

CP 3

Document

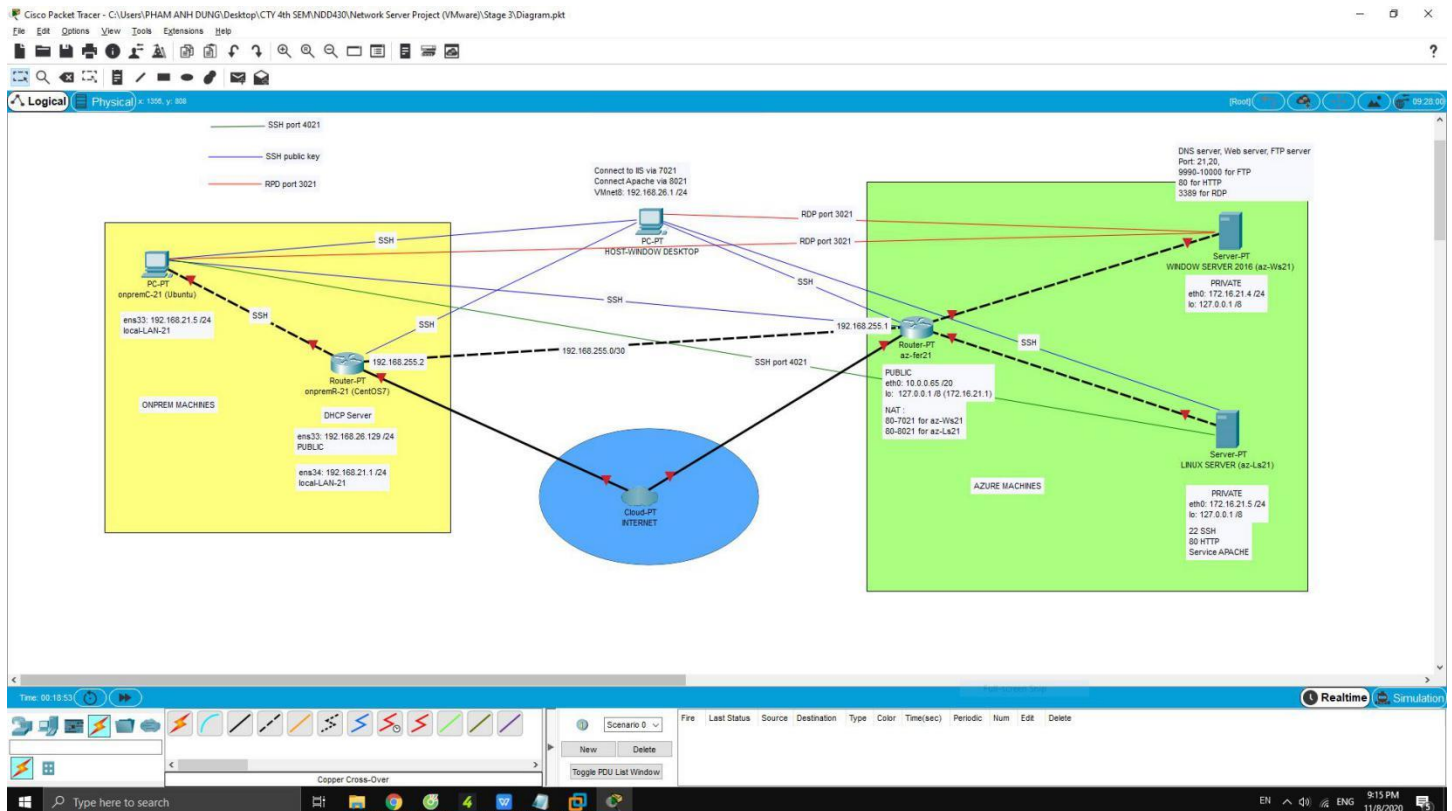
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PHAM*

