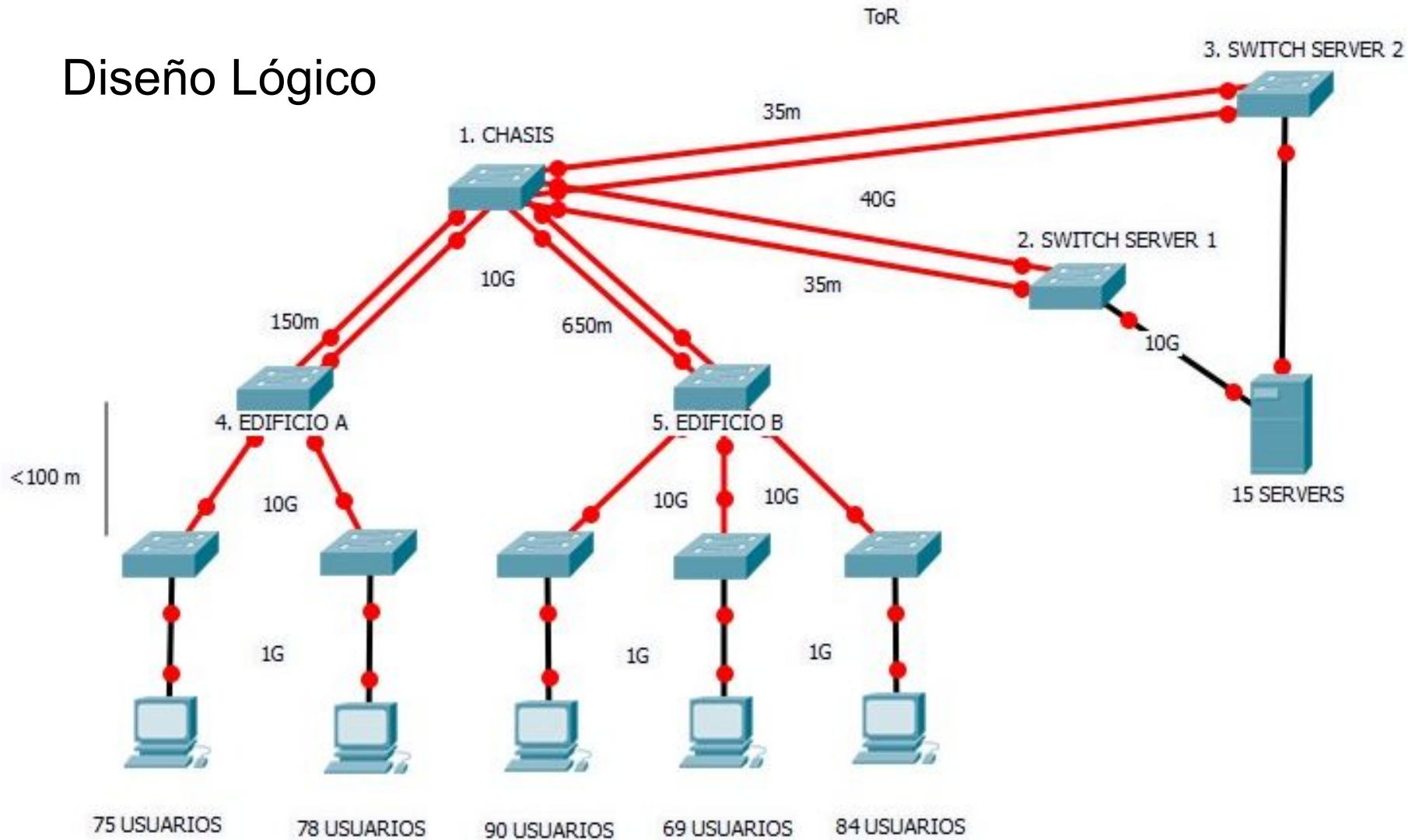

Dispositivos en LAN

— Erwin Hamid Pardo Quiroga —
Mauricio Andrés Guerra Cubillos

Diseño Lógico



Chasis vs Redundante

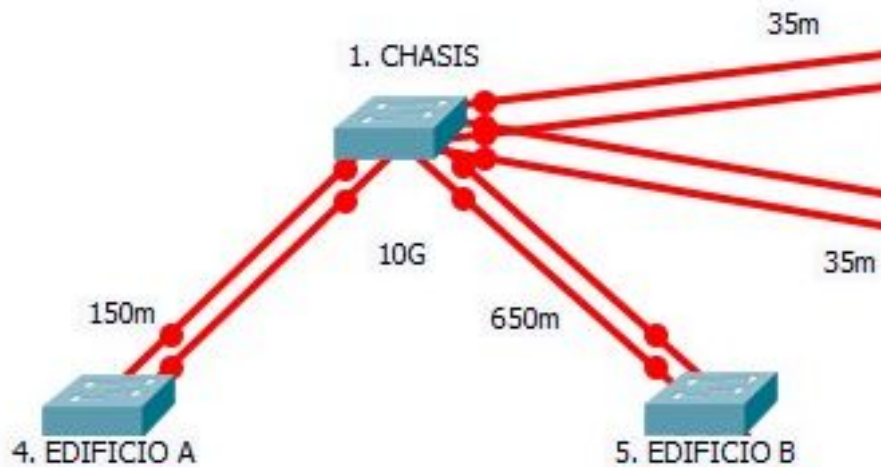
Switch	10G	40G	TRANSCEIVER
CORE		4	4 4x QSFP+, 4x XFP ó 4x SFP+
TOR1		15	2 2x QSFP+, 15x SFP+
TOR2		15	2 2x QSFP+, 15x SFP+
EDIFICIO A		5	5x XFP ó 5x SFP+
EDIFICIO B		7	7x XFP ó 7x SFP+
ACCESO	N		SFP+ si se elige apilamiento con cables Direct Attach

Switch	10G	40G	TRANSCEIVER
CORE 1		4	2 2x QSFP+, 4x XFP ó 4x SFP+
CORE 2		4	2 2x QSFP+, 4x XFP ó 4x SFP+
TOR1		15	2 2x QSFP+, 15x SFP+
TOR2		15	2 2x QSFP+, 15x SFP+
EDIFICIO A		5	5x XFP ó 5x SFP+
EDIFICIO B		7	7x XFP ó 7x SFP+
ACCESO	N		SFP+ si se elige apilamiento con cables Direct Attach

Transceivers OF

Transceiver	Data rate	Terms	Distance	Wavelengths
<p>SFP Transceiver</p> 	155M/622M/ 1.25G/ 2.5G/3G/ 4.25G	<p>Dual fiber</p> <p>Single</p> <p>Fiber/WDM</p> <p>CWDM</p> <p>DWDM</p>	300m/2km/ 10km/15k m/ 20km/40k m/ 60km/80k m/ 100km/120 km/ 150km	850nm/1310nm/155 0nm 1310nm/1490nm/15 50nm 270nm-1610nm ITU17~ITU61
