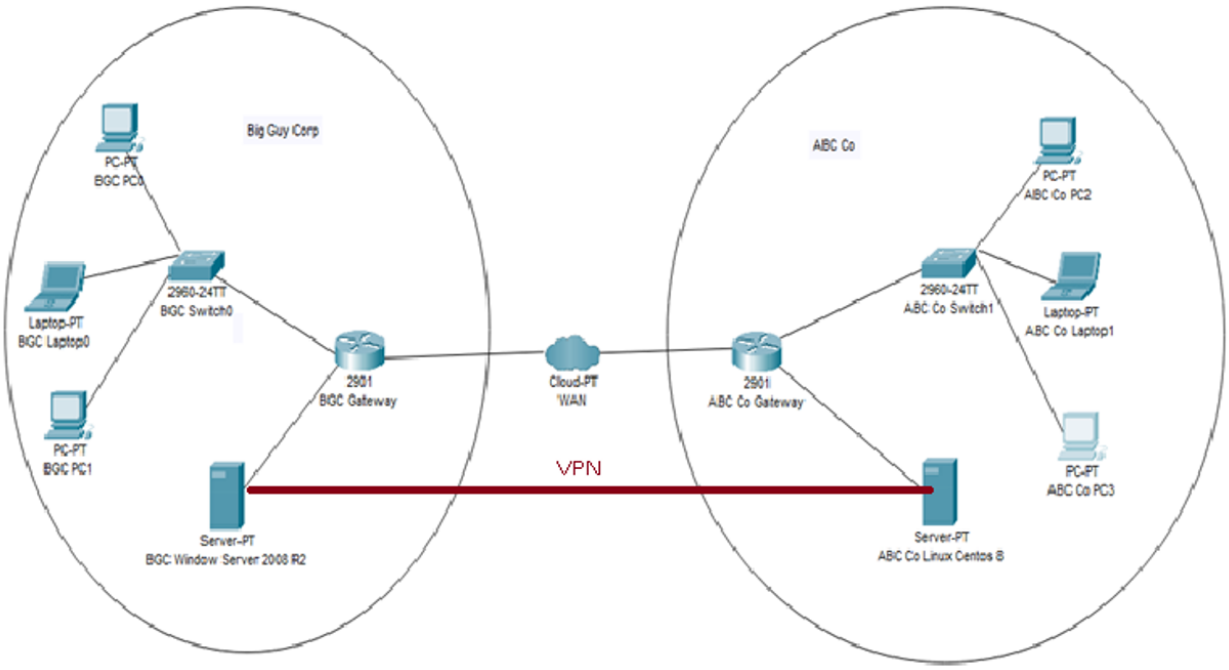
SLAVE DATABASE BACKUP WITH MYSQL ON WINDOW SERVER AND MARIADB ON LINUX CENTOS 8 AND CRONTAB

- Using the network configuration on last project:

VM Name	Hostname	Network Info
BigGuy Corp	bigguycorp.bigguyco.com	192.168.xx.2/24
ABC Co	abc-co.abc.com	192.168.xx.4/24



MariaDB Linux Configuration

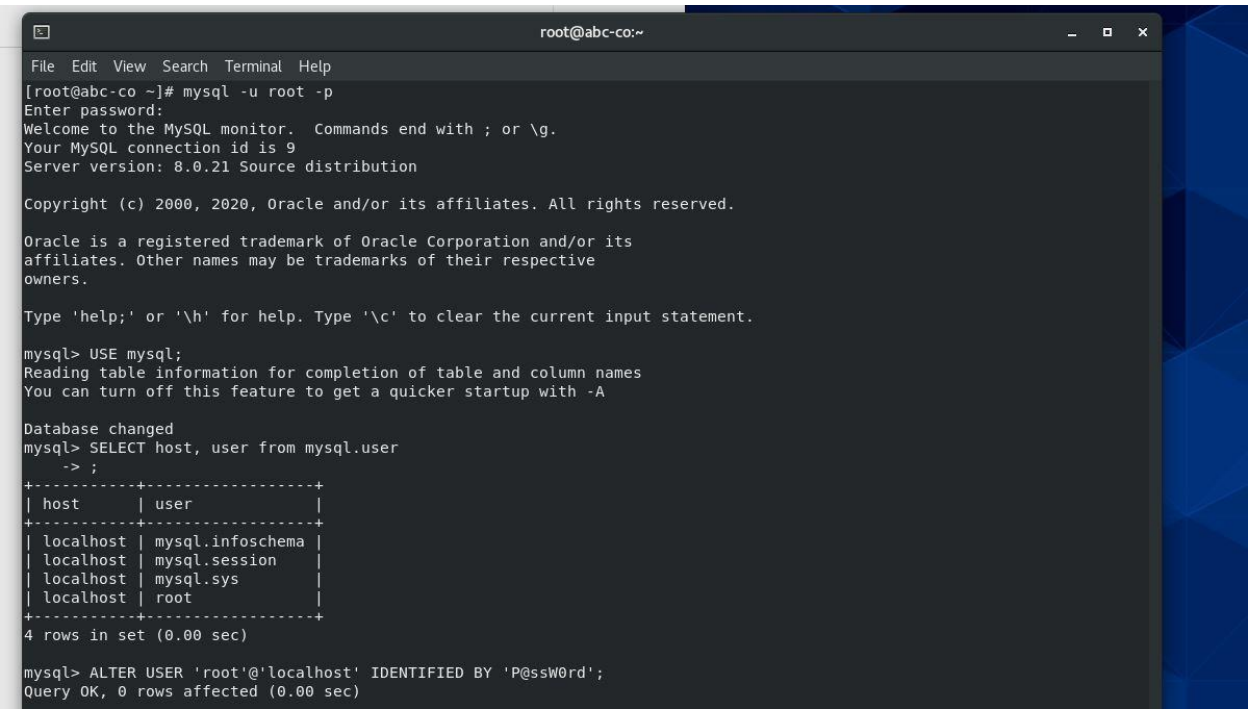
1) Download and install MySQL on ABC Co:
   - yum install mysql-server

