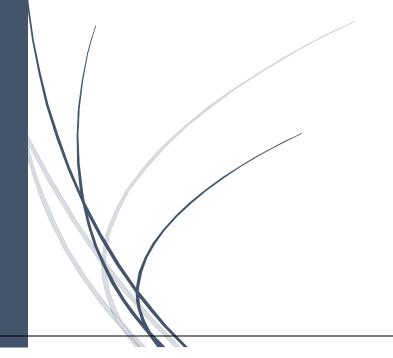21/12/2023

CCNP - PROJECT

Documentation : LAB CONFIG INTER-VLAN

PAPE LO
DSPI

NETWORK ENTERPRISE DSPI PARIS 8

1) **Equipements**

Name	Nombre	Type Câble
Router ISR 4321	3	Serial / Ethernet
Switch layer 3 WS-C3650-24PS	5	Ethernet
Servers	9	Ethernet
PC / Laptop	25	Ethernet
Printer	8	Ethernet

2) **Routers**

Device	Model	Description	Location	IOS	Licence
R1	ISR 4321	Router Etage 1	Rack-1: ETAGE-1 Bâtiment (A) Salle = 18 Armoire 1	isr4300-universalk9.03.16.05.S.155-3.S5-ext.SPA.bin	securityk9 ipbasek9
R2	ISR 4321	Router Etage 2	Rack-2: ETAGE-2 Bâtiment (A) Salle = 20 Armoire 1	isr4300-universalk9.03.16.05.S.155-3.S5-ext.SPA.bin	securityk9 ipbasek9
R3	ISR 4321	Router Etage 3	Rack-3: ETAGE-3 Bâtiment (A) Salle = 30 Armoire 1	isr4300-universalk9.03.16.05.S.155-3.S5-ext.SPA.bin	securityk9 ipbasek9

3) **SWITCH LAYER 3**

Device	Model	Ports	Description	Location	IOS	Licence	Mode
D1	WS-C3650-24PS	28	Switch 1 ETAGE-1	Rack-1: ETAGE-1 Bâtiment (A) Salle = 18 Armoire 1 Grille 1 – Etagère 1	cat3k_caa-universalk9.16.03.02.SPA.bin	ipservicesk9	BUNDLE
D2	WS-C3650-24PS	28	Switch 2 Etage 1	Rack-1: ETAGE-1 Bâtiment (A) Salle = 18 Armoire 1 Grille 2 – Etagère 1	cat3k_caa-universalk9.16.03.02.SPA.bin	ipservicesk9	BUNDLE
D3	WS-C3650-24PS	28	Switch 3 Etage 2	Rack-2: ETAGE-2 Bâtiment (A) Salle = 20 Armoire 1 Grille 1 – Etagère 1	cat3k_caa-universalk9.16.03.02.SPA.bin	ipservicesk9	BUNDLE
D4	WS-C3650-24PS	28	Switch 4 Etage 2	Rack-2: ETAGE-2 Bâtiment (A) Salle = 20 Armoire 1 Grille 2 – Etagère 1	cat3k_caa-universalk9.16.03.02.SPA.bin	ipservicesk9	BUNDLE
D5	WS-C3650-24PS	28	Switch 5 Etage 3	Rack-3: ETAGE-2 Bâtiment (A) Salle = 30 Armoire 1 Grille 1 – Etagère 1	cat3k_caa-universalk9.16.03.02.SPA.bin	ipservicesk9	BUNDLE

4) VLANs

ID	Name	Description	Nb Ports	Mode	IP	Masque	Location
			SWITCH D1				
10	DH	LAN 1 du Bureau DG	Range g1/0/2-5	Access	192.168.1.1	255.255.255.240	Salle-11
20	RH	LAN 2 du bureau RH	Range g1/0/6-9	Access	192.168.1.17	255.255.255.240	Salle-11
			SWITCH D2				
30	FINANCES	LAN 3 du bureau gestion des finances	Range g1/0/2-5	Access	192.168.1.33	255.255.255.240	Salle-15
40	IT	LAN 4 du bureau IT	Range g1/0/6-9	Access	192.168.1.49	255.255.255.240	Salle-15
			SWITCH D3				
50	MARKETING	LAN 5 du bureau marketing	Range g1/0/2-6	Access	192.168.1.68	255.255.255.240	Salle-3
60	COMMUNICATION	LAN 6 du bureau communication	Range g1/0/7-10	Access	192.168.1.85	255.255.255.240	Salle-3
			SWITCH D4				
70	LOGISTIQUE	LAN 7 du bureau logistique	Range g1/0/2-5	Access	192.168.1.115	255.255.255.240	Salle-4
80	JURIDIQUE	LAN 8 du bureau juridique	Range g1/0/6-9	Acces	192.168.1.132	255.255.255.240	Salle-4
			SWITCH D5				
90	SERVERS	LAN 9 des servers	Range g1/0/2-9	Access	209.165.200.13	255.255.255.240	Salle-30

