



CS310

COMPUTER NETWORKS

ASSIGNMENT 2 DOCUMENTATION



```
C:\>ping 172.16.11.1
```

```
Pinging 172.16.11.1 with 32 bytes of data:
```

```
Reply from 172.16.11.1: bytes=32 time<1ms TTL=255  
Reply from 172.16.11.1: bytes=32 time<1ms TTL=255  
Reply from 172.16.11.1: bytes=32 time<1ms TTL=255  
Reply from 172.16.11.1: bytes=32 time<1ms TTL=255
```

```
Ping statistics for 172.16.11.1:
```

```
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),  
    Approximate round trip times in milli-seconds:  
        Minimum = 0ms, Maximum = 0ms, Average = 0ms
```

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Contents

Introduction	3
Network Address Assignment.....	3
Subnetting Calculation (VLSM)	3
Wi-Fi: 250 usable IPs	4
CCTV: 15 usable IPs.....	4
POS: 10 usable IPs	5
IP Addressing Plan	6
Network Topology	6
Network Configuration Details	7
Suva Router Configuration:	7
Savusavu Router Configuration:	7
DHCP configuration for Wi-Fi	8
RIP v2 Configuration (Suva Router)	8
Access Control List (ACL)	9
Check List -Part 1 and Part 2	10
Check List Part 3	14
Conclusion	18
Student Contribution.....	18

Introduction

This document provides detailed subnetting calculations using VLSM (Variable Length Subnet Mask), IP address planning and network configurations for The MediConnect supermarket network. As specified in the CS310 assignment 2 specification, our group is required to use the network address assigned to our group and create subnets based on host requirements for Point-of-Sale machines, Customer Wi-Fi, and CCTV services. Also, to ensure end to end connectivity between devices on different subnets, we need to configure RIP v2 routing and implement ACLs (Access Control Lists) for security purposes.

Network Address Assignment

The assigned network address for Group 6 is 172.16.10.0/23, this major network requires subnetting using a technique called VLSM to accommodate for IP requirements based on the following:

- Customer Wi-Fi: 250 IP addresses
- CCTV services: 15 IP addresses
- Point-of-Sale machines: 10 IP addresses.

The Suva Data center is on the network 172.16.200.0/24 and the point-to-point link between Savusavu and Suva is on 172.16.240.0/30.

Subnetting Calculation (VLSM)

Step 1: Identify the class of the address.

- First octet: 172, falls in the range 128-191 which is a class B address.
- Default subnet mask for class B: 255.255.0.0 (/16)
- Given subnet mask: /23 (255.255.254.0)
- Total IP addresses in /23: $2^{32-23} = 2^9 = 512$ IP addresses (512 - 2 = 510 usable IP addresses)

Step 2: Host requirements

- Wi-Fi: 250 IPs
- CCTV: 15 IPs
- POS: 10 IPs

Ensure to sort the requirements in descending order for VLSM

Step 3: Calculate subnet sizes.

Wi-Fi: 250 usable IPs

- Using the formula: $2^H - 2$, where H is the number of host bits.
- $250 = 2^H - 2$, find H such that, $2^H - 2 > 250$
 $250 = 2^8 - 2$, therefore, to accommodate for 250 hosts, we need to allocate 8 host bits ($2^8 = 256$).
- Now the subnet mask will change:
255.255.254.0
In binary: 11111111 11111111 11111110 00000000 (1's represents network bits and 0's represent host bits)
- We need 8 host bits. Therefore, reverse 8 host bits from left and turn remaining bits into 1's
- Default subnet mask /23:
11111111 11111111 11111110 00000000
- New subnet mask:
11111111 11111111 11111111 00000000
255.255.255.0 or /24
- Using the last host bit which is our increment we will update the IP allocation table
- 172.16.10. 0 – 172.16.10.255/24 - This is the network range for Wi-Fi customers

CCTV: 15 usable IPs

- Using the formula: $2^H - 2$, where H is the number of host bits.
- $250 = 2^H - 2$, find H such that, $2^H - 2 > 15$
 $250 = 2^5 - 2$, therefore, to accommodate for 15 hosts, we need to allocate 5 host bits ($2^5 = 32$).
- Now the subnet mask will change:
255.255.255.0
In binary: 11111111 11111111 11111111 00000000 (1's represents network bits and 0's represent host bits)
- We need 5 host bits. Therefore, reverse 5 host bits from left and turn remaining bits into 1's
- Default subnet mask /24:
11111111 11111111 11111111 00000000

