Ministry of Defence Integrated Network

CCNA Final Graduation Project Documentation

Group Name: Network Guardians

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1. Introduction

The Ministry of Defence Integrated Network project is a CCNA graduation project designed to demonstrate enterprise network planning, configuration, security, redundancy, and troubleshooting skills. The network represents a multi-site organization with Headquarters, Air Defence, and Military Defence locations connected through a scalable and secure architecture.

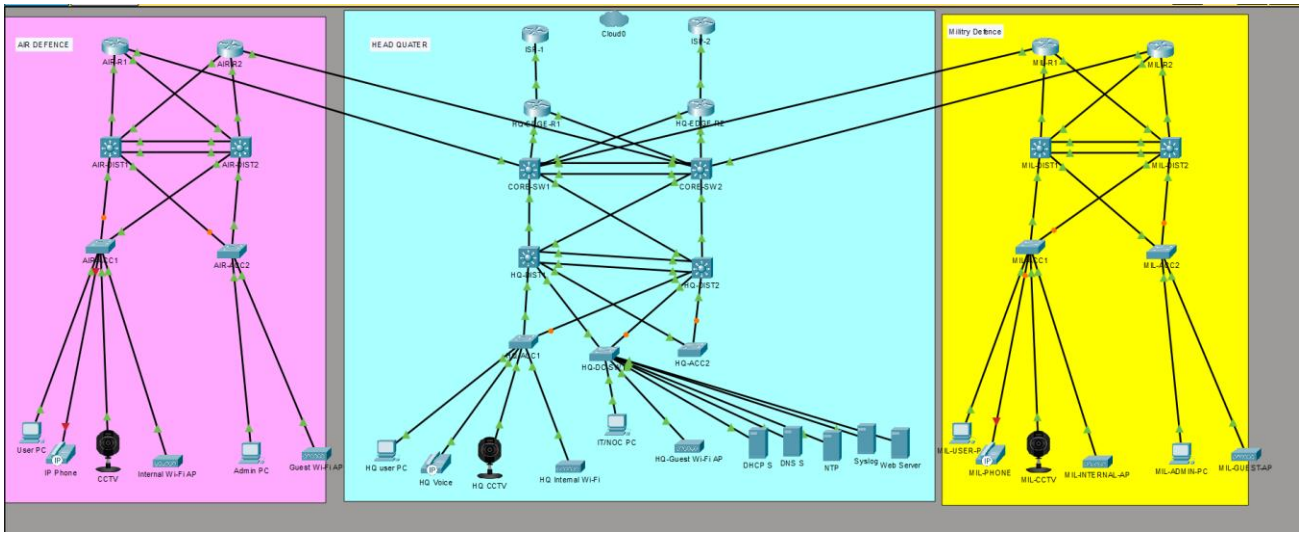
2. Project Objectives

The main objectives of this project are:
- Design a complete enterprise network topology.
- Apply VLAN segmentation for departments.
- Configure routing and redundancy.
- Implement network services such as DHCP, DNS, NTP, Syslog, SNMP, and SSH.
- Apply security controls including ACLs, Port Security, and DHCP Snooping.
- Verify network operation through testing.

3. Network Topology Design

The topology consists of Core, Distribution, and Access layers. The design uses routers, multilayer switches, access switches, servers, PCs, IP phones, CCTV devices, and wireless access points.

The architecture follows a hierarchical network model to improve scalability, management, and reliability.



4. IP Addressing Plan

Static IP addresses are assigned to infrastructure devices such as routers, core switches, servers, and management interfaces. End-user devices use DHCP dynamic addressing.

IP addressing follows IPv4 subnetting using VLSM to provide efficient address allocation.

1. VLSM Logic

Project-ku wuxuu leeyahay endpoints yar oo Packet Tracer demo ah. Sidaas darteed subnet kasta looma siinayo /24. Waxaan siinaynaa subnet ku filan gateway redundancy, infrastructure iyo expansion yar.

Prefix	Mask	Total IPs	Usable IPs	Meesha
/28	255.255.255.240	16	14	Servers iyo Management
/29	255.255.255.248	8	6	Users, Voice, CCTV, Admin, Wi-Fi
/30	255.255.255.252	4	2	Point-to-point routed links

Rule: Network address iyo Broadcast address host looma siin karo. HSRP VIP wuxuu isticmaalaa usable IP. Distribution switch kasta wuxuu helayaa static SVI IP u gaar ah.

