

# Technical Project Group 1

## Phase 2 Setup

# Router DHCP

# Spring R1 DHCP

```
SpringR1#show ip int brief
Interface          IP-Address      OK? Method Status      Protocol
GigabitEthernet0/0 192.168.60.1    YES NVRAM  up       up
GigabitEthernet0/1 192.168.60.5    YES NVRAM  up       up
GigabitEthernet0/2 192.168.60.17   YES NVRAM  up       up
GigabitEthernet0/3 192.168.255.136 YES DHCP   up       up
NVI0              192.168.60.1    YES unset   up       up
SpringR1#
```

# Spring R2 DhCP

```
SpringR2#show ip int brief
Interface          IP-Address      OK? Method Status      Protocol
GigabitEthernet0/0 192.168.60.10   YES NVRAM  up       up
GigabitEthernet0/1 192.168.60.13   YES NVRAM  up       up
GigabitEthernet0/2 192.168.60.18   YES NVRAM  up       up
GigabitEthernet0/3 192.168.255.139 YES DHCP   up       up
NVI0              192.168.60.10   YES unset  up       up
SpringR2#      ]
```

# NAT

R1

```
SpringR1#show running-config | section nat
  ip nat inside
  ip nat inside
  ip nat inside
  ip nat outside
  default-information originate metric 1
  ip nat inside source list INSIDE_SUBNETS interface GigabitEthernet0/3 overload
SpringR1#
```

# Ping from Client 1 to 8.8.8.8 and R1 Translations

```
Command Prompt      X + ▾
Microsoft Windows [Version 10.0.26100.1742]
(c) Microsoft Corporation. All rights reserved.

C:\Users\clhaki>ping 8.8.8.8

Pinging 8.8.8.8 with 32 bytes of data:
Reply from 8.8.8.8: bytes=32 time=20ms TTL=107
Reply from 8.8.8.8: bytes=32 time=14ms TTL=107
Reply from 8.8.8.8: bytes=32 time=16ms TTL=107
Reply from 8.8.8.8: bytes=32 time=17ms TTL=107

Ping statistics for 8.8.8.8:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 14ms, Maximum = 20ms, Average = 16ms

C:\Users\clhaki>
```

```
SpringR1#show ip nat translation
Pro Inside global      Inside local      Outside local      Outside global
tcp 192.168.255.136:49791 10.16.2.50:49791 13.89.179.8:443  13.89.179.8:443
tcp 192.168.255.136:49839 10.16.2.50:49839 172.172.255.217:443 172.172.255.217:443
tcp 192.168.255.136:49860 10.16.2.50:49860 13.89.179.8:443  13.89.179.8:443
tcp 192.168.255.136:56484 172.21.0.10:56484 135.18.128.210:443 135.18.128.210:443
tcp 192.168.255.136:56488 172.21.0.10:56488 52.191.219.104:443 52.191.219.104:443
tcp 192.168.255.136:56490 172.21.0.10:56490 20.190.135.2:443 20.190.135.2:443
tcp 192.168.255.136:56499 172.21.0.10:56499 20.190.135.2:443 20.190.135.2:443
tcp 192.168.255.136:62065 172.21.0.11:62065 20.96.52.198:443 20.96.52.198:443
tcp 192.168.255.136:62070 172.21.0.11:62070 52.167.17.97:443 52.167.17.97:443
udp 192.168.255.136:65372 172.21.0.11:65372 192.203.230.10:53 192.203.230.10:53
tcp 192.168.255.136:58943 172.21.0.12:58943 151.101.138.172:80 151.101.138.172:80
tcp 192.168.255.136:58944 172.21.0.12:58944 151.101.138.172:80 151.101.138.172:80
tcp 192.168.255.136:54358 172.21.0.40:54358 52.123.129.14:443 52.123.129.14:443
icmp 192.168.255.136:1 172.21.1.50:1      8.8.8.8:1          8.8.8.8:1
SpringR1#
```

R2, Since R2 is backup default route no translation yet.

```
SpringR2#show run | section nat
ip nat inside
ip nat inside
ip nat inside
ip nat outside
default-information originate metric 50
ip nat inside source list INSIDE_SUBNETS interface GigabitEthernet0/3 overload
```

# Default Routes in ospf



R1

```
SpringR1#show run | include ip route  
ip route 0.0.0.0 0.0.0.0 192.168.255.1  
SpringR1#
```

# R2

```
SpringR2#show run | include ip route
ip route 0.0.0.0 0.0.0.0 192.168.255.1 10
SpringR2#
```

# SpringCore1

```
Springcore1#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
      i - IS-IS, su - IS-IS summary, 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, H - NHRP, l - LISP
      a - application route
      + - replicated route, % - next hop override, p - overrides from PfR
```

```
Gateway of last resort is 192.168.60.1 to network 0.0.0.0
```

```
O*E2  0.0.0.0/0 [110/1] via 192.168.60.1, 4d15h, GigabitEthernet1/3
      10.0.0.0/8 is variably subnetted, 20 subnets, 2 masks
        C    10.16.0.0/24 is directly connected, Vlan110
        L    10.16.0.2/32 is directly connected, Vlan110
        C    10.16.1.0/24 is directly connected, Vlan120
        L    10.16.1.2/32 is directly connected, Vlan120
        C    10.16.2.0/24 is directly connected, Vlan210
        L    10.16.2.2/32 is directly connected, Vlan210
```

# SpringCore2

```
Springcore2#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
      i - IS-IS, su - IS-IS summary, 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, H - NHRP, l - LISP
      a - application route
      + - replicated route, % - next hop override, p - overrides from PfR

Gateway of last resort is 192.168.60.5 to network 0.0.0.0

O*E2  0.0.0.0/0 [110/1] via 192.168.60.5, 4d15h, GigabitEthernet1/2
      10.0.0.0/8 is variably subnetted, 20 subnets, 2 masks
C        10.16.0.0/24 is directly connected, Vlan110
L        10.16.0.3/32 is directly connected, Vlan110
C        10.16.1.0/24 is directly connected, Vlan120
L        10.16.1.3/32 is directly connected, Vlan120
C        10.16.2.0/24 is directly connected, Vlan210
L        10.16.2.3/32 is directly connected, Vlan210
C        10.16.3.0/24 is directly connected, Vlan220
L        10.16.3.3/32 is directly connected, Vlan220
      □
```

