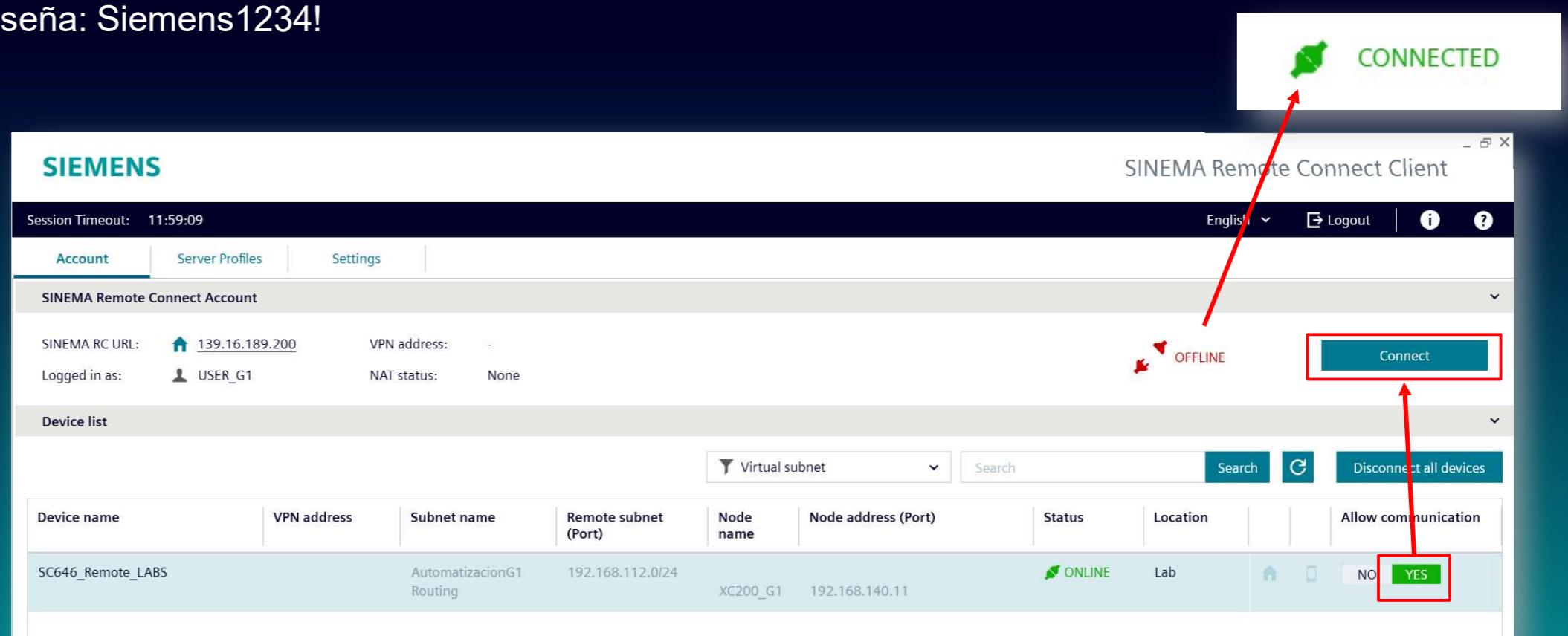


## Acceso al laboratorio de ciberseguridad

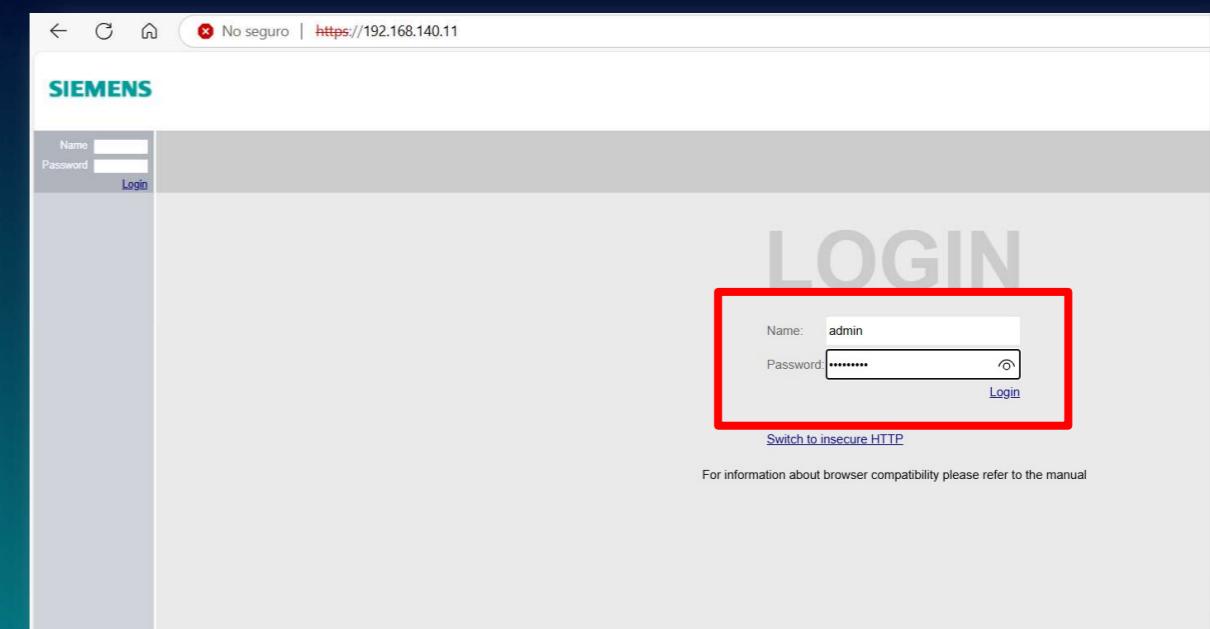
- Abrimos el software SINEMA Remote Connect Client.
- URL: [siemenscomunicaciones.dynalias.org:6443](https://siemenscomunicaciones.dynalias.org:6443)
- Usuario: USER\_GX dónde X es el número del grupo asignado.
- Contraseña: Siemens1234!



## Comprobar conexión

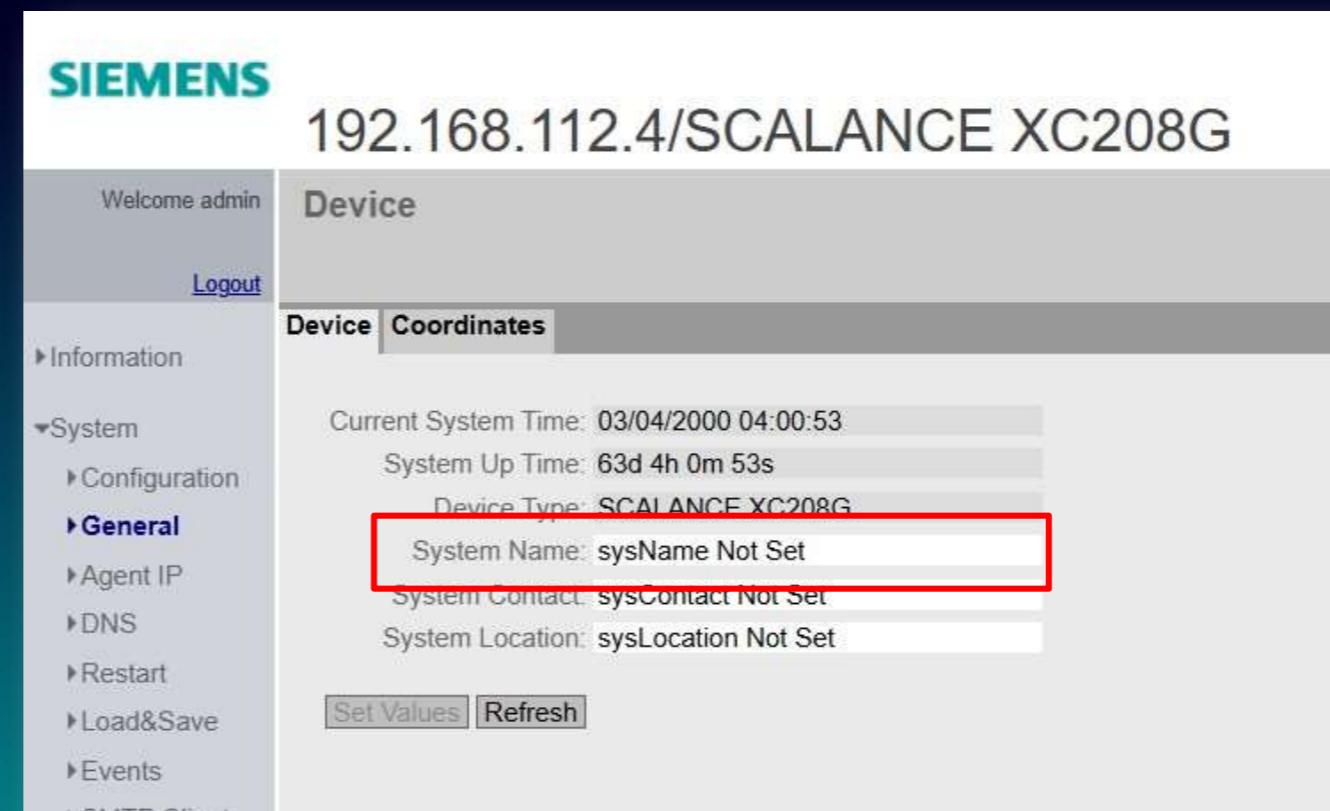
- **Comprobar conectividad CLI:** Ping constante al XC200 del anillo – `ping 192.168.140.1X -t`
- Acceder vía página web al equipo <https://192.168.140.21X>
  - Usuario: admin
  - Contraseña: Siemens1!

```
C:\Users\z004p9mx>ping 192.168.140.11 -t
Haciendo ping a 192.168.140.11 con 32 bytes de datos:
Respuesta desde 192.168.140.11: bytes=32 tiempo=125ms TTL=62
Respuesta desde 192.168.140.11: bytes=32 tiempo=80ms TTL=62
Respuesta desde 192.168.140.11: bytes=32 tiempo=86ms TTL=62
Respuesta desde 192.168.140.11: bytes=32 tiempo=76ms TTL=62
Respuesta desde 192.168.140.11: bytes=32 tiempo=80ms TTL=62
Respuesta desde 192.168.140.11: bytes=32 tiempo=97ms TTL=62
Respuesta desde 192.168.140.11: bytes=32 tiempo=127ms TTL=62
Respuesta desde 192.168.140.11: bytes=32 tiempo=75ms TTL=62
Respuesta desde 192.168.140.11: bytes=32 tiempo=74ms TTL=62
Respuesta desde 192.168.140.11: bytes=32 tiempo=64ms TTL=62
Respuesta desde 192.168.140.11: bytes=32 tiempo=105ms TTL=62
Respuesta desde 192.168.140.11: bytes=32 tiempo=108ms TTL=62
Respuesta desde 192.168.140.11: bytes=32 tiempo=136ms TTL=62
Respuesta desde 192.168.140.11: bytes=32 tiempo=84ms TTL=62
Respuesta desde 192.168.140.11: bytes=32 tiempo=88ms TTL=62
|
```



