)

pfSense - Netgate Device ID: f5844f7491 9eab95a404

*** Welcome to pfSense 2.5.2-RELEASE (amd64) on pfSense ***

 WAN (wan)       -> igb0        ->
 LAN (lan)       -> igb1        -> v4: 192.168.1.1/24

 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: 2
```

Step2. Type "1" and press "Enter" to set the WAN interfaces.

```
*** Welcome to pfSense 2.5.2-RELEASE (amd64) on pfSense ***

 WAN (wan)       -> igb0        ->
 LAN (lan)       -> igb1        -> v4: 192.168.1.1/24

 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: 2

Available interfaces:

1 - WAN (igb0 - dhcp, dhcp6)
2 - LAN (igb1 - static)

Enter the number of the interface you wish to configure: 1
```

Step3. Type "n" and press "Enter" to the next.

```
 WAN (wan)         -> igb0        ->
 LAN (lan)         -> igb1        -> v4: 192.168.1.1/24

 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: 2

Available interfaces:

1 - WAN (igb0 - dhcp, dhcp6)
2 - LAN (igb1 - static)

Enter the number of the interface you wish to configure: 1

Configure IPv4 address WAN interface via DHCP? (y/n) n
```

Step4. Type your static IP and press "Enter" to the next.

```
 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: 2

Available interfaces:

1 - WAN (igb0 - dhcp, dhcp6)
2 - LAN (igb1 - static)

Enter the number of the interface you wish to configure: 1

Configure IPv4 address WAN interface via DHCP? (y/n) n

Enter the new WAN IPv4 address.  Press <ENTER> for none:
> 192.168.0.1
```

Step5. Type "24" and press "Enter" to set the subnet masks.

```
 7) Ping host                          16) Restart PHP-FPM
 8) Shell

Enter an option: 2

Available interfaces:

1 - WAN (igb0 - dhcp, dhcp6)
2 - LAN (igb1 - static)

Enter the number of the interface you wish to configure: 1

Configure IPv4 address WAN interface via DHCP? (y/n) n

Enter the new WAN IPv4 address.  Press <ENTER> for none:
> 192.168.0.1

Subnet masks are entered as bit counts (as in CIDR notation) in pfSense.
e.g. 255.255.255.0 = 24
     255.255.0.0   = 16
     255.0.0.0     = 8

Enter the new WAN IPv4 subnet bit count (1 to 31):
> 24
```

Step6. Type your gateway address and press "Enter".

```
Available interfaces:

1 - WAN (igb0 - dhcp, dhcp6)
2 - LAN (igb1 - static)

Enter the number of the interface you wish to configure: 1

Configure IPv4 address WAN interface via DHCP? (y/n) n

Enter the new WAN IPv4 address.  Press <ENTER> for none:
> 192.168.0.1

Subnet masks are entered as bit counts (as in CIDR notation) in pfSense.
e.g. 255.255.255.0 = 24
     255.255.0.0   = 16
     255.0.0.0     = 8

Enter the new WAN IPv4 subnet bit count (1 to 31):
> 24

For a WAN, enter the new WAN IPv4 upstream gateway address.
For a LAN, press <ENTER> for none:
> 192.168.0.254
```

Step7. Type "n" and press "Enter".

```
1 - WAN (igb0 - dhcp, dhcp6)
2 - LAN (igb1 - static)

Enter the number of the interface you wish to configure: 1

Configure IPv4 address WAN interface via DHCP? (y/n) n

Enter the new WAN IPv4 address.  Press <ENTER> for none:
> 192.168.0.1

Subnet masks are entered as bit counts (as in CIDR notation) in pfSense.
e.g. 255.255.255.0 = 24
     255.255.0.0   = 16
     255.0.0.0     = 8

Enter the new WAN IPv4 subnet bit count (1 to 31):
> 24

For a WAN, enter the new WAN IPv4 upstream gateway address.
For a LAN, press <ENTER> for none:
> 192.168.0.254

Configure IPv6 address WAN interface via DHCP6? (y/n) n
```

Step8. Press "Enter" for none.

```
Enter the number of the interface you wish to configure: 1

Configure IPv4 address WAN interface via DHCP? (y/n) n

Enter the new WAN IPv4 address.  Press <ENTER> for none:
> 192.168.0.1

Subnet masks are entered as bit counts (as in CIDR notation) in pfSense.
e.g. 255.255.255.0 = 24
     255.255.0.0   = 16
     255.0.0.0     = 8

Enter the new WAN IPv4 subnet bit count (1 to 31):
> 24

For a WAN, enter the new WAN IPv4 upstream gateway address.
For a LAN, press <ENTER> for none:
> 192.168.0.254

Configure IPv6 address WAN interface via DHCP6? (y/n) n

Enter the new WAN IPv6 address.  Press <ENTER> for none:
>
```

Step9. Type "n" and press "Enter".

```
Enter the new WAN IPv4 address.  Press <ENTER> for none:
> 192.168.0.1

Subnet masks are entered as bit counts (as in CIDR notation) in pfSense.
e.g. 255.255.255.0 = 24
     255.255.0.0   = 16
     255.0.0.0     = 8

Enter the new WAN IPv4 subnet bit count (1 to 31):
> 24

For a WAN, enter the new WAN IPv4 upstream gateway address.
For a LAN, press <ENTER> for none:
> 192.168.0.254

Configure IPv6 address WAN interface via DHCP6? (y/n) n

Enter the new WAN IPv6 address.  Press <ENTER> for none:
>
Disabling IPv4 DHCPD...
Disabling IPv6 DHCPD...

Do you want to revert to HTTP as the webConfigurator protocol? (y/n) n
```

Step10. Press "Enter" to the next.

```
Enter the new WAN IPv4 subnet bit count (1 to 31):
> 24

For a WAN, enter the new WAN IPv4 upstream gateway address.
For a LAN, press <ENTER> for none:
> 192.168.0.254

Configure IPv6 address WAN interface via DHCP6? (y/n) n

Enter the new WAN IPv6 address.  Press <ENTER> for none:
>
Disabling IPv4 DHCPD...
Disabling IPv6 DHCPD...

Do you want to revert to HTTP as the webConfigurator protocol? (y/n) n

Please wait while the changes are saved to WAN...
 Reloading filter...
 Reloading routing configuration...
 DHCPD...

The IPv4 WAN address has been set to 192.168.0.1/24

Press <ENTER> to continue.
```

Step11. Now you can see the static IP of the WAN has been set. Type "7" and press "Enter" to check the network is connected.

```
 Reloading routing configuration...
 DHCPD...

The IPv4 WAN address has been set to 192.168.0.1/24

Press <ENTER> to continue.
pfSense - Netgate Device ID: f5844f74919eab95a404

*** Welcome to pfSense 2.5.2-RELEASE (amd64) on pfSense ***

 WAN (wan)        -> igb0        -> v4: 192.168.0.1/24
 LAN (lan)        -> igb1        -> v4: 192.168.1.1/24

 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: 7
```

Step12. Type "8.8.8.8" and press "Enter" to test network connection.

```
 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: 7



Enter a host name or IP address: 8.8.8.8

PING 8.8.8.8 (8.8.8.8): 56 data bytes
64 bytes from 8.8.8.8: icmp_seq=0 ttl=55 time=4.983 ms
64 bytes from 8.8.8.8: icmp_seq=1 ttl=55 time=7.728 ms
64 bytes from 8.8.8.8: icmp_seq=2 ttl=55 time=5.567 ms

--- 8.8.8.8 ping statistics ---
3 packets transmitted, 3 packets received, 0.0% packet loss
round-trip min/avg/max/stddev = 4.983/6.092/7.728/1.181 ms

Press ENTER to continue.
```

DHCP:

Step1. Type "2" and press "Enter" to set interfaces IP address.

Step2. Type "1" and press "Enter" to set the WAN interfaces.

Step3. Type "y" and press "Enter" to configure DHCP.