2) Enable and start the service…
   - systemctl enable mysqld

- systemctl start mysqld

3) Verify the service is running as intended…
   - systemctl status mysqld

4) Using cat command to view this file MySQL database
   - cat /var/log/mysql/mysqld.log
   - Then using this command to login as root to database mysql -u root -p
   - SELECT user,host FROM mysql.user;



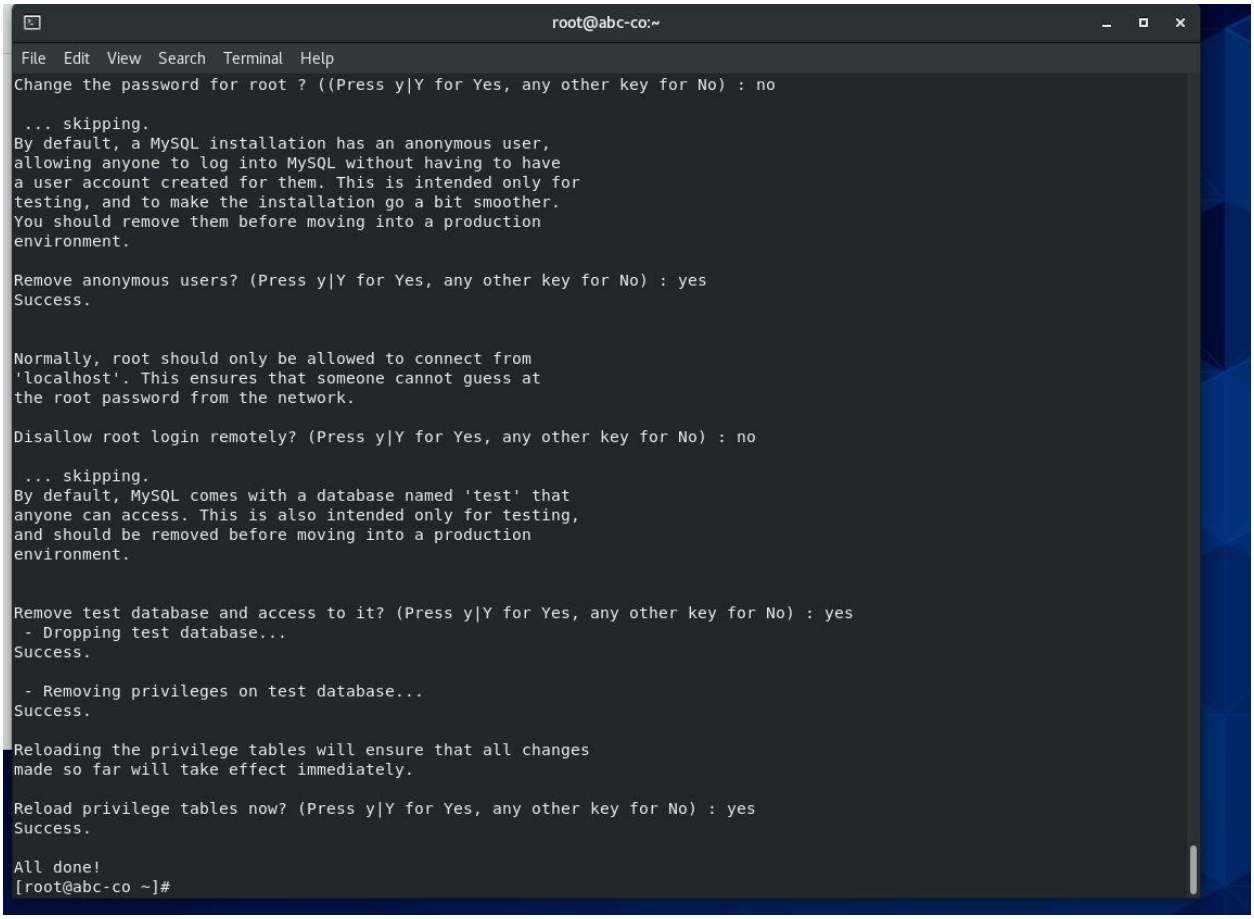
5) Change the root password
   ALTER USER ‘root’@’localhost’ IDENTIFIED BY ‘P@ssW0rd’;
   - You can change any password you want.

6) Exit and test the password has successfully been set for the root user
   - exit
   - Then login again and type the password you generated before:
   - mysql -u root -p

7) Create a replication database to test the slave server
   - mysql > CREATE DATABASE project3_test;

8) Run the “mysql_secure_installation” utility and choose NO for the options below