# IPv6 INTERFACES



# SpringCore IPV6 Interfaces

```
Springcore1#show ipv6 int brief
GigabitEthernet0/0      [up/up]
  unassigned
GigabitEthernet0/1      [up/up]
  unassigned
GigabitEthernet0/2      [up/up]
  unassigned
GigabitEthernet0/3      [up/up]
  unassigned
GigabitEthernet1/0      [up/up]
  unassigned
GigabitEthernet1/1      [up/up]
  FE80::5054:FF:FE12:5CF2
GigabitEthernet1/2      [up/up]
  FE80::5054:FF:FE94:C8EC
GigabitEthernet1/3      [up/up]
  FE80::5054:FF:FE0B:8026
Port-channel1           [up/up]
```

```
Vlan110                  [up/up]
  FE80::5054:FF:FE12:806E
  2001:16:ABCD:110::2
Vlan120                  [up/up]
  FE80::5054:FF:FE12:8078
  2001:16:ABCD:120::2
Vlan130                  [up/up]
  FE80::5054:FF:FE12:8082
  2001:16:ABCD:130::2
Vlan140                  [up/up]
  FE80::5054:FF:FE12:808C
  2001:16:ABCD:140::2
Vlan150                  [up/up]
  FE80::5054:FF:FE12:8096
  2001:16:ABCD:150::2
Vlan160                  [up/up]
  FE80::5054:FF:FE12:80A0
  2001:16:ABCD:160::2
Vlan210                  [up/up]
  FE80::5054:FF:FE12:80D2
  2001:16:ABCD:210::2
Vlan220                  [up/up]
  FE80::5054:FF:FE12:80DC
  2001:16:ABCD:220::2
Vlan230                  [up/up]
  FE80::5054:FF:FE12:80E6
  2001:16:ABCD:230::2
```

```
2001:16:ABCD:240::2
Vlan250                  [up/up]
  FE80::5054:FF:FE12:80FA
  2001:16:ABCD:250::2
Vlan310                  [up/up]
  FE80::5054:FF:FE12:8136
  2001:16:ABCD:310::2
Vlan320                  [up/up]
  FE80::5054:FF:FE12:8140
  2001:16:ABCD:320::2
Vlan330                  [up/up]
  FE80::5054:FF:FE12:814A
  2001:16:ABCD:330::2
Vlan340                  [up/up]
  FE80::5054:FF:FE12:8154
  2001:16:ABCD:340::2
Vlan350                  [up/up]
  FE80::5054:FF:FE12:815E
  2001:16:ABCD:350::2
Vlan716                  [up/up]
  FE80::5054:FF:FE12:82CC
  2001:16:ABCD:716::2
Vlan916                  [up/up]
  FE80::5054:FF:FE12:8394
  2001:16:ABCD:916::2
Springcore1#
```

# SpringCore2 IPv6 Interfaces

```
Springcore2#show ipv6 int brief
GigabitEthernet0/0      [up/up]
  unassigned
GigabitEthernet0/1      [up/up]
  unassigned
GigabitEthernet0/2      [up/up]
  unassigned
GigabitEthernet0/3      [up/up]
  unassigned
GigabitEthernet1/0      [up/up]
  unassigned
GigabitEthernet1/1      [up/up]
  FE80::5054:FF:FE6C:5FF0
GigabitEthernet1/2      [up/up]
  FE80::5054:FF:FE55:4025
GigabitEthernet1/3      [up/up]
  FE80::5054:FF:FE0B:225B
Port-channel12          [up/up]
  unassigned
```

```
Springcore2#show ipv6 int brief
GigabitEthernet0/0      [up/up]
  unassigned
GigabitEthernet0/1      [up/up]
  unassigned
GigabitEthernet0/2      [up/up]
  unassigned
GigabitEthernet0/3      [up/up]
  unassigned
GigabitEthernet1/0      [up/up]
  unassigned
GigabitEthernet1/1      [up/up]
  FE80::5054:FF:FE6C:5FF0
GigabitEthernet1/2      [up/up]
  FE80::5054:FF:FE55:4025
GigabitEthernet1/3      [up/up]
  FE80::5054:FF:FE0B:225B
Port-channel12          [up/up]
  unassigned
```

```
Springcore2#show ipv6 int brief
Vlan250                [up/up]
  FE80::5054:FF:FE64:80FA
  2001:16:ABCD:250::3
Vlan310                [up/up]
  FE80::5054:FF:FE64:8136
  2001:16:ABCD:310::3
Vlan320                [up/up]
  FE80::5054:FF:FE64:8140
  2001:16:ABCD:320::3
Vlan330                [up/up]
  FE80::5054:FF:FE64:814A
  2001:16:ABCD:330::3
Vlan340                [up/up]
  FE80::5054:FF:FE64:8154
  2001:16:ABCD:340::3
Vlan350                [up/up]
  FE80::5054:FF:FE64:815E
  2001:16:ABCD:350::3
Vlan716                [up/up]
  FE80::5054:FF:FE64:82CC
  2001:16:ABCD:716::3
Vlan916                [up/up]
  FE80::5054:FF:FE64:8394
  2001:16:ABCD:916::3
Springcore2#
```

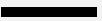
# SpringR1

```
SpringR1#show ipv6 int brief
GigabitEthernet0/0          [up/up]
    FE80::5054:FF:FE05:FC8E
GigabitEthernet0/1          [up/up]
    FE80::5054:FF:FE7B:2150
GigabitEthernet0/2          [up/up]
    FE80::5054:FF:FE31:BAAD
GigabitEthernet0/3          [up/up]
    unassigned
NVI0                         [up/up]
    unassigned      ]
SpringR1#
```

# SpringR2

```
SpringR2#show ipv6 int brief
GigabitEthernet0/0      [up/up]
    FE80::5054:FF:FE9A:CFE7
GigabitEthernet0/1      [up/up]
    FE80::5054:FF:FE1B:7C8C
GigabitEthernet0/2      [up/up]
    FE80::5054:FF:FE45:7591
GigabitEthernet0/3      [up/up]
    unassigned
NVI0                    [up/up]
    unassigned
SpringR2#
```

# SYSLOG



# DataCentre

```
Datacentre#show logging
Syslog logging: enabled (0 messages dropped, 2 messages rate-limited, 0 flushes, 0 overruns, xml disabled, filtering disabled)
No Active Message Discriminator.

>No Inactive Message Discriminator.

Console logging: level debugging, 70 messages logged, xml disabled,
                  filtering disabled
Monitor logging: level debugging, 0 messages logged, xml disabled,
                  filtering disabled
Buffer logging: level debugging, 73 messages logged, xml disabled,
                  filtering disabled
Exception Logging: size (8192 bytes)
Count and timestamp logging messages: disabled
Persistent logging: disabled
Trap logging: level informational, 76 message lines logged
  Logging to 172.21.0.40 (udp port 514, audit disabled,
    link up),
  5 message lines logged,
  0 message lines rate-limited,
  0 message lines dropped-by-MD,
  xml disabled, sequence number disabled
  filtering disabled
Logging Source-Interface:      VRF Name:
Vlan716
```

Activate Windows  
Go to Settings to activat

# SpringCore1

```
Springcore1#show logging
Syslog logging: enabled (0 messages dropped, 2 messages rate-limited, 0 flushes, 0 overruns, xml disabled, filtering disabled)
No Active Message Discriminator.

No Inactive Message Discriminator.

Console logging: level debugging, 216 messages logged, xml disabled,
                  filtering disabled
Monitor logging: level debugging, 0 messages logged, xml disabled,
                  filtering disabled
Buffer logging:  level debugging, 219 messages logged, xml disabled,
                  filtering disabled
Exception Logging: size (8192 bytes)
Count and timestamp logging messages: disabled      []
Persistent logging: disabled
Trap logging: level informational, 224 message lines logged
   Logging to 172.21.0.40 (udp port 514, audit disabled,
      link up),
      37 message lines logged,
      0 message lines rate-limited,
      0 message lines dropped-by-MD,
      xml disabled, sequence number disabled
      filtering disabled
Logging Source-Interface:      VRF Name:
Vlan916
Log Buffer (8192 bytes):
```

