

## 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!

The screenshot shows the SINEMA Remote Connect Client interface. At the top, a status bar indicates 'CONNECTED' with a green leaf icon. Below this, the 'SINEMA Remote Connect Account' section displays the SINEMA RC URL as 139.16.189.200, the user as USER\_G1, and the NAT status as None. A red arrow points from the 'CONNECTED' status to the 'Connect' button in the 'Device list' section. The 'Device list' section contains a table with the following data:

Device name	VPN address	Subnet name	Remote subnet (Port)	Node name	Node address (Port)	Status	Location	Allow communication
SC646_Remote_LABS		AutomatizacionG1 Routing	192.168.112.0/24	XC200_G1	192.168.140.11	ONLINE	Lab	YES

Red arrows highlight the 'Connect' button and the 'YES' button in the 'Allow communication' column of the table.

## 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
```

SIEMENS

Name:

Password:

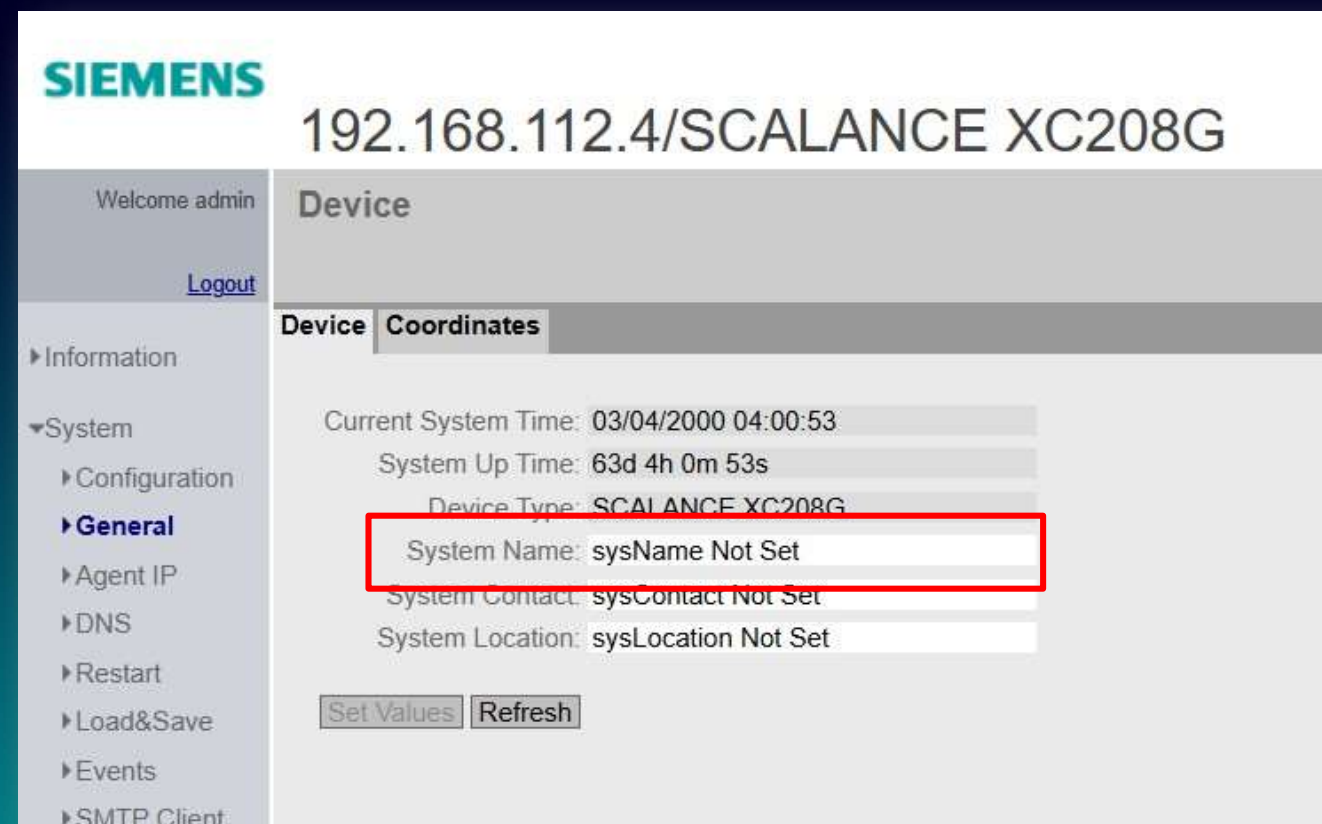
Login

[Switch to insecure HTTP](#)

For information about browser compatibility please refer to the manual

## XC200 - Asignar nombre al equipo

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



SIEMENS 192.168.112.4/SCALANCE XC208G

Welcome admin [Logout](#)

Information

System

Configuration

**General**

Agent IP

DNS

Restart

Load&Save

Events

SMTP Client

Device

Device	Coordinates
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	
System Contact: sysContact Not Set	
System Location: sysLocation Not Set	

[Set Values](#) [Refresh](#)

## 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

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

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 04:10:21  
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 displays the Siemens Industry Online Support interface. The top header shows the URL **192.168.112.4/SCALANCE XC208G**. The left sidebar contains a navigation menu with options: Welcome admin, Logout, Information, Start Page, Dashboard, **Versions**, I&M, ARP Table, Log Table, Faults, and Redundancy. The main content area is titled **Version Information** and contains a table with the following data:

Hardware	Name	Re
Basic Device	SCALANCE XC208G	2
Software	Description	Ve
Firmware	SCALANCE XC200 Firmware	VC
Bootloader	SCALANCE XC200 Bootloader	VC
Firmware_Running	Current running Firmware	VC

Below the table is a **Refresh** button. To the right, there is a search bar and a filter section. The filter section includes a **Filter criteria for entries** section with radio buttons for **All Products** and **My Products**. Below this is a **Product tree** dropdown menu and a search input field. The **Product** dropdown is set to **6GK5208-0BA00-2AC2**, and the **Entry type** dropdown is set to **Download (11)**. The **Date** section has **From** and **To** input fields. Below the filter section, there is a product card for **6GK5208-0BA00-2AC2** (EAN: 4047622314890 / UPC: 804766347115) with a description of the SCALANCE XC208 manageable Layer 2 IE switch. The bottom right corner of the interface shows **Save filter** and **Load filter** buttons.