- remove anonymous users
- remove test database
- reload privileges table



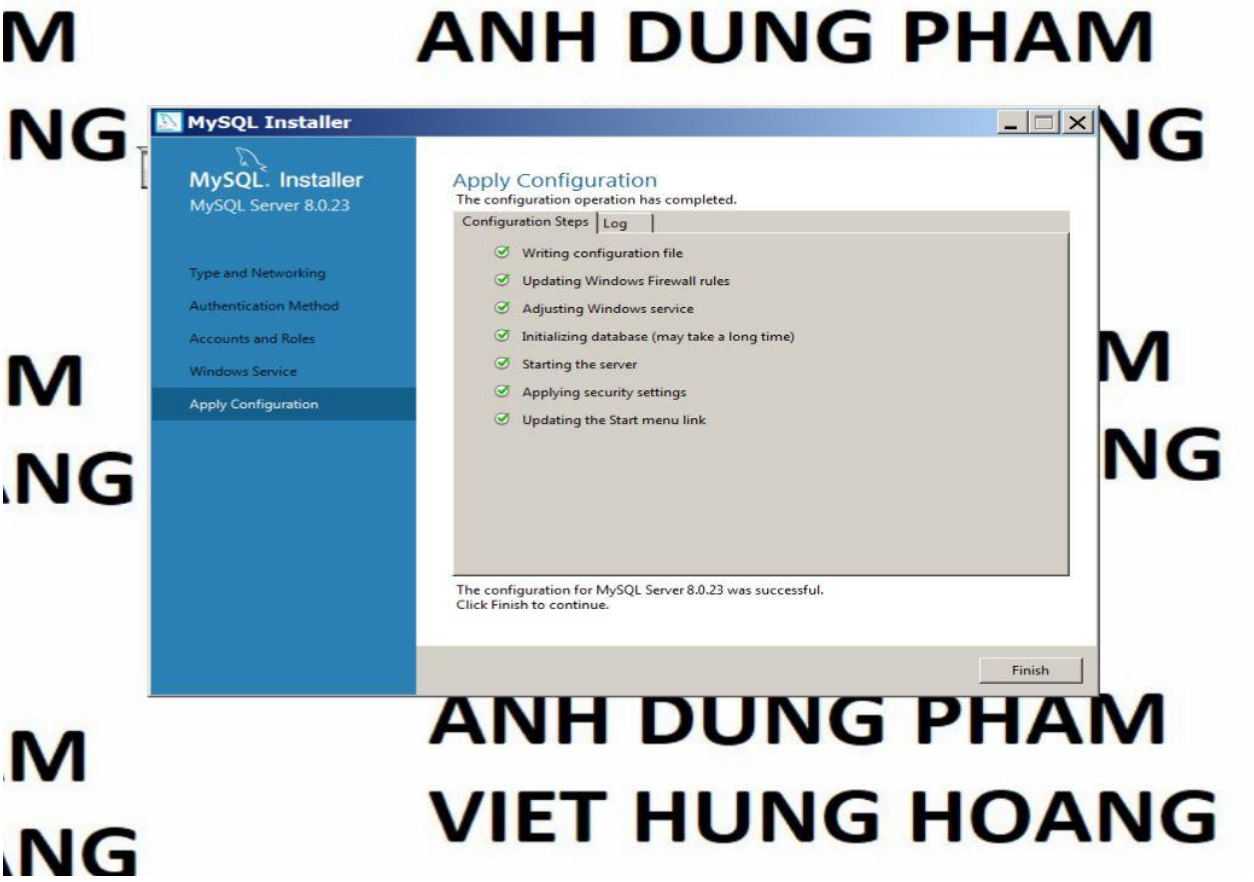
9) On the ABC Co on the firewall-cmd

- firewall-cmd --permanent --add-service=mysql
- firewall-cmd –reload

MySQL configuration on Windows 2008 R2

Install MySQL on BigGuy Corp machine

1) Google and download the MySQL Server Installer
- You will most likely have to install .NET Framework 4.5.2. Download and install this to proceed.
- When you open the installer, select “Server only”
- You have to install Microsoft Visual Studio C++ Redistributable.
- Next and set up the MySQL Root Password
- Finish the installation by clicking Execute



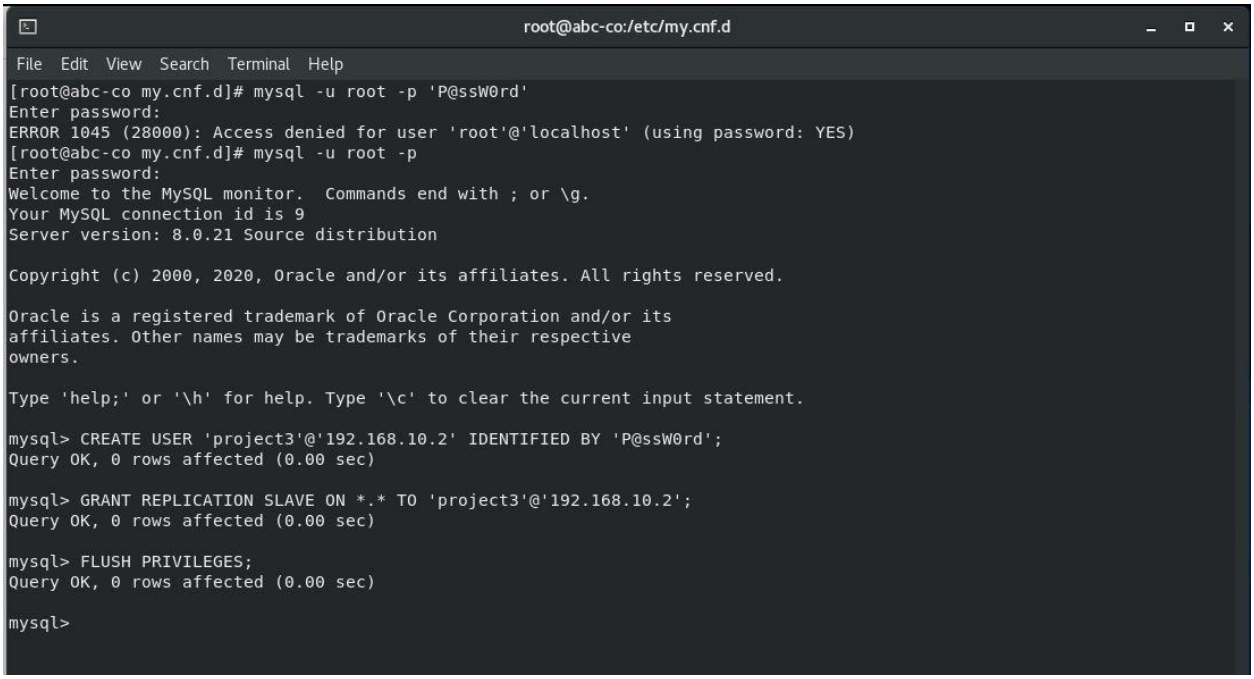
Configure ABC Co as the Master Server Replication

1) Edit MySQL server configuration file in folder: /etc/my.cnf.d
   - Append these lines below into the [mysqld] section
   - bind-address=abc-co ip address
   - server-id=2
   - log_bin=mysql-bin
   - binlog_do_db=project3_test

