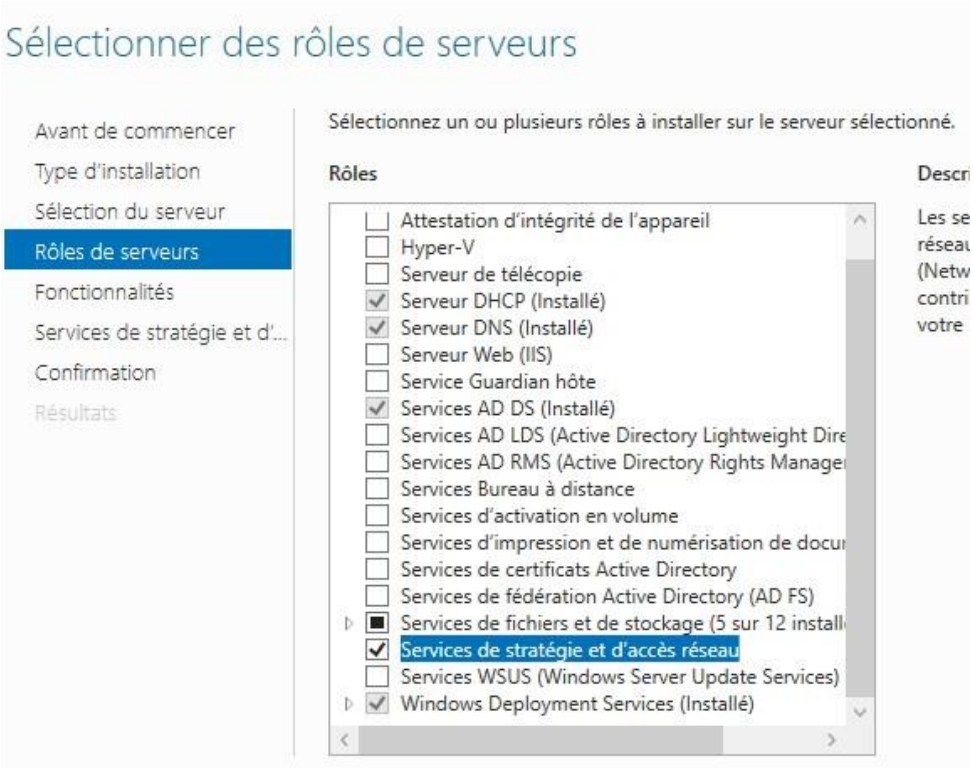
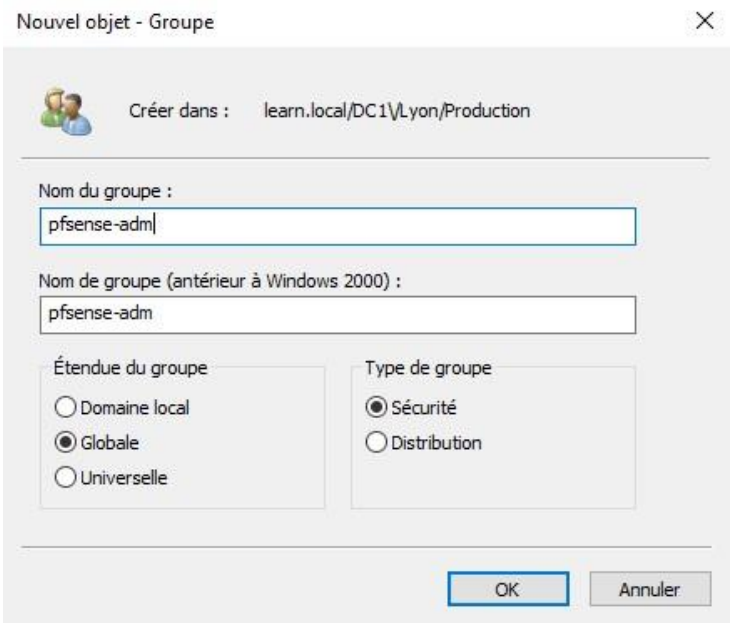
Installation de RADIUS

Etape 1 : NPS

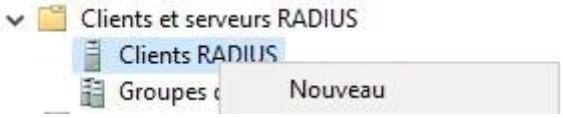
Installation du service NPS :

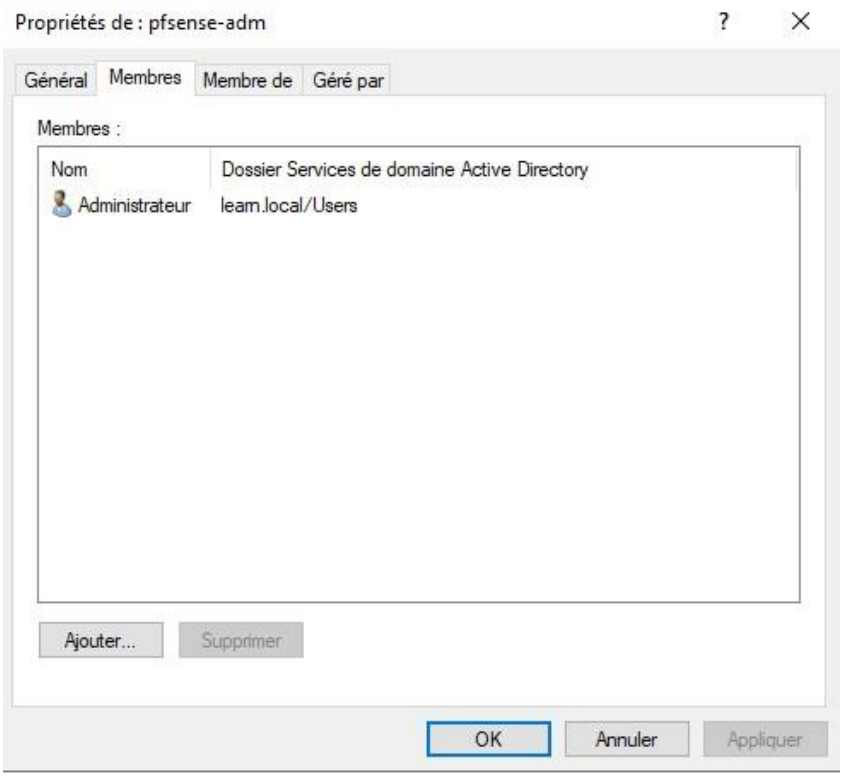


Création d'un groupe de sécurité pfsense-adm :

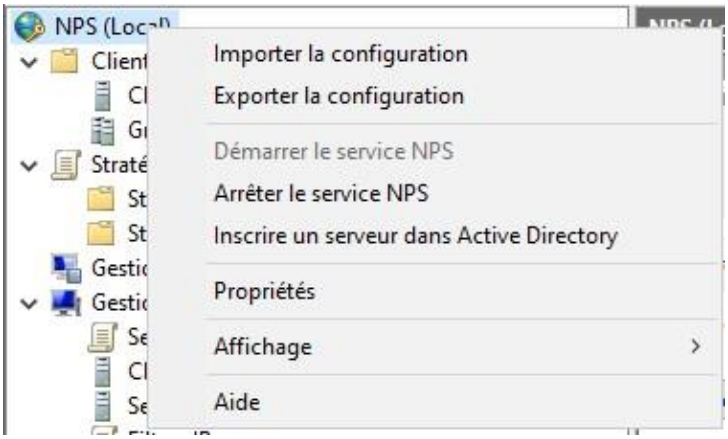


Ajout du compte Administrateur au groupe :