- New subnet mask:
11111111 11111111 11111111 11100000
255.255.255.224 or /27

Using the last host bit which is our increment we will update the IP allocation table

- 172.16.10. 0 – 172.16.10.255/24 - This is the network range for Wi-Fi customers
- 172.16.11.0 – 172.16.11.31 - This is the network range for CCTV services

POS: 10 usable IPs

- Using the formula: $2^H - 2$, where H is the number of host bits
- $250 = 2^H - 2$, find H such that, $2^H - 2 > 10$
 $250 = 2^4 - 2$, therefore, to accommodate for 10 hosts, we need to allocate 4 host bits ($2^4 = 16$).
- Now the subnet mask will change:
255.255.255.224
In binary: 11111111 11111111 11111111 00000000 (1's represents network bits and 0's represent host bits)
- We need 4 host bits. Therefore, reverse 4 host bits from left and turn remaining bits into 1's
- Default subnet mask /27:
11111111 11111111 11111111 11100000
- New subnet mask:
11111111 11111111 11111111 11110000
255.255.255.240 or /28

Using the last host bit which is our increment we will update the IP allocation table

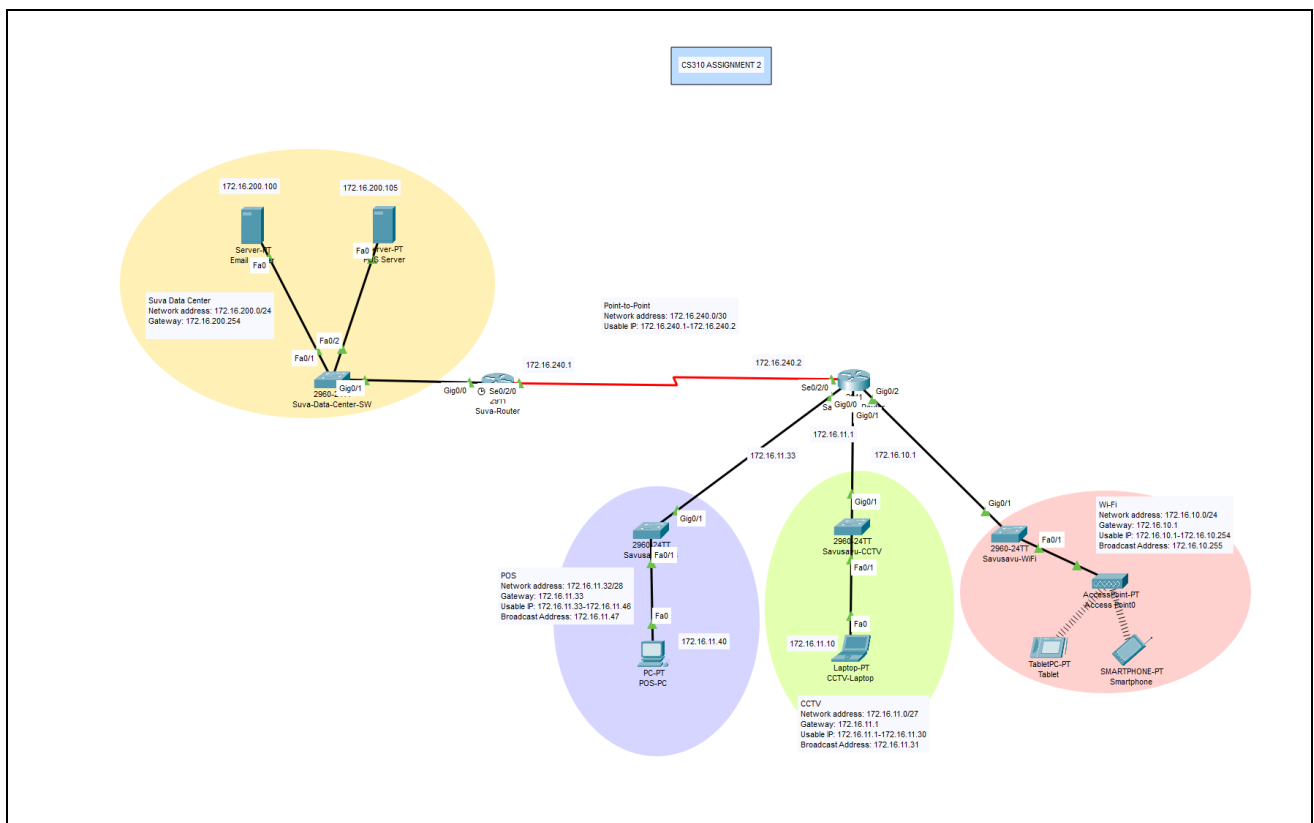
- 172.16.10. 0 – 172.16.10.255/24 - This is the network range for Wi-Fi customers
- 172.16.11.0 – 172.16.11.31/27 - This is the network range for CCTV services
- 172.16.11.32 – 172.16.11.47/28 - This is the network range for CCTV services

