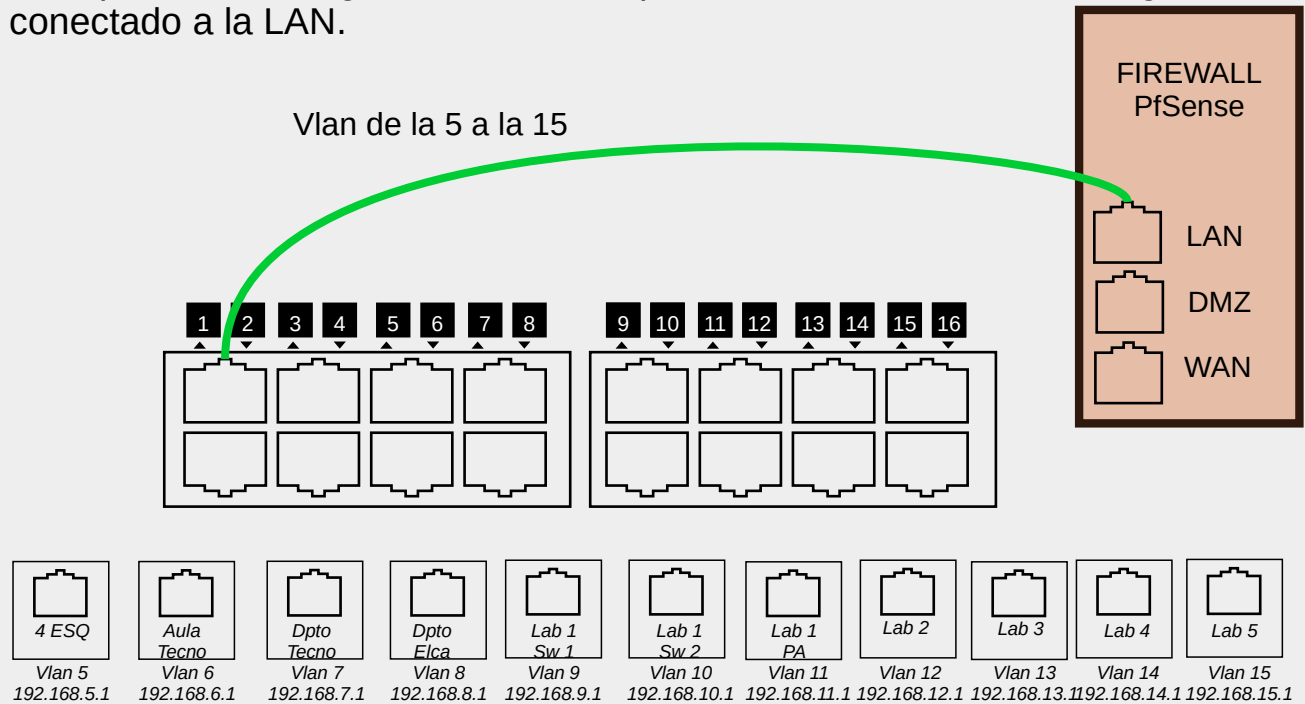


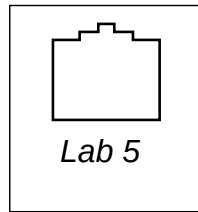
Práctica de VLANs en pfSense

En pfSense configurar las vlans que usaremos en el switch gestionable conectado a la LAN.



Crear VLAN en tarjeta de salida LAN

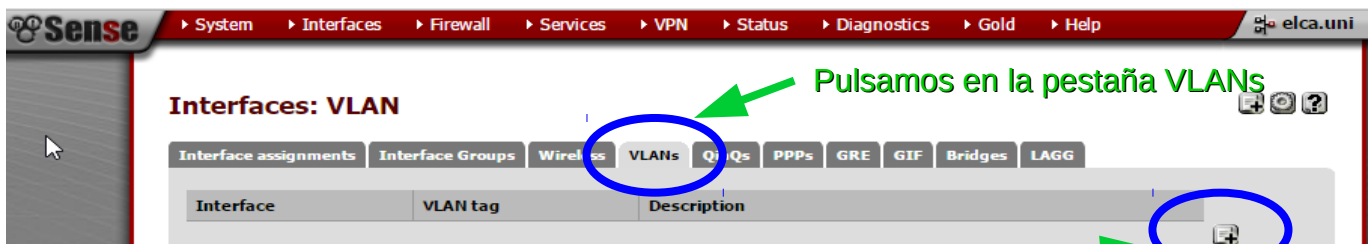
Vamos a crear la Vlan 15 Lab 5 con dirección ip 192.168.15.1 y rango de .10 a .40