2) Save the file, exit, and restart the MySQL service by using systemctl command
   - systemctl restart mysqld

3) Create a replication user on MySQL master server as the database root user
   - Login as root
   - mysql -u root -p

4) Create the replication user using BigGuy Corp's IP Address and granting all privileges
   - CREATE USER 'project3'@'192.168.10.2' IDENTIFIED BY 'P@ssW0rd';
   - GRANT REPLICATION SLAVE ON *.* TO 'project3'@'192.168.10.2';
   - FLUSH PRIVILEGES;

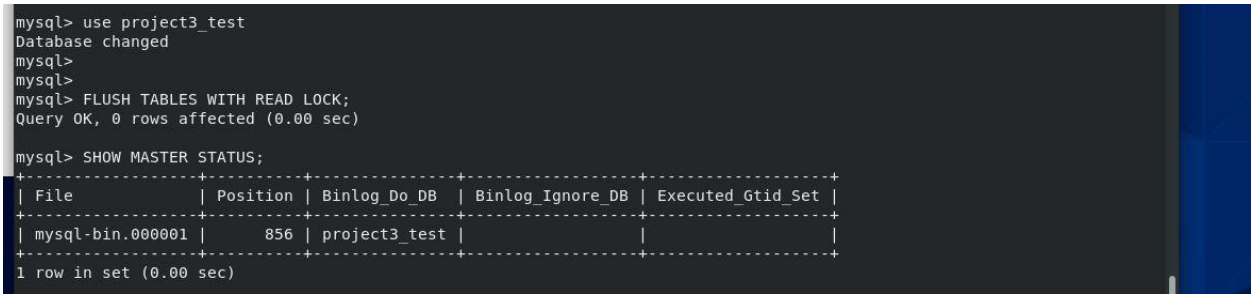


5) Dump the project3_test database

- mysql > USE replication_test;
- FLUSH TABLES WITH READ LOCK;

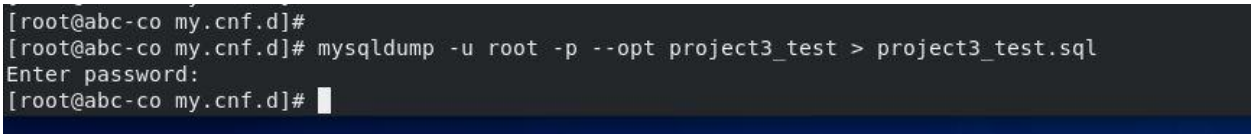
If you successful, you have issue this command and get the output like this picture below:

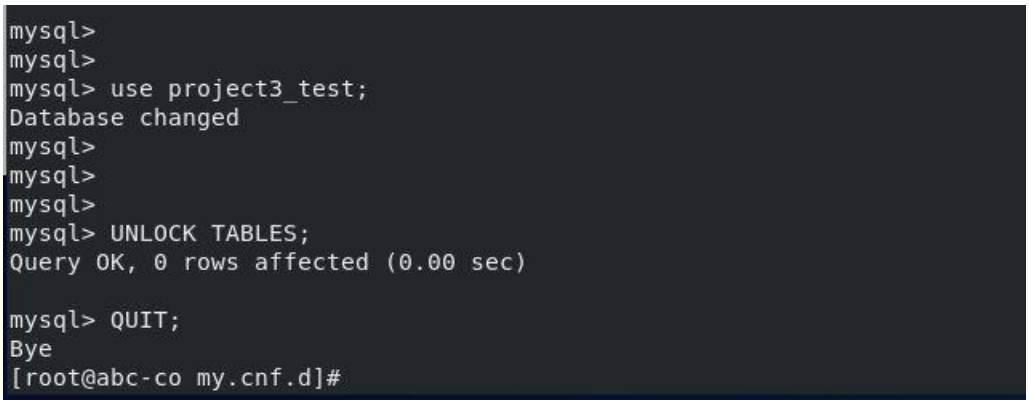
- SHOW MASTER STATUS;



6) Using these command below to execute mysqldump

- mysqldump -u root -p --opt project3_test > project3_test.sql
- UNLOCK TABLES;
- QUIT;





7) Copy the content of project3_test.sql on ABC Co to the BigGuy Corp. You can copy manually or using SCP command to transfer the file.

Configure BigGuy Corp Slave Server for Replication

1) Edit the MySQL server configuration file located in C:\ProgramData\MySQL\MySQL Server 8.0\my.ini

Open this file by using notepad and append/change these lines below into the [mysqld] section:

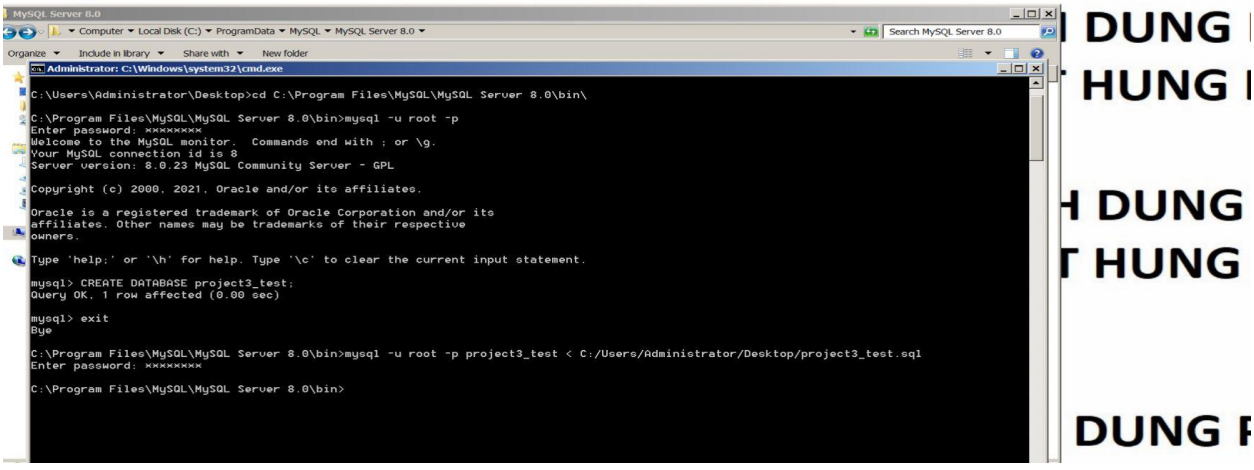
- bind-address= bigguy corp. ip address
- server-id=1
- log-bin="mysql-bin"
- binlog_do_db=project3_test

