Emerald Retail WAN
Design Prototype

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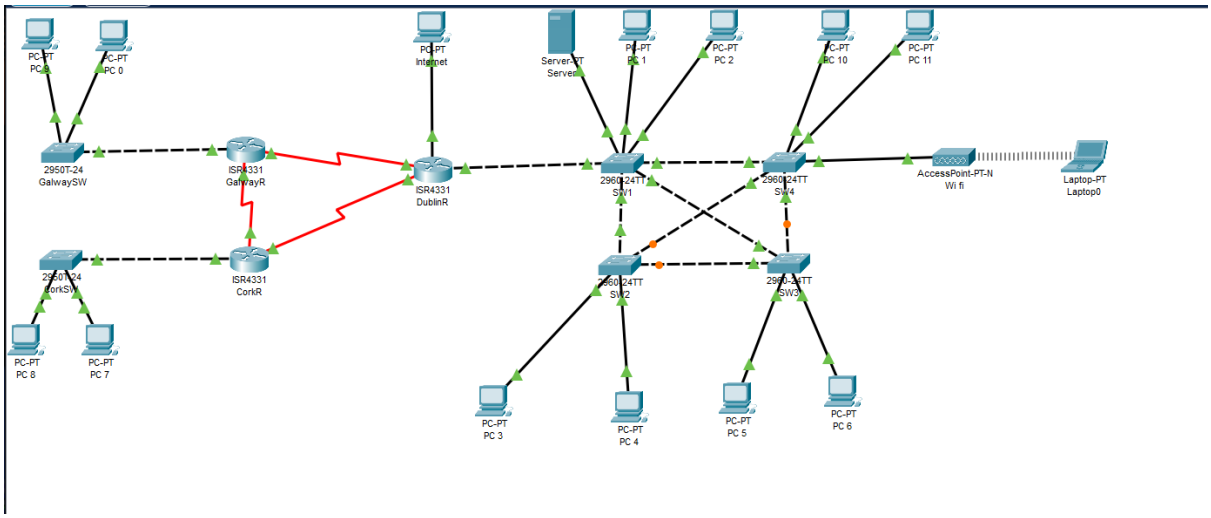
Contents

Full Design

Description: Emerald Retail Ltd., a growing Irish retail chain specialising in home goods, electronics and lifestyle products, has tasked you with designing and implementing a secure and efficient internetwork. The company operates from a headquarters in Dublin and has two branch offices located in Cork and Galway. Each location requires seamless communication, robust security and scalability to accommodate future growth.

I have designed a WAN for Emerald Retail that meets all its requirements. The WAN is made up of 3 LANs being the Dublin HQ LAN, Cork Branch LAN and the Galway Branch LAN. Each LAN is connected to the other two via routers with static routes to provide communication with each LAN.

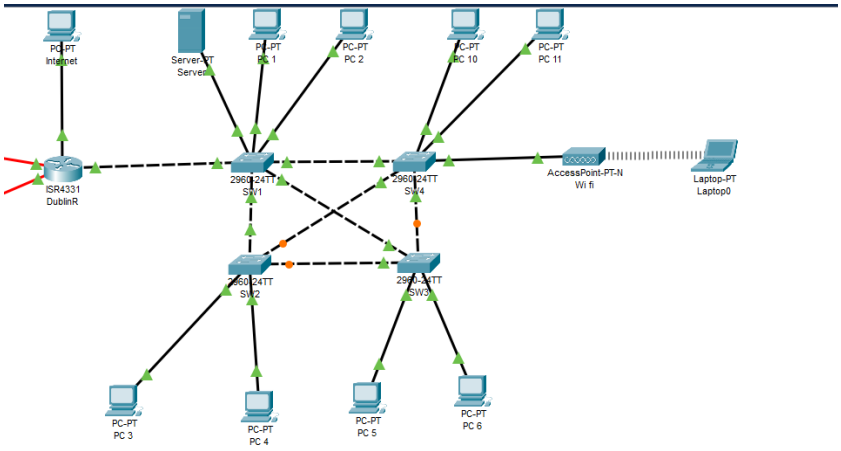
All Switches and Routers should have a banner and login accounts or passwords on the VTY and console lines. Only the Dublin LAN has this configured in the prototype.



Each of the following sections will provide a detailed breakdown of each area of the WAN.

Dublin HQ LAN

Overview



The Dublin HQ LAN is made up employee PCs both wired and wireless, switches for local communication, an access point for wireless connection, a router for inter VLAN routing and communication with the Cork and Galway branches and the internet and a DHCP server to give the employee PCs IPv4 addresses. Security measures are implemented in this LAN to prevent attacks and ensure smooth operations of the LAN.

VLANS

The Dublin HQ LAN is split into the following VLANs. Operations and Governance are used for employee PCs and network management. Wireless is used for wireless employee Laptops. Native is used as the native VLAN for the trunk lines instead of the default native VLAN. Unused was created to put all unused ports on as a security measure. All VLANs are created on all the switches in the Dublin HQ LAN.