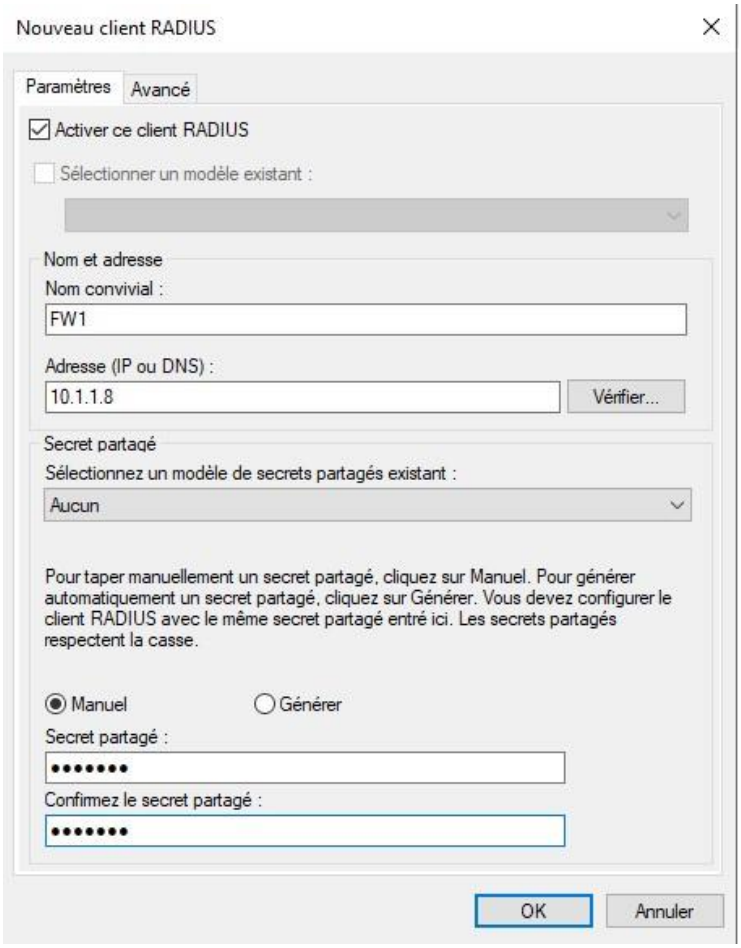




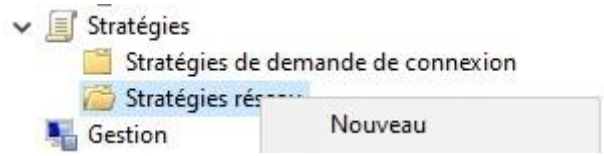
Faire clic droit sur NPS (Local) puis Inscrire un serveur dans Active Directory pour ajouter le serveur NPS à l'AD :



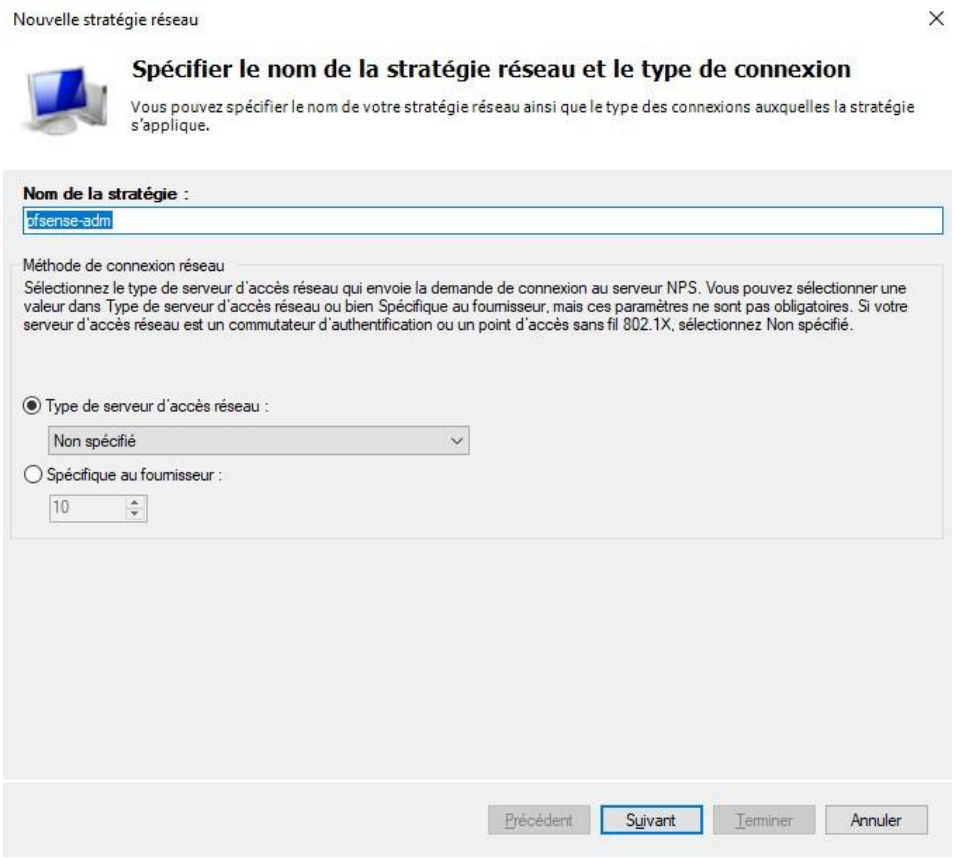
Faire clic droit sur Clients RADIUS puis Nouveau :
Ajout de FW1 en tant que client RADIUS :



