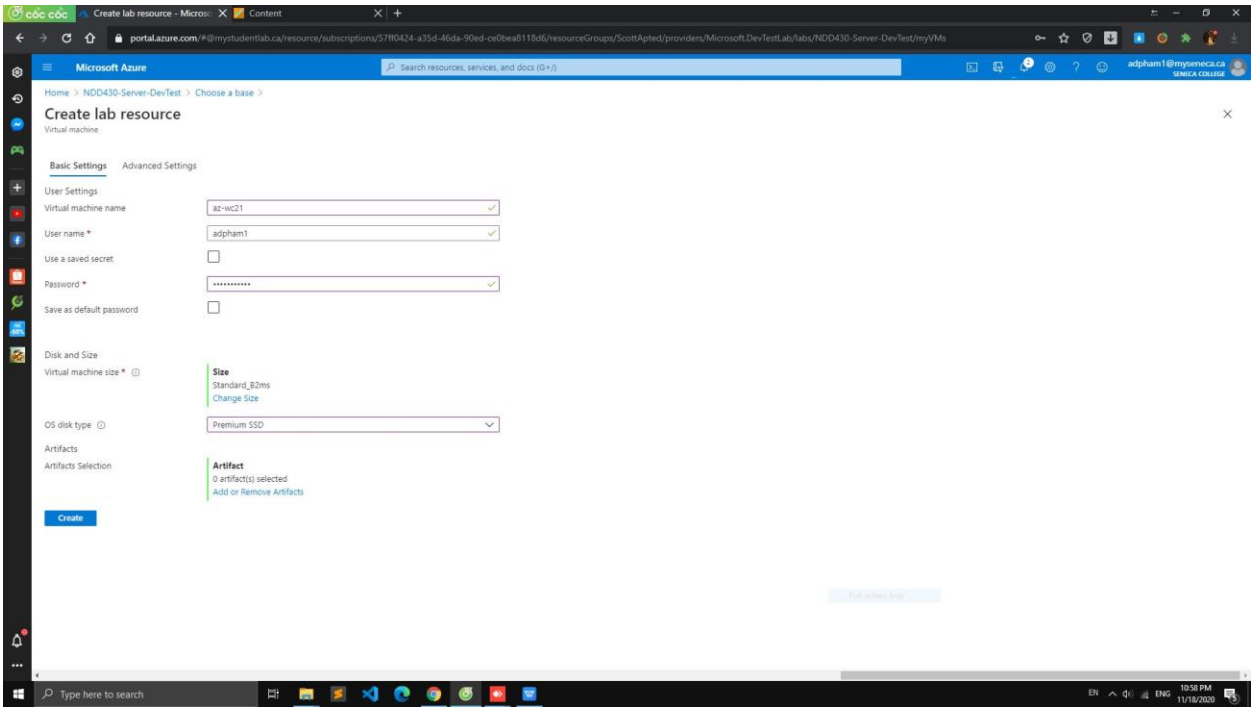
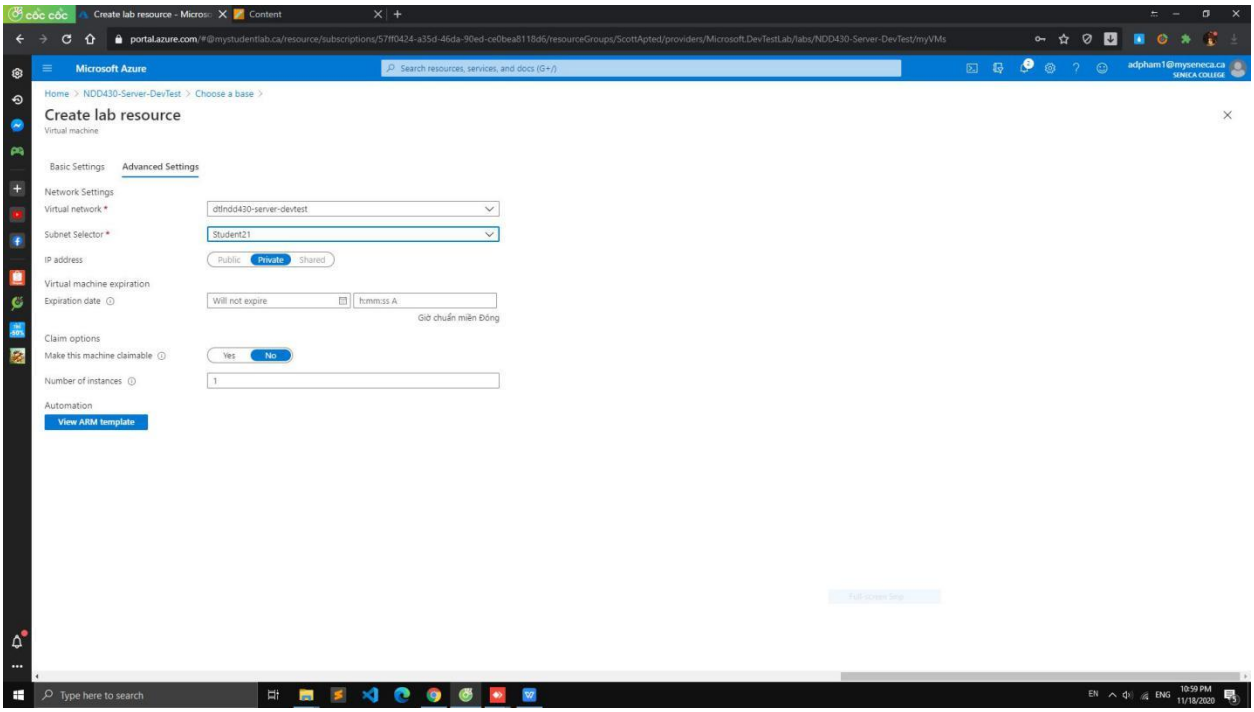
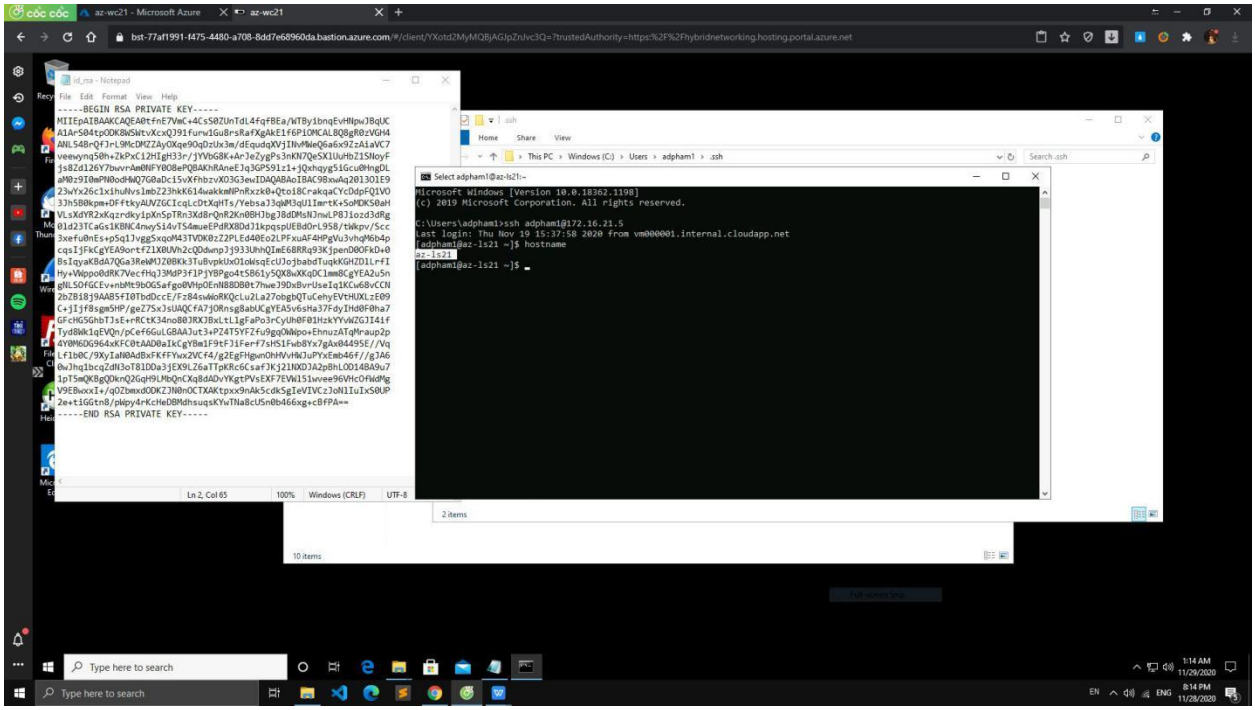
LINUX MAIL SERVER AND DATABASE ADMIN



