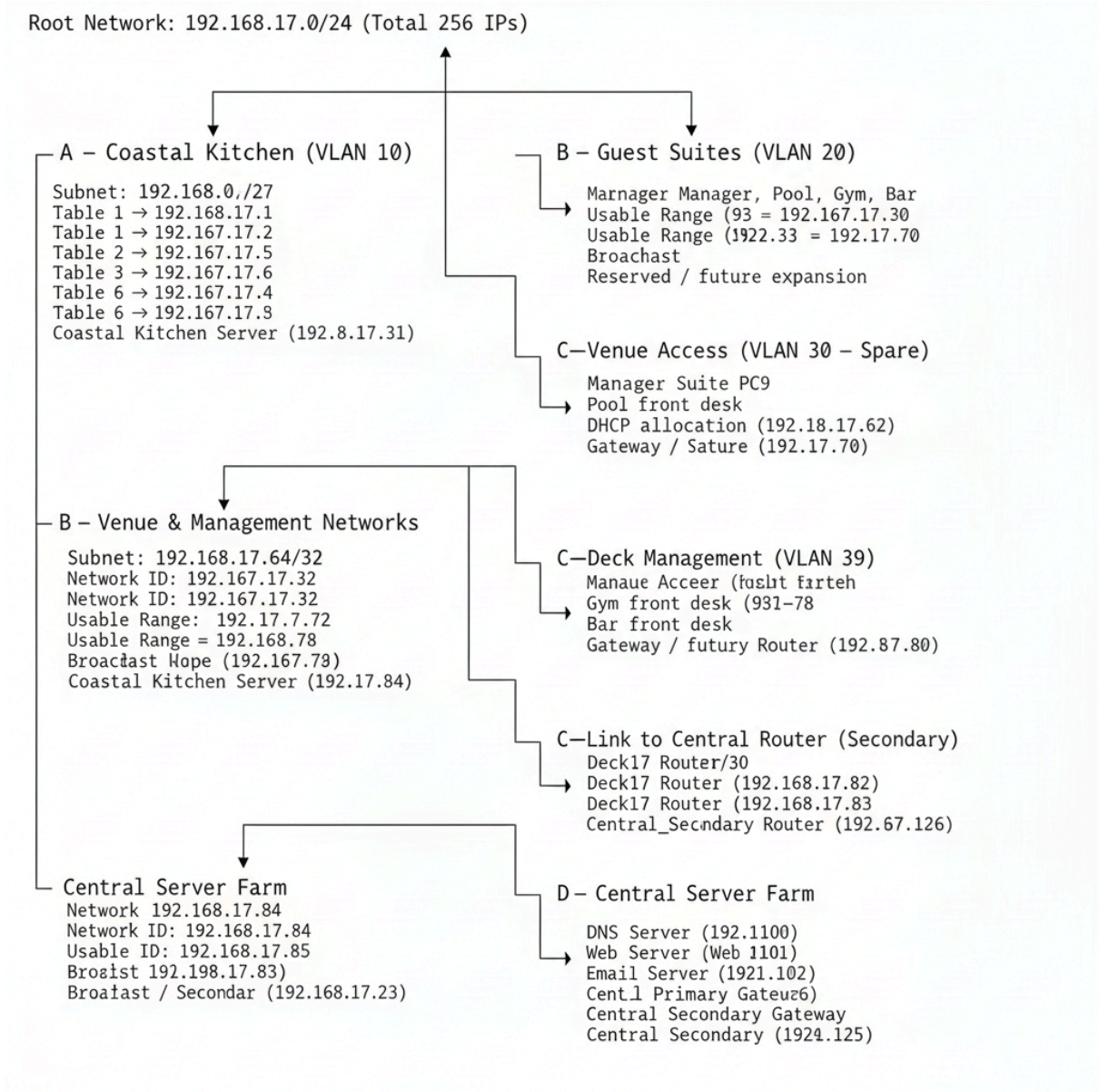


VLSM Tree



IP address table:

Device Name	Interface	IP Address	Subnet Mask	Default Gateway	Description
Deck17_Router	G0/0.10	192.168.17.30	255.255.255.224	N/A	Coastal Gateway
	G0/0.20	192.168.17.62	255.255.255.224	N/A	Guest Gateway
	G0/0.30	192.168.17.70	255.255.255.248	N/A	Mgmt Gateway
	G0/1	10.0.0.1	255.255.255.252	N/A	Link to Primary
	G0/2	10.0.0.5	255.255.255.252	N/A	Link to Backup
Central_Primary	G0/0	10.0.0.2	255.255.255.252	N/A	Link to Deck
	G0/1	192.168.17.126	255.255.255.224	N/A	Server Gateway
Table 1	NIC	192.168.17.1	255.255.255.224	192.168.17.30	Coastal PC 14
Guest PC	NIC	DHCP	DHCP	192.168.17.62	Guest Room 15

Coastal Server	NIC	192.168.17 .10	255.255.25 5.224	192.168.17 .30	Menu Server
DNS Server	NIC	192.168.17 .100	255.255.25 5.224	192.168.17 .126	Central DNS 16
Web Server	NIC	192.168.17 .101	255.255.25 5.224	192.168.17 .126	Central Web

Configuration commands for all routers:

Deck 17 Router-

```
en
conf t
int g0/0
no shut
exit
int g0/0.10
encap dot1Q 10
ip add 192.168.17.30 255.255.255.224
exit
int g0/0.20
encap dot1Q 20
ip add 192.168.17.62 255.255.255.224
exit
int g0/0.30
encap dot1Q 30
ip add 192.168.17.70 255.255.255.248
exit
int g0/1
ip add 10.0.0.1 255.255.255.252
no shut
exit
int g0/2
ip add 10.0.0.5 255.255.255.252
no shut
exit
ip dhcp pool Guest_Pool
network 192.168.17.32 255.255.255.224
default-router 192.168.17.62
dns-server 192.168.17.100
exit
ip route 0.0.0.0 0.0.0.0 10.0.0.2
ip route 0.0.0.0 0.0.0.0 10.0.0.6 10
access-list 100 permit ip 192.168.17.0 0.0.0.31 host 192.168.17.10
access-list 100 deny ip any host 192.168.17.10
access-list 100 permit ip any any end
write

show ip interface brief
show ip route
ping 10.0.0.2
```

Central Primary:

```
en
conf t
int g0/0
ip add 10.0.0.2 255.255.255.252
no shut
exit
int g0/1
ip add 192.168.17.126 255.255.255.224
no shut
exit
ip route 192.168.17.0 255.255.255.0 10.0.0.1
ip route 192.168.17.0 255.255.255.0 192.168.17.125 10
end
write
show ip interface brief
show ip route
ping 192.168.17.101
```

Central Secondary:

```
en
conf t
int g0/0
ip add 10.0.0.6 255.255.255.252
no shut
exit
int g0/1
ip add 192.168.17.125 255.255.255.224
no shut
exit
ip route 192.168.17.0 255.255.255.0 10.0.0.5
ip route 192.168.17.0 255.255.255.0 192.168.17.126 10
end
write

show ip interface brief
show ip route
```

List of any Assumptions:

Router-on-a-Stick: Assumed the Deck Router supports 802.1Q encapsulation to handle three VLANs over a single physical cable.

VLSM Growth: Assumed Guest Suites (VLAN 20) will not exceed 30 users, allowing the use of a /27 mask to minimize IP waste.

Standard Gateways: Assumed the highest usable IP in each subnet is reserved for the Router interface (Gateway).

WAN Connectivity: Assumed the use of HWIC-2T Serial Modules for dedicated, point-to-point backbone links between the Deck and Central routers.

Clock Rate Timing: Assumed the Central Primary router acts as the DCE device, providing the clocking signal for the serial links.

Acceptable Downtime: Assumed a 3–5 second delay during a primary link failure is acceptable for automatic failover to the secondary route.

Security Logic: Assumed "Security" means blocking Guest access to the Menu Server while maintaining full internet access for all users.

External Services: Assumed the Central Servers (DNS/Web) are managed externally and remain reachable via the provided Gateway IPs.