2. Site Address Blocks

Site	Reserved IPv4 Block	Isticmaalka
HQ	192.168.10.0/24	HQ VLANs iyo HQ servers
Air Defense	192.168.20.0/24	Air VLANs
Military Defense	192.168.30.0/24	Military VLANs
Infrastructure	192.168.100.0/22	Core, routers, Distribution routed links

3. HQ Final VLSM Table

VLAN	Name	Subnet	Mask	First	Last	Broadcast	HSRP VIP	HQ-DIST1	HQ-DIST2
50	SERVERS	192.168.10.0/28	255.255.255.240	192.168.10.1	192.168.10.14	192.168.10.15	192.168.10.1	192.168.10.2	192.168.10.3
99	MANAGEMENT	192.168.10.16/28	255.255.255.240	192.168.10.17	192.168.10.30	192.168.10.31	192.168.10.17	192.168.10.18	192.168.10.19
10	USERS	192.168.10.32/29	255.255.255.248	192.168.10.33	192.168.10.38	192.168.10.39	192.168.10.33	192.168.10.34	192.168.10.35
20	VOICE	192.168.10.40/29	255.255.255.248	192.168.10.41	192.168.10.46	192.168.10.47	192.168.10.41	192.168.10.42	192.168.10.43
30	CCTV	192.168.10.48/29	255.255.255.248	192.168.10.49	192.168.10.54	192.168.10.55	192.168.10.49	192.168.10.50	192.168.10.51
40	ADMIN-IT	192.168.10.56/29	255.255.255.248	192.168.10.57	192.168.10.62	192.168.10.63	192.168.10.57	192.168.10.58	192.168.10.59
60	INTERNAL-WIFI	192.168.10.64/29	255.255.255.248	192.168.10.65	192.168.10.70	192.168.10.71	192.168.10.65	192.168.10.66	192.168.10.67
70	GUEST	192.168.10.72/29	255.255.255.248	192.168.10.73	192.168.10.78	192.168.10.79	192.168.10.73	192.168.10.74	192.168.10.75

HSRP reservation: VIP, DIST1 iyo DIST2 addresses waa la qorsheeyay hadda. HSRP phase-ka marka la gaaro ayaa virtual IP la activate-gareynayaa. Hadda physical SVI IPs-ka DIST1/DIST2 oo keliya ayaa la gelinayaa.

4. HQ Static Infrastructure IP Table

Device	Role	IPv4	Mask	Gateway / Note
HQ-DIST1	VLAN 50 SVI	192.168.10.2	255.255.255.240	VIP 192.168.10.1 later
HQ-DIST2	VLAN 50 SVI	192.168.10.3	255.255.255.240	VIP 192.168.10.1 later
DHCP-SRV	DHCP Server	192.168.10.4	255.255.255.240	192.168.10.1
DNS-SRV	DNS Server	192.168.10.5	255.255.255.240	192.168.10.1
NTP-SRV	NTP Server	192.168.10.6	255.255.255.240	192.168.10.1
SYSLOG-SRV	Syslog Server	192.168.10.7	255.255.255.240	192.168.10.1
WEB-SRV	Web Server	192.168.10.8	255.255.255.240	192.168.10.1
HQ-ACC1	Management SVI	192.168.10.20	255.255.255.240	192.168.10.17 later
HQ-ACC2	Management SVI	192.168.10.21	255.255.255.240	192.168.10.17 later
HQ-DC-SW1	Management SVI	192.168.10.22	255.255.255.240	192.168.10.17 later

5. Air Defense Final VLSM Table

VLAN	Name	Subnet	Mask	First	Last	Broadcast	HSRP VIP	AIR-DIST1	AIR-DIST2
99	MANAGEMENT	192.168.20.0/28	255.255.255.240	192.168.20.1	192.168.20.14	192.168.20.15	192.168.20.1	192.168.20.2	192.168.20.3
10	USERS	192.168.20.16/29	255.255.255.248	192.168.20.17	192.168.20.22	192.168.20.23	192.168.20.17	192.168.20.18	192.168.20.19
20	VOICE	192.168.20.24/29	255.255.255.248	192.168.20.25	192.168.20.30	192.168.20.31	192.168.20.25	192.168.20.26	192.168.20.27
30	CCTV	192.168.20.32/29	255.255.255.248	192.168.20.33	192.168.20.38	192.168.20.39	192.168.20.33	192.168.20.34	192.168.20.35
40	ADMIN-IT	192.168.20.40/29	255.255.255.248	192.168.20.41	192.168.20.46	192.168.20.47	192.168.20.41	192.168.20.42	192.168.20.43
60	INTERNAL-WIFI	192.168.20.48/29	255.255.255.248	192.168.20.49	192.168.20.54	192.168.20.55	192.168.20.49	192.168.20.50	192.168.20.51
70	GUEST	192.168.20.56/29	255.255.255.248	192.168.20.57	192.168.20.62	192.168.20.63	192.168.20.57	192.168.20.58	192.168.20.59