```
 WAN (wan)        -> igb0        ->
 LAN (lan)        -> igb1        -> v4: 192.168.1.1/24

 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: 2

Available interfaces:

1 - WAN (igb0 - dhcp)
2 - LAN (igb1 - static)

Enter the number of the interface you wish to configure: 1

Configure IPv4 address WAN interface via DHCP? (y/n) y
```

Step4. Type "n" and press "Enter" to the next.

```
 LAN (lan)        -> igb1        -> v4: 192.168.1.1/24

 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: 2

Available interfaces:

1 - WAN (igb0 - dhcp)
2 - LAN (igb1 - static)

Enter the number of the interface you wish to configure: 1

Configure IPv4 address WAN interface via DHCP? (y/n) y

Configure IPv6 address WAN interface via DHCP6? (y/n) n
```

Step5. Press "Enter" for none to the next.

```
 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: 2

Available interfaces:

1 - WAN (igb0 - dhcp)
2 - LAN (igb1 - static)

Enter the number of the interface you wish to configure: 1

Configure IPv4 address WAN interface via DHCP? (y/n) y

Configure IPv6 address WAN interface via DHCP6? (y/n) n

Enter the new WAN IPv6 address.  Press <ENTER> for none:
>
```

Step6. Type "n" and press "Enter" to the next.

```
 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: 2

Available interfaces:

1 - WAN (igb0 - dhcp)
2 - LAN (igb1 - static)

Enter the number of the interface you wish to configure: 1

Configure IPv4 address WAN interface via DHCP? (y/n) y

Configure IPv6 address WAN interface via DHCP6? (y/n) n

Enter the new WAN IPv6 address.  Press <ENTER> for none:
>
Disabling IPv4 DHCPD...
Disabling IPv6 DHCPD...

Do you want to revert to HTTP as the webConfigurator protocol? (y/n) n
```

Step7. Press "Enter" to the next.

```
Enter the number of the interface you wish to configure: 1

Configure IPv4 address WAN interface via DHCP? (y/n) y

Configure IPv6 address WAN interface via DHCP6? (y/n) n

Enter the new WAN IPv6 address.  Press <ENTER> for none:
>
Disabling IPv4 DHCPD...
Disabling IPv6 DHCPD...

Do you want to revert to HTTP as the webConfigurator protocol? (y/n) n

Please wait while the changes are saved to WAN...
 Reloading filter...
 Reloading routing configuration...route: writing to routing socket: Network is
unreachable

 DHCPD...

The IPv4 WAN address has been set to dhcp

Press <ENTER> to continue.
```

Step8. Now you can see the DHCP of the WAN has been set. Type "7" and press "Enter" to check the network is connected.

```
--- 8.8.8.8 ping statistics ---
3 packets transmitted, 3 packets received, 0.0% packet loss
round-trip min/avg/max/stddev = 5.115/6.984/8.069/1.327 ms

Press ENTER to continue.

pfSense - Netgate Device ID: f5844f74919eab95a404

*** Welcome to pfSense 2.5.2-RELEASE (amd64) on pfSense ***

 WAN (wan)        -> igb0       -> v4/DHCP4: 192.168.50.174/24
 LAN (lan)        -> igb1       -> v4: 192.168.1.1/24

 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: 7
```

Step9. Type "8.8.8.8" and press "Enter" to test network connection.

```
 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: 7


Enter a host name or IP address: 8.8.8.8

PING 8.8.8.8 (8.8.8.8): 56 data bytes
64 bytes from 8.8.8.8: icmp_seq=0 ttl=55 time=8.539 ms
64 bytes from 8.8.8.8: icmp_seq=1 ttl=55 time=7.726 ms
64 bytes from 8.8.8.8: icmp_seq=2 ttl=55 time=9.505 ms

--- 8.8.8.8 ping statistics ---
3 packets transmitted, 3 packets received, 0.0% packet loss
round-trip min/avg/max/stddev = 7.726/8.590/9.505/0.727 ms

