PFSENSE

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pfSense

1. Overview

This document explains how to enable OpenOTP authentication with Radius Bridge and pfSense. For this recipe, you will need to have WebADM, OpenOTP installed and configured. Please, refer to WebADM Installation Guide and WebADM Administration Guide to do it.

2. WebADM/OpenOTP/Radius Bridge

For this recipe, you will need to have WebADM/OpenOTP installed and configured. Please, refer to WebADM Installation Guide and WebADM Manual to do it. You have also to install our Radius Bridge product on your WebADM server(s).

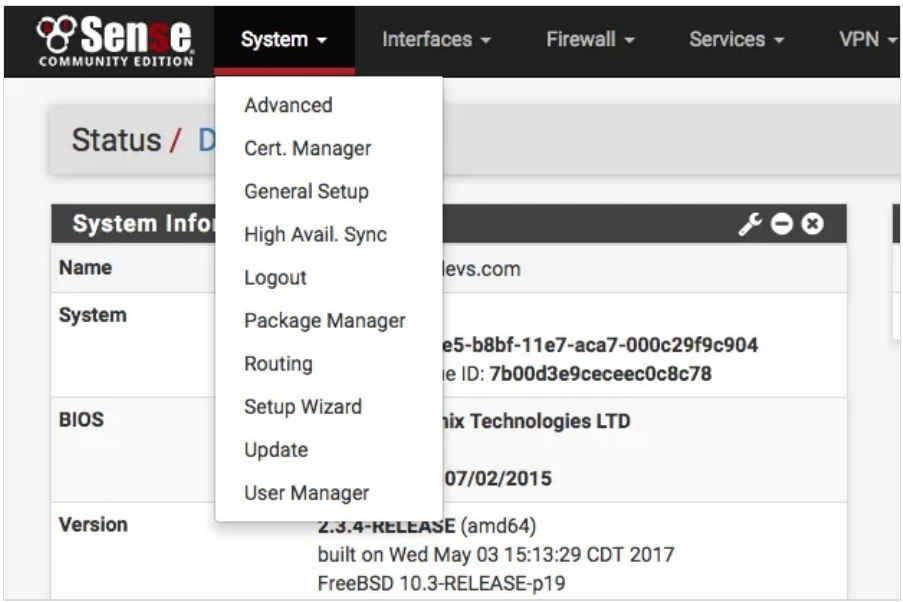
3. Register your pfSense in RadiusBridge

On your OpenOTP RadiusBridge server, edit the `/opt/radiusd/conf/clients.conf` and add a RADIUS client (with IP address and RADIUS secret) for your pfSense VPN server:

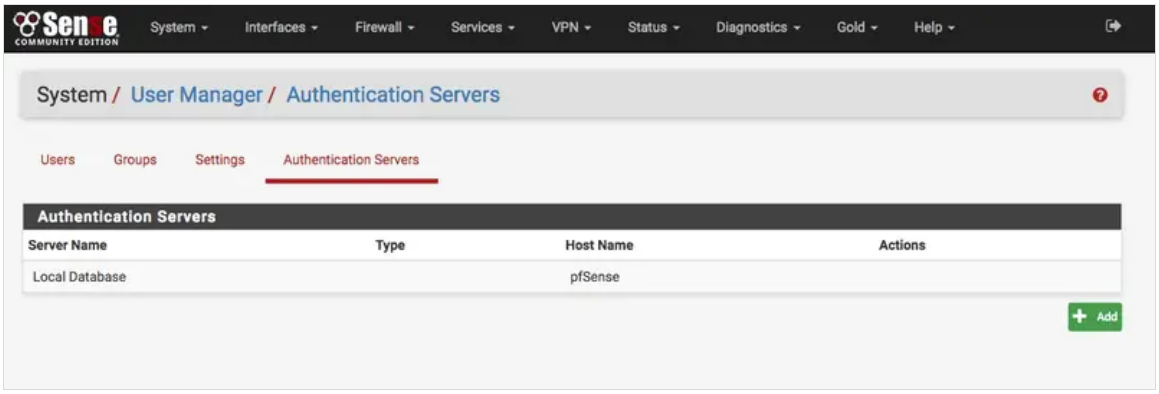
```
client <pfSense Server IP> {
 secret = testing123
 shortname = pfSense
  }
```