VLANS	
ID	**NAME**
10	Operations
20	Governance
50	Wireless
98	Native
99	Unused

```
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/4, changed state to up

%LINK-5-CHANGED: Interface FastEthernet0/1, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/1, changed state to up
Authoirized access only!

User Access Verification

Username: admin
Password:

SW1>en
SW1#show vlan

VLAN Name                             Status    Ports
---- -------------------------------- --------- -------------------------------
1    default                          active
10   operations                       active    Fa0/5, Fa0/23
20   governance                       active    Fa0/24
50   wireless                         active
98   native                           active
99   unused                           active    Fa0/6, Fa0/7, Fa0/8, Fa0/9
                                                Fa0/10, Fa0/11, Fa0/12, Fa0/13
                                                Fa0/14, Fa0/15, Fa0/16, Fa0/17
                                                Fa0/18, Fa0/19, Fa0/20, Fa0/21
                                                Fa0/22, Gig0/1, Gig0/2
1002 fddi-default                     active
1003 token-ring-default               active
1004 fddinet-default                  active
1005 trnet-default                    active

VLAN Type  SAID       MTU   Parent RingNo BridgeNo Stp  BrdgMode Trans1 Trans2
---- ----- ---------- ----- ------ ------ -------- ---- -------- ------ ------
1    enet  100001     1500  -      -      -        -    -        0      0
10   enet  100010     1500  -      -      -        -    -        0      0
 --More--
```

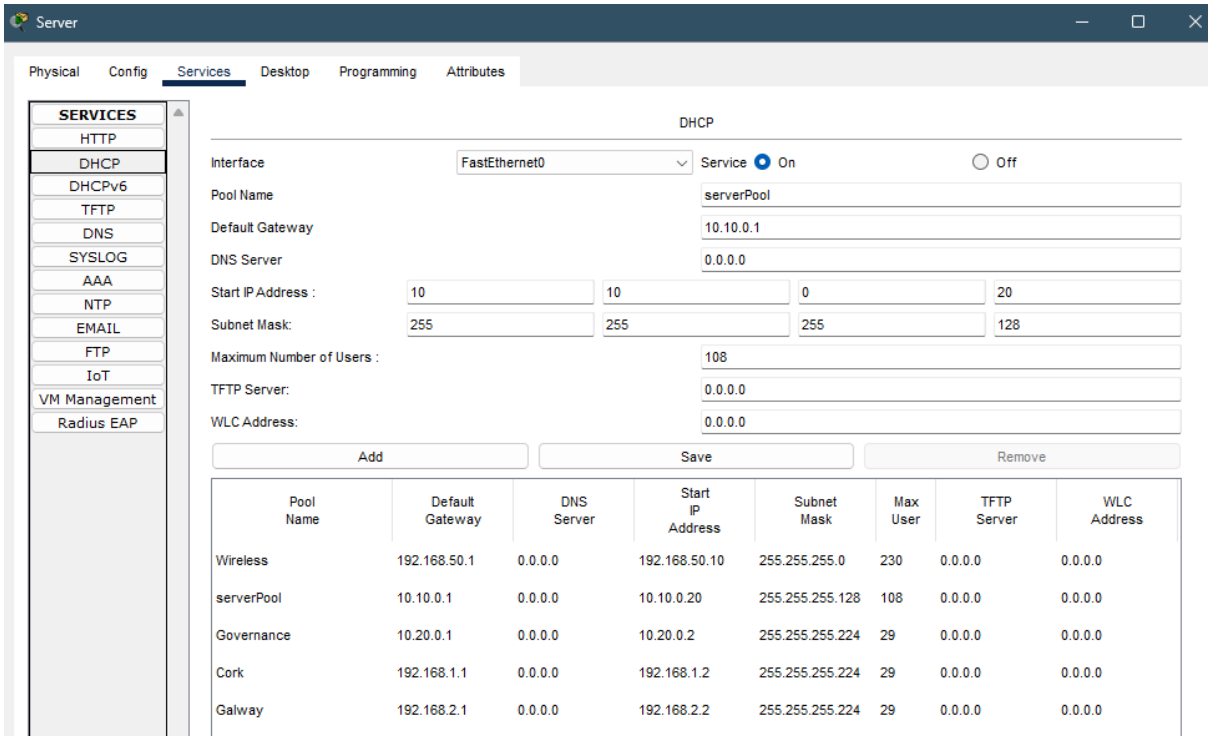
The Dublin Router provides inter VLAN routing using sub interfaces on the g0/0/0 interface. Each sub interface acts as the default gateway for the VLAN matching its IP address.

```
!
!
no ip domain-lookup
ip domain-name DublinR
!
!
spanning-tree mode pvst
!
!
!
!
!
!
interface GigabitEthernet0/0/0
 no ip address
 duplex auto
 speed auto
!
interface GigabitEthernet0/0/0.10
 description def gate 10
 encapsulation dot1Q 10
 ip address 10.10.0.1 255.255.255.128
!
interface GigabitEthernet0/0/0.20
 description def gate 20
 encapsulation dot1Q 20
 ip address 10.20.0.1 255.255.255.224
 ip helper-address 10.10.0.15
!
interface GigabitEthernet0/0/0.50
 description def gate 50
 encapsulation dot1Q 50
 ip address 192.168.50.1 255.255.255.0
 ip helper-address 10.10.0.15
!
interface GigabitEthernet0/0/1
 --More--
```