Vlan 15
192.168.15.1

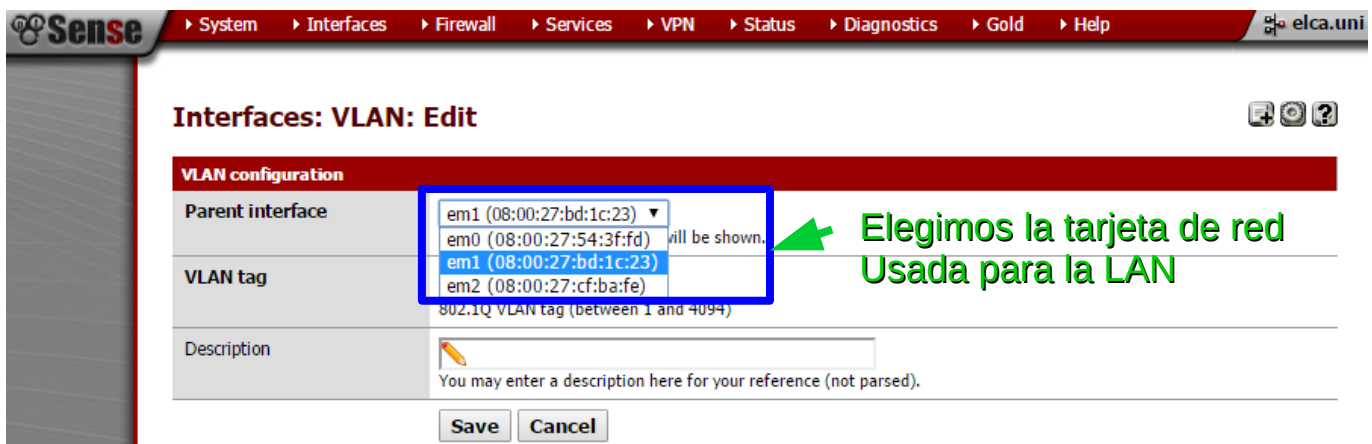


Interfaces → (assign)

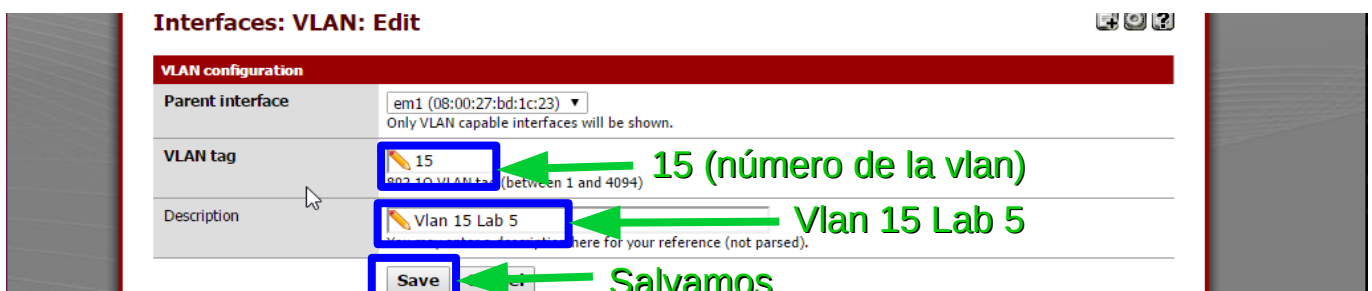


Pulsamos en la pestaña VLANs

Agregar



Elegimos la tarjeta de red Usada para la LAN



Nos quedaría así:

Interfaces: VLAN

Interface assignments | Interface Groups | Wireless | **VLANs** | QinQs | PPPs | GRE | GIF | Bridges | LAGG

Interface	VLAN tag	Description
em0	6	PPPOE_Vlan6
em1	15	Vlan 15 Lab 5

Interfaces: Assign network ports

Interface assignments | Interface Groups | Wireless | **VLANs** | QinQs | PPPs | GRE | GIF | Bridges | LAGG

Interface	Network port
WAN	em0 (08:00:27:54:3f:fd)
RED ADMINISTRATIVO	em1 (08:00:27:bd:1c:23)
RED ALUMNOS	em2 (08:00:27:cf:ba:fe)
Available network ports:	VLAN 6 on em0 (PPPOE_Vlan6)

Interface assignments (highlighted with a blue box and green arrow)

Add selected interface (highlighted with a blue box and green arrow)

Nos aparecerá una nueva interface que empezará por: OPT seguida de un número.