<p>SFP+ Transceiver</p> 	6G/8.5G/1 0G	<p>Dual fiber</p> <p>Single</p> <p>Fiber/WDM</p> <p>CWDM</p> <p>DWDM</p>	220m/300m/ 2km/10km/ 20km/40km/ 60km/80km	850nm/1310nm/155 0nm 1270nm/1330nm 1270nm-1330nm ITU17~ITU61
<p>XFP Transceiver</p> 	10G	<p>Dual fiber</p> <p>Single</p> <p>Fiber/WDM</p> <p>CWDM</p> <p>DWDM</p>	220m/300m/ 2km/10km/ 20km/40km/ 60km/80km/ 120km	850nm/1310nm/155 0nm 1270nm/1330nm 1270nm-1610nm ITU17~ITU61

Huawei S12704



4 enlaces **40GBase-SR4** (4 pares; OM3, 100m)

2 enlaces **10G-Base-SR** (OM3, 300m)

2 enlaces **10G-Base-LR** (OS1, 10Km)

4 Enlaces 40GBase-SR4

2 tarjetas ET1D2L02OSC0 (2-Port 40GBASE-X Interface Card (OSFP+))



**40GBASE-SR4 QSFP+
MMF MTP Patch Cable**



**40GBASE Universal QSFP+
MMF Duplex LC Patch Cable**



2x 10G-Base-SR, 2x 10G-Base-LR

2 tarjetas ET1D2X04XEA0 (4-Port 10GBASE-X (XFP))