## XC200 - Asignar nombre al equipo

- **System > General**
- Nombre: Agregado\_GX



The screenshot shows the Siemens web-based device configuration interface. The top bar displays the Siemens logo and the IP address 192.168.112.4/SCALANCE XC208G. The left sidebar, titled 'Device', contains a navigation menu with the following items: Welcome admin, Logout, Information, System (expanded), Configuration, General (selected), Agent IP, DNS, Restart, Load&Save, Events, and SMTP Client. The main content area is titled 'Device' and shows system status information: Current System Time: 03/04/2000 04:00:53, System Up Time: 63d 4h 0m 53s, Device Type: SCALANCE XC208G, System Name: sysName Not Set (highlighted with a red box), System Contact: sysContact Not Set, and System Location: sysLocation Not Set. At the bottom of the content area are 'Set Values' and 'Refresh' buttons.

## XC200 - Poner el equipo en hora: Servidor NTP

- **System > System Time > NTP Client**
- NTP Server: 192.168.140.140
- NTP Port: 123

SIEMENS  
192.168.112.4/SCALANCE XC208G

Network Time Protocol (NTP) Client

Manual Setting | DST Overview | DST Configuration | SNTP Client | **NTP Client** | SIMATIC Time Client | PTP Client | NTP Server

NTP Client  
 Secure NTP Client only

Current System Time: 03/04/2000 04:10  
Last Synchronization Time: Date/time not set  
Last Synchronization Mechanism: Not set  
Time Zone: +00:00  
Daylight Saving Time: inactive (offset + 0h)

NTP Server Index: 1

Select	NTP Server Index	NTP Server Address	NTP Server Port	Poll Interval	Key ID	Hash Algorithm
<input type="checkbox"/>	1	192.168.140.140	123	64	1	DES

1 entry.

[Create](#) [Delete](#) **[Set Values](#)** [Refresh](#)

## XC200 – Comprobar versión firmware

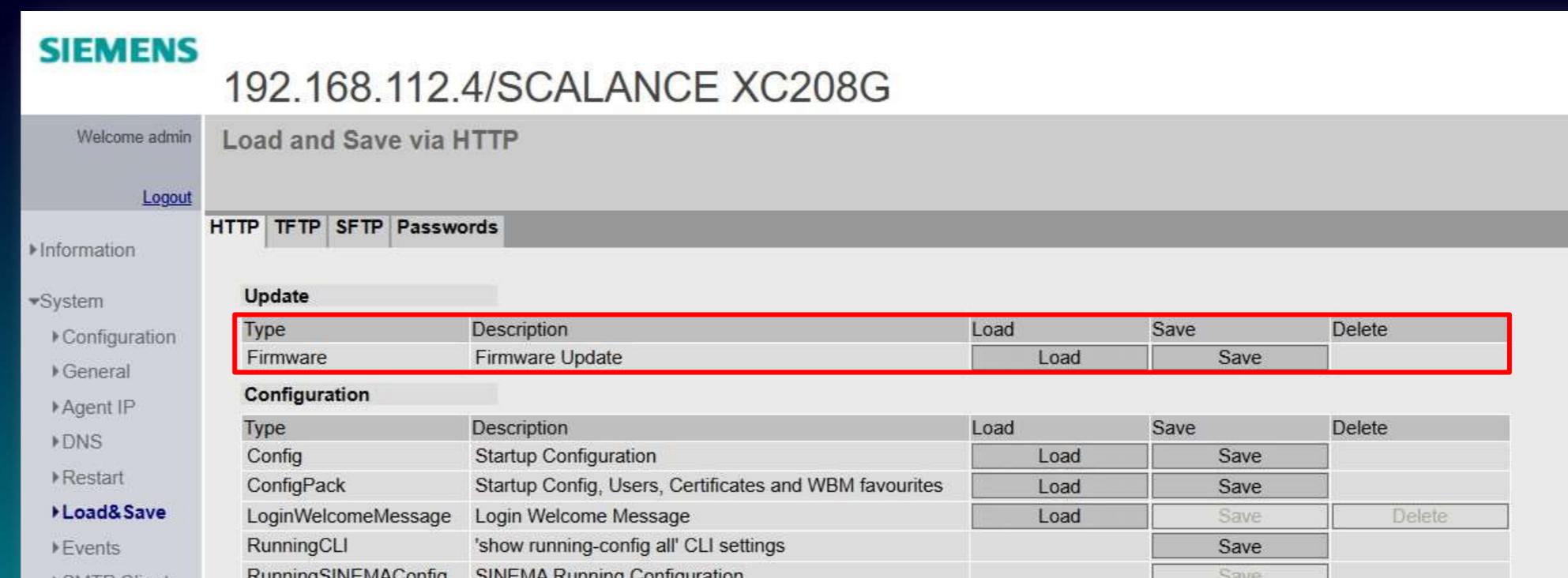
- **Information > Versións**
- Comprobar última versión: [Industry Support Siemens](#)
- ¿En qué versión está? ¿Esta en su última versión?



The screenshot shows the Siemens Industry Online Support website. The top navigation bar includes links for 'Industry Online Support International', 'Language', 'Contact', 'Help', 'Support Request', 'Site Explorer', and a search bar. The main content area displays a product detail page for the 'SCALANCE XC208G'. The page features a large image of a man working on a control panel, a product image of the SCALANCE XC208G switch, and a table with version information. The table includes columns for Hardware, Name, Version, and Revision. The 'Firmware' row shows 'SCALANCE XC200 Firmware' as the description and 'V01.00' as the version. The 'Bootloader' row shows 'SCALANCE XC200 Bootloader' as the description and 'V01.00' as the version. The 'Firmware\_Running' row shows 'Current running Firmware' as the description and 'V01.00' as the version. Below the table is a 'Refresh' button. The left sidebar shows a navigation menu with 'Information' expanded, showing 'Start Page', 'Dashboard', 'Versions', 'I&M', 'ARP Table', 'Log Table', 'Faults', and 'Redundancy'. The 'Logout' link is also visible in the sidebar.

## XC200 – Actualización de la versión firmware

- System > Load & Save



SIEMENS  
192.168.112.4/SCALANCE XC208G

Welcome admin [Logout](#)

Information

System

- Configuration
- General
- Agent IP
- DNS
- Restart
- Load&Save**
- Events
- SMTP Client

Load and Save via HTTP

HTTP | TFTP | SFTP | Passwords

**Update**

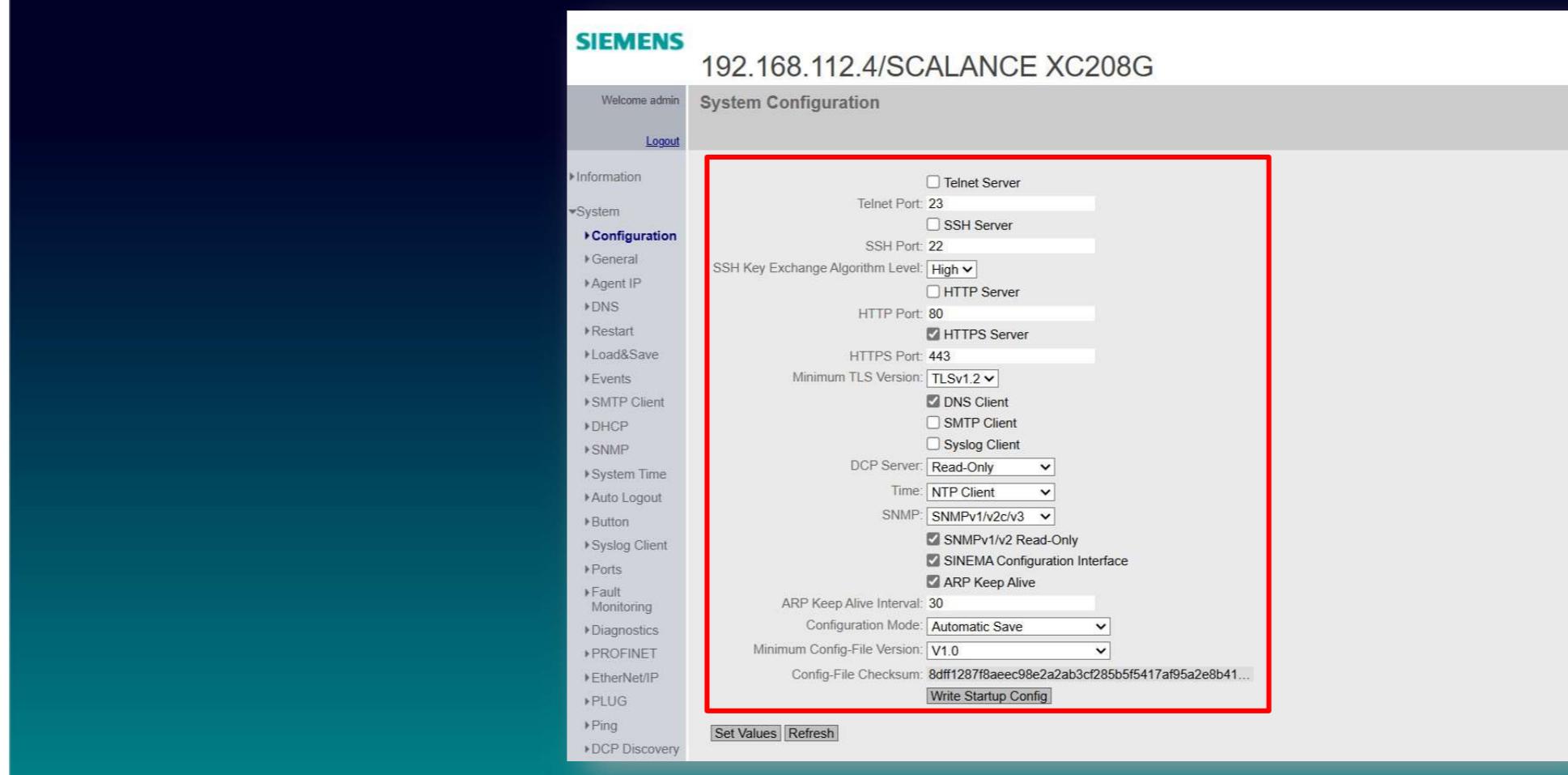
Type	Description	Load	Save	Delete
Firmware	Firmware Update	Load	Save	