IP Addressing Plan

Below is a table summarizing the VLSM Allocation for Wi-Fi, CCTV and POS

Department	IPs Required	Network Address	Subnet Mask	Usable IP Range	Usable IPs
Wi-Fi	250	172.16.10.0/24	255.255.255.0	172.16.10.1-172.16.10.254	254
CCTV	15	172.16.11.0/27	255.255.255.224	172.16.11.1-172.16.11.30	30
POS	10	172.16.11.32/28	255.255.255.240	172.16.11.33-172.16.11.46	14

Network Topology



Network Configuration Details

Suva Router Configuration:

```
Router>enable
Router#configure terminal
Router(config)#hostname SuvaRouter
SuvaRouter(config)#enable password PASSWORD
SuvaRouter(config)#line console 0
SuvaRouter(config-line)#password PASSWORD
SuvaRouter(config-line)#login
SuvaRouter(config-line)#exit
SuvaRouter(config)#interface GigabitEthernet0/0
SuvaRouter(config-if)#ip address 172.16.200.254 255.255.255.0
SuvaRouter(config-if)#description LAN-TO-SUVA-SWITCH
SuvaRouter(config-if)#no shutdown
SuvaRouter(config-if)#exit
SuvaRouter(config)#interface Serial0/2/0
SuvaRouter(config-if)#ip address 172.16.240.1 255.255.255.252
SuvaRouter(config-if)#description POINT-TO-POINT-TO-SAVUSAVU
SuvaRouter(config-if)#no shutdown
SuvaRouter(config-if)#exit
```

Savusavu Router Configuration:

```
Router>enable
Router#configure terminal
Router(config)#hostname SavusavuRouter
SavusavuRouter(config)#enable password PASSWORD
SavusavuRouter(config)#line console 0
SavusavuRouter(config-line)#password PASSWORD
SavusavuRouter(config-line)#login
SavusavuRouter(config-line)#exit
SavusavuRouter(config)#interface Serial0/2/0
SavusavuRouter(config-if)#ip address 172.16.240.2 255.255.255.252
SavusavuRouter(config-if)#description POINT-TO-POINT-TO-SUVA
SavusavuRouter(config-if)#no shutdown
SavusavuRouter(config-if)#exit
```

```
SavusavuRouter(config)#interface GigabitEthernet0/0
SavusavuRouter(config-if)#ip address 172.16.11.33 255.255.255.240
SavusavuRouter(config-if)#description LAN-TO-POS-SUBNET
SavusavuRouter(config-if)#no shutdown
SavusavuRouter(config-if)#exit
SavusavuRouter(config)#interface GigabitEthernet0/2
SavusavuRouter(config-if)#ip address 172.16.10.1 255.255.255.0
SavusavuRouter(config-if)#description LAN-TO-WIFI
SavusavuRouter(config-if)#no shutdown
SavusavuRouter(config-if)#exit
SavusavuRouter(config)#interface GigabitEthernet0/1
SavusavuRouter(config-if)#ip address 172.16.11.1 255.255.255.224
SavusavuRouter(config-if)#description LAN-TO-CCTV-SUBNET
SavusavuRouter(config-if)#no shutdown
SavusavuRouter(config-if)#exit
```