4. Configuring New Radius Server on pfSense

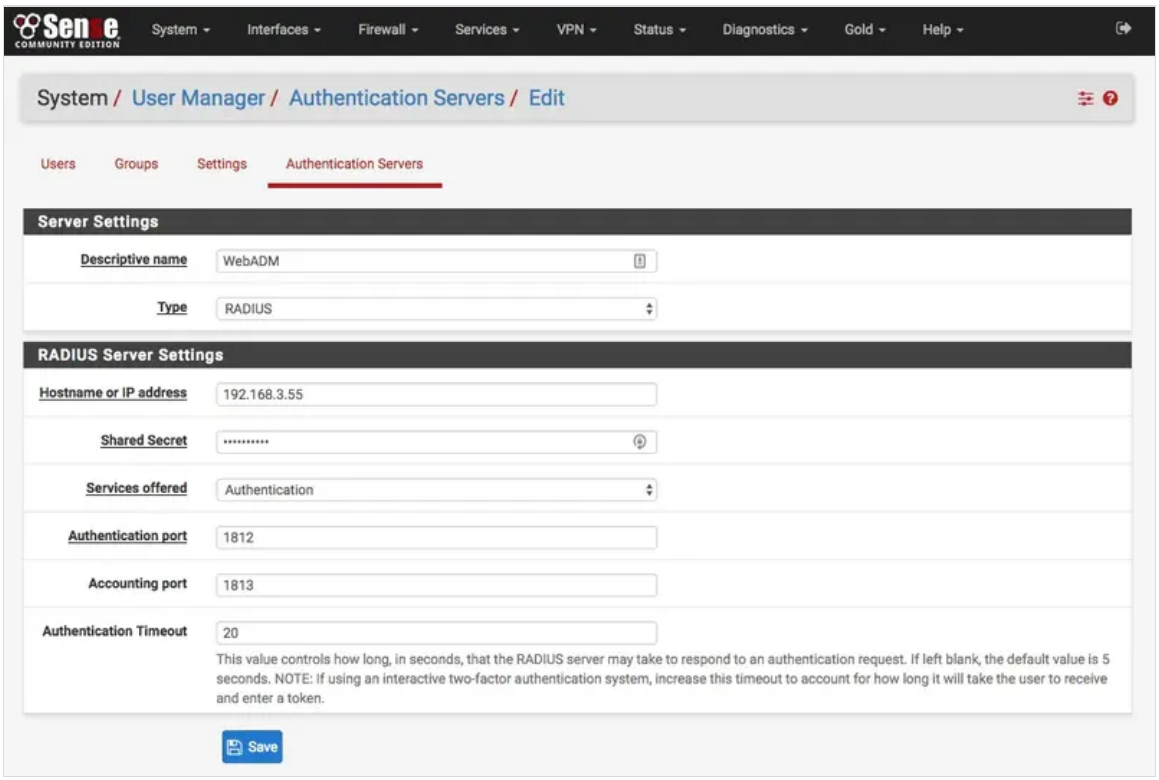
Here, we will configure a new RADIUS Server through the pfSense GUI. Go on the `System` tab and click on `User Manager`.



In the `Authentication Server` tab, click on `Add`:



Configure your WebADM server as a RADIUS server. Shared secret is previously defined in `/opt/radiusd/conf/clients.conf`.



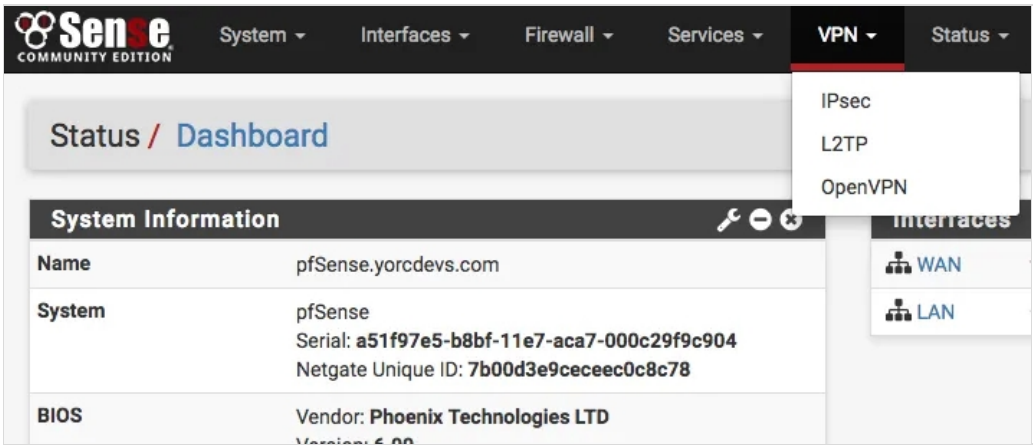
⚠ Note

Set the Authentication Timeout to 20.

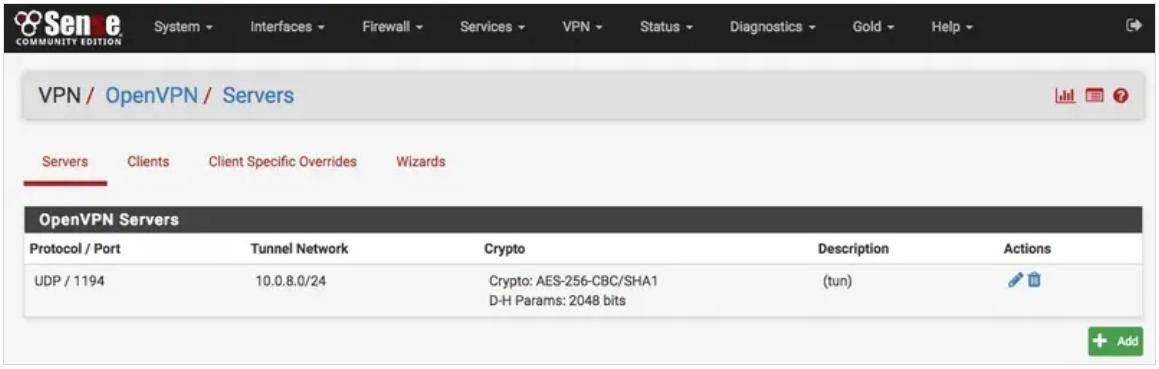
Click on `Save` when the configuration is done.

