

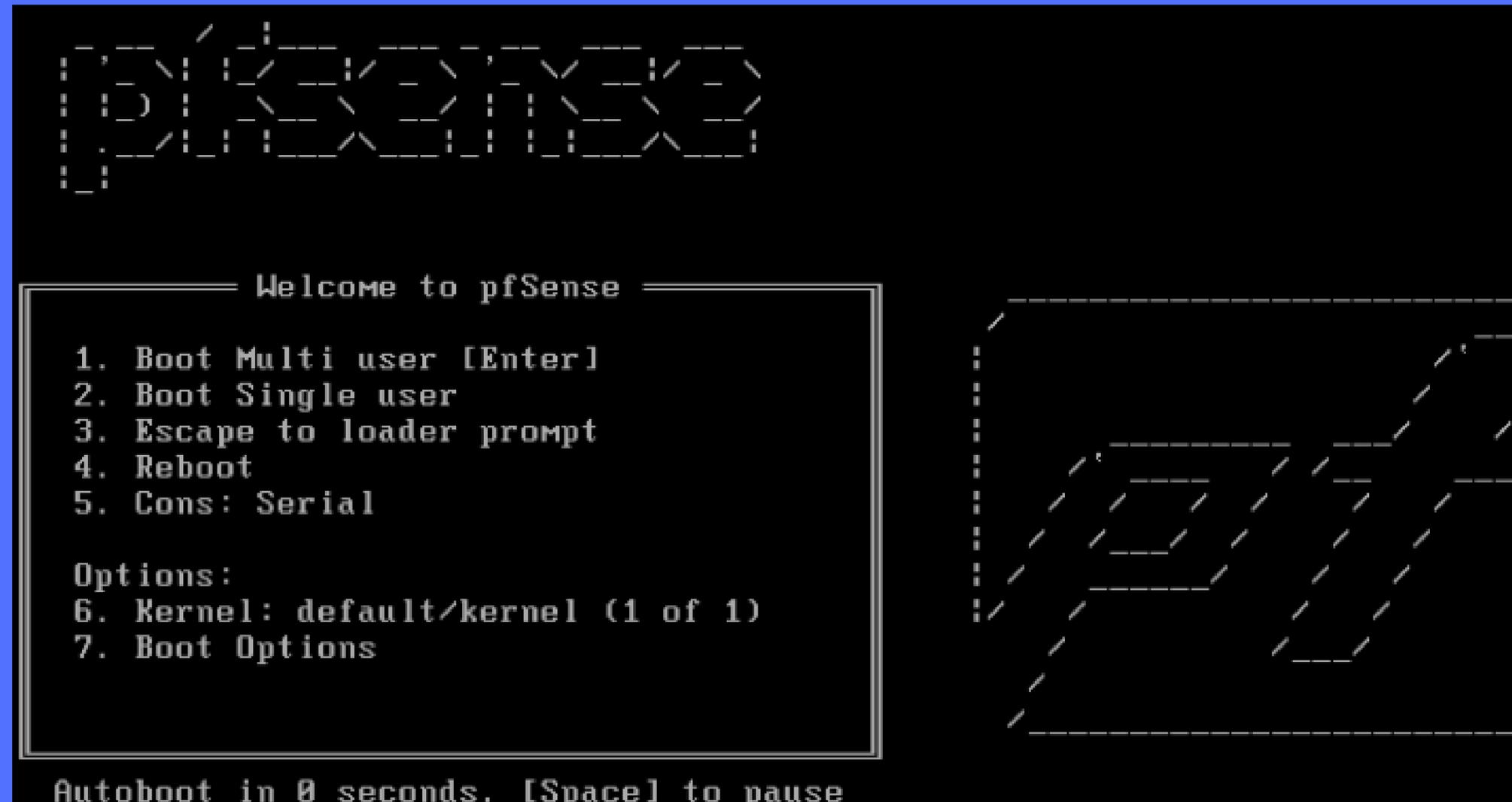
Rapport sur la Mise en Œuvre d'un Pare-feu PfSense