## XC200 – Actualización de la versión firmware

- System > Load & Save

The screenshot shows the Siemens web interface for the SCALANCE XC208G device. The page title is '192.168.112.4/SCALANCE XC208G'. The left sidebar contains a navigation menu with 'System' expanded, showing 'Load&Save' as the selected option. The main content area is titled 'Load and Save via HTTP' and has tabs for 'HTTP', 'TFTP', 'SFTP', and 'Passwords'. Under the 'Update' section, there is a table with the following data:

Type	Description	Load	Save	Delete
Firmware	Firmware Update	Load	Save	

Below the 'Update' table is a 'Configuration' section with another table:

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	
RunningSINEMAConfig	SINEMA Running Configuration		Save	

## XC200 – Deshabilitar protocolos no seguros

- System > Configuration

**SIEMENS** 192.168.112.4/SCALANCE XC208G

Welcome admin [Logout](#)

**System Configuration**

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

☐ 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: 8dff1287f8aee98e2a2ab3cf285b5f5417af95a2e8b41...

[Write Startup Config](#)

[Set Values](#) [Refresh](#)

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

- System > DCP Discovery > Discover

SIEMENS 192.168.140.11/XC200\_G1 02/17/2025 17:36:18

Welcome admin Logout

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

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

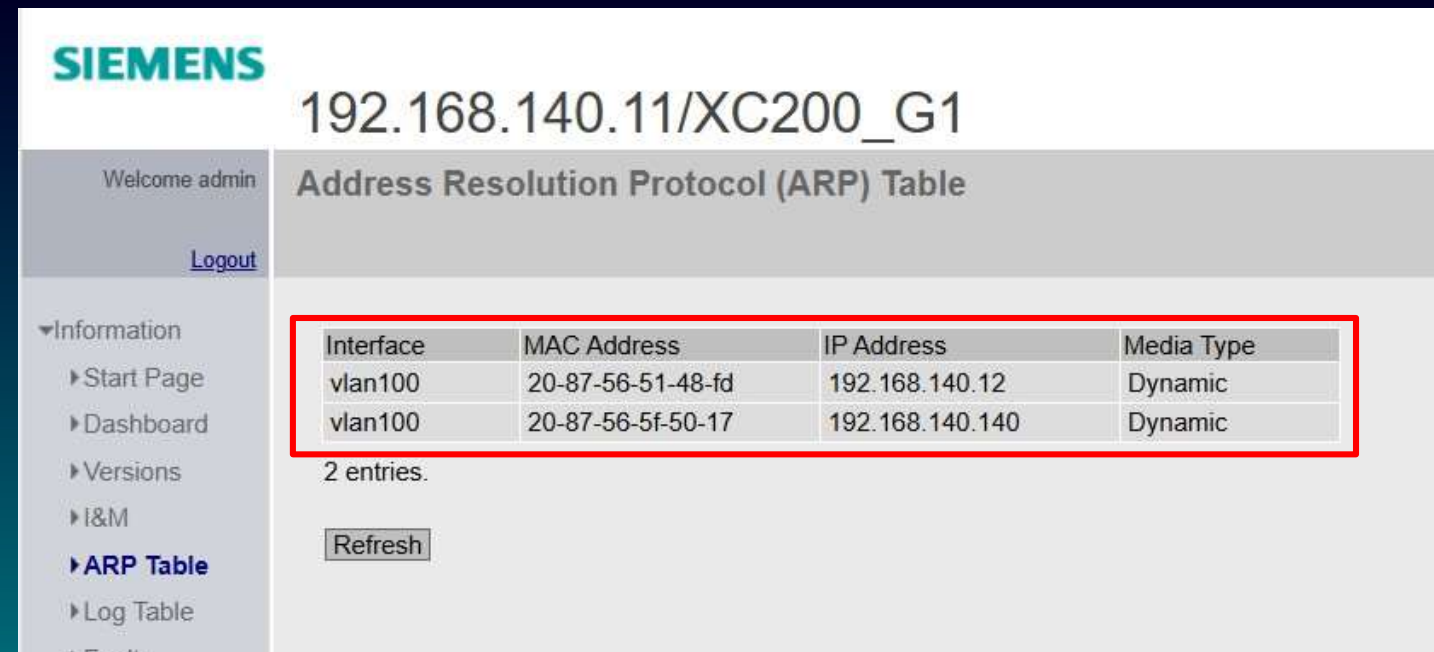
Port	MAC Address	Device Type	Device Name	IP Address	Mask Address	Gateway Address	Name Status	IP Status	Timeout[s]	Blink
0 entries.										

Set Values Refresh



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

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



The screenshot shows the Siemens XC200 web interface. The top bar displays the Siemens logo and the URL 192.168.140.11/XC200\_G1. Below the top bar, there is a navigation menu on the left with options like Start Page, Dashboard, Versions, I&M, ARP Table (highlighted), Log Table, and Faults. The main content area is titled 'Address Resolution Protocol (ARP) Table'. It contains a table with 4 columns: Interface, MAC Address, IP Address, and Media Type. The table has 2 entries, both for 'vlan100'. Below the table, it says '2 entries.' and there is a 'Refresh' button.