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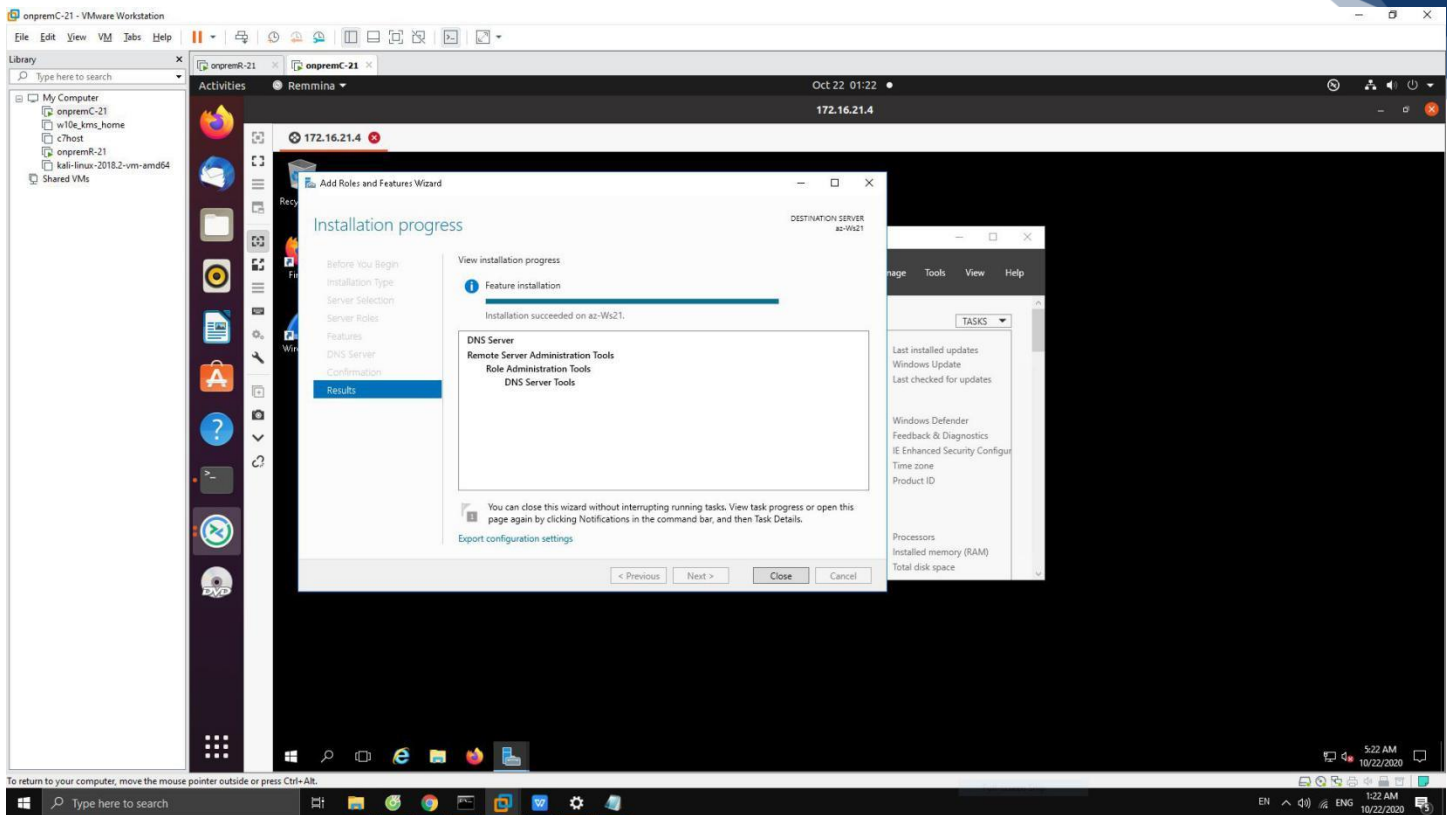
Create a network Diagram that displays the topology and includes:

- **ip addressing information for all interfaces**
- **A list of services being hosted by each device**



DNS Server Install (step by step)

1. Into Server Manager, select Manage and click Add Roles and Features.
2. Click Next.
3. Select Role-based or feature-based installation, and then click Next.
4. Click Select a server from the server pool, click az-ws21, click Next.
5. On the Select server roles page, click DNS Server.
6. When the Add Roles and Features Wizard dialog box, select Add Features, and then click Next.
7. On the DNS Server page, click Next.
8. On the Confirm installation selections page, click the Install button.
9. When the installation is completed, click the Close button. And restart the system.



Apache Install (step by step)

