

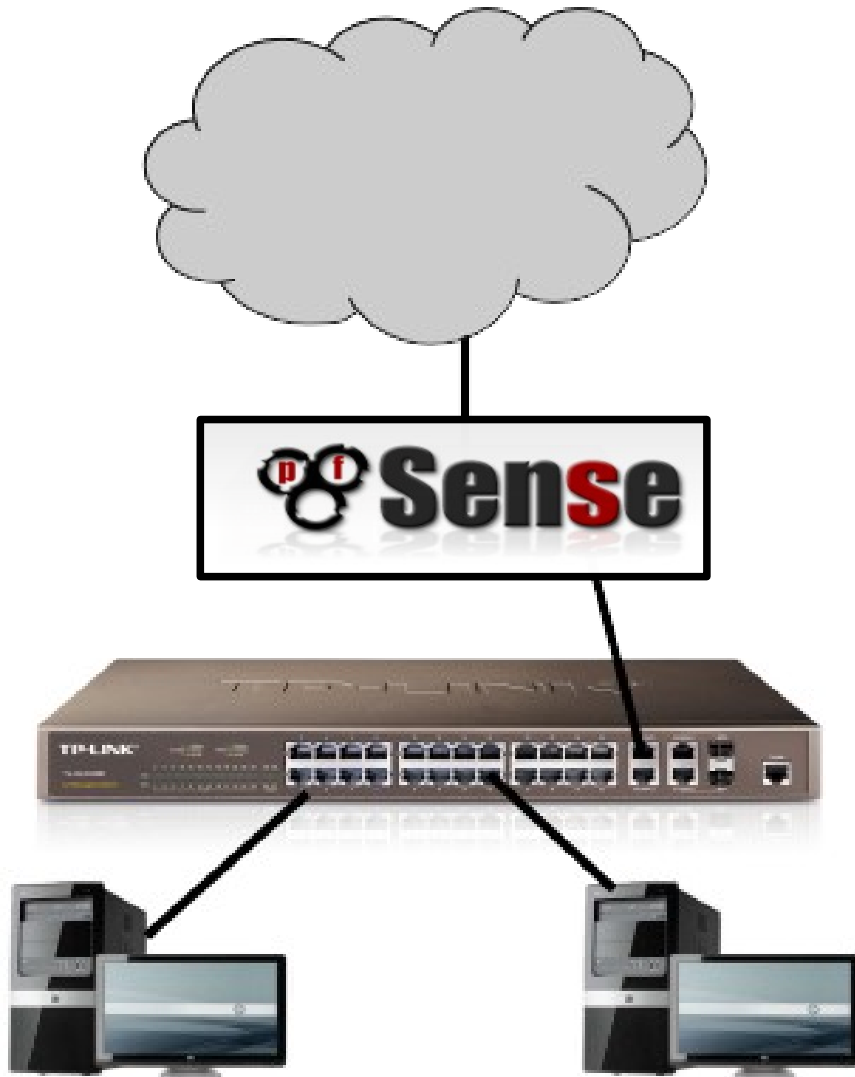
# **Actividade A01: Os firewalls e as regras de filtraxe**

**Tarefa 2: Práctica guiada consistente na instalación e configuración dun network level firewall para cumprir cunha política de tráfico dunha organización.**

Autor: Manuel González Regal

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# Proxecto: Firewall de rede



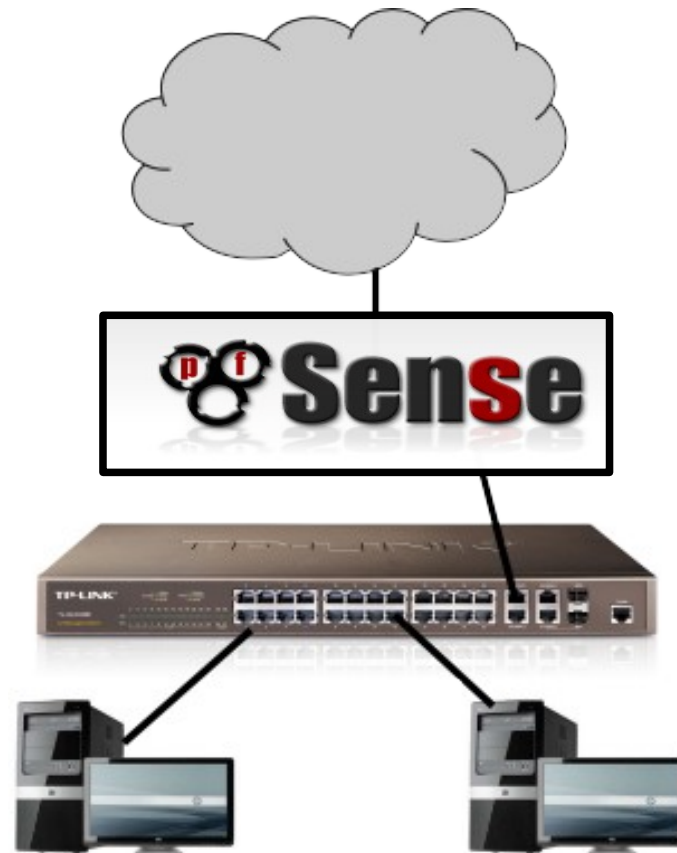
## Obxectivo

Control do tráfico dende/hacia Internet  
cun firewall de rede

## Procedemento

Instalar e configurar pfsense para  
satisfacer a política de tráfico definida

# Proxecto: Firewall de rede



- a. Permitirase a saída a Internet a todos os equipos da organización.
- b. Impedirase que equipos externos (en Internet) accedan á Intranet da organización.
- c. O firewall poderá administrarse únicamente dende equipos da Intranet da organización.

**NOTA ACLARATORIA:** Ó longo da práctica empregaranse uns valores de configuración (direccións IP, DNS e default gw) que seguramente hai que modificalos para que a práctica funcione correctamente no teu laboratorio.