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

## 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

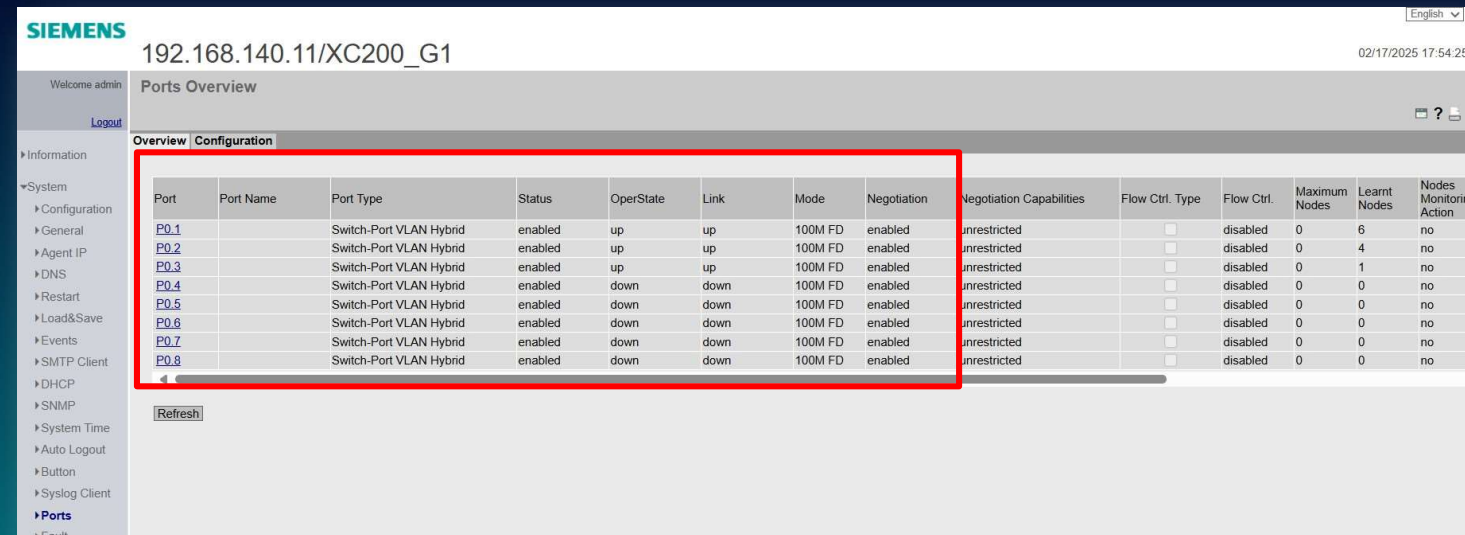
The screenshot shows the Siemens XC200 web interface. The top header displays the Siemens logo and the IP address 192.168.140.11/XC200\_G1. Below this, a navigation menu on the left includes 'Welcome admin', 'Logout', and a list of information categories: Start Page, Dashboard, Versions, I&M, ARP Table, Log Table, Faults, Redundancy, Ethernet Statistics, and Unicast. The main content area is titled 'Link Layer Discovery Protocol (LLDP) Neighbors'. It contains a table with the following data:

System Name	Device ID	Local Interface	Hold Time[s]	Capability	Port ID
	d4:f5:27:3d:88:c8	P0.3	20	Bridge,Router	port-005
VRRP_IQZ	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

Below the table is a 'Refresh' button. The entire table and button area is highlighted with a red rectangle.

## XC200 – Estado de los puertos del Switch

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

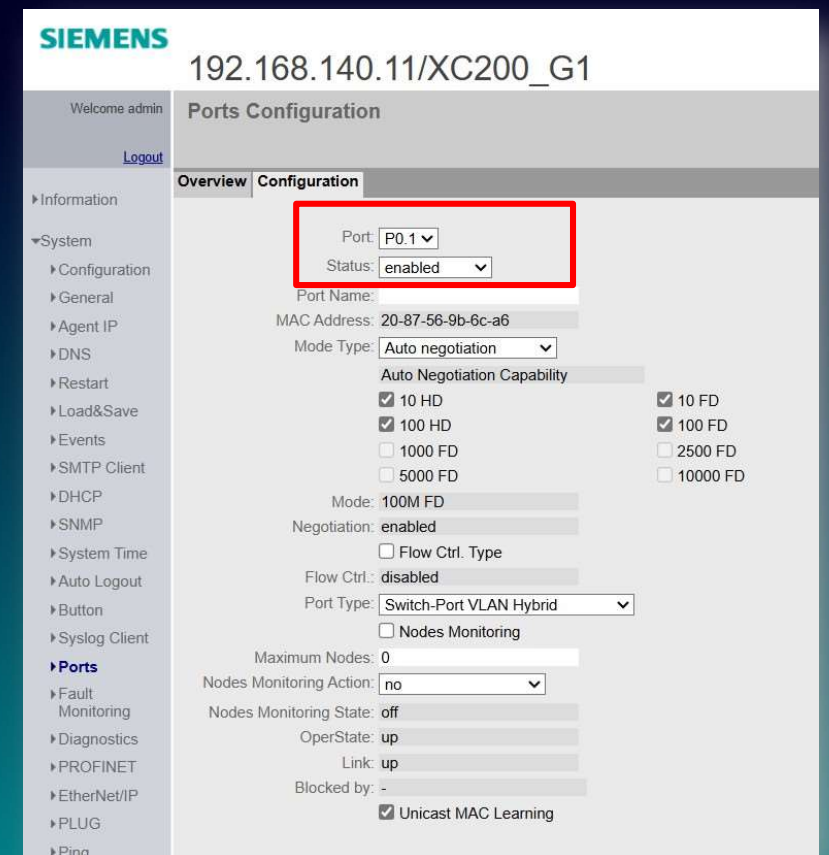


192.168.140.11/XC200\_G1

Ports Overview

Port	Port Name	Port Type	Status	OperState	Link	Mode	Negotiation	Negotiation Capabilities	Flow Ctrl. Type	Flow Ctrl.	Maximum Nodes	Learnt 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

[Refresh](#)



192.168.140.11/XC200\_G1

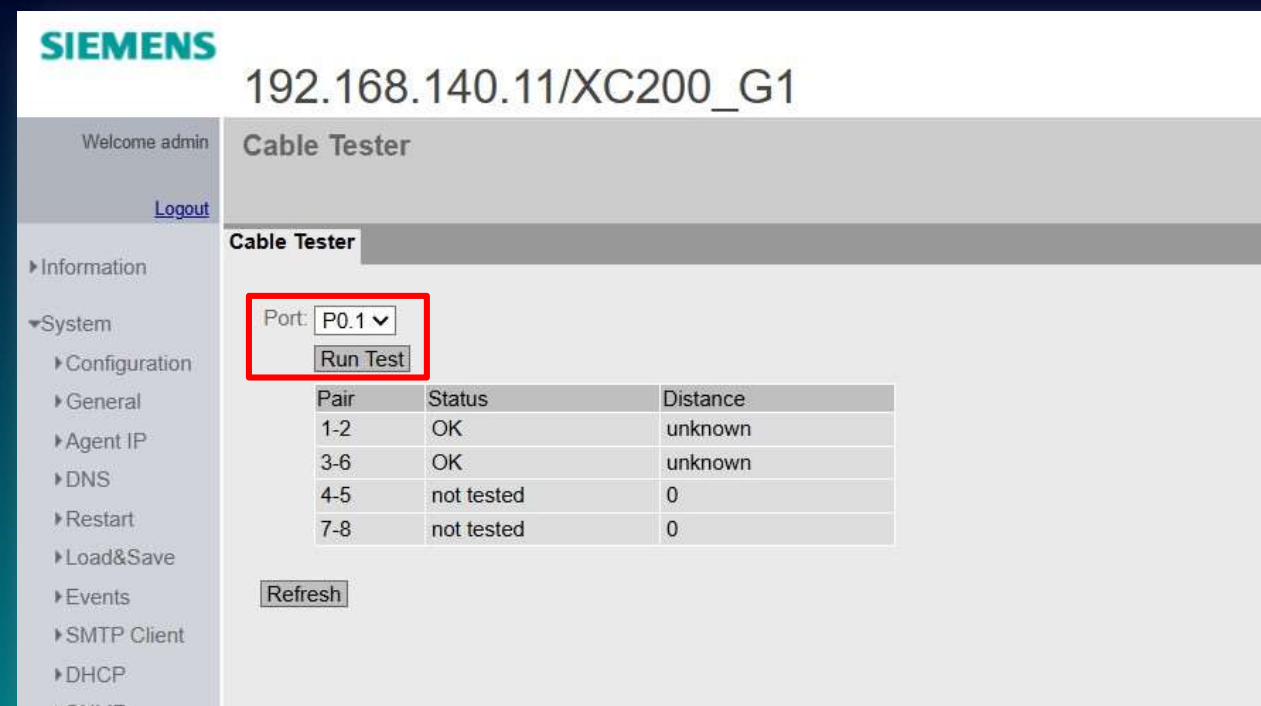
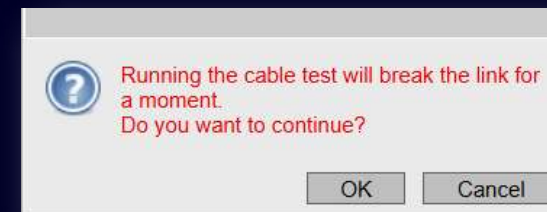
Ports Configuration

Port: **P0.1**  