Act  
Go t

# SpringCore2

```
Springcore2#show logging
Syslog logging: enabled (0 messages dropped, 2 messages rate-limited, 0 flushes, 0 overruns, xml disabled, filtering disabled)

No Active Message Discriminator.

No Inactive Message Discriminator.

Console logging: level debugging, 204 messages logged, xml disabled,
                  filtering disabled
Monitor logging: level debugging, 0 messages logged, xml disabled,
                  filtering disabled
Buffer logging:  level debugging, 207 messages logged, xml disabled,
                  filtering disabled
Exception Logging: size (8192 bytes)
Count and timestamp logging messages: disabled
Persistent logging: disabled
Trap logging: level informational, 216 message lines logged
               Logging to 172.21.0.40 (udp port 514, audit disabled,
               link up),
               53 message lines logged,
               0 message lines rate-limited,
               0 message lines dropped-by-MD,
               xml disabled, sequence number disabled
               filtering disabled
Logging Source-Interface:          VRF Name:
Vlan916
```

Activ  
Go to S

# SpringR1

```
SpringR1#show logging
Syslog logging: enabled (0 messages dropped, 3 messages rate-limited, 0 flushes, 0 overruns, xml disabled, filtering disabled)

No Active Message Discriminator.

No Inactive Message Discriminator.

Console logging: level debugging, 113 messages logged, xml disabled,
                  filtering disabled
Monitor logging: level debugging, 0 messages logged, xml disabled,
                  filtering disabled
Buffer logging:  level debugging, 114 messages logged, xml disabled,
                  filtering disabled
Exception Logging: size (8192 bytes)
Count and timestamp logging messages: disabled
Persistent logging: disabled

No active filter modules.

Trap logging: level informational, 167 message lines logged
              Logging to 172.21.0.40 (udp port 514, audit disabled,
                link up),
                112 message lines logged,
                0 message lines rate-limited,
                0 message lines dropped-by-MD,
                xml disabled, sequence number disabled
                filtering disabled
Logging Source-Interface:      VRF Name:
                           GigabitEthernet0/1

Log Buffer (8192 bytes):
```

# SpringR2

```
SpringR2#show logging
Syslog logging: enabled (0 messages dropped, 3 messages rate-limited, 0 flushes, 0 overruns, xml disabled, filtering disabled)

No Active Message Discriminator.

No Inactive Message Discriminator.

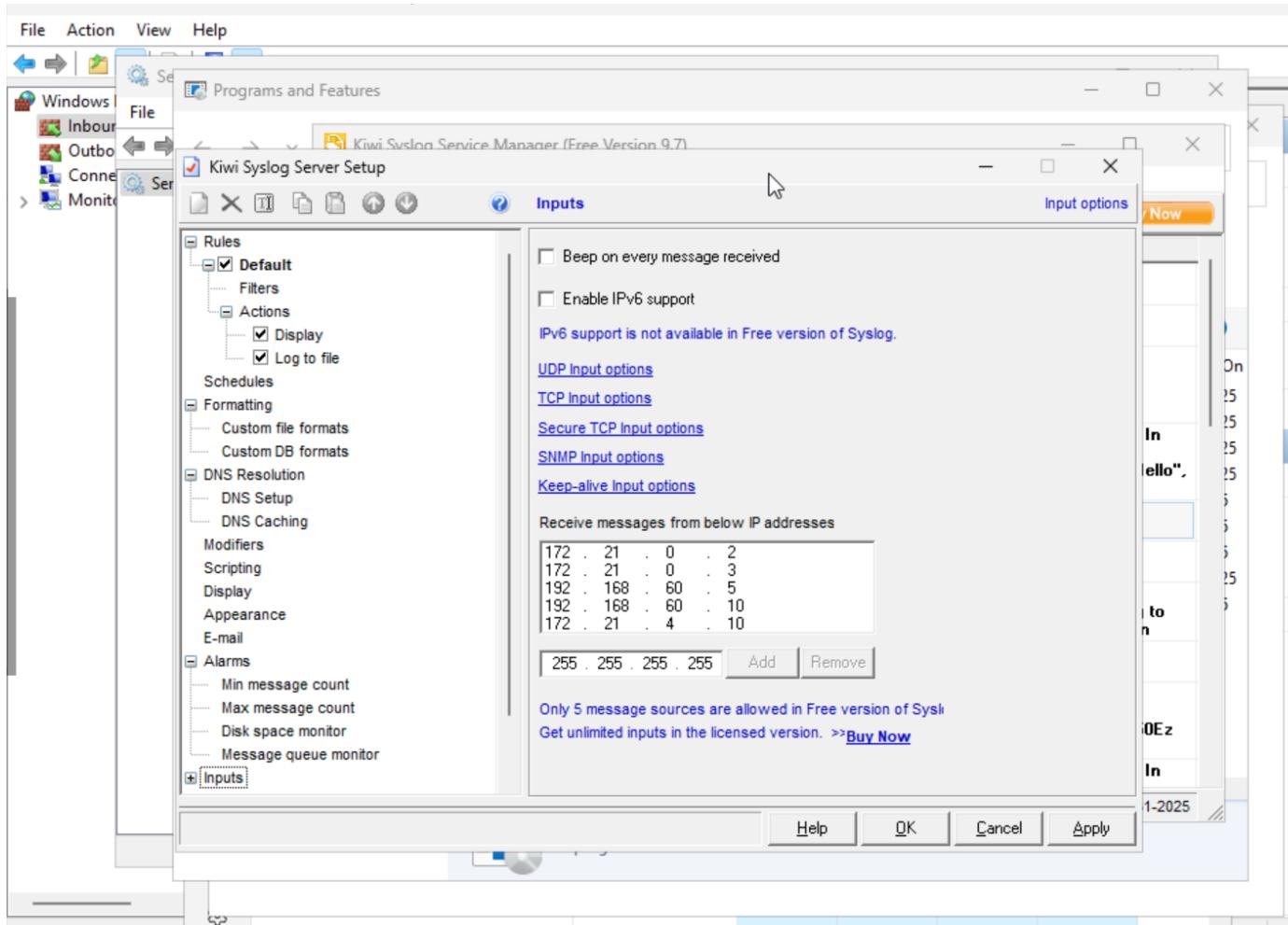
▶ Console logging: level debugging, 67 messages logged, xml disabled,
    filtering disabled
    Monitor logging: level debugging, 0 messages logged, xml disabled,
    filtering disabled
    Buffer logging: level debugging, 68 messages logged, xml disabled,
    filtering disabled
    Exception Logging: size (8192 bytes)
    Count and timestamp logging messages: disabled
    Persistent logging: disabled

No active filter modules.

Trap logging: level informational, 72 message lines logged
    Logging to 172.21.0.40 (udp port 514, audit disabled,
        link up),
        20 message lines logged,
        0 message lines rate-limited,
        0 message lines dropped-by-MD,
        xml disabled, sequence number disabled
        filtering disabled
    Logging Source-Interface:          VRF Name:
        GigabitEthernet0/0

Log Buffer (8192 bytes):
```