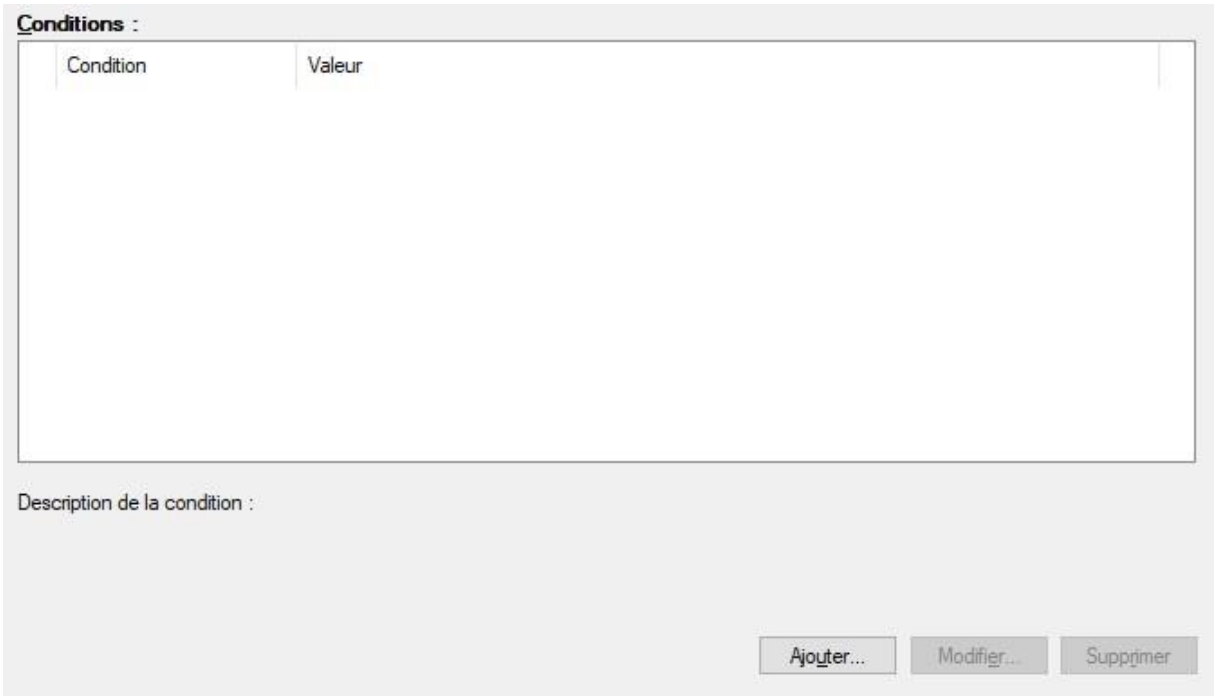
Faire clic droit sur Stratégies réseau puis Nouveau :



Donner un nom à la stratégie réseau puis faire Suivant :

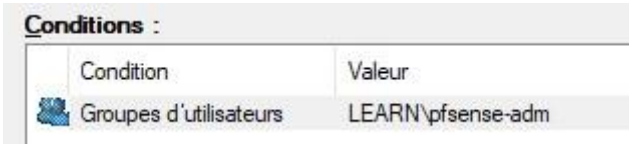


Cliquer sur Ajouter :

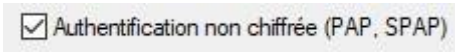


Sélectionner Groupe d'utilisateurs :

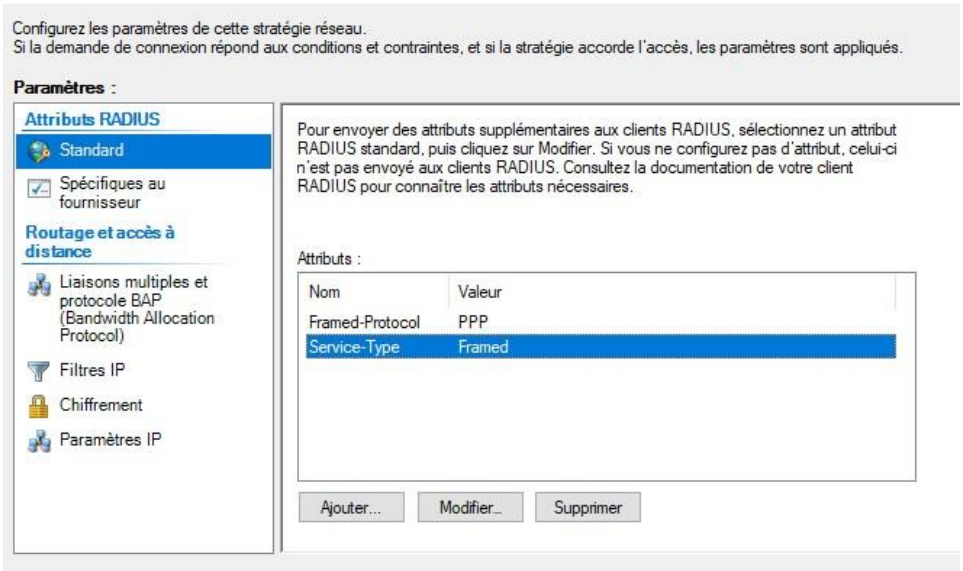
Ajouter le groupe pfsense-adm :



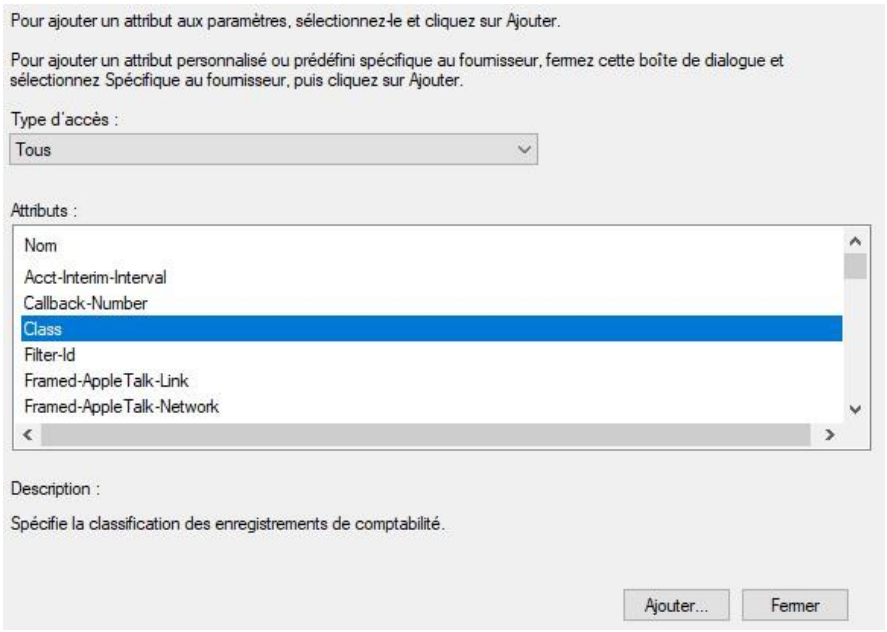
Faire Suivant jusqu'à pouvoir cocher PAP, cocher la case et faire Suivant :



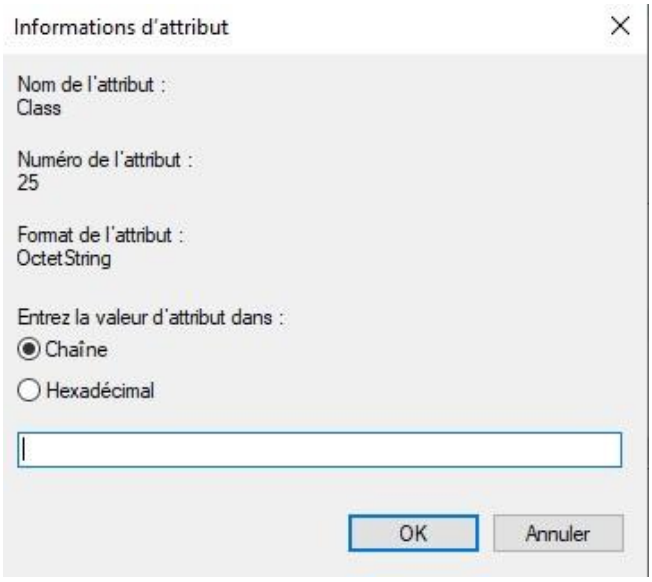
Faire Suivant puis sur ce menu cliquer sur Ajouter :