Chater Ahmed

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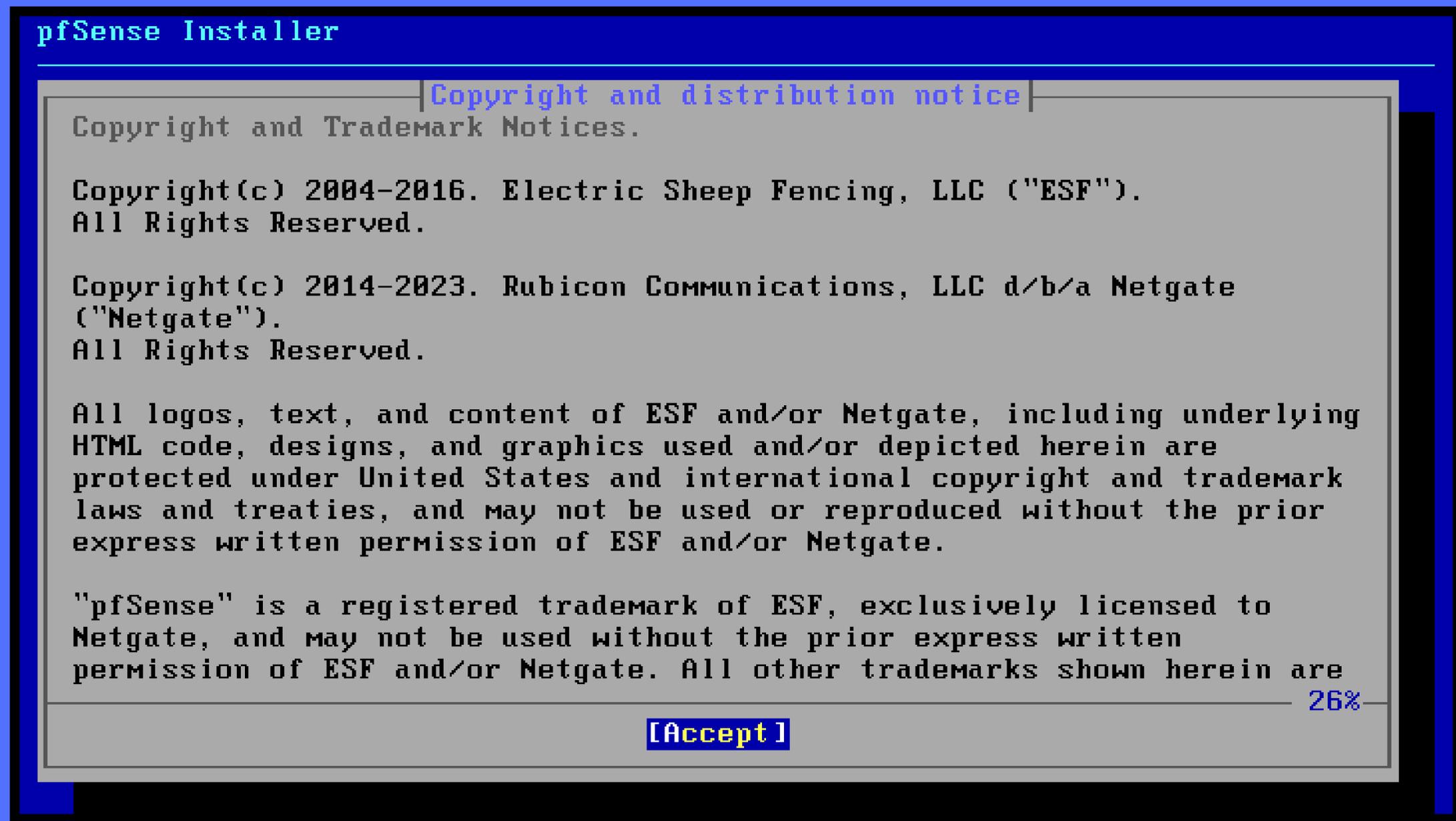
introduction :

PfSense est une distribution open source de FreeBSD, conçue pour agir comme pare-feu et routeur avec une gestion conviviale via une interface Web. Doté de fonctionnalités telles que le pare-feu, le NAT/PAT, le relais DHCP/DNS, le proxy, le VPN et le hotspot Wi-Fi, PfSense offre une solution complète pour sécuriser et gérer les réseaux.



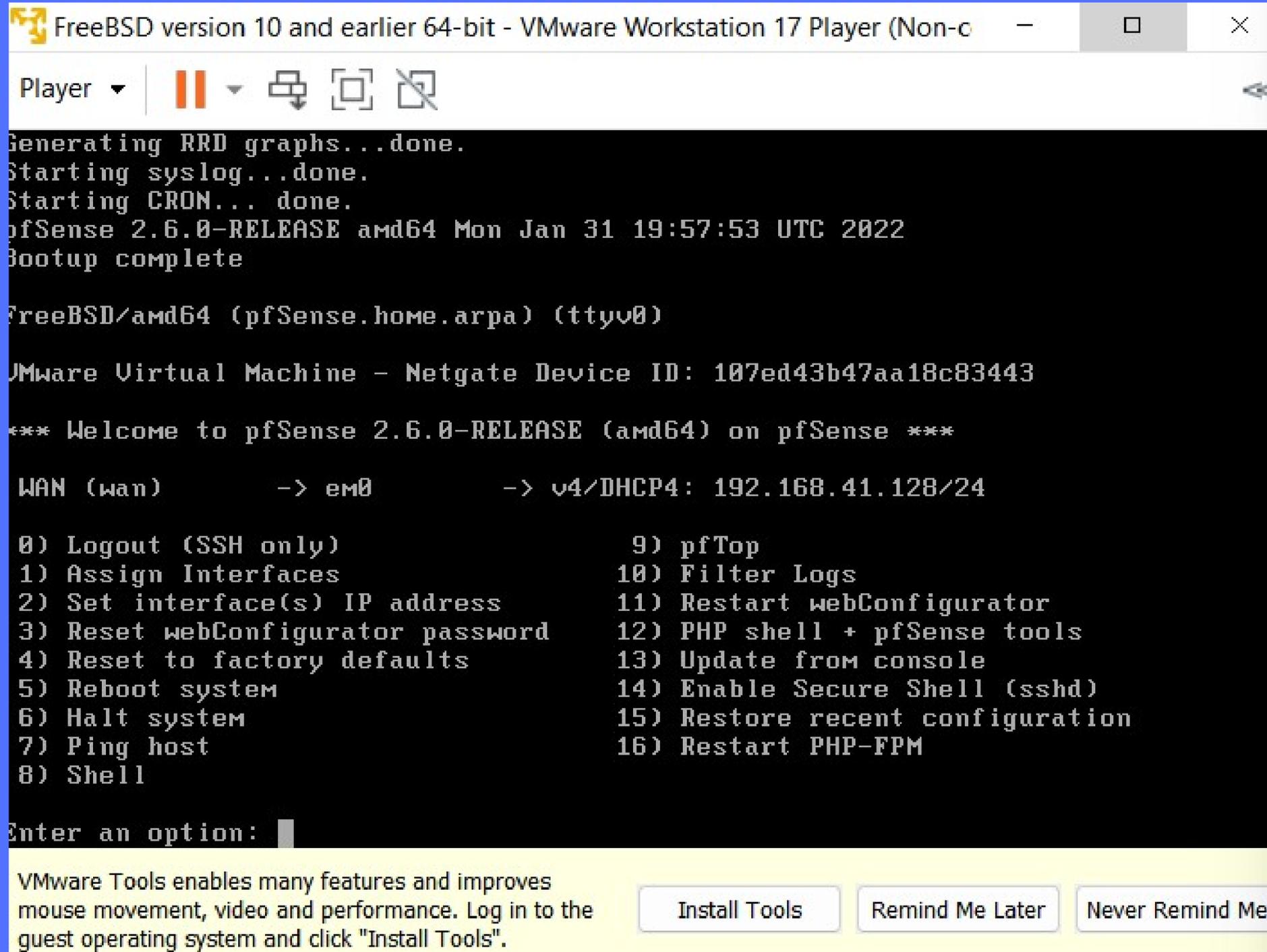
Installation de PfSense :

Installation dans une VM dédiée : L'image est installée dans une machine virtuelle (VM) dédiée, où le processus de configuration démarre automatiquement.