**Configuration**

Type	Description	Load	Save	Delete
Config	Startup Configuration	Load	Save	
ConfigPack	Startup Config, Users, Certificates and WBM favourites	Load	Save	
LoginWelcomeMessage	Login Welcome Message	Load	Save	Delete
RunningCLI	'show running-config all' CLI settings		Save	
RunningSINEMAConf	SINEMA Running Configuration		Save	

## XC200 – Deshabilitar protocolos no seguros

- System > Configuration



SIEMENS

192.168.112.4/SCALANCE XC208G

Welcome admin

Logout

Information

System

Configuration

- General
- Agent IP
- DNS
- Restart
- Load&Save
- Events
- SMTP Client
- DHCP
- SNMP
- System Time
- Auto Logout
- Button
- Syslog Client
- Ports
- Fault Monitoring
- Diagnostics
- PROFINET
- EtherNet/IP
- PLUG
- Ping
- DCP Discovery

System Configuration

Telnet Server:  Telnet Port: 23

SSH Server:  SSH Port: 22

SSH Key Exchange Algorithm Level:  High

HTTP Server:  HTTP Port: 80

HTTPS Server:  HTTPS Port: 443

Minimum TLS Version:  TLSv1.2

DNS Client:

SMTP Client:

Syslog Client:

DCP Server:  Read-Only

Time:  NTP Client

SNMP:  SNMPv1/v2c/v3

SNMPv1/v2 Read-Only:

SINEMA Configuration Interface:

ARP Keep Alive:

ARP Keep Alive Interval: 30

Configuration Mode:  Automatic Save

Minimum Config-File Version:  V1.0

Config-File Checksum: 8dff1287f8aec98e2a2ab3cf285b5f5417af95a2e8b41...

Write Startup Config

Set Values Refresh

## XC200 – ¿Qué dispositivos ves en capa 2?

- System > DCP Discovery > Discover

SIEMENS

192.168.140.11/XC200\_G1

Discovery and Set via PROFINET Discovery and Configuration Protocol (DCP)

Welcome admin

Logout

Information

System

- Configuration
- General
- Agent IP
- DNS
- Restart
- Load&Save
- Events
- SMTP Client
- DHCP
- SNMP
- System Time
- Auto Logout
- Button

Timeout[s]: 5

Blink Own LEDs

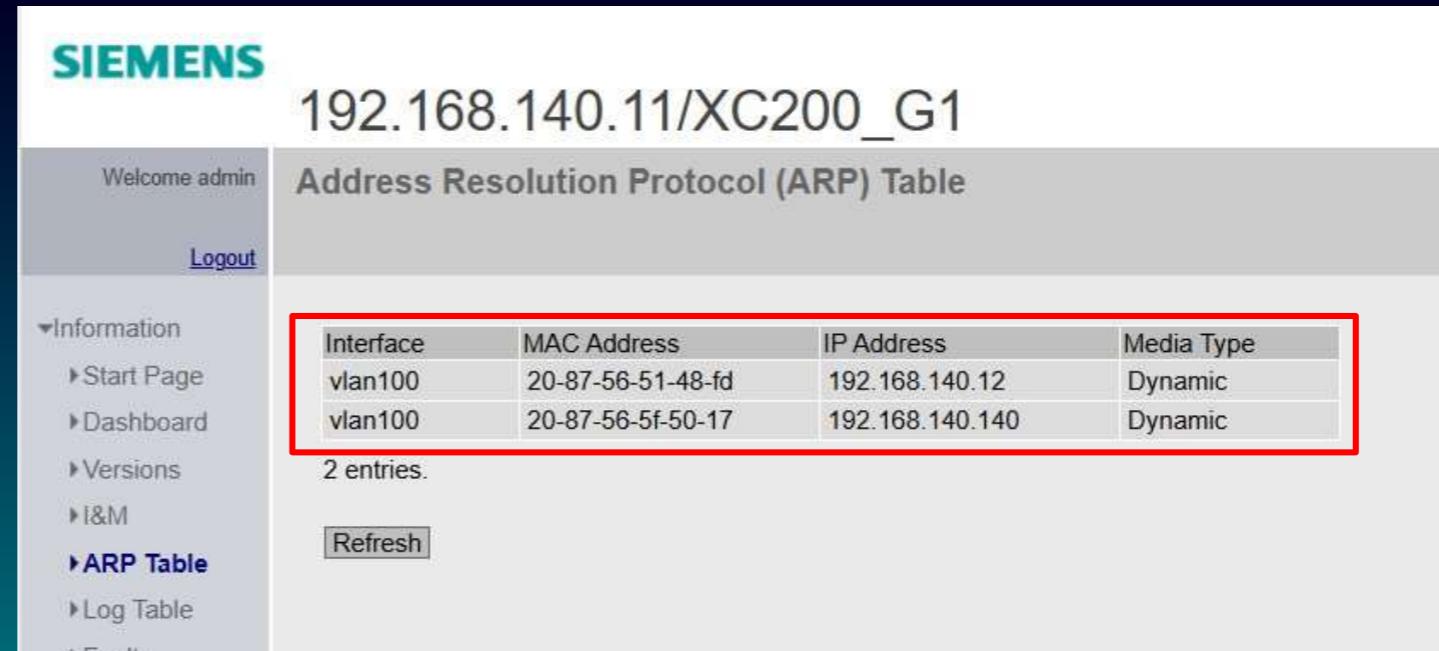
Interface: vlan100

Discover

Port	MAC Address	Device Type	Device Name	IP Address	Mask Address	Gateway Address	Name Status	IP Status	Timeout[s]	Blink
0 entries.										

## XC200 – ¿Qué dispositivos tienes en tu FDB?

- **Information > ARP Table**
- ¿Coinciden con los que descubres en capa 2?



SIEMENS  
192.168.140.11/XC200\_G1

Welcome admin [Logout](#)

Information

- ▶ Start Page
- ▶ Dashboard
- ▶ Versions
- ▶ I&M
- ▶ ARP Table**
- ▶ Log Table
- ▶ Faults

Address Resolution Protocol (ARP) Table

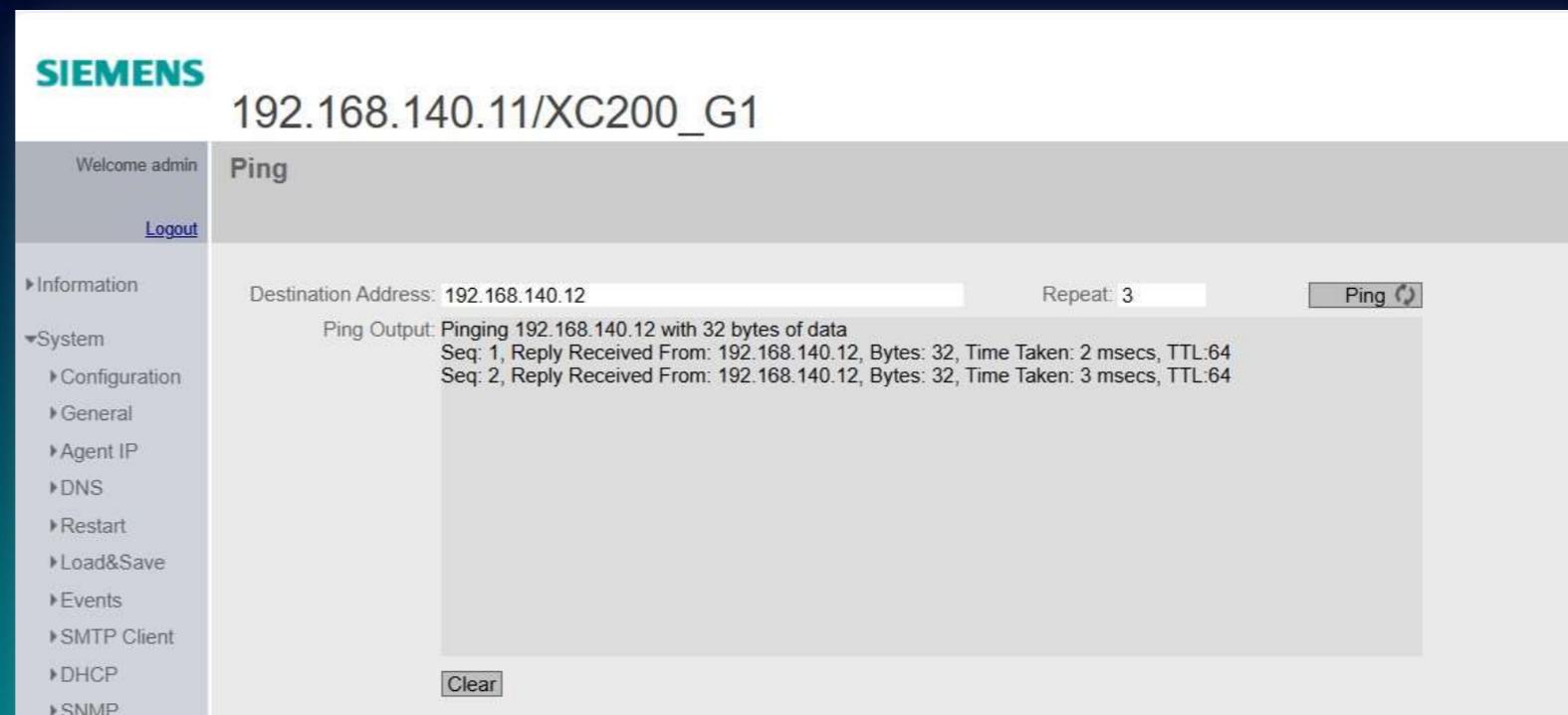
Interface	MAC Address	IP Address	Media Type
vlan100	20-87-56-51-48-fd	192.168.140.12	Dynamic
vlan100	20-87-56-5f-50-17	192.168.140.140	Dynamic