2) Create a folder called “Data” in C:\Program Files\MySQL\MySQL Server 8.0\

- Open cmd.exe
- cd C:\Program Files\MySQL\MySQL Server 8.0\bin\
- mysqld --initialize –console

3) Import the replication_test.sql into BigGuy Corp’s version of MySQL…

- Open cmd.exe
- cd C:\Program Files\MySQL\MySQL Server 8.0\bin\
- mysql -u root -p
- CREATE DATABASE project3_test;
- mysql -u root -p project3_test < C:/Users/Administrator/Desktop/project3_test.sql



4) Setup the slave server on the Windows Machine

Enter the following commands after opening MySQL CLI and login by root account

- CHANGE MASTER TO
- MASTER_HOST='IP address of ABC Co',
- MASTER_PORT=3306,
- MASTER_USER= 'project3',
- MASTER_PASSWORD='P@ssW0rd',
- MASTER_LOG_FILE= '**mysql-bin.00000*X'***,
- MASTER_LOG_POS=***XXX***;

=> XXX and 'mysql-bin.00000*X'* *is in last part step 5*

5) Stop and start the slave service

- mysql> STOP SLAVE;
- mysql> START SLAVE;

```
mysql> CHANGE MASTER TO
    -> MASTER_HOST='192.168.10.4',
    -> MASTER_PORT=3306,
    -> MASTER_USER='project3',
    -> MASTER_PASSWORD='P@ssW0rd',
    -> MASTER_LOG_FILE='mysql-bin.000001',
    -> MASTER_LOG_POS=856;
Query OK, 0 rows affected, 8 warnings (0.02 sec)

mysql>
mysql>
mysql>   STOP SLAVE;
Query OK, 0 rows affected, 2 warnings (0.00 sec)

mysql> START SLAVE;
Query OK, 0 rows affected, 1 warning (0.00 sec)
```

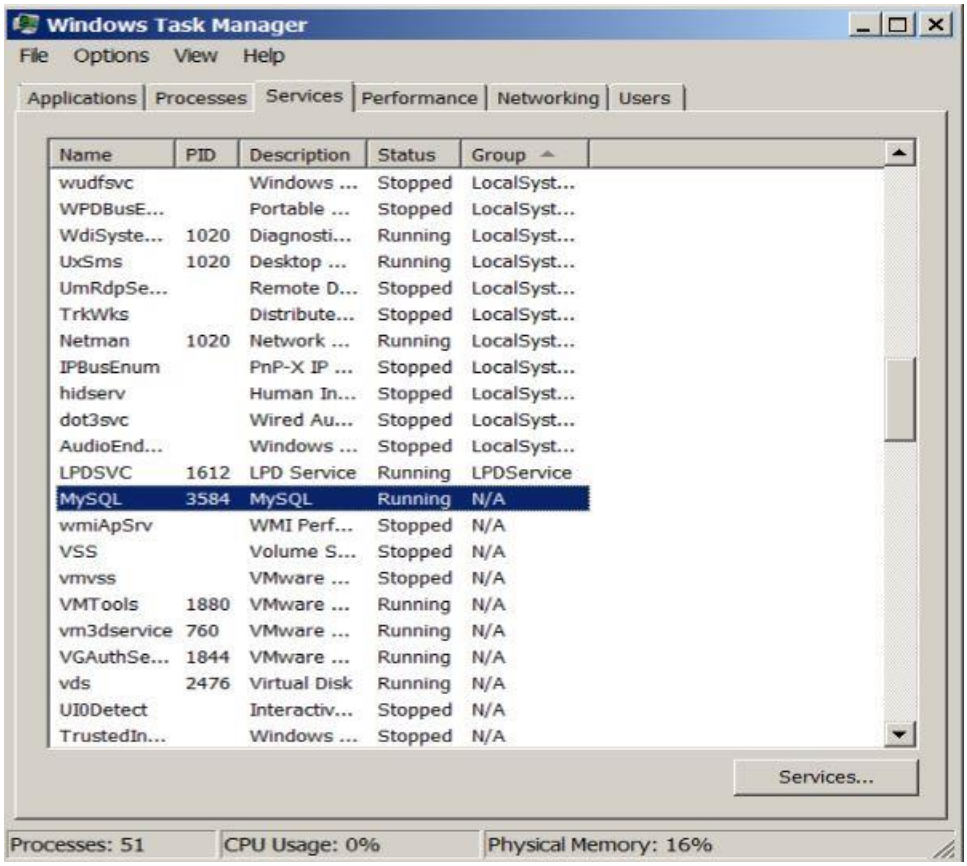
6) Manually restart the MySQL server:

- Open cmd.exe
- cd C:\Program Files\MySQL\MySQL Server 8.0\bin\
- To stop the server using the command below:
- mysqladmin.exe -u root shutdown -p
- To start the server…
- mysqld

```
C:\Program Files\MySQL\MySQL Server 8.0\bin>mysqladmin.exe -u root shutdown -p
Enter password: ********

C:\Program Files\MySQL\MySQL Server 8.0\bin>
```

7) Debugging error:

- Before we move to next step, open Task Manager -> Services. Find MySQL service and start MySQL services



- If you have issues, try running the **mysqld --initialize --console** command in bash. The command will run without [ERROR] message

- If you get ERROR, you might have to delete all of the content in C:\Program Files\MySQL\MySQL Server 8.0\Data, Then run the **mysqld --initialize --console** command again

- Verify the slave status with no errors on Big Guy Corp by using this command

mysql> SHOW SLAVE STATUS;

Test the replication process

1) Test the replication process by checking the previous created database was transferred on the slave server

On the ABC Co machine, log into root for MySQL

- mysql -u root -p

2) Select the project3_test database and create a new table inside it

USE replication_test;

- CREATE TABLE test(name varchar(30));

3) Verify the table was replicated on the BigGuy Corp machine

- CREATE database project3_test;
- USE project3_test;
- SHOW TABLES;

4) Exporting DBs on ABC Co...