999	NATIVE	VLAN native switch D3 – D4 – D5	G1/0/11	Trunk			Salle-3,4,30
888	SHUTPORT	D1-D2-D3-D4-D5	Range g 1/0/1,g1/0/10,g1/0/12-24,g1/1/1-4 (D1-D2-D4-D5) Range g 1/0/1,g1/0/12-24,g1/1/1-4 (D3)	Access (port shutdown)			Salle-11,15,3,4,30

5) Router IP interface

R1					
Interface	**Description**	**IPV4 address**	**IPV6 address**	**MAC address**	**Routing**
G0/0/0	Connect to SWITCH D1	192.168.1.161/28			OSPFv2
G0/0/1	Connect to SWITCH D2	192.168.1.145			OSPFv2
S0/1/0	Connect to R2	192.168.1.177/28			OSPFv2
R2					
S0/1/0	Connect to R1	192.168.1.178/28			OSPFv2
S0/1/1	Connect to R3	192.168.1.193/28			OSPFv2
G0/0/0.50	Connect to SWITCH D3 VLAN 50	192.168.1.65/28			OSPFv2 – Inter-VLAN
G0/0/0.60	Connect to SWITCH D3 VLAN 60	192.168.1.81/28			OSPFv2 – Inter-VLAN

G0/0/1.70	Connect to SWITCH D4 VLAN 70	192.168.1.113/28			OSPFv2 – Inter-VLAN
G0/0/1.80	Connect to SWITCH D4 VLAN 80	192.168.1.129/28			OSPFv2 – Inter-VLAN
R3					
S0/1/1	Connect to R2	192.168.1.194/28			OSPFv2
G0/0/0.90	Connect to SWITCH D5 VLAN 90	209.165.200.1/28			OSPFv2 – Inter-VLAN

6) Switch layer 3 ip interface

D1					
Interface	**Description**	**IPV4 address**	**IPV6 address**	**MAC address**	**Routing**
G1/0/11	Connect to R1	192.168.1.162/28			OSPFv2

D2					
Interface	**Description**	**IPV4 address**	**IPV6 address**	**MAC address**	**Routing**
G1/0/11	Connect to R1	192.168.1.146/28			OSPFv2

D3					
Interface	**Description**	**IPV4 address**	**IPV6 address**	**MAC address**	**Routing**
G1/0/11	Connect to R2			0001.c9cc.e201	

D4					
Interface	**Description**	**IPV4 address**	**IPV6 address**	**MAC address**	**Routing**
G1/0/11	Connect to R2			0001.c9cc.e202	

D5					
Interface	**Description**	**IPV4 address**	**IPV6 address**	**MAC address**	**Routing**
G1/0/11	Connect to R3			00d0.5862.ee01	

7) Commutation LAN

D1							
Port	**Description**	**Access**	**VLAN**	**Trunk**	**EtherChannel**	**Native**	**Enabled**
G1/0/11	No switchport to R1						Yes
Range G1/0/2-5	Assign to VLAN 10	Yes	10				Yes
Range G1/0/6-9	Assign to VLAN 20	Yes	20				Yes
Range g1/0/1/1, g1/0/10,g1/0/12-24, g1/1/1-4	Assign to vlan 888	Yes	888				Shutdown

D2							
Port	**Description**	**Access**	**VLAN**	**Trunk**	**EtherChannel**	**Native**	**Enabled**
G1/0/11	No switchport to R1						Yes
Range G1/0/2-5	Assign to VLAN 30	Yes	30				Yes
Range G1/0/6-9	Assign to VLAN 40	Yes	40				Yes
Range g1/0/1/1, g1/0/10,g1/0/12-24, g1/1/1-4	Assign to vlan 888	Yes	888				Shutdown