IP Addressing

Employee PCs and Laptops receive their IP addresses from the DHCP server in the LAN. PCs in the operations VLAN are given an IP address in the 10.10.0.0/27 sub network. PCs in the Governance VLAN are given an IP address in the 10.20.0.0/30 sub network. Wireless clients in the wireless VLAN are given an IP address in the 192.168.50.0/24 sub network. The router is configured with an IP helper address to allow the PCs on the governance and wireless VLANs to contact the DHCP server on the operations VLAN.

DHCP POOLS				
ID	**NETWORK**	**RANGE**	**DEFAULT GATEWAY**	**MASK**
10	10.10.0.0	15 to 126	10.10.0.1	255.255.255.128
20	10.20.0.0	2 to 29	10.20.0.1	255.255.255.224
50	192.168.50.0	2 to 255	192.168.50.1	255.255.255.0

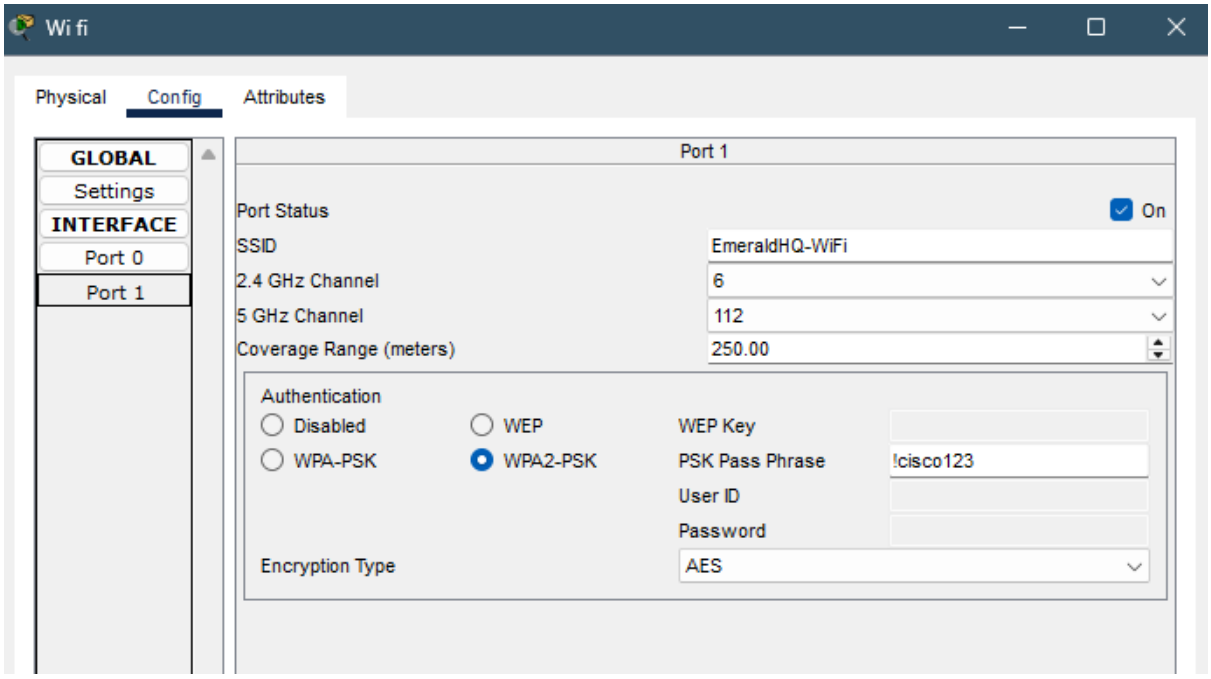


Wireless

An access point set up to be on the wireless VLAN is used to allow wireless clients to connect to the LAN. The access point has the configuration specified in the table below. Due to the limitations of Cisco Packet Tracer the access point uses WPA2 security but in the real-world implementation of the LAN WPA3 security would be used. SSID cloaking and MAC filtering could not be setup either.

I also tried an implementation of a LWAP and WLC however cisco packet tracer would not allow me to save the WLC configurations. Even with the WLC WPA3 security, SSID cloaking and MAC filtering could not be implemented.

Wireless			
SSID	**Security**	**SSID Cloaking**	**MAC Filtering**
EmeraldHQ-Wifi	WPA2	yes	yes



WAN Communication

The Dublin router is set up with static routes and floating static routes to enable communication with the Cork and Galway branches and the internet.

