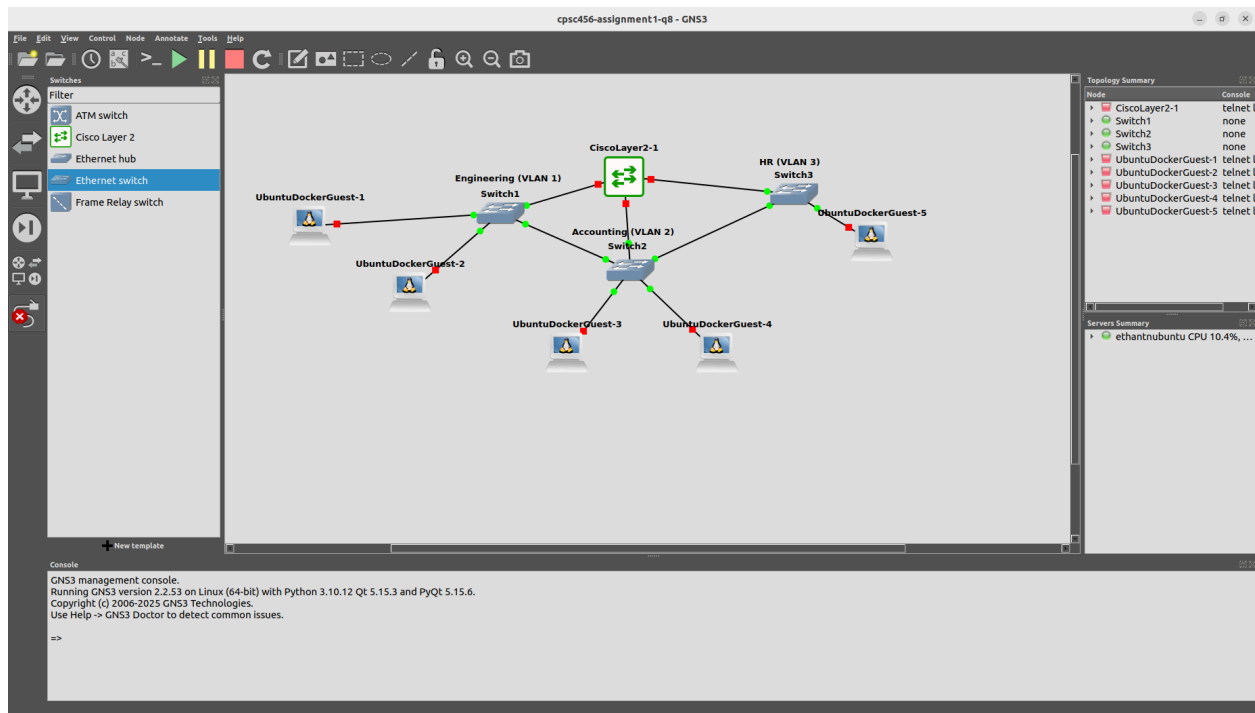


## GNS3 topology



## Engineering (VLAN 10) configuration.

```
root@UbuntuDockerGuest-1: ~  
GNU nano 7.2 /etc/network/interfaces *  
# This is a sample network config, please uncomment lines to configure  
#  
# Uncomment this line to load custom interface files  
# source /etc/network/interfaces.d/*  
# Static config for eth0  
auto eth0  
iface eth0 inet static  
    address 192.168.10.2  
    netmask 255.255.255.0  
#    gateway 192.168.0.1  
#    up echo nameserver 192.168.0.1 > /etc/resolv.conf  
# DHCP config for eth0  
#auto eth0  
#iface eth0 inet dhcp  
^G Help      ^O Write Out ^W Where Is  ^K Cut       ^T Execute  
^X Exit      ^R Read File ^_ Replace  ^U Paste     ^J Justify
```

```
root@UbuntuDockerGuest-2: ~  
GNU nano 7.2 /etc/network/interfaces *  
# This is a sample network config, please uncomment lines to configure  
#  
# Uncomment this line to load custom interface files  
# source /etc/network/interfaces.d/*  
# Static config for eth0  
auto eth0  
iface eth0 inet static  
    address 192.168.10.3  
    netmask 255.255.255.0  
#    gateway 192.168.0.1  
#    up echo nameserver 192.168.0.1 > /etc/resolv.conf  
# DHCP config for eth0  
#auto eth0  
#iface eth0 inet dhcp  
^G Help      ^O Write Out ^W Where Is  ^K Cut       ^T Execute  
^X Exit      ^R Read File ^_ Replace  ^U Paste     ^J Justify
```