1. `sudo yum install httpd service.`
2. `sudo systemctl enable httpd service.`
3. `sudo systemctl start httpd service.`
4. Create the website by: `sudo vi /var/www/html/index.html`
5. Copy the html that you formatted into the index.html

```

<!DOCTYPE html>
<html lang="en">
<head>
<title>Page Title</title>
<meta charset="UTF-8">
<meta name="viewport" content="width=device-width, initial-scale=1">
<style>
body {
  font-family: Arial, Helvetica, sans-serif;
}
</style>
</head>
<body>

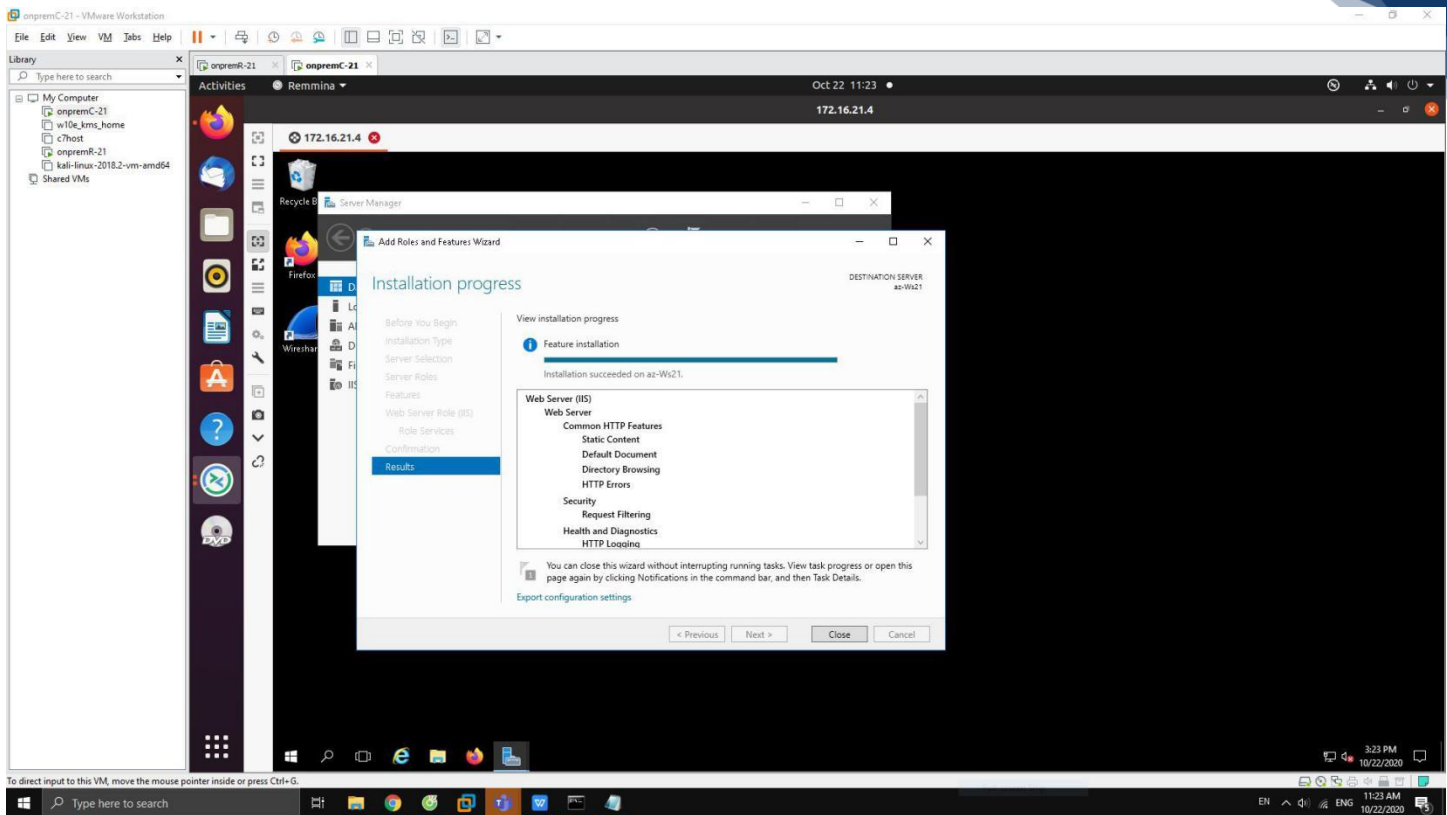
<h1>My Website from Linux Server</h1>
<p>My name: Anh Dung Pham</p>
<p>My ID: adpham1</p>
<p>Course: NDD430</p>
<p>Unique ID number: 21</p>

</body>
</html>
~

```

IIS Install (step by step)

1. Select Server Manager opens, Manage and click Add Roles and Features.
2. click Next.
3. Select Role-based or feature-based installation and then click Next.
4. Click az-ws21, and then click Next.
5. On the Select server roles page, click Web Server (IIS).
6. At the Add Roles and Features Wizard dialog, select Add Features and click Next.
7. Select features page opens, click Next.
8. click Next.
9. click Next.
10. Click Install
11. When the installation is done, click the Close button. And restart the system



Appendix A – DNS Settings

DNS Table

- **Expand this table to include all FQDNs and IPs configured in your DNS**

FQDN	IP Address
az-Ws21.ndd43021.com	IP Address: 172.16.21.4
az-Ls21.ndd43021.com	Subnet mask: 255.255.255.0
az-fer21.ndd43021.com	Gateway: 172.16.21.1
	Preferred DNS: 172.16.21.4

