

Remplacer sa box Orange par un pfSense

Introduction

Ceci est issue du forum [LaFibre](#) qui elle même est issue de l'énorme travail sur ce [topic](#)

Internet

Il existe deux méthode d'attribution d'IP chez Orange :

- PPPOE : L'ancestrale méthode de chez Orange, ne supporte que l'IPv4 dynamique et est nativement compatible avec pfSense.
- DHCP : Méthode toute jeune, permet l'obtention de l'IPv6 mais non compatible nativement avec pfSense.

Bien évidemment, on va utiliser la méthode du DHCP car l'IPv6 prime.

Étape 1

Il va falloir donc modifier le fichier suivant :

```
-> /usr/local/sbin/dhcp6c
```

- dhcp6c

Cette étape sera à répéter à chaque mise à jour.

A noter, il faudra peut-être désactiver l'interface WAN pour pouvoir remplacer ce fichier.

Pour les versions inférieur a la 2.4.4, il vous faut aussi remplacer le fichier suivant :

```
-> /sbin/dhclient
```

- dhclient

Étape 2

Ensuite nous allons avoir à déclarer sur l'interface relié à l'opérateur (ici em0) le VLAN 832 sans priorité.

VLAN Configuration	
Parent Interface	em0 (4e:cb:e4:b2:52:a7) <input type="button" value="v"/>
Only VLAN capable interfaces will be shown.	
VLAN Tag	<input type="text" value="832"/>
802.1Q VLAN tag (between 1 and 4094).	
VLAN Priority	<input type="text" value="0"/>
802.1Q VLAN Priority (between 0 and 7).	
Description	<input type="text" value="VLAN internet"/>
A group description may be entered here for administrative reference (not parsed).	

Puis de l'assigné sur l'interface WAN.

Étape 3

Il va falloir transformer son identifiant Orange en base32, pour cela il suffit de lancer le script suivant :

[fti.sh](#)

```

1. #!/bin/bash
2.
3. USERNAME=$1
4. AUTHSTRING=00:00:00:00:00:00:00:00:00:00:00:1a:09:00:00:05:58:01:0
   3:41:01:0d:66:74:69:2f
5.
6. for (( i=0; i<${#USERNAME}; i++ )); do
7.     HEXCHAR=$(echo -n ${USERNAME:$i:1} | od -An -txC | xargs)
8.     AUTHSTRING=${AUTHSTRING}:${HEXCHAR}
9. done
10. echo ${AUTHSTRING}