## Accounting (VLAN 20) configuration.

```
root@UbuntuDockerGuest-3: ~
GNU nano 7.2 /etc/network/interfaces *
# This is a sample network config, please uncomment lines to configure the
#
# Uncomment this line to load custom interface files
# source /etc/network/interfaces.d/*
# Static config for eth0
auto eth0
iface eth0 inet static
    address 192.168.20.2
    netmask 255.255.255.0
    gateway 192.168.0.1
# up echo nameserver 192.168.0.1 > /etc/resolv.conf
# DHCP config for eth0
#auto eth0
#iface eth0 inet dhcp
^G Help ^O Write Out ^W Where Is ^K Cut ^T Execute
^X Exit ^R Read File ^_ Replace ^U Paste ^J Justify

root@UbuntuDockerGuest-4: ~
GNU nano 7.2 /etc/network/interfaces *
# This is a sample network config, please uncomment lines to configure the
#
# Uncomment this line to load custom interface files
# source /etc/network/interfaces.d/*
# Static config for eth0
auto eth0
iface eth0 inet static
    address 192.168.20.3
    netmask 255.255.255.0
    gateway 192.168.0.1
# up echo nameserver 192.168.0.1 > /etc/resolv.conf
# DHCP config for eth0
#auto eth0
#iface eth0 inet dhcp
^G Help ^O Write Out ^W Where Is ^K Cut ^T Execute
^X Exit ^R Read File ^_ Replace ^U Paste ^J Justify
```

HR (VLAN 30) configuration.

```
root@UbuntuDockerGuest-5: ~
GNU nano 7.2 /etc/network/interfaces
# This is a sample network config, please uncomment lines to configure the
#
# Uncomment this line to load custom interface files
# source /etc/network/interfaces.d/*
# Static config for eth0
auto eth0
iface eth0 inet static
    address 192.168.30.2
    netmask 255.255.255.0
    gateway 192.168.0.1
# up echo nameserver 192.168.0.1 > /etc/resolv.conf
# DHCP config for eth0
#auto eth0
#iface eth0 inet dhcp
# hostname UbuntuDockerGuest-5
^G Help ^O Write Out ^W Where Is ^K Cut
^X Exit ^R Read File ^_ Replace ^U Paste
```

Reset and checked IPs for hosts in VLAN 10

```
root@UbuntuDockerGuest-1: ~
Connected to localhost.
Escape character is '^['.
UbuntuDockerGuest-1 console is now available... Press RETURN to get started.
root@UbuntuDockerGuest-1:~# ifconfig
eth0: flags=4163<UP,BROADCAST,RUNNING,MULTICAST> mtu 1500
    inet 192.168.10.2 netmask 255.255.255.0 broadcast 0.0.0.0
    inet6 fe80::42:1c:ff:fe18:3300 prefixlen 64 scopeid 0x20<link>
    ether 02:42:1c:18:33:00 txqueuelen 1000 (Ethernet)
    RX packets 115 bytes 18049 (18.0 KB)
    RX errors 0 dropped 4 overruns 0 frame 0
    TX packets 10 bytes 796 (796.0 B)
    TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0

lo: flags=73<UP,LOOPBACK,RUNNING> mtu 65536
    inet 127.0.0.1 netmask 255.0.0.0
    inet6 ::1 prefixlen 128 scopeid 0x10<host>
    loop txqueuelen 1000 (Local Loopback)
    RX packets 0 bytes 0 (0.0 B)
    RX errors 0 dropped 0 overruns 0 frame 0
    TX packets 0 bytes 0 (0.0 B)
    TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0

root@UbuntuDockerGuest-2: ~
Connected to localhost.
Escape character is '^['.
UbuntuDockerGuest-2 console is now available... Press RETURN to get started.
root@UbuntuDockerGuest-2:~# ifconfig
eth0: flags=4163<UP,BROADCAST,RUNNING,MULTICAST> mtu 1500
    inet 192.168.10.3 netmask 255.255.255.0 broadcast 0.0.0.0
    inet6 fe80::42:f3:ff:fe97:8c00 prefixlen 64 scopeid 0x20<link>
    ether 02:42:f3:97:8c:00 txqueuelen 1000 (Ethernet)
    RX packets 118 bytes 18259 (18.2 KB)
    RX errors 0 dropped 3 overruns 0 frame 0
    TX packets 10 bytes 796 (796.0 B)
    TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0

lo: flags=73<UP,LOOPBACK,RUNNING> mtu 65536
    inet 127.0.0.1 netmask 255.0.0.0
    inet6 ::1 prefixlen 128 scopeid 0x10<host>
    loop txqueuelen 1000 (Local Loopback)
    RX packets 0 bytes 0 (0.0 B)
    RX errors 0 dropped 0 overruns 0 frame 0
    TX packets 0 bytes 0 (0.0 B)
    TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0
```