Press ENTER to continue.
```

4. PfSense WebGUI

The following picture is the pfsense firewall framework example. You can configure it through pfsense WebGUI to make the system have functions like port forward, traffic shaper, IPSEC etc.
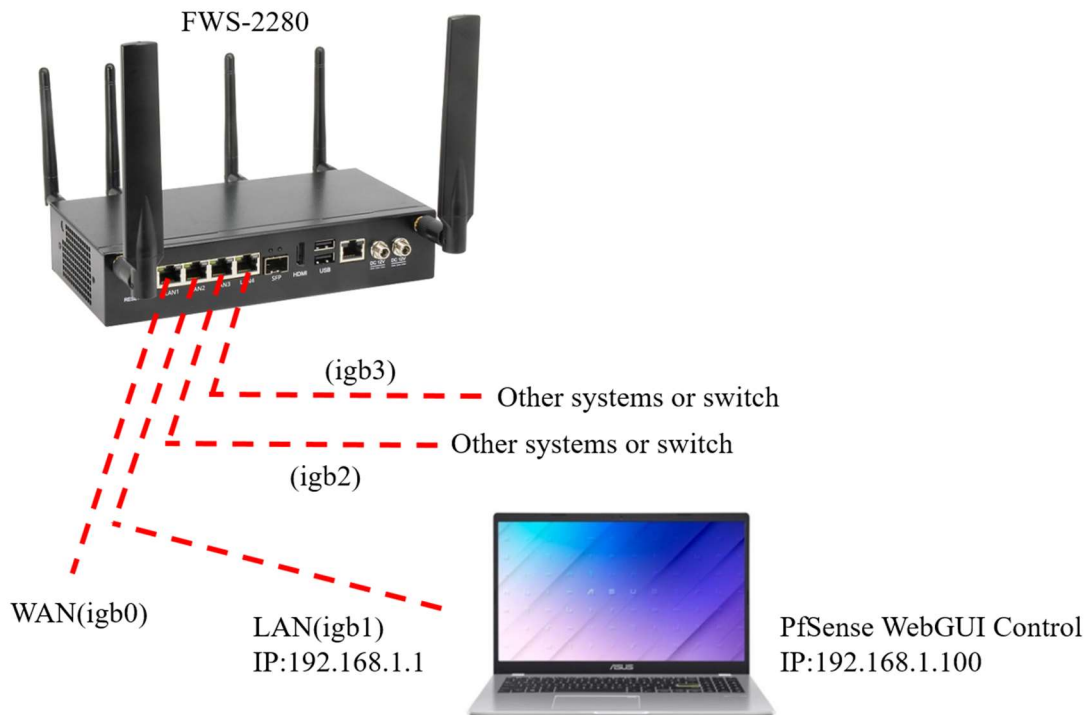
Step1. You can see the default igb1 IP of pfsense is 192.168.1.1, so you must set the laptop IP to the same domain, such as 192.168.1.100. Then type 192.168.1.1 on the browser to enter the pfsense WebGUI.
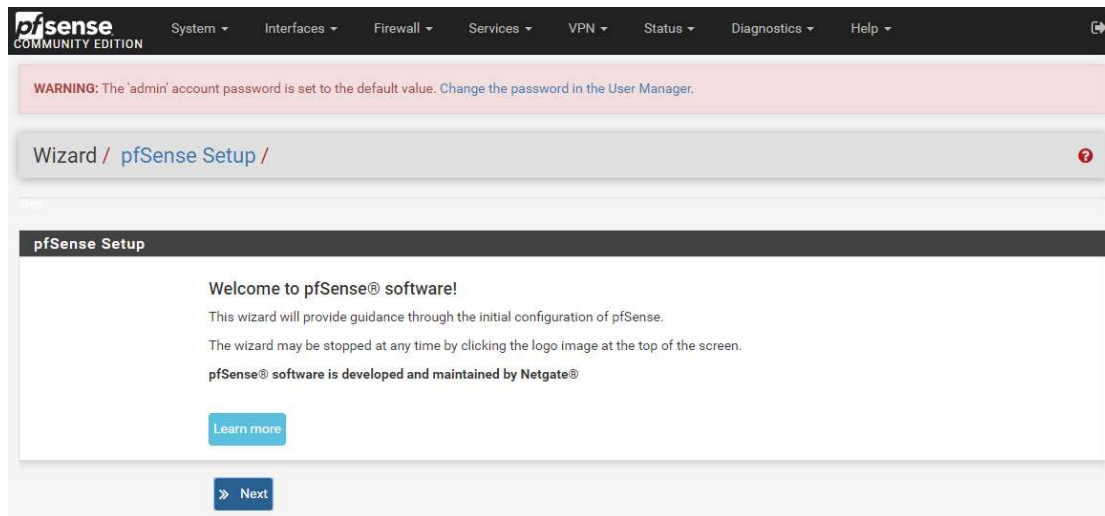
Default Username: **admin**
Default Password: **pfsense**

Step2. Click "Next" to the next pfsense setup.

Step3. Click "Next" to the next pfsense setup.

Step4. Type the hostname, domain and DNS or use default value and click "Next".

Step5. Choose your time zone and click "Next".

Step6. Configure your WAN Interface, PPPoE, PPTP and click "Next" to the next.