Para definir as características da máquina virtual onde se traballará con pfSense hai que ter en conta o seguinte:

- Baseado en FreeBSD.
- Hardware:

## Minimum Hardware Requirements

The following outlines the minimum hardware requirements for pfSense 1.2.x. Note the minimum requirements are not suitable for all environments, see the Hardware Sizing Guidance page for information.

CPU - 100 MHz Pentium  
RAM - 128 MB

Requirements specific to individual platforms follow.

### Live CD

CD-ROM drive  
USB flash drive or floppy drive to hold configuration file

### Hard drive installation

CD-ROM for initial installation  
1 GB hard drive

### Embedded

512 MB Compact Flash card  
Serial port for console

- S.O. FreeBSD
- Memoria RAM 512 MB
- Disco Duro, de 4 a 8 GB
- Unidade de CD-ROM para facer a instalación
- Dúas tarxetas de rede

# Instalación → virtualbox

The screenshot shows the Oracle VM VirtualBox Administrator interface. On the left, a list of virtual machines is displayed, including Windows 7, Windows XP SP3, windowsCLONE, pfSense, Endian 2.5.1, Debian 6 base, Lubuntu 12.04, Ubuntu 12.04 - LXDE, LXDE-Lab, LXDE-custom, and pfSense-sec2012. The main pane shows the configuration for 'pfSense-sec2012' with the following settings:

- General:** Nombre: pfSense-sec2012, Tipo SO: FreeBSD
- Sistema:** Memoria base: 512 MB, Orden de arranque: Disquete, CD/DVD-ROM, Disco duro
- Pantalla:** Memoria de vídeo: 7 MB, Servidor de escritorio remoto: Inhabilitado
- Almacenamiento:**
- Audio:** Controlador de anfitrión: PulseAudio, Controlador: ICH AC97
- Red:** Adaptador 1: Intel PRO/1000 MT Desktop (Adaptador puente, eth0), Adaptador 2: Intel PRO/1000 MT Desktop (Adaptador puente, eth0)

A blue box highlights the 'Red' section, and a line points from the text 'Unha para a WAN e outra para Intranet' to the two network adapters listed. Below the screenshot, a larger 'Red' section is shown with the following settings:

- Red:** Adaptador 1: Intel PRO/1000 MT Desktop (Adaptador puente, «eth0»), Adaptador 2: Intel PRO/1000 MT Desktop (Adaptador solo anfitrión, «vboxnet0»)

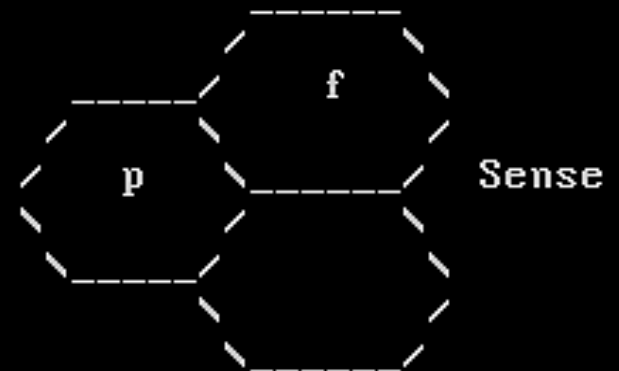
En función da vosa rede e os escenarios que se monten pódese seleccionar os modos de rede que máis os conveña.

# Instalación

Welcome to pfSense!

1. Boot pfSense [default]
2. Boot pfSense with ACPI disabled
3. Boot pfSense using USB device
4. Boot pfSense in Safe Mode
5. Boot pfSense in single user mode
6. Boot pfSense with verbose logging
7. Escape to loader prompt
8. Reboot

Select option, [Enter] for default  
or [Space] to pause timer 6 \_



# Instalación

```
Timecounter "TSC" frequency 3210394662 Hz quality 800
Timecounters tick every 10.000 msec
IPsec: Initialized Security Association Processing.
em0: link state changed to UP
em1: link state changed to UP
usb0: 12Mbps Full Speed USB v1.0
usb1: 480Mbps High Speed USB v2.0
ad0: 4096MB <UBOX HARDDISK 1.0> at ata0-master UDMA33
ugen0.1: <Apple> at usb0
uhub0: <Apple OHCI root HUB, class 9/0, rev 1.00/1.00, addr 1> on usb0
ugen1.1: <Intel> at usb1
uhub1: <Intel EHCI root HUB, class 9/0, rev 2.00/1.00, addr 1> on usb1
acd0: DVDROM <UBOX CD-ROM/1.0> at ata1-master UDMA33
Root mount waiting for: usb1 usb0
uhub0: 8 ports with 8 removable, self powered
Root mount waiting for: usb1
Root mount waiting for: usb1
Root mount waiting for: usb1
uhub1: 8 ports with 8 removable, self powered
Trying to mount root from cd9660:/dev/iso9660/pfsense
Configuring crash dumps...
Mounting filesystems...
md0.uzip: 2498 x 65536 blocks
Generating MFS /var partition
```

# Instalación a disco → I

```

  _ _ _ _ _
 /   \   f
<  p   \   Sense
 \   /   _
  _ _ _ _ _

Welcome to pfSense 2.0.1-RELEASE ...

Mounting unionfs directories...done.
Creating symlinks.....done.
Launching the init system... done.
Initializing..... done.
Starting device manager (devd)...done.

[ Press R to enter recovery mode or ]
[  press I to launch the installer  ]

(R)ecovery mode can assist by rescuing config.xml
from a broken hard disk installation, etc.

(I)nstaller may be invoked now if you do
not wish to boot into the liveCD environment at this time.

(C)ontinues the LiveCD bootup without further pause.

Timeout before auto boot continues (seconds): 6
```

I → lanza o instalador



# Instalación

F10=Refresh Display

## Configure Console

Your selected environment uses the following console settings, shown in parentheses. Select any that you wish to change.