2 entries.

[Refresh](#)

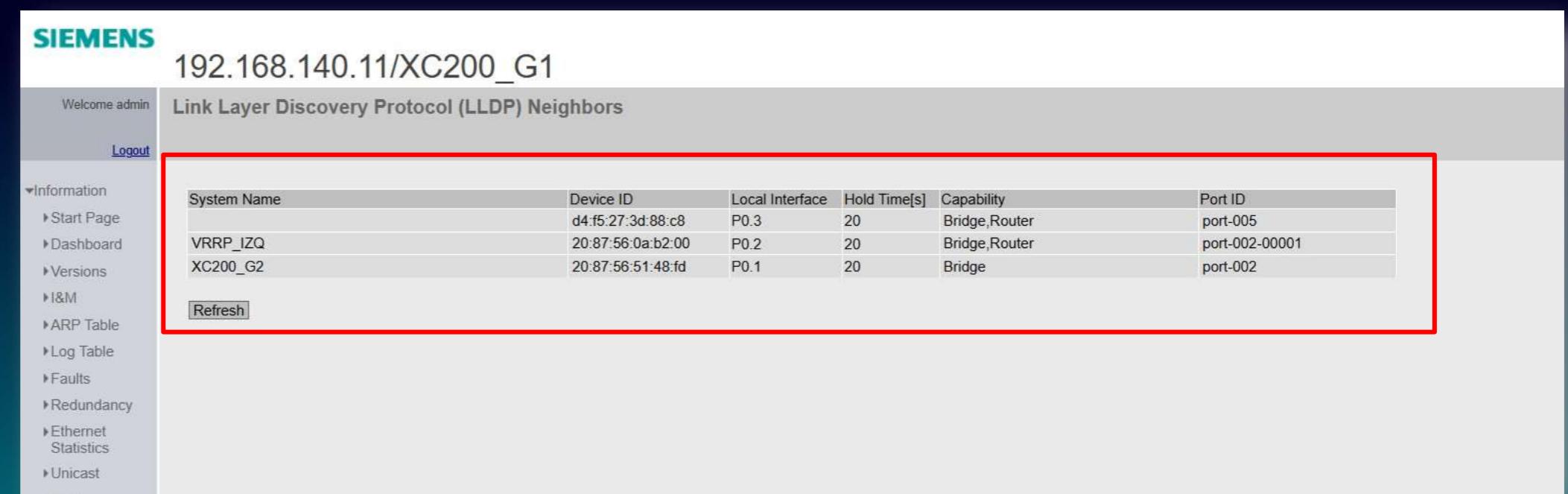
## XC200 – ¿Qué dispositivos tienes en tu FDB?

- Haz PING a los dispositivos de los otros grupos 192.168.140.1X: **System > PING**
- Revisa de nuevo tu FDB
- ¿Hay nuevos dispositivos? ¿Por qué?
- **Layer 2 > Dynamic MAC Aging**



## XC200 – ¿Qué dispositivos están conectados al switch?

- Information > LLDP > Refresh



SIEMENS  
192.168.140.11/XC200\_G1  
Welcome admin Logout  
Information Start Page Dashboard Versions I&M ARP Table Log Table Faults Redundancy Ethernet Statistics Unicast  
Link Layer Discovery Protocol (LLDP) Neighbors

System Name	Device ID	Local Interface	Hold Time[s]	Capability	Port ID
VRRP_IZQ	d4:f5:27:3d:88:c8	P0.3	20	Bridge,Router	port-005
XC200_G2	20:87:56:0a:b2:00	P0.2	20	Bridge,Router	port-002-00001
XC200_G2	20:87:56:51:48:fd	P0.1	20	Bridge	port-002

Refresh

## XC200 – Estado de los puertos del Switch

- **System > Ports**
- Deshabilita los no utilizados: **System > Ports > Configuration**

The image shows two screenshots of the Siemens XC200 web interface. The left screenshot displays the 'Ports Overview' page, showing a table of port status for ports P0.1 to P0.8. The right screenshot shows the 'Ports Configuration' page for port P0.1, with various configuration options like Mode Type (Auto negotiation), Flow Ctrl. Type (disabled), and Negotiation (enabled). A red box highlights the port configuration section on the right.

**Ports Overview (Left Screenshot):**

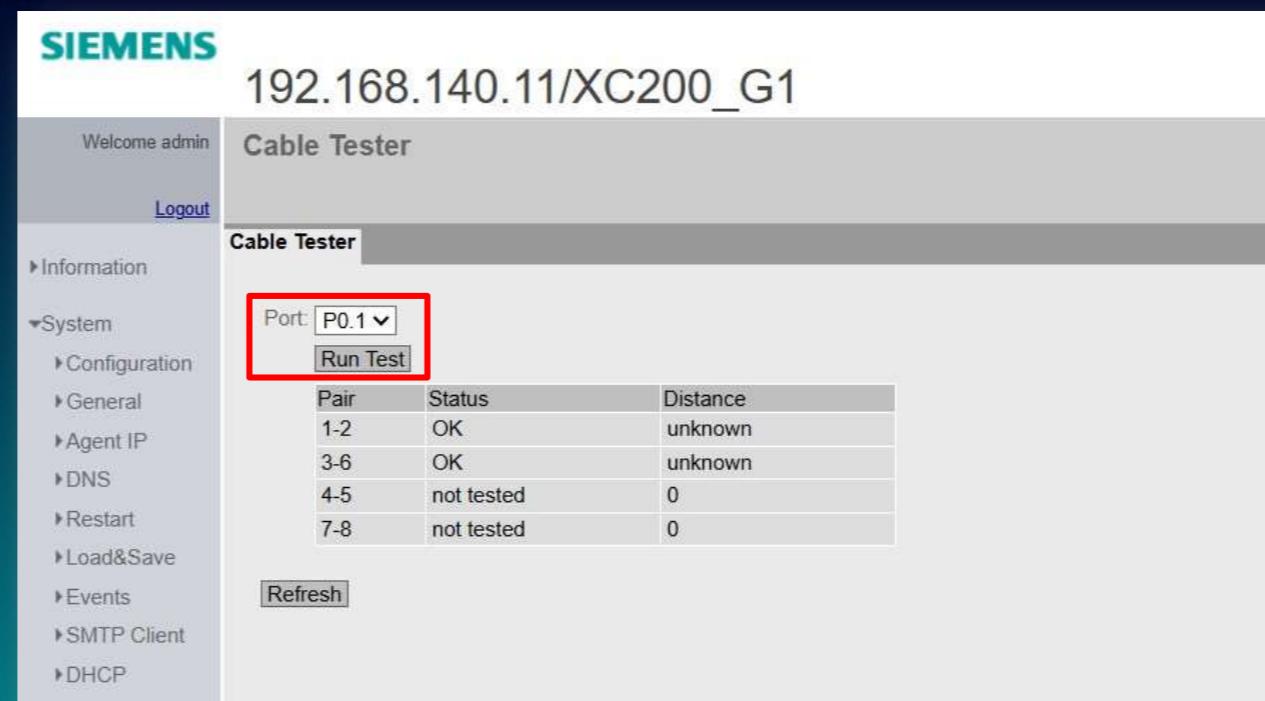
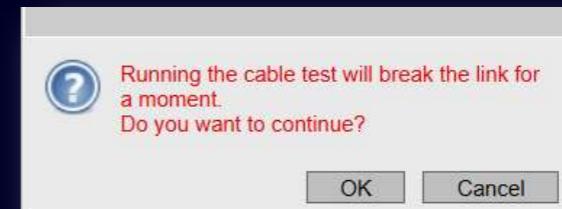
Port	Port Name	Port Type	Status	OperState	Link	Mode	Negotiation	Negotiation Capabilities	Flow Ctrl. Type	Flow Ctrl.	Maximum Nodes	Learned Nodes	Nodes Monitoring Action
P0.1	Switch-Port VLAN Hybrid	enabled	up	up	100M FD	enabled	unrestricted	<input type="checkbox"/>	disabled	0	6	no	
P0.2	Switch-Port VLAN Hybrid	enabled	up	up	100M FD	enabled	unrestricted	<input type="checkbox"/>	disabled	0	4	no	
P0.3	Switch-Port VLAN Hybrid	enabled	up	up	100M FD	enabled	unrestricted	<input type="checkbox"/>	disabled	0	1	no	
P0.4	Switch-Port VLAN Hybrid	enabled	down	down	100M FD	enabled	unrestricted	<input type="checkbox"/>	disabled	0	0	no	
P0.5	Switch-Port VLAN Hybrid	enabled	down	down	100M FD	enabled	unrestricted	<input type="checkbox"/>	disabled	0	0	no	
P0.6	Switch-Port VLAN Hybrid	enabled	down	down	100M FD	enabled	unrestricted	<input type="checkbox"/>	disabled	0	0	no	
P0.7	Switch-Port VLAN Hybrid	enabled	down	down	100M FD	enabled	unrestricted	<input type="checkbox"/>	disabled	0	0	no	
P0.8	Switch-Port VLAN Hybrid	enabled	down	down	100M FD	enabled	unrestricted	<input type="checkbox"/>	disabled	0	0	no	