The Dublin Router has a gateway of last resort created for all traffic that does not have a destination within the Emerald Retail WAN. All traffic that uses this route will go to the internet.

The Dublin Router has routes statically created for traffic with their destination in the Cork LAN. A single route is created as the Cork LAN is not split into multiple VLANs.

The Dublin Router has routes statically created for traffic with their destination in the Galway LAN. A single route is created as the Galway LAN is not split into multiple VLANs.

ROUTES			
TO	**NETWORK**	**MASK**	**NEXT-HOP OR INT**
LAST RESORT	0.0.0.0	0.0.0.0	G0/1/0
CORK	192.168.1.0	255.255.255.224	192.168.4.6
GALWAY	192.168.2.0	255.255.255.224	192.168.4.2

Floating static routes are created to allow communications between LAN even if the primary route is down for any reason.

FLOATING ROUTES					
TO	**VIA**	**NETWORK**	**MASK**	**INT**	**ADMIN DISTANCE**
LAST RESORT	x	0.0.0.0	0.0.0.0	G0/1/0	5

CORK	GALWAY	192.168.1.0	255.255.255.224	S0/1/0	5
GALWAY	CORK	192.168.2.0	255.255.255.224	S0/1/1	5

Physical Config CLI Attributes

IOS Command Line Interface

```
       D - EIGRP, EX - EIGRP external
L    FF00::/8 [0/0]
     via Null0, receive
DublinR#
DublinR#show ip route
Codes: L - local, C - connected, S - static, R - RIP, M - mobile, B - BGP
       D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area
       N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
       E1 - OSPF external type 1, E2 - OSPF external type 2, E - EGP
       i - IS-IS, L1 - IS-IS level-1, L2 - IS-IS level-2, ia - IS-IS inter area
       * - candidate default, U - per-user static route, o - ODR
       P - periodic downloaded static route

Gateway of last resort is 0.0.0.0 to network 0.0.0.0

     10.0.0.0/8 is variably subnetted, 4 subnets, 3 masks
C       10.10.0.0/25 is directly connected, GigabitEthernet0/0/0.10
L       10.10.0.1/32 is directly connected, GigabitEthernet0/0/0.10
C       10.20.0.0/27 is directly connected, GigabitEthernet0/0/0.20
L       10.20.0.1/32 is directly connected, GigabitEthernet0/0/0.20
     192.168.1.0/27 is subnetted, 1 subnets
S       192.168.1.0/27 [1/0] via 192.168.4.6
     192.168.2.0/27 is subnetted, 1 subnets
S       192.168.2.0/27 [1/0] via 192.168.4.2
     192.168.4.0/24 is variably subnetted, 6 subnets, 2 masks
C       192.168.4.0/30 is directly connected, Serial0/1/0
L       192.168.4.1/32 is directly connected, Serial0/1/0
C       192.168.4.4/30 is directly connected, Serial0/1/1
L       192.168.4.5/32 is directly connected, Serial0/1/1
C       192.168.4.12/30 is directly connected, GigabitEthernet0/0/1
L       192.168.4.13/32 is directly connected, GigabitEthernet0/0/1
     192.168.50.0/24 is variably subnetted, 2 subnets, 2 masks
C       192.168.50.0/24 is directly connected, GigabitEthernet0/0/0.50
L       192.168.50.1/32 is directly connected, GigabitEthernet0/0/0.50
S*   0.0.0.0/0 is directly connected, GigabitEthernet0/0/1

DublinR#
```

Security

Security measures have been taken to prevent the following attacks.

• MAC Table Attacks: Prevent attackers from flooding the switch's MAC address table, causing traffic to broadcast to all ports. To prevent this type of attack firstly all unused ports are made to be access ports in the unused VLAN and shut down. Secondly the following port security has been added to all active access ports.

PORT SECURITY		
MAX MACS	STICKY MACS	VIOLATION MODE
5	TRUE	RESTRICT

• VLAN Attacks: Protect against VLAN hopping and double-tagging to ensure VLAN segmentation is not bypassed. To prevent this type of attack firstly all unused ports are made to be access ports in the unused VLAN and shut down this prevents DTP

negotiations. Secondly the Trunk ports are configured manually with DTP negotiations disabled and the native VLAN changed from 1 to the created native VLAN.

TRUNK SECURITY		
TRUNK	NO NEGOTIATE	NATIVE
TRUE	TRUE	98

• DHCP Attacks: Mitigate DHCP starvation and rogue DHCP servers to prevent denial of service or unauthorised configurations. To prevent this type of attack DHCP snooping is enabled on all switches in the LAN. Trusted ports are configured on all the switches as needed and all other ports on the switches are left as untrusted.

• ARP Spoofing: Address ARP spoofing to prevent attackers from impersonating devices and intercepting traffic. To prevent this type of attack DHCP snooping and ARP inspection is enabled on all switches. Trusted ports are configured on all the switches as needed and all other ports on the switches are left as untrusted.