< Change Video Font (default) >

< Change Screenmap (default) >

< Change Keymap (default) >

< Accept these Settings >

## Configure Console

Your selected environment uses the following console settings, shown in parentheses. Select any that you wish to change.

- < Change Video Font (default) >
- < Change Screenmap (default) >
- < **Change Keymap (default)** >
- < Accept these Settings >

## Select Keyboard Map

- < ru.cp866.kbd >
- < ru.iso5.kbd >
- < ru.koi8-r.kbd >
- < ru.koi8-r.shift.kbd >
- < ru.koi8-r.win.kbd >
- < si.iso.kbd >
- < sk.iso2.kbd >
- < spanish.iso.acc.kbd >
- < **spanish.iso.kbd** >
- < spanish.iso15.acc.kbd >
- < swedish.cp850.kbd >
- < swedish.iso.kbd >
- < swissfrench.cp850.kbd >
- < swissfrench.iso.acc.kbd >
- < swissfrench.iso.kbd >
- < swissgerman.cp850.kbd >
- < swissgerman.iso.acc.kbd >
- < swissgerman.iso.kbd >
- < tr.iso9.q.kbd >
- < ua.iso5.kbd >
- < ua.koi8-u.kbd >
- < ua.koi8-u.shift.alt.kbd >
- < uk.cp850-ctrl.kbd >

# Instalación

F10=Refresh Display

## Configure Console

Your selected environment uses the following console settings, shown in parentheses. Select any that you wish to change.

- < Change Video Font (default) >
- < Change Screenmap (default) >
- < Change Keymap (spanish.iso) >
- < Accept these Settings >

Select Task

Choose one of the following tasks to perform.

- < Quick/Easy Install >
- < Custom Install >
- < Rescue config.xml >
- < Reboot >
- < Exit >

Are you SURE?

Easy Install will automatically install without asking any questions.

WARNING: This will erase all contents in your first hard disk! This action is irreversible. Do you really want to continue?

If you wish to have more control on your setup, choose Custom Installation from the Main Menu.

< OK > < Cancel >

# Instalación

F10=Refresh Display

Executing Commands

```
/usr/local/bin/cpdup -vvv -l -o /boot /mnt/boot
```

[

2%

]

< Cancel >

# Instalación

F10=Refresh Display

## Install Kernel(s)

You may now wish to install a custom Kernel configuration.

< Symmetric multiprocessing kernel (more than one processor) >

< Embedded kernel (no vga console, keyboard) >

< Developers kernel (includes GDB, etc) >

Press F1 for Help

**Reboot**

This machine is about to be shut down. After the machine has reached its shutdown state, you may remove the CD from the CD-ROM drive tray and press Enter to reboot from the HDD.

**< Reboot >** < Return to Select Task >

pfSense is now rebooting

After the reboot is complete, open a web browser and enter `https://192.168.1.1` (or the LAN IP Address) in the location bar.

You might need to acknowledge the HTTPS certificate if your browser reports it as untrusted. This is normal as a self-signed certificate is used by default.

\*DEFAULT Username\*: admin

\*DEFAULT Password\*: pfsense

Rebooting in 5 seconds. CTRL-C to abort.

Rebooting in 4 seconds. CTRL-C to abort.

Rebooting in 3 seconds. CTRL-C to abort.

Rebooting in 2 seconds. CTRL-C to abort.

Rebooting in 1 second.. CTRL-C to abort.

pfSense is now rebooting.

En VirtualBoX: Dispositivos → Eliminar disco da unidade

F1 pfSense

F6 PXE

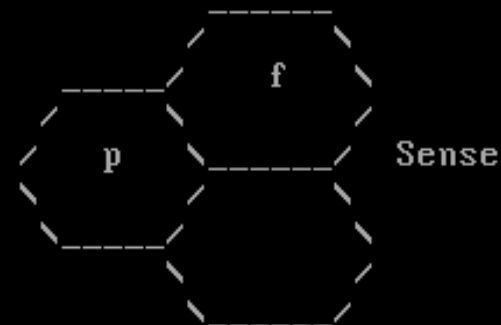
Boot: F1

=

Welcome to pfSense!

1. Boot pfSense [default]
2. Boot pfSense with ACPI disabled
3. Boot pfSense using USB device
4. Boot pfSense in Safe Mode
5. Boot pfSense in single user mode
6. Boot pfSense with verbose logging
7. Escape to loader prompt
8. Reboot

Select option, [Enter] for default  
or [Space] to pause timer 2





# Asignación tarjetas de rede

```
Welcome to pfSense 2.0.1-RELEASE ...

No core dumps found.
Creating symlinks.....done.
External config loader 1.0 is now starting... ad0s1b
Launching the init system... done.
Initializing..... done.
Starting device manager (devd)...done.
Loading configuration.....done.

Network interface mismatch -- Running interface assignment option.

Valid interfaces are:

em0    08:00:27:53:7a:82    (up) Intel(R) PRO/1000 Legacy Network Connection 1.0.3
em1    08:00:27:2a:ec:dc    (up) Intel(R) PRO/1000 Legacy Network Connection 1.0.3

Do you want to set up VLANs first?

If you are not going to use VLANs, or only for optional interfaces, you should
say no here and use the webConfigurator to configure VLANs later, if required.

Do you want to set up VLANs now [y|n]? n
```

# Asignación tarjetas de rede

```
em0  08:00:27:53:7a:82  (up) Intel(R) PRO/1000 Legacy Network Connection 1.0.3
```

```
em1  08:00:27:2a:ec:dc  (up) Intel(R) PRO/1000 Legacy Network Connection 1.0.3
```

Do you want to set up VLANs first?

If you are not going to use VLANs, or only for optional interfaces, you should say no here and use the webConfigurator to configure VLANs later, if required.

Do you want to set up VLANs now [y/n]? n

**\*NOTE\*** pfSense requires **\*AT LEAST\*** 1 assigned interface(s) to function.  
If you do not have **\*AT LEAST\*** 1 interfaces you CANNOT continue.