Installation de PfSense :

Pendant l'installation, les interfaces réseau sont configurées, avec une identification du WAN (Wide Area Network) et du LAN (Local Area Network).



```
FreeBSD version 10 and earlier 64-bit - VMware Workstation 17 Player (Non-c
Player | || | | |
Generating RRD graphs...done.
Starting syslog...done.
Starting CRON... done.
pfSense 2.6.0-RELEASE amd64 Mon Jan 31 19:57:53 UTC 2022
Bootup complete

FreeBSD/amd64 (pfSense.home.arp) (ttyv0)

VMware Virtual Machine - Netgate Device ID: 107ed43b47aa18c83443

*** Welcome to pfSense 2.6.0-RELEASE (amd64) on pfSense ***

WAN (wan)      -> em0          -> v4/DHCP4: 192.168.41.128/24

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

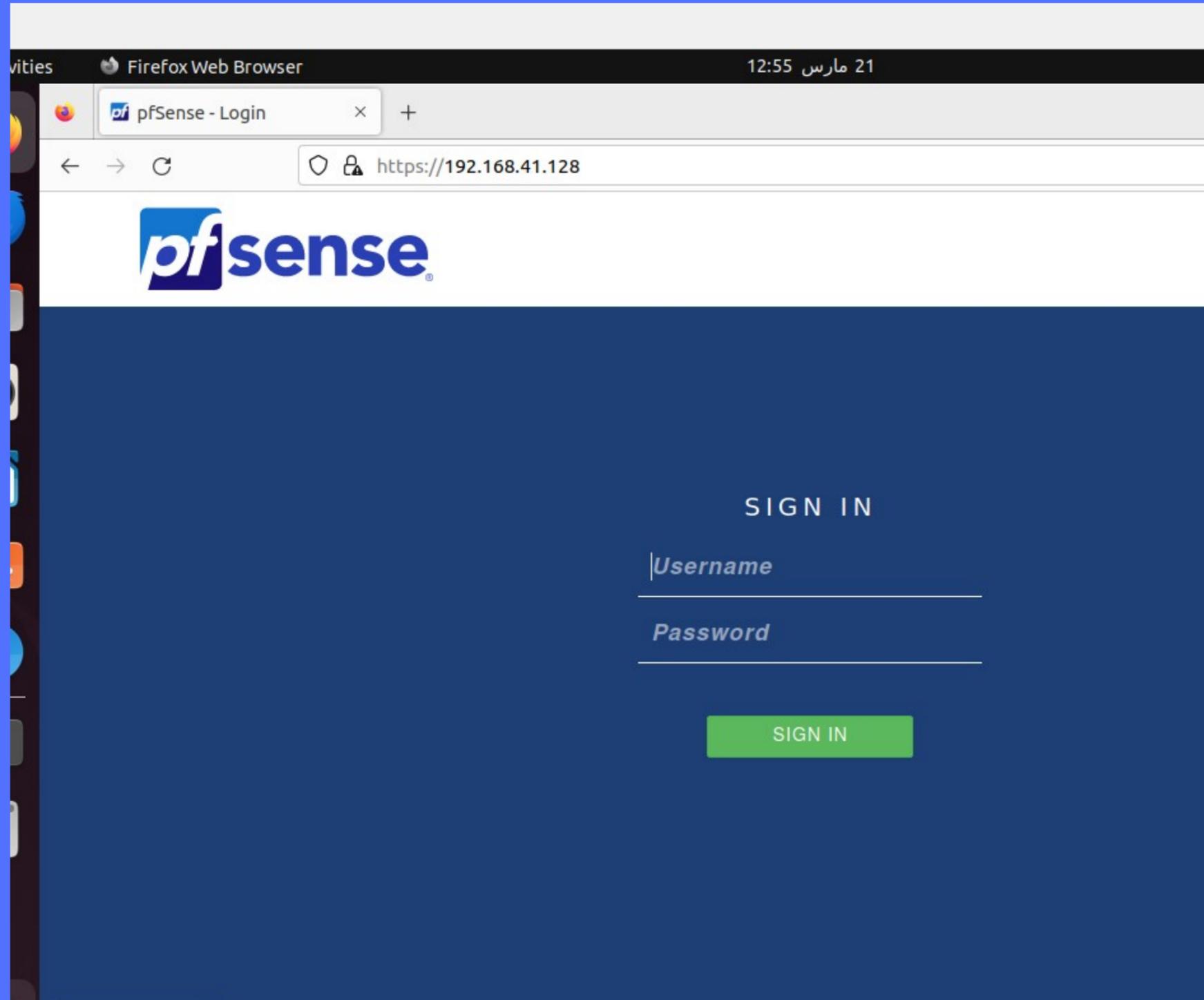
Enter an option: |
```

VMware Tools enables many features and improves mouse movement, video and performance. Log in to the guest operating system and click "Install Tools".