Status: **enabled**

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

## XC200 – Estado del cable

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



The screenshot shows the Siemens Cable Tester web interface. The top bar displays the Siemens logo and the URL "192.168.140.11/XC200\_G1". Below this, a "Welcome admin" message and a "Logout" link are visible. The left sidebar contains a navigation menu with options: Information, System (expanded), Configuration, General, Agent IP, DNS, Restart, Load&Save, Events, SMTP Client, DHCP, and SNMP. The main content area is titled "Cable Tester" and features a "Port:" dropdown menu set to "P0.1", a "Run Test" button, and a table showing test results for different cable pairs. A "Refresh" button is located below the table.

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?

SIEMENS 192.168.140.11/XC200\_G1

Welcome admin [Logout](#)

Load and Save via HTTP

HTTP TFTP SFTP Passwords

Information

System

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

**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	
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	
WBM Fav	WBM favourite pages	Load	Save	Delete

**Certificate & Key**

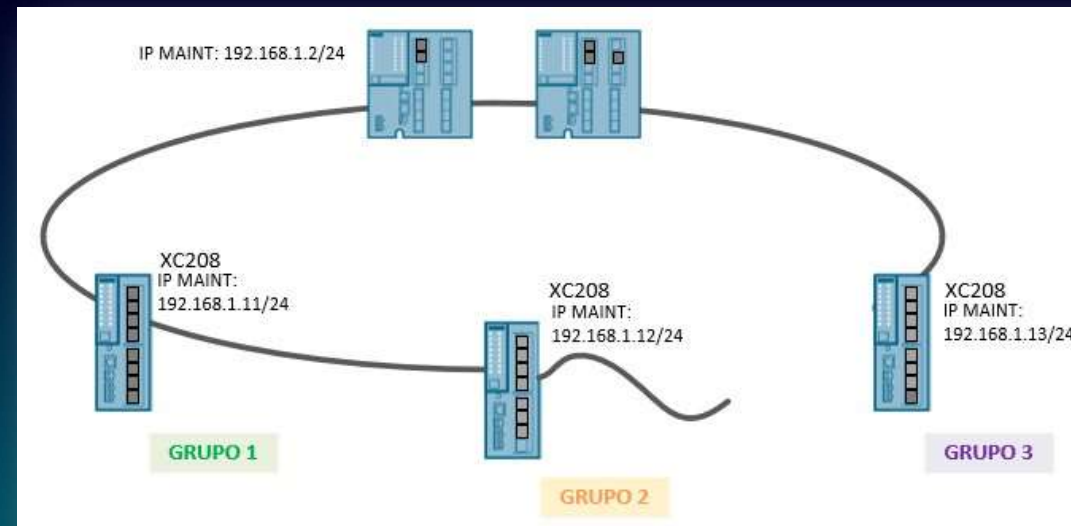
Type	Description	Load	Save	Delete
HTTPSCert	HTTPS Certificate	Load	Save	Delete



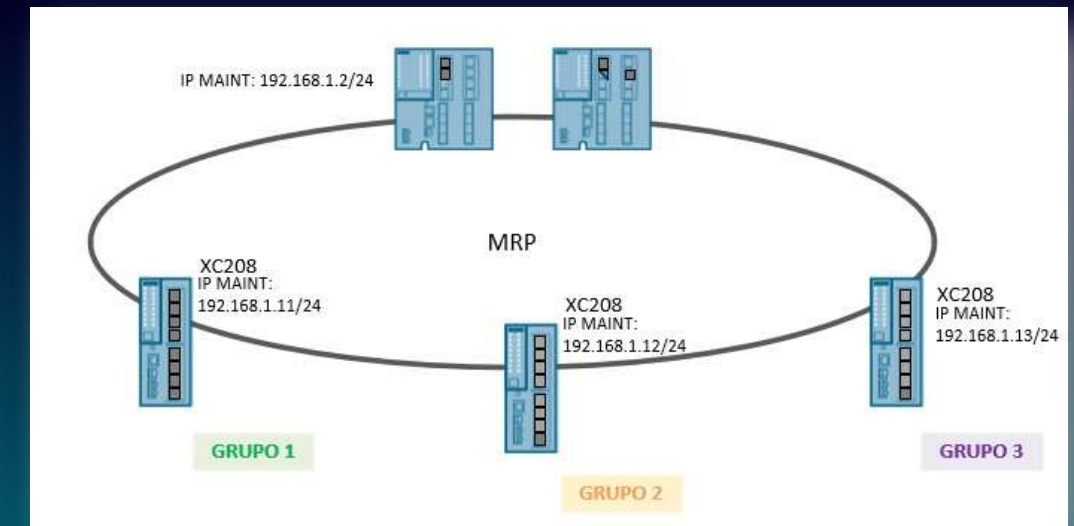
## XC200 – Esquema de configuración MRP

- **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.