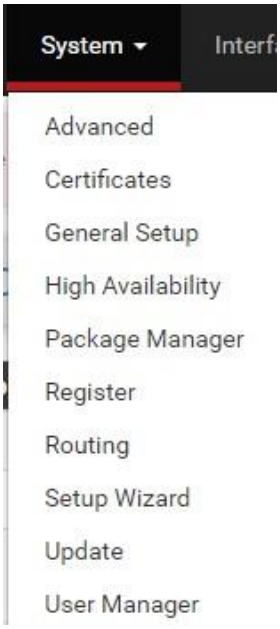
Sélectionner Class :



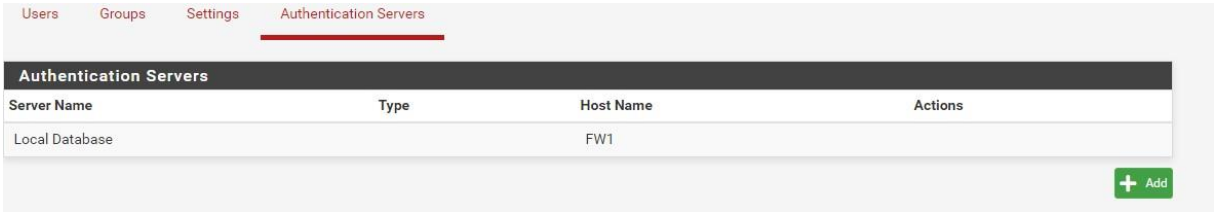
Écrire pfsense-adm puis faire OK, Suivant et Terminé :



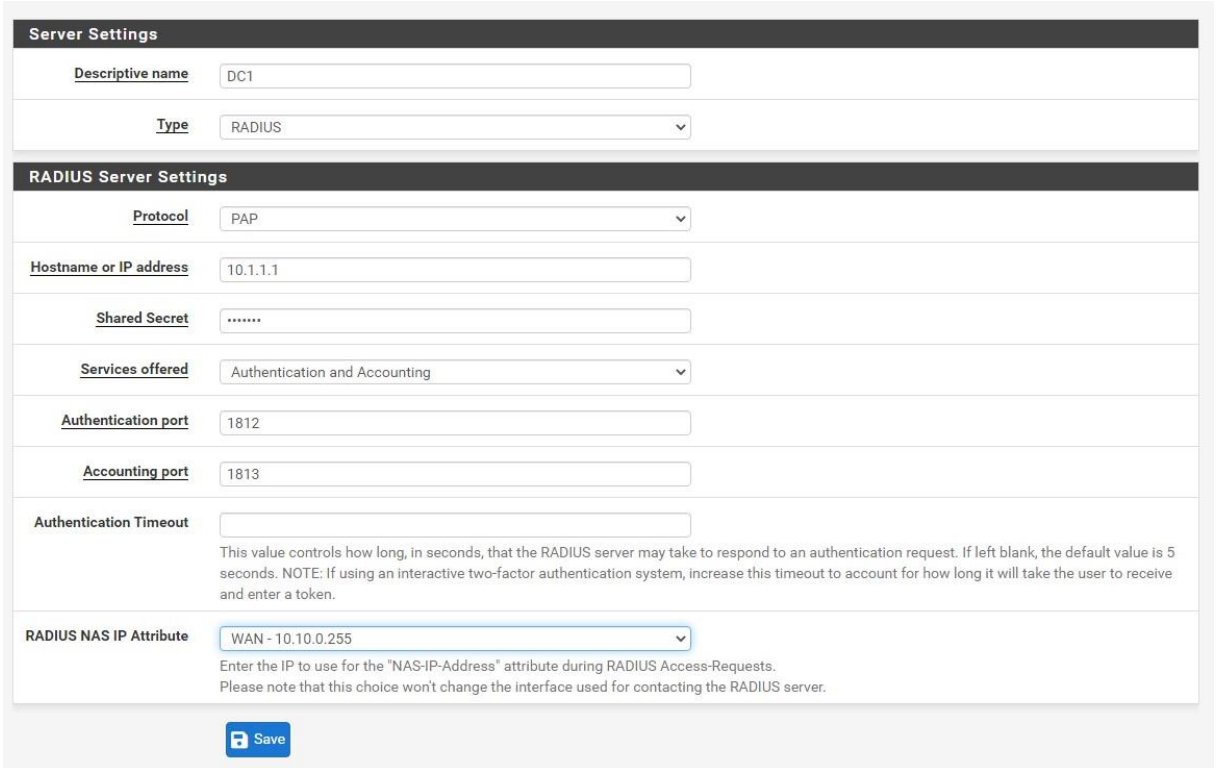
Sur l'interface web de pfSense, aller dans la section System puis dans le menu User Manager :



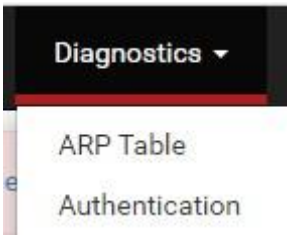
Dans Authentification Servers, cliquer sur Add :



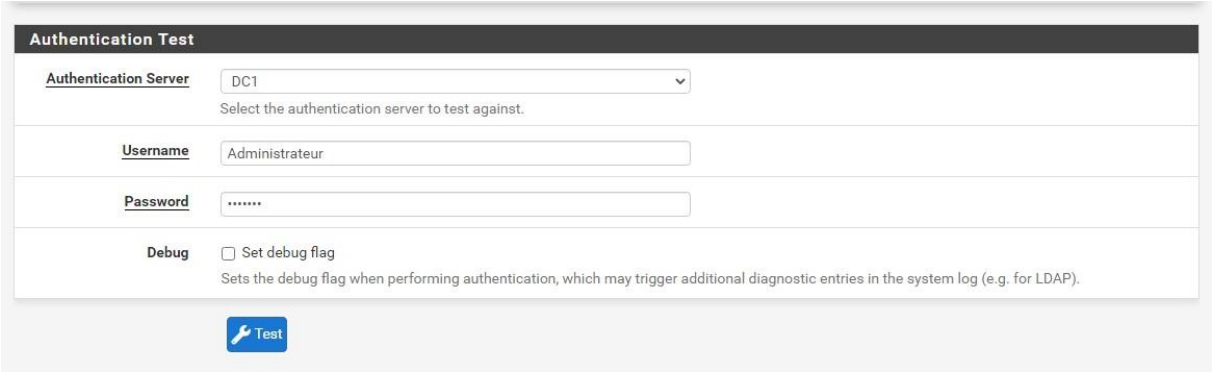
Entrer les informations suivantes puis faire Save :