## Reset and checked IPS for hosts in VLAN 20

```
root@UbuntuDockerGuest-3: ~
Trying 127.0.0.1...
Connected to localhost.
Escape character is '^]'.
UbuntuDockerGuest-3 console is now available... Press RETURN to get started.
root@UbuntuDockerGuest-3:~# ifconfig
eth0: flags=4163<UP,BROADCAST,RUNNING,MULTICAST> mtu 1500
    inet 192.168.20.2 netmask 255.255.255.0 broadcast 0.0.0.0
    inet6 fe80::42:f9ff:fe21:c400 prefixlen 64 scopeid 0x20<link>
    ether 02:42:f9:21:c4:00 txqueuelen 1000 (Ethernet)
    RX packets 117 bytes 18057 (18.0 KB)
    RX errors 0 dropped 4 overruns 0 frame 0
    TX packets 10 bytes 796 (796.0 B)
    TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0

lo: flags=73<UP,LOOPBACK,RUNNING> mtu 65536
    inet 127.0.0.1 netmask 255.0.0.0
    inet6 ::1 prefixlen 128 scopeid 0x10<host>
    loop txqueuelen 1000 (Local Loopback)
    RX packets 0 bytes 0 (0.0 B)
    RX errors 0 dropped 0 overruns 0 frame 0
    TX packets 0 bytes 0 (0.0 B)
    TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0

root@UbuntuDockerGuest-3:~#
```

```
root@UbuntuDockerGuest-4: ~
Trying 127.0.0.1...
Connected to localhost.
Escape character is '^]'.
UbuntuDockerGuest-4 console is now available... Press RETURN to get started.
root@UbuntuDockerGuest-4:~# ifconfig
eth0: flags=4163<UP,BROADCAST,RUNNING,MULTICAST> mtu 1500
    inet 192.168.20.3 netmask 255.255.255.0 broadcast 0.0.0.0
    inet6 fe80::42:11ff:fec4:ea00 prefixlen 64 scopeid 0x20<link>
    ether 02:42:11:c4:ea:00 txqueuelen 1000 (Ethernet)
    RX packets 117 bytes 17977 (17.9 KB)
    RX errors 0 dropped 3 overruns 0 frame 0
    TX packets 10 bytes 796 (796.0 B)
    TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0

lo: flags=73<UP,LOOPBACK,RUNNING> mtu 65536
    inet 127.0.0.1 netmask 255.0.0.0
    inet6 ::1 prefixlen 128 scopeid 0x10<host>
    loop txqueuelen 1000 (Local Loopback)
    RX packets 0 bytes 0 (0.0 B)
    RX errors 0 dropped 0 overruns 0 frame 0
    TX packets 0 bytes 0 (0.0 B)
    TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0

root@UbuntuDockerGuest-4:~#
```

