



PFsense is an open source network firewall/router software distribution which is based on the FreeBSD operating system. Just like many other popular firewall's in an industry level such as a Cisco ASA, Juniper, Check Point, Cisco PIX, Sonicwall, Netgear, and etc, pfsense is a free cost web interface to configure network components.

Hardware Requirements

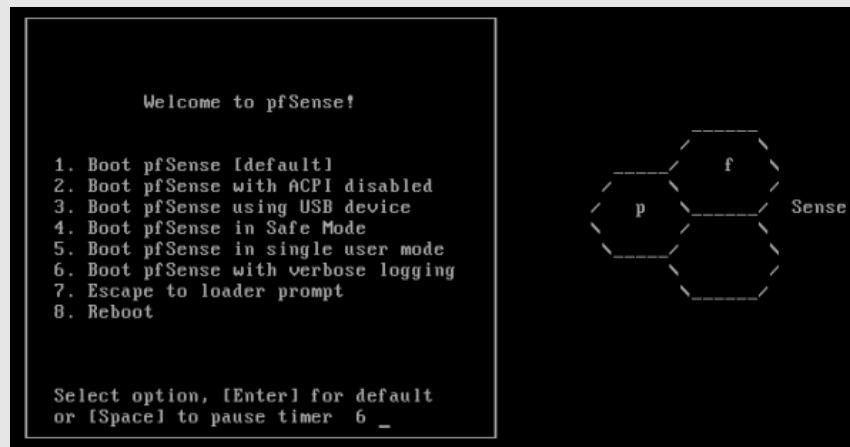
- Pentium II Processor, 256MB RAM, 1 GB of HHD Space, CD-ROM
- 2 Ethernet Cards
- Pfsense ISO File

pfSense Installation and Configuration

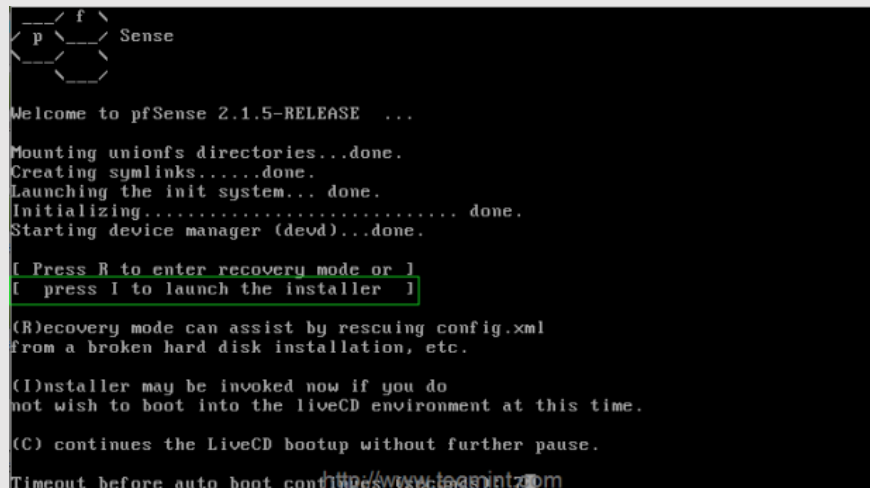
1. Visit the pfSense download page and select the proper settings for your system. I chose “i386 (32-bit)” as my computer architecture, and platform “LiveCD with installer”. Each case is different, make sure to select and download the correct file for your system.
2. After selecting the architecture and platform, you will get a list of mirrors to download, make sure to select nearest mirror link to download the image from there.