Step7. Configure your LAN Interface and click "Next" to the next.

Step8. Set your admin password and click "Next" to the next.

Step9. Click "Reload" to reload pfsense with new changes.
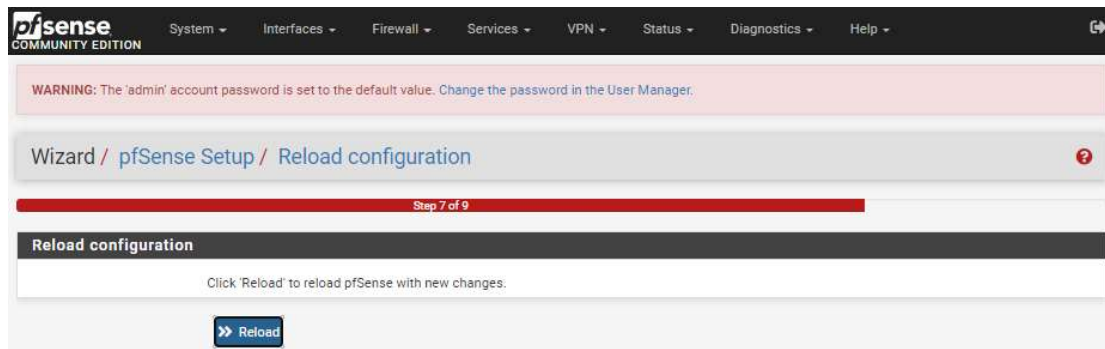
Step10. Click "Finish" to complete the configuration.
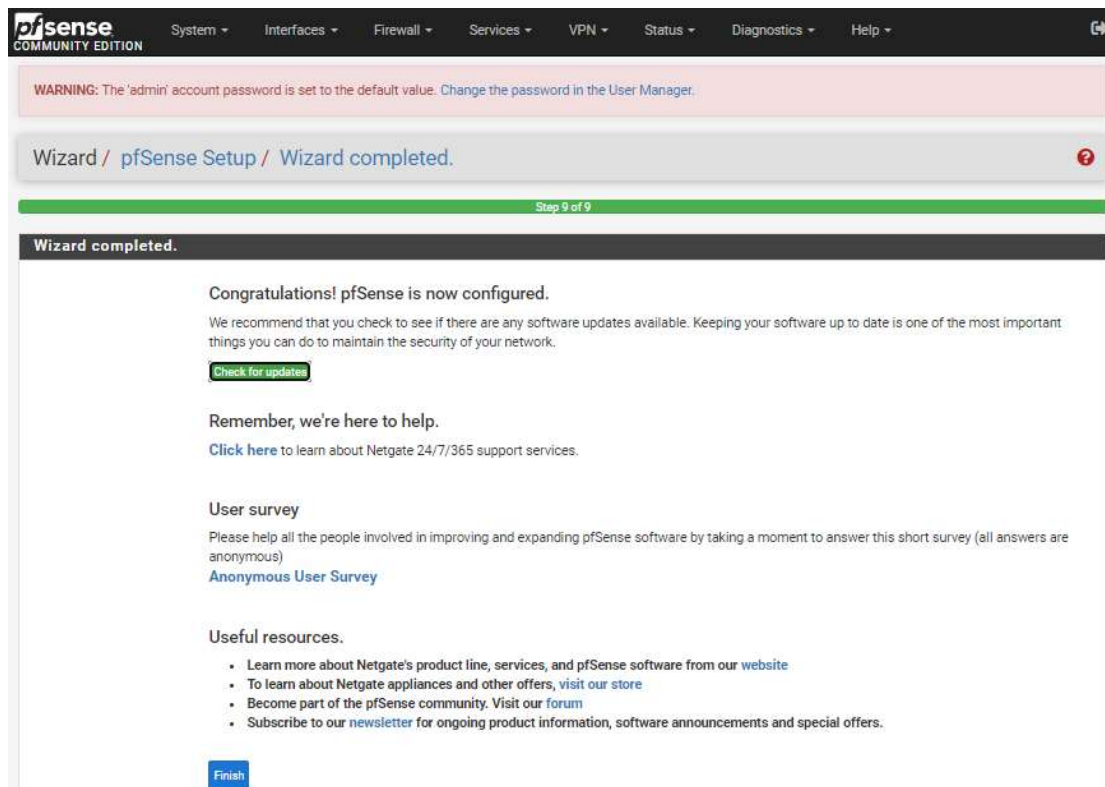
Step11. Click "Accept" to accept copyright and trademark notices.

Step 12. The left block shows some system information, such as CPU information, CPU usage, memory usage, disk usage etc. And the right block shows the connection status of WAN and LAN interfaces. In addition, you can also click the "+" in the upper right corner to add different display blocks.

Assuming you added "Traffic graphs", you can see the dynamic WAN and LAN in/out situation in the lower right corner of the homepage.
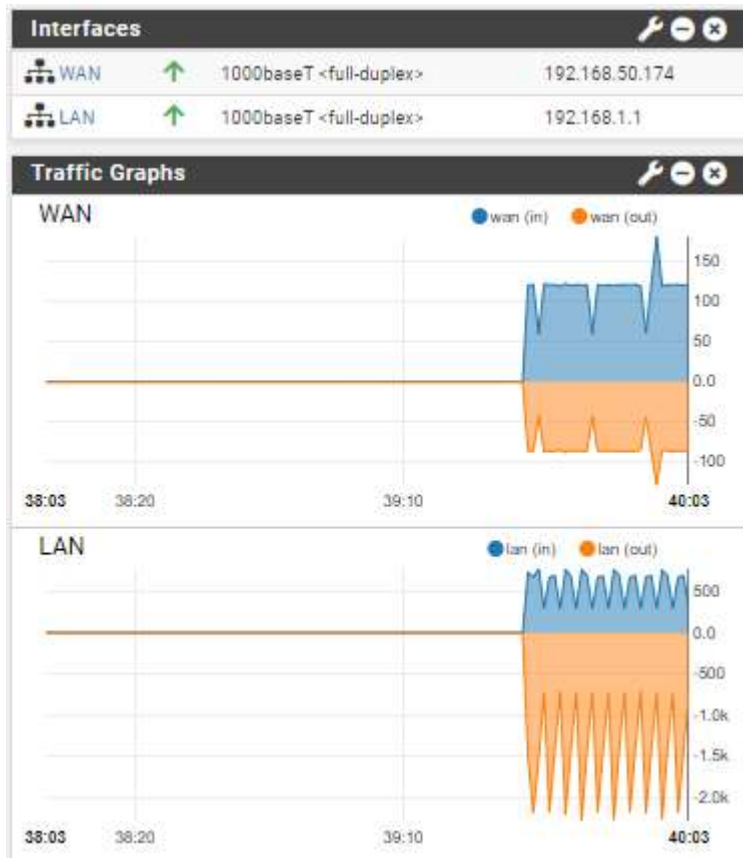