Interfaces: Assign network ports

Interface assignments | Interface Groups | Wireless | **VLANs** | QinQs | PPPs | GRE | GIF | Bridges | LAGG

Interface has been added. (highlighted with a blue box and green arrow)

Una interface ha sido añadida (highlighted with a blue box and green arrow)

Nombre de la nueva interface (OPTx) (highlighted with a blue box and green arrow)

Interface	Network port
WAN	em0 (08:00:27:54:3f:fd)
RED ADMINISTRATIVO	em1 (08:00:27:bd:1c:23)
RED ALUMNOS	em2 (08:00:27:cf:ba:fe)
OPT2 (highlighted with a blue box and green arrow)	VLAN 6 on em0 (PPPOE_Vlan6)
Available network ports:	em0 (08:00:27:54:3f:fd) em1 (08:00:27:bd:1c:23) em2 (08:00:27:cf:ba:fe) VLAN 6 on em0 (PPPOE_Vlan6) VLAN 15 on em1 (Vlan 15 Lab 5) (highlighted with a blue box and green arrow)

Elegimos la vlan para asignarsela (highlighted with a blue box and green arrow)

Interfaces that are configured as members of a lagg(4) interface will not be shown.

Guardamos los cambios.

RED ADMINISTRATIVO | em1 (08:00:27:bd:1c:23)

RED ALUMNOS | em2 (08:00:27:cf:ba:fe)

OPT2 | VLAN 15 on em1 (Vlan 15 Lab 5)

Available network ports: | VLAN 15 on em1 (Vlan 15 Lab 5)

Save (highlighted with a blue box and green arrow)

Salvamos (highlighted with a blue box and green arrow)

RED ADMINISTRATIVO

em1 (08:00:27:bd:1c:23)

RED ALUMNOS

em2 (08:00:27:cf:ba:fe)

OPT2

VLAN 15 on em1 (Vlan 15 Lab 5)

Available network ports:

VLAN 6 on em0 (PPPOE_Vlan6)

Pulsamos sobre OPT2 u OPTx

Interfaces: OPT2

General configuration

Enable

☐ Enable Interface

Habilitamos la interface

Save

Cancel

Interfaces: OPT2

General configuration

Enable

☒ Enable Interface

Description

VLAN 15 LAB 5

VLAN 15 LAB 5

Enter a description (name) for the interface here.

IPv4 Configuration Type

Static IPv4

Elegimos: Static IPv4

IPv6 Configuration Type

None

MAC address

This field can be used to modify ("spoof") the MAC address of this interface
Enter a MAC address in the following format: xx:xx:xx:xx:xx:xx or leave blank

MTU

If you leave this field blank, the adapter's default MTU will be used. This is typically 1500 bytes but can vary in some circumstances.

MSS

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.

Speed and duplex

Advanced - Show advanced option

Static IPv4 configuration

IPv4 address

192.168.15.1 / 24

192.168.15.1 / 24

IPv4 Upstream Gateway

None - or add a new one.

If this interface is an Internet connection, select an existing Gateway from the list or add a new one using the link above.
On local LANs the upstream gateway should be "none".

Private networks

☐ Block 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 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.

Note: The update frequency can be changed under System->Advanced Firewall/NAT settings.

Save

Salvamos

Interfaces: VLAN15LAB5

Aplicamos los cambios



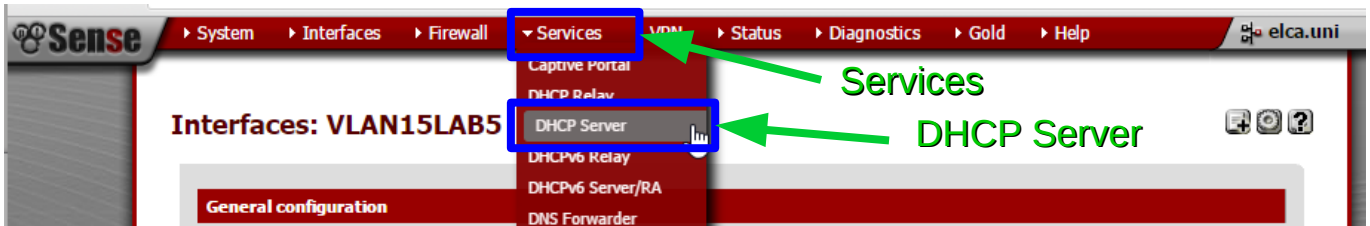
The VLAN15LAB5 configuration has been changed.