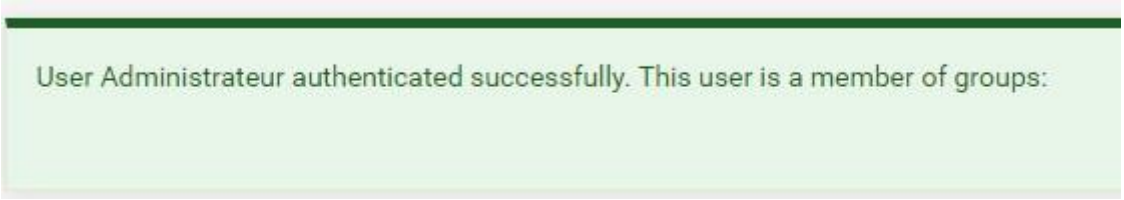
Pour tester le bon fonctionnement de notre manipulation, se rendre dans la section Diagnostics puis dans le menu Authentification :



Sélectionner le bon serveur et inscrire les informations de connexion de l'utilisateur ajouté précédemment dans le groupe pfsense-adm :

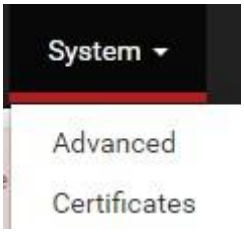


Un message positif devrait apparaître :

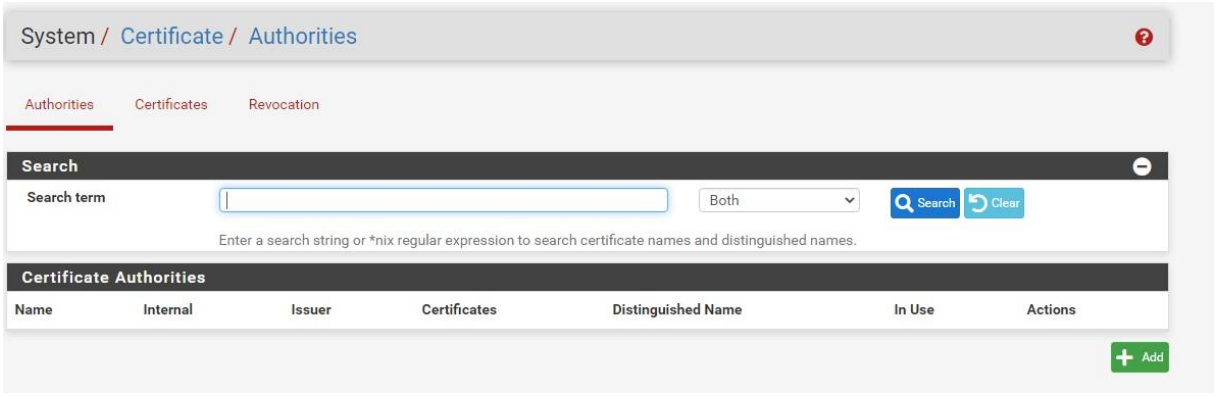


Etape 2 : VPN SSL

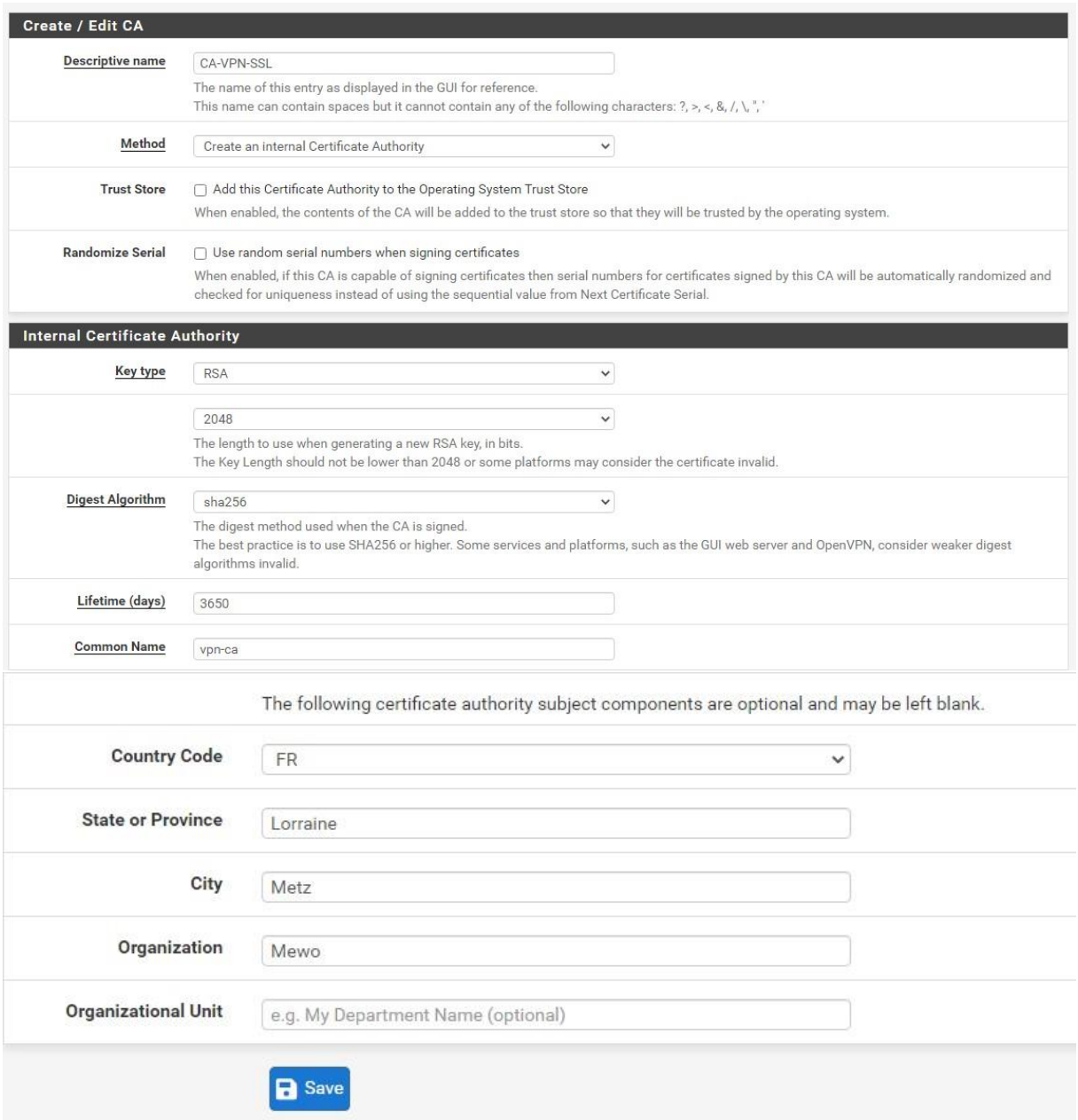
Sur FW1, Se rendre dans la section System puis dans le menu Certificates :



Cliquer sur le bouton Add :