D3							
Port	**Description**	**Access**	**VLAN**	**Trunk**	**EtherChannel**	**Native**	**Enabled**
G1/0/11	Trunk To D4 via R2			Yes		999	Yes
Range G1/0/2-6	Assign to VLAN 50	Yes	50				Yes
Range G1/0/7-10	Assign to VLAN 60	Yes	60				Yes
Range g1/0/1/1,g1/0/12-24, g1/1/1-4,	Assign to VALN 888	Yes	888				Shutdown

D4							
Port	**Description**	**Access**	**VLAN**	**Trunk**	**EtherChannel**	**Native**	**Enabled**
G1/0/11	Trunk to D3 via R2			Yes		999	Yes
Range G1/0/2-5	Assign to VLAN 70	Yes	70				Yes
Range G1/0/6-9	Assign to VLAN 80	Yes	80				Yes
Range g1/0/1/1, g1/0/10,g1/0/12-24, g1/1/1-4	Assign to VLAN 888	Yes	888				Shutdown

D5							
Port	**Description**	**Access**	**VLAN**	**Trunk**	**EtherChannel**	**Native**	**Enabled**
G1/0/11	Trunk via R3			Yes		999	Yes
Range G1/0/2-14	Assign to VLAN 90	Yes	90				Yes
Range g1/0/1/1, g1/0/10,g1/0/12-24, g1/1/1-4	Assign to VLAN 888	Yes	888				Shutdown

8) <u>Servers</u>

Device	OS	Services	MAC Address	IPV4 address	Default gateway	DNS	Location
WEB	MS Server 2019	HTTP - HTTPS	0007.ec24.a81e	209.165.200.2			Rack-3: ETAGE-3 Bâtiment (A) Salle = 30 Armoire 1 GRILLE 1 ETAGERE 1
DNS	MS Server 2019	DNS	00e0.b014.29e8	209.165.200.3			Rack-3: ETAGE-3 Bâtiment (A) Salle = 30 Armoire 1 GRILLE 1 ETAGERE 1
EMAIL	MS Server 2019	SMTP – POP3	0060.47e6.8a6d	209.165.200.4			Rack-3: ETAGE-3 Bâtiment (A) Salle = 30 Armoire 1 GRILLE 1 ETAGERE 1
FTP	MS Server 2019	FTP	0001.641d.9a3e	209.165.200.5	209.165.200.1	8.8.8.8	Rack-3: ETAGE-3 Bâtiment (A) Salle = 30 Armoire 1 GRILLE 1 ETAGERE 1
TFTP	MS Server 2019	TFTP	00e0.b067.b596	209.165.200.6			Rack-3: ETAGE-3 Bâtiment (A) Salle = 30 Armoire 1 GRILLE 1 ETAGERE 1
Syslog	MS Server 2019	Syslog	000a.4106.2498	209.165.200.7			Rack-3: ETAGE-3 Bâtiment (A) Salle = 30 Armoire 1 GRILLE 1 ETAGERE 1
NTP	MS Server 2019	NTP	0001.64a3.0c44	209.165.200.8			Rack-3: ETAGE-3 Bâtiment (A) Salle = 30 Armoire 1 GRILLE 1 ETAGERE 1

AD DS	MS Server 2019	AD DS	0090.2b0e.23db	209.165.200.9			Rack-3: ETAGE-3 Bâtiment (A) Salle = 30 Armoire 1 GRILLE 1 ETAGERE 1
RADIUS	MS Server 2019	RAIDUS					Rack-3: ETAGE-3 Bâtiment (A) Salle = 30 Armoire 1 GRILLE 1 ETAGERE 1

9) **Terminaux PC / Printer**

VLAN 10 SALLE 11								
Device	OS	Services	MAC address	IPV4 Address	Type	Default gateway	DNS	Location
Henry Cazenave	MS Windows 11	http – https – ntp – ftp – tftp – Email – dns – Radius - AD	0060.5c30.1997	192.168.1.2	DHCP > D1	192.168.1.1	8.8.8.8	Etage 1 – Salle 11
Alceste Marchant			00d0.ff70.3c2e	192.168.1.3				
Grégoire Moreau			0060.3e01.4715	192.168.1.4				
Printer0-Salle-11			00d0.ff3c.0b12	192.168.1.5				