# Syslog Server: ip – 172.21.0.40



Kiwi Syslog Service Manager (Free Version 9.7)

File Edit View Manage Help

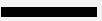
Display 00 (Default) > [Compare features of the free and licensed versions](#) [Buy Now](#)

Date	Time	Priority	Hostname	Message
10-31-2025	18:44:33	Local7 Notice	172.21.0.2	227: *Oct 31 14:30:33.766: %SYS-5-CONFIG_I: Configured from console by console
10-31-2025	18:44:19	Local7 Notice	172.21.0.3	217: *Oct 31 14:46:25.973: %SYS-5-CONFIG_I: Configured from console by console
10-31-2025	18:35:34	Local7 Critical	172.21.0.2	226: -Traceback= 2419AC9z 8924F5z 96CA51z 952D6Dz 125FE3z 128B80z 113F6Fz 11390Bz 9778B1z 97C0F3z 97B0BEz 98606Az 986FCBz 986F5Fz 866848z 29177A3z
10-31-2025	18:35:34	Local7 Critical	172.21.0.2	225: *Oct 31 14:22:40.035: %LINK-2-INTVULN: In critical region with interrupt level=0, intfc=GigabitEthernet1/3 -Process= "OSPF-16 Hello", ipl= 0, pid= 190
10-31-2025	18:27:41	Local7 Notice	172.21.4.10	76: *Oct 31 17:01:07.963: %SYS-5-CONFIG_I: Configured from console by console
10-31-2025	18:27:09	Local7 Notice	192.168.60.5	167: *Oct 31 21:21:32.483: %SYS-5-CONFIG_I: Configured from console by console
10-31-2025	18:26:36	Local7 Info	192.168.60.10	72: *Oct 31 21:12:46.889: %SYS-6-LOGGINGHOST_STARTSTOP: Logging to host 172.21.0.40 port 514 started - reconnection
10-31-2025	18:26:35	Local7 Notice	192.168.60.10	71: *Oct 31 21:12:40.885: %SYS-5-CONFIG_I: Configured from console by console
10-31-2025	18:24:44	Local7 Critical	192.168.60.5	166: -Traceback= 225E51z 140413z 177DB17z 1781091z 14FB2Ez 14F1A4z 15A98Az 15B83Fz 22B20Bz 1B26336z 1B25B39z 1B219C5z 1B2150Ez 1B28A52z 1B20C9Az 1B2069Dz
10-31-2025	18:24:44	Local7 Critical	192.168.60.5	165: *Oct 31 21:19:10.232: %LINK-2-INTVULN: In critical region with interrupt level=0, intfc=GigabitEthernet0/3 -Process= "IP Input", ipl= 0, pid= 136

New settings applied to Syslogd service.

100% | 10 MPH | 18:46 | 10-31-2025

# Tftp



# SpringCore1

```
Springcore1#copy running-config tftp
Address or name of remote host []? 172.21.0.40
Destination filename [springcore1-config]? SpringCore1-config
!!
10169 bytes copied in 7.106 secs (1431 bytes/sec)
```

```
Springcore1#copy tftp running-config
Address or name of remote host []? 172.21.0.40
Source filename []? SpringCore1-config
Destination filename [running-config]?
Accessing tftp://172.21.0.40/SpringCore1-config...
Loading SpringCore1-config from 172.21.0.40 (via Vlan916): !
[OK - 10169 bytes]
Failed to generate persistent self-signed certificate.
    Secure server will use temporary self-signed certificate.

10169 bytes copied in 1.523 secs (6677 bytes/sec)
Springcore1#
```

# SpringCore2

```
Springcore2#copy running-config tftp
Address or name of remote host []? 172.21.0.40
Destination filename [springcore2-config]? SpringCore2
!!
9672 bytes copied in 6.907 secs (1400 bytes/sec)
Springcore2#copy tftp running-config
Address or name of remote host []? 172.21.0.40
Source filename []? SpringCore2
Destination filename [running-config]?
Accessing tftp://172.21.0.40/SpringCore2...
Loading SpringCore2 from 172.21.0.40 (via Vlan916): !
[OK - 9672 bytes]
Failed to generate persistent self-signed certificate.
Secure server will use temporary self-signed certificate.

9672 bytes copied in 1.069 secs (9048 bytes/sec)
Springcore2#
*Sat Mar 22 14:59:43 2014: 100% CPU usage. Processor 16. Mon 1 1 1 1
```

# SpringR1

```
password.
SpringR1#copy running-config tftp
Address or name of remote host []? 172.21.0.40
Destination filename [springr1-config]? SpringR1
!!
4316 bytes copied in 2.395 secs (1802 bytes/sec)

SpringR1#copy tftp running-config
Address or name of remote host []? 172.21.0.40
Source filename []? SpringR1
Destination filename [running-config]?
Accessing tftp://172.21.0.40/SpringR1...
Loading SpringR1 from 172.21.0.40 (via GigabitEthernet0/0): !
[OK - 4316 bytes]
                                          ^
%Dynamic mapping in use, cannot change
4316 bytes copied in 6.024 secs (716 bytes/sec)

SpringR1#
```

# SpringR2

```
SpringR2#copy running-config tftp
Address or name of remote host []? 172.21.0.40
Destination filename [springr2-config]? SpringR2
!!
4323 bytes copied in 2.151 secs (2010 bytes/sec)

SpringR2#copy tftp running-config
Address or name of remote host []? 172.21.0.40
Source filename []? SpringR2
Destination filename [running-config]?
Accessing tftp://172.21.0.40/SpringR2...
Loading SpringR2 from 172.21.0.40 (via GigabitEthernet0/1): !
[OK - 4323 bytes]

%DYNAMIC mapping in use, cannot change
4323 bytes copied in 5.943 secs (727 bytes/sec)
```

# DataCentre

```
Datacentre#copy running-config tftp
Address or name of remote host []? 172.21.0.40
Destination filename [datacentre-config]? Datacentre
!!
5021 bytes copied in 2.428 secs (2068 bytes/sec)
Datacentre#copy tftp running-config
Address or name of remote host []? 172.21.0.40
Source filename []? Datacentre
Destination filename [running-config]?
Accessing tftp://172.21.0.40/Datacentre...
Loading Datacentre from 172.21.0.40 (via Vlan716): !
[OK - 5021 bytes]
Failed to generate persistent self-signed certificate.
    Secure server will use temporary self-signed certificate.

5021 bytes copied in 0.473 secs (10615 bytes/sec)
Datacentre#
```

# Floor1-Acc1

```
Floor1-Acc1#copy running-config tftp
Address or name of remote host []? 172.21.0.40
Destination filename [floor1-acc1-config]? Floor1-Acc1
!!
5184 bytes copied in 4.074 secs (1272 bytes/sec)
Floor1-Acc1#copy tftp running-config
Address or name of remote host []? 172.21.0.40
Source filename []? Floor1-Acc1
Destination filename [running-config]?
Accessing tftp://172.21.0.40/Floor1-Acc1...
Loading Floor1-Acc1 from 172.21.0.40 (via Vlan716): !
[OK - 5184 bytes]
Failed to generate persistent self-signed certificate.
    Secure server will use temporary self-signed certificate.

5184 bytes copied in 0.677 secs (7657 bytes/sec)
Floor1-Acc1#
*Oct 31 14:03:12.013: %SYS-5-CONFIG_I: Configured from tftp://172.21.0.40/Floor1-Acc1 by console
Floor1-Acc1#
```

