

Remplacer sa box Orange par un pfSense

Introduction

Ceci est issue du forum [LaFibre](#) qui elle celui 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 :

- dhcp6c
- > /usr/local/sbin/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 :

- dhclient
- > /sbin/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) <small>Only VLAN capable interfaces will be shown.</small>
VLAN Tag	832 <small>802.1Q VLAN tag (between 1 and 4094).</small>
VLAN Priority	0 <small>802.1Q VLAN Priority (between 0 and 7).</small>
Description	VLAN internet <small>A group description may be entered here for administrative reference (not parsed).</small>

Puis de l'assigné sur l'interface WAN.

Étape 3

<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(r),f+=m.charAt(_>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(
=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 =
        st11zero + ':' + 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> Rédigé par <b>kgersen</b> via ce <a
href="https://lafibre.info/remplacer-livebox/cacking-nouveau-systeme-de-generation-de-loption-90-dh
cp/">topic 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> RND
Salt: <input id="salt" placeholder="16 ASCII Charts" / maxlength="16" size="16"><br> RND Bytes:
<input id="byte" placeholder="1 ASCII Charts" maxlength="1" size="12"/> <br>(exécution sur le
navigateur, rien ne transit sur le réseau)<br> <hr> <button id="btn2">Générer la
chaîne</button><br>

```

```

$Identifiant :<textarea id="output" placeholder=""></textarea><br>

```

```

</body> </div> </html> Note:

```

La box génère a chaque requête DHCP deux valeurs aléatoire (nommé "RND Salt" et "RND Bytes" dans ce tuto), ce qui veut dire que le rejeu est possible.

Étape 4

Nous allons configurer les DHCP.

Pour cela, voici la configuration standard :

Avec dans le **Send Options IPv4** :

```
dhcp-class-identifiant "sagem",user-class  
"+FSVDSL_livebox.Internet.softathome.Livebox4",option-90 $Identifiant
```

dans le **Request Options IPv4** :

```
subnet-mask,broadcast-address,dhcp-lease-time,dhcp-renewal-time,dhcp-  
rebinding-time,domain-search,routers,domain-name-servers,option-90
```

et dans le **Send Options IPv6** :

```
ia-pd 0, raw-option 15  
00:2b:46:53:56:44:53:4c:5f:6c:69:76:65:62:6f:78:2e:49:6e:74:65:72:6e:65:74:2  
e:73:6f:66:74:61:74:68:6f:6d:65:2e:6c:69:76:65:62:6f:78:33,raw-option 16  
00:00:04:0e:00:05:73:61:67:65:6d,raw-option 6 00:0b:00:11:00:17:00:18,raw-  
option 11 $Identifiant
```

Oubliez pas de remplacer la valeur "\$Identifiant" de l'option 90 en IPv4 et de l'option 11 en IPv6 par celle générée à l'étape 3

Vous devriez recevoir une IPv4 et un /56 IPv6.

Étape 5

Il faudra ajouter la route suivante pour pouvoir profiter de l'IPv6 :

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

Il est recommandé de récupérer l'adresse MAC de votre décodeur TV.

Sinon vous pouvez utilisé celle ci : 5e:ff:56:a2:af:15

Étape 2

Il vous faut créer les deux interfaces VLAN 838 et 840 sur la même interface physique que celle utilisé

pour Internet.

Le VLAN 840 est utilisé pour la télévision en direct alors que le VLAN 838 est utilisé pour la VOD, et tous les services annexes du décodeurs.

Étape 3

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

General Configuration

Enable Enable interface

Description
Enter a description (name) for the interface here.

IPv4 Configuration Type

IPv6 Configuration Type

MAC Address
The MAC address of a VLAN interface must be set on its parent interface

MTU
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
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
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 Advanced Configuration Configuration Override
Use advanced DHCP configuration options. Override the configuration from this file.

Hostname
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 /
The value in this field is used as a fixed alias IPv4 address by the DHCP client.

Reject leases from
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.

DHCP VLAN Priority Enable dhcpclient VLAN Priority tagging
Normally off unless specifically required by the ISP. Choose 802.1p priority to set.

Protocol timing
Timeout Retry Select timeout Reboot Backoff cutoff Initial interval

Presets FreeBSD default Clear pfSense Default 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
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
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
The values in this field are DHCP options required by the client when requesting a DHCP lease. [option [...]]

Option modifiers
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

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 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
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.

avec pour options :

```
dhcp-class-identifier "sagem", user-class "+FSVDSL_livebox.MLTV.softathome.Livebox3", dhcp-client-identifier 01:$MAC_DECODEUR
```

Notez bien le 01 avant la valeur \$MAC_DECODEUR

Étape 4

Il vous faudra attribuer une IP a l'interface VLAN 840 afin de pouvoir lancé le service **icmproxy**

Étape 5

Il vous faudra créer une interface upstream comprenant :

IGMP Proxy Edit

Interface WAN_TV_840

Description wan
A description may be entered here for administrative reference (not parsed).

Type Upstream Interface
The upstream network interface is the outgoing interface which is responsible for communicating to available multicast data sources. There can only be one upstream interface. Downstream network interfaces are the distribution interfaces to the destination networks, where multicast clients can join groups and receive multicast data. One or more downstream interfaces must be configured.

Threshold
Defines the TTL threshold for the network interface. Packets with a lower TTL than the threshold value will be ignored. This setting is optional, and by default the threshold is 1.

Networks	Network/CIDR	Action
193.0.0.0	/ 8	Delete
81.0.0.0	/ 8	Delete
172.0.0.0	/ 8	Delete
80.0.0.0	/ 8	Delete

Add network + Add network

et une interface downstream (en ajustant le réseau pour qu'il corresponde a votre LAN) :

IGMP Proxy Edit

Interface

Description
 A description may be entered here for administrative reference (not parsed).

Type
 The upstream network interface is the outgoing interface which is responsible for communicating to available multicast data sources. There can only be one upstream interface.
 Downstream network interfaces are the distribution interfaces to the destination networks, where multicast clients can join groups and receive multicast data. One or more downstream interfaces must be configured.

Threshold
 Defines the TTL threshold for the network interface. Packets with a lower TTL than the threshold value will be ignored. This setting is optional, and by default the threshold is 1.

Networks /
 Network/CIDR

Add network

ce qui doit donner :

General IGMP Options

Enable Enable IGMP

IGMP Proxy

Name	Type	Values	Description	Actions
WAN_TV_840	upstream	193.0.0.0/8, 81.0.0.0/8, 172.0.0.0/8, 80.0.0.0/8	wan	
LAN	downstream	172.16.20.0/24		

Étape 6

Création des règles de pare-feu



Étape 7

Il vous faudra créer un bail DHCP Statique afin de définir des serveurs DNS spécifique a ce même décodeur :

Static DHCP Mapping on LAN

MAC Address
MAC address (6 hex octets separated by colons)

Client Identifier

IP Address
If an IPv4 address is entered, the address must be outside of the pool.
If no IPv4 address is given, one will be dynamically allocated from the pool.
The same IP address may be assigned to multiple mappings.

Hostname
Name of the host, without domain part.

Description
A description may be entered here for administrative reference (not parsed).

ARP Table Static Entry Create an ARP Table Static Entry for this MAC & IP Address pair.

WINS Servers

DNS Servers

Note: leave blank to use the system default DNS servers - this interface's IP if DNS Forwarder or Resolver is enabled, otherwise the servers configured on the General page.

Étape 8

Redémarrer votre décodeur et enjoy 😎

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