VLAN 20 SALLE 11								
Device	OS	Services	MAC address	IPV4 Address	Type	Default gateway	DNS	Location
Bob	MS Windows 11	http – https – ntp – ftp – tftp – Email – dns – Radius - AD	00d0.5861.042d	192.168.18	DHCP > D1	192.168.1.17	8.8.8.8	Etage 1 – Salle 11
Alpha			00e0.f987.1456	192.168.1.19				
DSPI			000c.856c.e4c1	192.168.1.20				
Printer1-Salle-11			0001.64eb.a705	192.168.1.21				

VLAN 30 SALLE 15								
Device	OS	Services	MAC address	IPV4 Address	Type	Default gateway	DNS	Location
PC3	MS Windows 11	http – https – ntp – ftp – tftp – Email – dns – Radius - AD	0090.2160.5669	192.168.1.34	DHCP > D2	192.168.1.33	8.8.8.8	Etage 2 – Salle 15
PC4			0060.7020.13d0	192.168.1.35				
Laptop3			00d0.d3e1.9336	192.168.1.36				
Printer2-Salle-15			0060.3e50.2b20	192.168.1.37				

VLAN 40 SALLE 15								
Device	OS	Services	MAC address	IPV4 Address	Type	Default gateway	DNS	Location
Laptop4	MS Windows 11	http – https – ntp – ftp – tftp – Email – dns – Radius - AD	0007.ec59.6e34	192.168.1.50	DHCP > D2	192.168.1.49	8.8.8.8	Etage 2 – Salle 15
Laptop5			0001.c9d7.23c9	192.168.1.51				
Laptop6			0060.70b1.da80	192.168.1.52				
Printer3-Salle-15			00d0.ff82.3b8a	192.168.1.53				

VLAN 50 SALLE 3									
Device	OS	Services	MAC address	IPV4 Address	Type	Default gateway	DNS	Location	
PC5	MS Windows 11	http – https – ntp – ftp – tftp – Email – dns – Radius - AD	0060.4780.db5a	192.168.1.66	DHCP > R2	192.168.1.65	8.8.8.8	Etage 2 – Salle 3	
PC6			0090.21a7.36b5	192.168.1.67					
PC7			0060.3e06.e552	192.168.1.69					
PC8			0090.2199.775c	192.168.1.70					
Printer4-Salle-3			000a.f300.8048	192.168.1.71					

VLAN 60 SALLE 3									
Device	OS	Services	MAC address	IPV4 Address	Type	Default gateway	DNS	Location	
Laptop7	MS Windows 11	http – https – ntp – ftp – tftp – Email – dns – Radius - AD	00d0.bc4e.6382	192.168.1.82	DHCP > R2	192.168.1.81	8.8.8.8	Etage 2 – Salle 3	
Laptop8			0060.4752.3c99	192.168.1.83					
Laptop9			0003.e4c4.a195	192.168.1.84					
Printer5-Salle-3			00d0.bcea.57de	192.168.1.86					

VLAN 70 SALLE 4								
Device	OS	Services	MAC address	IPV4 Address	Type	Default gateway	DNS	Location
SERGE	MS Windows 11	http – https – ntp – ftp – tftp – Email – dns – Radius - AD	0005.5e55.002c	192.168.1.114	DHCP > R2	192.168.1.113	8.8.8.8	Etage 2 – Salle 4
PC11			0001.6482.c1e2	192.168.1.116				
PC12			0090.2170.c121	192.168.1.117				
Printer6-Salle-4			0001.436a.71d3	192.168.1.118				

VLAN 80 SALLE 4								
Device	OS	Services	MAC address	IPV4 Address	Type	Default gateway	DNS	Location
OUSSOU	MS Windows 11	http – https – ntp – ftp – tftp – Email – dns – Radius - AD	0050.0f7e.0430	192.168.1.130	DHCP > R2	192.168.1.129	8.8.8.8	Etage 2 – Salle 4
Laptop11			0001.43ea.45da	192.168.1.31				
Laptop12			0001.c9a4.2bee	192.168.1.133				
Printer7-Salle-4			00d0.ff4a.dcd4	192.168.1.134				