Install Tools Remind Me Later Never Remind Me

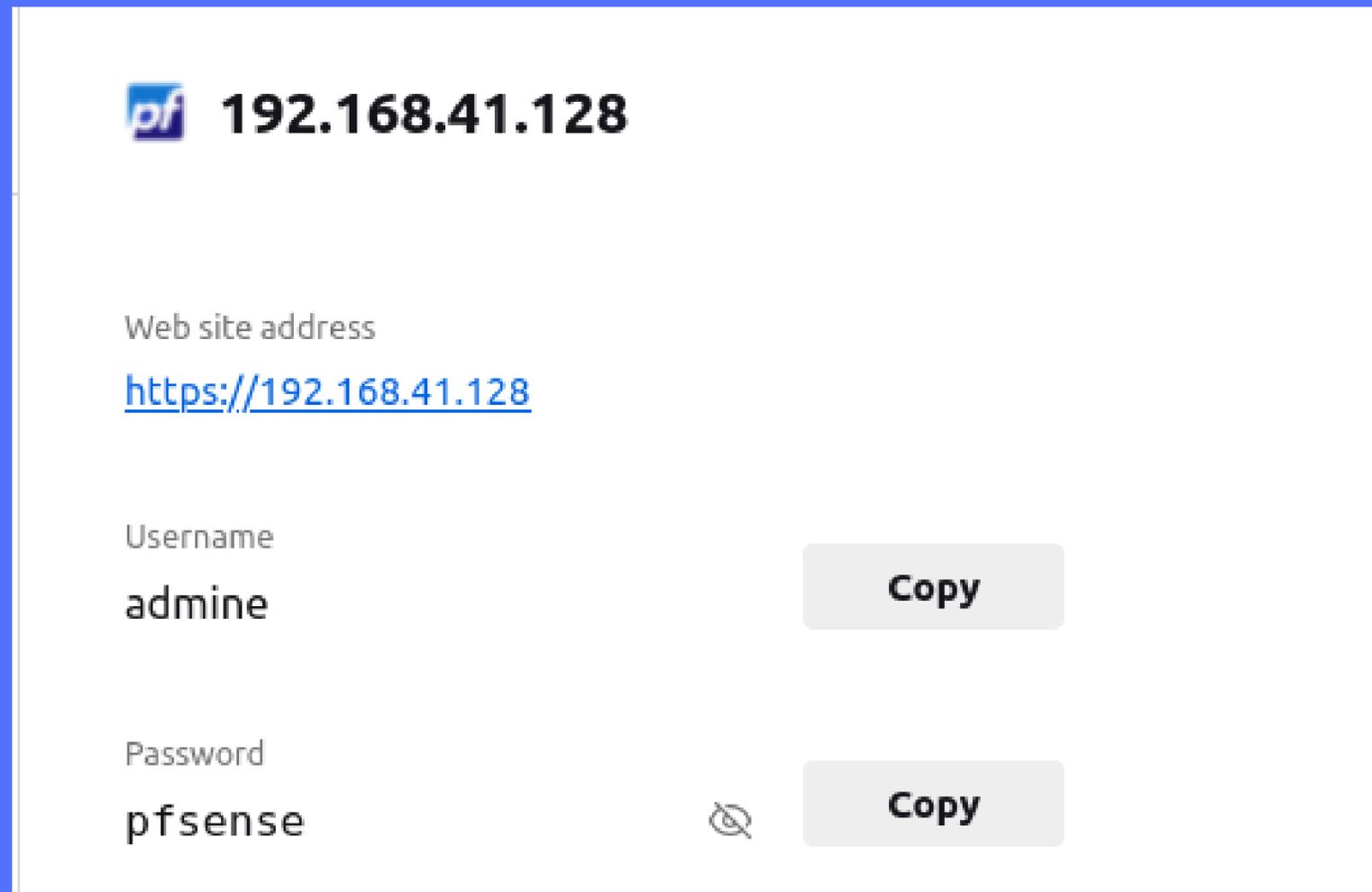
Configuration de pfSense :

Configuration des informations générales : L'utilisateur peut modifier le nom du pare-feu, déclarer un nom de domaine et sélectionner le fuseau horaire.



Assistant de configuration :