If you do not have at least 1 **\*REAL\*** network interface card(s)  
or one interface with multiple VLANs then pfSense  
**\*WILL NOT\*** function correctly.

If you do not know the names of your interfaces, you may choose to use auto-detection. In that case, disconnect all interfaces now before hitting 'a' to initiate auto detection.

Enter the WAN interface name or 'a' for auto-detection: em0

# Asignación tarjetas de rede

Do you want to set up VLANs first?

If you are not going to use VLANs, or only for optional interfaces, you should say no here and use the webConfigurator to configure VLANs later, if required.

Do you want to set up VLANs now [y/n]? n

**\*NOTE\*** pfSense requires **\*AT LEAST\*** 1 assigned interface(s) to function.  
If you do not have **\*AT LEAST\*** 1 interfaces you **CANNOT** continue.

If you do not have at least 1 **\*REAL\*** network interface card(s)  
or one interface with multiple VLANs then pfSense  
**\*WILL NOT\*** function correctly.

If you do not know the names of your interfaces, you may choose to use auto-detection. In that case, disconnect all interfaces now before hitting 'a' to initiate auto detection.

Enter the WAN interface name or 'a' for auto-detection: em0

Enter the LAN interface name or 'a' for auto-detection

NOTE: this enables full Firewalling/NAT mode.

(or nothing if finished): em1

# Asignación tarjetas de rede

If you are not going to use VLANs, or only for optional interfaces, you should say no here and use the webConfigurator to configure VLANs later, if required.

Do you want to set up VLANs now [y/n]? n

**\*NOTE\*** pfSense requires **\*AT LEAST\*** 1 assigned interface(s) to function.  
If you do not have **\*AT LEAST\*** 1 interfaces you CANNOT continue.

If you do not have at least 1 **\*REAL\*** network interface card(s)  
or one interface with multiple VLANs then pfSense  
**\*WILL NOT\*** function correctly.

If you do not know the names of your interfaces, you may choose to use auto-detection. In that case, disconnect all interfaces now before hitting 'a' to initiate auto detection.

Enter the WAN interface name or 'a' for auto-detection: em0

Enter the LAN interface name or 'a' for auto-detection

NOTE: this enables full Firewalling/NAT mode.

(or nothing if finished): em1

Enter the Optional 1 interface name or 'a' for auto-detection

(or nothing if finished):

# Asignación tarxetas de rede

If you do not have *\*AT LEAST\** 1 interfaces you CANNOT continue.

If you do not have at least 1 *\*REAL\** network interface card(s) or one interface with multiple VLANs then pfSense *\*WILL NOT\** function correctly.

If you do not know the names of your interfaces, you may choose to use auto-detection. In that case, disconnect all interfaces now before hitting 'a' to initiate auto detection.

Enter the WAN interface name or 'a' for auto-detection: em0

Enter the LAN interface name or 'a' for auto-detection

NOTE: this enables full Firewalling/NAT mode.

(or nothing if finished): em1

Enter the Optional 1 interface name or 'a' for auto-detection

(or nothing if finished):

The interfaces will be assigned as follows:

WAN -> em0

LAN -> em1

Do you want to proceed [y;n]?y

# Asignación tarxetas de rede

```
NOTE: this enables full Firewalling/NAT mode.
```

```
(or nothing if finished): em1
```

```
Enter the Optional 1 interface name or 'a' for auto-detection
```

```
(or nothing if finished):
```

```
The interfaces will be assigned as follows:
```

```
WAN -> em0
```

```
LAN -> em1
```

```
Do you want to proceed [y/n]?y
```

```
Writing configuration...done.
```

```
Updating configuration...done.
```

```
Cleaning backup cache...done.
```

```
Setting up extended sysctls...done.
```

```
Setting timezone...done.
```

```
Starting Secure Shell Services...done.
```

```
Setting up polling defaults...done.
```

```
Setting up interfaces microcode...done.
```

```
Configuring LAGG interfaces...done.
```

```
Configuring VLAN interfaces...done.
```

```
Configuring QinQ interfaces...done.
```

```
Configuring WAN interface...
```

# Asignación tarxetas de rede

```
Starting DHCP service...done.  
Starting DNS forwarder...done.  
Configuring firewall.....done.  
Starting OpenNTP time client...done.  
Generating RRD graphs...done.  
Starting CRON... done.  
Bootup complete
```

```
FreeBSD/i386 (pfSense.localdomain) (ttyv0)
```

```
*** Welcome to pfSense 2.0.1-RELEASE-pfSense (i386) on pfSense ***
```

```
WAN (wan)          -> em0          -> 192.168.1.100 (DHCP)  
LAN (lan)          -> em1          -> 192.168.1.1
```

- |                                   |                                |
|-----------------------------------|--------------------------------|
| 0) Logout (SSH only)              | 8) Shell                       |
| 1) Assign Interfaces              | 9) pfTop                       |
| 2) Set interface(s) IP address    | 10) Filter Logs                |
| 3) Reset webConfigurator password | 11) Restart webConfigurator    |
| 4) Reset to factory defaults      | 12) pfSense Developer Shell    |
| 5) Reboot system                  | 13) Upgrade from console       |
| 6) Halt system                    | 14) Enable Secure Shell (sshd) |
| 7) Ping host                      |                                |

```
Enter an option: █
```

# Asignación tarxetas de rede: PROBLEMAS

A interface WAN configúrase por defecto por DHCP.