SIEMENS 192.168.140.11/XC200\_G1

Welcome admin [Logout](#)

Information  
System  
Layer 2  
Configuration  
QoS  
Rate Control  
VLAN  
Private VLAN  
Provider Bridge  
Mirroring  
Dynamic MAC Aging  
**Ring Redundancy**  
Spanning Tree  
Loop Detection

### Ring Redundancy

Ring Standby MRP Interconnection

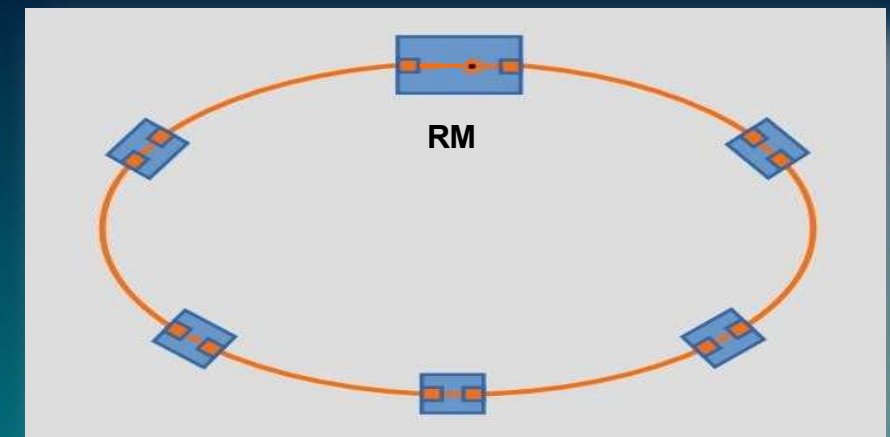
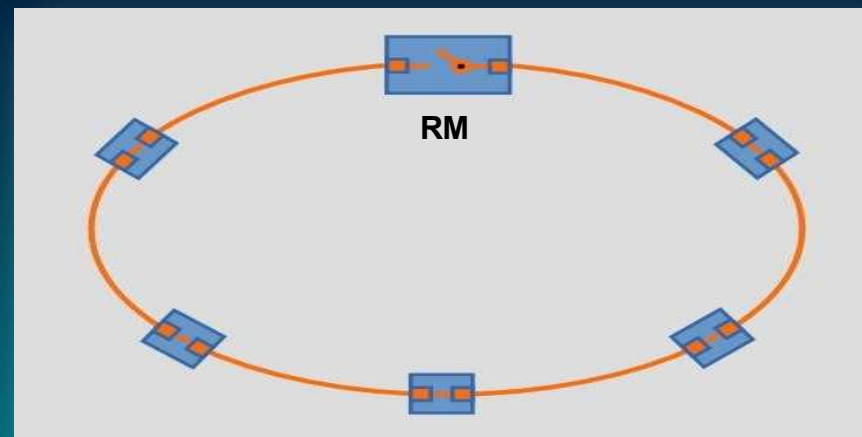
Ring ID: 1  
☒ Ring Redundancy  
Ring Redundancy Mode: MRP Client  
Ring Ports: P0.1 P0.2  
Domain Name: default-mrpdomain  
☐ Observer [Restart Observer](#)  
[Restore Default](#)

Ring ID	Domain Name	Ring Redundancy Mode	Ring Port 1	Ring Port 2
1	default-mrpdomain	MRP Client	P0.1	P0.2
2		-	P0.1	P0.2
3		-	P0.1	P0.2
4		-	P0.1	P0.2

[Set Values](#) [Refresh](#)

## XC200 – Anillo MRP información

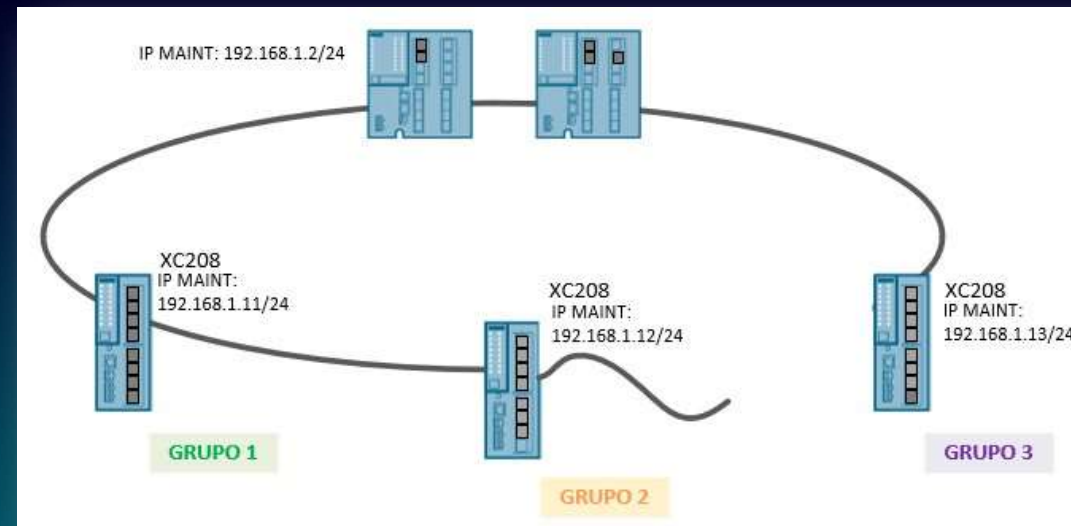
- **System > Ports > Blocked by...**
- ¿En que estado están los puertos del anillo?