5. Port Forward
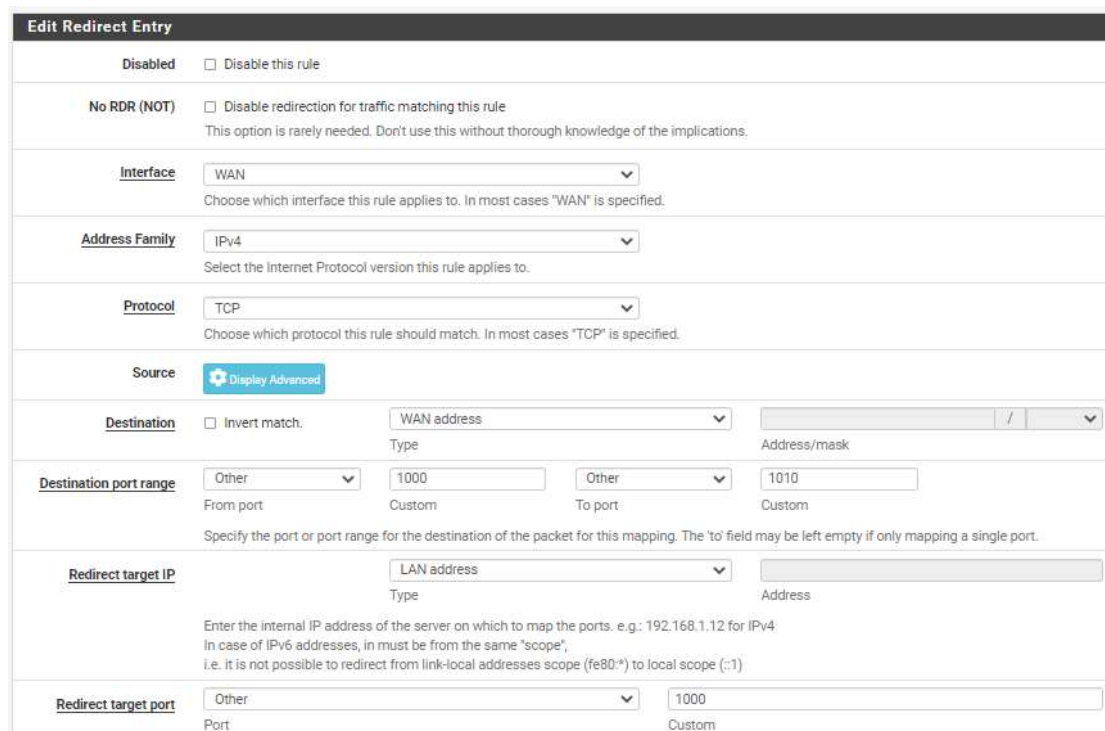
Step1. Choose Firewall and click "NAT".
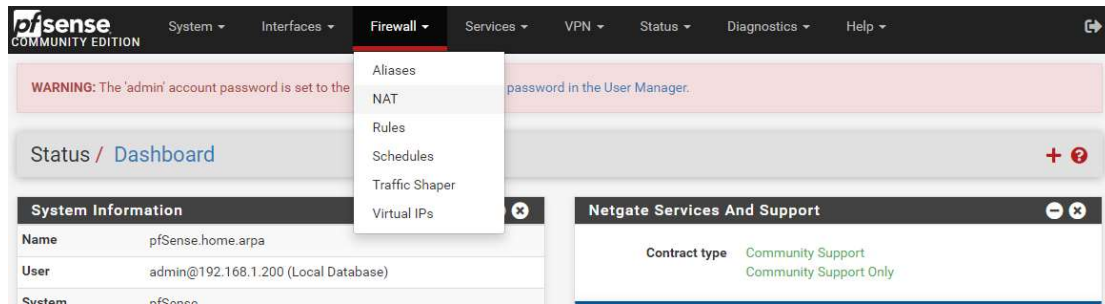
Step2. Click "Add".
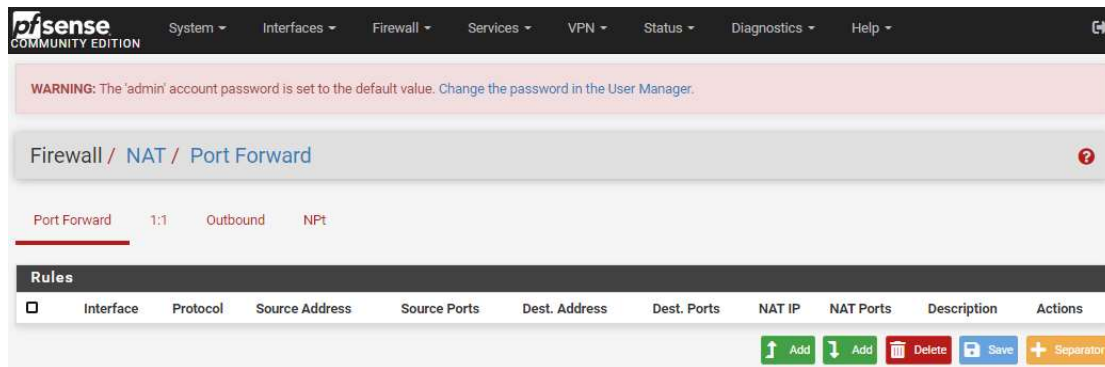
Step3. Set the "destination port range" to "1000 to 1010", the "redirect target IP" to "LAN address", and "redirect target port" to "1000". Click "Save" to save the configuration.

Step4. Click "Apply Changes" to complete the configuration.

Step5. Now you can change your laptop connection mode to DHCP, and you can connect to Internet through port forward.

6. Traffic Shaper

Step1. Choose "Firewall" and click "Traffic Shaper".
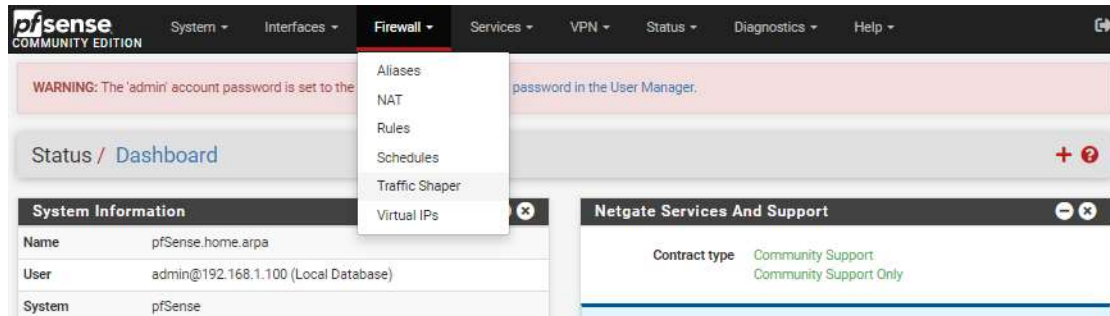
Step2. Choose "Wizards" and click "traffic_shaper_wizard_multi_all.xml".
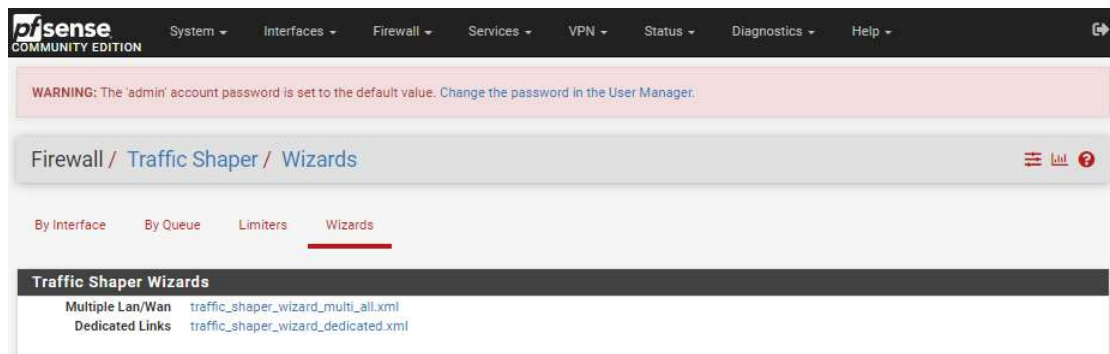
Step3. Set your number of WAN/LAN type interfaces and click "Next".

Step4. Click "Next".