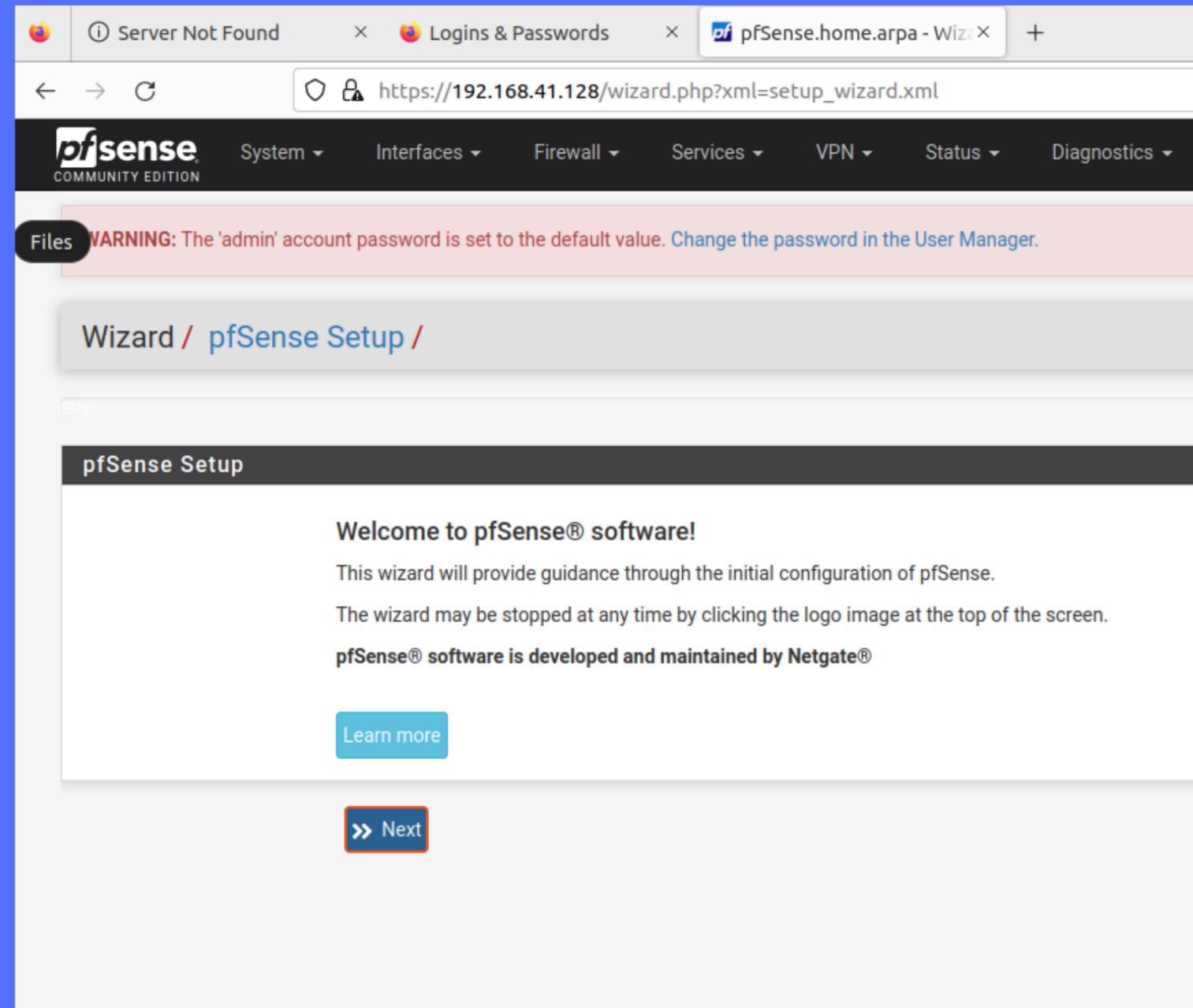
À travers l'interface utilisateur Web, l'assistant de configuration guide l'utilisateur pour finaliser l'installation du pare-feu.



The screenshot shows a configuration assistant interface for PfSense. At the top left, there is a logo with the letters 'pf' in a blue square, followed by the IP address '192.168.41.128' in bold black text. Below this, the text 'Web site address' is followed by a blue hyperlink 'https://192.168.41.128'. Underneath, the label 'Username' is followed by the text 'admin' and a grey 'Copy' button. Finally, the label 'Password' is followed by the text 'pfsense', a small eye icon, and another grey 'Copy' button.

Assistant de configuration :

L'interface WAN est généralement configurée automatiquement par DHCP, mais peut être configurée manuellement si nécessaire.



The screenshot shows a web browser window with the URL `https://192.168.41.128/wizard.php?xml=setup_wizard.xml`. The browser tabs include "Server Not Found", "Logins & Passwords", and "pfSense.home.arpa - Wizard". The page header features the pfSense logo and navigation menus for System, Interfaces, Firewall, Services, VPN, Status, and Diagnostics. A warning message states: "WARNING: The 'admin' account password is set to the default value. Change the password in the User Manager." The main content area is titled "Wizard / pfSense Setup /" and contains a "Step" indicator. Below this, a dark header reads "pfSense Setup". The main text says: "Welcome to pfSense® software! This wizard will provide guidance through the initial configuration of pfSense. The wizard may be stopped at any time by clicking the logo image at the top of the screen. pfSense® software is developed and maintained by Netgate®". There are two buttons: a teal "Learn more" button and a red "Next" button with a double arrow icon.

VMware Workstation 17 Player



Error while powering on: The process cannot access the file because another process has locked a portion of the file

Cannot open the disk 'C:\Users\USUARIO\Documents\Virtual Machines\FreeBSD version 10 and earlier 64-bit\FreeBSD version 10 and earlier 64-bit.vmdk' or one of the snapshot disks it depends on.

Module 'Disk' power on failed.

Failed to start the virtual machine.

