## 16/10/2023

# **TP PFSENSE : COMPTE RENDU**

# Contenue de la procédure

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## 1. Introduction

## 1. Définition du sujet

Un pare-feu, en informatique, est un peu comme un gardien de sécurité numérique pour votre réseau. Son rôle principal est de protéger un réseau informatique en contrôlant le trafic entrant et sortant. Imagine-le comme une barrière qui filtre tout ce qui tente d'entrer ou de sortir de votre réseau.

### \*openai.com

### 2. Problématique

Mise en place d'un pare-feu sur notre plateforme entre le réseau wan et nos réseaux avec des règles de filtrages, un réseau DMZ et un réseau wifi avec un portail captif

## 3. La méthode utiliser

Création d'une vm pfsense, création d'un réseau lan réserver pour l'interconnexion entre le pare-feu et le routeur principale, ajout des rôles et des règles

# 2. Création de la machine virtuelle

### 1. Création de la vm

New Virtual Machine Wizard	
WORKSTATION PRO <sup>™</sup> 177 Welcome to the New Virtual Machine Wizard	New Virtual Machine Wizard       X         Guest Operating System Installation       A virtual machine is like a physical computer; it needs an operating system. How will you install the guest operating system?
What type of configuration do you want? <ul> <li></li></ul>	Installer disc: Installer disc: No drives available Installer disc image file (iso): C:\Users\axel.chamey\Desktop\pfSense-CE-2.7.0-REL \ FreeBSD version 10 and earlier 64-bit detected. I will ingtall the operating system later. The virtual machine will be created with a blank hard disk.
How large do you want this disk to be?	Help < Back Next > Cancel
The virtual machine's hard disk is stored as one or more files on the host computer's physical disk. These file(s) start small and become larger as you add applications, files, and data to your virtual machine. Maximum disk gize (GB): 20.0 - Recommended size for FreeBSD version 10 and earlier 64-bit: 20 GB	New Virtual Machine Wizard         X           Name the Virtual Machine         X           What name would you like to use for this virtual machine?         X
Store virtual disk as a single file     Split virtual disk into <u>m</u> ultiple files     Splitting the disk makes it easier to move the virtual machine to another computer     but may reduce performance with very large disks.      Help     < <u>Back</u> <u>Next</u> > <u>Cancel</u>	Virtual machine name:         Pf Sense         Location:         C:\Users\axel.chamey\Documents\Virtual Machines\Pf Sense         Browse         The default location can be changed at Edit > Preferences.
	< <u>B</u> ack <u>N</u> ext > Cancel

ICI J'utilise VMWARE workstation 17 mais un hyperV windows fera aussi bien l'affaire

## 2. Installation de la vm pf sense

pfSense Installer 				
Welcome to pfSense!		pfSense Installer		
Install Install pfSer Rescue Shell Launch a she Resource config xml Recourt conf	<mark>lse</mark> Il for rescue operations in xml from a previous in			
	.3	Ном мо	Partitioning uld you like to partition your disk	·?
	<cancel></cancel>	Au	to (ZFS) Guided Root-on-ZFS	
		Ma Sh	nual Manual Disk Setup (expert ell Open a shell and partitio	s) m by hand
			<mark>&lt; DK →</mark> <cancel></cancel>	
FreeBSD Installer			ļ.	
Parti	tion	lp FreeBSD Installe	choose which disk to setup using U r	FS and standard partitions
Would you like to use (da0) for pfSense or share it with other o	this entire disk partition it to perating systems?			
Using the entire disk currently stored ther	will erase any data e.			
[Entire Disk]	[ Partition ]		Select a partition Scheme Would for this volume:	ie k
			(da0) share APM Apple Partition Map	?
			curre GPT GUID Partition Tabl	e
			[ OK ] [Cancel]	
FreeBSD Installer				
Please review the disk the Finish button.	setup. When complete,	press		
			ystems	
ta0 20 GB MBR da0s1 20 GB BSD				
da0s1a 19 GB freebs da0s1b 1.0 GB freeb	d-ufs ∕ sd-swap none			
	iyj [Kevert] [ Huto ]	IFINISHI		
	Starting syslogdom Starting CRON done	e.		
	pfSense 2.7.0-RELEASE Bootup complete	amd64 Wed Jun 2	8 03:53:34 UTC 2023	
Nous voila sur le pfsense :	FreeBSD∕amd64 (pfSens	e.home.arpa) (tt	yv0)	
	UMware Virtual Machin	e – Netgate Devi - 2 7 8 PELEOSE	ce ID: b5cfd7a08df693e5e2f9	
	WAN (wan) -> e	mØ −> v4/	DHCP4: 192.168.113.137/24	
	LAN (lan) -> e	m1 -> ∪4:	192.168.1.1/24	
	<ol> <li>Assign Interfaces</li> <li>Set interface(s)</li> </ol>	IP address	10) Filter Logs 11) Restart webConfigurator	
	<ul> <li>3) Reset webConfigur</li> <li>4) Reset to factory</li> <li>5) Reboot system</li> </ul>	ator password defaults	<ul> <li>12) PHP shell + pfSense tools</li> <li>13) Update from console</li> <li>14) Enable Secure Shell (sshd)</li> </ul>	
	6) Halt system 7) Ping host 8) Shall		15) Restore recent configurati 16) Restart PHP-FPM	lon
	Enter an option: 1			