Device	Static Management IPv4	Mask	Future Gateway
AIR-ACC1	192.168.20.4	255.255.255.240	192.168.20.1
AIR-ACC2	192.168.20.5	255.255.255.240	192.168.20.1

6. Military Defense Final VLSM Table

VLAN	Name	Subnet	Mask	First	Last	Broadcast	HSRP VIP	MIL-DIST1	MIL-DIST2
99	MANAGEMENT	192.168.30.0/28	255.255.255.240	192.168.30.1	192.168.30.14	192.168.30.15	192.168.30.1	192.168.30.2	192.168.30.3
10	USERS	192.168.30.16/29	255.255.255.248	192.168.30.17	192.168.30.22	192.168.30.23	192.168.30.17	192.168.30.18	192.168.30.19
20	VOICE	192.168.30.24/29	255.255.255.248	192.168.30.25	192.168.30.30	192.168.30.31	192.168.30.25	192.168.30.26	192.168.30.27
30	CCTV	192.168.30.32/29	255.255.255.248	192.168.30.33	192.168.30.38	192.168.30.39	192.168.30.33	192.168.30.34	192.168.30.35
40	ADMIN-IT	192.168.30.40/29	255.255.255.248	192.168.30.41	192.168.30.46	192.168.30.47	192.168.30.41	192.168.30.42	192.168.30.43
60	INTERNAL-WIFI	192.168.30.48/29	255.255.255.248	192.168.30.49	192.168.30.54	192.168.30.55	192.168.30.49	192.168.30.50	192.168.30.51
70	GUEST	192.168.30.56/29	255.255.255.248	192.168.30.57	192.168.30.62	192.168.30.63	192.168.30.57	192.168.30.58	192.168.30.59

Device	Static Management IPv4	Mask	Future Gateway
MIL-ACC1	192.168.30.4	255.255.255.240	192.168.30.1
MIL-ACC2	192.168.30.5	255.255.255.240	192.168.30.1

7. Final /30 Routed Link Plan

Link	Subnet	Side A	Side B	Purpose
CORE-SW1 <-> CORE-SW2	192.168.100.0/30	CORE1 192.168.100.1	CORE2 192.168.100.2	L3 core interconnect / Port-Channel if used
CORE-SW1 <-> HQ-DIST1	192.168.100.4/30	CORE1 192.168.100.5	DIST1 192.168.100.6	Area 0 later
CORE-SW2 <-> HQ-DIST1	192.168.100.8/30	CORE2 192.168.100.9	DIST1 192.168.100.10	Area 0 later
CORE-SW1 <-> HQ-DIST2	192.168.100.12/30	CORE1 192.168.100.13	DIST2 192.168.100.14	Area 0 later
CORE-SW2 <-> HQ-DIST2	192.168.100.16/30	CORE2 192.168.100.17	DIST2 192.168.100.18	Area 0 later
CORE-SW1 <-> HQ-EDGE-R1	192.168.100.20/30	CORE1 192.168.100.21	EDGE1 192.168.100.22	Internal edge path
CORE-SW2 <-> HQ-EDGE-R1	192.168.100.24/30	CORE2 192.168.100.25	EDGE1 192.168.100.26	Internal edge path
CORE-SW1 <-> HQ-EDGE-R2	192.168.100.28/30	CORE1 192.168.100.29	EDGE2 192.168.100.30	Internal edge path
CORE-SW2 <-> HQ-EDGE-R2	192.168.100.32/30	CORE2 192.168.100.33	EDGE2 192.168.100.34	Internal edge path
CORE-SW1 <-> AIR-R1	192.168.100.36/30	CORE1 192.168.100.37	AIR-R1 192.168.100.38	Area 0 side later
CORE-SW2 <-> AIR-R2	192.168.100.40/30	CORE2 192.168.100.41	AIR-R2 192.168.100.42	Area 0 side later
CORE-SW1 <-> MIL-R1	192.168.100.44/30	CORE1 192.168.100.45	MIL-R1 192.168.100.46	Area 0 side later
CORE-SW2 <-> MIL-R2	192.168.100.48/30	CORE2 192.168.100.49	MIL-R2 192.168.100.50	Area 0 side later