No caso de non recibir a configuración por DHCP aparecerán erros e o primeiro arranque da máquina tarda moito máis do normal.

```
Starting DNS forwarder...done.
Configuring firewall.....done.
Generating RRD graphs...done.
Starting CRON... done.
Bootup complete

FreeBSD/i386 (pfSense.localdomain) (ttyv0)

*** Welcome to pfSense 2.0.3-RELEASE-pfSense (i386) on pfSense ***

WAN (wan)          -> em0          -> NONE (DHCP)
LAN (lan)           -> em1          -> 192.168.1.1

0) Logout (SSH only)      8) Shell
1) Assign Interfaces      9) pfTop
2) Set interface(s) IP address 10) Filter Logs
3) Reset webConfigurator password 11) Restart webConfigurator
4) Reset to factory defaults 12) pfSense Developer Shell
5) Reboot system          13) Upgrade from console
6) Halt system             14) Enable Secure Shell (sshd)
7) Ping host

Enter an option: █
```

Solucións: {

- Paciencia e agardar
- Ter un servidor DHCP na rede
- Poñer a NIC en modo NAT e despois poñela en modo Puente e configurala cos valores adecuados



```
Starting DHCP service...done.  
Starting DNS forwarder...done.  
Configuring firewall.....done.  
Starting OpenNTP time client...done.  
Generating RRD graphs...done.  
Starting CRON... done.  
Bootup complete  
  
FreeBSD/i386 (pfSense.localdomain) (ttyv0)  
  
*** Welcome to pfSense 2.0.1-RELEASE-pfSense (i386) on pfSense ***  
  
WAN (wan)          -> em0          -> 192.168.1.100 (DHCP)  
LAN (lan)          -> em1          -> 192.168.1.1  
  
0) Logout (SSH)  
1) Assign Interf  
2) Set interf  
3) Reset webCo  
4) Reset to fa  
5) Reboot syst  
6) Halt system  
7) Ping host  
  
Enter an option
```

Esta vai ser a IP dende  
onde configurar o  
pfSense



# Cambiar IP dende consola

```
Starting DHCP service...done.  
Starting DNS forwarder...done.  
Configuring firewall.....done.  
Starting OpenNTP time client...done.  
Generating RRD graphs...done.  
Starting CRON... done.  
Bootup complete
```

```
FreeBSD/i386 (pfSense.localdomain) (ttyv0)
```

```
*** Welcome to pfSense 2.0.1-RELEASE-pfSense (i386) on pfSense ***
```

```
WAN (wan)          -> em0          -> 192.168.1.100 (DHCP)  
LAN (lan)          -> em1          -> 192.168.1.1
```

- |                                   |                                |
|-----------------------------------|--------------------------------|
| 0) Logout (SSH only)              | 8) Shell                       |
| 1) Assign Interfaces              | 9) pfTop                       |
| 2) Set interface(s) IP address    | 10) Filter Logs                |
| 3) Reset webConfigurator password | 11) Restart webConfigurator    |
| 4) Reset to factory defaults      | 12) pfSense Developer Shell    |
| 5) Reboot system                  | 13) Upgrade from console       |
| 6) Halt system                    | 14) Enable Secure Shell (sshd) |
| 7) Ping host                      |                                |

```
Enter an option: █
```

# Cambiar IP dende consola

```
FreeBSD/i386 (pfSense.localdomain) (ttyv0)
```

```
*** Welcome to pfSense 2.0.1-RELEASE-pfSense (i386) on pfSense ***
```

```
WAN (wan)          -> em0          -> 192.168.1.100 (DHCP)
LAN (lan)           -> em1          -> 192.168.1.1
```

- |                                   |                                |
|-----------------------------------|--------------------------------|
| 0) Logout (SSH only)              | 8) Shell                       |
| 1) Assign Interfaces              | 9) pfTop                       |
| 2) Set interface(s) IP address    | 10) Filter Logs                |
| 3) Reset webConfigurator password | 11) Restart webConfigurator    |
| 4) Reset to factory defaults      | 12) pfSense Developer Shell    |
| 5) Reboot system                  | 13) Upgrade from console       |
| 6) Halt system                    | 14) Enable Secure Shell (sshd) |
| 7) Ping host                      |                                |

```
Enter an option: 2
```

```
Available interfaces:
```

- 1 - WAN
- 2 - LAN

```
Enter the number of the interface you wish to configure: 2
```

# Cambiar IP dende consola

```
Enter an option: 2
```

```
Available interfaces:
```

```
1 - WAN
```

```
2 - LAN
```

```
Enter the number of the interface you wish to configure: 2
```

```
Enter the new LAN IPv4 address. Press <ENTER> for none:
```

```
> 192.168.56.253
```

```
Subnet masks are entered as bit counts (as in CIDR notation) in pfSense.
```

```
e.g. 255.255.255.0 = 24
```

```
255.255.0.0 = 16
```

```
255.0.0.0 = 8
```

```
Enter the new LAN IPv4 subnet bit count:
```

```
> 24
```

← Máscaras en formato CIDR

Especificar a IP da interface LAN do pfsense. Débese escoller unha axeitada en base ó modo de rede escollido en Virtualbox e a rede onde está esta tarxeta.

# Cambiar IP dende consola

```
Enter the new LAN IPv4 subnet bit count:
> 24

For a WAN, enter the new LAN IPv4 upstream gateway address.
For a LAN, press <ENTER> for none:
>

Enter the new LAN IPv6 address. Press <ENTER> for none:
>

Do you want to enable the DHCP server on LAN? [y/n] n
Disabling DHCPD...Done!
Disabling DHCPD...Done!

Do you want to revert to HTTP as the webConfigurator protocol? (y/n) n

Please wait while the changes are saved to LAN... Reloading filter...
DHCPD...

The IPv4 LAN address has been set to 192.168.56.253/24
You can now access the webConfigurator by opening the following URL in your web
browser:

    https://192.168.56.253/

Press <ENTER> to continue. █
```

The IPv4 LAN address has been set to 192.168.56.253/24  
You can now access the webConfigurator by opening the following URL in your web browser:

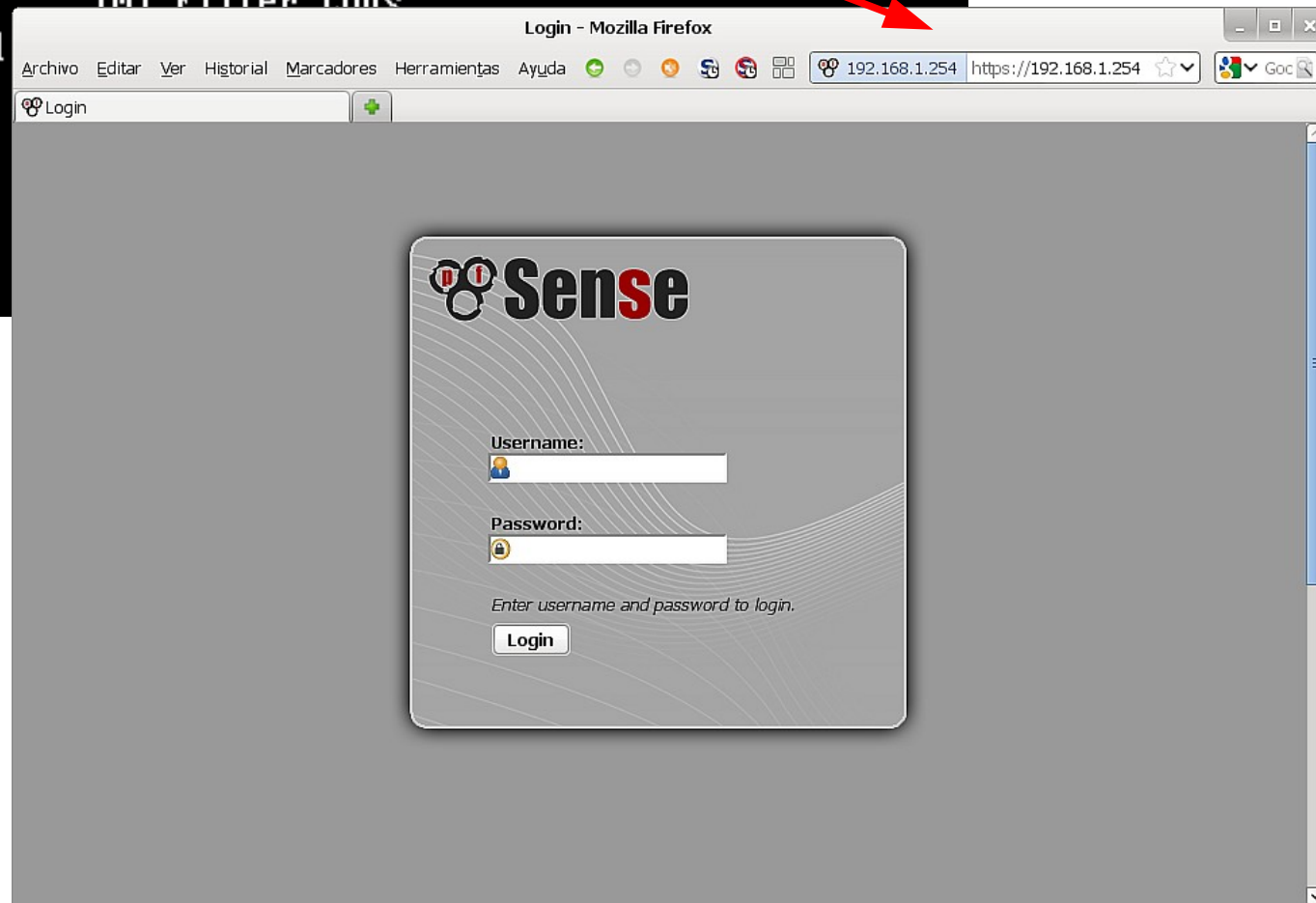
<https://192.168.56.253/>

Press <ENTER> to continue.

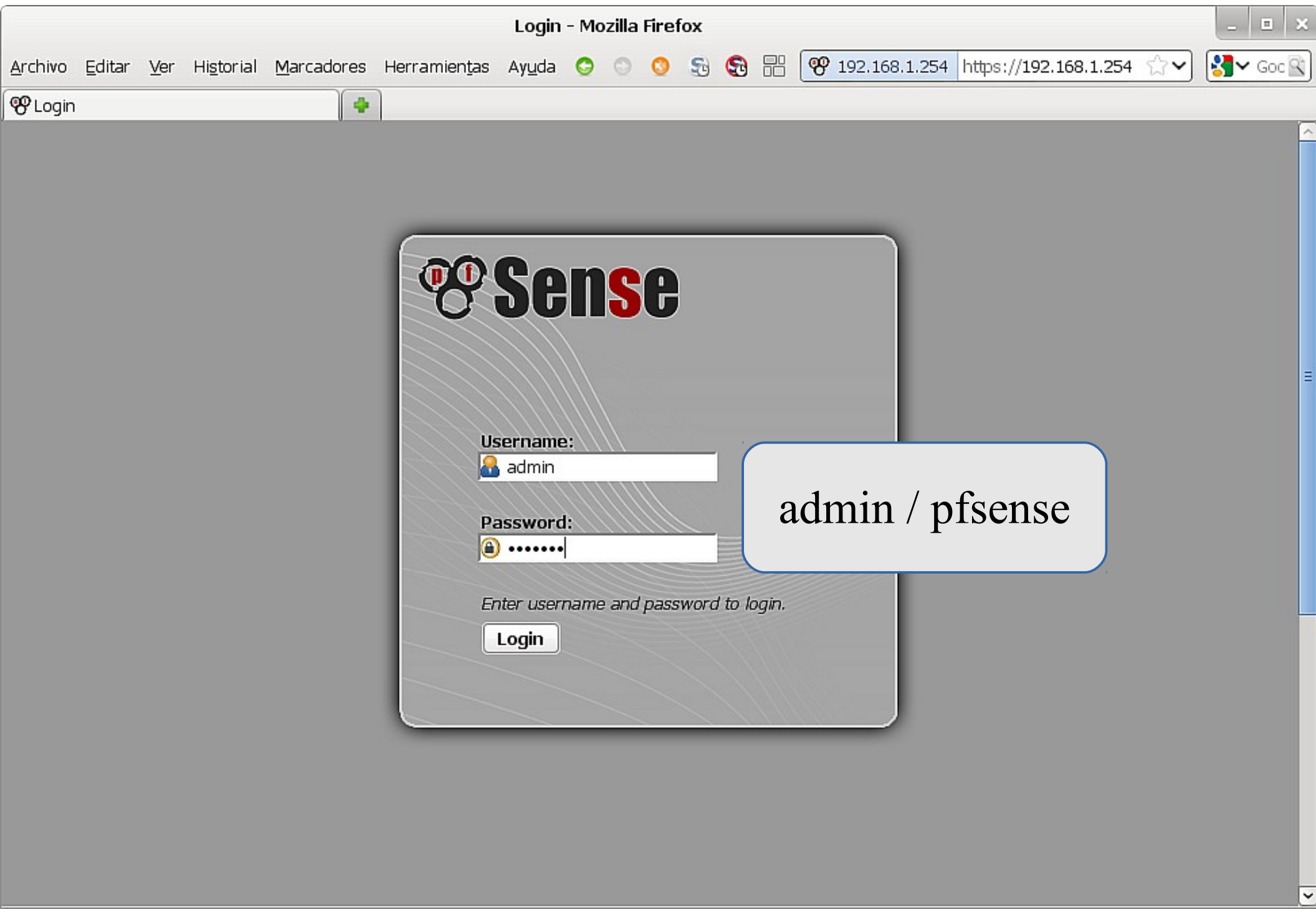
\*\*\* Welcome to pfSense 2.1.3-RELEASE-pfSense (i386) on pfSense \*\*\*