Appendix B – Firewall Configurations

- **Iptables configurations for ALL Linux Machines**

On az-fer21:

```

C:\Users\PHAM ANH DUNG>ssh adpham1@az-fer21347477.canadacentral.cloudapp.azure.com
Last login: Wed Nov 4 20:57:07 2020 from bras-base-toroon2196w-grc-20-174-88-2-113.dsl.bell.ca
[adpham1@az-fer21 ~]$ hostname
az-fer21
[adpham1@az-fer21 ~]$ sudo iptables -vnl
Chain INPUT (policy DROP 2782 packets, 123K bytes)
  pkts bytes target prot opt in out source destination state
  2633 2087K ACCEPT tcp -- * * 0.0.0.0/0 0.0.0.0/0 state RELATED,ESTABLISHED
  0 0 ACCEPT tcp -- * * 0.0.0.0/0 0.0.0.0/0 tcp spt:53
  354 62899 ACCEPT udp -- * * 0.0.0.0/0 0.0.0.0/0 udp spt:53
  64 4864 ACCEPT udp -- * * 0.0.0.0/0 0.0.0.0/0 udp spt:123
  7 396 ACCEPT tcp -- * * 0.0.0.0/0 0.0.0.0/0 tcp dpt:22
  573 92962 ACCEPT udp -- * * 0.0.0.0/0 0.0.0.0/0 udp dpt:1194

Chain FORWARD (policy DROP 0 packets, 0 bytes)
  pkts bytes target prot opt in out source destination
  0 0 ACCEPT tcp -- * * 0.0.0.0/0 0.0.0.0/0 tcp dpt:3389
  0 0 ACCEPT tcp -- * * 0.0.0.0/0 0.0.0.0/0 tcp spt:3389
  323 34507 ACCEPT tcp -- * * 0.0.0.0/0 0.0.0.0/0 tcp dpt:22
  220 32927 ACCEPT tcp -- * * 0.0.0.0/0 0.0.0.0/0 tcp spt:22
  36 1596 ACCEPT tcp -- * * 0.0.0.0/0 0.0.0.0/0 tcp dpt:80
  119 5184 ACCEPT tcp -- * * 0.0.0.0/0 0.0.0.0/0 tcp spt:80
  59 3330 ACCEPT tcp -- * * 0.0.0.0/0 0.0.0.0/0 multiport dports 21,20,9990:10000
  49 3584 ACCEPT tcp -- * * 0.0.0.0/0 0.0.0.0/0 multiport sports 21,20,9990:10000
  0 0 ACCEPT tcp -- * * 172.16.21.4 0.0.0.0/0 tcp dpt:53
  0 0 ACCEPT tcp -- * * 172.16.21.4 0.0.0.0/0 tcp spt:53
  183 15111 ACCEPT udp -- * * 172.16.21.4 0.0.0.0/0 udp dpt:53
  183 28232 ACCEPT udp -- * * 172.16.21.4 0.0.0.0/0 udp spt:53

Chain OUTPUT (policy ACCEPT 4642 packets, 1113K bytes)
  pkts bytes target prot opt in out source destination
[adpham1@az-fer21 ~]$

```

```

[adpham1@az-fer21 ~]$ hostname
az-fer21
[adpham1@az-fer21 ~]$ sudo iptables -vnl -t nat
Chain PREROUTING (policy ACCEPT 3028 packets, 142K bytes)
  pkts bytes target prot opt in out source destination
  0 0 DNAT tcp -- * * 0.0.0.0/0 0.0.0.0/0 tcp dpt:7021 to:172.16.21.4:80
  13 572 DNAT tcp -- * * 0.0.0.0/0 0.0.0.0/0 tcp dpt:8021 to:172.16.21.5:80

Chain INPUT (policy ACCEPT 14 packets, 1270 bytes)
  pkts bytes target prot opt in out source destination

Chain OUTPUT (policy ACCEPT 962 packets, 63411 bytes)
  pkts bytes target prot opt in out source destination

Chain POSTROUTING (policy ACCEPT 0 packets, 0 bytes)
  pkts bytes target prot opt in out source destination
  1150 78239 MASQUERADE all -- * eth0 0.0.0.0/0 0.0.0.0/0
[adpham1@az-fer21 ~]$

```


On az-Is21

```

adpham1@onpremC-21:~/Desktop$ ssh adpham1@172.16.21.5
Last login: Wed Nov  4 20:54:03 2020 from az-fer21.internal.cloudapp.net
adpham1@az-ls21 ~]$ hostname
onpremC-21
adpham1@az-ls21 ~]$ sudo iptables -vnl
Chain INPUT (policy DROP 47 packets, 3524 bytes)
  pkts bytes target     prot opt in     out     source            destination
 2147 1599K ACCEPT     tcp  --  *      *      0.0.0.0/0         0.0.0.0/0         state RELATED,ESTABLISHED
    12  544 ACCEPT     tcp  --  *      *      0.0.0.0/0         0.0.0.0/0         tcp dpt:80
    3    180 ACCEPT     tcp  --  *      *      0.0.0.0/0         0.0.0.0/0         tcp dpt:22
 290 50289 ACCEPT     all  --  *      *      168.63.129.16     0.0.0.0/0

Chain FORWARD (policy ACCEPT 0 packets, 0 bytes)
  pkts bytes target     prot opt in     out     source            destination

Chain OUTPUT (policy ACCEPT 1235 packets, 190K bytes)
  pkts bytes target     prot opt in     out     source            destination
 2144 589K ACCEPT     all  --  *      *      0.0.0.0/0         168.63.129.16

adpham1@az-ls21 ~]$ sudo iptables -vnl -t nat
Chain PREROUTING (policy ACCEPT 7 packets, 340 bytes)
  pkts bytes target     prot opt in     out     source            destination

Chain INPUT (policy ACCEPT 7 packets, 340 bytes)
  pkts bytes target     prot opt in     out     source            destination

Chain OUTPUT (policy ACCEPT 264 packets, 17183 bytes)
  pkts bytes target     prot opt in     out     source            destination

Chain POSTROUTING (policy ACCEPT 264 packets, 17183 bytes)
  pkts bytes target     prot opt in     out     source            destination
adpham1@az-ls21 ~]$