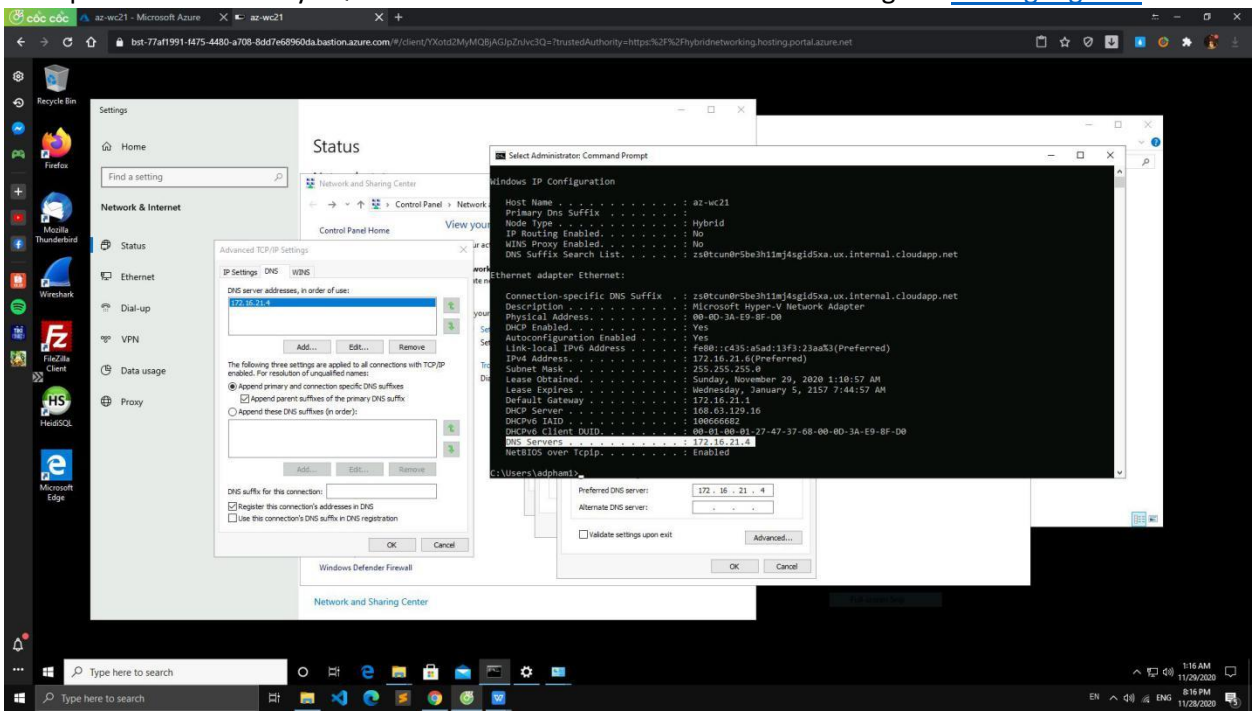


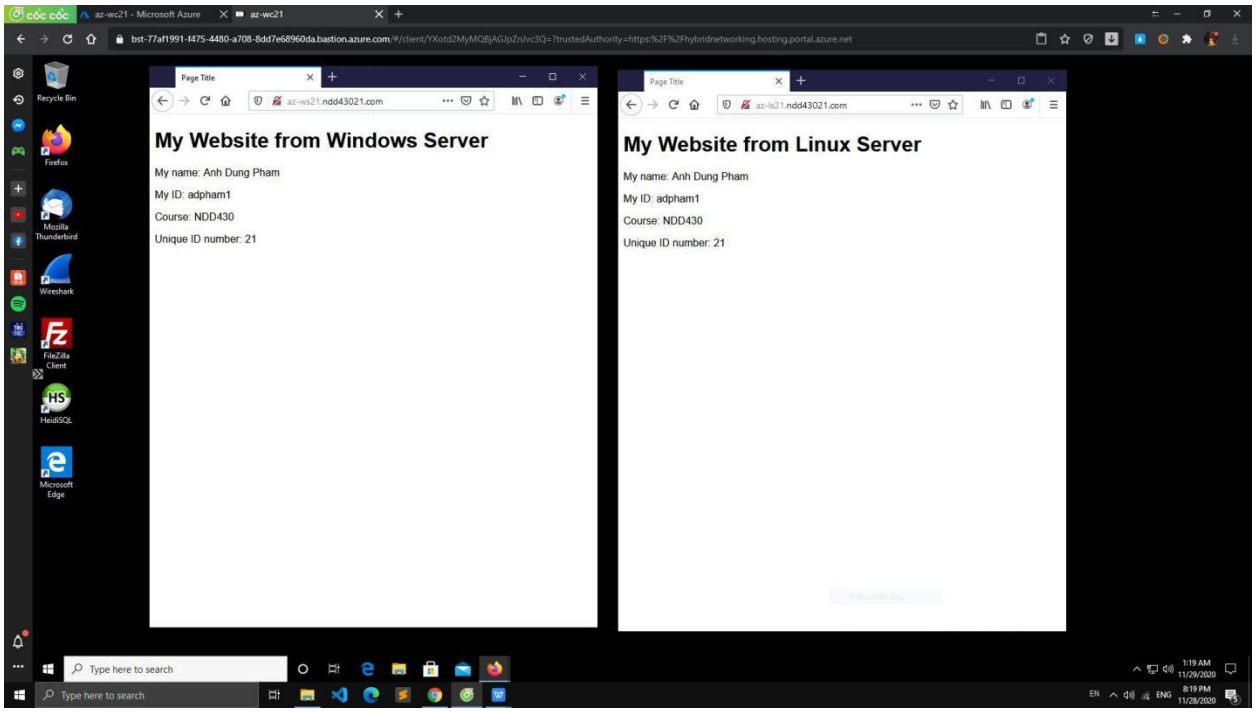
Post deployment configurations

- Follow this guide to RDP into your **az-wcXX** machine. Scroll down the "Connect" sections and follow those instructions to RDP into you Windows Client.
- Verify that you can RDP into your Windows Client from your host **using the FQDN and custom port assigned to you by Azure.**