WAN (wan)           -> em0           -> v4/DHCP4: 192.168.1.35/24  
LAN (lan)           -> em1           -> v4: 192.168.56.253/24

- 0) Logout (SSH only)
- 1) Assign Interfaces
- 2) Set interface(s) IP address
- 3) Reset webConfigurator password
- 4) Reset to factory defaults
- 5) Reboot system
- 6) Halt system
- 7) Ping host
- 8) Shell
- 9) pfTop
- 10) Filter Logs



# Configuración






This wizard will guide you through the initial configuration of pfSense.

Next


On this screen you will set the general pfSense parameters.

#### General Information

Hostname:

 pfSense  
EXAMPLE: myserver

Domain:

 localdomain  
EXAMPLE: mydomain.com

Primary DNS Server:



Secondary DNS Server:



Override DNS:


☒ Allow DNS servers to be overridden by DHCP/PPP on WAN

Next



On this screen you will set the general pfSense parameters.

### General Information


|                       |   |
|-----------------------|---|
| Hostname:             |  pfSense<br><small>EXAMPLE: myserver</small>         |
| Domain:               |  localdomain<br><small>EXAMPLE: mydomain.com</small> |
| Primary DNS Server:   |  80.58.32.97   |
| Secondary DNS Server: |  80.58.0.33  |
| Override DNS:         | <input checked="" type="checkbox"/> Allow DNS servers to be overridden by DHCP/PPP on WAN   |

Servidores DNS que usará pfSense  
Indicar os servidores do ISP

Next

Please enter the time, date and time zone.

### Time Server Information

|                       |  |
|-----------------------|--|
| Time server hostname: |  0.pfsense.pool.ntp.org<br><small>Enter the hostname (FQDN) of the time server.</small> |
| Timezone:             | Europe/Madrid  |

NTP – hora do sistema

Next

On this screen we will configure the Wide Area Network information.

### Configure WAN Interface

SelectedType:

DHCP 

## Configuración interfaz WAN

### General configuration

MAC Address:



This field can be used to modify ("spoof") the MAC address of the WAN interface (may be required with some cable connections). Enter a MAC address in the following format: xx:xx:xx:xx:xx:xx or leave blank.

MTU:



If you enter a value in this field, then MSS clamping for TCP connections to the value entered above minus 40 (TCP/IP header size) will be in effect. If you leave this field blank, an MTU of 1492 bytes for PPPoE and 1500 bytes for all other connection types will be assumed.

### Static IP Configuration

IP Address:



/ 1 

Gateway:



### DHCP client configuration

DHCP 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).

### PPPoE configuration

On this screen we will configure the Wide Area Network information.

### Configure WAN Interface

SelectedType:

Static



### General configuration

MAC Address:



This field can be used to modify ("spoof") the MAC address of the WAN interface (may be required with some cable connections). Enter a MAC address in the following format: xxxxxxxxxx or leave blank.

Especificar a IP da interface WAN e a IP do router que lle da saída a Internet. Para as prácticas na casa ou no centro, será unha IP da rede da casa/clase e a IP do router da casa/clase.

### Static IP Configuration

IP Address:



192.168.1.253

/

24



Upstream Gateway:



192.168.1.1

# BOAS PRÁCTICAS: bloquear direccións 'marcianas'

**Direccións marcianas:** son todas aquelas que pola súa asignación non poden xerar tráfico Internet válido (e, polo tanto, seguramente enmascaran tráfico ilícito), incluíndo:

- Direccións reservadas por IANA. (0.0.0.0/8, 10.0.0.0/8, 100.64.0.0/10, 127.0.0.0/8, 169.254.0.0/16, 172.16.0.0/12, 192.0.0.0/24, 192.0.2.0/24, 198.18.0.0/15, 192.168.0.0/16, 198.51.100.0/24, 203.0.113.0/24, 224.0.0.0/4, 240.0.0.0/4, 255.255.255.255/32).

**Direccións Bogon:** Bloques de rede non asignados a ningún RIR

- RFC 3232: Este documento establece unha base de datos online en continuo cambio como referencia obrigada para a asignación dos rangos de direccións IP por IANA.