- ¿Y en el RM 192.168.140.1?
- ¿En que estado están los puertos en el RM cuando salta la redundancia? – *Avisar al supervisor para que provoque la caída.*
- ¿Qué puerto se pasiva al recuperarse?



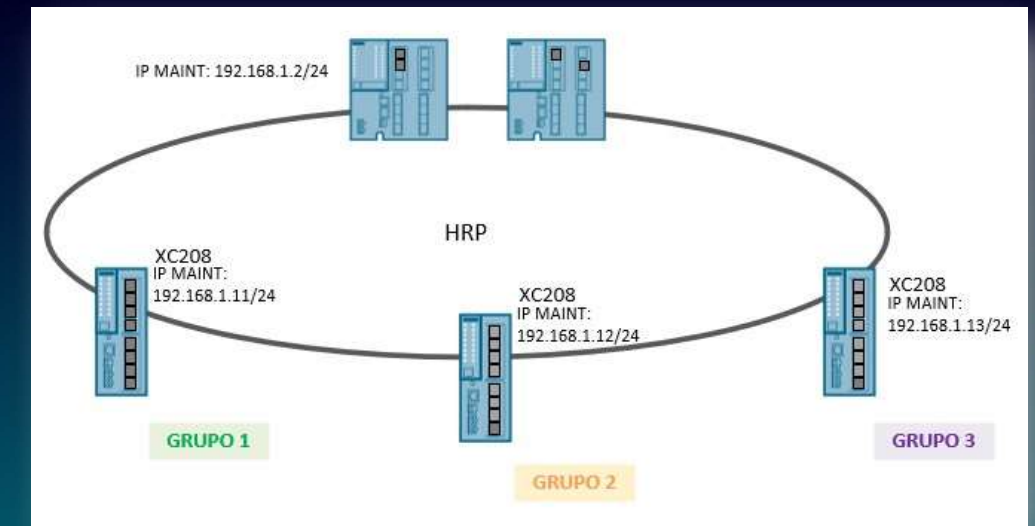
## XC200 – Esquema de configuración HRP

- **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.

SIEMENS 192.168.140.11/XC200\_G1

Welcome admin [Logout](#)

Information

System

Layer 2

Configuration

QoS

Rate Control

VLAN

Private VLAN

Provider Bridge

Mirroring

Dynamic MAC Aging

**Ring Redundancy**

Spanning Tree

Loop Detection

Ring Redundancy

Ring Standby MRP Interconnection

Ring ID: 1

☒ Ring Redundancy

Ring Redundancy Mode: HRP Client

Ring Ports: P0.1 P0.2

Domain Name: default-mrpdomain

☐ Observer [Restart Observer](#)

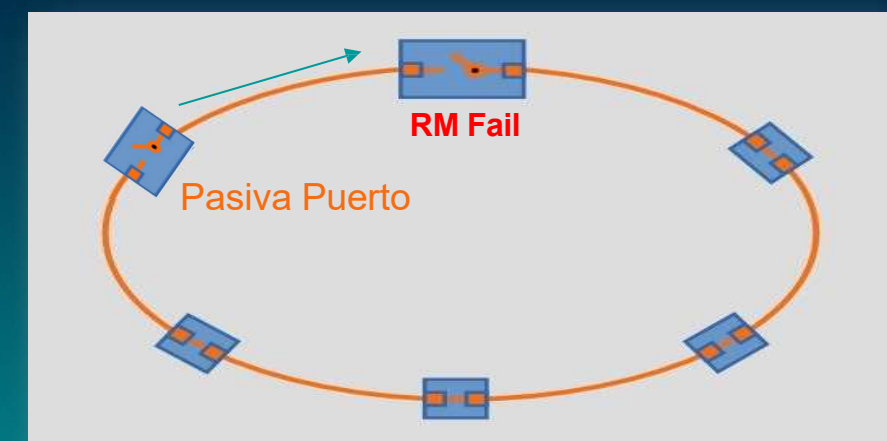
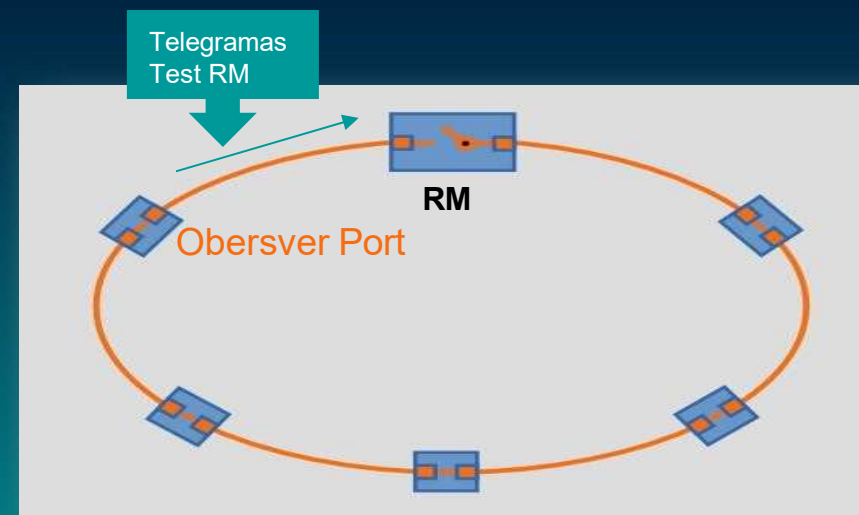
[Restore Default](#)

Ring ID	Domain Name	Ring Redundancy Mode	Ring Port 1	Ring Port 2
1	default-mrpdomain	HRP Client	P0.1	P0.2
2		-	P0.1	P0.2
3		-	P0.1	P0.2
4		-	P0.1	P0.2

[Set Values](#) [Refresh](#)