- Copy the SSH private key to this machine that is required to SSH into your Linux Server **(az-lsXX)**



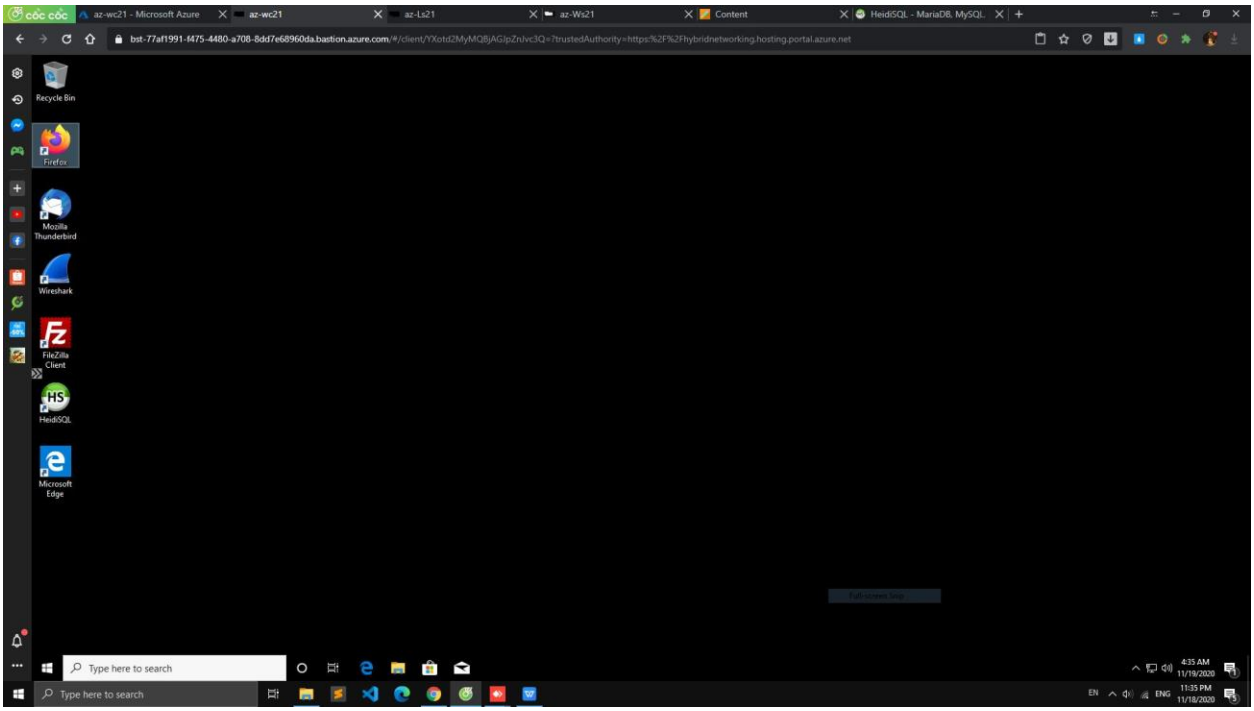
- Make the necessary configurations to verify that the Windows Client can connect to the IIS and Apache webserver by FQDN. Note that the VM should still be able to go to www.google.ca