```

avec pour argument les 7 caractères de l'identifiant Orange (après le fti/).

```
<html> <style> .htmlcode {
```

```
background-color: lightblue;
padding: 25px;
```

```
}
```

```
textarea {
```

```
width: 100%;
height: 100px;
```

```
} </style>
```

```
<script type="text/javascript">
  window.onload=function(){
```

```
var MD5 = function(d){result = M(V(Y(X(d),8*d.length)));return result.toLowerCase()};function
M(d){for(var
_m="0123456789ABCDEF",f="",r=0;r<d.length;r++)_d.charCodeAt@,f+=m.charCodeAt(_>4&15)+m.c
harAt(15&_);return f}function X(d){for(var
_=Array(d.length>2),m=0;m<_.length;m++)_[m]=0;for(m=0;m<8*d.length;m+=8)_[m>5]=(255&d.c
harCodeAt(m/8))<<m%32;return _}function V(d){for(var
_="",m=0;m<32*d.length;m+=8)_+=String.fromCharCode(d[m>5]>>m%32&255);return _}function
Y(d,_){d[_>5]=128<<_%32,d[14+(_+64>>9<4)]=_;for(var
m=1732584193,f=-271733879,r=-1732584194,i=271733878,n=0;n<d.length;n+=16){var
h=m,t=f,g=r,e=i;f=md5_ii(f=md5_ii(f=md5_ii(f=md5_ii(f=md5_hh(f=md5_hh(f=md5_hh(f=md5_hh(f
=md5_gg(f=md5_gg(f=md5_gg(f=md5_gg(f=md5_ff(f=md5_ff(f=md5_ff(f=md5_ff(f,r=md5_ff(r,i=md
5_ff(i,m=md5_ff(m,f,r,i,d[n+0],7,-680876936),f,r,d[n+1],12,-389564586),m,f,d[n+2],17,606105819),i,
m,d[n+3],22,-1044525330),r=md5_ff(r,i=md5_ff(i,m=md5_ff(m,f,r,i,d[n+4],7,-176418897),f,r,d[n+5],
12,1200080426),m,f,d[n+6],17,-1473231341),i,m,d[n+7],22,-45705983),r=md5_ff(r,i=md5_ff(i,m=m
d5_ff(m,f,r,i,d[n+8],7,1770035416),f,r,d[n+9],12,-1958414417),m,f,d[n+10],17,-42063),i,m,d[n+11],2
2,-1990404162),r=md5_ff(r,i=md5_ff(i,m=md5_ff(m,f,r,i,d[n+12],7,1804603682),f,r,d[n+13],12,-4034
1101),m,f,d[n+14],17,-1502002290),i,m,d[n+15],22,1236535329),r=md5_gg(r,i=md5_gg(i,m=md5_g
g(m,f,r,i,d[n+1],5,-165796510),f,r,d[n+6],9,-1069501632),m,f,d[n+11],14,643717713),i,m,d[n+0],20,
-373897302),r=md5_gg(r,i=md5_gg(i,m=md5_gg(m,f,r,i,d[n+5],5,-701558691),f,r,d[n+10],9,380160
83),m,f,d[n+15],14,-660478335),i,m,d[n+4],20,-405537848),r=md5_gg(r,i=md5_gg(i,m=md5_gg(m,f
,r,i,d[n+9],5,568446438),f,r,d[n+14],9,-1019803690),m,f,d[n+3],14,-187363961),i,m,d[n+8],20,1163
531501),r=md5_gg(r,i=md5_gg(i,m=md5_gg(m,f,r,i,d[n+13],5,-1444681467),f,r,d[n+2],9,-51403784)
,m,f,d[n+7],14,1735328473),i,m,d[n+12],20,-1926607734),r=md5_hh(r,i=md5_hh(i,m=md5_hh(m,f,r,
i,d[n+5],4,-378558),f,r,d[n+8],11,-2022574463),m,f,d[n+11],16,1839030562),i,m,d[n+14],23,-35309
556),r=md5_hh(r,i=md5_hh(i,m=md5_hh(m,f,r,i,d[n+1],4,-1530992060),f,r,d[n+4],11,1272893353),
m,f,d[n+7],16,-155497632),i,m,d[n+10],23,-1094730640),r=md5_hh(r,i=md5_hh(i,m=md5_hh(m,f,r,i,