5. Configuring OpenOTP Authentication for OpenVPN Server on pfSense

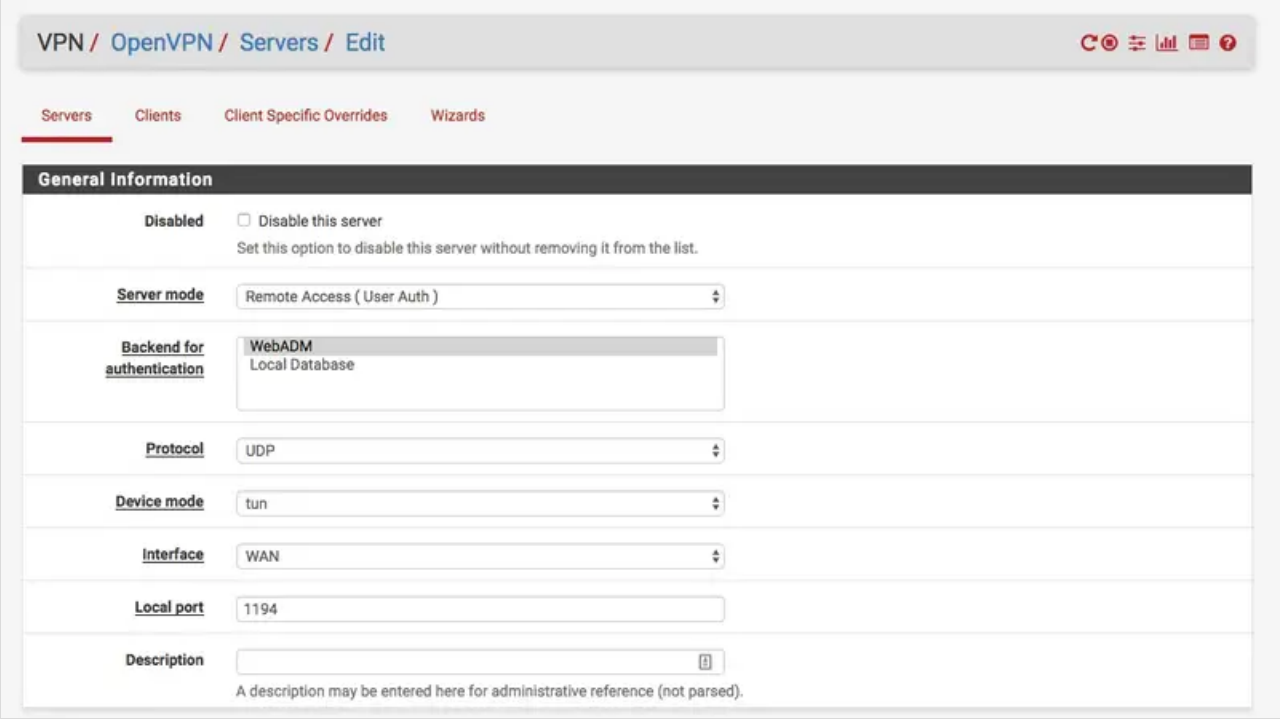
> ⚠ Note
>
> In this how-to, we will not explain how to configure the OpenVPN server. Please refer to OpenVPN or pfSense documentation for this part.



Now on your OpenVPN configuration, click on `Servers` tab and edit your OpenVPN server.



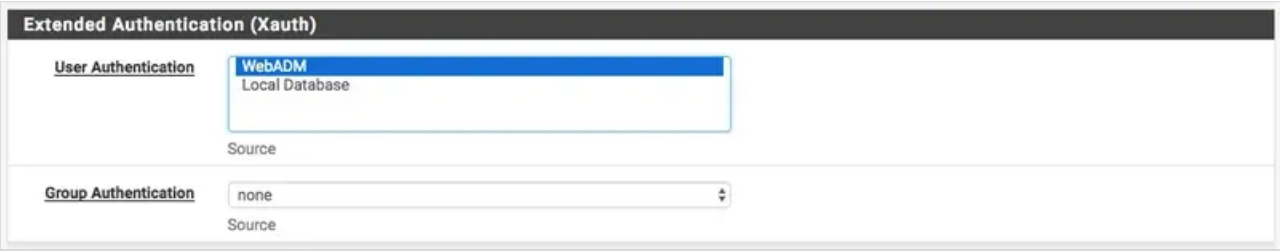
For the Server mode setting, select `Remote Access (User Auth)` and for the backend authentication option, choose your RADIUS Server previously created, in my case ‘WebADM’.



It's done for the authentication part.