Install the following apps on your **az-wcXX:**

- Filezilla Client
- Thunderbird E-mail Client
- A client of your choice that can be used to connect to a MySQL database
- FireFox
- Wireshark

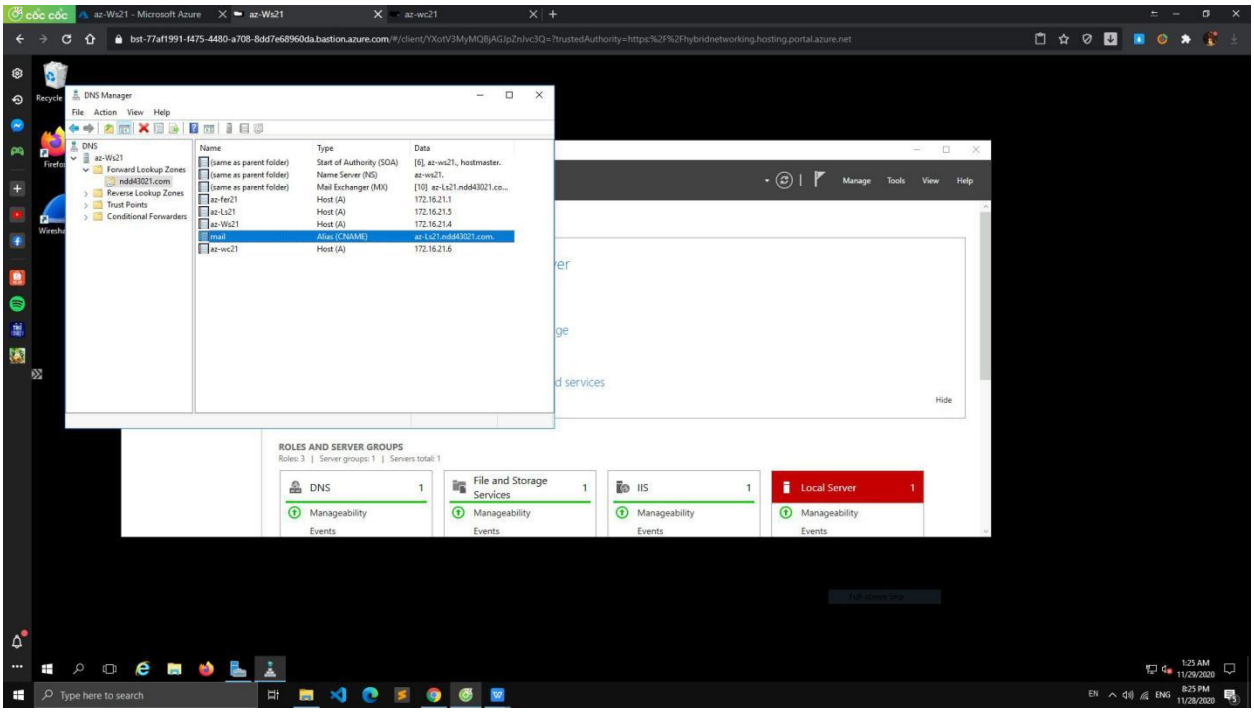

az-wc21 - Microsoft Azure
az-wc21
az-Ls21
az-Ws21
Content
HeidiSQL - MariaDB, MySQL
bst-77af1991-f475-4480-a708-8dd7e68960da.bastion.azure.com/#/client/YXotd2MyMQBjAGlpZnJvc3Q=?trustedAuthority=https%3F%2Fhybridnetworking.hosting.portal.azure.net
Recycle Bin
Firefox
Mozilla Thunderbird
Wireshark
FileZilla Client
HeidiSQL
Microsoft Edge
Type here to search
Type here to search
4:35 AM
11/19/2020
11:35 PM
11/18/2020

Install and configure Mail on the Linux Server

Using the guides below (you've seen them before) configure mail on your Linux Server (az-lsXX.)

Create an MX record for your domain.

Create a CNAME record, mail, pointing to your Linux server.