- mysqldump -u root -p --all-databases --master-data > /root/dbdump.db

5) Importing database on BigGuy Corp from ABC Co

- mysql -u root -p < /root/dbdump.db

CREATE WEB PAGE TO ADD DATABASE

1) On ABC Co. machine, install Apache and PHP

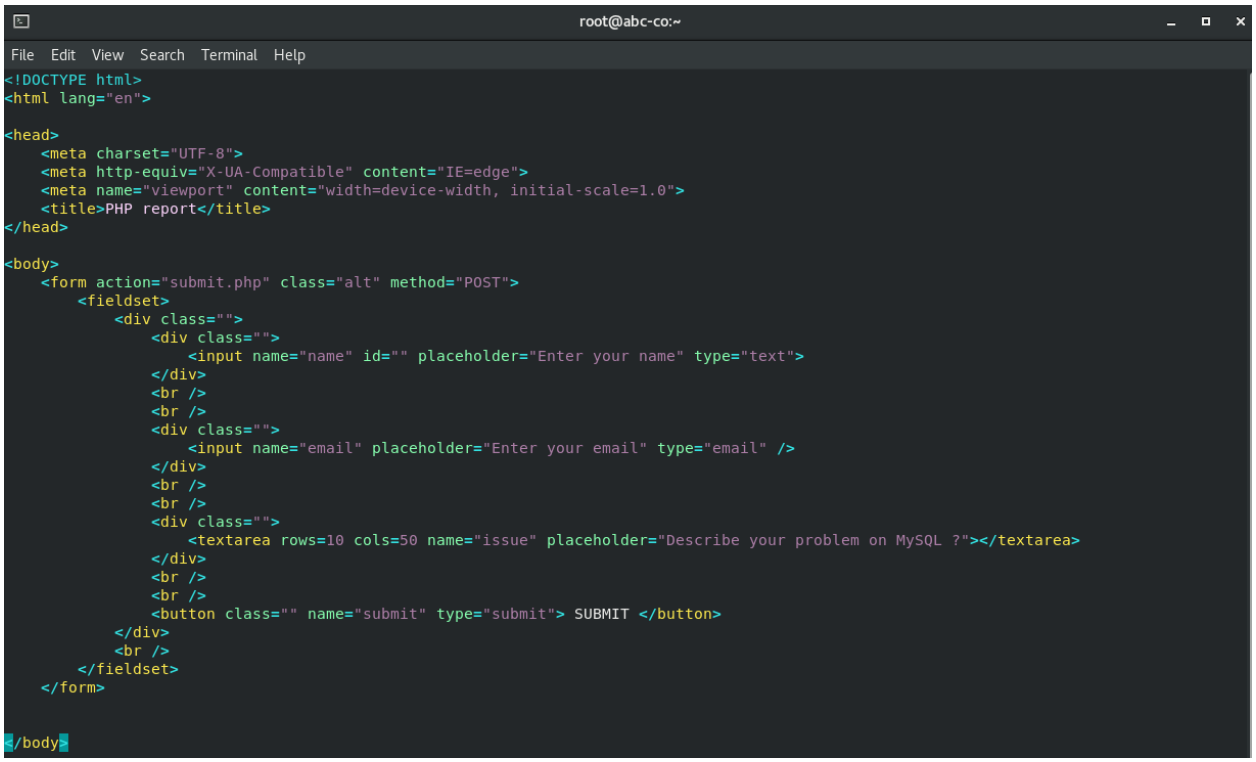
- yum install -y httpd
- yum install -y php php-mysqlnd

- Enable and start the httpd service

- systemctl enable httpd
- systemctl start httpd

2) Switch over and create an html file in the document root…

- cd /var/www/html
- vim index.html
- Fill the file contents with the HTML script like the picture below:



3) Create a table in the project3_test database to store user input from the web page

4) Login as root to your MySQL server...

- mysql -u root -p
- USE project3_test;
- CREATE table test3(id int NOT NULL AUTO_INCREMENT, name varchar(255), email varchar(255), issue text, PRIMARY KEY (id));

- DESCRIBE test;

```
mysql> DESC test3;
+-------+--------------+------+-----+---------+----------------+
| Field | Type         | Null | Key | Default | Extra          |
+-------+--------------+------+-----+---------+----------------+
| id    | int          | NO   | PRI | NULL    | auto_increment |
| name  | varchar(255) | YES  |     | NULL    |                |
| email | varchar(255) | YES  |     | NULL    |                |
| issue | text         | YES  |     | NULL    |                |
+-------+--------------+------+-----+---------+----------------+
4 rows in set (0.00 sec)
```

5) Create the PHP form that will handle and importing data from HTML form
   - Create a new form in the document root
   - vim /var/www/html/submit.php
   - Fill the file contents of submit.php like the picture below:

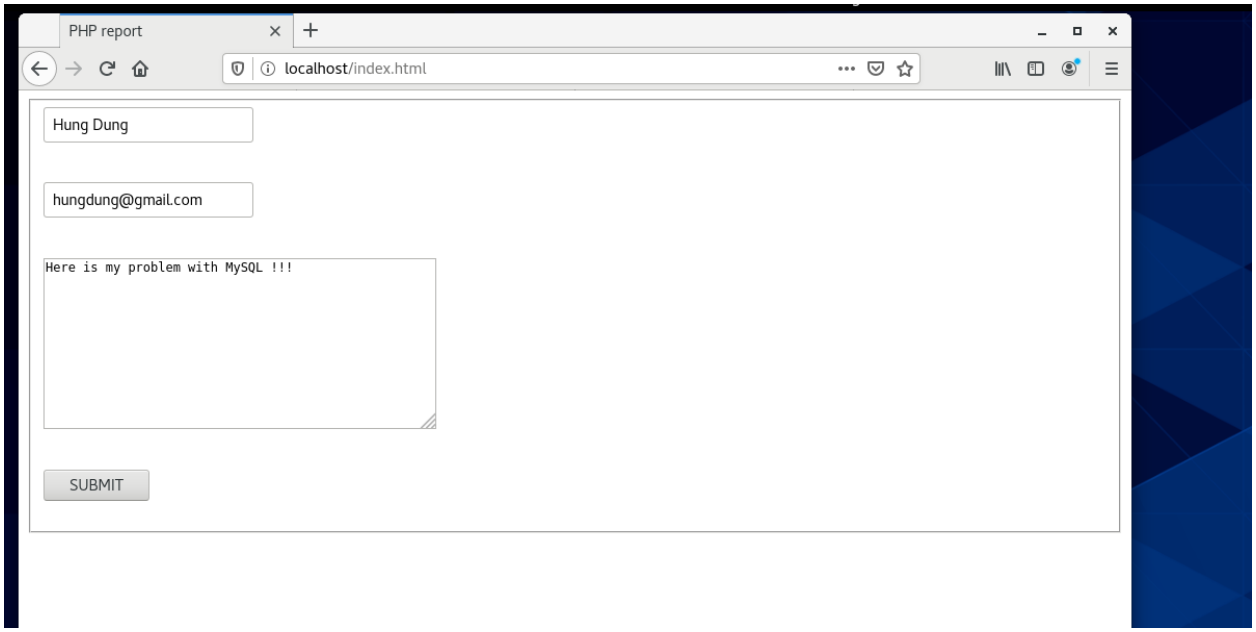
root@abc-co:~

File Edit View Search Terminal Help

```php
<?php
$host = "localhost";
$db_name = "project3_test";
$username = "root";
$password = "P@ssW0rd";
$connection = null;
try{
$connection = new PDO("mysql:host=" . $host . ";dbname=" . $db_name, $username, $password);
$connection->exec("set names utf8");
}catch(PDOException $exception){
echo "Connection error: " . $exception->getMessage();
}

function saveData($name, $email, $issue){
global $connection;
$query = "INSERT INTO test3(name, email, issue) VALUES( :name, :email, :issue)";

$callToDb = $connection->prepare( $query );
$name=htmlspecialchars(strip_tags($name));
$email=htmlspecialchars(strip_tags($email));
$issue=htmlspecialchars(strip_tags($issue));
$callToDb->bindParam(":name",$name);
$callToDb->bindParam(":email",$email);
$callToDb->bindParam(":issue",$issue);

if($callToDb->execute()){
return '<h3>Issue collected !!!</h3>';
}
}

if( isset($_POST['submit'])){
$name = htmlentities($_POST['name']);
$email = htmlentities($_POST['email']);
$issue = htmlentities($_POST['issue']);

$result = saveData($name, $email, $issue);
echo $result;
}
else{
echo '<h3>Check webpage form submit if error !!!</h3>';
}
```

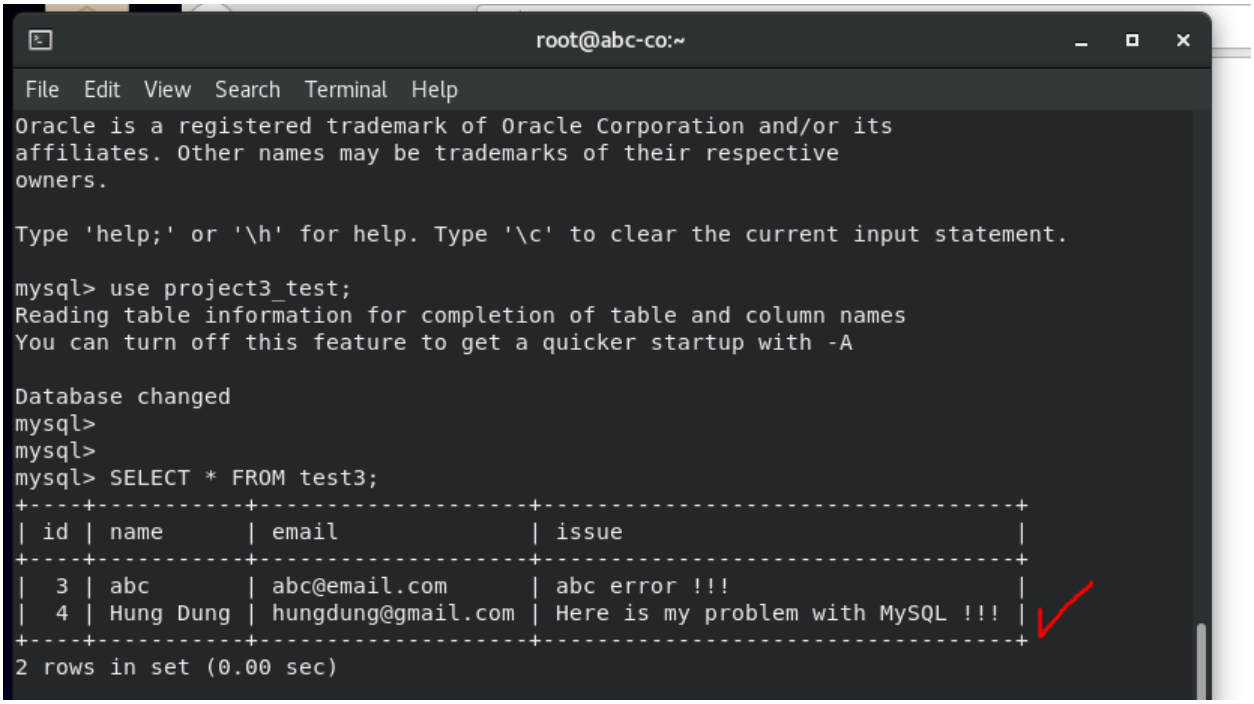
6) Test your webpage works and imports data successfully to the database

- Open Mozilla Firefox
- Navigate to localhost:80/index.html
- Fill out the form and submit



7) Verify the data was successfully imported into test3 table.