NOTA: hai diferentes definicións para estes conceptos. Por exemplo:

bogon = martians + Ips non asignadas a RIR (registros regionais de internet)

**OLLO:** Hai que valorar si se bloquean as Private Networks na WAN

- Nas prácticas moitas veces a rede WAN é unha destas redes privadas.
- O FW pode estar dentro dunha organización que usa direccións privadas.

# BOAS PRÁCTICAS: bloquear direccións 'marcianas'

## RFC1918 Networks

### Block RFC1918 Private Networks:

☒ When set, this option blocks traffic from IP addresses that are reserved for private networks as per RFC 1918 (10/8, 172.16/12, 192.168/16) as well as loopback addresses (127/8). You should generally leave this option turned on, unless your WAN network lies in such a private address space, too. Block private networks from entering via WAN

## Block bogon networks

### Block bogon networks:

☒ When set, this option blocks traffic from IP addresses that are reserved (but not RFC 1918) or not yet assigned by IANA. Bogons are prefixes that should never appear in the Internet routing table, and obviously should not appear as the source address in any packets you receive. Block non-Internet routed networks from entering via WAN

Aínda que é a configuración por defecto e é unha boa práctica bloquear este tipo de direccións; para esta práctica inicial e ó traballar no exemplo con redes Privadas, **non se bloqueará as redes privadas.**

En calquera momento pódese cambiar este comportamento, como se verá en prácticas posteriores.

On this screen we will configure the Local Area Network information.

### Configure LAN Interface

LAN IP Address:



192.168.56.253

Type dhcp if this interface uses DHCP to obtain its IP address.

Subnet Mask:

24

Next

On this screen we will set the admin password, which is used to access the WebGUI and also SSH services if you wish to enable them.

### Set Admin WebGUI Password

Admin Password:



.....

Admin Password  
AGAIN:



.....

Next

Click 'Reload' to reload pfSense with new changes. If you changed the password, pfSense will ask you to log in again.

Reload

A reload is now in progress. Please wait.

The wizard will redirect to the next step once the reload is completed.

Reload in progress

Congratulations! pfSense is now configured.

Please consider donating to the project to help us with our overheads costs.

Click [here](#) to donate or purchase services offered by the pfSense team.

Click [here](#) to continue on to pfSense webConfigurator.

Wizard completed.

# Status: Dashboard — Visión rápida do estado xeral do pfSense



| System Information |  |
|--------------------|--|
| Name               | pfSense.localdomain  |
| Version            | <b>2.1.3-RELEASE</b> (i386)<br>built on Thu May 01 15:52:17 EDT 2014<br>FreeBSD 8.3-RELEASE-p16<br><br>You are on the latest version |
| Platform           | pfSense  |
| CPU Type           | Intel(R) Core(TM) i5-3570 CPU @ 3.40GHz  |
| Uptime             | 00 Hour 27 Minutes 16 Seconds  |
| Current date/time  | Mon Jun 23 0:49:49 CEST 2014   |
| DNS server(s)      | 127.0.0.1<br>80.58.32.97<br>80.58.0.33   |
| Last config change | Mon Jun 23 2:47:13 CEST 2014   |
| State table size   | <div><div></div></div><br>0% (48/67000)<br><a href="#">Show states</a>   |
| MBUF Usage         | <div><div></div></div><br>3% (646/22720)   |
| Load average       | 0.08, 0.09, 0.07   |
| CPU usage          | <div><div></div></div><br>3%   |
| Memory usage       | <div><div></div></div><br>13% of 679 MB  |
| SWAP usage         | <div><div></div></div><br>0% of 2048 MB  |
| Disk usage         | <div><div></div></div><br>1% of 17G  |

| Interfaces |  |
|------------|--|
| <b>WAN</b> | <div><div></div></div><br>1000baseT <full-duplex><br><b>192.168.1.253</b>  |
| <b>LAN</b> | <div><div></div></div><br>1000baseT <full-duplex><br><b>192.168.56.253</b> |

personalizable













| Available Widgets                     |  |
|---------------------------------------|--|
| <a href="#">Captive Portal Status</a> |  |
| <a href="#">Carp Status</a>           |  |
| <a href="#">Gateways</a>              |  |
| <a href="#">Gmirror Status</a>        |  |
| <a href="#">Installed Packages</a>    |  |
| <a href="#">Interface Statistics</a>  |  |
| <a href="#">Interfaces</a>            |  |
| <a href="#">Ipsec</a>                 |  |
| <a href="#">Load Balancer Status</a>  |  |
| <a href="#">Firewall Logs</a>         |  |
| <a href="#">OpenVPN</a>               |  |
| <a href="#">Picture</a>               |  |
| <a href="#">Rss</a>                   |  |
| <a href="#">Services Status</a>       |  |
| <a href="#">System Information</a>    |  |
| <a href="#">Traffic Graphs</a>        |  |
| <a href="#">Wake On Lan</a>           |  |







# Control de Acceso



|                                     | ID | Proto  | Source  | Port | Destination | Port      | Gateway | Queue | Schedule | Description                        |   |
|-------------------------------------|----|--------|---------|------|-------------|-----------|---------|-------|----------|------------------------------------|---|
| <input checked="" type="checkbox"/> |    | *      | *       | *    | LAN Address | 443<br>80 | *       | *     |          | Anti-Lockout Rule                  |     |
| <input type="checkbox"/>            |    | IPv4 * | LAN net | *    | *           | *         | *       | none  |          | Default allow LAN to any rule      |          |
| <input type="checkbox"/>            |    | IPv6 * | LAN net | *    | *           | *         | *       | none  |          | Default allow LAN IPv6 to any rule |    |

 pass  
 pass (disabled)

 block  
 block (disabled)

 reject  
 reject (disabled)

 log  
 log (disabled)

A configuración por defecto de pfSense é a de permitir saír libremente a Internet ós equipos da Intranet e bloquear as conexións iniciadas dende Internet hacia a Intranet. Ademáis, pode administrarse vía web desde a intranet