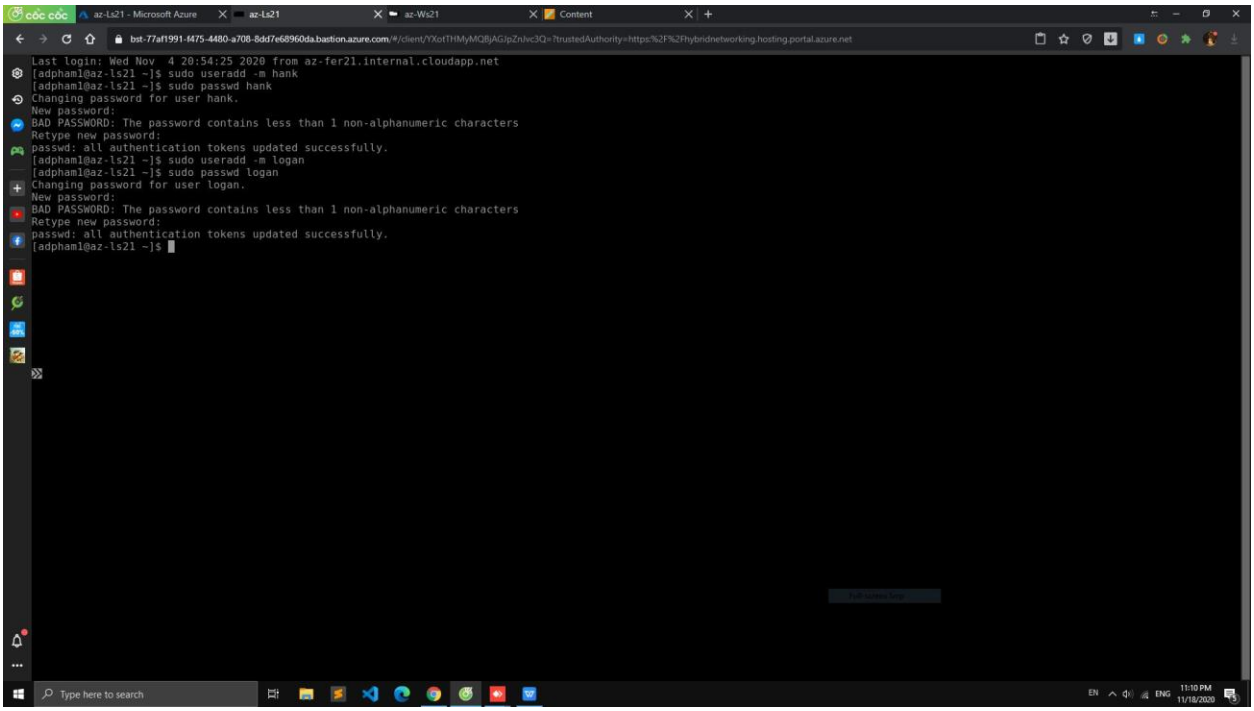


Create two accounts, one called 'hank' and the other called 'logan.'

https://wiki.cdot.senecacollege.ca/wiki/OPS335_Lab_4

https://wiki.cdot.senecacollege.ca/wiki/OPS335_Lab_4b

```
sudo useradd -m hank
sudo passwd hank
sudo useradd -m logan
sudo passwd logan
```



sudo yum install postfix -y
sudo systemctl start postfix
sudo systemctl status postfix
sudo vim /etc/postfix/main.cf

```
mydomain = mail.ndd43021.com
```

```
myorigin = $mydomain
```

```
inet_interfaces = all
#inet_interfaces = $myhostname
#inet_interfaces = $myhostname, localhost
#inet_interfaces = localhost

# Enable IPv4, and IPv6 if supported
inet_protocols = all
```

```
mydestination = $mydomain, $myhostname, localhost.$mydomain, localhost
```

```
mailbox_command = /usr/libexec/dovecot/dovecot-lda -f "$SENDER" -a "$RECIPIENT"
```

sudo yum install dovecot

sudo systemctl enable dovecot

sudo systemctl start dovecot

sudo vi /etc/dovecot/dovecot.conf

protocols = imap

sudo vi /etc/dovecot/conf.d/10-ssl.conf

ssl = yes

sudo vi /etc/dovecot/conf.d/10-auth.conf

disable_plaintext_auth = no

sudo vi /etc/dovecot/conf.d/10-mail.conf file

mail_location = maildir:~/Maildir

sudo systemctl restart postfix

sudo systemctl restart dovecot

sudo vim /etc/sysconfig/network-scripts/ifcfg-eth0

sudo systemctl restart network.service

```
# Created by cloud-init on instance boot automatically, do not edit.
#
BOOTPROTO=dhcp
DEVICE=eth0
HWADDR=00:0d:3a:84:a1:9e
ONBOOT=yes
TYPE=Ethernet
DNS1=172.16.21.4
USERCTL=no
DHCP_HOSTNAME=az-ls21
```

sudo iptables -A INPUT -p tcp --dport 25 -j ACCEPT

sudo iptables -A INPUT -p tcp --dport 143 -j ACCEPT

sudo service iptables save

```
[adpham1@az-ls21 ~]$ sudo iptables -vnL
Chain INPUT (policy DROP 58 packets, 4356 bytes)
 pkts bytes target     prot opt in     out     source               destination
 7105 4834K ACCEPT     tcp  --  *      *       0.0.0.0/0            0.0.0.0/0           state RELATED,ESTABLISHED
    1    52 ACCEPT     tcp  --  *      *       0.0.0.0/0            0.0.0.0/0           tcp dpt:80
    2   112 ACCEPT     tcp  --  *      *       0.0.0.0/0            0.0.0.0/0           tcp dpt:22
  704  128K ACCEPT     all  --  *      *       168.63.129.16        0.0.0.0/0
    0     0 ACCEPT     tcp  --  *      *       0.0.0.0/0            0.0.0.0/0           tcp dpt:25
    0     0 ACCEPT     tcp  --  *      *       0.0.0.0/0            0.0.0.0/0           tcp dpt:143
    0     0 ACCEPT     tcp  --  *      *       0.0.0.0/0            0.0.0.0/0           tcp dpt:3306

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

Chain OUTPUT (policy ACCEPT 3600 packets, 619K bytes)
 pkts bytes target     prot opt in     out     source               destination
 6304 1771K ACCEPT     all  --  *      *       0.0.0.0/0            168.63.129.16
[adpham1@az-ls21 ~]$
```

```
[adpham1@az-ls21 ~]$ sudo cat /etc/resolv.conf
# Generated by NetworkManager
search zs0tcun0r5be3h11mj4sgid5xa.ux.internal.cloudapp.net
nameserver 168.63.129.16
nameserver 172.16.21.4
[adpham1@az-ls21 ~]$
```

Install and configure MariaDB on the Linux Server

mariadb-server is the package file for MySQL. Install this package and configure a read-only user to access this database.

sudo iptables -A INPUT -p tcp --dport 3306 -j ACCEPT
sudo service iptables save

```
[adpham1@az-ls21 ~]$ sudo iptables -vnL
Chain INPUT (policy DROP 61 packets, 4584 bytes)
 pkts bytes target     prot opt in     out     source               destination
 8030 5580K ACCEPT     tcp  --  *      *       0.0.0.0/0            0.0.0.0/0           state RELATED,ESTABLISHED
    1    52 ACCEPT     tcp  --  *      *       0.0.0.0/0            0.0.0.0/0           tcp dpt:80
    2   112 ACCEPT     tcp  --  *      *       0.0.0.0/0            0.0.0.0/0           tcp dpt:22
  808  147K ACCEPT     all  --  *      *       168.63.129.16        0.0.0.0/0
    0     0 ACCEPT     tcp  --  *      *       0.0.0.0/0            0.0.0.0/0           tcp dpt:25
    0     0 ACCEPT     tcp  --  *      *       0.0.0.0/0            0.0.0.0/0           tcp dpt:143
    0     0 ACCEPT     tcp  --  *      *       0.0.0.0/0            0.0.0.0/0           tcp dpt:3306

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

Chain OUTPUT (policy ACCEPT 4065 packets, 699K bytes)
 pkts bytes target     prot opt in     out     source               destination
 7282 2048K ACCEPT     all  --  *      *       0.0.0.0/0            168.63.129.16
[adpham1@az-ls21 ~]$
```

sudo yum install mariadb-server
sudo systemctl start mariadb
sudo systemctl enable mariadb
mysql_secure_installation