# Floor2-Acc1

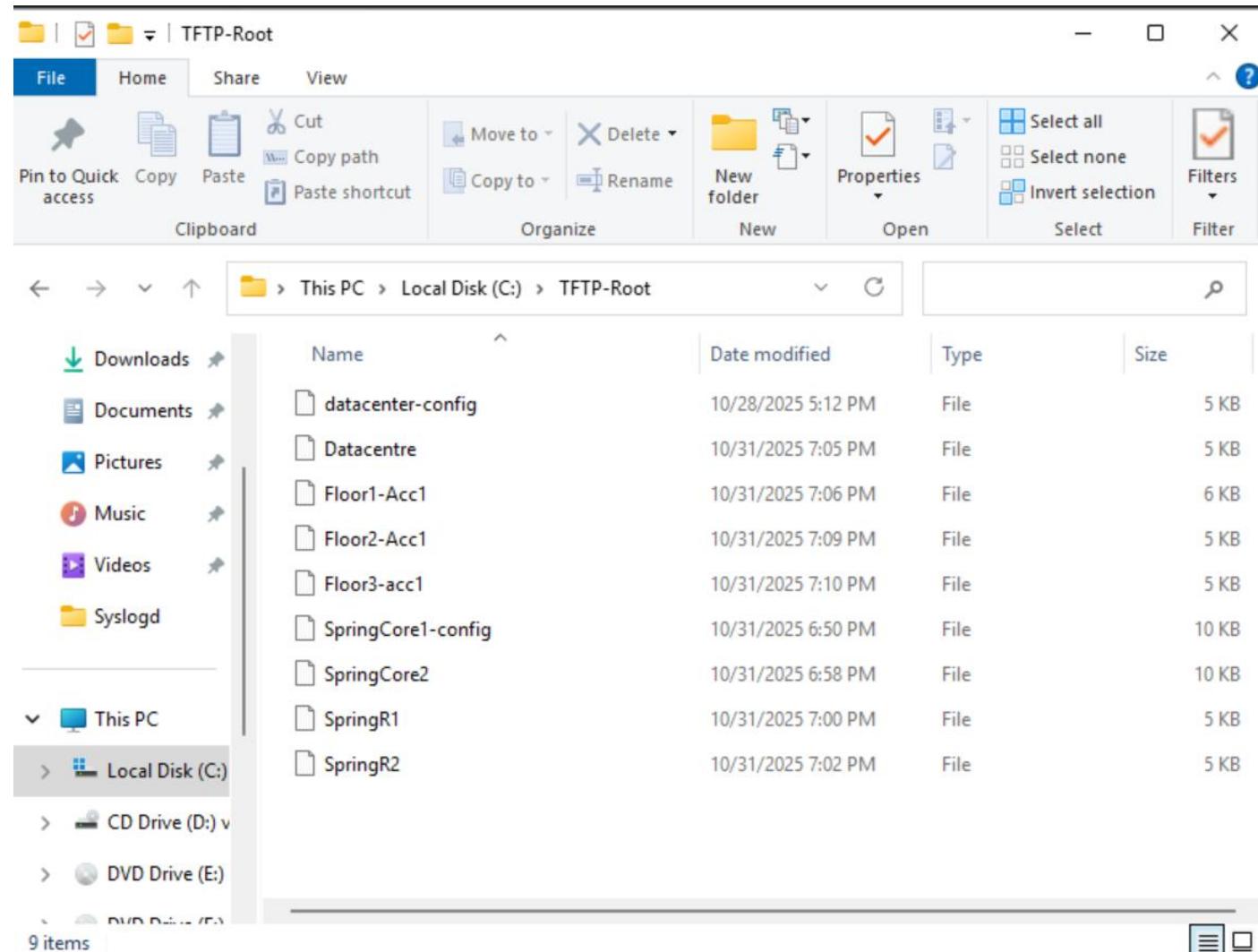
```
Floor2-Acc1#copy running-config tftp
Address or name of remote host []? 172.21.0.40
Destination filename [floor2-acc1-config]? Floor2-Acc1
!!
5038 bytes copied in 3.328 secs (1514 bytes/sec)
Floor2-Acc1#copy tftp running-config
Address or name of remote host []? 172.21.0.40
Source filename []? Floor2-Acc1
Destination filename [running-config]?
Accessing tftp://172.21.0.40/Floor2-Acc1...
Loading Floor2-Acc1 from 172.21.0.40 (via Vlan716): !
[OK - 5038 bytes]
Failed to generate persistent self-signed certificate.
    Secure server will use temporary self-signed certificate.

5038 bytes copied in 0.594 secs (8481 bytes/sec)
```

# Floor3-Acc1

```
Floor3-Acc1#copy running-config tftp
Address or name of remote host []? 172.21.0.40
Destination filename [floor3-acc1-config]? Floor3-acc1
!!
5028 bytes copied in 3.077 secs (1634 bytes/sec)
Floor3-Acc1#copy tftp running-config
Address or name of remote host []? 172.21.0.40
Source filename []? Floor3-acc1
Destination filename [running-config]?
Accessing tftp://172.21.0.40/Floor3-acc1...
Loading Floor3-acc1 from 172.21.0.40 (via Vlan716): !
[OK - 5028 bytes]
Failed to generate persistent self-signed certificate.
Secure server will use temporary self-signed certificate.

5028 bytes copied in 0.588 secs (8551 bytes/sec)
Floor3-Acc1#
```