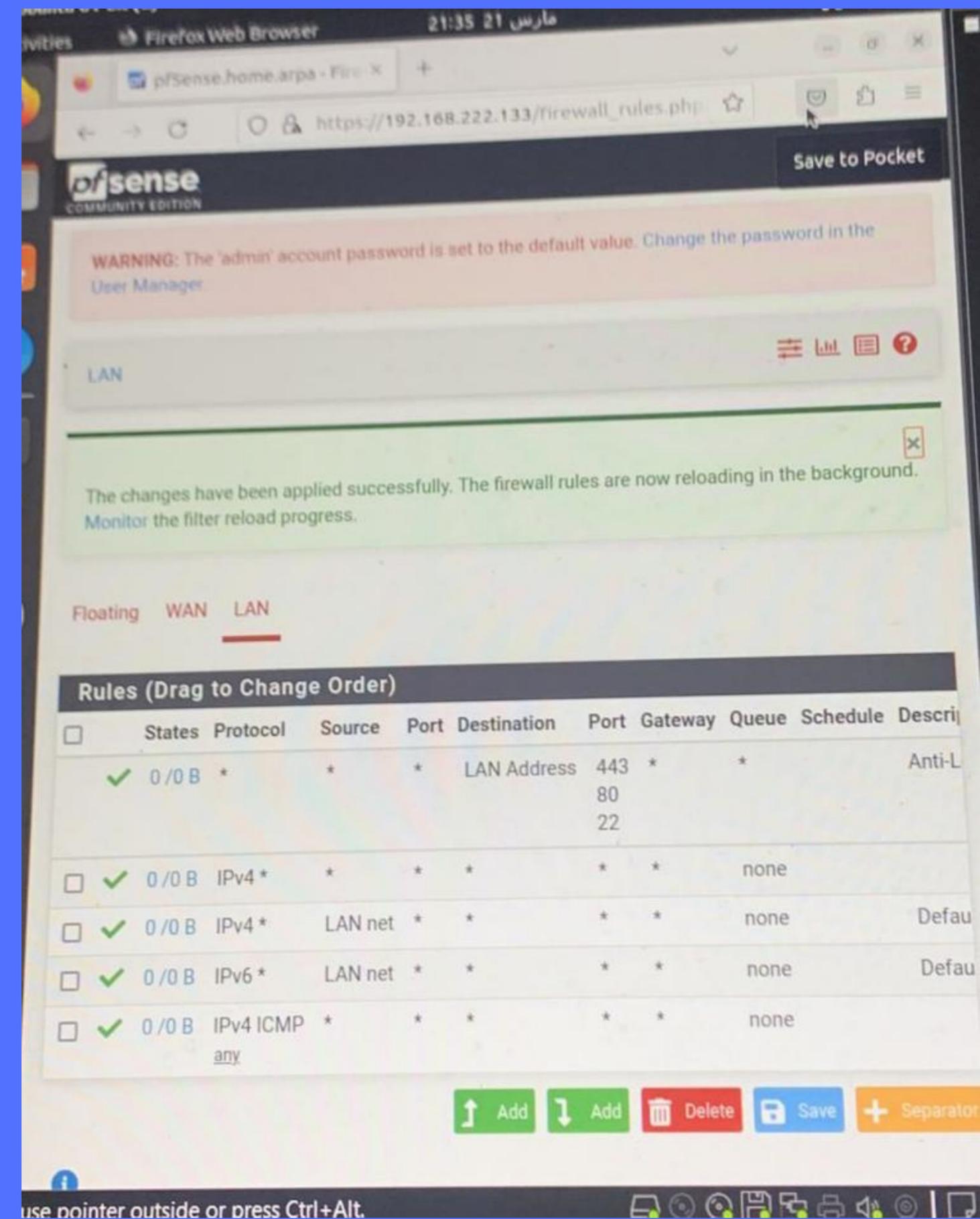
OK

Configuration de l'interface WAN :

L'utilisateur peut modifier l'adresse IP de l'interface LAN et changer les identifiants par défaut du compte admin de PfSense.

Configuration des règles :

L'utilisateur peut définir des règles en fonction de divers critères tels que l'interface, le protocole, l'adresse source et de destination.



WARNING: The 'admin' account password is set to the default value. Change the password in the User Manager.

LAN

The changes have been applied successfully. The firewall rules are now reloading in the background. Monitor the filter reload progress.

Floating WAN LAN

Rules (Drag to Change Order)

<input type="checkbox"/>	States	Protocol	Source	Port	Destination	Port	Gateway	Queue	Schedule	Description
<input checked="" type="checkbox"/>	0/0 B	*	*	*	LAN Address	443 80 22	*	*		Anti-L
<input type="checkbox"/>	<input checked="" type="checkbox"/>	0/0 B	IPv4	*	*	*	*	none		
<input type="checkbox"/>	<input checked="" type="checkbox"/>	0/0 B	IPv4	*	LAN net	*	*	none		Defau
<input type="checkbox"/>	<input checked="" type="checkbox"/>	0/0 B	IPv6	*	LAN net	*	*	none		Defau
<input type="checkbox"/>	<input checked="" type="checkbox"/>	0/0 B	IPv4 ICMP	*	*	*	*	none		

↑ Add ↓ Add Delete Save + Separator

Configuration de l'interface LAN :

L'utilisateur peut modifier l'adresse IP de l'interface LAN et changer les identifiants par défaut du compte admin de PfSense.

WARNING: The 'admin' account password is set to the default value. Change the password in the User Manager

Wizard / pfSense Setup / Time Server Information

Step 3 of 9

Time Server Information

Please enter the time, date and time zone.

Time server hostname
Enter the hostname (FQDN) of the time server.

Timezone

[» Next](#)

Configuration de l'interface LAN :

L'utilisateur peut modifier l'adresse IP de l'interface LAN et changer les identifiants par défaut du compte admin de PfSense.

Wizard / pfSense Setup / General Information

Step 2 of 9

General Information

On this screen the general pfSense parameters will be set.

Hostname	<input type="text" value="chater"/> EXAMPLE: myserver
Domain	<input type="text" value="coulibaly.arpa"/> EXAMPLE: mydomain.com
Primary DNS Server	<input type="text"/>
Secondary DNS Server	<input type="text"/>
Override DNS	<input checked="" type="checkbox"/> Allow DNS servers to be overridden by DHCP/PPP on WAN

Evaluation copy, build 26058, ge_release.2

Configuration de l'interface LAN :

L'utilisateur peut modifier l'adresse IP de l'interface LAN et changer les identifiants par défaut du compte admin de PfSense.

Set the MTU of the WAN interface. If this field is left blank, an MTU of 1492 bytes for PPPoE and 1500 bytes assumed.

MSS

If a value is entered in this field, then MSS clamping for TCP connections to the value entered above minus 40 bytes. If this field is left blank, an MSS of 1492 bytes for PPPoE and 1500 bytes for all other connection types will be used. The MTU value in most all cases.

Static IP Configuration

IP Address

Subnet Mask

Upstream Gateway

DHCP client configuration

DHCP Hostname

The value in this field is sent as the DHCP client identifier and hostname when requesting a DHCP lease. Some DHCP servers require a unique identifier (for identification).

PPPoE configuration

Configuration de l'interface LAN :

L'utilisateur peut modifier l'adresse IP de l'interface LAN et changer les identifiants par défaut du compte admin de PfSense.

identification).