- Enter current password for root (enter for none): press Enter
- Set root password? [Y/n] Y
- New password: type password root for mariadb
- Re-enter new password: type password root again for mariadb
- Remove anonymous users? [Y/n] Y
- Disallow root login remotely? [Y/n] Y
- Remove test database and access to it? [Y/n] Y
- Reload privilege tables now? [Y/n] Y

mysql -u root -p

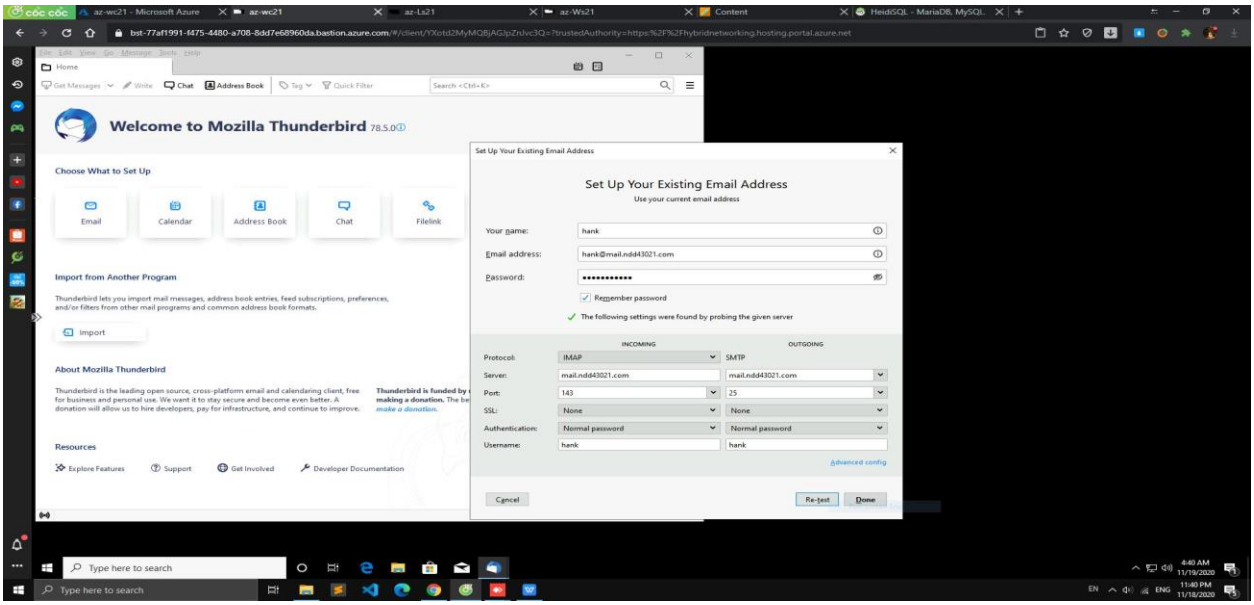
GRANT SELECT ON mysql.* TO 'adpham1'@'172.16.21.6' identified by 'Anhdung1302';
FLUSH PRIVILEGES;