```

On onpremR (CenOs7)

```

adpham1@onpremR-21 ~]$ sudo iptables -vnl
Chain INPUT (policy ACCEPT 12938 packets, 3888K bytes)
  pkts bytes target     prot opt in     out     source            destination

Chain FORWARD (policy ACCEPT 17696 packets, 15M bytes)
  pkts bytes target     prot opt in     out     source            destination
23186 1959K ACCEPT     all  --  ens34    *      0.0.0.0/0         0.0.0.0/0

Chain OUTPUT (policy ACCEPT 18537 packets, 2919K bytes)
  pkts bytes target     prot opt in     out     source            destination

adpham1@onpremR-21 ~]$ sudo iptables -vnl -t nat
Chain PREROUTING (policy ACCEPT 342 packets, 29892 bytes)
  pkts bytes target     prot opt in     out     source            destination

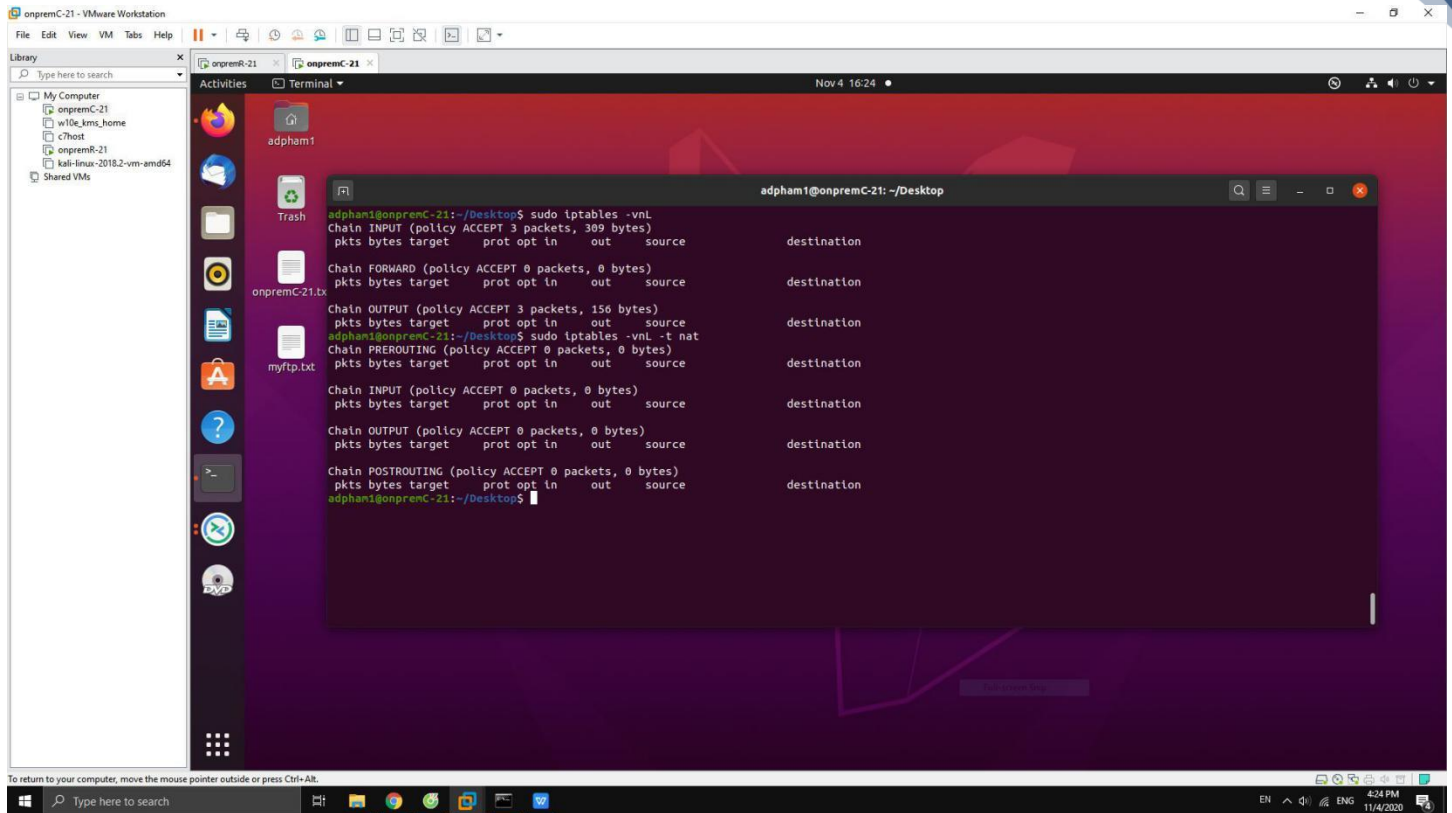
Chain INPUT (policy ACCEPT 32 packets, 4843 bytes)
  pkts bytes target     prot opt in     out     source            destination

Chain OUTPUT (policy ACCEPT 11 packets, 1517 bytes)
  pkts bytes target     prot opt in     out     source            destination

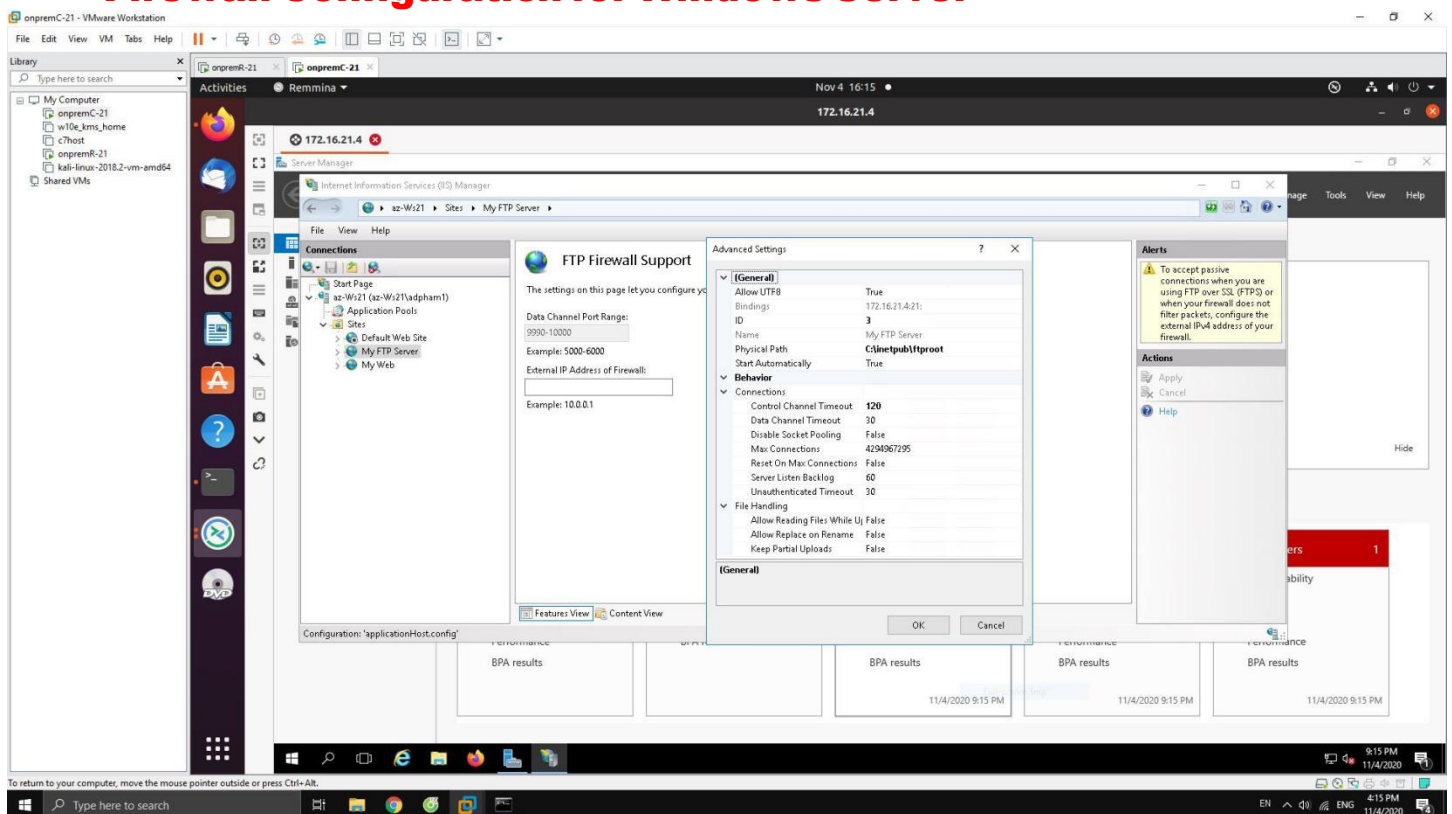
Chain POSTROUTING (policy ACCEPT 232 packets, 19865 bytes)
  pkts bytes target     prot opt in     out     source            destination
86 5937 MASQUERADE all  --  *      *      ens33            0.0.0.0/0
adpham1@onpremR-21 ~]$

```


On onpremC (Ubuntu)