## Reset and checked IPS for hosts in VLAN 30

```
root@UbuntuDockerGuest-5: ~
Trying 127.0.0.1...
Connected to localhost.
Escape character is '^]'.
UbuntuDockerGuest-5 console is now available... Press RETURN to get started.
root@UbuntuDockerGuest-5:~# ifconfig
eth0: flags=4163<UP,BROADCAST,RUNNING,MULTICAST> mtu 1500
    inet 192.168.30.2 netmask 255.255.255.0 broadcast 0.0.0.0
    inet6 fe80::42:edff:feb9:2300 prefixlen 64 scopeid 0x20<link>
    ether 02:42:ed:b9:23:00 txqueuelen 1000 (Ethernet)
    RX packets 110 bytes 17517 (17.5 KB)
    RX errors 0 dropped 4 overruns 0 frame 0
    TX packets 10 bytes 796 (796.0 B)
    TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0

lo: flags=73<UP,LOOPBACK,RUNNING> mtu 65536
    inet 127.0.0.1 netmask 255.0.0.0
    inet6 ::1 prefixlen 128 scopeid 0x10<host>
    loop txqueuelen 1000 (Local Loopback)
    RX packets 0 bytes 0 (0.0 B)
```

Ping from 192.168.10.2 to 192.168.10.3

```
root@UbuntuDockerGuest-1: ~  
inet 127.0.0.1 netmask 255.0.0.0  
inet6 ::1 prefixlen 128 scopeid 0x10<host>  
loop txqueuelen 1000 (Local Loopback)  
RX packets 0 bytes 0 (0.0 B)  
RX errors 0 dropped 0 overruns 0 frame 0  
TX packets 0 bytes 0 (0.0 B)  
TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0  
  
root@UbuntuDockerGuest-1:~# ping 192.168.10.3  
PING 192.168.10.3 (192.168.10.3) 56(84) bytes of data.  
64 bytes from 192.168.10.3: icmp_seq=1 ttl=64 time=2.12 ms  
64 bytes from 192.168.10.3: icmp_seq=2 ttl=64 time=0.531 ms  
64 bytes from 192.168.10.3: icmp_seq=3 ttl=64 time=0.506 ms  
64 bytes from 192.168.10.3: icmp_seq=4 ttl=64 time=0.466 ms  
64 bytes from 192.168.10.3: icmp_seq=5 ttl=64 time=0.525 ms  
64 bytes from 192.168.10.3: icmp_seq=6 ttl=64 time=0.331 ms  
64 bytes from 192.168.10.3: icmp_seq=7 ttl=64 time=0.476 ms  
64 bytes from 192.168.10.3: icmp_seq=8 ttl=64 time=0.515 ms  
64 bytes from 192.168.10.3: icmp_seq=9 ttl=64 time=0.514 ms  
64 bytes from 192.168.10.3: icmp_seq=10 ttl=64 time=0.447 ms  
64 bytes from 192.168.10.3: icmp_seq=11 ttl=64 time=0.576 ms  
64 bytes from 192.168.10.3: icmp_seq=12 ttl=64 time=0.456 ms  
64 bytes from 192.168.10.3: icmp_seq=13 ttl=64 time=0.469 ms  
  
root@UbuntuDockerGuest-2:~#  
Connected to localhost.  
Escape character is '^['.  
UbuntuDockerGuest-2 console is now available... Press RETURN to get started.  
root@UbuntuDockerGuest-2:~# ifconfig  
eth0: flags=4163<UP,BROADCAST,RUNNING,MULTICAST> mtu 1500  
inet 192.168.10.3 netmask 255.255.255.0 broadcast 0.0.0.0  
inet6 fe80::42:f3ff:fe97:8c00 prefixlen 64 scopeid 0x20<link>  
ether 02:42:f3:97:8c:00 txqueuelen 1000 (Ethernet)  
RX packets 118 bytes 18259 (18.2 KB)  
RX errors 0 dropped 3 overruns 0 frame 0  
TX packets 10 bytes 796 (796.0 B)  
TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0  
  
lo: flags=73<UP,LOOPBACK,RUNNING> mtu 65536  
inet 127.0.0.1 netmask 255.0.0.0  
inet6 ::1 prefixlen 128 scopeid 0x10<host>  
loop txqueuelen 1000 (Local Loopback)  
RX packets 0 bytes 0 (0.0 B)  
RX errors 0 dropped 0 overruns 0 frame 0  
TX packets 0 bytes 0 (0.0 B)  
TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0  
  
root@UbuntuDockerGuest-2:~#
```