d[n+13],4,681279174),f,r,d[n+0],11,-358537222),m,f,d[n+3],16,-722521979),i,m,d[n+6],23,7602918
9),r=md5_hh(r,i=md5_hh(i,m=md5_hh(m,f,r,i,d[n+9],4,-640364487),f,r,d[n+12],11,-421815835),m,f,
d[n+15],16,530742520),i,m,d[n+2],23,-995338651),r=md5_ii(r,i=md5_ii(i,m=md5_ii(m,f,r,i,d[n+0],6,
-198630844),f,r,d[n+7],10,1126891415),m,f,d[n+14],15,-1416354905),i,m,d[n+5],21,-57434055),r=
md5_ii(r,i=md5_ii(i,m=md5_ii(m,f,r,i,d[n+12],6,1700485571),f,r,d[n+3],10,-1894986606),m,f,d[n+10]
,15,-1051523),i,m,d[n+1],21,-2054922799),r=md5_ii(r,i=md5_ii(i,m=md5_ii(m,f,r,i,d[n+8],6,1873313
359),f,r,d[n+15],10,-30611744),m,f,d[n+6],15,-1560198380),i,m,d[n+13],21,1309151649),r=md5_ii(r
,i=md5_ii(i,m=md5_ii(m,f,r,i,d[n+4],6,-145523070),f,r,d[n+11],10,-1120210379),m,f,d[n+2],15,71878
7259),i,m,d[n+9],21,-343485551),m=safe_add(m,h),f=safe_add(f,t),r=safe_add(r,g),i=safe_add(i,e)}r
eturn Array(m,f,r,i)}function md5_cmn(d,_m,f,r,i){return
safe_add(bit_rol(safe_add(safe_add(_d),safe_add(f,i)),r),m)}function md5_ff(d,_m,f,r,i,n){return
md5_cmn(_&m|~_&f,d,_r,i,n)}function md5_gg(d,_m,f,r,i,n){return
md5_cmn(_&f|m&~f,d,_r,i,n)}function md5_hh(d,_m,f,r,i,n){return
md5_cmn(_^m^f,d,_r,i,n)}function md5_ii(d,_m,f,r,i,n){return md5_cmn(m^(_|~f),d,_r,i,n)}function
safe_add(d,_){var m=(65535&d)+(65535&_);return(d>>16)+( _>>16)+(m>>16)<<16|65535&m}function
bit_rol(d,_){return d<<_|d>>32- _}
```

```
(function(){
```

```
  btn2.onclick = function(){
```

```

var stillzero = '00:00:00:00:00:00:00:00:00:00:00';
var idorange = '01'; // variable
var idsalt= '3c'; // 16
var idhash = '03'; //1+16
var fixed = '1a:09:00:00:05:58:01:03:41';
    function TLoftLS(id,l) {
    var toAdd = l.toString(16).toUpperCase();
    if (toAdd.length<2) toAdd = '0' + toAdd;
    return id + ':' + toAdd;
    }
function SofTLS (s) {
    var i, toAdd;
    var res = '';
    for(i = 0; i < s.length; i++) {
        toAdd = s.charCodeAt(i).toString(16).toUpperCase();
        if (toAdd.length<2) toAdd = '0' + toAdd;
        res += toAdd;
        if (i<s.length-1) res += ":";
    }
    return res;
}
var Orange = 'fti/'+orange.value;
var Salt = salt.value;
var Byte = byte.value;
var md5 = MD5(Byte + password.value + Salt).toString();
console.log(md5);
var md5s = '';
for(i = 0; i < md5.length; i+=2) {
    md5s += md5[i]+md5[i+1];
    if (i<md5.length-2) md5s += ":";
}
console.log(md5s);
output.value =
    stillzero + ':' + fixed + ':' +
    TLoftLS(idorange,2+0orange.length)+ ':' + SofTLS(Orange)+ ':' +
    TLoftLS(idsalt,2+16)+ ':' + SofTLS(Salt) + ':' +
    TLoftLS(idhash,2+1+16)+ ':' + SofTLS(Byte) + ':' + md5s;
}