5.1 Configuring OpenOTP Authentication for IPsec

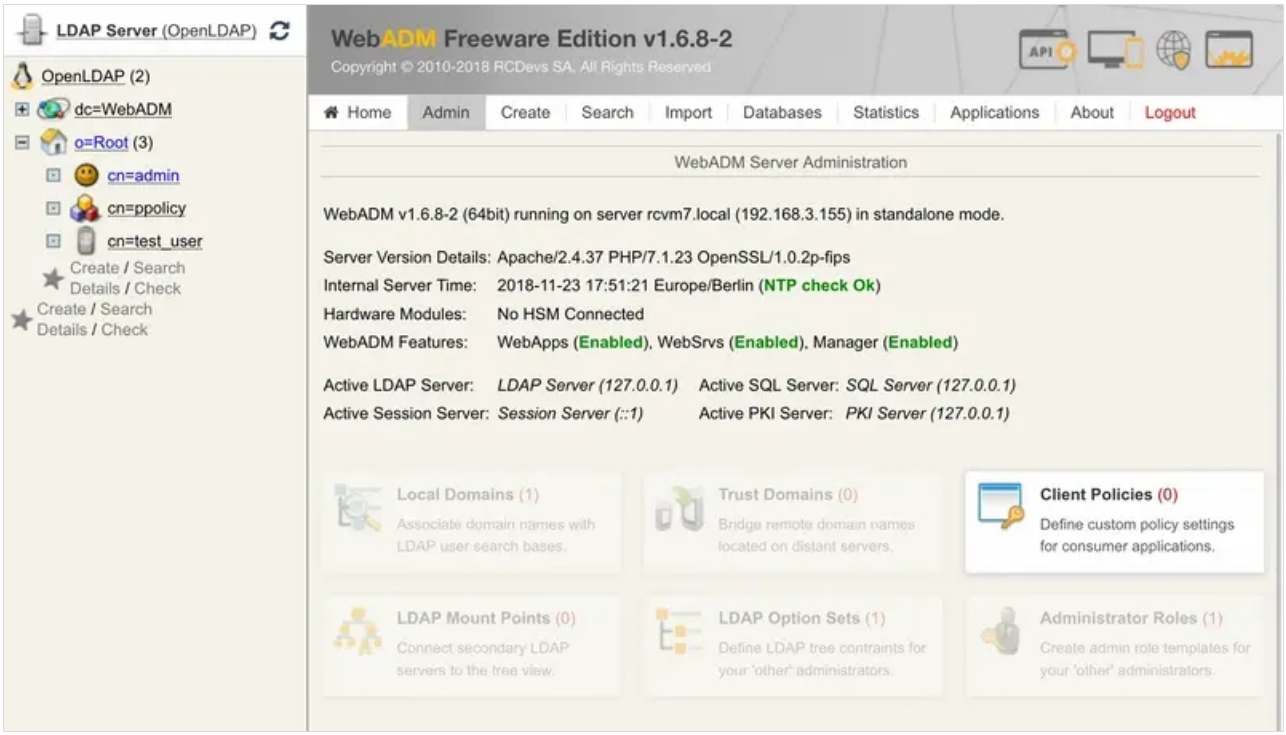
Same procedure as above, you have to select WebADM in the Extended Authentication (Xauth) if you use L2TP and IPsec:



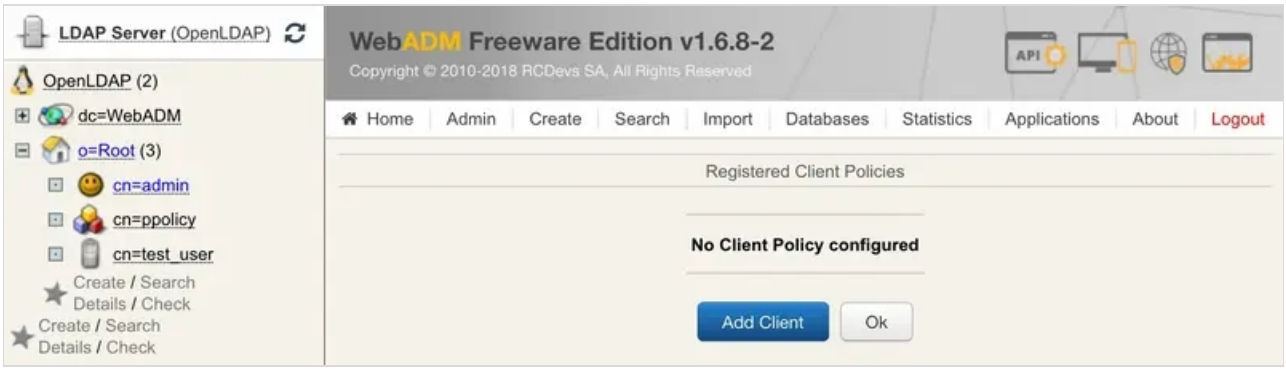
6. Configuring WebADM/OpenOTP Client Policy

> ⚠ Note
>
> OpenVPN doesn't manage the RADIUS challenge authentication. So, we will create a client policy to be able to log in on the OpenVPN server with OpenOTP and the concatenated mode (LDAP password+OTP in the same password field.)