PING SUCCESSFUL

Ping from 192.168.10.2 to 192.168.30.2

```
root@UbuntuDockerGuest-1: ~  
64 bytes from 192.168.10.3: icmp_seq=31 ttl=64 time=0.669 ms  
64 bytes from 192.168.10.3: icmp_seq=32 ttl=64 time=0.535 ms  
64 bytes from 192.168.10.3: icmp_seq=33 ttl=64 time=0.618 ms  
64 bytes from 192.168.10.3: icmp_seq=34 ttl=64 time=0.532 ms  
64 bytes from 192.168.10.3: icmp_seq=35 ttl=64 time=0.698 ms  
64 bytes from 192.168.10.3: icmp_seq=36 ttl=64 time=0.898 ms  
64 bytes from 192.168.10.3: icmp_seq=37 ttl=64 time=0.486 ms  
64 bytes from 192.168.10.3: icmp_seq=38 ttl=64 time=0.603 ms  
64 bytes from 192.168.10.3: icmp_seq=39 ttl=64 time=0.565 ms  
64 bytes from 192.168.10.3: icmp_seq=40 ttl=64 time=0.559 ms  
64 bytes from 192.168.10.3: icmp_seq=41 ttl=64 time=0.635 ms  
64 bytes from 192.168.10.3: icmp_seq=42 ttl=64 time=1.29 ms  
64 bytes from 192.168.10.3: icmp_seq=43 ttl=64 time=0.835 ms  
64 bytes from 192.168.10.3: icmp_seq=44 ttl=64 time=0.690 ms  
64 bytes from 192.168.10.3: icmp_seq=45 ttl=64 time=0.584 ms  
64 bytes from 192.168.10.3: icmp_seq=46 ttl=64 time=0.617 ms  
64 bytes from 192.168.10.3: icmp_seq=47 ttl=64 time=0.545 ms  
^C  
--- 192.168.10.3 ping statistics ---  
47 packets transmitted, 47 received, 0% packet loss, time 47056ms  
rtt min/avg/max/mdev = 0.331/0.665/2.678/0.397 ms  
root@UbuntuDockerGuest-1:~# ping 192.168.30.2  
ping: connect: Network is unreachable  
root@UbuntuDockerGuest-1:~#  
  
root@UbuntuDockerGuest-5:~#  
UbuntuDockerGuest-5 console is now available... Press RETURN to get started.  
root@UbuntuDockerGuest-5:~# ifconfig  
eth0: flags=4163<UP,BROADCAST,RUNNING,MULTICAST> mtu 1500  
inet 192.168.30.2 netmask 255.255.255.0 broadcast 0.0.0.0  
inet6 fe80::42:edff:feb9:2300 prefixlen 64 scopeid 0x20<link>  
ether 02:42:ed:b9:23:00 txqueuelen 1000 (Ethernet)  
RX packets 110 bytes 17517 (17.5 KB)  
RX errors 0 dropped 4 overruns 0 frame 0  
TX packets 10 bytes 796 (796.0 B)  
TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0  
  
lo: flags=73<UP,LOOPBACK,RUNNING> mtu 65536  
inet 127.0.0.1 netmask 255.0.0.0  
inet6 ::1 prefixlen 128 scopeid 0x10<host>  
loop txqueuelen 1000 (Local Loopback)  
RX packets 0 bytes 0 (0.0 B)  
RX errors 0 dropped 0 overruns 0 frame 0  
TX packets 0 bytes 0 (0.0 B)  
TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0  
  
root@UbuntuDockerGuest-5:~# pico /etc/network/interfaces  
root@UbuntuDockerGuest-5:~#
```

PING UNSUCCESSFUL, NETWORK UNREACHABLE