Step5. Click "Next".

Step6. You can set an IP here and this will lower the priority of traffic from this IP. Then click "Next".

Step7. You can enable the lower priority of Peer-to-Peer traffic here. Then click "Next".

Step8. You can enable the priority of gaming traffic to higher than most traffic here. Then click "Next".

Step9. You can enable the other networking protocols. This will help raise or lower the priority of other protocols higher than most traffic. Then click "Next".

Step10. Click "Finish" to complete the configuration.

Step11. Choose "Firewall" and click "Traffic Shaper" again.

Step12. Click "LAN".

Step13. You can enable discipline and set the bandwidth here and click "Save". (For example, we set the bandwidth to 10Mbit/s)
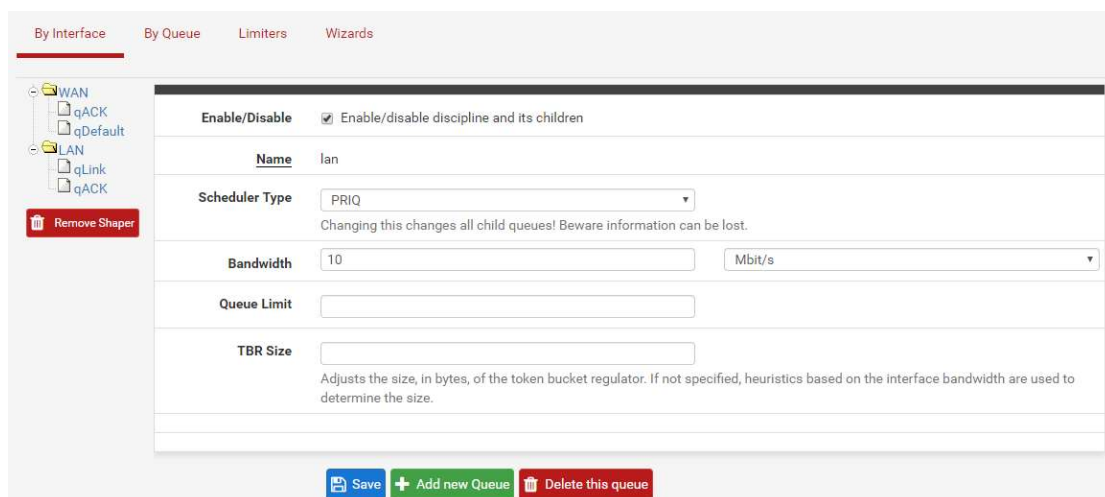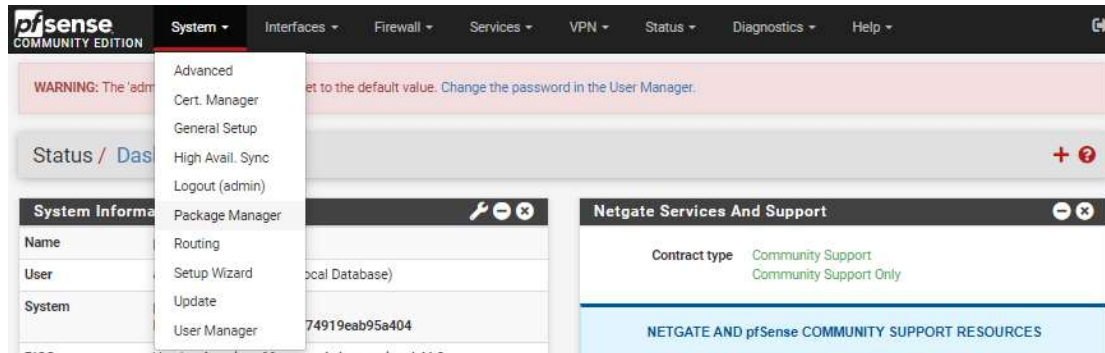

Step14. Click "Apply Changes".