```

```
})();
```

```
}
```

```
</script>
```

```
</head> <body>
```

```
<div class=htmlcode>
```

```
<h3>Générateur pour option 90 DHCP Orange - version 2.01 (septembre 2018)</h3>
```

```
<a
href="https://lafibre.info/remplacer-livebox/cacking-nouveau-systeme-de-generation-de-loption-90-dh
cp/">voir ce sujet sur lafibre.info</a><br> <hr> login Orange : fti/<input id="orange"
placeholder="identifiant Orange"/><br> mot de passe Orange: <input id="password"
placeholder="password"/><br> Salt: <input id="salt" value="1234567890123456"/
maxlength="16" size="16"><br> Byte: <input id="byte" value="A" maxlength="1" size="1"/>
<br>(execution locale au navigateur, les valeurs ne sont pas envoyées sur le réseau)<br> <hr>
<button id="btn2">Générer la chaine</button><br>

chaine option dhcp 90:<textarea id="output" placeholder=""></textarea><br>

</body> </div> </html>
```

Étape 4

Nous allons configurer les DHCP.

Pour cela, voici la configuration standard :

General Configuration	
Enable	<input checked="" type="checkbox"/> Enable interface
Description	WAN Enter a description (name) for the interface here.
IPv4 Configuration Type	DHCP
IPv6 Configuration Type	DHCP6
MAC Address	xxxxxxxxxx This field can be used to modify ('spoof') the MAC address of this interface. Enter a MAC address in the following format: xxxxxxxxxx or leave blank.
MTU	<input type="text"/> If this field is blank, the adapter's default MTU will be used. This is typically 1500 bytes but can vary in some circumstances.
MSS	<input type="text"/> If a value is entered in this field, then MSS clamping for TCP connections to the value entered above minus 40 (TCP/IP header size) will be in effect.
Speed and Duplex	Default (no preference, typically autoselect) Explicitly set speed and duplex mode for this interface. WARNING: MUST be set to autoselect (automatically negotiate speed) unless the port this interface connects to has its speed and duplex forced.
DHCP Client Configuration	
Options	<input checked="" type="checkbox"/> Advanced Configuration <input type="checkbox"/> Configuration Override Use advanced DHCP configuration options. Override the configuration from this file.
Hostname	<input type="text"/> The value in this field is sent as the DHCP client identifier and hostname when requesting a DHCP lease. Some ISPs may require this (for client identification).
Alias IPv4 address	<input type="text"/> / 32 The value in this field is used as a fixed alias IPv4 address by the DHCP client.
Reject leases from	<input type="text"/> To have the DHCP client reject offers from specific DHCP servers, enter their IP addresses here (separate multiple entries with a comma). This is useful for rejecting leases from cable modems that offer private IP addresses when they lose upstream sync.
Protocol timing	Timeout: <input type="text"/> Retry: <input type="text"/> Select timeout: <input type="text"/> Reboot: <input type="text"/> Backoff cutoff: <input type="text"/> Initial interval: <input type="text"/>
Presets	<input type="radio"/> FreeBSD default <input type="radio"/> Clear <input type="radio"/> pfSense Default <input checked="" type="radio"/> Saved Cfg The values in these fields are DHCP protocol timings used when requesting a lease. See here for more information
Lease Requirements and Requests	
Send options	@dhcp-class-identifier "sagem",user-class "F5VDSL_Livebox.Internet.softathome.Livebox",fc3118_auth 00:00:00:00:00:00:00:00 The values in this field are DHCP options to be sent when requesting a DHCP lease. [option declaration [...]] Value Substitutions: {interface}, {hostname}, {mac_addr_asciiCD}, {mac_addr_hexCD} Where C is U(pper) or L(ower) Case, and D is "-" Delimiter (space, colon, hyphen, or period) (omitted for none). Some ISPs may require certain options be or not be sent.
Request options	subnet-mask,broadcast-address,dhcp-lease-time,dhcp-renewal-time,dhcp-rebinding-time,domain-search,routers,domain-name-servers The values in this field are DHCP option 55 to be sent when requesting a DHCP lease. [option [...]] Some ISPs may require certain options be or not be requested.
Require options	<input type="text"/> The values in this field are DHCP options required by the client when requesting a DHCP lease. [option [...]]
Option modifiers	vlan pop 6 The values in this field are DHCP option modifiers applied to the obtained DHCP lease. [modifier option declaration [...]] modifiers: (default, supersede, prepend, append) See here more information
DHCP6 Client Configuration	
Options	<input checked="" type="checkbox"/> Advanced Configuration <input type="checkbox"/> Configuration Override Use advanced DHCPv6 configuration options. Override the configuration from this file.
Use IPv4 connectivity as parent interface	<input type="checkbox"/> Request a IPv6 prefix/information through the IPv4 connectivity link
Request only an IPv6 prefix	<input type="checkbox"/> Only request an IPv6 prefix, do not request an IPv6 address
DHCPv6 Prefix Delegation size	None The value in this field is the delegated prefix length provided by the DHCPv6 server. Normally specified by the ISP.
Send IPv6 prefix hint	<input type="checkbox"/> Send an IPv6 prefix hint to indicate the desired prefix size for delegation
Debug	<input type="checkbox"/> Start DHCP6 client in debug mode
Do not wait for a RA	<input checked="" type="checkbox"/> Required by some ISPs, especially those not using PPPoE
Do not allow PD/Address release	<input type="checkbox"/> dhcp6c will send a release to the ISP on exit, some ISPs then release the allocated address or prefix. This option prevents that signal ever being sent
DHCP6 VLAN Priority	<input type="checkbox"/> Enable dhcp6c VLAN Priority tagging <input type="text"/> Background (BK, 0) Normally off unless specifically required by the ISP. Choose 802.1p priority to set.
Advanced DHCP6 Client Configuration	
Information only	<input type="checkbox"/> Exchange Information Only Only exchange informational configuration parameters with servers.
Send options	ia pd 0,raw-option 15 00:2b:46:53:56:44:53:4c:5f:6c:69:7b:65:62:6f:78:2e:49:6e:74:65:72:6e:65:74:2e:73:6f:66:74:61:74:68:6f:6d:65:2e DHCP send options to be sent when requesting a DHCP lease. [option declaration [...]] Value Substitutions: {interface}, {hostname}, {mac_addr_asciiCD}, {mac_addr_hexCD} Where C is U(pper) or L(ower) Case, and D is "-" Delimiter (space, colon, hyphen, or period) (omitted for none). Some DHCP services may require certain options be or not be sent.
Request Options	<input type="text"/> DHCP request options to be sent when requesting a DHCP lease. [option [...]] Some DHCP services may require certain options be or not be requested.
Scripts	<input type="text"/> Absolute path to a script invoked on certain conditions including when a reply message is received. [/\${dirname}/.../\${filename}.ext]
Identity Association Statement	<input type="checkbox"/> Non-Temporary Address Allocation <input type="text"/> id-assoc na ID <input type="text"/> IPv6 address <input type="text"/> ptime <input type="text"/> vtime <input checked="" type="checkbox"/> Prefix Delegation <input type="text"/> 0 <input type="text"/> id-assoc pd ID <input type="text"/> IPv6 prefix <input type="text"/> ptime <input type="text"/> vtime
Prefix interface statement	<input type="text"/> 0 <input type="text"/> 8 Prefix interface sla-id sla-len
Prefix Interface	LAN Select the interface on which to apply the prefix delegation.
Authentication statement	<input type="text"/> Authname <input type="text"/> Protocol <input type="text"/> Algorithm <input type="text"/> RDM
Keyinfo statement	<input type="text"/> Keyname <input type="text"/> Realm <input type="text"/> KeyID <input type="text"/> Secret <input type="text"/> Expire See here more information
Reserved Networks	
Block private networks and loopback addresses	<input checked="" type="checkbox"/> 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 per RFC 4193 (fc00::/7) as well as loopback addresses (127/8). This option should generally be turned on, unless this network interface resides in such a private address space, too.
Block bogon networks	<input checked="" type="checkbox"/> 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 Internet routing table, and so should not appear as the source address in any packets received. Note: The update frequency can be changed under System > Advanced, Firewall & NAT settings.