You must apply the changes in order for them to take effect.

Don't forget to adjust the DHCP Server range if needed after applying.

Apply changes

Vamos a establecer el rango de ips para esta vlan



Services: DHCP server

RED_ADMINISTRATIVO

RED_ALUMNOS

VLAN15LAB5

Seleccionamos la vlan

☒ Enable DHCP server on VLAN15LAB5 interface

Habilitamos el DHCP

☐ Deny unknown clients

If this is checked, only the clients defined below will get DHCP leases from this server.

Subnet 192.168.15.0

Subnet mask 255.255.255.0

Available range 192.168.15.1 - 192.168.15.254

Range 192.168.15.10 to 192.168.15.40

Ponemos nuestro rango de ips:
192.168.15.10 a 192.168.15.40

Additional Pools

If you need additional pools of addresses inside of this subnet outside the above Range, they may be specified here.

Pool Start

Pool End

Description

Bajamos y pulsamos en Save

Additional BOOTP/DHCP
Options

Advanced

- Show Additional BOOTP/DHCP Options

Save

Guardamos los cambios

Nos mostrará este mensaje, indicando que los cambios han sido Aplicados exitosamente.

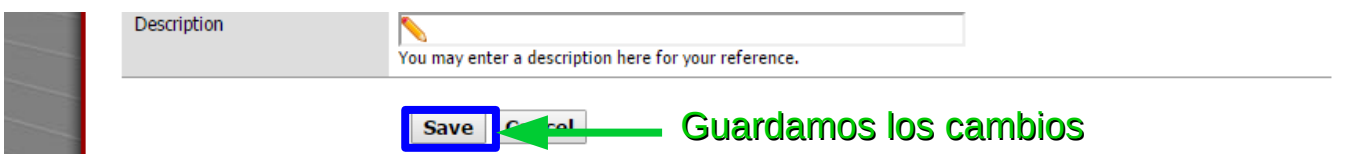
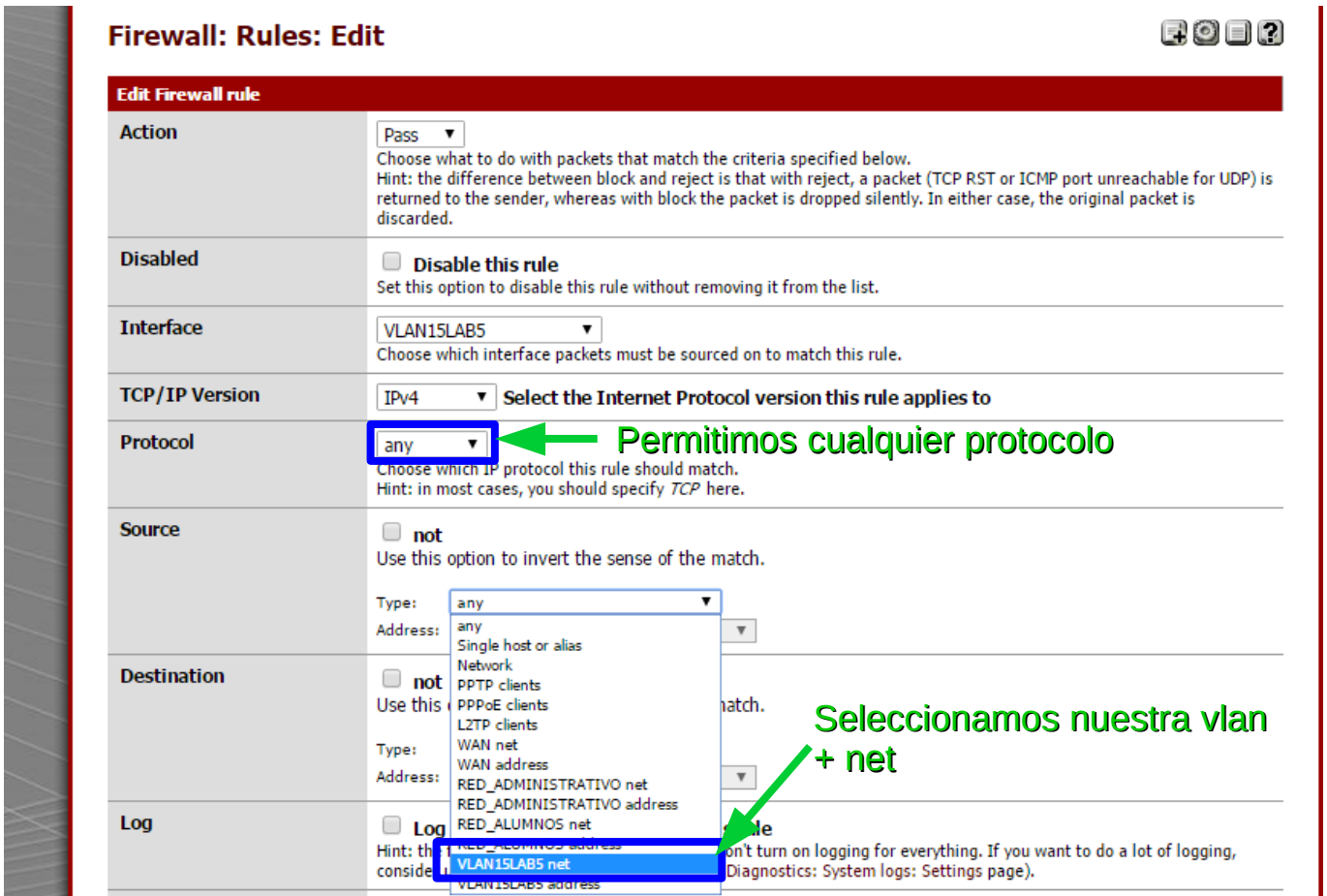
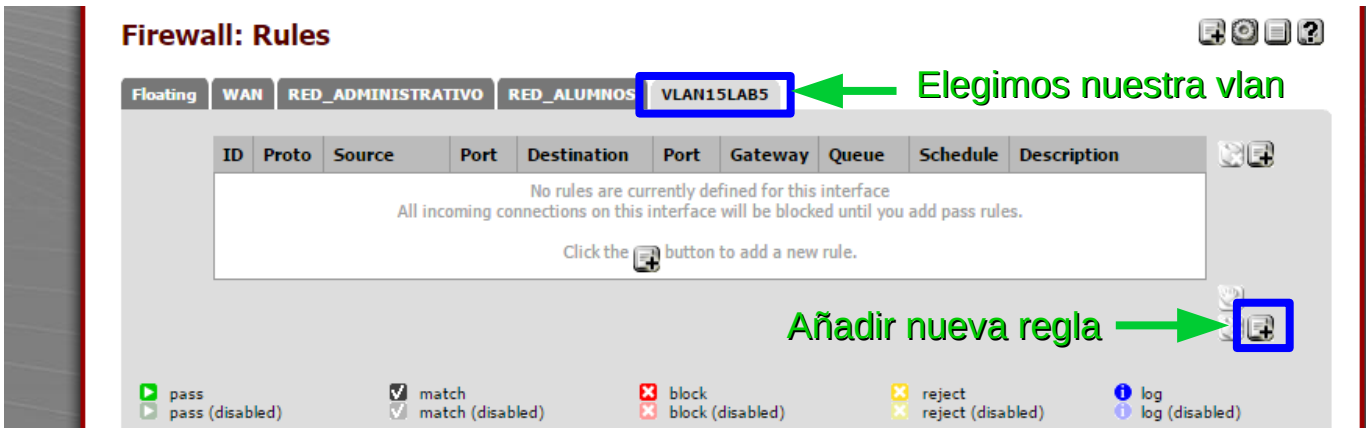
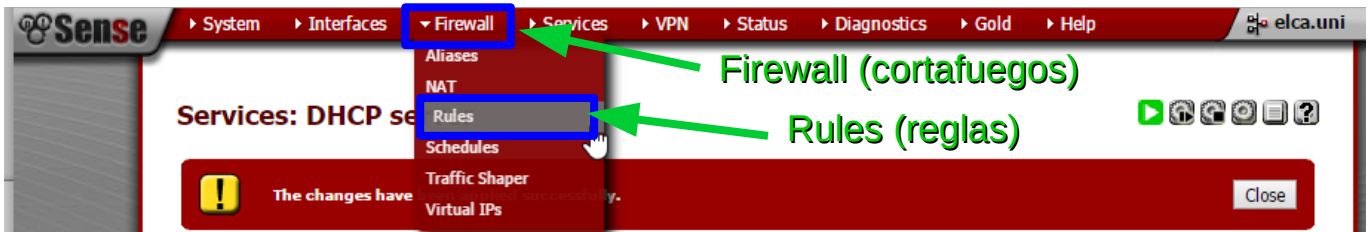
Services: DHCP server



The changes have been applied successfully.