**Ports Configuration (Right Screenshot):**

Port: P0.1  
Status: enabled  
Port Name: 20-87-56-9b-6c-a6  
MAC Address: 20-87-56-9b-6c-a6  
Mode Type: Auto negotiation  
Auto Negotiation Capability:  
10 HD (checked)  
100 HD (checked)  
1000 FD (unchecked)  
2500 FD (unchecked)  
5000 FD (unchecked)  
10000 FD (unchecked)  
Mode: 100M FD  
Negotiation: enabled  
Flow Ctrl. Type: disabled  
Port Type: Switch-Port VLAN Hybrid  
Nodes Monitoring: no  
Maximum Nodes: 0  
Nodes Monitoring Action: no  
Nodes Monitoring State: off  
OperState: up  
Link: up  
Blocked by: -  
Unicast MAC Learning (checked)

## XC200 – Estado del cable

- System > Ports Diagnostics
- **No hacerlo en producción, puede parar la planta!!!!**



Pair	Status	Distance
1-2	OK	unknown
3-6	OK	unknown
4-5	not tested	0
7-8	not tested	0

## XC200 – ConfigPack

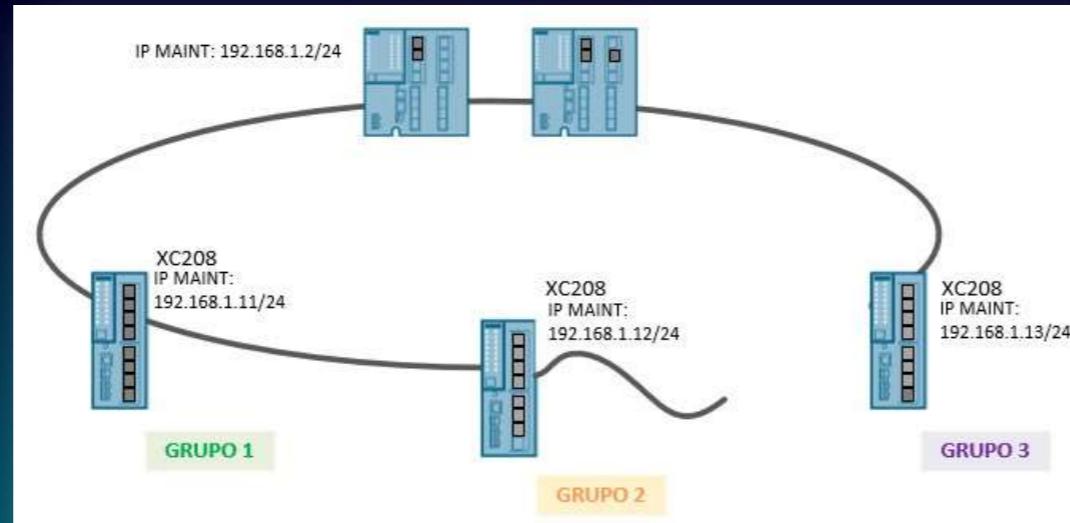
- Descarga el ConfigPack y el CLI: System > Load&Save
- ¿Qué diferencia hay entre el ConfigPack y el CLI?

Type	Description	Load	Save	Delete
Firmware	Firmware Update	Load	Save	
Config	Startup Configuration	Load	Save	
ConfigPack	Startup Config, Users, Certificates and WBM favourites	Load	Save	
LogonWorkstation	Logon Workstation Configuration	Load	Save	Delete
RunningCLI	'show running-config all' CLI settings		Save	
RunningSINEMAConfig	SINEMA Running Configuration		Save	
Script	Script	Load		
SINEMAConfig	SINEMA Offline Configuration	Load		
Users	Users and Passwords	Load	Save	
WBMFav	WBM favourite pages	Load	Save	Delete

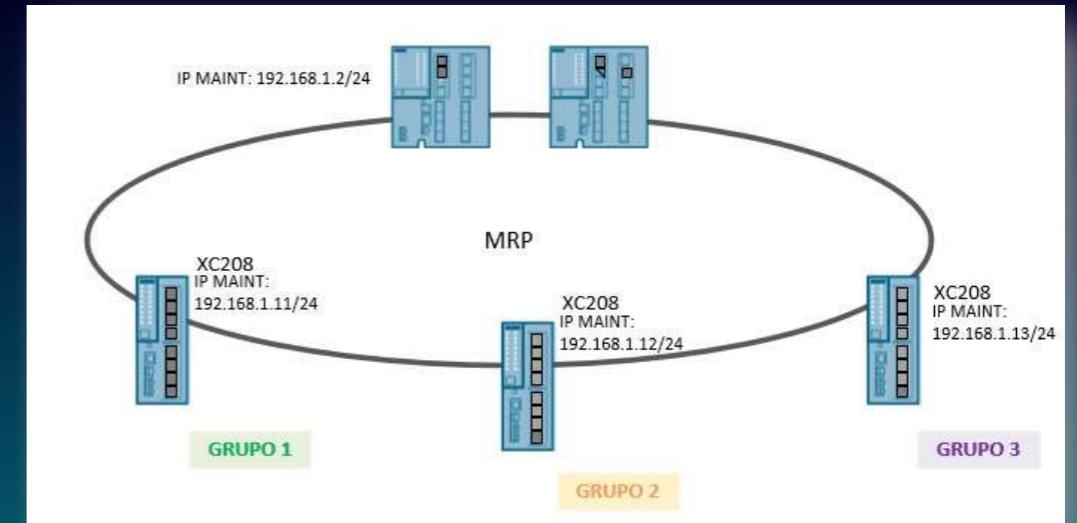
## XC200 – Esquema de configuración MRP

- **Objetivo:** Configurar una topología redundante MRP.