DHCP configuration for Wi-Fi

```
SavusavuRouter(config)#ip dhcp pool WIFI_POOL
SavusavuRouter(dhcp-config)#network 172.16.10.0 255.255.255.0
SavusavuRouter(dhcp-config)#default-router 172.16.10.1
SavusavuRouter(dhcp-config)#exit
SavusavuRouter(config)#ip dhcp excluded-address 172.16.10.1
```

RIP v2 Configuration (Suva Router)

```
SuvaRouter(config)#router rip
SuvaRouter(config-router)#version 2
SuvaRouter(config-router)#no auto-summary
SuvaRouter(config-router)#network 172.16.200.0
SuvaRouter(config-router)#network 172.16.240.0
SuvaRouter(config-router)#exit
```

RIP v2 Configuration (Savusavu Router)

```
SavusavuRouter(config)#router rip
SavusavuRouter(config-router)#version 2
SavusavuRouter(config-router)#no auto-summary
SavusavuRouter(config-router)#network 172.16.10.0
```



```
SavusavuRouter(config-router)#network 172.16.11.0
SavusavuRouter(config-router)#network 172.16.240.0
SavusavuRouter(config-router)#exit
```

Access Control List (ACL)

Wi-Fi devices (172.16.10.0/24) should not access the following:

- Email Server
- POS server
- POS clients
- CCTV clients

```
SavusavuRouter(config)#access-list 100 deny ip 172.16.10.0 0.0.0.255 172.16.200.100
0.0.0.0
SavusavuRouter(config)#access-list 100 deny ip 172.16.10.0 0.0.0.255 172.16.200.105
0.0.0.0
SavusavuRouter(config)#access-list 100 deny ip 172.16.10.0 0.0.0.255 172.16.11.32
0.0.0.15
SavusavuRouter(config)#access-list 100 deny ip 172.16.10.0 0.0.0.255 172.16.11.0
0.0.0.31
SavusavuRouter(config)#access-list 100 permit ip any any
SavusavuRouter(config)#interface GigabitEthernet0/2
SavusavuRouter(config-if)#ip access-group 100 in
SavusavuRouter(config-if)#exit
```

Check List -Part 1 and Part 2

All tests for Part 1 and Part 2 meet the checklist requirements

Suva Router Pings Email Server.	<pre>SuvaRouter#ping 172.16.200.100 Type escape sequence to abort. Sending 5, 100-byte ICMP Echos to 172.16.200.100, timeout is 2 seconds: !!!!!! Success rate is 100 percent (5/5), round-trip min/avg/max = 0/0/0 ms</pre>
Suva Router pings POS Server.	<pre>SuvaRouter#ping 172.16.200.105 Type escape sequence to abort. Sending 5, 100-byte ICMP Echos to 172.16.200.105, timeout is 2 seconds: !!!!!! Success rate is 100 percent (5/5), round-trip min/avg/max = 0/0/0 ms</pre>
Savusavu POS PC should be able to ping the Savusavu Router.	<pre>C:\>ping 172.16.11.33 Pinging 172.16.11.33 with 32 bytes of data: Reply from 172.16.11.33: bytes=32 time<1ms TTL=255 Reply from 172.16.11.33: bytes=32 time<1ms TTL=255 Reply from 172.16.11.33: bytes=32 time<1ms TTL=255 Reply from 172.16.11.33: bytes=32 time<1ms TTL=255 Ping statistics for 172.16.11.33: Packets: Sent = 4, Received = 4, Lost = 0 (0% loss), Approximate round trip times in milli-seconds: Minimum = 0ms, Maximum = 0ms, Average = 0ms</pre>
Savusavu WiFi devices should be able to ping the Savusavu Router.	<pre>Cisco Packet Tracer PC Command Line 1.0 C:\>ping 172.16.10.1 Pinging 172.16.10.1 with 32 bytes of data: Reply from 172.16.10.1: bytes=32 time=38ms TTL=255 Reply from 172.16.10.1: bytes=32 time=30ms TTL=255 Reply from 172.16.10.1: bytes=32 time=20ms TTL=255 Reply from 172.16.10.1: bytes=32 time=17ms TTL=255 Ping statistics for 172.16.10.1: Packets: Sent = 4, Received = 4, Lost = 0 (0% loss), Approximate round trip times in milli-seconds: Minimum = 17ms, Maximum = 38ms, Average = 26ms</pre>