8. Air Defense Routed Links

Link	Subnet	Side A	Side B
AIR-R1 <-> AIR-DIST1	192.168.101.0/30	AIR-DIST1 192.168.101.1	AIR-R1 192.168.101.2
AIR-R1 <-> AIR-DIST2	192.168.101.4/30	AIR-DIST2 192.168.101.5	AIR-R1 192.168.101.6
AIR-R2 <-> AIR-DIST1	192.168.101.8/30	AIR-DIST1 192.168.101.9	AIR-R2 192.168.101.10
AIR-R2 <-> AIR-DIST2	192.168.101.12/30	AIR-DIST2 192.168.101.13	AIR-R2 192.168.101.14

9. Military Defense Routed Links

Link	Subnet	Side A	Side B
MIL-R1 <-> MIL-DIST1	192.168.102.0/30	MIL-DIST1 192.168.102.1	MIL-R1 192.168.102.2
MIL-R1 <-> MIL-DIST2	192.168.102.4/30	MIL-DIST2 192.168.102.5	MIL-R1 192.168.102.6
MIL-R2 <-> MIL-DIST1	192.168.102.8/30	MIL-DIST1 192.168.102.9	MIL-R2 192.168.102.10
MIL-R2 <-> MIL-DIST2	192.168.102.12/30	MIL-DIST2 192.168.102.13	MIL-R2 192.168.102.14

10. ISP Public Lab Links

Link	Subnet	ISP Side	HQ Edge Side
ISP1 <-> HQ-EDGE-R1	203.0.113.0/30	203.0.113.1	203.0.113.2
ISP2 <-> HQ-EDGE-R2	198.51.100.0/30	198.51.100.1	198.51.100.2

Public lab addresses: 203.0.113.0/24 iyo 198.51.100.0/24 waa documentation/test ranges. Waxaa loogu isticmaalaa lab-ka, ma aha public production addresses loo leeyahay.

5. VLAN and Switching Design

VLAN segmentation is implemented to separate network departments:

VLAN 10: USERS
VLAN 20: VOICE
VLAN 30: CCTV
VLAN 40: ADMIN-IT
VLAN 50: SERVERS
VLAN 60: INTERNAL-WIFI
VLAN 70: GUEST
VLAN 99: MANAGEMENT

Access ports connect end devices while trunk ports carry multiple VLANs between switches.

6. Routing Design

OSPF is used for dynamic IPv4 routing between network devices. Static routing is used where required for IPv6 according to project requirements. Default routes provide connectivity toward external networks.

7. Network Services

The network implements:

DHCP for automatic client addressing.
DNS for name resolution.
NTP for time synchronization.
Syslog for centralized logging.
SNMP for network monitoring.
SSH for secure remote management.
NAT for address translation.

8. Network Security

Security features include:

ACLs to control traffic between VLANs.
Port Security to limit unauthorized devices.
DHCP Snooping to prevent rogue DHCP servers.
SSH access control for secure device administration.

9. Wireless Network Design

Wireless access points provide internal and guest wireless connectivity. Guest users are logically separated from internal resources through VLAN segmentation and security policies.

10. Testing and Verification

Testing includes:

- Ping and traceroute between networks.
- DHCP address assignment verification.
- NAT verification.
- ACL rule testing.
- HSRP redundancy verification.
- OSPF neighbor verification.
- VLAN and trunk verification.

```
HQ-DIST2#show logging
Syslog logging: enabled (0 messages dropped, 0 messages rate-limited,
          0 flushes, 0 overruns, xml disabled, filtering disabled)

No Active Message Discriminator.


No Inactive Message Discriminator.


    Console logging: level debugging, 68 messages logged, xml disabled,
          filtering disabled
    Monitor logging: level debugging, 68 messages logged, xml disabled,
          filtering disabled
    Buffer logging:  level debugging, 0 messages logged, xml disabled,
          filtering disabled

    Logging Exception size (4096 bytes)
    Count and timestamp logging messages: disabled
    Persistent logging: disabled

No active filter modules.

 --More-- |
```

```
AIR-R1#show clock
23:37:50.894 UTC Sun Aug 23 2026
AIR-R1#
```

```
HQ-DIST1#
HQ-DIST1#
HQ-DIST1#show ip ssh
SSH Enabled - version 2.0
Authentication timeout: 120 secs; Authentication retries: 3
HQ-DIST1#
```

```
HQ-DIST1#show access-lists
Standard IP access list ACL_MGMT
    10 permit 192.168.10.56 0.0.0.7
    20 permit 192.168.20.40 0.0.0.7
    30 permit 192.168.30.40 0.0.0.7
    40 deny any
Extended IP access list ACL_DATACENTER
    10 permit ip 192.168.10.56 0.0.0.7 192.168.10.0 0.0.0.15
    20 permit ip 192.168.20.40 0.0.0.7 192.168.10.0 0.0.0.15
    30 permit ip 192.168.30.40 0.0.0.7 192.168.10.0 0.0.0.15
    40 permit udp any 192.168.10.0 0.0.0.15 eq domain
    50 permit udp any 192.168.10.0 0.0.0.15 eq 123
    60 permit udp any 192.168.10.0 0.0.0.15 eq 514
    70 permit tcp any 192.168.10.0 0.0.0.15 eq www
    80 deny ip any 192.168.10.0 0.0.0.15
    90 permit ip any any

HQ-DIST1#
```

```
AIR-ACC1#show port-security
Secure Port MaxSecureAddr CurrentAddr SecurityViolation Security Action
               (Count)       (Count)        (Count)
-----------------------------------------------------------------------
        Fa0/1        2          1                0         Shutdown
        Fa0/2        1          1                1         Shutdown
        Fa0/3        2          1                0         Shutdown
        Fa0/4        2          0                0         Shutdown
        Fa0/5        2          0                0         Shutdown
        Fa0/6        2          0                0         Shutdown
        Fa0/7        2          0                0         Shutdown
        Fa0/8        2          0                0         Shutdown
        Fa0/9        2          0                0         Shutdown
       Fa0/10        2          0                0         Shutdown
       Fa0/11        2          0                0         Shutdown
       Fa0/12        2          0                0         Shutdown
       Fa0/13        2          0                0         Shutdown
       Fa0/14        2          0                0         Shutdown
       Fa0/15        2          0                0         Shutdown
       Fa0/16        2          0                0         Shutdown
       Fa0/17        2          0                0         Shutdown
       Fa0/18        2          0                0         Shutdown
       Fa0/19        2          0                0         Shutdown
       Fa0/20        2          0                0         Shutdown
-----------------------------------------------------------------------
AIR-ACC1#
```

```
AIR-ACC1#show ip dhcp snooping binding
MacAddress          IpAddress        Lease(sec)  Type           VLAN  Interface
------------------  ---------------  ----------  -------------  ----  --------------------
Total number of bindings: 0
AIR-ACC1#
```

```
AIR-ACC1#show ip dhcp snooping
Switch DHCP snooping is enabled
DHCP snooping is configured on following VLANs:
10,20,30,40,50,60,70,99
Insertion of option 82 is disabled
Option 82 on untrusted port is not allowed
Verification of hwaddr field is enabled
Interface                  Trusted    Rate limit (pps)
------------------------   -------    ----------------
FastEthernet0/2            no         unlimited
FastEthernet0/1            no         unlimited
FastEthernet0/3            no         unlimited
GigabitEthernet0/1         yes        unlimited
GigabitEthernet0/2         yes        unlimited
AIR-ACC1#
```

```
C:\>ipconfig

FastEthernet0 Connection:(default port)

   Connection-specific DNS Suffix..:
   Link-local IPv6 Address.....: FE80::2E0:F9FF:FE53:454C
   IPv6 Address.....: ::
   IPv4 Address.....: 192.168.20.21
   Subnet Mask.....: 255.255.255.248
   Default Gateway.....: ::
                                 192.168.20.17

Bluetooth Connection:

   Connection-specific DNS Suffix..:
   Link-local IPv6 Address.....: ::
   IPv6 Address.....: ::
   IPv4 Address.....: 0.0.0.0
   Subnet Mask.....: 0.0.0.0
   Default Gateway.....: ::
                                 0.0.0.0

C:\>
```