The screenshot shows the pfSense download page. At the top, there is a navigation bar with links for 'Buy Now', 'Support Portal', 'Partner Login', and 'Blog'. Below this, the 'pfSense' logo is displayed. The main heading is 'Latest Stable Version (Community Edition)'. Underneath, it states 'This is the most recent stable release, and the recommended version for all installations. For upgrade information, see the Upgrade Guide.' There are two buttons: 'RELEASE NOTES' and 'SOURCE CODE'. The 'Select Image To Download' section contains a form with the following fields: 'File Type' (dropdown menu set to 'Install'), 'Architecture' (dropdown menu set to 'i386 (32-bit)'), 'Platform' (dropdown menu set to 'CD Image (ISO) Installer'), and 'Mirror' (dropdown menu set to 'New York City, USA'). A 'DOWNLOAD' button is located below the form. To the right of the form is a 'Subscribe To Our Newsletter' section with a text input field and a 'SUBSCRIBE' button. Below the form, there is a 'Supported by Netgate' logo. At the bottom, there is a 'Daily Snapshots Available' section with a text input field and a 'DISCUSSION FORUM' button.

3. After download completes, the downloaded image must be burn to an CD/DVD media as an ISO image before we start using it. You can use any CD/DVD burning software to burn the image to CD/DVD media.
4. Now switch on or reboot the target machine, place pfSense CD/DVD and set the BIOS options to your booting method (CD/DVD or USB) and choose the boot options by pressing a keyboard function keys, usually F10 or F12, pfSense will start booting.
5. As the pfSense starts booting, a prompt is displayed with some options and a countdown timer. At this prompt, press 1 to get install pfsense by default. If we don't choose any option it will start to boot option 1 by default.



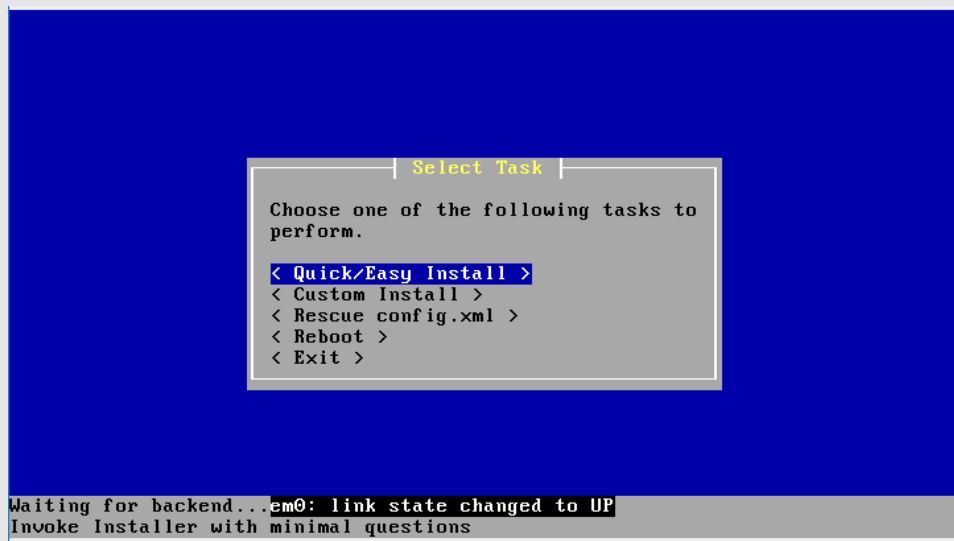
6. Next, press 'I' to install fresh copy of pfsense, If we need to start a recovery use **R**, to Continue using Live CD choose **C** within 20 seconds count.



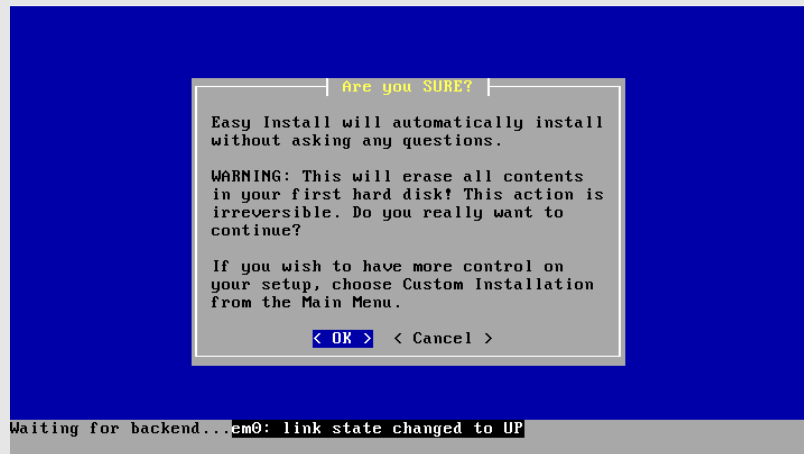
7. On the next screen, it will ask you to 'Configure Console', just press 'Accept these settings' to move forward for installation process.