PPPoE configuration

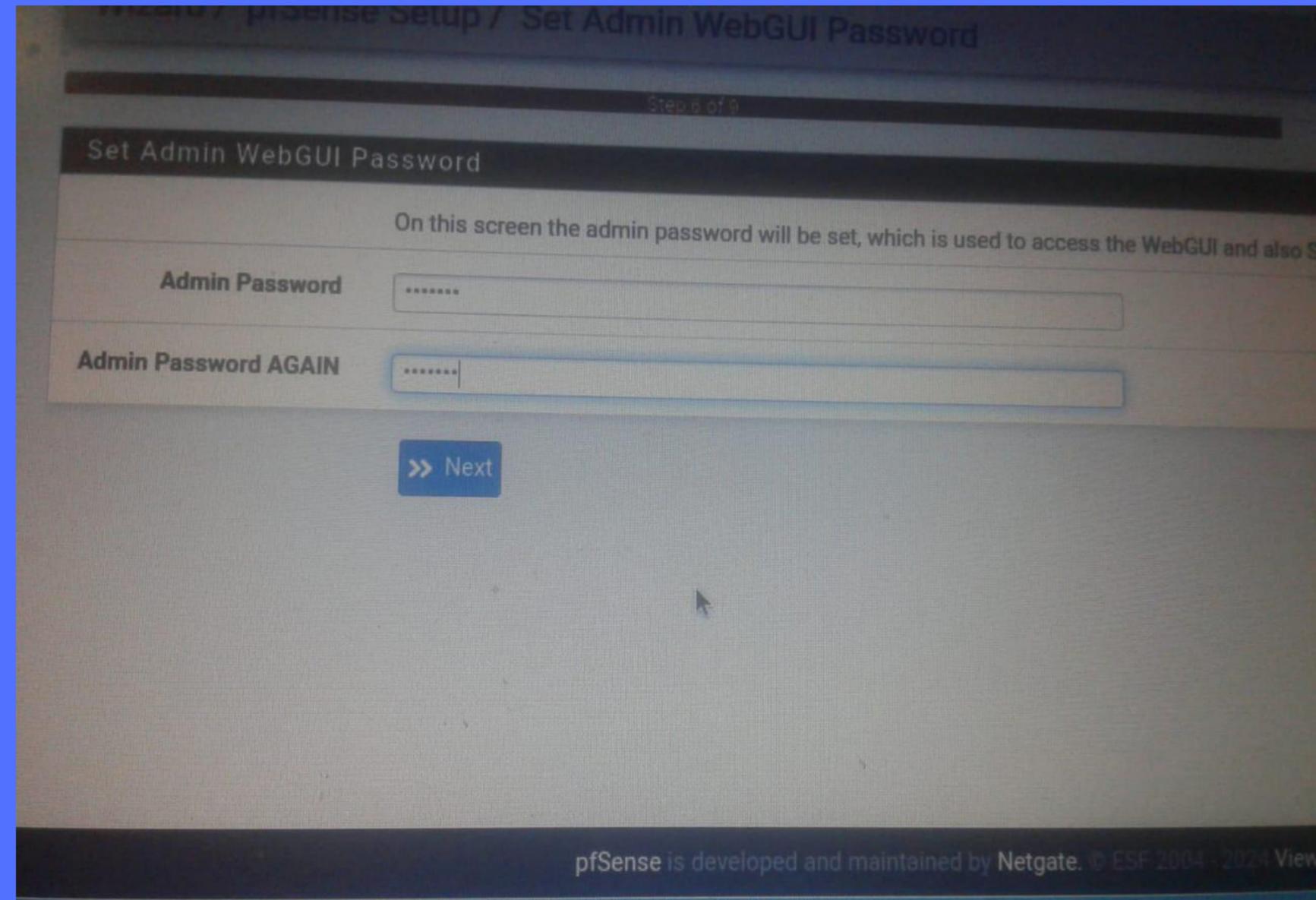
PPPoE Username	<input type="text"/>
PPPoE Password	<input type="password"/>
Show PPPoE password	<input type="checkbox"/> Reveal password characters
PPPoE Service name	<input type="text"/> Hint: this field can usually be left empty
PPPoE Dial on demand	<input type="checkbox"/> Enable Dial-On-Demand mode This option causes the interface to operate in dial-on-demand mode, allowing a virtual full time connection of the link is delayed until qualifying outgoing traffic is detected.
PPPoE Idle timeout	<input type="text"/> If no qualifying outgoing packets are transmitted for the specified number of seconds, the connection is terminated. If this feature is disabled, the connection will remain active indefinitely.