• STP (Spanning Tree Protocol) Attacks: Safeguard the spanning tree topology from malicious BPDUs that could cause loops or reroute traffic. To prevent this type of attack Port Fast and BPDU Guard is enabled globally on all switches. By enabling this security globally all access ports on the switches are given this security.

SW1

Physical Config CLI Attributes

IOS Command Line Interface

```
no service timestamps debug datetime msec
service password-encryption
!
hostname SW1
!
!
!
!
username admin secret 5 $1$mERr$hx5rVt7rPNoS4wqbXKX7m0
!
ip arp inspection vlan 10,20,50,98
ip arp inspection validate src-mac dst-mac ip
!
ip dhcp snooping vlan 10,20,50,98
ip dhcp snooping
!
spanning-tree mode pvst
spanning-tree portfast default
spanning-tree portfast bpduguard default
spanning-tree extend system-id
spanning-tree vlan 10,20,50,98 priority 0
!
interface FastEthernet0/1
 switchport trunk native vlan 98
 switchport trunk allowed vlan 10,20,50,98
 ip arp inspection trust
 ip dhcp snooping trust
 ip dhcp snooping limit rate 30
 switchport mode trunk
 switchport nonegotiate
!
interface FastEthernet0/2
 switchport trunk native vlan 98
 switchport trunk allowed vlan 10,20,50,98
 ip arp inspection trust
 ip dhcp snooping trust
 ip dhcp snooping limit rate 30
 switchport mode trunk
 switchport nonegotiate
!
interface FastEthernet0/3
 switchport trunk native vlan 98
 switchport trunk allowed vlan 10,20,50,98
 ip arp inspection trust
 ip dhcp snooping trust
 ip dhcp snooping limit rate 30
 switchport mode trunk
 switchport nonegotiate
!
interface FastEthernet0/4
 switchport trunk native vlan 98
 switchport trunk allowed vlan 10,20,50,98
 ip arp inspection trust
 ip dhcp snooping trust
 ip dhcp snooping limit rate 30
 switchport mode trunk
 switchport nonegotiate
!
interface FastEthernet0/5
 switchport access vlan 10
 ip arp inspection trust
 ip dhcp snooping trust
 ip dhcp snooping limit rate 30
 switchport mode access
 switchport port-security
 switchport port-security mac-address sticky
 switchport port-security violation restrict
 switchport port-security mac-address sticky 0001.C7B8.C819
!
interface FastEthernet0/6
 switchport access vlan 99
 switchport mode access
 shutdown
!
interface FastEthernet0/7
 switchport access vlan 99
 switchport mode access
 shutdown
!
interface FastEthernet0/8
 switchport access vlan 99
 switchport mode access
 shutdown
!
interface FastEthernet0/9
 switchport access vlan 99
 switchport mode access
 shutdown
 --More--
```