<p>Savusavu CCTV Laptop should be able to ping the Savusavu Router.</p>	<pre> C:\>ping 172.16.11.1 Pinging 172.16.11.1 with 32 bytes of data: Reply from 172.16.11.1: bytes=32 time<1ms TTL=255 Reply from 172.16.11.1: bytes=32 time<1ms TTL=255 Reply from 172.16.11.1: bytes=32 time<1ms TTL=255 Reply from 172.16.11.1: bytes=32 time<1ms TTL=255 Ping statistics for 172.16.11.1: Packets: Sent = 4, Received = 4, Lost = 0 (0% loss), Approximate round trip times in milli-seconds: Minimum = 0ms, Maximum = 0ms, Average = 0ms </pre>	
<p>Savusavu POS PC should be able to ping the Email Server and the POS Server.</p>	<pre> C:\>ping 172.16.200.100 Pinging 172.16.200.100 with 32 bytes of data: Reply from 172.16.200.100: bytes=32 time=18ms TTL=126 Reply from 172.16.200.100: bytes=32 time=15ms TTL=126 Reply from 172.16.200.100: bytes=32 time=17ms TTL=126 Reply from 172.16.200.100: bytes=32 time=19ms TTL=126 Ping statistics for 172.16.200.100: Packets: Sent = 4, Received = 4, Lost = 0 (0% loss), Approximate round trip times in milli-seconds: Minimum = 15ms, Maximum = 19ms, Average = 17ms C:\>ping 172.16.200.105 Pinging 172.16.200.105 with 32 bytes of data: Reply from 172.16.200.105: bytes=32 time=18ms TTL=126 Reply from 172.16.200.105: bytes=32 time=21ms TTL=126 Reply from 172.16.200.105: bytes=32 time=1ms TTL=126 Reply from 172.16.200.105: bytes=32 time=15ms TTL=126 Ping statistics for 172.16.200.105: Packets: Sent = 4, Received = 4, Lost = 0 (0% loss), Approximate round trip times in milli-seconds: Minimum = 1ms, Maximum = 21ms, Average = 13ms </pre>	

<p>Savusavu WiFi devices should be able to ping the Email Server and the POS Server.</p>	<pre> C:\>ping 172.16.200.100 Pinging 172.16.200.100 with 32 bytes of data: Reply from 172.16.200.100: bytes=32 time=24ms TTL=126 Reply from 172.16.200.100: bytes=32 time=21ms TTL=126 Reply from 172.16.200.100: bytes=32 time=32ms TTL=126 Reply from 172.16.200.100: bytes=32 time=21ms TTL=126 Ping statistics for 172.16.200.100: Packets: Sent = 4, Received = 4, Lost = 0 (0% loss), Approximate round trip times in milli-seconds: Minimum = 21ms, Maximum = 32ms, Average = 24ms C:\>ping 172.16.200.105 Pinging 172.16.200.105 with 32 bytes of data: Reply from 172.16.200.105: bytes=32 time=22ms TTL=126 Reply from 172.16.200.105: bytes=32 time=22ms TTL=126 Reply from 172.16.200.105: bytes=32 time=29ms TTL=126 Reply from 172.16.200.105: bytes=32 time=21ms TTL=126 Ping statistics for 172.16.200.105: Packets: Sent = 4, Received = 4, Lost = 0 (0% loss), Approximate round trip times in milli-seconds: Minimum = 21ms, Maximum = 29ms, Average = 23ms </pre>
<p>Savusavu CCTV Laptop should be able to ping the Email Server and the POS Server.</p>	<pre> C:\>ping 172.16.200.100 Pinging 172.16.200.100 with 32 bytes of data: Reply from 172.16.200.100: bytes=32 time=18ms TTL=126 Reply from 172.16.200.100: bytes=32 time=1ms TTL=126 Reply from 172.16.200.100: bytes=32 time=12ms TTL=126 Reply from 172.16.200.100: bytes=32 time=17ms TTL=126 Ping statistics for 172.16.200.100: Packets: Sent = 4, Received = 4, Lost = 0 (0% loss), Approximate round trip times in milli-seconds: Minimum = 1ms, Maximum = 18ms, Average = 12ms C:\>ping 172.16.200.105 Pinging 172.16.200.105 with 32 bytes of data: Reply from 172.16.200.105: bytes=32 time=18ms TTL=126 Reply from 172.16.200.105: bytes=32 time=22ms TTL=126 Reply from 172.16.200.105: bytes=32 time=25ms TTL=126 Reply from 172.16.200.105: bytes=32 time=17ms TTL=126 Ping statistics for 172.16.200.105: Packets: Sent = 4, Received = 4, Lost = 0 (0% loss), Approximate round trip times in milli-seconds: Minimum = 17ms, Maximum = 25ms, Average = 20ms </pre>