PPTP configuration

PPTP Username	<input type="text"/>
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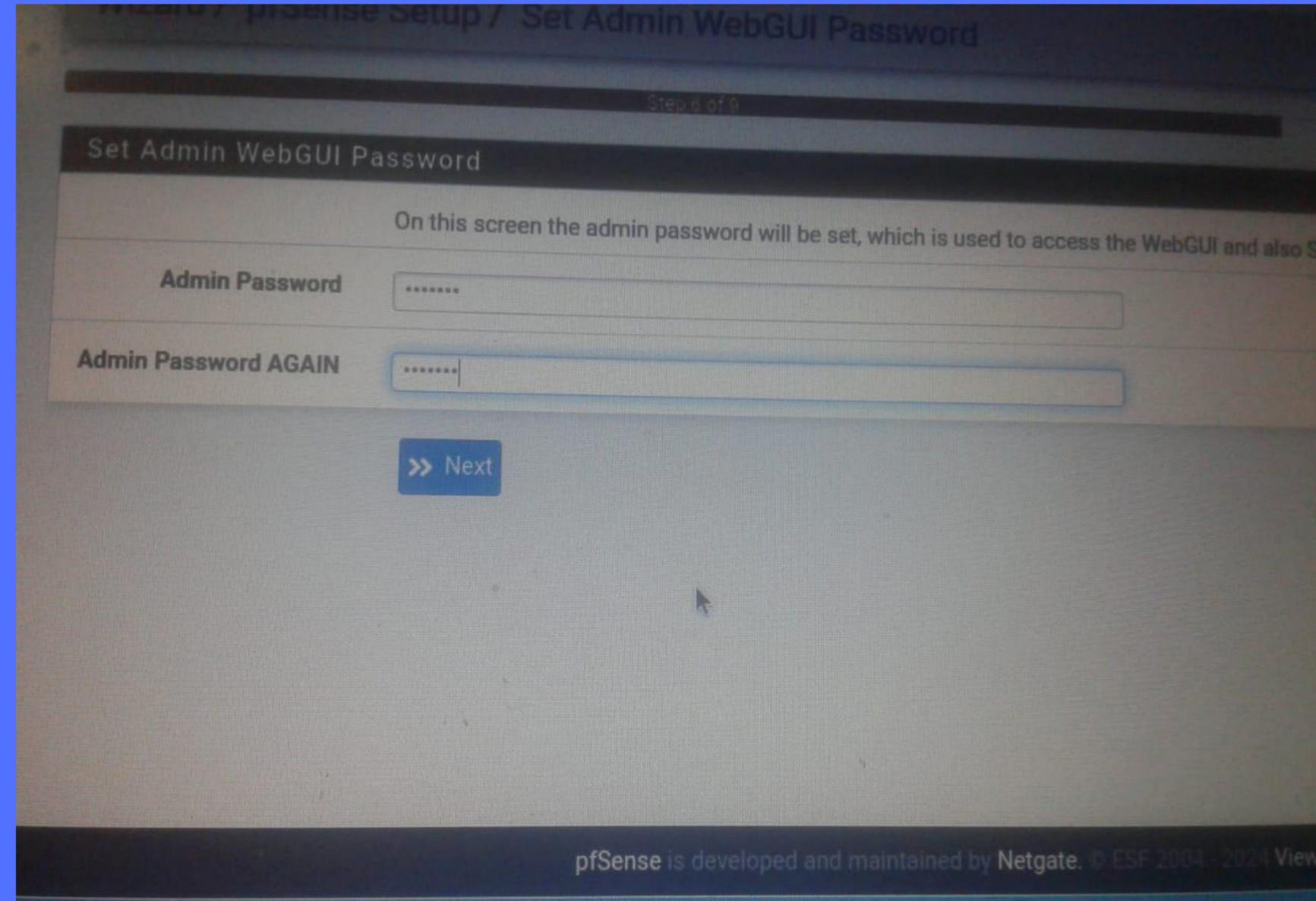
Configuration de l'interface LAN :

L'utilisateur peut modifier l'adresse IP de l'interface LAN et changer les identifiants par défaut du compte admin de PfSense.



Règles LAN -> WAN :

Par défaut, toutes les connexions sont autorisées, mais l'utilisateur peut ajouter des règles pour contrôler le trafic. Les règles définissent des actions telles que Pass (autoriser), Block (bloquer) ou Reject (rejeter).



Problem loading page x chater.coulibaly.arpa - St. x

← → ↻ https://192.168.41.3

Name	chater.coulibaly.arpa
User	admin@192.168.41.130 (Local Database)
System	VMware Virtual Machine Netgate Device ID: 107ed43b47aa18c83443
BIOS	Vendor: Phoenix Technologies LTD Version: 6.00 Release Date: Thu Nov 12 2020
Version	2.6.0-RELEASE (amd64) built on Mon Jan 31 19:57:53 UTC 2022 FreeBSD 12.3-STABLE <i>Unable to check for updates</i>
CPU Type	11th Gen Intel(R) Core(TM) i7-1195G7 @ 2.90GHz AES-NI CPU Crypto: Yes (inactive) QAT Crypto: No
Hardware crypto	
Kernel PTI	Disabled
MDS Mitigation	Inactive

WAN

Action

Choose what to do with packets that match the criteria specified below.
Hint: the difference between block and reject is that with reject, a packet (TCP RST or ICMP port unreachable for UDP) is returned whereas with block the packet is dropped silently. In either case, the original packet is discarded.

Disabled Disable this rule

Set this option to disable this rule without removing it from the list.

Interface

Choose the interface from which packets must come to match this rule.

Address Family

Select the Internet Protocol version this rule applies to.

Protocol

Choose which IP protocol this rule should match.

Source Invert match

Source Address

 Display Advanced

The **Source Port Range** for a connection is typically random and almost never equal to the destination port. In most cases this is its default value, any.

Destination Invert match

Destination Address

← → ↻ https://192.168.41.3/firewall_rules_edit.php?if=wan&after=1 ☆

TCP
Choose which IP protocol this rule should match.

Source

Source Invert match

Hide Advanced

The **Source Port Range** for a connection is typically random and almost never equal to the destination port. In most cases its default value, **any**.

Source Port Range
From Custom To Custom

Specify the source port or port range for this rule. The "To" field may be left empty if only filtering a single port.

Destination

Destination Invert match

Destination Port Range
From Custom To Custom

Specify the destination port or port range for this rule. The "To" field may be left empty if only filtering a single port.

Extra Options

Log Log packets that are handled by this rule
Hint: the firewall has limited local log space. Don't turn on logging for everything. If doing a lot of logging, consider using the [Status: System Logs: Settings](#) page).

Description

Conclusion :

La mise en œuvre d'un pare-feu PfSense offre une solution complète et conviviale pour sécuriser et gérer les réseaux. À travers des étapes d'installation et de configuration bien définies, les utilisateurs peuvent bénéficier de fonctionnalités avancées tout en maintenant un niveau élevé de sécurité.