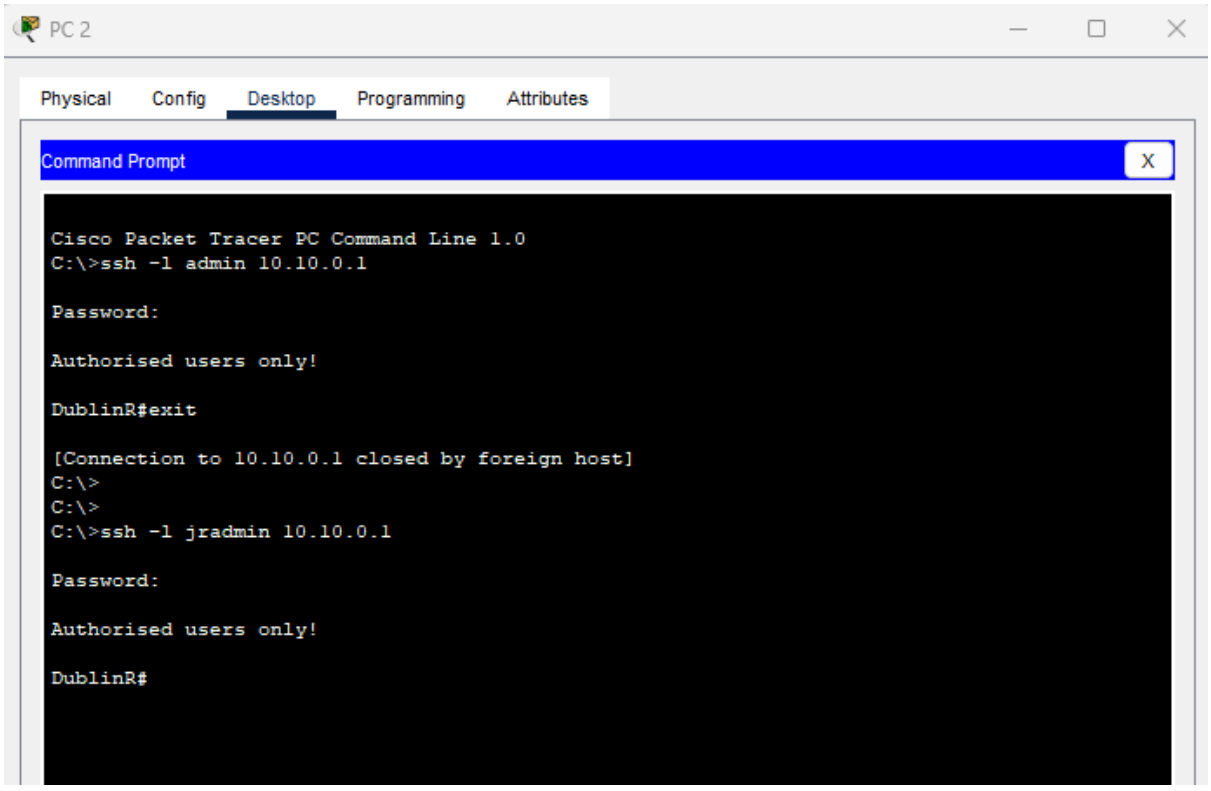
SSH

SSH with 2 local accounts has been set up on the Dublin router to prevent unauthorised access to the router and to allow remote access to the router.

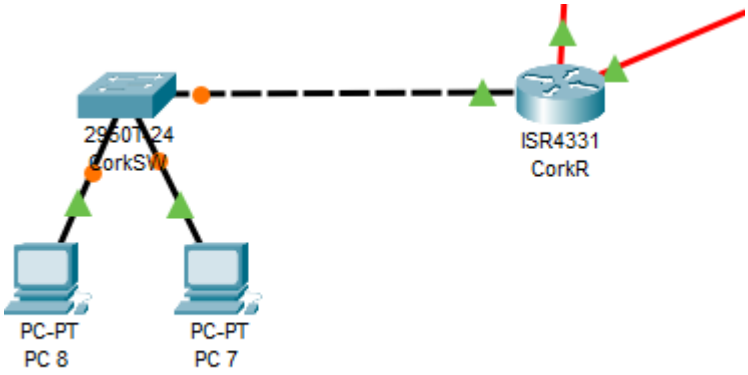
This has been set up only on the Dublin router but would be set up on all routers and switches in a real-world situation.

SECURITY		
Name	**Password**	**Priv**
Admin	cisco	15
Jradmin	cisco	7

SSH	
Device	**Domain name**
DublinR	DublinR



Cork branch



The Cork Branch LAN is not fully developed as this prototype is only to show the interconnectivity between each LAN in the WAN. In a real-world situation, the Cork LAN would be fully developed with more devices and security for all users' safety. It would be much the same as the Dublin HQ LAN.

No configuration has been added to the switch in the Cork LAN. The 2 employee PCs get their IP addresses dynamically, IPv4 from the DHCP server in the Dublin HQ and IPv6 from SLAAC via the Cork Router. The Cork router has an IP helper address added to point to the DHCP server.

DHCP POOLS				
ID	**NETWORK**	**RANGE**	**DEFAULT GATEWAY**	**MASK**
Cork	192.168.1.0	2 to 29	192.168.1.1	255.255.255.224

IPV6 SLAAC			
ID	**NETWORK**	**LINK-LOCAL**	**ROUTER ADDRESS**
Cork	2001:db8:1::/64	FE80::	2001:db8:1::1

The Cork Router has a gateway of last resort created for all traffic that does not have a destination within the Emerald Retail WAN. All traffic that uses this route will go to the internet via the Dublin HQ router.

The Cork Router has routes statically created for traffic with their destination in the Dublin HQ LAN. As the Dublin HQ LAN is split into different VLANs a route is created for each.

The Cork Router has a route statically created for traffic with their destination in the Galway Branch LAN in both IPv4 and IPv6. These routes go through the interface that is connected to the Galway Router, with this set up the Cork and Galway branches can communicate with each other even if the Dublin HQ router is down for any reason.

ROUTES			
TO	**NETWORK**	**MASK**	**NEXT-HOP OR INT**
LAST RESORT	0.0.0.0	0.0.0.0	S0/1/0
DUBLIN VLAN 10	10.10.0.0	255.255.255.128	192.168.4.5
DUBLIN VLAN 20	10.20.0.0	255.255.255.224	192.168.4.5
DUBLIN VLAN 50	192.168.50.0	255.255.255.224	192.168.4.5
GALWAY	192.168.2.0	255.255.255.224	192.168.4.9
GALWAY IPV6	2001:DB8:2::	/64	S0/1/1

Floating static routes are created to allow communications between LAN even if the primary route is down for any reason.