Tablet and Smart Phone should be able to ping each other.

```
C:\>ping 172.16.10.2

Pinging 172.16.10.2 with 32 bytes of data:

Reply from 172.16.10.2: bytes=32 time=50ms TTL=128
Reply from 172.16.10.2: bytes=32 time=28ms TTL=128
Reply from 172.16.10.2: bytes=32 time=26ms TTL=128
Reply from 172.16.10.2: bytes=32 time=27ms TTL=128

Ping statistics for 172.16.10.2:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 26ms, Maximum = 50ms, Average = 32ms
```

```
C:\>ping 172.16.10.3

Pinging 172.16.10.3 with 32 bytes of data:

Reply from 172.16.10.3: bytes=32 time=36ms TTL=128
Reply from 172.16.10.3: bytes=32 time=32ms TTL=128
Reply from 172.16.10.3: bytes=32 time=28ms TTL=128
Reply from 172.16.10.3: bytes=32 time=35ms TTL=128

Ping statistics for 172.16.10.3:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 28ms, Maximum = 36ms, Average = 32ms
```

Tablet and Smart Phone should be able to ping the POS PC and CCTV laptop at Savusavu.

```
C:\>ping 172.16.11.40

Pinging 172.16.11.40 with 32 bytes of data:

Reply from 172.16.11.40: bytes=32 time=4ms TTL=128
Reply from 172.16.11.40: bytes=32 time=5ms TTL=128
Reply from 172.16.11.40: bytes=32 time=1ms TTL=128
Reply from 172.16.11.40: bytes=32 time=6ms TTL=128

Ping statistics for 172.16.11.40:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 1ms, Maximum = 6ms, Average = 4ms

C:\>ping 172.16.11.10

Pinging 172.16.11.10 with 32 bytes of data:

Reply from 172.16.11.10: bytes=32 time<1ms TTL=127
Reply from 172.16.11.10: bytes=32 time<1ms TTL=127
Reply from 172.16.11.10: bytes=32 time<1ms TTL=127
Reply from 172.16.11.10: bytes=32 time<1ms TTL=127

Ping statistics for 172.16.11.10:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 0ms, Average = 0ms
```

Check List Part 3

All tests for Part 3 meet the checklist requirements

Savusavu WiFi devices should NOT be able to ping the Email Server and the POS Server	<pre>Approximate round trip times in milli-seconds: Minimum = 16ms, Maximum = 28ms, Average = 20ms C:\> C:\> C:\> C:\> C:\>ping 172.16.200.100 Pinging 172.16.200.100 with 32 bytes of data: Reply from 172.16.10.1: Destination host unreachable. Reply from 172.16.10.1: Destination host unreachable. Reply from 172.16.10.1: Destination host unreachable. Reply from 172.16.10.1: Destination host unreachable. Ping statistics for 172.16.200.100: Packets: Sent = 4, Received = 0, Lost = 4 (100% loss), C:\>ping 172.16.200.105 Pinging 172.16.200.105 with 32 bytes of data: Reply from 172.16.10.1: Destination host unreachable. Reply from 172.16.10.1: Destination host unreachable. Reply from 172.16.10.1: Destination host unreachable. Reply from 172.16.10.1: Destination host unreachable. Ping statistics for 172.16.200.105: Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),</pre>
---	--