Estado Inicial

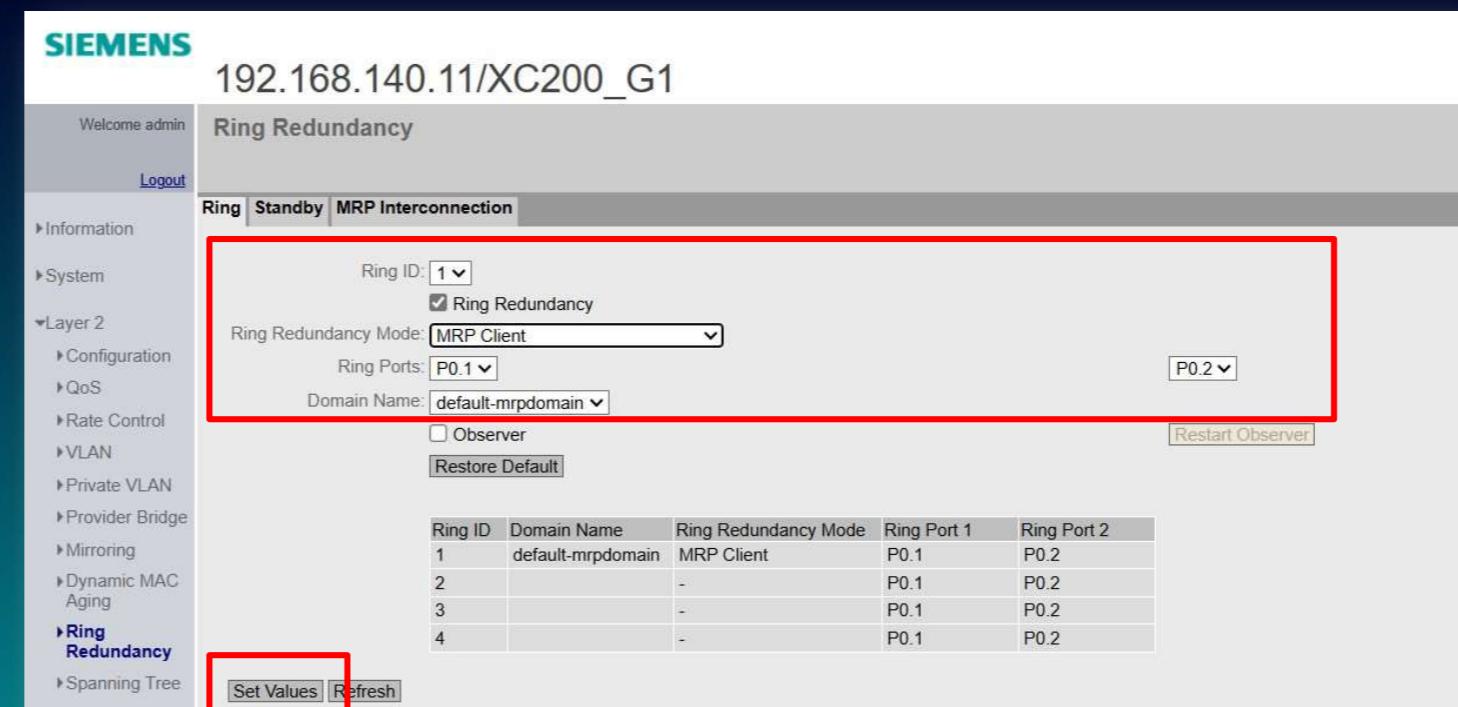


Estado Final



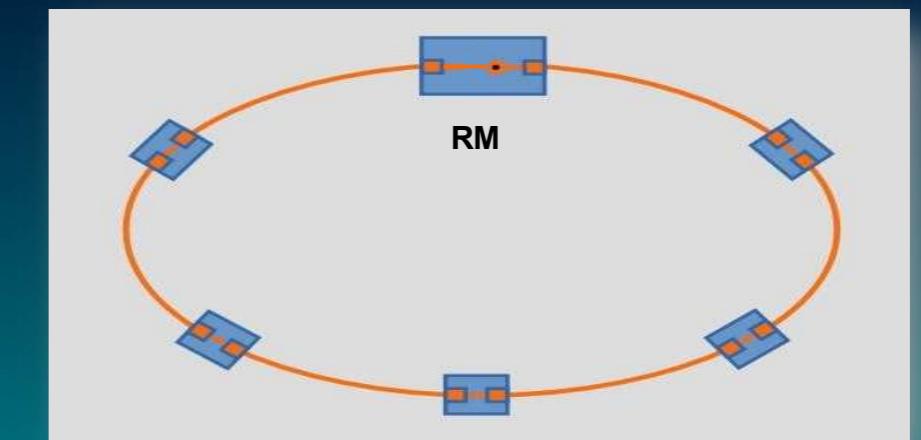
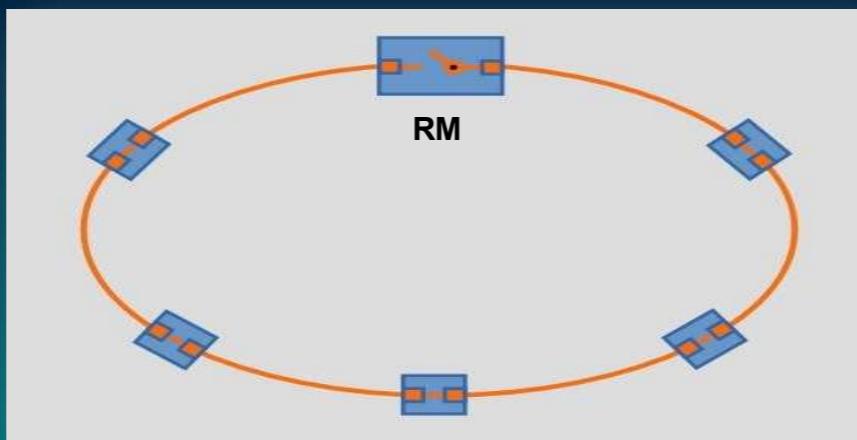
## XC200 – Configuración MRP

- **Layer 2 > Ring Redundancy > Ring > Habilitar MRP Client**
- Seleccionar los puertos del anillo: **P0.1 y P0.2**
- Seleccionar dominio MRP: **default-mrpdomain**
- Apunta el dominio MRP, debe ser el mismo en todos los dispositivos del anillo.



## XC200 – Anillo MRP información

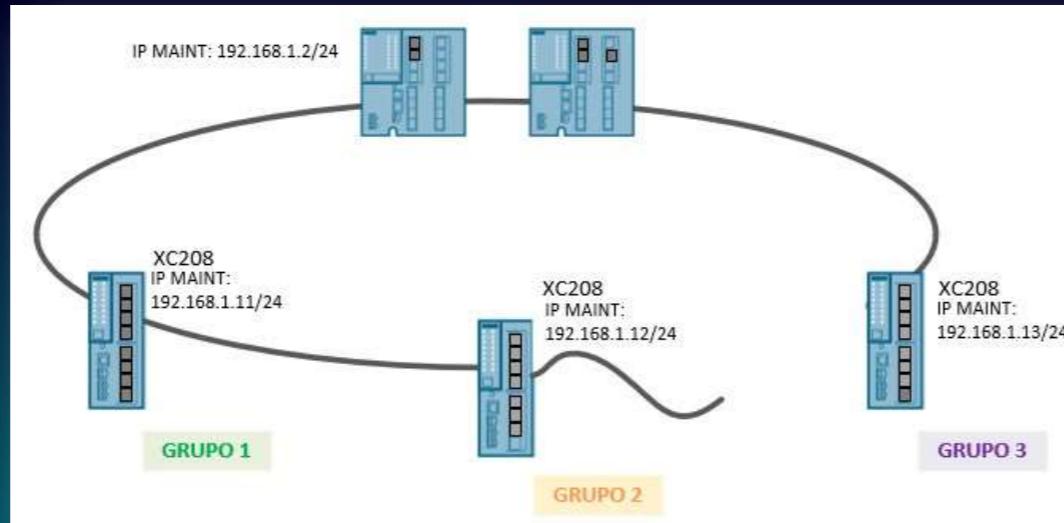
- **System > Ports > Blocked by...**
- ¿En que estado están los puertos del anillo?
- ¿Y en el RM 192.168.140.1?
- ¿En que estado están los puertos en el RM cuando salta la redundancia? – *Avisar al supervisor para que provoque la caída.*
- ¿Qué puerto se pasiva al recuperarse?



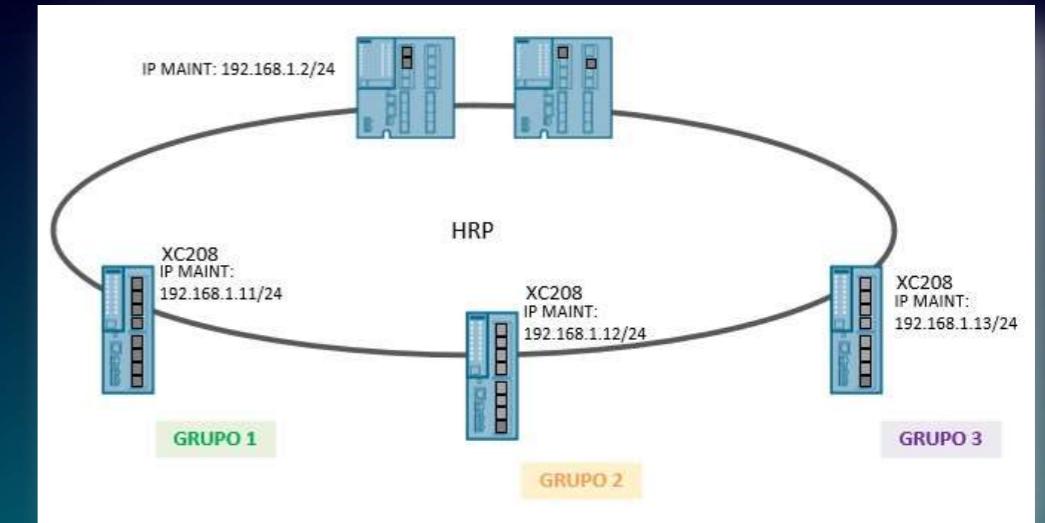
## XC200 – Esquema de configuración HRP

- **Objetivo:** Configurar una topología redundante HRP.