FLOATING ROUTES					
TO	**VIA**	**NETWORK**	**MASK**	**INT**	**ADMIN DISTANCE**
LAST RESORT	DUBLIN	0.0.0.0	0.0.0.0	S0/1/0	5
DUBLIN VLAN 10	GALWAY	10.10.0.0	255.255.255.128	S0/1/1	5
DUBLIN VLAN 20	GALWAY	10.20.0.0	255.255.255.224	S0/1/1	5
DUBLIN VLAN 50	GALWAY	192.168.50.0	255.255.255.224	S0/1/1	5
GALWAY	DUBLIN	192.168.2.0	255.255.255.224	S0/1/0	5

CorkR

Physical Config CLI Attributes

IOS Command Line Interface

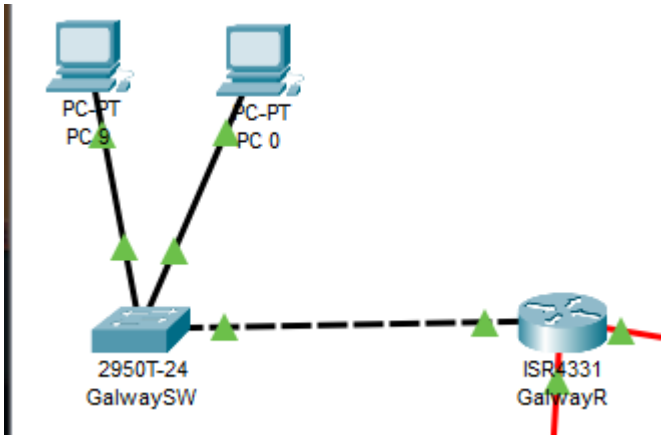
```
CorkR>en
CorkR#show ipv6 route
IPv6 Routing Table - 6 entries
Codes: C - Connected, L - Local, S - Static, R - RIP, B - BGP
       U - Per-user Static route, M - MIPv6
       I1 - ISIS L1, I2 - ISIS L2, IA - ISIS interarea, IS - ISIS summary
       ND - ND Default, NDp - ND Prefix, DCE - Destination, NDr - Redirect
       O - OSPF intra, OI - OSPF inter, OE1 - OSPF ext 1, OE2 - OSPF ext 2
       ON1 - OSPF NSSA ext 1, ON2 - OSPF NSSA ext 2
       D - EIGRP, EX - EIGRP external
C   2001:DB8:1::/64 [0/0]
     via GigabitEthernet0/0/0, directly connected
L   2001:DB8:1::1/128 [0/0]
     via GigabitEthernet0/0/0, receive
S   2001:DB8:2::/64 [1/0]
     via Serial0/1/1, directly connected
C   2001:DB8:3::/64 [0/0]
     via Serial0/1/1, directly connected
L   2001:DB8:3::1/128 [0/0]
     via Serial0/1/1, receive
L   FF00::/8 [0/0]
     via Null0, receive
CorkR#show ip route
Codes: L - local, C - connected, S - static, R - RIP, M - mobile, B - BGP
       D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area
       N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
       E1 - OSPF external type 1, E2 - OSPF external type 2, E - EGP
       i - IS-IS, L1 - IS-IS level-1, L2 - IS-IS level-2, ia - IS-IS inter area
       * - candidate default, U - per-user static route, o - ODR
       P - periodic downloaded static route

Gateway of last resort is 0.0.0.0 to network 0.0.0.0

     10.0.0.0/8 is variably subnetted, 2 subnets, 2 masks
S       10.10.0.0/25 [1/0] via 192.168.4.5
S       10.20.0.0/27 [1/0] via 192.168.4.5
     192.168.1.0/24 is variably subnetted, 2 subnets, 2 masks
C       192.168.1.0/27 is directly connected, GigabitEthernet0/0/0
L       192.168.1.1/32 is directly connected, GigabitEthernet0/0/0
     192.168.2.0/27 is subnetted, 1 subnets
S       192.168.2.0/27 [1/0] via 192.168.4.9
     192.168.4.0/24 is variably subnetted, 4 subnets, 2 masks
C       192.168.4.4/30 is directly connected, Serial0/1/0
L       192.168.4.6/32 is directly connected, Serial0/1/0
C       192.168.4.8/30 is directly connected, Serial0/1/1
L       192.168.4.10/32 is directly connected, Serial0/1/1
S    192.168.50.0/24 [1/0] via 192.168.4.5
S*   0.0.0.0/0 is directly connected, Serial0/1/1

CorkR#
```

Galway branch



The Galway Branch LAN is not fully developed as this prototype is only to show the interconnectivity between each LAN in the WAN. In a real-world situation, the Galway LAN would be fully developed with more devices and security for all users' safety. It would be much the same as the Dublin HQ LAN.

No configuration has been added to the switch in the Galway LAN. The 2 employee PCs get their IP addresses dynamically, IPv4 from the DHCP server in the Dublin HQ and IPv6 from SLAAC via the Galway Router. The Galway router has an IP helper address added to point to the DHCP server.

DHCP POOLS				
ID	**NETWORK**	**RANGE**	**DEFAULT GATEWAY**	**MASK**
Galway	192.168.2.0	2 to 29	192.168.2.1	255.255.255.224

IPV6 SLAAC			
ID	**NETWORK**	**LINK-LOCAL**	**ROUTER ADDRESS**
Galway	2001:db8::/64	FE80::	2001:db8:2

The Galway Router has a gateway of last resort created for all traffic that does not have a destination within the Emerald Retail WAN. All traffic that uses this route will go to the internet via the Dublin HQ router.