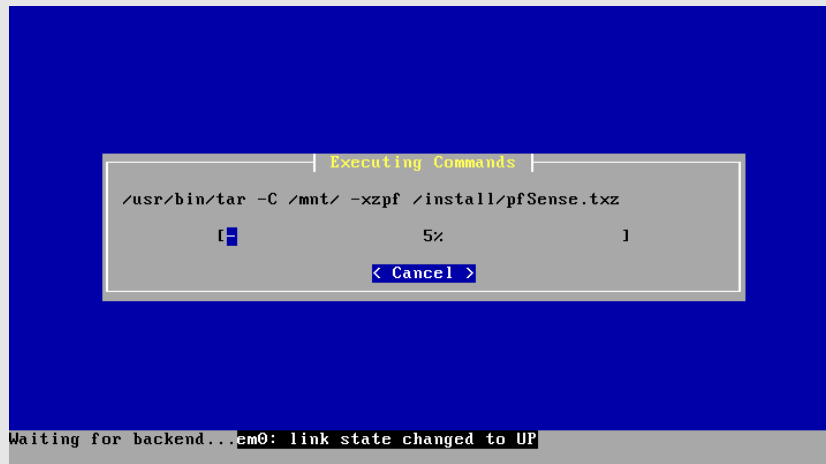
8. If you're new to pfSense, choose 'Quick/Easy Install' option to take make things easier or choose 'Custom Install' to get advance options during installation process (recommended for advance users)



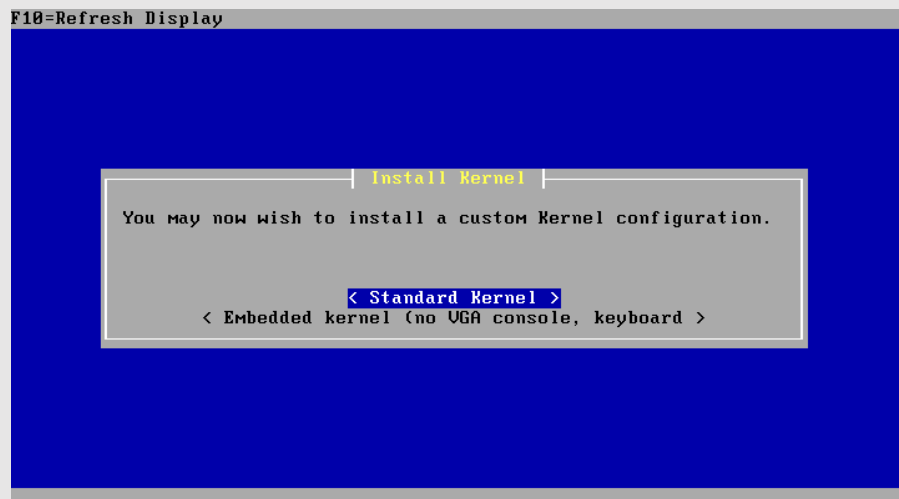
9. It will ask “Are you Sure?” This warning will prompt you that it will erase all contents in your first hard disk. This action is irreversible. Select “Ok” when ready.