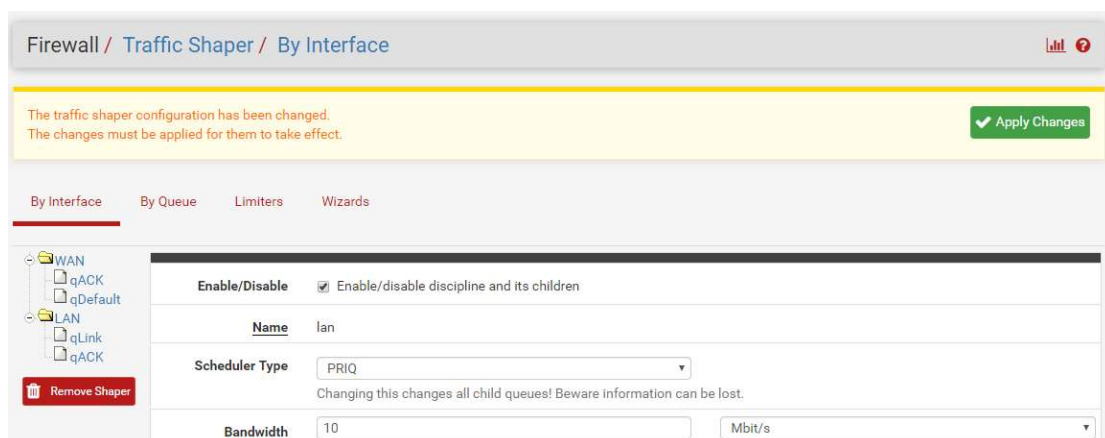
Step15. Please download a large file and go back to the home page. Then you can see the bandwidth of the LAN is keep on 1.25MB/s.
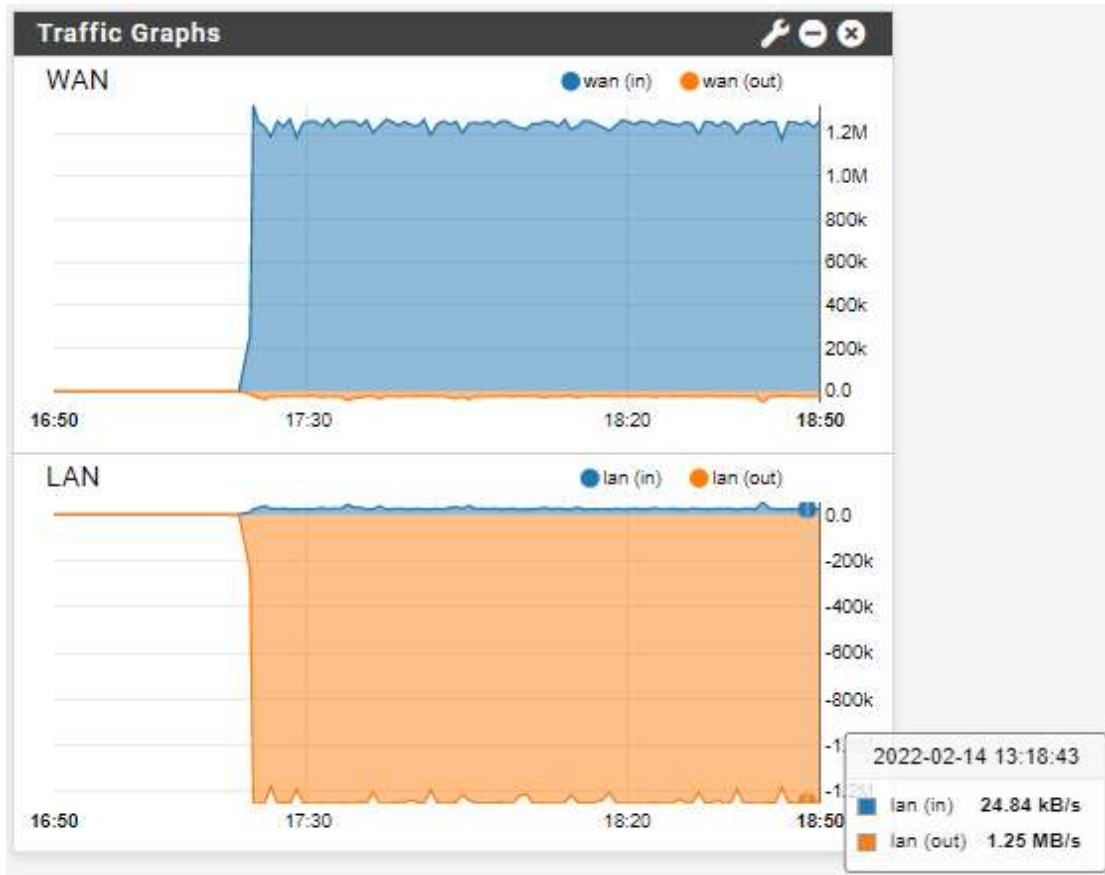
7. Install pfBlockerNG
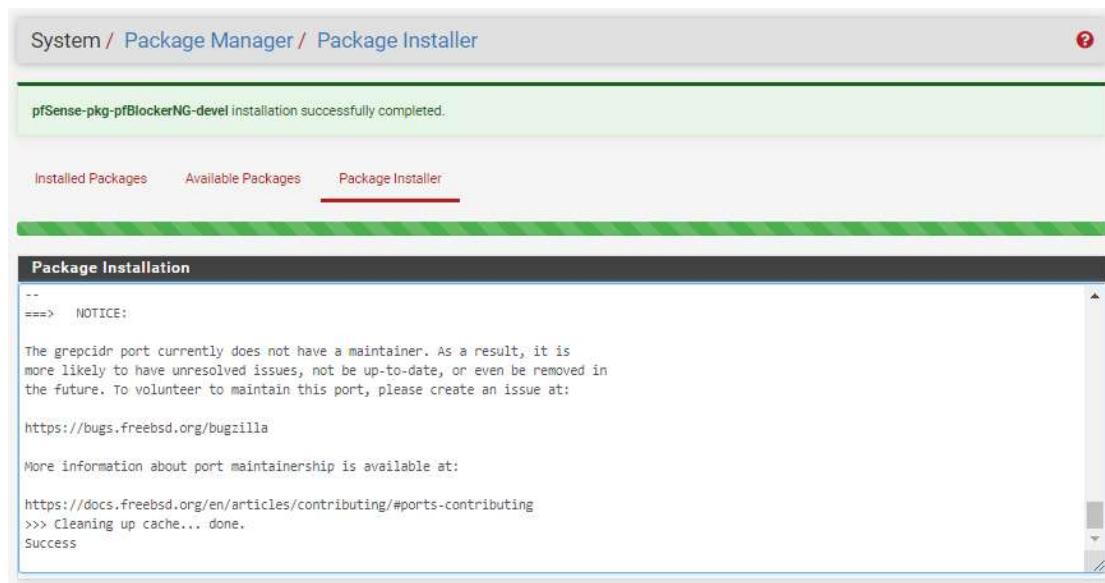
Step1. Choose "System" and click "Package Manager".

Step2. Click "Available Packages" and type "pfBlockerNG-devel" on the search term. Then click "Search" and "+Install".
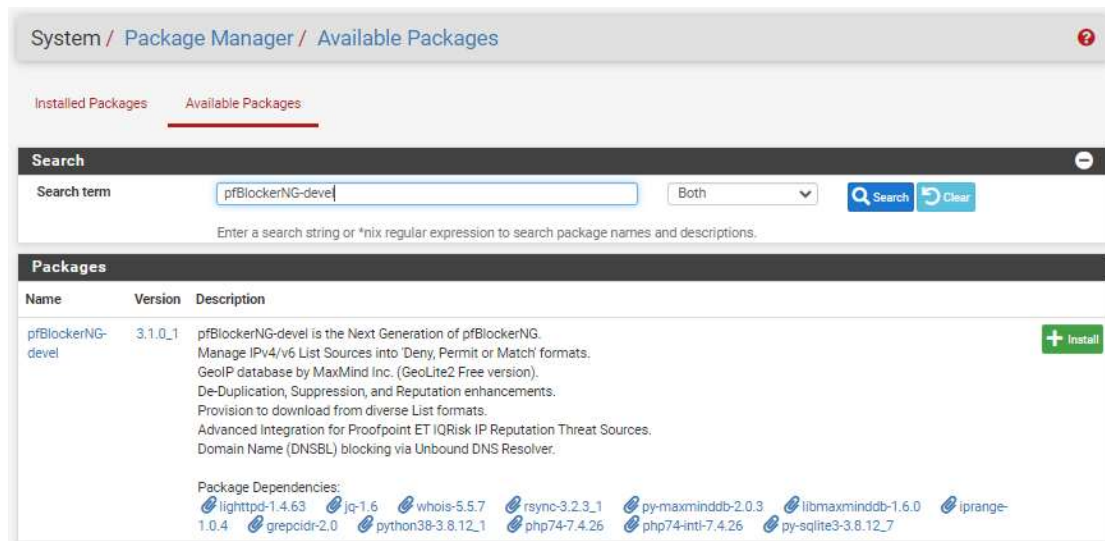
Step3. Click "Confirm".
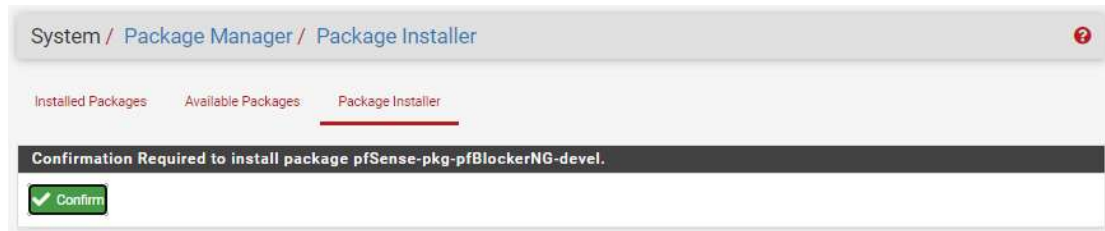
Step4. When you see the word "Success" and it means the installation is complete.

System / Package Manager / Package Installer

pfSense-pkg-pfBlockerNG-devel installation successfully completed.

Installed Packages   Available Packages   Package Installer

Package Installation
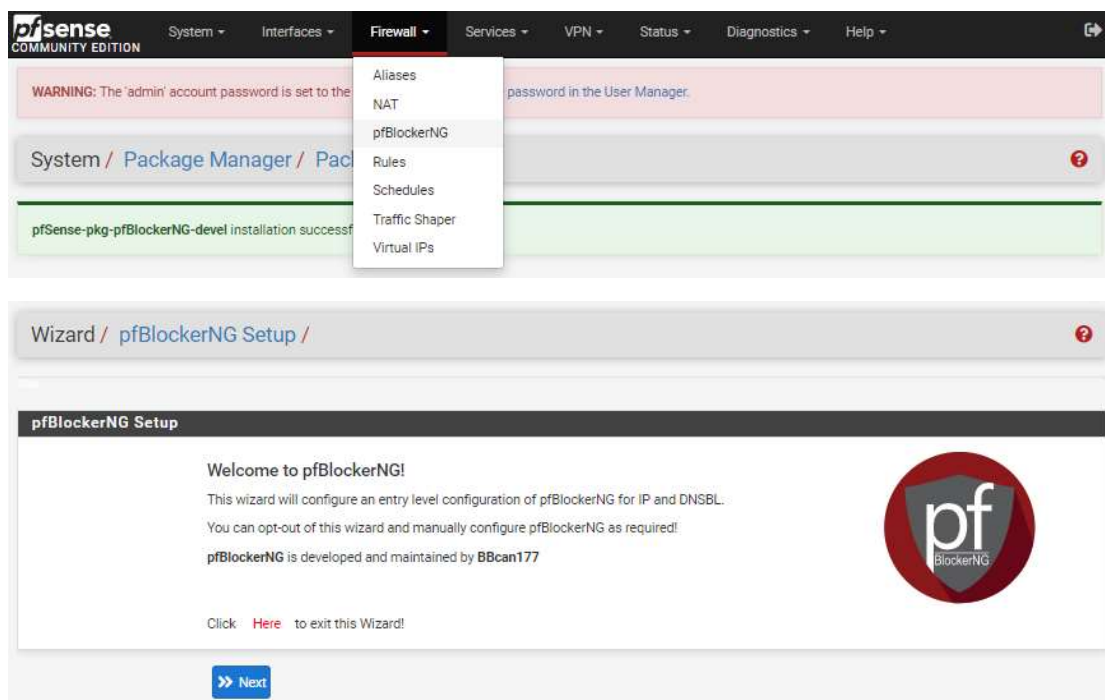
```
--
===>   NOTICE:

The grepcidr port currently does not have a maintainer. As a result, it is
more likely to have unresolved issues, not be up-to-date, or even be removed in
the future. To volunteer to maintain this port, please create an issue at:

https://bugs.freebsd.org/bugzilla

More information about port maintainership is available at:

https://docs.freebsd.org/en/articles/contributing/#ports-contributing
>>> Cleaning up cache... done.
Success
```

Step5. Now you can choose "Firewall" and click "pfBlockerNG" to start setting.

pfsense
COMMUNITY EDITION   System ▾   Interfaces ▾   Firewall ▾   Services ▾   VPN ▾   Status ▾   Diagnostics ▾   Help ▾

Aliases
WARNING: The 'admin' account password is set to the   NAT   password in the User Manager.
                                                        pfBlockerNG
System / Package Manager / Pac   Rules
                                                        Schedules
pfSense-pkg-pfBlockerNG-devel installation successf Traffic Shaper
                                                        Virtual IPs

Wizard / pfBlockerNG Setup /

pfBlockerNG Setup

Welcome to pfBlockerNG!

This wizard will configure an entry level configuration of pfBlockerNG for IP and DNSBL.

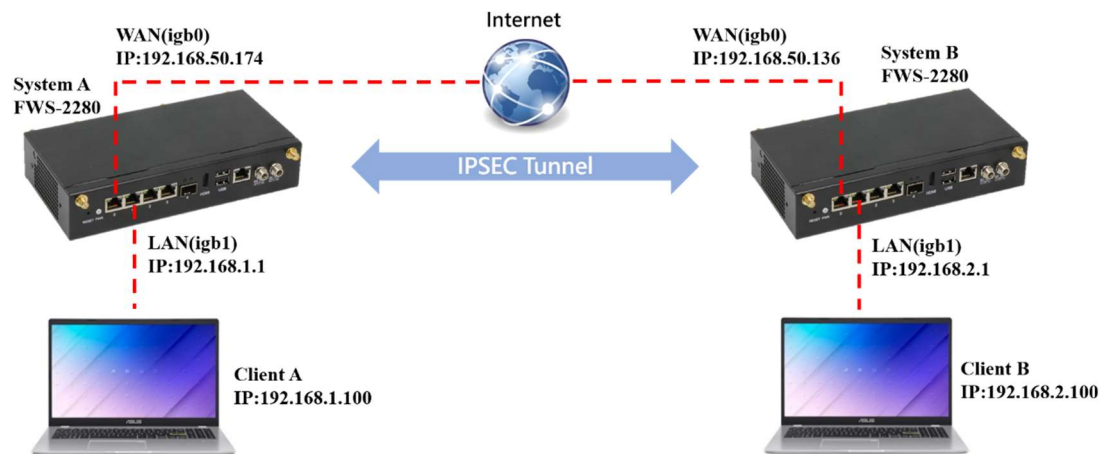You can opt-out of this wizard and manually configure pfBlockerNG as required!

pfBlockerNG is developed and maintained by **BBcan177**

Click   Here   to exit this Wizard!

>> Next

8. IPSEC

The following picture is the IPSEC framework example. You can refer to the following configuration to complete the IPSEC demonstration.
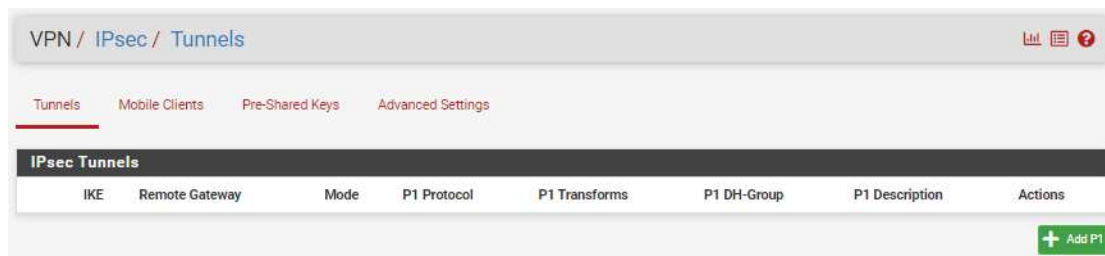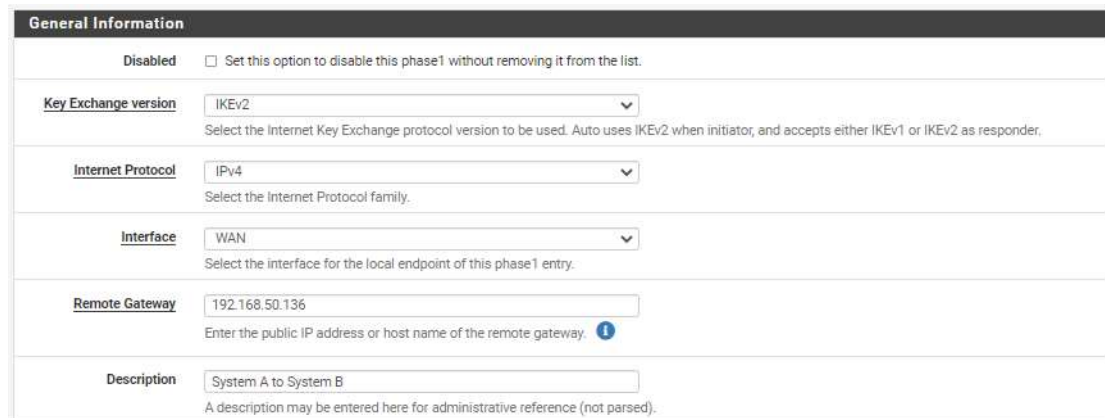

System A:

Step1. Choose "VPN" and click "IPsec".

Step2. Click "Add P1".

Step3. Type system B WAN IP on the "Remote Gateway".

Step4. Click "Generate new Pre-Shared Key" and "Save" to finish Phase 1 configuration.

※System B also needs to enter the same pre-shared key.

Step5. Click "Show Phase 2 Entries" and "Add P2".

Step6. Type System B subnet on "Remote Network". For example, "192.168.2.0". And click "Save" to finish Phase 2 configuration.

Step7. Click "Apply Changes".

Step8. Choose "Firewall" and click "Rules".

Step9. Choose "IPsec" and click "Add".

Step10. Change "Address Family" to "IPv4+IPv6" and "Protocol" to "Any". Then click "Save".

Step11. Choose "System" and click "Routing".

Step12. Click "Add".

Step13. Type a gateway name and type system B WAN IP on the "Gateway". Then click "Save".

Step14. Change "Default gateway IPv4" to "GATEWAY_A" and click "Save".

Step15. Choose "Static Routes" and click "Add".

Step16. Type "0.0.0.0" and change mask to "/24" on "Destination network". And choose "GATEWAY_A - 192.168.50.136" as "Gateway". Then click "Save".

Step17. Click "Apply Changes".

System B:

※Please remember that the LAN port IP of System B should be set to "192.168.2.1".
Please refer to "Step7" of "3. PfSense WebGUI"

Step1. Choose "VPN" and click "IPsec".

Step2. Click "Add P1".

Step3. Type system A WAN IP on the "Remote Gateway".

Step4. Copy system A Pre-Shared Key to here and click "Save" to finish Phase 1 configuration.

Step5. Click "Show Phase 2 Entries" and "Add P2".

Step6. Type System A subnet on "Remote Network". For example, "192.168.1.0". And click "Save" to finish Phase 2 configuration.

Step7. Click "Apply Changes".

Step8. Choose "Firewall" and click "Rules".

Step9. Choose "IPsec" and click "Add".

Step10. Change "Address Family" to "IPv4+IPv6" and "Protocol" to "Any". Then click "Save".

Step11. Choose "System" and click "Routing".

Step12. Click "Add".

Step13. Type a gateway name and type system A WAN IP on the "Gateway". Then click "Save".

System / Routing / Gateways / Edit

Edit Gateway

Disabled	☐ Disable this gateway Set this option to disable this gateway without removing it from the list.
Interface	WAN Choose which interface this gateway applies to.
Address Family	IPv4 Choose the Internet Protocol this gateway uses.
Name	GATEWAY_B Gateway name
Gateway	192.168.50.174 Gateway IP address

Step14. Change "Default gateway IPv4" to "GATEWAY_B" and click "Save".

Default gateway

Default gateway IPv4	GATEWAY_B Select a gateway or failover gateway group to use as the default gateway.
Default gateway IPv6	Automatic Select a gateway or failover gateway group to use as the default gateway.

💾 Save

Step15. Choose "Static Routes" and click "Add".

System / Routing / Static Routes

The static route configuration has been changed.
The changes must be applied for them to take effect.

✔ Apply Changes

Gateways   Static Routes   Gateway Groups

Static Routes

Network	Gateway	Interface	Description	Actions

➕ Add

Step16. Type "0.0.0.0" and change mask to "/24" on "Destination network". And choose "GATEWAY_B - 192.168.50.174" as "Gateway". Then click "Save".

System / Routing / Static Routes / Edit

Edit Route Entry

Destination network	0.0.0.0 / 24 Destination network for this static route
Gateway	GATEWAY_B - 192.168.50.174 Choose which gateway this route applies to or add a new one first
Disabled	☐ Disable this static route Set this option to disable this static route without removing it from the list.
Description	 A description may be entered here for administrative reference (not parsed).

💾 Save

Step17. Click "Apply Changes".

When both System A and System B are configured, please choose "Status" and click "IPsec".

Click "Connect VPN".

Please wait for a while, if you see a value in Bytes-in/out, it means that the tunnel can start to transmit.

In Client B, you can ping "192.168.1.100" to test the IPSEC.

```
Microsoft Windows [Version 10.0.19041.1415]
(c) Microsoft Corporation. All rights reserved.

C:\Users\NSD>ping 192.168.1.100

Pinging 192.168.1.100 with 32 bytes of data:
Reply from 192.168.1.100: bytes=32 time=1ms TTL=126
Reply from 192.168.1.100: bytes=32 time=1ms TTL=126
Reply from 192.168.1.100: bytes=32 time=1ms TTL=126
Reply from 192.168.1.100: bytes=32 time=1ms TTL=126

Ping statistics for 192.168.1.100:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 1ms, Maximum = 1ms, Average = 1ms

C:\Users\NSD>
```

9. AAEON PfSense SDK

PfSense SDK from AAEON is a software development kit designed to help developers with controlling hardware on AAEON FWS series platforms.

AAEON PfSense SDK provides developers fast control on AAEON FWS series IO functions:

- Software Programmable Button Settings and Configuration
- Status LED Settings and Configuration
- DIO Settings and Configuration
- Lanbypass Settings and Configuration
- Watchdog Settings and Configuration
- Liquid Crystal Display Module (LCM) Settings and Configuration

10. Purchase Netgate PfSense Support

If you need pfsense support services (such as setup assistance), you can refer to the following website: https://www.netgate.com/support

Netgate TAC Support Options	TAC LITE	TAC PRO	TAC ENTERPRISE
For Netgate appliances, AWS/Azure pfSense cloud instances, or 3rd party hardware	FREE*	$399 /per year	$799 /per year
Zero-to-Ping**	✓	✓	✓
TAC Support Hours	—	24/7	24/7
Target Initial Response SLA	—	24 Hours	4 Hours
Email / Support Portal	—	✓	✓
Telephone Support	—	—	✓
		Buy TAC Pro	Buy TAC Enterprise