The Galway Router has routes statically created for traffic with their destination in the Dublin HQ LAN. As the Dublin HQ LAN is split into different VLANs a route is created for each.

The Galway Router has a route statically created for traffic with their destination in the Cork Branch LAN in both IPv4 and IPv6. These routes go through the interface that is connected to the Cork Router, with this set up the Galway and Cork branches can communicate with each other even if the Dublin HQ router is down for any reason.

ROUTES			
TO	**NETWORK**	**MASK**	**NEXT-HOP OR INT**
LAST RESORT	0.0.0.0	0.0.0.0	S0/1/0
DUBLIN VLAN 10	10.10.0.0	255.255.255.128	192.168.4.1
DUBLIN VLAN 20	10.20.0.0	255.255.255.224	192.168.4.1
DUBLIN VLAN 50	192.168.50.0	255.255.255.224	192.168.4.1
CORK	192.168.1.0	255.255.255.224	192.168.4.10
CORK IPV6	2001:DB8:1::	/64	S0/1/1

Floating static routes are created to allow communications between LAN even if the primary route is down for any reason.

FLOATING ROUTES					
TO	**VIA**	**NETWORK**	**MASK**	**INT**	**ADMIN DISTANCE**
LAST RESORT	DUBLIN	0.0.0.0	0.0.0.0	S0/1/0	5
DUBLIN VLAN 10	CORK	10.10.0.0	255.255.255.128	S0/1/1	5
DUBLIN VLAN 20	CORK	10.20.0.0	255.255.255.224	S0/1/1	5
DUBLIN VLAN 50	CORK	192.168.50.0	255.255.255.224	S0/1/1	5
CORK	DUBLIN	192.168.1.0	255.255.255.224	S0/1/0	5

GalwayR

Physical Config CLI Attributes

IOS Command Line Interface

```
GalwayR>en
GalwayR#show ipv6 route
IPv6 Routing Table - 6 entries
Codes: C - Connected, L - Local, S - Static, R - RIP, B - BGP
       U - Per-user Static route, M - MIPv6
       I1 - ISIS L1, I2 - ISIS L2, IA - ISIS interarea, IS - ISIS summary
       ND - ND Default, NDp - ND Prefix, DCE - Destination, NDr - Redirect
       O - OSPF intra, OI - OSPF inter, OE1 - OSPF ext 1, OE2 - OSPF ext 2
       ON1 - OSPF NSSA ext 1, ON2 - OSPF NSSA ext 2
       D - EIGRP, EX - EIGRP external
S   2001:DB8:1::/64 [1/0]
     via Serial0/1/1, directly connected
C   2001:DB8:2::/64 [0/0]
     via GigabitEthernet0/0/0, directly connected
L   2001:DB8:2::1/128 [0/0]
     via GigabitEthernet0/0/0, receive
C   2001:DB8:3::/64 [0/0]
     via Serial0/1/1, directly connected
L   2001:DB8:3::2/128 [0/0]
     via Serial0/1/1, receive
L   FF00::/8 [0/0]
     via Null0, receive
GalwayR#show ip route
Codes: L - local, C - connected, S - static, R - RIP, M - mobile, B - BGP
       D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area
       N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
       E1 - OSPF external type 1, E2 - OSPF external type 2, E - EGP
       i - IS-IS, L1 - IS-IS level-1, L2 - IS-IS level-2, ia - IS-IS inter area
       * - candidate default, U - per-user static route, o - ODR
       P - periodic downloaded static route

Gateway of last resort is 0.0.0.0 to network 0.0.0.0

     10.0.0.0/8 is variably subnetted, 2 subnets, 2 masks
S       10.10.0.0/25 [1/0] via 192.168.4.1
S       10.20.0.0/27 [1/0] via 192.168.4.1
     192.168.1.0/27 is subnetted, 1 subnets
S       192.168.1.0/27 [1/0] via 192.168.4.10
     192.168.2.0/24 is variably subnetted, 2 subnets, 2 masks
C       192.168.2.0/27 is directly connected, GigabitEthernet0/0/0
L       192.168.2.1/32 is directly connected, GigabitEthernet0/0/0
     192.168.4.0/24 is variably subnetted, 4 subnets, 2 masks
C       192.168.4.0/30 is directly connected, Serial0/1/0
L       192.168.4.2/32 is directly connected, Serial0/1/0
C       192.168.4.8/30 is directly connected, Serial0/1/1
L       192.168.4.9/32 is directly connected, Serial0/1/1
     192.168.50.0/24 is variably subnetted, 2 subnets, 2 masks
S       192.168.50.0/24 is directly connected, Serial0/1/1
S       192.168.50.0/27 [1/0] via 192.168.4.1
S*   0.0.0.0/0 is directly connected, Serial0/1/1

GalwayR#
```