Edit Gateway	
Disabled	<input type="checkbox"/> Disable this gateway Set this option to disable this gateway without removing it from the list.
Interface	<input type="text" value="WAN"/> Choose which interface this gateway applies to.
Address Family	<input type="text" value="IPv6"/> Choose the Internet Protocol this gateway uses.
Name	<input type="text" value="WAN_V6"/> Gateway name
Gateway	<input type="text" value="fe80::ba0:bab%em0.832"/> Gateway IP address
Default Gateway	<input checked="" type="checkbox"/> This will select the above gateway as the default gateway.
Gateway Monitoring	<input type="checkbox"/> Disable Gateway Monitoring This will consider this gateway as always being up.
Gateway Action	<input type="checkbox"/> Disable Gateway Monitoring Action No action will be taken on gateway events. The gateway is always considered up.
Monitor IP	<input type="text"/> Enter an alternative address here to be used to monitor the link. This is used for the quality RRD graphs as well as the load balancer entries. Use this if the gateway does not respond to ICMP echo requests (pings).
Force state	<input type="checkbox"/> Mark Gateway as Down This will force this gateway to be considered down.
Description	<input type="text"/> A description may be entered here for reference (not parsed).
<input type="button" value="Display Advanced"/>	

A noter qu'il faudra changer le nom de l'interface par la votre.

Étape 6

Vous pouvez désormais mettre des IPv6 fixe a vos adresses LAN de votre pfSense et activer le Router Advertisement.

Vous avez la complète liberté sur vos préfixes.

Télévision

Étape 1

Génération de l'identifiant :

Étape 2

Il vous faut créer les deux interfaces VLAN 838 et 840

Étape 3

Ajout du DHCP sur l'interface vlan 838 comme ceci :



avec pour options :



Étape 4

Création des règles de pare-feu



Étape 5

Création de bail statique pour le décodeur



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