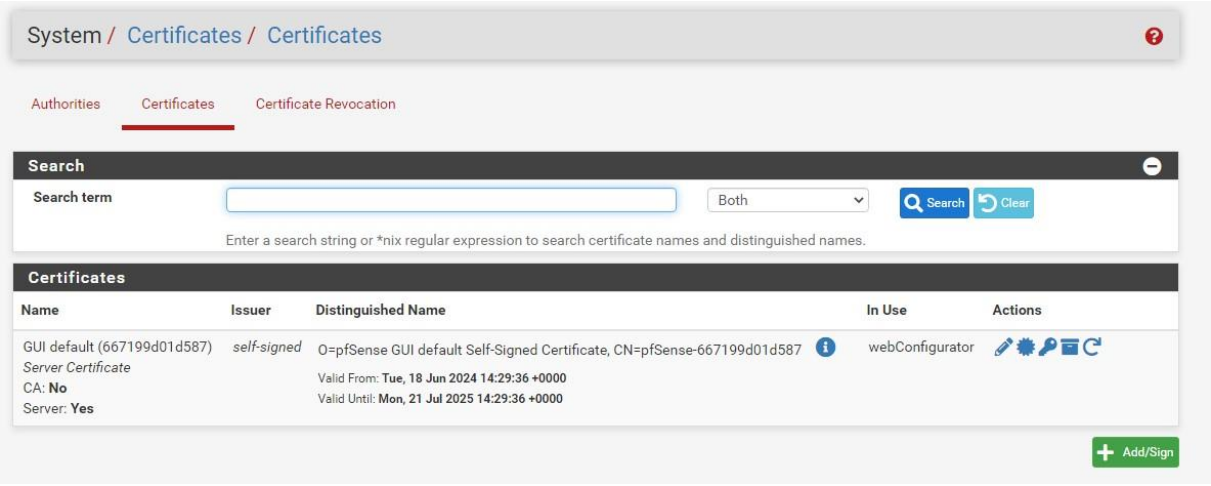


Renseigner les informations principales puis faire Save :

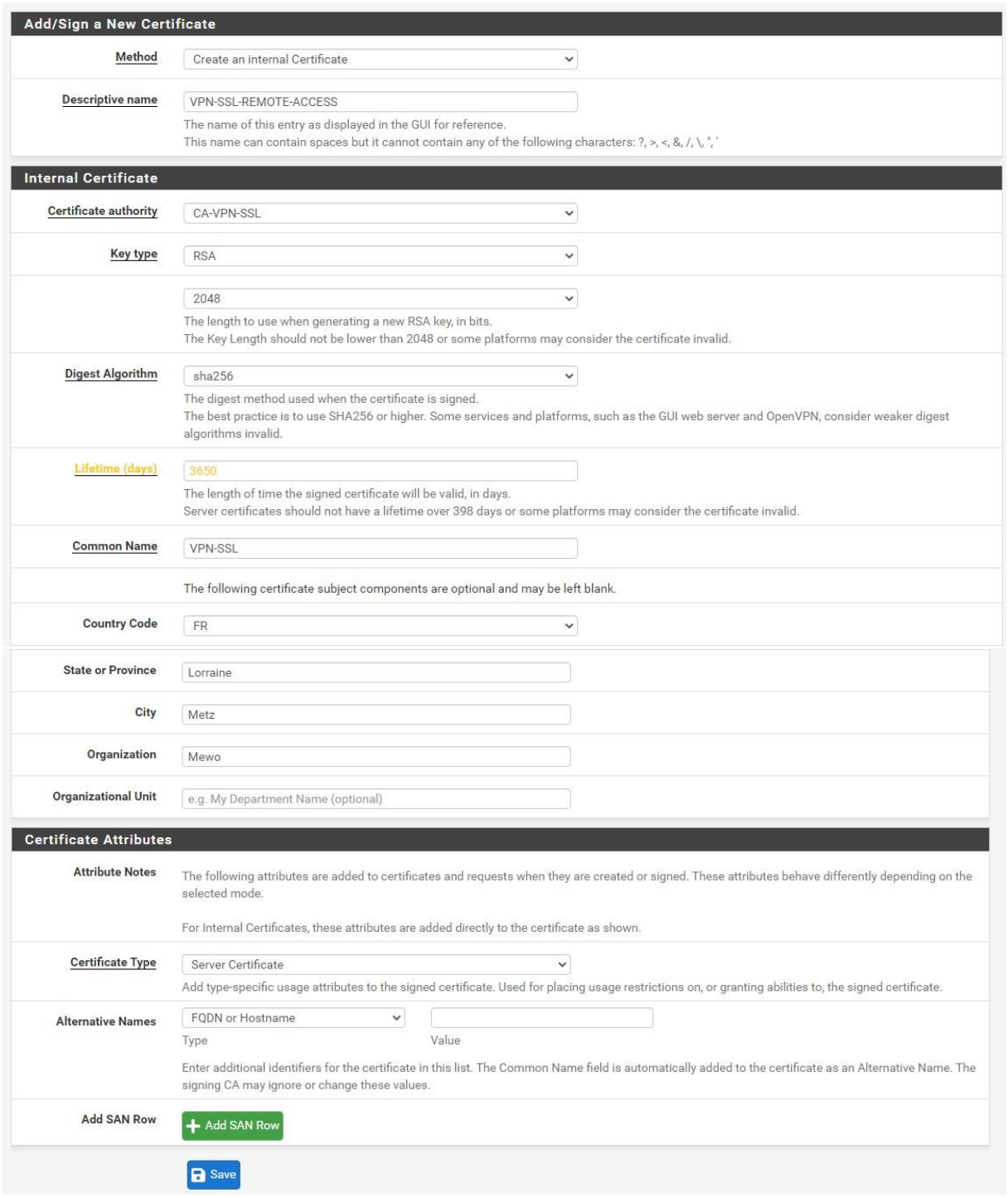


L’autorité de certification a été créée :

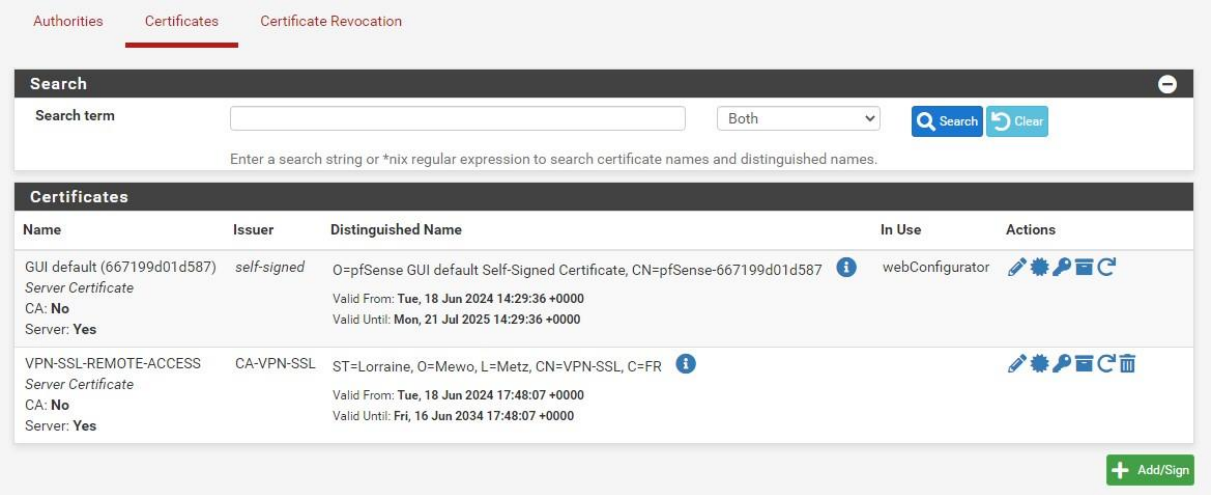
Cliquer sur l’onglet Certificates puis faire Add/Sign :