Top

```
GigabitEthernet1/0/18  unassigned      YES unset  down                  down
GigabitEthernet1/0/19  unassigned      YES unset  down                  down
GigabitEthernet1/0/20  unassigned      YES unset  down                  down
GigabitEthernet1/0/21  unassigned      YES unset  down                  down
GigabitEthernet1/0/22  unassigned      YES unset  down                  down
GigabitEthernet1/0/23  unassigned      YES unset  down                  down
GigabitEthernet1/0/24  unassigned      YES unset  down                  down
GigabitEthernet1/1/1   unassigned      YES unset  down                  down
GigabitEthernet1/1/2   unassigned      YES unset  down                  down
GigabitEthernet1/1/3   unassigned      YES unset  down                  down
GigabitEthernet1/1/4   unassigned      YES unset  down                  down
Vlan1                  unassigned      YES unset  administratively down down
Vlan10                 192.168.10.34   YES manual up                    up
Vlan20                 192.168.10.42   YES manual up                    up
Vlan30                 192.168.10.50   YES manual up                    up
Vlan40                 192.168.10.58   YES manual up                    up
Vlan50                 192.168.10.2    YES manual up                    up
Vlan60                 192.168.10.66   YES manual up                    up
Vlan70                 192.168.10.74   YES manual up                    up
Vlan99                 192.168.10.18   YES manual up                    up
HQ-DIST1#
```