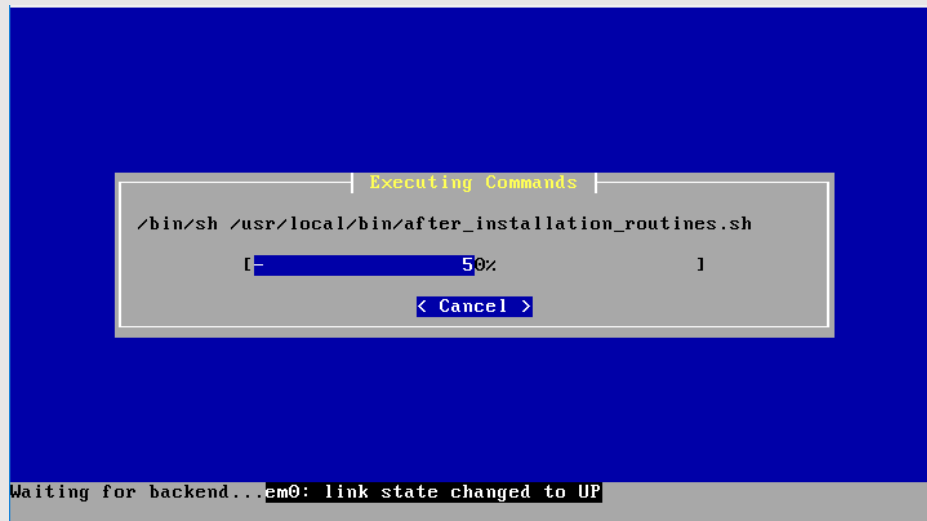
10. You will see the installation process.



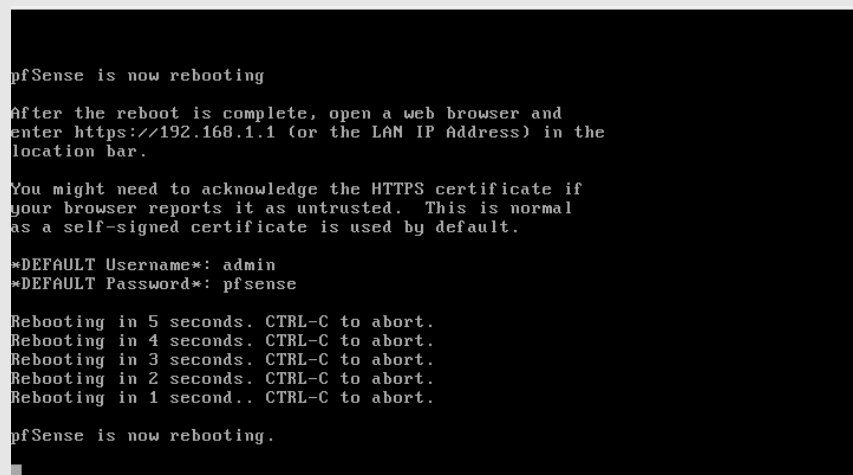
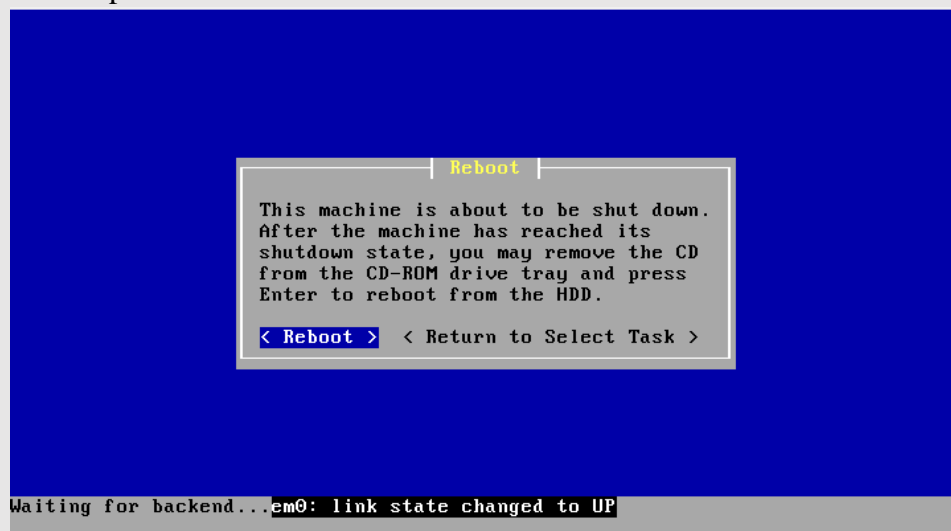
11. At last for installing the kernel, you can choose from the options. Here I choose the standard kernel option.