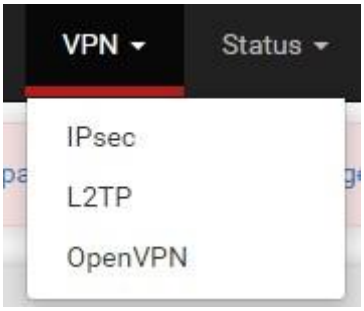
Remplir les informations comme ci-dessous puis faire Save :



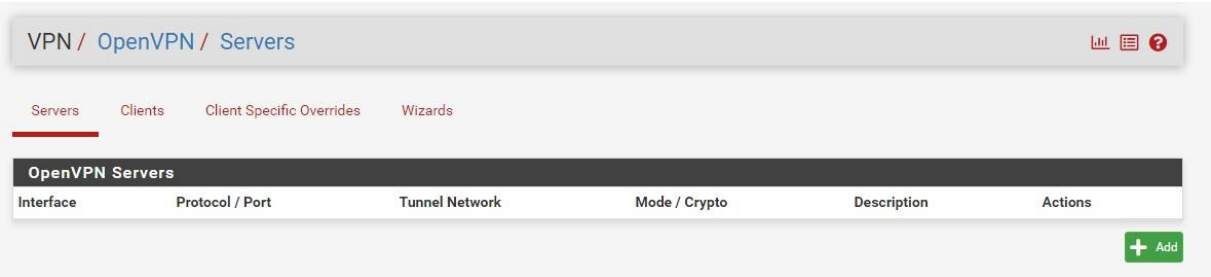
Le certificat à bien été créé :



Dans la section VPN, aller dans le menu OpenVPN :



Cliquer sur Add :



Indiquer les informations suivantes et faire Save :

General Information

Description

A description of this VPN for administrative reference.

Disabled

☐ Disable this server

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

Mode Configuration

Server mode: Remote Access (SSL/TLS + User Auth)

Backend for authentication: DC1, Local Database

Device mode: tun - Layer 3 Tunnel Mode

"tun" mode carries IPv4 and IPv6 (OSI layer 3) and is the most common and compatible mode across all platforms.
"tap" mode is capable of carrying 802.3 (OSI Layer 2.)

Endpoint Configuration

Protocol: UDP on IPv4 only

Interface: WAN

The interface or Virtual IP address where OpenVPN will receive client connections.

Local port: 1194

The port used by OpenVPN to receive client connections.

Cryptographic Settings

TLS Configuration

☑ Use a TLS Key

A TLS key enhances security of an OpenVPN connection by requiring both parties to have a common key before a peer can perform a TLS handshake. This layer of HMAC authentication allows control channel packets without the proper key to be dropped, protecting the peers from attack or unauthorized connections.The TLS Key does not have any effect on tunnel data.

☑ Automatically generate a TLS Key.

Peer Certificate Authority: CA-VPN-SSL

Peer Certificate Revocation list: No Certificate Revocation Lists defined. One may be created here: System > Cert. Manager

OCSP Check: ☐ Check client certificates with OCSP

Server certificate: VPN-SSL-REMOTE-ACCESS (Server: Yes, CA: CA-VPN-SSL)

Certificates known to be incompatible with use for OpenVPN are not included in this list, such as certificates using incompatible ECDSA curves or weak digest algorithms.

DH Parameter Length: 2048 bit

Diffie-Hellman (DH) parameter set used for key exchange.

ECDH Curve: Use Default

The Elliptic Curve to use for key exchange.
The curve from the server certificate is used by default when the server uses an ECDSA certificate. Otherwise, secp384r1 is used as a fallback.

Data Encryption Algorithms

CHACHA20-POLY1305 (256 bit key, stream cipher) DES-EDE-CBC (128 bit key, 64 bit block) DES-EDE-CFB (128 bit key, 64 bit block) DES-EDE-OFB (128 bit key, 64 bit block) DES-EDE3-CBC (192 bit key, 64 bit block) DES-EDE3-CFB (192 bit key, 64 bit block) DES-EDE3-CFB1 (192 bit key, 64 bit block) DES-EDE3-CFB8 (192 bit key, 64 bit block) DES-EDE3-OFB (192 bit key, 64 bit block) None (No Encryption)	AES-256-GCM AES-128-GCM CHACHA20-POLY1305

Fallback Data Encryption Algorithm

AES-256-CBC (256 bit key, 128 bit block)

The Fallback Data Encryption Algorithm used for data channel packets when communicating with clients that do not support data encryption algorithm negotiation (e.g. Shared Key). This algorithm is automatically included in the Data Encryption Algorithms list.

Auth digest algorithm

SHA256 (256-bit)

The algorithm used to authenticate data channel packets, and control channel packets if a TLS Key is present.
When an AEAD Encryption Algorithm mode is used, such as AES-GCM, this digest is used for the control channel only, not the data channel.
The server and all clients must have the same setting. While SHA1 is the default for OpenVPN, this algorithm is insecure.

Hardware Crypto

No Hardware Crypto Acceleration

Certificate Depth

One (Client+Server)

When a certificate-based client logs in, do not accept certificates below this depth. Useful for denying certificates made with intermediate CAs generated from the same CA as the server.

Strict User-CN Matching

☐ Enforce match

When authenticating users, enforce a match between the common name of the client certificate and the username given at login.

Client Certificate Key Usage Validation

☑ Enforce key usage

Verify that only hosts with a client certificate can connect (EKU: "TLS Web Client Authentication").

Tunnel Settings

IPv4 Tunnel Network

10.10.10.0/24

This is the IPv4 virtual network or network type alias with a single entry used for private communications between this server and client hosts expressed using CIDR notation (e.g. 10.0.8.0/24). The first usable address in the network will be assigned to the server virtual interface. The remaining usable addresses will be assigned to connecting clients.

A tunnel network of /30 or smaller puts OpenVPN into a special peer-to-peer mode which cannot push settings to clients. This mode is not compatible with several options, including Exit Notify, and Inactive.

IPv6 Tunnel Network

This is the IPv6 virtual network or network type alias with a single entry used for private communications between this server and client hosts expressed using CIDR notation (e.g. fe80::/64). The ::1 address in the network will be assigned to the server virtual interface. The remaining addresses will be assigned to connecting clients.

Redirect IPv4 Gateway

☐ Force all client-generated IPv4 traffic through the tunnel.

Redirect IPv6 Gateway

☐ Force all client-generated IPv6 traffic through the tunnel.

IPv4 Local network(s)

10.1.1.0/24

IPv4 networks that will be accessible from the remote endpoint. Expressed as a comma-separated list of one or more CIDR ranges or host/network type aliases. This may be left blank if not adding a route to the local network through this tunnel on the remote machine. This is generally set to the LAN network.