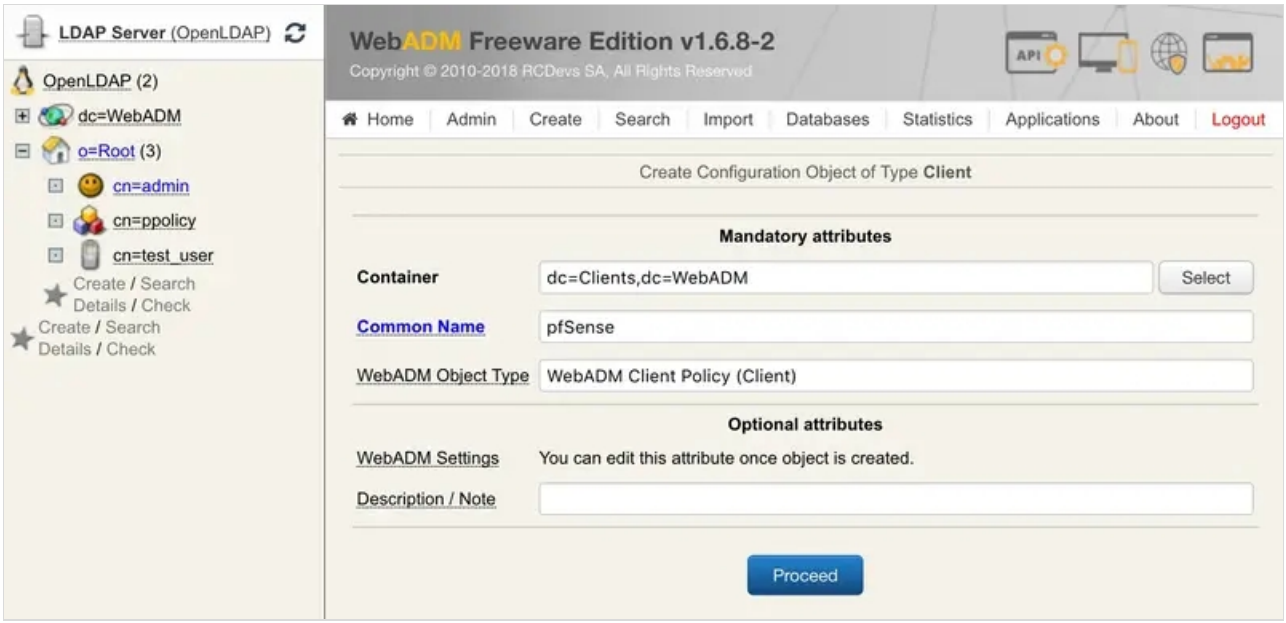
Login on the WebADM GUI, click on `Admin` tab and click on `Client Policies` button.



Click now on `Add Client`.



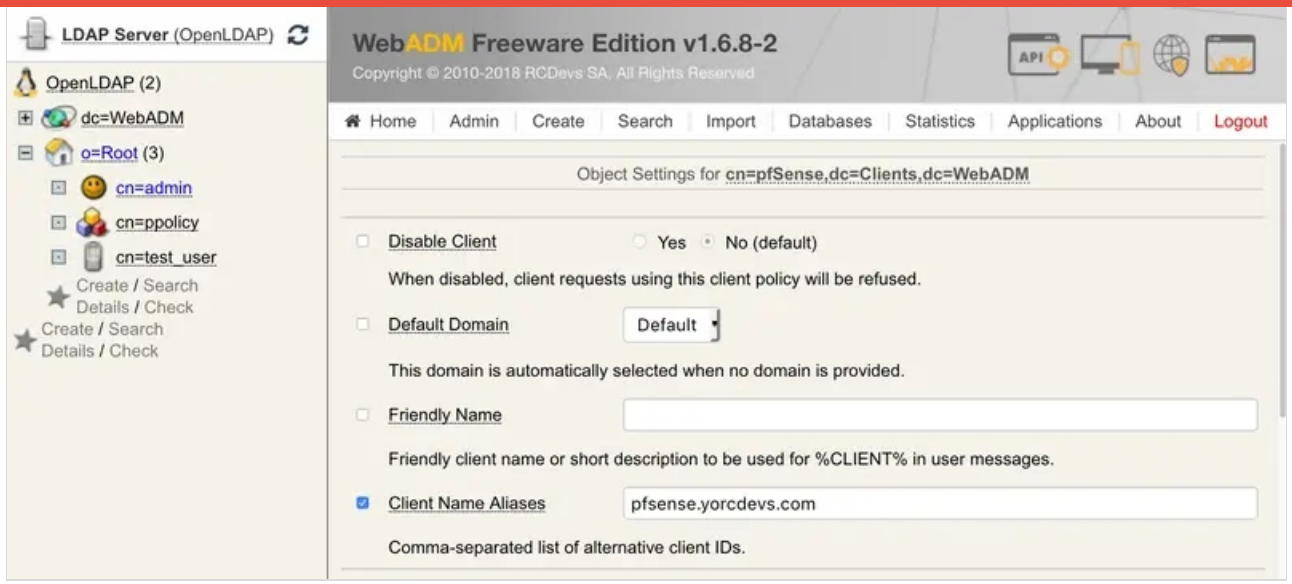
Name your client policy as you prefer, click on `Proceed` button and on `Create Object` button.