# 3. Configuration de base en CLI

<ul> <li>Ø) Logout (SSH only)</li> <li>1) Assign Interfaces</li> <li>2) Set interface(s) IP address</li> <li>3) Reset webConfigurator passwoid</li> <li>4) Reset to factory defaults</li> <li>5) Reboot system</li> <li>6) Halt system</li> <li>7) Ping host</li> <li>8) Shell</li> <li>Enter an option: 2</li> </ul>	<ul> <li>9) pfTop</li> <li>10) Filter Logs</li> <li>11) Restart webConfigurator</li> <li>12) PHP shell + pfSense tools</li> <li>13) Update from console</li> <li>14) Enable Secure Shell (sshd)</li> <li>15) Restore recent configuration</li> <li>16) Restart PHP-FPM</li> </ul>	Dans un premier temps on selectionne l'option 2 pour fixer l'adresses ip de interface LAN
On séléctione l'interface LAN (option 2)	<ul> <li>Ø) Logout (SSH only)</li> <li>1) Assign Interfaces</li> <li>2) Set interface(s) IP address</li> <li>3) Reset webConfigurator password</li> <li>4) Reset to factory defaults</li> <li>5) Reboot system</li> <li>6) Halt system</li> <li>7) Ping host</li> <li>8) Shell</li> </ul>	9) pfTop 10) Filter Logs 11) Restart webConfigurator 12) PHP shell + pfSense tools 13) Update from console 14) Enable Secure Shell (sshd) 15) Restore recent configuration 16) Restart PHP-FPM
	Enter an option: 2	
	ичанавне interfaces. 1 - WAN (ем0 - dhcp, dhcp6)	
	2 - LAN (em1 - static)	uich to configure: 2
	Enter the number of the Interface you	wish to configure. 2
Enter the number of the inte Configure IPv4 address LAN i Enter the new LAN IPv4 addre > 192.168.10.30	erface you wish to configure: 2 interface via DHCP? (y/n) n ess. Press <enter> for none:</enter>	On rentre notre adresse ip
En général on configure	Enter an option: 2 Available interfaces:	
mais si vous voulez le	1 — WAN (ем0 — dhcp, dhcp6) 2 — LAN (ем1 — static)	
faire via DHCP rentrez	Enter the number of the interfa	ce you wish to configure: 2
«у»	Configure IPv4 address LAN inte	rface via DHCP? (y/n) n
Enter the new LAN IPv4 s > 27	ubnet bit count (1 to 32):	La c'est le masque de votre réseau
Faite ENTRE	For a WAN, enter the new LAN IP Four a LAN, press <enter> for no &gt;</enter>	v4 upstreaм gateway address. ne:
Configure IPv6 address LAN	interface via DHCP6? (y/n) n	Faite NON
Faite ENTRE	Ent the new LAN IPv6 address	. Press <enter> for none:</enter>
Do you want to enable the	DHCP server on LAN? (y/n) n	Faite NON
Faite NON	Do you want to revert to HTTP as the w	ebConfigurator protocol? (y∕n) n
WAN (wan) -> ем0 LAN (lan) -> ем1	-> ∪4/DHCP4: 192.168.113.137/24 -> ∪4: 192.168.10.30/27	
Et voila, vous avez bien conj	figurer votre interface lan	_
Nous nouvez décormait acc	dor à l'interface web	

Vous pouvez désormait acceder à l'interface web

# 3. Configuration sur l'interface web

## 1. Setup de base

SIGN IN admin pfsense		Connectez vous sur l'interface web du routeur depuis un poste qui est connecter sur le même réseau Les identifiants par default sont admin : pfsens		
Cliquez sur le menu déroulant « System » puis « Setup Wizard »	WARNING: The Status / C System Info Name User System BIOS	System - Inter Advanced Certificates General Setup High Availability Package Manager Register Routing Setup Wilmrd Update User Manager Logout (admin)	faces • Firewall • Services •	
Wizard / pfSense Setup / pfSense Setup Welcome to pfSense® so This wizard will provide guidance The wizard may be stopped at an pfSense® software is developed Learn more Next	ftware! e through the initial configurati ay time by clicking the logo ima and maintained by Netgate®	Release Date: Thu i	Nov 12 2020 Cliquez sur >> NEXT	