## SolarWinds TFTP Server

File Tools Help

```
TFTP connected from 172.21.4.13:55395 on 10/31/2025 7:11:18 PM, binary, GET. Completed, file name: C:\TFTP-Root\Floor3-acc1
TFTP connected from 172.21.4.13:55395 on 10/31/2025 7:11:18 PM, binary, GET. Started, file name: C:\TFTP-Root\Floor3-acc1, file size: 5028.
TFTP connected from 172.21.4.13:61532 on 10/31/2025 7:11:18 PM, binary, GET. Completed, file name: C:\TFTP-Root\Floor3-acc1
TFTP connected from 172.21.4.13:61532 on 10/31/2025 7:11:18 PM, binary, GET. Started, file name: C:\TFTP-Root\Floor3-acc1, file size: 5028.
TFTP connected from 172.21.4.13:62209 on 10/31/2025 7:11:17 PM, binary, GET. Intemupted by client, received error packet with code: 0 and message: Session terminated
TFTP connected from 172.21.4.13:62209 on 10/31/2025 7:11:17 PM, binary, GET. Started, file name: C:\TFTP-Root\Floor3-acc1, file size: 5028.
TFTP connected from 172.21.4.13:55334 on 10/31/2025 7:11:17 PM, binary, GET. Completed, file name: C:\TFTP-Root\Floor3-acc1
TFTP connected from 172.21.4.13:55334 on 10/31/2025 7:11:17 PM, binary, GET. Started, file name: C:\TFTP-Root\Floor3-acc1, file size: 5028.
TFTP connected from 172.21.4.13:56204 on 10/31/2025 7:10:59 PM, binary, PUT. Completed, file name: C:\TFTP-Root\Floor3-acc1.
TFTP connected from 172.21.4.13:56204 on 10/31/2025 7:10:59 PM, binary, PUT. Started, file name: C:\TFTP-Root\Floor3-acc1.
TFTP connected from 172.21.4.12:60972 on 10/31/2025 7:09:59 PM, binary, GET. Completed, file name: C:\TFTP-Root\Floor2-Acc1
TFTP connected from 172.21.4.12:60972 on 10/31/2025 7:09:59 PM, binary, GET. Started, file name: C:\TFTP-Root\Floor2-Acc1, file size: 5038.
TFTP connected from 172.21.4.12:58394 on 10/31/2025 7:09:59 PM, binary, GET. Completed, file name: C:\TFTP-Root\Floor2-Acc1
TFTP connected from 172.21.4.12:58394 on 10/31/2025 7:09:59 PM, binary, GET. Started, file name: C:\TFTP-Root\Floor2-Acc1, file size: 5038.
TFTP connected from 172.21.4.12:59346 on 10/31/2025 7:09:58 PM, binary, GET. Intemupted by client, received error packet with code: 0 and message: Session terminated
TFTP connected from 172.21.4.12:59346 on 10/31/2025 7:09:58 PM, binary, GET. Started, file name: C:\TFTP-Root\Floor2-Acc1, file size: 5038.
TFTP connected from 172.21.4.12:61754 on 10/31/2025 7:09:58 PM, binary, GET. Completed, file name: C:\TFTP-Root\Floor2-Acc1
TFTP connected from 172.21.4.12:61754 on 10/31/2025 7:09:58 PM, binary, GET. Started, file name: C:\TFTP-Root\Floor2-Acc1, file size: 5038.
TFTP connected from 172.21.4.12:53359 on 10/31/2025 7:09:38 PM, binary, PUT. Completed, file name: C:\TFTP-Root\Floor2-Acc1.
TFTP connected from 172.21.4.12:53359 on 10/31/2025 7:09:38 PM, binary, PUT. Started, file name: C:\TFTP-Root\Floor2-Acc1.
TFTP connected from 172.21.4.11:57482 on 10/31/2025 7:07:31 PM, binary, GET. Completed, file name: C:\TFTP-Root\Floor1-Acc1
TFTP connected from 172.21.4.11:57482 on 10/31/2025 7:07:30 PM, binary, GET. Started, file name: C:\TFTP-Root\Floor1-Acc1, file size: 5184.
TFTP connected from 172.21.4.11:54709 on 10/31/2025 7:07:30 PM, binary, GET. Completed, file name: C:\TFTP-Root\Floor1-Acc1
TFTP connected from 172.21.4.11:54709 on 10/31/2025 7:07:30 PM, binary, GET. Started, file name: C:\TFTP-Root\Floor1-Acc1, file size: 5184.
TFTP connected from 172.21.4.11:57384 on 10/31/2025 7:07:29 PM, binary, GET. Intemupted by client, received error packet with code: 0 and message: Session terminated
TFTP connected from 172.21.4.11:57384 on 10/31/2025 7:07:29 PM, binary, GET. Started, file name: C:\TFTP-Root\Floor1-Acc1, file size: 5184.
TFTP connected from 172.21.4.11:61547 on 10/31/2025 7:07:29 PM, binary, GET. Completed, file name: C:\TFTP-Root\Floor1-Acc1
TFTP connected from 172.21.4.11:61547 on 10/31/2025 7:07:29 PM, binary, GET. Started, file name: C:\TFTP-Root\Floor1-Acc1, file size: 5184.
TFTP connected from 172.21.4.11:64683 on 10/31/2025 7:06:58 PM, binary, PUT. Completed, file name: C:\TFTP-Root\Floor1-Acc1.
TFTP connected from 172.21.4.11:64683 on 10/31/2025 7:06:58 PM, binary, PUT. Started, file name: C:\TFTP-Root\Floor1-Acc1.
TFTP connected from 172.21.4.10:53055 on 10/31/2025 7:05:27 PM, binary, GET. Completed, file name: C:\TFTP-Root\Datacentre
TFTP connected from 172.21.4.10:53055 on 10/31/2025 7:05:27 PM, binary, GET. Started, file name: C:\TFTP-Root\Datacentre, file size: 5021.
TFTP connected from 172.21.4.10:54227 on 10/31/2025 7:05:27 PM, binary, GET. Completed, file name: C:\TFTP-Root\Datacentre
TFTP connected from 172.21.4.10:54227 on 10/31/2025 7:05:26 PM, binary, GET. Started, file name: C:\TFTP-Root\Datacentre, file size: 5021.
TFTP connected from 172.21.4.10:57224 on 10/31/2025 7:05:25 PM, binary, GET. Intemupted by client, received error packet with code: 0 and message: Session terminated
TFTP connected from 172.21.4.10:57224 on 10/31/2025 7:05:25 PM, binary, GET. Started, file name: C:\TFTP-Root\Datacentre, file size: 5021.
TFTP connected from 172.21.4.10:52474 on 10/31/2025 7:05:25 PM, binary, GET. Completed, file name: C:\TFTP-Root\Datacentre
TFTP connected from 172.21.4.10:52474 on 10/31/2025 7:05:25 PM, binary, GET. Started, file name: C:\TFTP-Root\Datacentre, file size: 5021.
TFTP connected from 172.21.4.10:59938 on 10/31/2025 7:05:01 PM, binary, PUT. Completed, file name: C:\TFTP-Root\Datacentre.
TFTP connected from 172.21.4.10:59938 on 10/31/2025 7:05:01 PM, binary, PUT. Started, file name: C:\TFTP-Root\Datacentre.
TFTP connected from 192.168.60.13:65211 on 10/31/2025 7:03:02 PM, binary, GET. Completed, file name: C:\TFTP-Root\SpringR2
TFTP connected from 192.168.60.13:65211 on 10/31/2025 7:03:02 PM, binary, GET. Started, file name: C:\TFTP-Root\SpringR2, file size: 4323
```