VLAN 90 SALLE 30								
Device	OS	Services	MAC address	IPV4 Address	Type	Default gateway	DNS	Location
Admin	MS Windows Server 2019	http – https – ntp – ftp – tftp – Email – dns – Radius – AD Syslog - NTP	00d0.5862.ee01	209.165.200.11	DHCP > R3	209.165.200.1	8.8.8.8	Salle 30
WEB		HTTP / HTTPS	0007.ec24.a81e	209.165.200.2				
DNS		DNS	00e0.b014.29e8	209.165.200.3				
EMAIL		EMAIL	0060.47e6.8a6d	209.165.200.4				
FTP		FTP	0001.641d.9a3e	209.165.200.5				
TFTP		TFTP	00e0.b067.b596	209.165.200.6				
SYSLOG		SYLOG	000a.4106.2498	209.165.200.7				
NTP		NTP	0001.64a3.0c44	209.165.200.8				
AD DS		AD	0090.2b0e.23db	209.165.200.9				
RADIUS		RADIUS	00d0.d3a0.7134	209.165.200.10				

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10) Type reseaux

Name	Description	LAN	Address Reseau	Mask / Wildcard	1er IP reseau	IP diffusion	Dernier IP reseau	NB Hôtes
Reseau 1	Reseau VLAN 10	1	192.168.1.0		192.168.1.1	192.168.1.15	192.168.1.14	
Reseau 2	Reseau VLAN 20	2	192.168.1.16		192.168.1.17	192.168.1.31	192.168.1.30	
Reseau 3	Reseau VLAN 30	3	192.168.1.32		192.168.1.33	192.168.1.47	192.168.1.46	
Reseau 4	Reseau VLAN 40	4	192.168.1.48		192.168.1.49	192.168.1.63	192.168.1.62	
Reseau 5	Reseau VLAN 50	5	192.168.1.64		192.168.1.65	192.168.1.79	192.168.1.78	
Reseau 6	Reseau VLAN 60	6	192.168.1.80	/28	192.168.1.81	192.168.1.95	192.168.1.94	
Reseau 7	Reseau VLAN 70	7	192.168.1.112	255.255.255.240	192.168.1.113	192.168.1.127	192.168.1.126	14
Reseau 8	Reseau VLAN 80	8	192.168.1.128	0.0.0.15	192.168.1.129	192.168.1.143	192.168.1.142	
Reseau 9	Reseau VLAN 90	9	209.165.200.0		209.165.200.1	209.165.200.14	209.165.200.13	
D1 – R1	Reseau D1 > R1	10	192.168.1.160		192.168.1.161	192.168.1.175	192.1681.174	
D2 – R1	Reseau D1 > R1	11	192.168.1.144		192.168.1.145	192.168.1.159	192.168.1.158	
R1 – R2	Reseau R1 > R2	12	192.168.1.176		192.168.1.177	192.168.1.191	192.168.1.190	
R2 – R3	Reseau R2 > R3	13	192.168.1.192		192.168.1.193	192.168.1.207	192.168.1.206	

11) Protocols

Name	Config Router	Config Switch layer 3	Servers	PC / Printer	Enabled
OSPFv2	Yes (R1 – R2 – R3)	Yes (D1 – D2)			Yes
DHCP	Yes (R2 – R3)	Yes (D1 – D2)	Active	Active	Yes
HTTP / HTPPS			Active		Yes
DNS			Active	Active	Yes
FTP			Active	Active	Yes
SMTP – POP3			Active	Active	Yes
TFTP			Active	Active	Yes
Syslog	Yes – all	Yes – All	Active		Yes
NTP	Yes – All	Yes – All	Active		Yes
AD DS			Active	Active	Yes
CDP	Yes – All (Desactive)	Yes – All (Desactive)			Desactive
LLDP	Yes – All (Desactive)	Yes – All (Desactive)			Desactive
Nat Static	Yes (R3)			Active Server Web	Yes
Nat Dynamic	Yes (R2 > Vlan 50 - 60)			Active	Yes
PAT	Yes (R2 > Vlan 70 – 80)			Active	Yes
SSH	Yes – All	Yes – All			Yes

12) Sauvegarde 📁

📁	Source	Destination	Name
Running-config	R1		R1-config
	R2		R2-config
	R3		R3-config
	D1		D1-config
	D2		D2-config
	D3		D3-config
	D4		D4-config
	D5		D5-config
Vlan.dat	D1		D1-vlan
	D2	Server TFTP	D2-vlan
	D3		D3-vlan
	D4	209.165.200.6	D4-vlan
	D5		D5-vlan
IOS	R1		R1-IOS
	R2		R2-IOS
	R3		R3-IOS
	D1		D1-IOS
	D2		D2-IOS
	D3		D3-IOS
	D4		D4-IOS
	D5		D5-IOS