## 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?

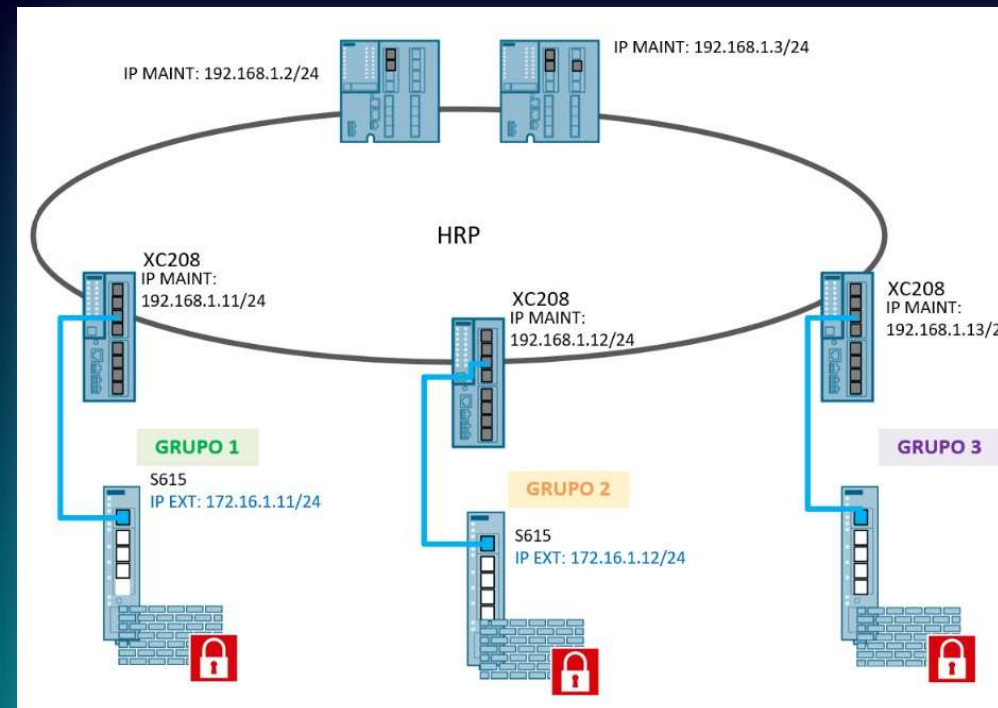




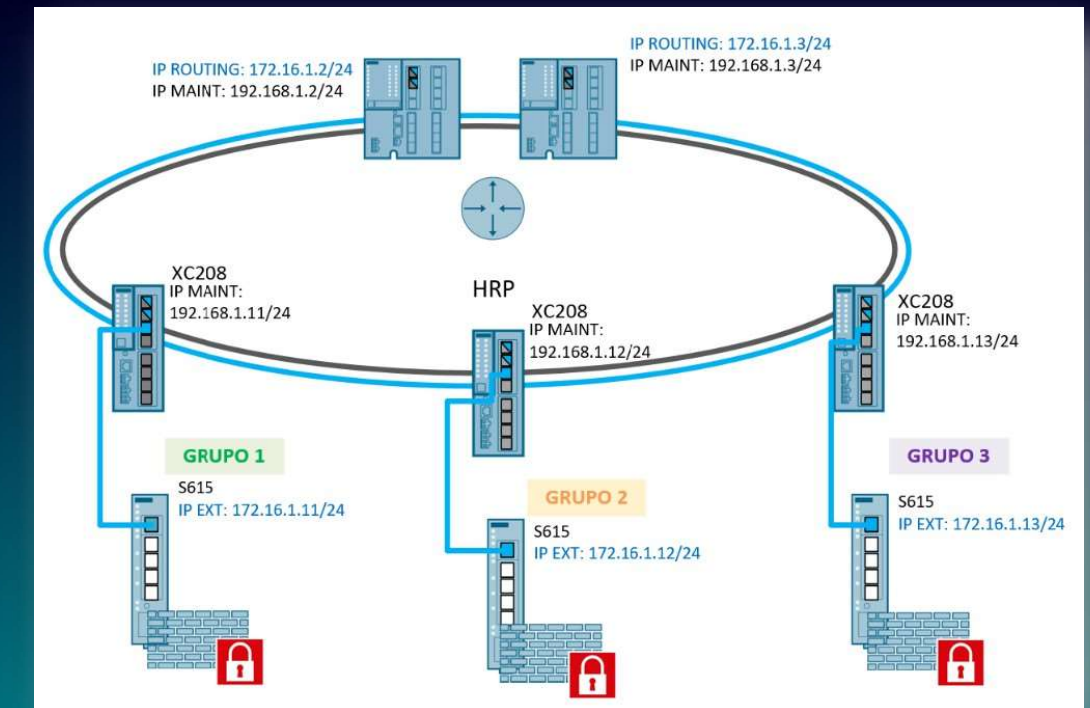
## XC200 – VLANs

- **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?

The screenshot shows the Siemens S615 web interface. The top bar displays the Siemens logo and the URL 192.168.112.1/SCALANCE S615. The left sidebar contains a navigation menu with the following items: Welcome admin, Logout, Wizards, Information, System (expanded), Configuration, General, Restart, Load&Save, Events, SMTP Client, SNMP, System Time, Auto Logout, Button, Syslog Client, Fault Monitoring, PLUG, Ping (highlighted), and DCP Discovery. The main content area is titled 'Ping' and contains the following fields: Destination Address (172.16.140.12), Repeat (3), DNS Resolution (Auto), and Out Interface for IPv6 (-). A 'Ping' button is located to the right of the Repeat field. Below these fields, a message states: 'Out Interface is required only when pinging IPv6 multicast and link-local addresses'. The 'Ping Output' section is a large text area, and a 'Clear' button is located at the bottom left of this section.

## XC200 – Creación VLANs

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

SIEMENS 192.168.140.11/XC200\_G1

Welcome admin [Logout](#)

Virtual Local Area Network (VLAN) General  
[Changes will be saved automatically in 56 seconds. Press 'Write Startup Config' to save immediately.](#)

General GVRP Port Based VLAN

Bridge Mode:

Base Bridge Mode:

☐ Update Priority

VLAN ID:

Select	VLAN ID	Name	Status	Private VLAN Type	Primary VLAN ID
<input type="checkbox"/>	100	MAINT	Static	-	

1 entry.