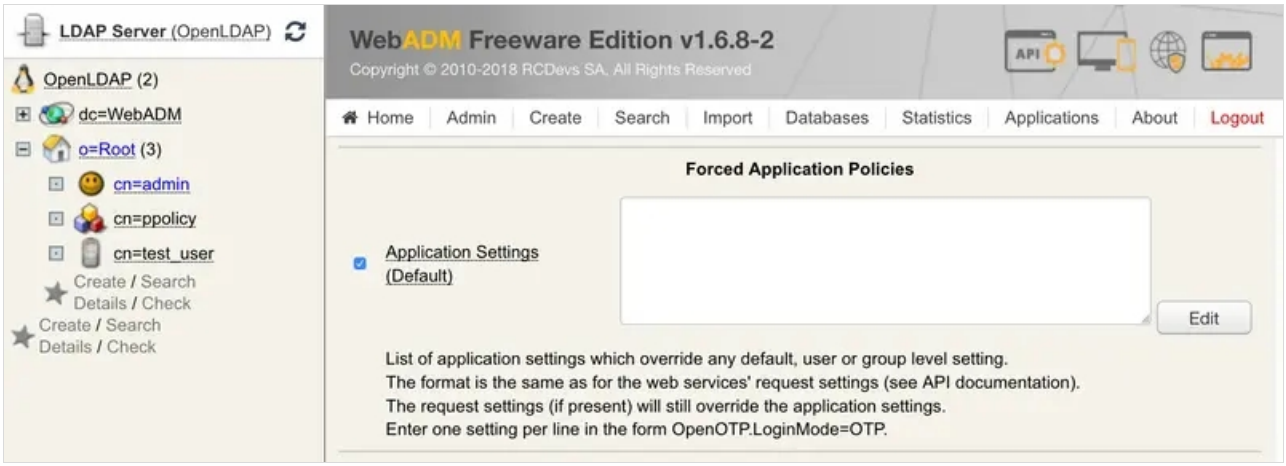
Now you are on the client policy configuration page. Edit the setting `Client Name Aliases` with the name of your pfsense

server. In my case: pfsense.yorcdevs.com

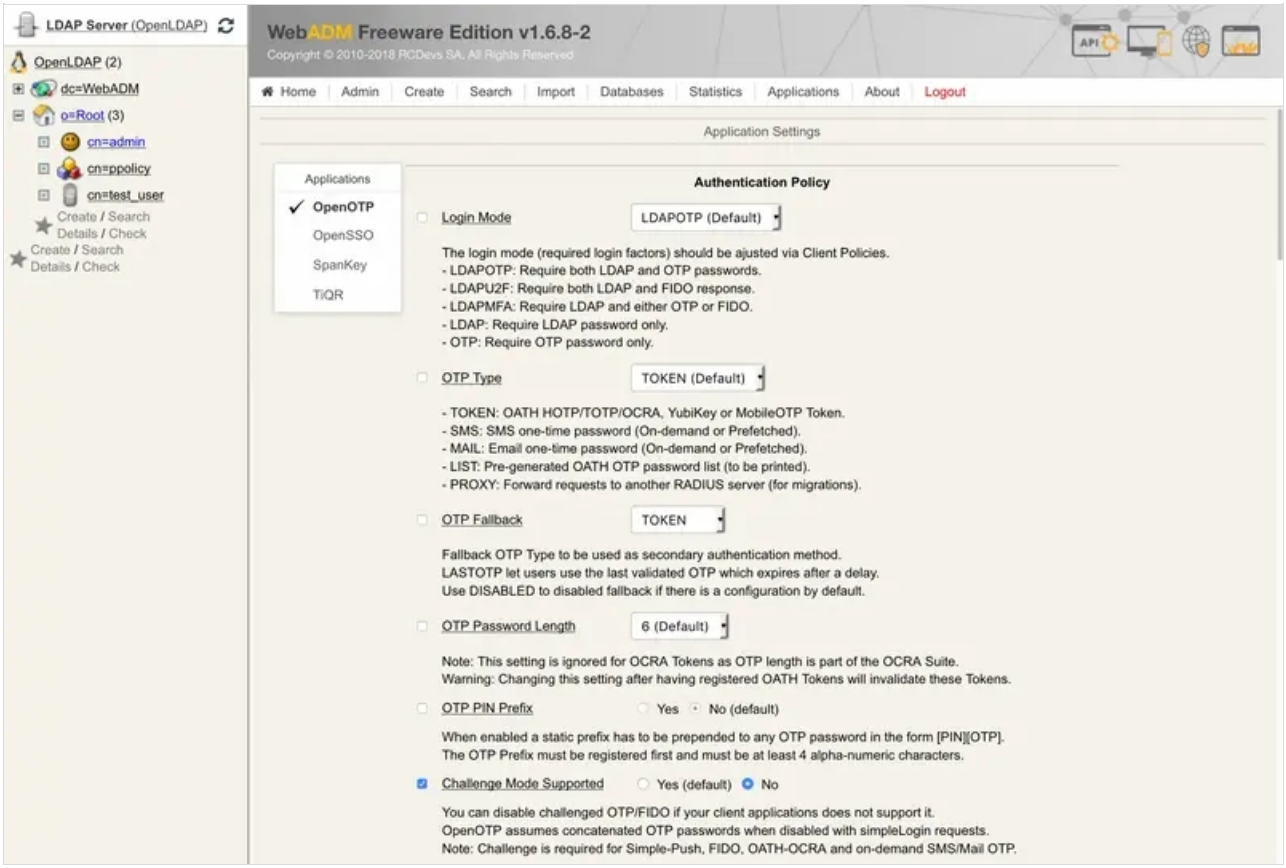
> ⚠ Note
>
> This setting is very important, it will do the matching between the pfsense server and the client policy.