Estado Inicial

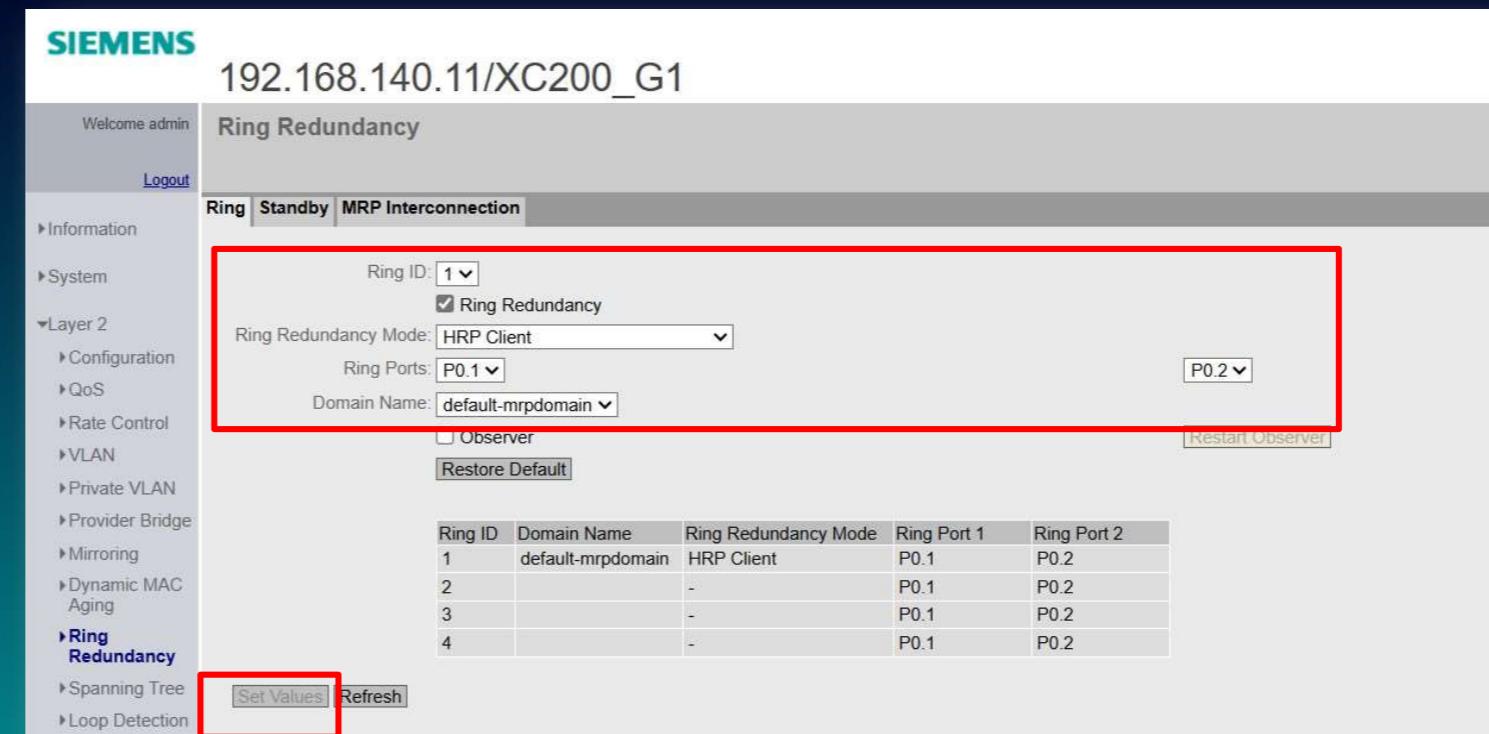


Estado Final



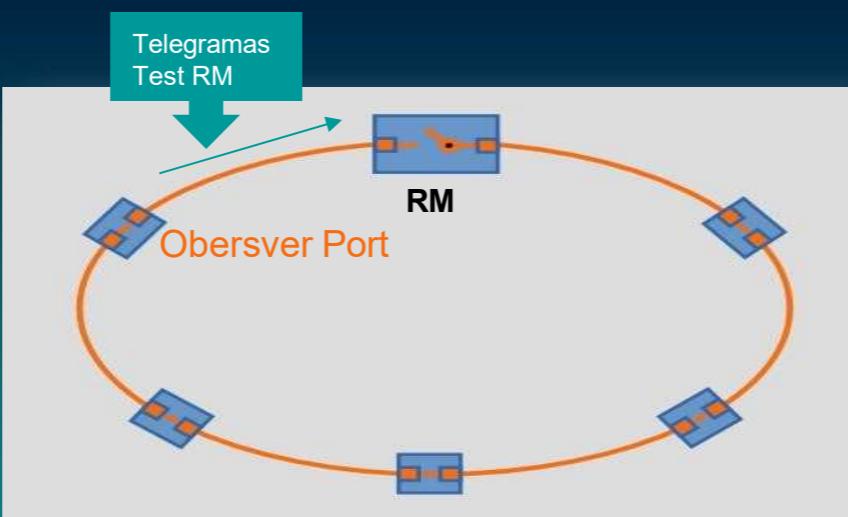
## XC200 – Configuración HRP

- Layer 2 > Ring Redundancy > Ring > Habilitar HRP Client
- Seleccionar los puertos del anillo: **P0.1 y P0.2**
- Seleccionar dominio MRP: **default-mrpdomain**
- Apunta el dominio MRP, debe ser el mismo en todos los dispositivos del anillo.



## XC200 – Anillo HRP información

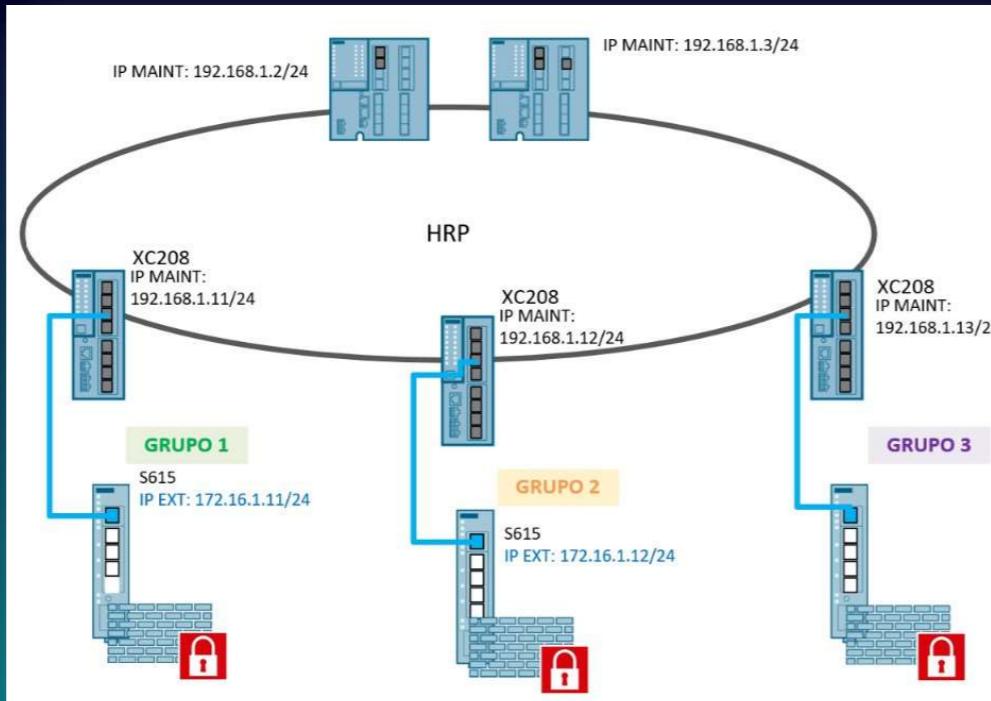
- **System > Ports > Blocked by...**
- ¿En que estado están los puertos del anillo?
- ¿Y en el RM 192.168.140.1?
- ¿En que estado están los puertos en el RM cuando salta la redundancia? – *Avisar al supervisor para que provoque la caída.*
- ¿Qué puerto se pasiva al recuperarse?



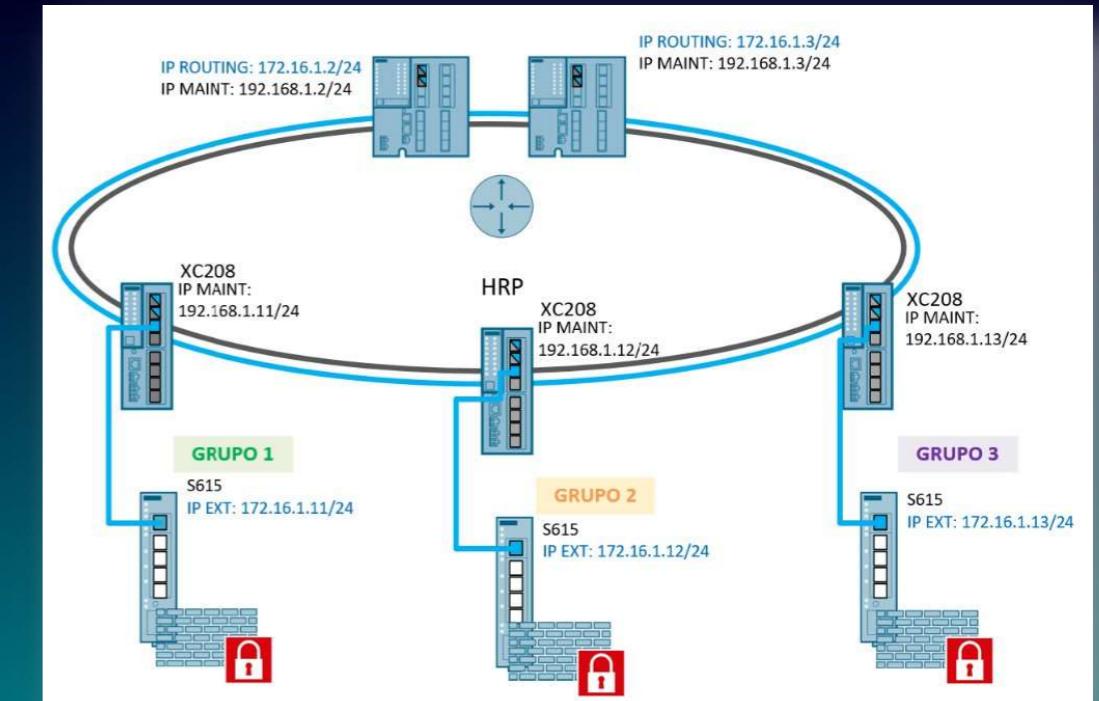
## XC200 – VLANs

- **Objetivo:** Comunicar entre los grupos de automatización.