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

# XC200 – Distirbución VLANs

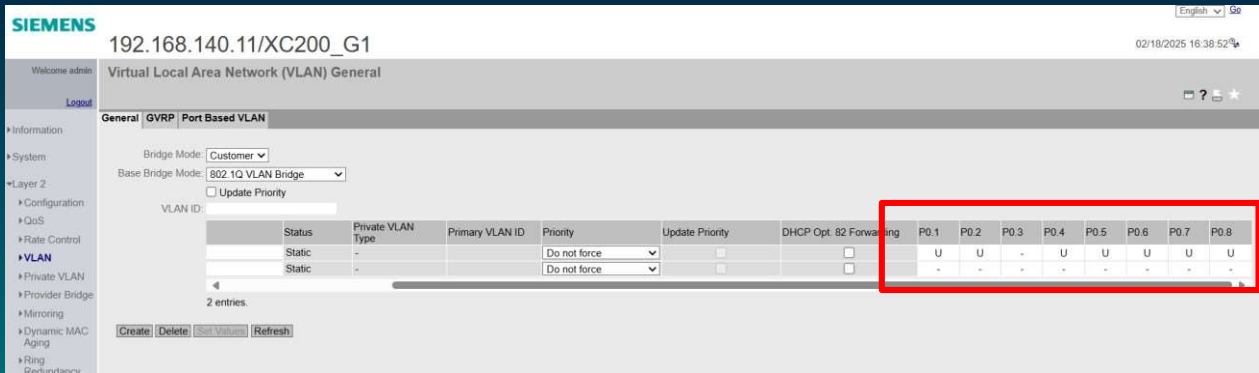
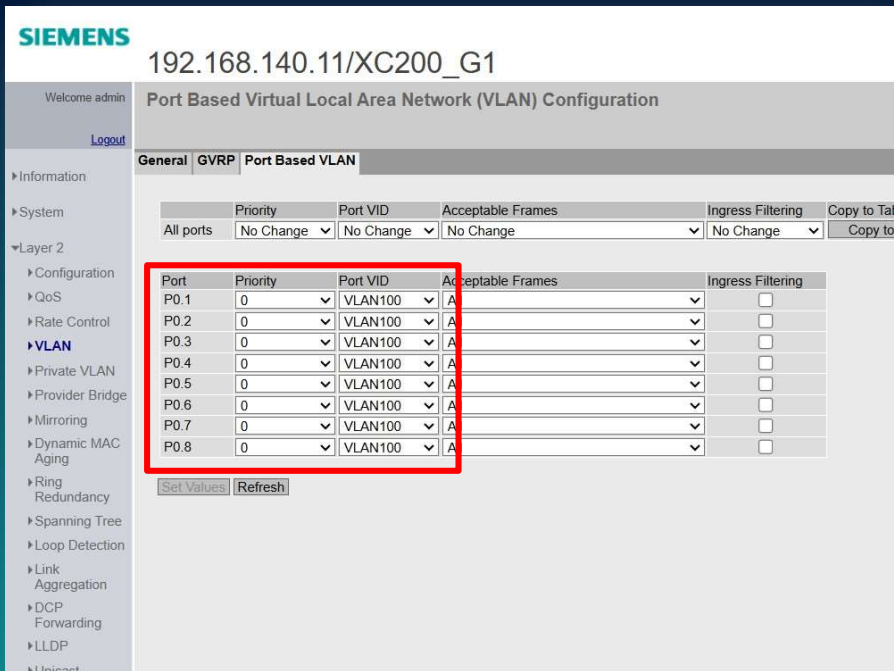
¡Aquí tienes dos retos!

- 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



## XC200 – Distribución VLANs

¡Aquí tienes dos retos!

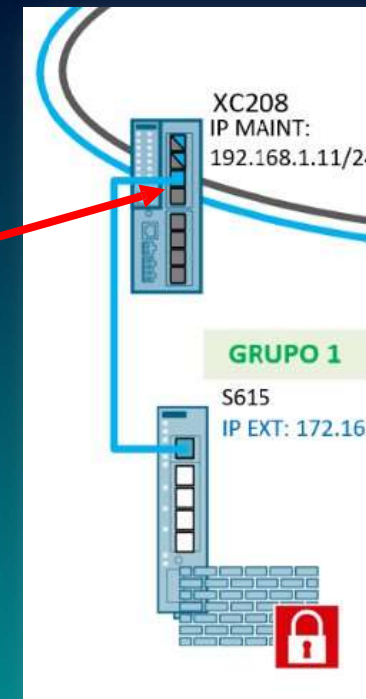
- Asignar VLANs a los puertos (Pista: esto depende del equipo con el que se conecte)

**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	Priority	Port VID
P0.1	0	VLAN100
P0.2	0	VLAN100
P0.3	0	VLAN200
P0.4	0	VLAN100
P0.5	0	VLAN100
P0.6	0	VLAN100
P0.7	0	VLAN100
P0.8	0	VLAN100



P0.1	P0.2	P0.3	P0.4	P0.5	P0.6	P0.7	P0.8
U	U	-	U	U	U	U	U
M	M	U	-	-	-	-	-

## S615 – Comprobar comunicación

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

The screenshot shows the Siemens S615 web interface. The top bar displays the Siemens logo and the URL 192.168.112.1/SCALANCE S615. The left sidebar contains a navigation menu with the following items: Welcome admin, Logout, Wizards, Information, System (expanded), Configuration, General, Restart, Load&Save, Events, SMTP Client, SNMP, System Time, Auto Logout, Button, Syslog Client, Fault Monitoring, PLUG, Ping (highlighted), and DCP Discovery. The main content area is titled 'Ping' and contains the following fields: Destination Address (172.16.140.12), Repeat (3), DNS Resolution (Auto), and Out Interface for IPv6 (-). A 'Ping' button is located to the right of the Repeat field. Below these fields, a message states: 'Out Interface is required only when pinging IPv6 multicast and link-local addresses'. The 'Ping Output' section is a large text area, and a 'Clear' button is located below it.