Wizard / pfSense	Setup / Ge	neral Information		
Step 2 of 9	_			Rentrez un nom pour votre
General Information			ha ant	PF, le nom de domaine et les
Hostname	On this screen tr	ie general proense parameters will	De set.	ip des serveurs dns
Hostiane	Name of the fire	wall host, without domain part.		(EXTERNES)
	Examples: pfsen	ise, firewall, edgefw		-
Domain	chamey.acy			
	Domain name fo	or the firewall.		
	Examples: home	e.arpa, example.com		
	Do not end the d Rendezvous, Airı Alternatives sucl	omain name with '.local' as the fina print, Airplay) and some Windows s h as 'home.arpa', 'local.lan', or 'mylo	al part (Top Level Domain, TLD). The Toca systems and networked devices. These v ocal' are safe.	af TL vill nc
	The default beha manually configu	avior of the DNS Resolver will ignor ured DNS servers below for client q	e manually configured DNS servers for c queries, visit Services > DNS Resolver and	lient d ena
Primary DNS Server	192.168.130.2			
Secondary DNS Server	1.1.4.4			
Override DNS				
	Allow DNS serve	ers to be overridden by DHCP/PPP	on WAN	
		Time server hostname	Please enter the time, date and t 2.pfsense.pool.ntp.org Enter the hostname (FQDN) of th	ime zone.
		Timezone	Europe/Paris	~
			>> Next	
		Step 5 of 9		
Configure LAN Inter	face			ICI on configure l'IP et le masque de
	On this screen	e Local Area Network information will be configured.		notre pare-feu
LAN IP Address	192.168.10.3 Type dhcp if th	0 nis interface uses DHCP to obtain i		
Subnet Mask	27		~	
	>> Next			
		-		0(0)7073
		Reload conf	iguration	
		Reford com	iguiution	
Et enfin cliquez s	sur reload		Click 'Reloa	d' to reload pfSense with new changes.
			>> Reloa	

# Wizard / pfSense Setup / Wizard completed.

#### Step 9 of 9

### Wizard completed.

### Congratulations! pfSense is now configured.

We recommend that you check to see if there are any software updates a things you can do to maintain the security of your network.

### Check for updates

## Remember, we're here to help.

Click here to learn about Netgate 24/7/365 support services.

### User survey

Please help all the people involved in improving and expanding pfSense : anonymous) Anonymous User Survey

### 2. Configuration des interfaces DMZ et WIFI

Rendez-vous dans le menu interface de votre routeur

http	https://192.168.10.30/interfaces.php?if=opt2					
p col		System <del>-</del>	Interfaces 🕶	Firewall 👻	Services <del>-</del>	
	WARNING: The 'a	idmin' account	Assignments	fault value	e. Change the	
		_	WAN			
	Interfaces / OPT	OPT2 (	LAN			
		/ 01 12 (	DMZ	_		
	General Conf	iguration	OPT2			
		Enable 🗆	Enable interface			

Interface	Network port	
WAN	em0 (00:0c:29:f2:71:be)	~
LAN	em1 (00:0c:29:f2:71:c8)	► Delete
OPT1	em2 (00:0c:29:f2:71:d2)	► Delete
Available network ports:	em3 (00:0c:29:f2:71:dc)	► Add

D Save

Ajouter une première intefrace en cliquant sur le bouton « +ADD », ici ce sera l'interface DMZ

### Interfaces / OPT1 (em2) **General Configuration** Enable Enable interface Description DMZ Enter a description (name) for the interface here. IPv4 Configuration Type Static IPv4 ¥ Static IPv4 Configuration IPv4 Address 172.31.255.254 / 12 ~ None $\mathbf{v}$ IPv4 Upstream gateway 🕂 Add a new gateway If this interface is an Internet connection, select an existing Gateway from the list or add a new one using the "Add" button. On local area network interfaces the upstream gateway should be "none Selecting an upstream gateway causes the firewall to treat this interface as a WAN type interface. Gateways can be managed by clicking here **Reserved Networks** Block private networks and loopback addresses Blocks traffic from IP addresses that are reserved for private networks per RFC 1918 (10/8, 172.16/12, 192.168/16) and unique local addresses RFC 4193 (fc00::/7) as well as loopback addresses (127/8). This option should generally be turned on, unless this network interface resides in s private address space, too. Block bogon networks Blocks traffic from reserved IP addresses (but not RFC 1918) or not yet assigned by IANA. Bogons are prefixes that should never appear in the II routing table, and so should not appear as the source address in any packets received. This option should only be used on external interfaces (WANs), it is not necessary on local interfaces and it can potentially block required local 1 Note: The update frequency can be changed under System > Advanced, Firewall & NAT settings. 🖶 Save

Configurez les paramètres de la nouvelle carte réseau

Vous pouvez ainsi paramétrer au temps de carte réseau que vous en avez sur votre routeur