# IPv6 Routes



```
Springcore1#show ipv6 route
IPv6 Routing Table - default - 37 entries
Codes: C - Connected, L - Local, S - Static, U - Per-user Static route
      B - BGP, R - RIP, I1 - ISIS L1, I2 - ISIS L2
      IA - ISIS interarea, IS - ISIS summary, D - EIGRP, EX - EIGRP external
      ND - ND Default, NDp - ND Prefix, DCE - Destination, NDr - Redirect
      RL - RPL, O - OSPF Intra, OI - OSPF Inter, OE1 - OSPF ext 1
      OE2 - OSPF ext 2, ON1 - OSPF NSSA ext 1, ON2 - OSPF NSSA ext 2
      1a - LISP alt, lr - LISP site-registrations, ld - LISP dyn-eid
      1A - LISP away, a - Application
C 2001:16:ABCD:110::/64 [0/0]
  via Vlan110, directly connected
L 2001:16:ABCD:110::2/128 [0/0]
  via Vlan110, receive
C 2001:16:ABCD:120::/64 [0/0]
  via Vlan120, directly connected
L 2001:16:ABCD:120::2/128 [0/0]
  via Vlan120, receive
C 2001:16:ABCD:130::/64 [0/0]
  via Vlan130, directly connected
L 2001:16:ABCD:130::2/128 [0/0]
  via Vlan130, receive
C 2001:16:ABCD:140::/64 [0/0]
  via Vlan140, directly connected
L 2001:16:ABCD:140::2/128 [0/0]
  via Vlan140, receive
C 2001:16:ABCD:150::/64 [0/0]
  via Vlan150, directly connected
L 2001:16:ABCD:150::2/128 [0/0]
  via Vlan150, receive
C 2001:16:ABCD:160::/64 [0/0]
  via Vlan160, directly connected
L 2001:16:ABCD:160::2/128 [0/0]
  via Vlan160, receive
C 2001:16:ABCD:210::/64 [0/0]
```

```
via Vlan100, receive
C 2001:16:ABCD:210::/64 [0/0]
  via Vlan210, directly connected
L 2001:16:ABCD:210::2/128 [0/0]
  via Vlan210, receive
C 2001:16:ABCD:220::/64 [0/0]
  via Vlan220, directly connected
L 2001:16:ABCD:220::2/128 [0/0]
  via Vlan220, receive
D 2001:16:ABCD:230::/64 [0/0]
  via Vlan230, directly connected
L 2001:16:ABCD:230::2/128 [0/0]
  via Vlan230, receive
C 2001:16:ABCD:240::/64 [0/0]
  via Vlan240, directly connected
L 2001:16:ABCD:240::2/128 [0/0]
  via Vlan240, receive
C 2001:16:ABCD:250::/64 [0/0]
  via Vlan250, directly connected
L 2001:16:ABCD:250::2/128 [0/0]
  via Vlan250, receive
C 2001:16:ABCD:310::/64 [0/0]
  via Vlan310, directly connected
L 2001:16:ABCD:310::2/128 [0/0]
  via Vlan310, receive
C 2001:16:ABCD:320::/64 [0/0]
  via Vlan320, directly connected
L 2001:16:ABCD:320::2/128 [0/0]
  via Vlan320, receive
C 2001:16:ABCD:330::/64 [0/0]
  via Vlan330, directly connected
L 2001:16:ABCD:330::2/128 [0/0]
  via Vlan330, receive
C 2001:16:ABCD:340::/64 [0/0]
  via Vlan340, directly connected
L 2001:16:ABCD:340::2/128 [0/0]
  via Vlan340, receive
C 2001:16:ABCD:350::/64 [0/0]
C 2001:16:ABCD:716::/64 [0/0]
  via Vlan716, directly connected
L 2001:16:ABCD:716::2/128 [0/0]
  via Vlan716, receive
C 2001:16:ABCD:916::/64 [0/0]
  via Vlan916, directly connected
L 2001:16:ABCD:916::2/128 [0/0]
  via Vlan916, receive
L FF00::/8 [0/0]
  via Null0, receive
Springcore1#
```