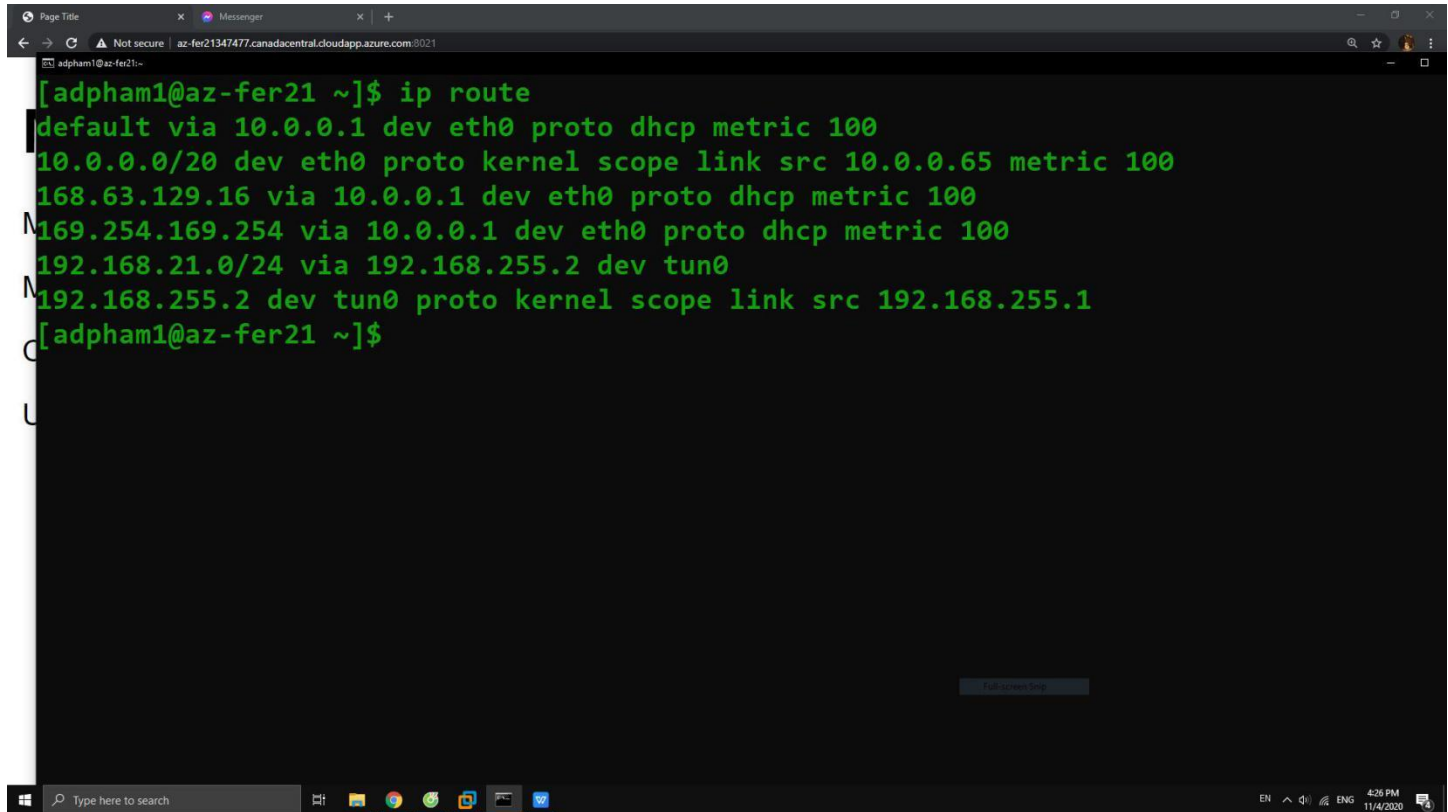
• Firewall Configuration for Windows Server