Top

```
CORE-SW1#show ip ospf neighbor


Neighbor ID     Pri   State           Dead Time   Address         Interface
4.4.4.4           1   FULL/BDR        00:00:35    192.168.100.2   Port-channel1
1.1.1.1           1   FULL/BDR        00:00:34    192.168.100.22  GigabitEthernet1/0/4
2.2.2.2           1   FULL/BDR        00:00:35    192.168.100.30  GigabitEthernet1/0/5
6.6.6.6           1   FULL/DR         00:00:33    192.168.100.14  GigabitEthernet1/0/6
10.10.10.1        1   FULL/DR         00:00:35    192.168.100.38  GigabitEthernet1/0/7
20.20.20.1        1   FULL/DR         00:00:35    192.168.100.46  GigabitEthernet1/0/8
5.5.5.5           1   FULL/DR         00:00:35    192.168.100.6   GigabitEthernet1/0/3
CORE-SW1#
```

```
HQ-DIST1#show standby brief
                     P indicates configured to preempt.
                     |
Interface   Grp  Pri P State    Active          Standby         Virtual IP
Vl10        10   110 P Active   local           192.168.10.35   192.168.10.33
Vl20        20   110 P Active   local           192.168.10.43   192.168.10.41
Vl30        30   110 P Active   local           192.168.10.51   192.168.10.49
Vl40        40   110 P Active   local           192.168.10.59   192.168.10.57
Vl50        50   110 P Active   local           192.168.10.3    192.168.10.1
Vl60        60   110 P Active   local           192.168.10.67   192.168.10.65
Vl70        70   110 P Active   local           192.168.10.75   192.168.10.73
Vl99        99   110 P Active   local           192.168.10.19   192.168.10.17
HQ-DIST1#
```

```
HQ-DIST1#show etherchannel summary
Flags:  D - down        P - in port-channel
        I - stand-alone s - suspended
        H - Hot-standby (LACP only)
        R - Layer3      S - Layer2
        U - in use      f - failed to allocate aggregator
        u - unsuitable for bundling
        w - waiting to be aggregated
        d - default port


Number of channel-groups in use: 1
Number of aggregators:           1

Group  Port-channel  Protocol    Ports
------+-------------+-----------+-----------------------------------------------

10     Po10(SU)           LACP   Gig1/0/1(P) Gig1/0/2(P)
HQ-DIST1#
```

```
CORE-SW1#
CORE-SW1#show etherchannel summary
Flags:  D - down        P - in port-channel
        I - stand-alone s - suspended
        H - Hot-standby (LACP only)
        R - Layer3      S - Layer2
        U - in use      f - failed to allocate aggregator
        u - unsuitable for bundling
        w - waiting to be aggregated
        d - default port


Number of channel-groups in use: 1
Number of aggregators:           1

Group  Port-channel  Protocol    Ports
------+-------------+-----------+-----------------------------------------------

1      Po1(RU)           LACP   Gig1/0/1(P) Gig1/0/2(P)
CORE-SW1#
```

```
MIL-ACC1(config-if)#do sh int tr
Port        Mode         Encapsulation  Status        Native vlan
Gig0/1      on           802.1q         trunking      1

Port        Vlans allowed on trunk
Gig0/1      1-1005

Port        Vlans allowed and active in management domain
Gig0/1      1,10,20,30,40,60,70,99

Port        Vlans in spanning tree forwarding state and not pruned
Gig0/1      1,10,20,30,40,60,70,99

MIL-ACC1(config-if)#
```

```
HQ-ACC1#
HQ-ACC1#
HQ-ACC1#show interfaces trunk
Port        Mode         Encapsulation  Status        Native vlan
Gig0/1      on           802.1q         trunking      1
Gig0/2      on           802.1q         trunking      1

Port        Vlans allowed on trunk
Gig0/1      1-1005
Gig0/2      1-1005

Port        Vlans allowed and active in management domain
Gig0/1      1,10,20,30,40,50,60,70,99
Gig0/2      1,10,20,30,40,50,60,70,99

Port        Vlans in spanning tree forwarding state and not pruned
Gig0/1      1,10,20,30,40,50,60,70,99
Gig0/2      none

HQ-ACC1#
```

```
MIL-DIST1#sho vlan b

VLAN Name                             Status    Ports
---- -------------------------------- --------- -------------------------------
1    default                          active    Gig1/0/7, Gig1/0/8, Gig1/0/9, Gig1/0/10
                                                Gig1/0/11, Gig1/0/12, Gig1/0/13, Gig1/0/14
                                                Gig1/0/15, Gig1/0/16, Gig1/0/17, Gig1/0/18
                                                Gig1/0/19, Gig1/0/20, Gig1/0/21, Gig1/0/22
                                                Gig1/0/23, Gig1/0/24, Gig1/1/1, Gig1/1/2
                                                Gig1/1/3, Gig1/1/4
10   USERS                            active
20   VOICE                            active
30   CCTV                             active
40   ADMIN-IT                         active
60   INTERNAL-WIFI                    active
70   GUEST                            active
99   MANAGEMENT                       active
1002 fddi-default                     active
1003 token-ring-default               active
1004 fddinet-default                  active
1005 trnet-default                    active
MIL-DIST1#
```

```
AIR-DIST1#
AIR-DIST1#sh vlan b

VLAN Name                             Status    Ports
---- -------------------------------- --------- -------------------------------
1    default                          active    Gig1/0/7, Gig1/0/8, Gig1/0/9, Gig1/0/10
                                                Gig1/0/11, Gig1/0/12, Gig1/0/13, Gig1/0/14
                                                Gig1/0/15, Gig1/0/16, Gig1/0/17, Gig1/0/18
                                                Gig1/0/19, Gig1/0/20, Gig1/0/21, Gig1/0/22
                                                Gig1/0/23, Gig1/0/24, Gig1/1/1, Gig1/1/2
                                                Gig1/1/3, Gig1/1/4
10   USERS                            active
20   VOICE                            active
30   CCTV                             active
40   ADMIN-IT                         active
60   INTERNAL-WIFI                    active
70   GUEST                            active
99   MANAGEMENT                       active
1002 fddi-default                     active
1003 token-ring-default               active
1004 fddinet-default                  active
1005 trnet-default                    active
AIR-DIST1#
```

```
HQ-DIST1#
HQ-DIST1#show vlan brief

VLAN Name                             Status    Ports
---- -------------------------------- --------- -------------------------------
1    default                          active    Gig1/0/8, Gig1/0/9, Gig1/0/10, Gig1/0/11
                                                Gig1/0/12, Gig1/0/13, Gig1/0/14, Gig1/0/15
                                                Gig1/0/16, Gig1/0/17, Gig1/0/18, Gig1/0/19
                                                Gig1/0/20, Gig1/0/21, Gig1/0/22, Gig1/0/23
                                                Gig1/0/24, Gig1/1/1, Gig1/1/2, Gig1/1/3
                                                Gig1/1/4
10   USERS                            active
20   VOICE                            active
30   CCTV                             active
40   ADMIN-IT                         active
50   SERVERS                          active
60   INTERNAL-WIFI                    active
70   GUEST                            active
99   MANAGEMENT                       active
1002 fddi-default                     active
1003 token-ring-default               active
1004 fddinet-default                  active
1005 trnet-default                    active
HQ-DIST1#
```

11. Conclusion

The Ministry of Defence Integrated Network project demonstrates practical CCNA networking skills through design, configuration, security implementation, and verification of an enterprise network environment.