Close

Vamos a darle permisos a nuestra vlan:



Nos queda así. Falta aplicar los cambios.

Firewall: Rules

 The firewall rule configuration has been changed. You must apply the changes in order for them to take effect.

Aplicar cambios → **Apply changes**

Floating | WAN | RED_ADMINISTRATIVO | RED_ALUMNOS | **VLAN15LAB5**

ID	Proto	Source	Port	Destination	Port	Gateway	Queue	Schedule	Description
☐	☒	IPv4 *	VLAN15LAB5 net	*	*	*	*	none	

☒ pass
☐ pass (disabled)
 ☒ match
☐ match (disabled)
 ☒ block
☐ block (disabled)
 ☒ reject
☐ reject (disabled)
 ☒ log
☐ log (disabled)

Los ajustes han sido aplicados. Las reglas del cortafuegos se están recargando en segundo plano ahora.

Firewall: Rules

 The settings have been applied. The firewall rules are now reloading in the background. You can also monitor the reload progress.

Cerramos → **Close**

Floating | WAN | RED_ADMINISTRATIVO | RED_ALUMNOS | **VLAN15LAB5**

ID	Proto	Source	Port	Destination	Port	Gateway	Queue	Schedule	Description
☐	☒	IPv4 *	VLAN15LAB5 net	*	*	*	*	none	

☒ pass
☐ pass (disabled)
 ☒ match
☐ match (disabled)
 ☒ block
☐ block (disabled)
 ☒ reject
☐ reject (disabled)
 ☒ log
☐ log (disabled)

Nos queda así. Todo el tráfico está habilitado.

Firewall: Rules

Floating | WAN | RED_ADMINISTRATIVO | RED_ALUMNOS | **VLAN15LAB5**

ID	Proto	Source	Port	Destination	Port	Gateway	Queue	Schedule	Description
☐	☒	IPv4 *	VLAN15LAB5 net	*	*	*	*	none	

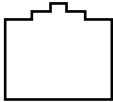
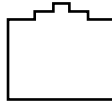
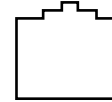
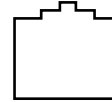
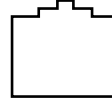
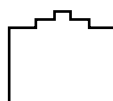
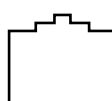
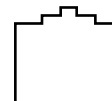
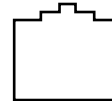
☒ pass
☐ pass (disabled)
 ☒ match
☐ match (disabled)
 ☒ block
☐ block (disabled)
 ☒ reject
☐ reject (disabled)
 ☒ log
☐ log (disabled)

Status: Dashboard

System Information	
Name	elca.uni
Version	2.2.5-RELEASE (amd64) built on Wed Nov 04 15:49:37 CST 2015 FreeBSD 10.1-RELEASE-p24 Update available. Click Here to view update.
Platform	pfSense
CPU Type	Intel(R) Core(TM) i5-5200U CPU @ 2.20GHz
Uptime	02 Hours 22 Minutes 02 Seconds
Current Date/Time	Tue Feb 9 13:14:34 CET 2016

Interfaces	
WAN (DHCP)	1000baseT <full-duplex> 192.168.10.143
RED ADMINISTRATIVO	1000baseT <full-duplex> 200.0.0.1
RED ALUMNOS	1000baseT <full-duplex> 150.0.0.1
VLAN15LAB5	1000baseT <full-duplex> 192.168.15.1

Esto lo debemos hacer con todas las vlan que nos faltan.

 4 ESQ Vlan 5 192.168.5.1	 Aula Tecno Vlan 6 192.168.6.1	 Dpto Tecno Vlan 7 192.168.7.1	 Dpto Elca Vlan 8 192.168.8.1	 Lab 1 Sw 1 Vlan 9 192.168.9.1
 Lab 1 Sw 2 Vlan 10 192.168.10.1	 Lab 1 PA Vlan 11 192.168.11.1	 Lab 2 Vlan 12 192.168.12.1	 Lab 3 Vlan 13 192.168.13.1	 Lab 4 Vlan 14 192.168.14.1

Cuando todas las vlan estén implementadas, debemos ver que reglas establecemos a cada una, filtros, etc.