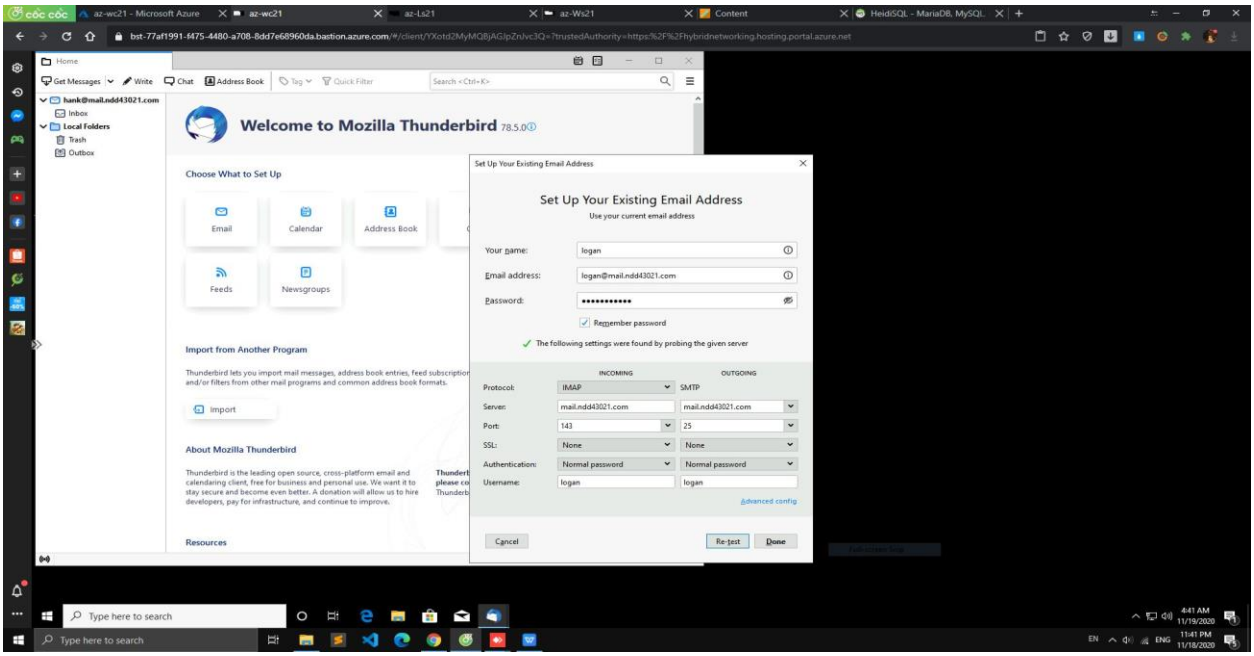
Checkpoint Demonstration

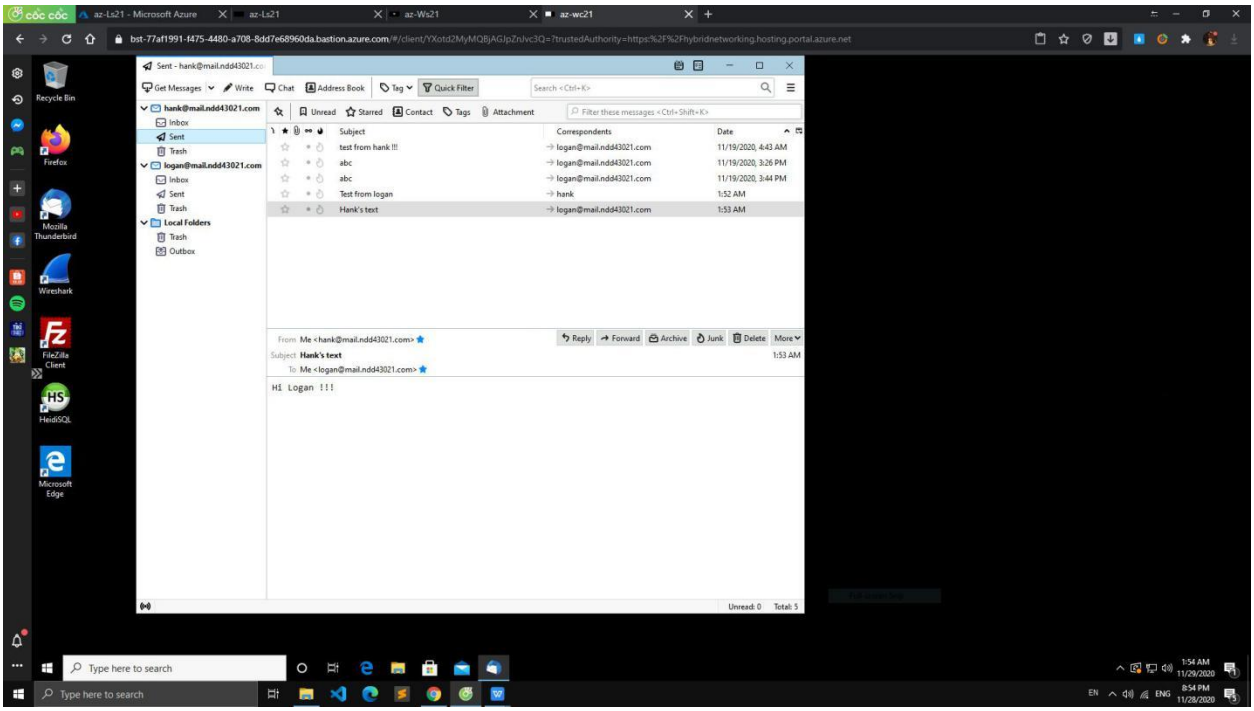
You will have to demonstrate the following during an online session to complete this checkpoint (please have all VMs turned on, ready to go):

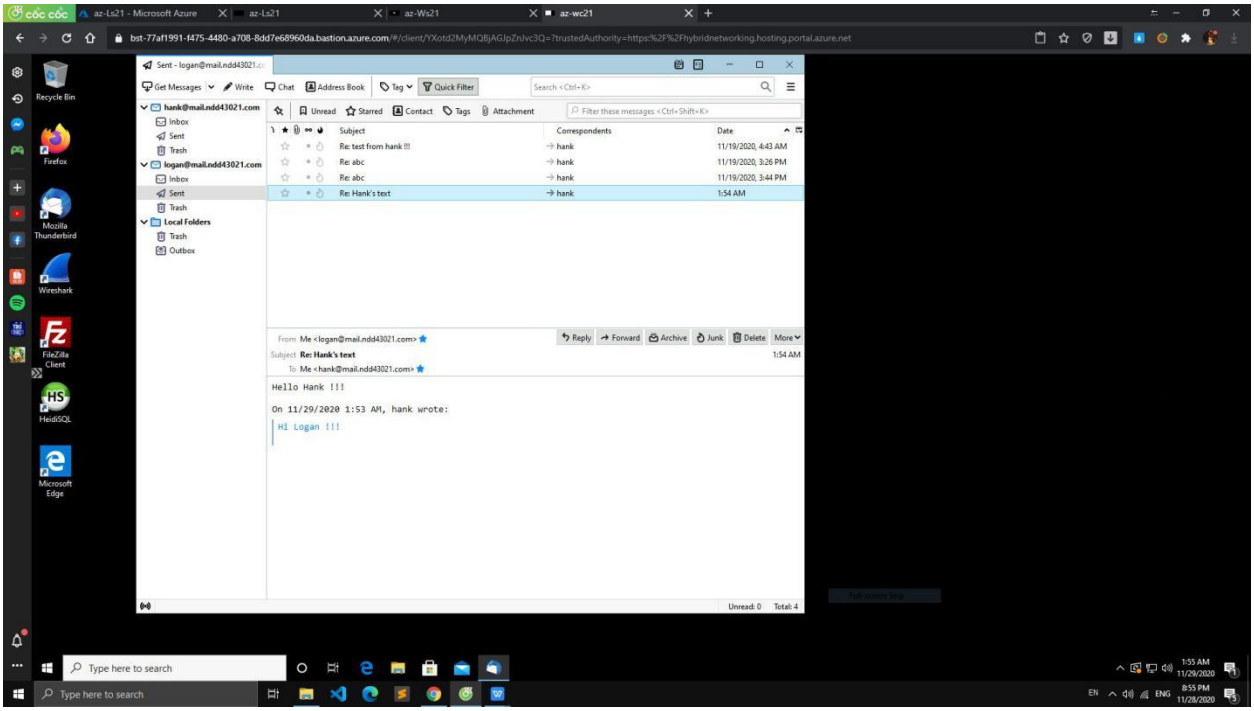
From your **az-wcXX** machine:

Send an e-mail from Hank to Logan and then have Logan reply to it. **You must use FQDNs when accessing email accounts i.e hank@mail.ndd430XX.com -- not hank@172.16.85.5**

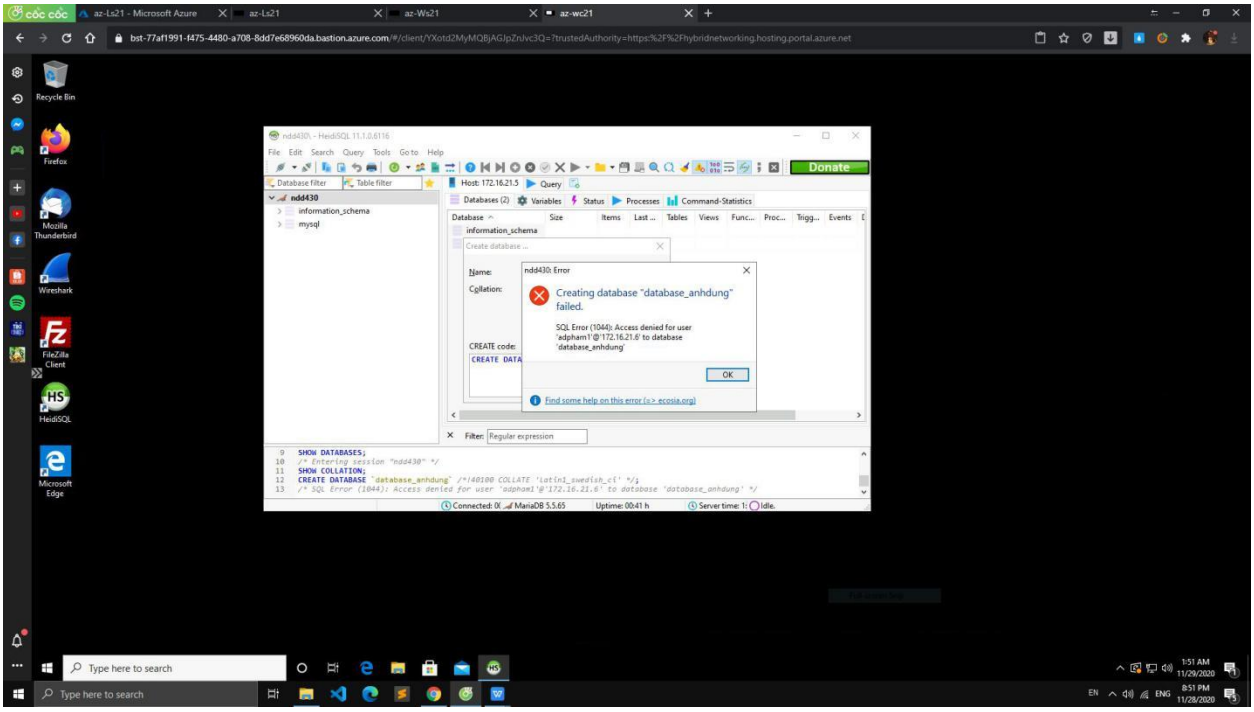





az-Ls21 - Microsoft Azure
az-Ls21
az-Ws21
az-wc21
Sent - hank@mail.ndd43021.com
Get Messages
Write
Chat
Address Book
Tag
Quick Filter
Search <Ctrl+K>
hank@mail.ndd43021.com
Inbox
Sent
Trash
logan@mail.ndd43021.com
Local Folders
Outbox
Unread
Starred
Contact
Tags
Attachment
Filter these messages <Ctrl+Shift+K>
Subject
Correspondents
Date
test from hank !!!
logan@mail.ndd43021.com
11/19/2020, 4:43 AM
abc
11/19/2020, 3:26 PM
11/19/2020, 3:44 PM
Test from logan
hank
1:52 AM
Hank's text
1:53 AM
From Me <hank@mail.ndd43021.com>
Reply
Forward
Archive
Junk
Delete
More
Subject Hank's text
To Me <logan@mail.ndd43021.com>
Hi Logan !!!
Unread: 0
Total: 5
Type here to search
1:54 AM
11/29/2020
8:54 PM
11/28/2020


az-Ls21 - Microsoft Azure
az-Ls21
az-Ws21
az-wc21
Sent - logan@mail.ndd43021.com
Get Messages
Write
Chat
Address Book
Tag
Quick Filter
Search <Ctrl+K>
hank@mail.ndd43021.com
Inbox
Sent
Trash
logan@mail.ndd43021.com
Local Folders
Outbox
Unread
Starred
Contact
Tags
Attachment
Filter these messages <Ctrl+Shift+K>
Subject
Correspondents
Date
Re: test from hank !!!
hank
11/19/2020, 4:43 AM
Re: abc
11/19/2020, 3:26 PM
11/19/2020, 3:44 PM
Re: Hank's text
1:54 AM
From Me <logan@mail.ndd43021.com>
Reply
Forward
Archive
Junk
Delete
More
Subject Re: Hank's text
To Me <hank@mail.ndd43021.com>
Hello Hank !!!
On 11/29/2020 1:53 AM, hank wrote:
Hi Logan !!!
Unread: 0
Total: 4
Type here to search
1:55 AM
11/29/2020
8:55 PM
11/28/2020

Log in to your MySQL database with your read only user and attempt to create a database.



Use the documentation template provided to submit you documentation for this checkpoint.