Estado Inicial



Estado Final



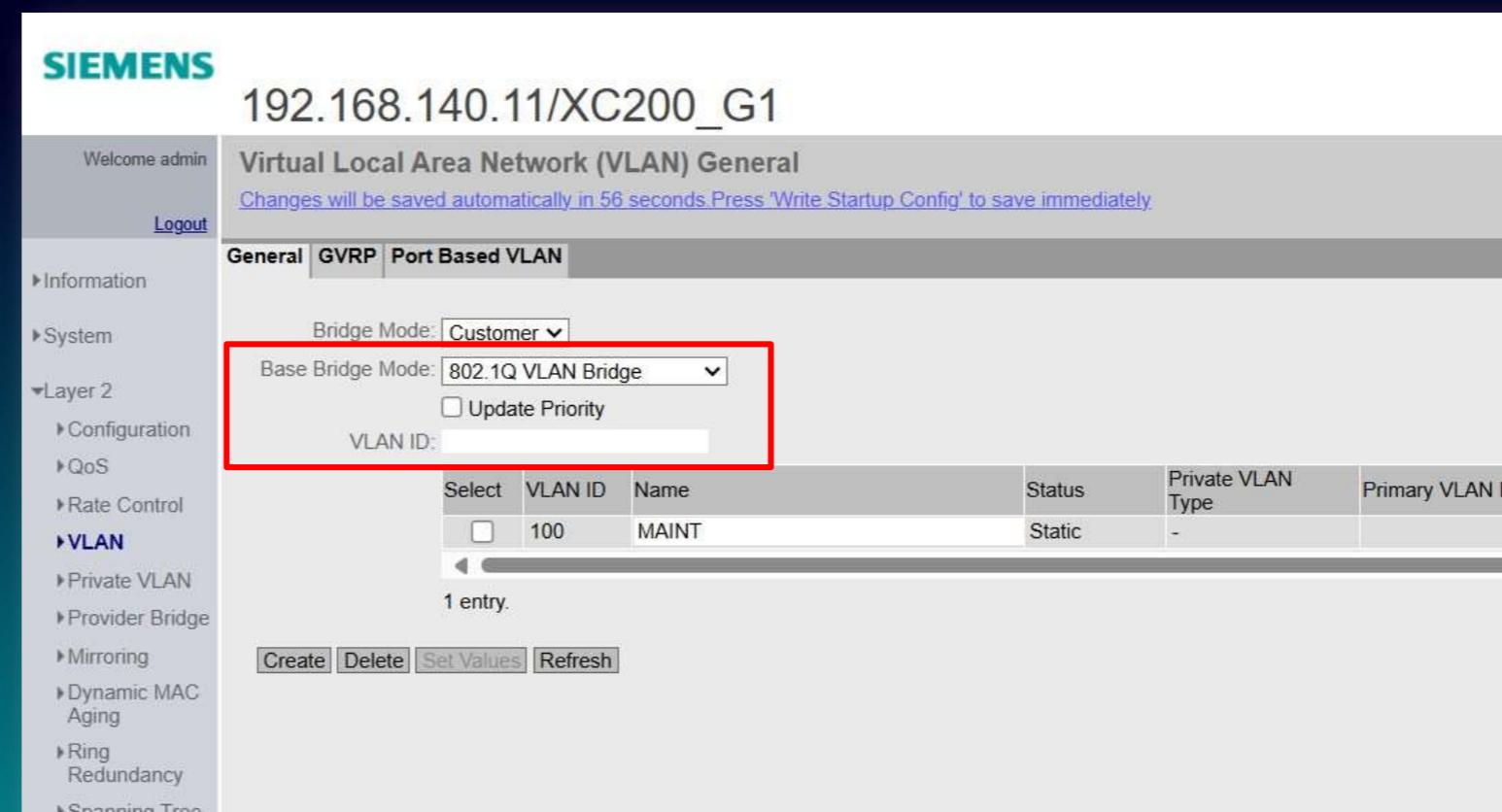
## S615 – Comprobar comunicación

- Haz PING a los S615 de los otros grupos 192.168.1X2.1 : **System > PING**
- ¿Responde? ¿Por qué?



## XC200 – Creación VLANs

- Layer 2 > VLAN > VLAN Bridge
- Crear VLAN de routing: VLAN ID 200

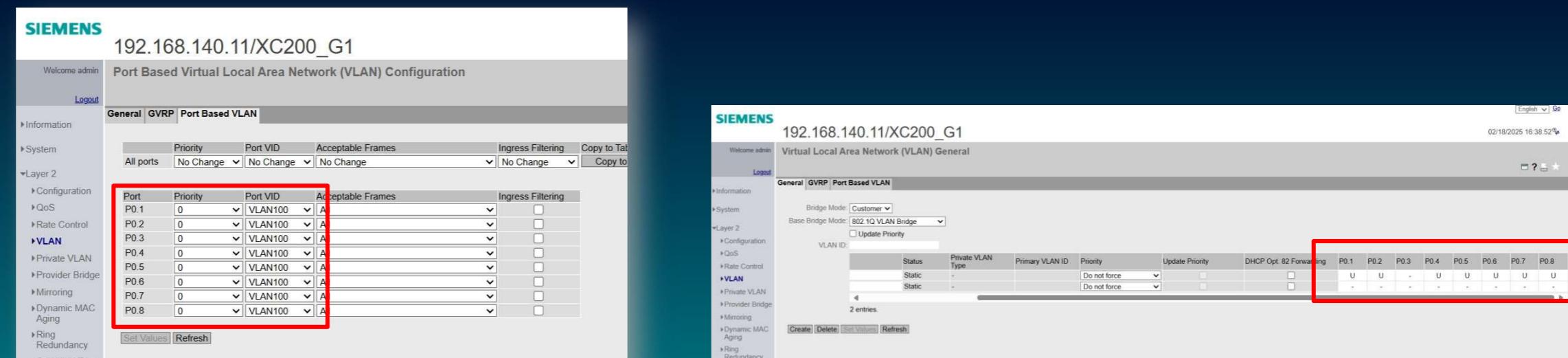


The screenshot shows the Siemens XC200 configuration interface for creating VLANs. The URL is 192.168.140.11/XC200\_G1. The page title is "Virtual Local Area Network (VLAN) General". The left sidebar shows navigation options: Welcome admin, Logout, Information, System, Layer 2 (Configuration, QoS, Rate Control, VLAN, Private VLAN, Provider Bridge, Mirroring, Dynamic MAC Aging, Ring Redundancy, Spanning Tree). The main content area is titled "Virtual Local Area Network (VLAN) General" and shows "Changes will be saved automatically in 56 seconds. Press 'Write Startup Config' to save immediately." It has tabs for General, GVRP, and Port Based VLAN, with General selected. Under General, "Bridge Mode" is set to "Customer" and "Base Bridge Mode" is set to "802.1Q VLAN Bridge". A red box highlights the "Base Bridge Mode" dropdown and the "Update Priority" checkbox. A table lists a single entry: VLAN ID 100, Name MAINT, Status Static, Private VLAN Type -, and Primary VLAN ID -. At the bottom are buttons for Create, Delete, Set Values, and Refresh.

## XC200 – Distribución VLANs

¡Aquí tienes dos retos!

- Asignar VLANs a los puertos (Pista: esto depende del equipo con el que se conecte)  
**Layer 2 > VLAN > Port-Based VLAN**
- Asignar roles a los puertos (Pista: Depende de las VLANs que quieras dejar pasar por el puerto)  
**Layer 2 > VLAN > VLAN Bridge**



**Port Based Virtual Local Area Network (VLAN) Configuration**

Port	Priority	Port VID	Acceptable Frames	Ingress Filtering
P0.1	0	VLAN100	A	
P0.2	0	VLAN100	A	
P0.3	0	VLAN100	A	
P0.4	0	VLAN100	A	
P0.5	0	VLAN100	A	
P0.6	0	VLAN100	A	
P0.7	0	VLAN100	A	
P0.8	0	VLAN100	A	

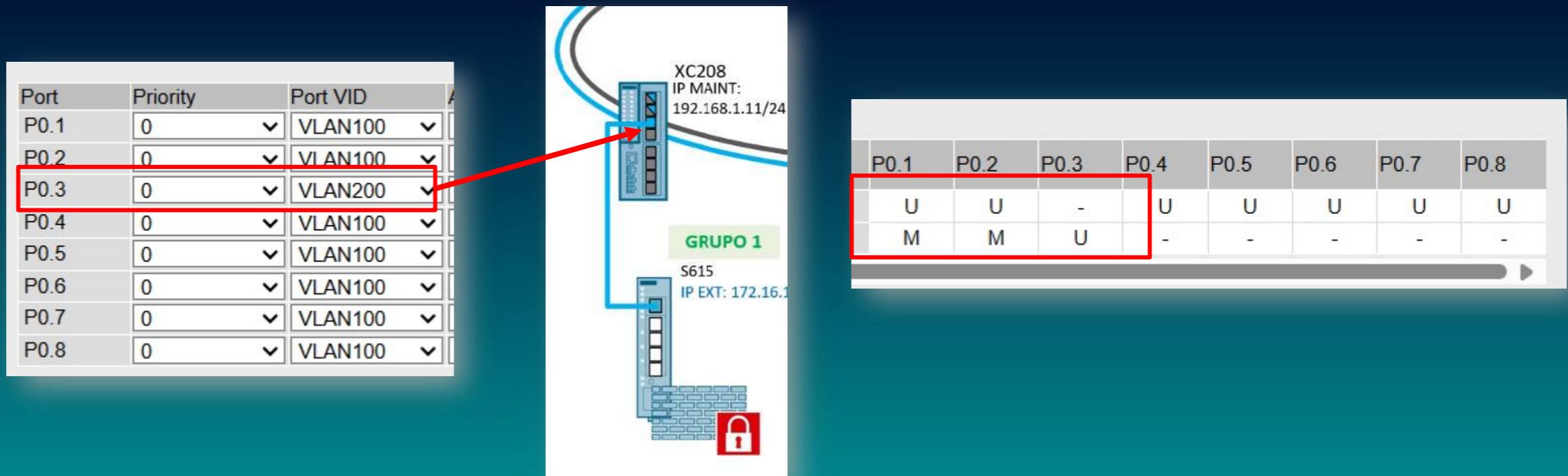
**Virtual Local Area Network (VLAN) General**

VLAN ID	Status	Private VLAN Type	Primary VLAN ID	Priority	Update Priority	DHCP Opt. 82 Forwarding	P0.1	P0.2	P0.3	P0.4	P0.5	P0.6	P0.7	P0.8
1	Static	-	-	Do not force			U	U	-	U	U	U	U	U
2	Static	-	-	Do not force			+	+	+	+	+	+	+	+

## XC200 – Distribución VLANs

¡Aquí tienes dos retos!

- Asignar VLANs a los puertos (Pista: esto depende del equipo con el que se conecte)  
**Layer 2 > VLAN > Port-Based VLAN**
- Asignar roles a los puertos (Pista: Depende de las VLANs que quieras dejar pasar por el puerto)  
**Layer 2 > VLAN > VLAN Bridge**



## S615 – Comprobar comunicación

- Haz PING a los S615 de los otros grupos 192.168.1x2.1: **System > PING**
- ¿Responde? ¿Por qué?