Appendix C – Routing Configurations

- **Routing Tables for Az-fer and onpremR**

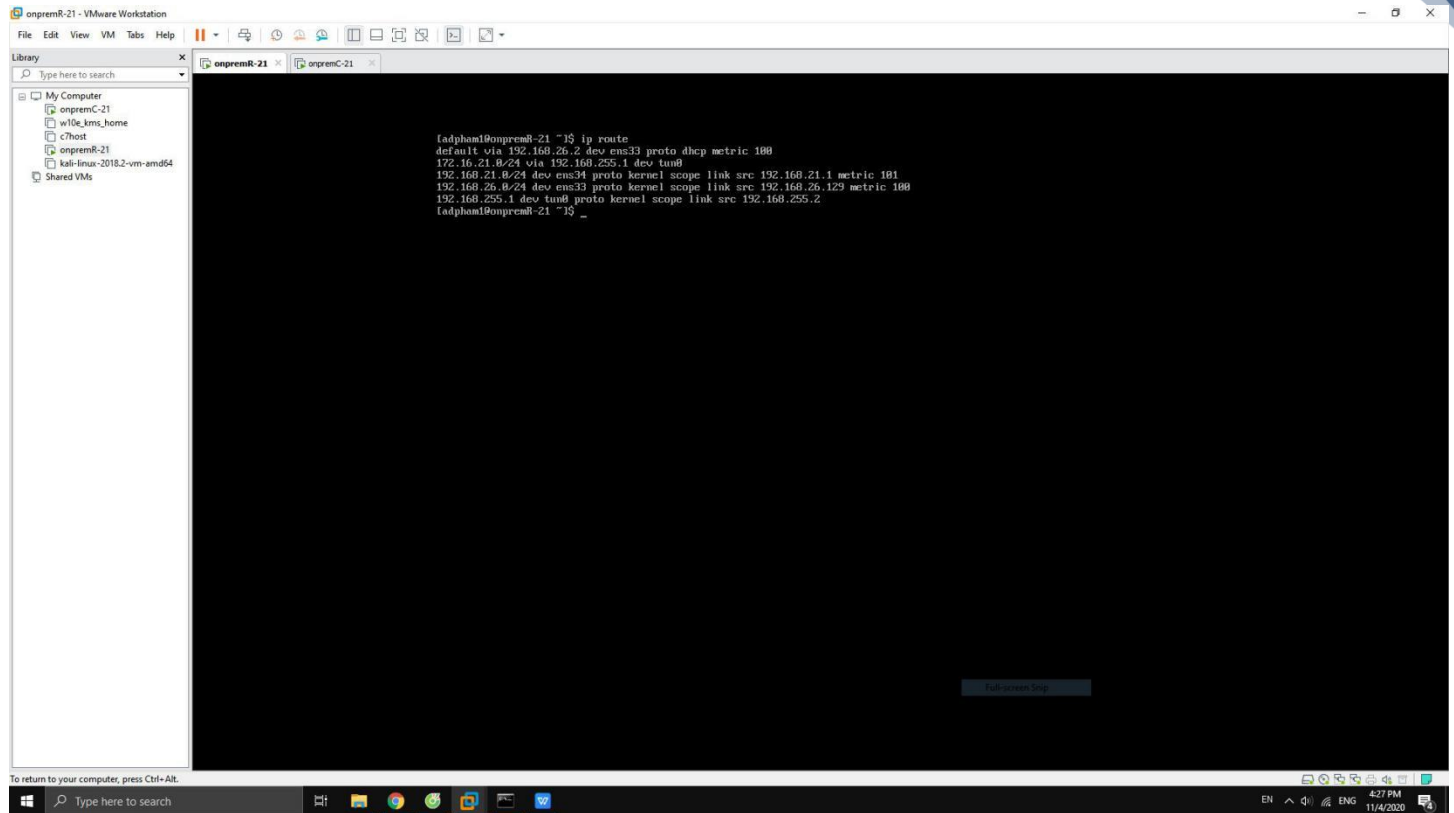
Routing on az-fer21:



```
[adpham1@az-fer21 ~]$ ip route
default via 10.0.0.1 dev eth0 proto dhcp metric 100
10.0.0.0/20 dev eth0 proto kernel scope link src 10.0.0.65 metric 100
168.63.129.16 via 10.0.0.1 dev eth0 proto dhcp metric 100
169.254.169.254 via 10.0.0.1 dev eth0 proto dhcp metric 100
192.168.21.0/24 via 192.168.255.2 dev tun0
192.168.255.2 dev tun0 proto kernel scope link src 192.168.255.1
[adpham1@az-fer21 ~]$
```

The screenshot shows a terminal window with a dark background and green text. The terminal output displays the routing table for the user 'adpham1' on the host 'az-fer21'. The output lists several routes, including a default route, a specific route for 10.0.0.0/20, and routes for 168.63.129.16, 169.254.169.254, and 192.168.21.0/24. The terminal window is titled 'Page Title' and 'Messenger'. The browser address bar shows 'az-fer21347477.canadacentral.cloudapp.azure.com:8021'. The Windows taskbar at the bottom shows the search bar, taskbar icons, and system tray with the date '11/4/2020' and time '4:26 PM'.

Routing on onpremR:



onpremR-21 - VMware Workstation

File Edit View VM Tabs Help

Library

Type here to search

My Computer

- onpremC-21
- wildc-kms_home
- c7host
- onpremR-21
- kali-linux-2018.2-vm-amd64
- Shared VMs

```
[adpham1@onpremR-21 ~]$ ip route
default via 192.168.26.2 dev ens33 proto dhcp metric 100
192.16.21.0/24 via 192.168.255.1 dev tun0
192.168.21.0/24 dev ens34 proto kernel scope link src 192.168.21.1 metric 101
192.168.26.0/24 dev ens33 proto kernel scope link src 192.168.26.129 metric 100
192.168.255.1 dev tun0 proto kernel scope link src 192.168.255.2
[adpham1@onpremR-21 ~]$
```

Full-screen Snap

To return to your computer, press Ctrl+Alt.

Type here to search

EN 4:27 PM 11/4/2020