
Pfsense introduction and lab installation guidance



What is firewall...

- ❖ A system designed to **prevent unauthorized access** to or from a private network.
- ❖ **A network security device:**
 - physical or software,**
 - designed to monitor:
 - incoming and outgoing traffic**
 - from a network,
 - stop malicious attacks and apply security policies and rules**

What do firewalls do...

- ❖ **Protection against outside cyber attackers** by shielding computer or network from malicious or unnecessary network traffic
- ❖ **Preventing malicious software** from accessing a computer or network via the internet.
- ❖ Can be **configured to block data** from certain **locations, applications, or ports** while allowing relevant and necessary data through



Hardware firewall...

Advantages of Physical Firewalls...

- ❖ Single-device network control
- ❖ Better security
- ❖ Constant protection
- ❖ Prevention of threats from reaching internal drives

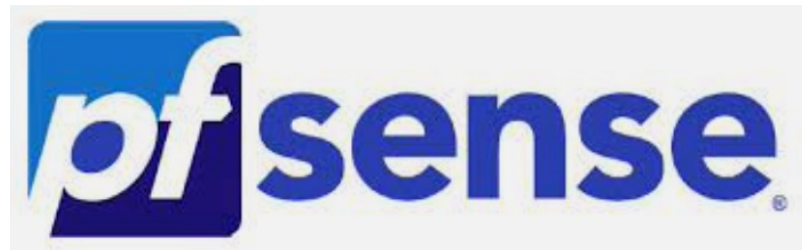
Why can't we go for hardware firewalls easily...

- ❖ Cost. Normally, a dedicated hardware firewall costs more than a software firewall.
- ❖ Takes up physical space, and involves wiring.
- ❖ Complex Operations

why software firewalls ...

- ❖ Their ability to control the specific network behaviour of individual applications on a system
- ❖ Cheaper
- ❖ Require little space
- ❖ Easy to install

Any solution for that for us...



What is pfsense...

- ❖ A firewall/router computer software distribution based on FreeBSD
- ❖ Stands for Packet-Filtering (The name derives from the fact that the software uses the **packet-filtering tool**)
- ❖ Installed on a physical computer/virtual machine to make a dedicated firewall/router for a network

[Repository](https://github.com/pfsense/pfsense): github.com/pfsense/pfsense



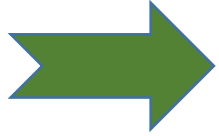
Features...

- ❖ significant flexibility and powerful features, but it is also a heavier piece of software compared to RouterOS
- ❖ open-source
- ❖ software configuration is performed using the web-based GUI
- ❖ typically configured as
 - DHCP server
 - DNS server
 - WiFi access point
 - VPN server, all running on the same hardware device

But there are limitations too.....

- ❖ Software bugs
- ❖ No advanced security features like hardware firewalls
- ❖ Technical Support
- ❖ Less user-friendly UI
- ❖ Performance

Let's go and do the lab setup...



<https://ws.learn.ac.lk/wiki/Cnbp2022/Agenda/pfSenseSetup>

Thank you