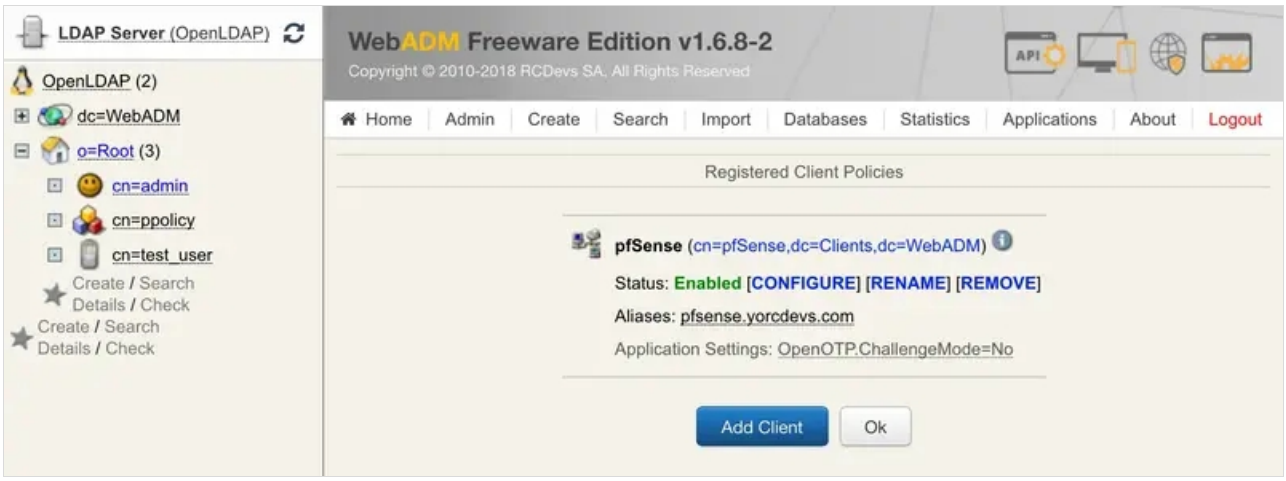
After that, you can scroll down and check the box `Forced Application Policies` and click on `Edit` button:



In the `Applications` box on the top left, click on `OpenOTP` and now, you are able to reconfigure completely the OpenOTP application for pfSense. But here, only one setting interest us who is the `Challenge Mode Supported`. You have to set the setting to `No` because OpenVPN doesn't manage the RADIUS Challenge. Of course, my default configuration of OpenOTP is set for `LDAPOTP` login mode.



You can now click on `Apply`, twice, to save the configuration.



Now you can test the authentication.

7. Authentication Test

> **Note**
>
> Before testing, you should have an Activated User in WebADM/OpenOTP and a Token enrolled on your user account. We will not explain here how to do it, so please refer to the following documentation if required: User Activation and Token enrollment

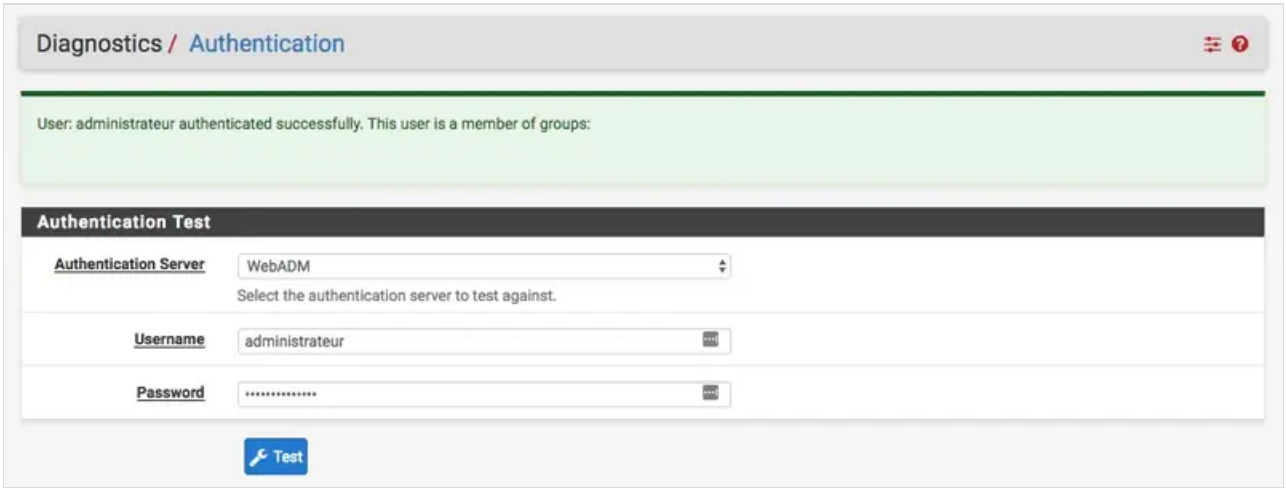
You can test an authentication through your VPN client or through the Authentication Diagnostic tool available on the pfSense GUI.