Conector Duplex SC



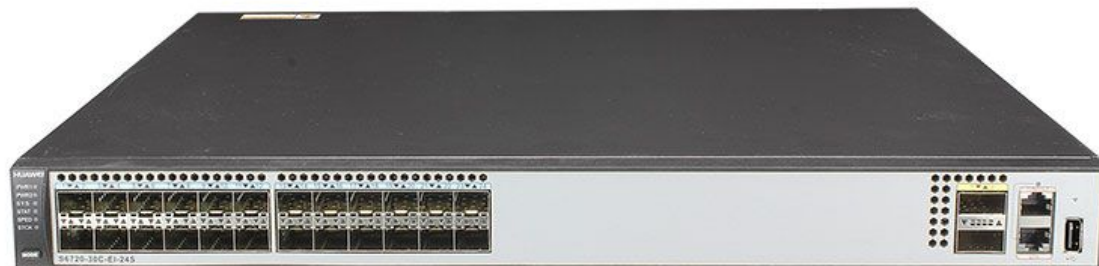
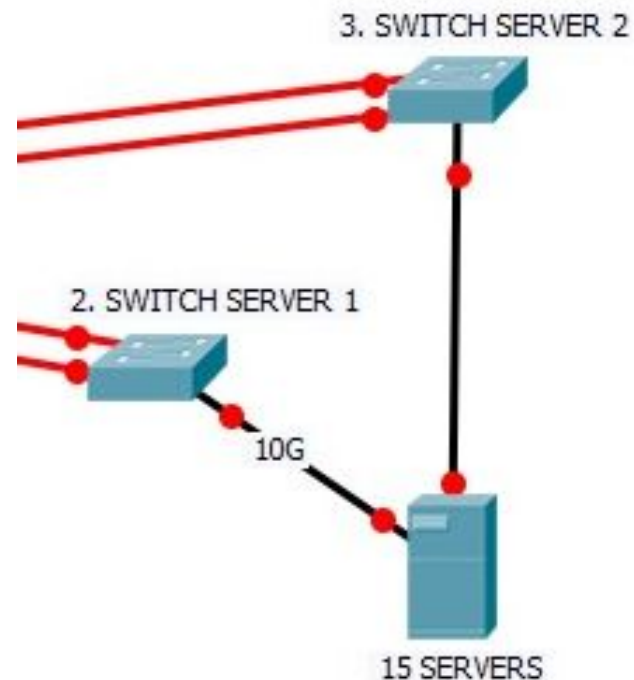
Conector Duplex LC

Huawei S6720-30C-EI-24S-AC

Cada switch debe soportar:

2 Enlaces 40GBase-SR4

15 Enlaces 10GBaseT cat 6A



Huawei S6720-30C-EI-24S-AC

24 x 10 GE SFP+

2 x 40 GE QSFP+ ports

Slot for 4 x 40GE QSFP+

Double hot-swappable
AC/DC power supplies

Forwarding: 720 Mpps

Switching capacity: 2.56
Tbit/s

Extended Module Slot

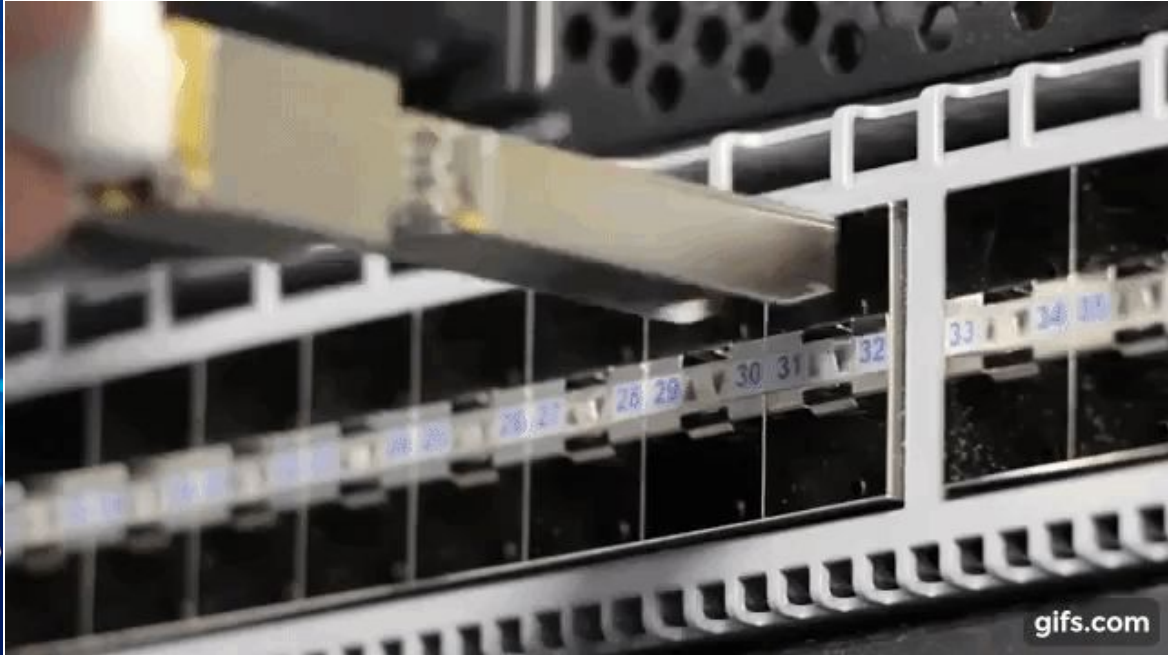
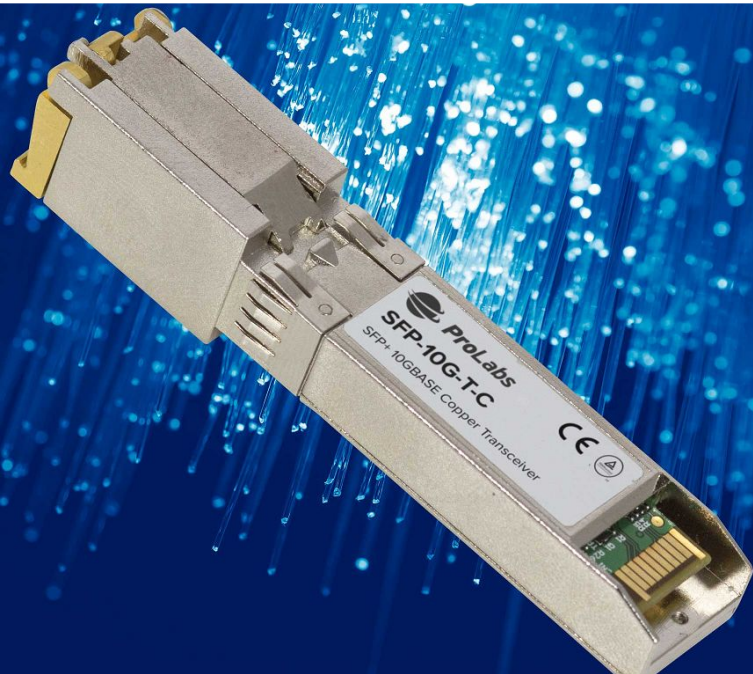


4 x 40G module

每个型号都包含一个扩展插槽，支持4端口40G QSFP+插卡，
Each model are designed with one extended slot for a 4 x 40G-port module

10GBASE-T SFP+ Copper Transceiver (RJ45)

Soporta enlaces de hasta 30m usando categoría 6A



Huawei S6700-24-EI

24 x GE SFP/10 GE SFP+ ports

Switching Capacity: 960 Gbit/s

<100 m

Forwarding: 360 Mpps

Double swappable AC/DC power supplies



Huawei S6700-24-EI

2x 10GBASE-SR (Edificio A - Core)

2x 10GBASE-LR (Edificio B - Core)

5x 10GBASE-USR / 10GBASE-SR / 10GBASE-LRM / 10GBASE-LX4 (Switches de acceso)