IPv6 Local network(s)

IPv6 networks that will be accessible from the remote endpoint. Expressed as a comma-separated list of one or more IP/PREFIX or host/network type aliases. This may be left blank if not adding a route to the local network through this tunnel on the remote machine. This is generally set to the LAN network.

Concurrent connections

10

Specify the maximum number of clients allowed to concurrently connect to this server.

Allow Compression

Refuse any non-stub compression (Most secure)

Allow compression to be used with this VPN instance.
Compression can potentially increase throughput but may allow an attacker to extract secrets if they can control compressed plaintext traversing the VPN (e.g. HTTP). Before enabling compression, consult information about the VORACLE, CRIME, TIME, and BREACH attacks against TLS to decide if the use case for this specific VPN is vulnerable to attack.

Asymmetric compression allows an easier transition when connecting with older peers.

Push Compression

☐ Push the selected Compression setting to connecting clients.

Type-of-Service

☐ Set the TOS IP header value of tunnel packets to match the encapsulated packet value.

Inter-client communication	☐ Allow communication between clients connected to this server
Duplicate Connection	☐ Allow multiple concurrent connections from the same user When set, the same user may connect multiple times. When unset, a new connection from a user will disconnect the previous session. Users are identified by their username or certificate properties, depending on the VPN configuration. This practice is discouraged security reasons, but may be necessary in some environments.

Client Settings

Dynamic IP	☑ Allow connected clients to retain their connections if their IP address changes.
Topology	net30 -- Isolated /30 network per client Specifies the method used to supply a virtual adapter IP address to clients when using TUN mode on IPv4. Some clients may require this be set to "subnet" even for IPv6, such as OpenVPN Connect (iOS/Android). Older versions of OpenVPN (before 2.0.9) or clients such as Yealink phones may require "net30".

Ping settings

Inactive	300 Causes OpenVPN to close a client connection after n seconds of inactivity on the TUN/TAP device. Activity is based on the last incoming or outgoing tunnel packet. A value of 0 disables this feature. This option is ignored in Peer-to-Peer Shared Key mode and in SSL/TLS mode with a blank or /30 tunnel network as it will cause the server to exit and not restart.
Ping method	keepalive -- Use keepalive helper to define ping configuration keepalive helper uses interval and timeout parameters to define ping and ping-restart values as follows: ping = interval ping-restart = timeout*2 push ping = interval push ping-restart = timeout

Interval	10
Timeout	60

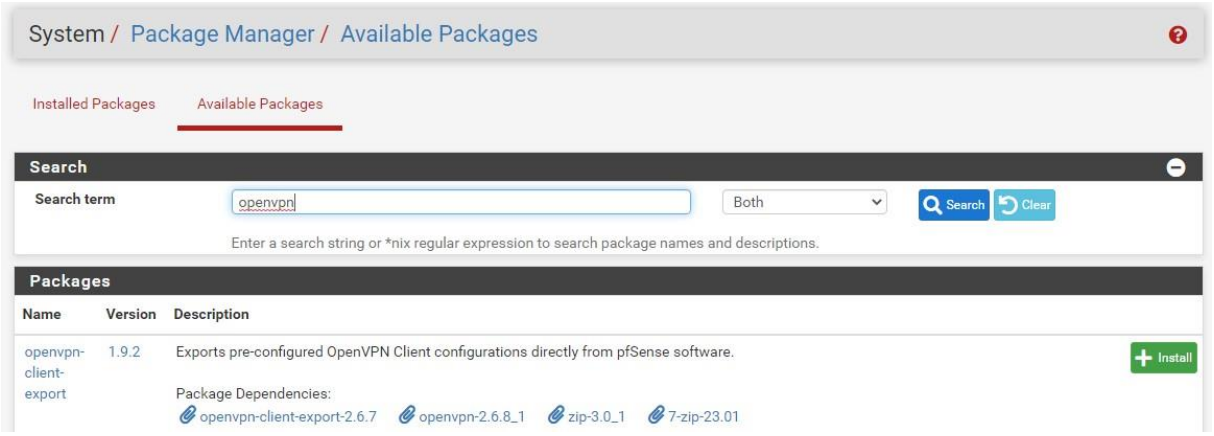
Advanced Client Settings

DNS Default Domain	☑ Provide a default domain name to clients
DNS Default Domain	learn.local
DNS Server enable	☑ Provide a DNS server list to clients. Addresses may be IPv4 or IPv6.
DNS Server 1	10.1.1.1
DNS Server 2	
DNS Server 3	
DNS Server 4	
Block Outside DNS	☐ Make Windows 10 Clients Block access to DNS servers except across OpenVPN while connected, forcing clients to use only VPN DNS servers. Requires Windows 10 and OpenVPN 2.3.9 or later. Only Windows 10 is prone to DNS leakage in this way, other clients will ignore the option as they are not affected.
Force DNS cache update	☐ Run "net stop dnscache", "net start dnscache", "ipconfig /flushdns" and "ipconfig /registerdns" on connection initiation. This is known to kick Windows into recognizing pushed DNS servers.
NTP Server enable	☐ Provide an NTP server list to clients
NetBIOS enable	☐ Enable NetBIOS over TCP/IP If this option is not set, all NetBIOS-over-TCP/IP options (including WINS) will be disabled.

Advanced Configuration

Custom options	Enter any additional options to add to the OpenVPN server configuration here, separated by semicolon. EXAMPLE: push "route 10.0.0.0 255.255.255.0"
Username as Common Name	☐ Use the authenticated client username instead of the certificate common name (CN). When a user authenticates, if this option is enabled then the username of the client will be used in place of the certificate common name for purposes such as determining Client Specific Overrides.
UDP Fast I/O	☐ Use fast I/O operations with UDP writes to tun/tap. Experimental. Optimizes the packet write event loop, improving CPU efficiency by 5% to 10%. Not compatible with all platforms, and not compatible with OpenVPN bandwidth limiting.
Exit Notify	Reconnect to this server / Retry once Send an explicit exit notification to connected clients/peers when restarting or shutting down, so they may immediately disconnect rather than waiting for a timeout. In SSL/TLS Server modes, clients may be directed to reconnect or use the next server. This option is ignored in Peer-to-Peer Shared Key mode and in SSL/TLS mode with a blank or /30 tunnel network as it will cause the server to exit and not restart.
Send/Receive Buffer	Default Configure a Send and Receive Buffer size for OpenVPN. The default buffer size can be too small in many cases, depending on hardware and network uplink speeds. Finding the best buffer size can take some experimentation. To test the best value for a site, start at 512KiB and test higher and lower values.
Gateway creation	◉ Both ○ IPv4 only ○ IPv6 only If you assign a virtual interface to this OpenVPN server, this setting controls which gateway types will be created. The default setting is 'both'.
Verbosity level	default Each level shows all info from the previous levels. Level 3 is recommended for a good summary of what's happening without being swamped by output. None: Only fatal errors Default through 4: Normal usage range 5: Output R and W characters to the console for each packet read and write. Uppercase is used for TCP/UDP packets and lowercase is used for TUN/TAP packets. 6-11: Debug info range

Se rendre à cet emplacement et installer le package openvpn-client-export :



Retourner dans le menu OpenVPN puis aller dans Client Export :

Remplir ces informations puis cliquer sur Save as default :