I will test through the diagnostic tool, so I select my WebADM server as Authentication server.

In the password field, I put my LDAP password and my OTP.

e.g : password123456

Where ‘password’ is my LDAP password and ‘123456’ is my OTP.



And I’m successfully logged.

8. WebADM Logs

We can show in the WebADM logs that the Client policy previously created is called, the challenge mode is disabled and the authentication is a success with an OTP.

```
[2017-10-25 14:52:20] [127.0.0.1] [OpenOTP:8VE13372] New openotpSimpleLogin SOAP request
[2017-10-25 14:52:20] [127.0.0.1] [OpenOTP:8VE13372] > Username: administrateur
[2017-10-25 14:52:20] [127.0.0.1] [OpenOTP:8VE13372] > Password: xxxxxxxxxxxxxx
[2017-10-25 14:52:20] [127.0.0.1] [OpenOTP:8VE13372] > Client ID: pfSense.yorcdevs.com
[2017-10-25 14:52:20] [127.0.0.1] [OpenOTP:8VE13372] > Options: RADIUS,-U2F
[2017-10-25 14:52:20] [127.0.0.1] [OpenOTP:8VE13372] Enforcing client policy: pfSense (matched client
ID)
[2017-10-25 14:52:20] [127.0.0.1] [OpenOTP:8VE13372] Registered openotpSimpleLogin request
[2017-10-25 14:52:20] [127.0.0.1] [OpenOTP:8VE13372] Resolved LDAP user:
CN=Administrateur,CN=Users,DC=yorcdevs,DC=com
[2017-10-25 14:52:20] [127.0.0.1] [OpenOTP:8VE13372] Resolved LDAP groups: propri\xc3\xa9taires
cr\xc3\xa9ateurs de la strat\xc3\xa9gie de groupe,admins du domaine,administrateurs de
l\xe2\x80\x99entreprise,administrateurs du sch\xc3\xa9ma,administrateurs,utilisateurs du bureau
\xc3\xa0 distance,groupe de r\xc3\xa9plication dont le mot de passe rodc est refus\xc3\xa9
[2017-10-25 14:52:20] [127.0.0.1] [OpenOTP:8VE13372] Started transaction lock for user
[2017-10-25 14:52:20] [127.0.0.1] [OpenOTP:8VE13372] Found user language: EN
[2017-10-25 14:52:20] [127.0.0.1] [OpenOTP:8VE13372] Found 1 user mobiles: +33xxxxxxxxx
[2017-10-25 14:52:20] [127.0.0.1] [OpenOTP:8VE13372] Found 1 user emails: support@rcdevs.com
[2017-10-25 14:52:20] [127.0.0.1] [OpenOTP:8VE13372] Found 3 user certificates
[2017-10-25 14:52:20] [127.0.0.1] [OpenOTP:8VE13372] Found 37 user settings:
LoginMode=LDAPOTP,OTPType=TOKEN,OTPLength=6,ChallengeMode=No,ChallengeTimeout=90,PushLogin=
1:HOTP-SHA1-6:QN06-
T1M,SMSType=Normal,SMSMode=Ondemand,MailMode=Ondemand,LastOTPTime=300,ListChallengeMode=

[2017-10-25 14:52:20] [127.0.0.1] [OpenOTP:8VE13372] Found 9 user data:
LoginCount,RejectCount,LastOTP,TokenType,TokenKey,TokenState,Device1Name,Device1Data,Device1State

[2017-10-25 14:52:20] [127.0.0.1] [OpenOTP:8VE13372] Last OTP present (valid until 2017-10-25
14:54:30)
[2017-10-25 14:52:20] [127.0.0.1] [OpenOTP:8VE13372] Challenge mode disabled (assuming
concatenated passwords)
[2017-10-25 14:52:20] [127.0.0.1] [OpenOTP:8VE13372] Found 1 registered OTP token (TOTP)
[2017-10-25 14:52:20] [127.0.0.1] [OpenOTP:8VE13372] Requested login factors: LDAP & OTP
[2017-10-25 14:52:20] [127.0.0.1] [OpenOTP:8VE13372] LDAP password Ok
[2017-10-25 14:52:20] [127.0.0.1] [OpenOTP:8VE13372] TOTP password Ok (token #1)
[2017-10-25 14:52:20] [127.0.0.1] [OpenOTP:8VE13372] Updated user data
[2017-10-25 14:52:20] [127.0.0.1] [OpenOTP:8VE13372] Sent success response
```