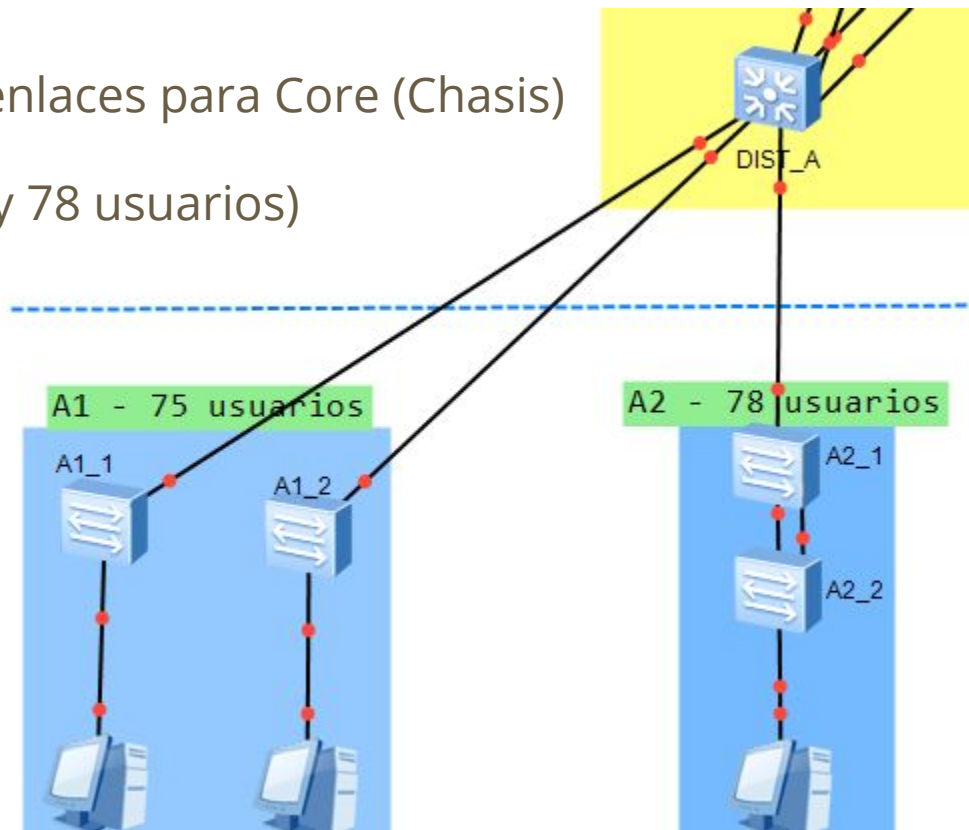
Edificio A

4 enlaces para core (Redundante) ó 2 enlaces para Core (Chasis)

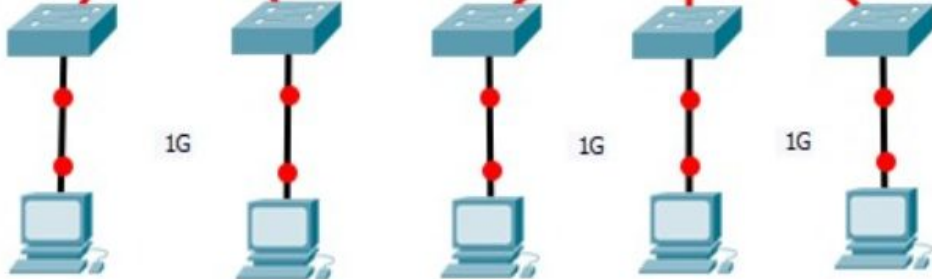
3 enlaces para switches de acceso (75 y 78 usuarios)

A1: 2 switches de 48p (Nuevo Enlace).

A2: 2 switches de 48p (Apilamiento).



S5710-108C-PWR-HI



48 x 10/100/1,000 Base-T, and 8 x 10 GE SFP+

- Three front extended slots:

Optional subcard 1: 16 x 10/100/1,000 BASE-T

Optional subcard 2: 16 x 1,000 BASE-X

- One rear extended slot:

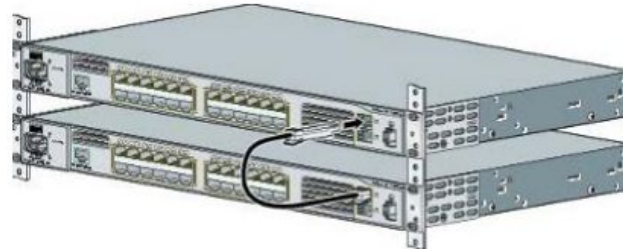
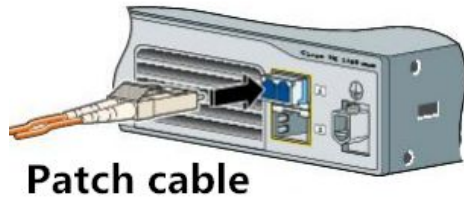
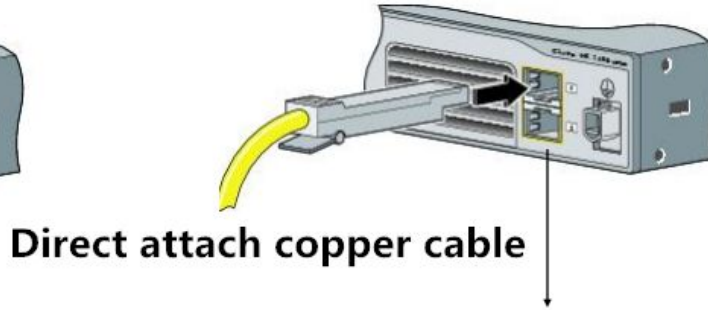
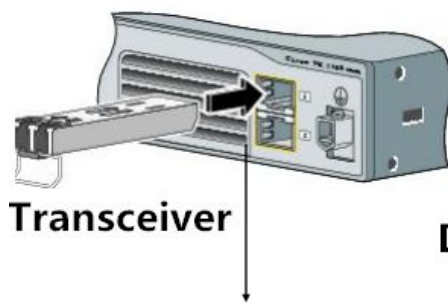
Optional subcard 1: 4 x 10 GE SFP+ (no GE auto adaption)

Optional subcard 2: 4 x 40 GE QSFP+



Transceiver en Apilamiento

SFP+ Direct Attach, hasta 15 m. Barato, de baja latencia, de baja potencia



LACP - ACTOR

CORE1 [COM: 2000]	
GE 0/0/1	↔ TOR2: GE 0/0/1
GE 0/0/2	↔ TOR1: GE 0/0/2
GE 0/0/11	↔ DIST_A: GE 0/0/11
GE 0/0/13	↔ DIST_A: GE 0/0/13
GE 0/0/21	↔ DIST_B: GE 0/0/21
GE 0/0/23	↔ DIST_B: GE 0/0/23

```
[CORE1]lacp priority 100
[CORE1]interface eth-trunk 1
[CORE1-Eth-Trunk1]mode lacp-static
[CORE1-Eth-Trunk1]max active-linknumber 2
[CORE1-Eth-Trunk1]quit
[CORE1]
<CORE1>save
```

```
<CORE1>system-view
[CORE1]int g0/0/11
[CORE1-GigabitEthernet0/0/11]eth-trunk 1
[CORE1-GigabitEthernet0/0/11]lacp priority 100
[CORE1-GigabitEthernet0/0/11]int g0/0/13
[CORE1-GigabitEthernet0/0/13]eth-trunk 1
[CORE1-GigabitEthernet0/0/13]lacp priority 100
[CORE1-GigabitEthernet0/0/13]q
[CORE1]q
<CORE1>save
```

Define el switch ACTOR

Las interfaces con mayor prioridad se activarán al fallar el enlace

Se repite para el Edificio B

LACP - Partner

DIST_A [COM: 2002]	
GE 0/0/1	↔ A1_1: GE 0/0/1
GE 0/0/2	↔ A1_2: GE 0/0/2
GE 0/0/3	↔ A2_1: Ethernet 0/0/1
GE 0/0/10	↔ CORE2: GE 0/0/10
GE 0/0/11	↔ CORE1: GE 0/0/11
GE 0/0/12	↔ CORE2: GE 0/0/12
GE 0/0/13	↔ CORE1: GE 0/0/13

```
<DIST_A>system-view
[DIST_A]interface Eth-Trunk 1
[DIST_A-Eth-Trunk1]mode lacp-static
[DIST_A-Eth-Trunk1]q
[DIST_A]int g0/0/11
[DIST_A-GigabitEthernet0/0/11]eth-trunk 1
[DIST_A-GigabitEthernet0/0/11]int g0/0/13
[DIST_A-GigabitEthernet0/0/13]eth-trunk 1
[DIST_A-GigabitEthernet0/0/13]q
[DIST_A]q
<DIST_A>save|
```