12. You will see more installation processes.



13. After kernel has been installed, reboot the machine and configure the networking and more in next step as follows.



14. After rebooting, you will get the below screen with available interfaces to configure the network.

```
Welcome to pfSense 2.1.5-RELEASE ...

No core dumps found.
Creating symlinks.....done.
External config loader 1.0 is now starting...
Launching the init system... done.
Initializing..... done.
Starting device manager (devd)...done.
Loading configuration.....done.

Default interfaces not found -- Running interface assignment option.

Valid interfaces are:

em0  08:00:27:88:17:8b  (up) Intel(R) PRO/1000 Legacy Network Connection 1.0.6
em1  08:00:27:4b:47:37  (up) Intel(R) PRO/1000 Legacy Network Connection 1.0.6

Do you want to set up VLANs first?

If you are not going to use VLANs, or only for optional interfaces, you should
say no here and use the webConfigurator to configure VLANs later, if required.
```

15. The first option is presented as VLAN's, generally VLAN's are not needed, they are needed for advance networking, simply here say No.
16. There are two interface's em0 and em1, I have planned to assign em0 as WAN our external interface and em1 as LAN which for internal interface with firewall/NAT features enabled.

```
If you are not going to use VLANs, or only for optional interfaces, you should
say no here and use the webConfigurator to configure VLANs later, if required.

Do you want to set up VLANs now [y|n]? n

*NOTE*  pfSense requires *AT LEAST* 1 assigned interface(s) to function.
        If you do not have *AT LEAST* 1 interfaces you CANNOT continue.

        If you do not have at least 1 *REAL* network interface card(s)
        or one interface with multiple VLANs then pfSense
        *WILL NOT* function correctly.

If you do not know the names of your interfaces, you may choose to use
auto-detection. In that case, disconnect all interfaces now before
hitting 'a' to initiate auto detection.

Enter the WAN interface name or 'a' for auto-detection: em0

Enter the LAN interface name or 'a' for auto-detection
NOTE: this enables full Firewalling/NAT mode.
(or nothing if finished): em1

Enter the Optional 1 interface name or 'a' for auto-detection
(or nothing if finished): http://www.tecmint.com
```

17. I don't need an optional interface name, so just continue by pressing Return Key. It will ask for the confirmation Yes/No proceed with Y and press enter to continue.

```
If you do not have *AT LEAST* 1 interfaces you CANNOT continue.

If you do not have at least 1 *REAL* network interface card(s)
or one interface with multiple VLANs then pfSense
*WILL NOT* function correctly.

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Enter the LAN interface name or 'a' for auto-detection
NOTE: this enables full Firewalling/NAT mode.
(or nothing if finished): em1

Enter the Optional 1 interface name or 'a' for auto-detection
(or nothing if finished):

The interfaces will be assigned as follows:
WAN -> em0
LAN -> em1

Do you want to proceed [y/n]? Y http://www.tecmint.com
```

18. After setting up interfaces, you will get the pfsense menu as show below.

```
Enter an option: -**rel: watchdog timeout
rel: watchdog timeout
*^COR^COQe

*** Welcome to pfSense 2.3.2-RELEASE (amd64 full-install) on admin ***

WAN (wan)      -> re0      -> v4: 192.168.201.8/24
LAN (lan)      -> re1      -> v4: 10.0.0.1/24

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: █
```

- WAN IP address will be assigned from DHCP. If you need we can assign a static IP.
- LAN IP address will be default as 192.168.1.1, if you want to change choose option 2 and set interfaces IP address.