Tablet and Smart Phone should be able to ping each other.

```
C:\>ping 172.16.10.3

Pinging 172.16.10.3 with 32 bytes of data:

Reply from 172.16.10.3: bytes=32 time=57ms TTL=128
Reply from 172.16.10.3: bytes=32 time=33ms TTL=128
Reply from 172.16.10.3: bytes=32 time=29ms TTL=128
Reply from 172.16.10.3: bytes=32 time=31ms TTL=128

Ping statistics for 172.16.10.3:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 29ms, Maximum = 57ms, Average = 37ms

C:\>ping 172.16.10.2

Pinging 172.16.10.2 with 32 bytes of data:

Reply from 172.16.10.2: bytes=32 time=31ms TTL=128
Reply from 172.16.10.2: bytes=32 time=31ms TTL=128
Reply from 172.16.10.2: bytes=32 time=36ms TTL=128
Reply from 172.16.10.2: bytes=32 time=22ms TTL=128

Ping statistics for 172.16.10.2:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 22ms, Maximum = 36ms, Average = 30ms
```


Tablet and Smart Phone should NOT be able to ping the POS PC and CCTV laptop at Savusavu

```
C:\>ping 172.16.11.40

Pinging 172.16.11.40 with 32 bytes of data:

Reply from 172.16.10.1: Destination host unreachable.
Reply from 172.16.10.1: Destination host unreachable.
Reply from 172.16.10.1: Destination host unreachable.
Reply from 172.16.10.1: Destination host unreachable.

Ping statistics for 172.16.11.40:
    Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),

C:\>ping 172.16.11.10

Pinging 172.16.11.10 with 32 bytes of data:

Reply from 172.16.10.1: Destination host unreachable.
Reply from 172.16.10.1: Destination host unreachable.
Reply from 172.16.10.1: Destination host unreachable.
Reply from 172.16.10.1: Destination host unreachable.

Ping statistics for 172.16.11.10:
    Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),

C:\>ping 172.16.11.40

Pinging 172.16.11.40 with 32 bytes of data:

Reply from 172.16.10.1: Destination host unreachable.
Reply from 172.16.10.1: Destination host unreachable.
Reply from 172.16.10.1: Destination host unreachable.
Reply from 172.16.10.1: Destination host unreachable.

Ping statistics for 172.16.11.40:
    Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),

C:\>ping 172.16.11.10

Pinging 172.16.11.10 with 32 bytes of data:

Reply from 172.16.10.1: Destination host unreachable.
Reply from 172.16.10.1: Destination host unreachable.
Reply from 172.16.10.1: Destination host unreachable.
Reply from 172.16.10.1: Destination host unreachable.

Ping statistics for 172.16.11.10:
    Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),
```


Savusavu
Point of
Sale PC
should be
able to
ping the
Suva
Email
Server
and the
POS
Server.

```
C:\>ping 172.16.200.100

Pinging 172.16.200.100 with 32 bytes of data:

Reply from 172.16.200.100: bytes=32 time=18ms TTL=126
Reply from 172.16.200.100: bytes=32 time=12ms TTL=126
Reply from 172.16.200.100: bytes=32 time=1ms TTL=126
Reply from 172.16.200.100: bytes=32 time=18ms TTL=126

Ping statistics for 172.16.200.100:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 1ms, Maximum = 18ms, Average = 12ms

C:\>ping 172.16.200.105

Pinging 172.16.200.105 with 32 bytes of data:

Reply from 172.16.200.105: bytes=32 time=15ms TTL=126
Reply from 172.16.200.105: bytes=32 time=10ms TTL=126
Reply from 172.16.200.105: bytes=32 time=2ms TTL=126
Reply from 172.16.200.105: bytes=32 time=2ms TTL=126

Ping statistics for 172.16.200.105:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 2ms, Maximum = 15ms, Average = 7ms
```

Conclusion

This documentation outlines all subnetting calculations using VLSM, IP addressing plan used to design the and implement the topology. The configurations used in this network design such as DHCP, RIP v2 routing and ACLs, all meet the specified requirements of this assignment. Also, all connectivity tests were successful and noted in this report.

Student Contribution

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