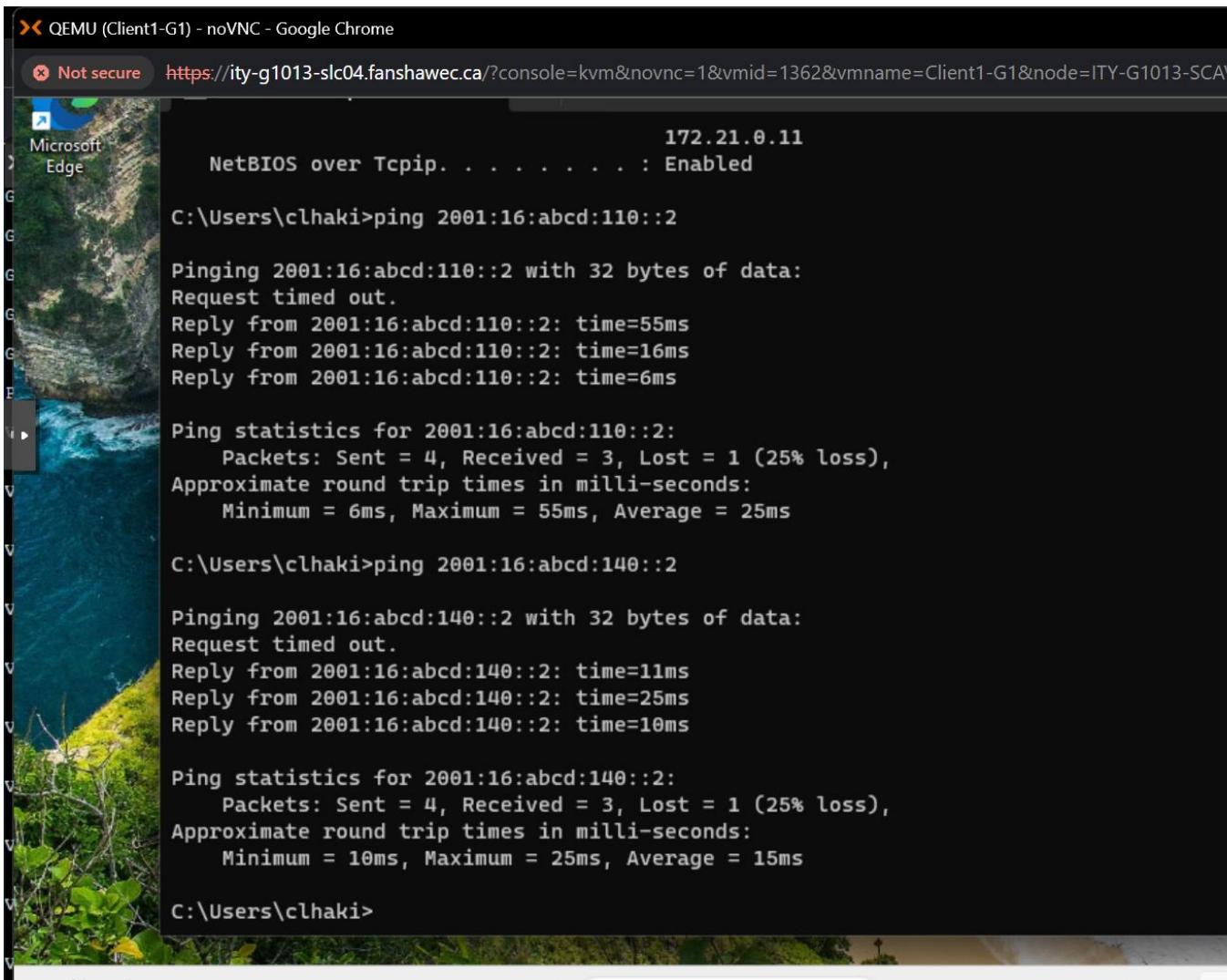
```
Springcore2#show ipv6 route
IPv6 Routing Table - default - 37 entries
Codes: C - Connected, L - Local, S - Static, U - Per-user Static route
B - BGP, R - RIP, I1 - ISIS L1, I2 - ISIS L2
IA - ISIS interarea, IS - ISIS summary, D - EIGRP, EX - EIGRP external
ND - ND Default, NDp - ND Prefix, DCE - Destination, NDr - Redirect
RL - RPL, O - OSPF Intra, OI - OSPF Inter, OE1 - OSPF ext 1
OE2 - OSPF ext 2, ON1 - OSPF NSSA ext 1, ON2 - OSPF NSSA ext 2
la - LISP alt, lr - LISP site-registrations, ld - LISP dyn-eid
1A - LISP away, a - Application
C 2001:16:ABCD:110::/64 [0/0]
    via Vlan110, directly connected
L 2001:16:ABCD:110::3/128 [0/0]
    via Vlan110, receive
C 2001:16:ABCD:120::/64 [0/0]
    via Vlan120, directly connected
L 2001:16:ABCD:120::3/128 [0/0]
    via Vlan120, receive
C 2001:16:ABCD:130::/64 [0/0]
    via Vlan130, directly connected
L 2001:16:ABCD:130::3/128 [0/0]
    via Vlan130, receive
C 2001:16:ABCD:140::/64 [0/0]
    via Vlan140, directly connected
L 2001:16:ABCD:140::3/128 [0/0]
    via Vlan140, receive
C 2001:16:ABCD:150::/64 [0/0]
    via Vlan150, directly connected
L 2001:16:ABCD:150::3/128 [0/0]
    via Vlan150, receive
C 2001:16:ABCD:160::/64 [0/0]
    via Vlan160, directly connected
L 2001:16:ABCD:160::3/128 [0/0]
    via Vlan160, receive
C 2001:16:ABCD:210::/64 [0/0]
    via Vlan210, directly connected
L 2001:16:ABCD:210::3/128 [0/0]
    via Vlan210, receive
```

```
Via Vlan220, receive
C 2001:16:ABCD:220::/64 [0/0]
    via Vlan220, directly connected
L 2001:16:ABCD:220::3/128 [0/0]
    via Vlan220, receive
C 2001:16:ABCD:230::/64 [0/0]
    via Vlan230, directly connected
2001:16:ABCD:230::3/128 [0/0]
    via Vlan230, receive
C 2001:16:ABCD:240::/64 [0/0]
    via Vlan240, directly connected
2001:16:ABCD:240::3/128 [0/0]
    via Vlan240, receive
C 2001:16:ABCD:250::/64 [0/0]
    via Vlan250, directly connected
2001:16:ABCD:250::3/128 [0/0]
    via Vlan250, receive
C 2001:16:ABCD:310::/64 [0/0]
    via Vlan310, directly connected
2001:16:ABCD:310::3/128 [0/0]
    via Vlan310, receive
C 2001:16:ABCD:320::/64 [0/0]
    via Vlan320, directly connected
2001:16:ABCD:320::3/128 [0/0]
    via Vlan320, receive
C 2001:16:ABCD:330::/64 [0/0]
    via Vlan330, directly connected
2001:16:ABCD:330::3/128 [0/0]
    via Vlan330, receive
C 2001:16:ABCD:340::/64 [0/0]
    via Vlan340, directly connected
2001:16:ABCD:340::3/128 [0/0]
    via Vlan340, receive
C 2001:16:ABCD:350::/64 [0/0]
    via Vlan350, directly connected
2001:16:ABCD:350::3/128 [0/0]
    via Vlan350, receive
C 2001:16:ABCD:716::/64 [0/0]
    via Vlan716, directly connected
L 2001:16:ABCD:716::3/128 [0/0]
    via Vlan716, receive
C 2001:16:ABCD:916::/64 [0/0]
    via Vlan916, directly connected
L 2001:16:ABCD:916::3/128 [0/0]
    via Vlan916, receive
L FF00::/8 [0/0]
    via Null0, receive
```

# PING & TRACERT



# Ping From Client 1 to SpringCore2



QEMU (Client1-G1) - noVNC - Google Chrome  
Not secure https://ity-g1013-slc04.fanshawec.ca/?console=kvm&novnc=1&vmid=1362&vmname=Client1-G1&node=ITY-G1013-SCAV1

```
Microsoft Edge
172.21.0.11
NetBIOS over Tcpip. . . . . : Enabled

C:\Users\clhaki>ping 2001:16:abcd:110::2

Pinging 2001:16:abcd:110::2 with 32 bytes of data:
Request timed out.
Reply from 2001:16:abcd:110::2: time=55ms
Reply from 2001:16:abcd:110::2: time=16ms
Reply from 2001:16:abcd:110::2: time=6ms

Ping statistics for 2001:16:abcd:110::2:
    Packets: Sent = 4, Received = 3, Lost = 1 (25% loss),
Approximate round trip times in milli-seconds:
    Minimum = 6ms, Maximum = 55ms, Average = 25ms

C:\Users\clhaki>ping 2001:16:abcd:140::2

Pinging 2001:16:abcd:140::2 with 32 bytes of data:
Request timed out.
Reply from 2001:16:abcd:140::2: time=11ms
Reply from 2001:16:abcd:140::2: time=25ms
Reply from 2001:16:abcd:140::2: time=10ms

Ping statistics for 2001:16:abcd:140::2:
    Packets: Sent = 4, Received = 3, Lost = 1 (25% loss),
Approximate round trip times in milli-seconds:
    Minimum = 10ms, Maximum = 25ms, Average = 15ms

C:\Users\clhaki>
```

# Tracert From client 1 to SpringCore1 & 2

```
C:\Users\clhaki>tracert 2001:16:abcd:140::3

Tracing route to 2001:16:abcd:140::3 over a maximum of 30 hops

 1  12 ms    19 ms    29 ms  2001:16:abcd:140::3

Trace complete.

C:\Users\clhaki>
```

```
C:\Users\clhaki>tracert 2001:16:abcd:140::2

Tracing route to 2001:16:abcd:140::2 over a maximum of 30 hops

 1  87 ms    10 ms     6 ms  2001:16:abcd:130::3
 2  11 ms    10 ms    12 ms  2001:16:abcd:140::2

Trace complete.

C:\Users\clhaki>
```

# Ping from client 1 to client 2

```
C:\Users\clhaki>ping 2001:16:abcd:210:3671:ae5c:944e:3533

Pinging 2001:16:abcd:210:3671:ae5c:944e:3533 with 32 bytes of data:
Request timed out.

Reply from 2001:16:abcd:210:3671:ae5c:944e:3533: time=15ms
Reply from 2001:16:abcd:210:3671:ae5c:944e:3533: time=17ms
Reply from 2001:16:abcd:210:3671:ae5c:944e:3533: time=15ms

Ping statistics for 2001:16:abcd:210:3671:ae5c:944e:3533:
    Packets: Sent = 4, Received = 3, Lost = 1 (25% loss),
Approximate round trip times in milli-seconds:
    Minimum = 15ms, Maximum = 17ms, Average = 15ms

C:\Users\clhaki>hostname
Client1

C:\Users\clhaki>
```