- mysql -u root -p
- USE project3_test;
- SELECT * FROM test3;



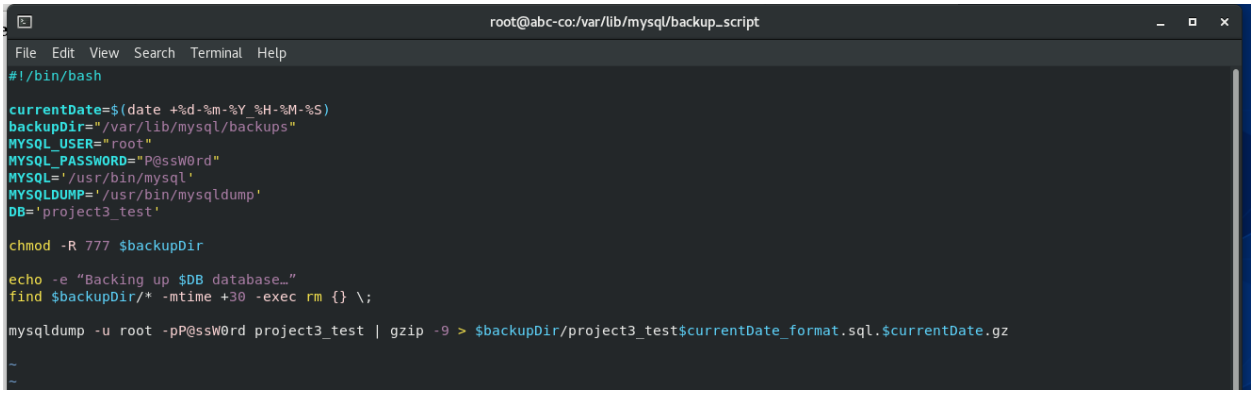
Create a Database Backup System Crontab Bash on ABC Co

8) Create the following directorys located at /var/lib/mysql

- mkdir /var/lib/mysql/backups
- mkdir /var/lib/mysql/backup_script

9) Create a simple backup script:

- vim /var/lib/mysql/backup_script/sql_script.sh

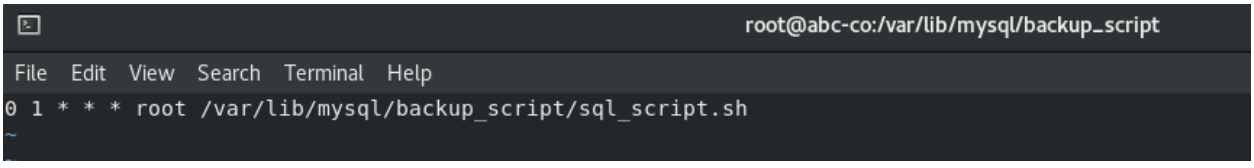


- Assign the script proper permissions:

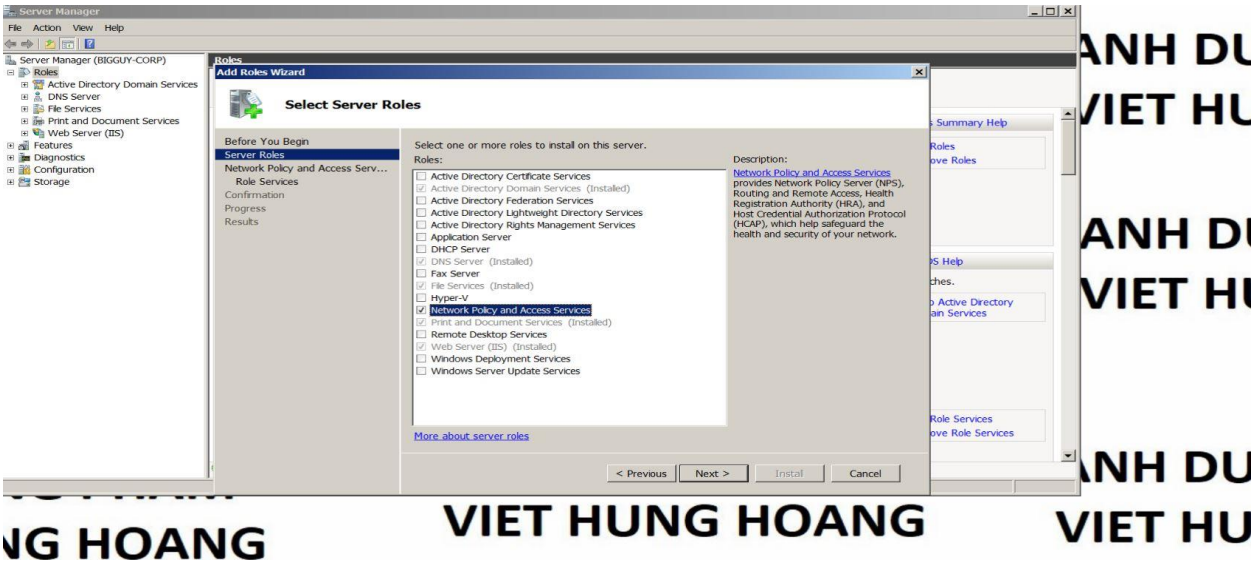
- chmod +x /var/lib/mysql/backup_script/sql_script.sh

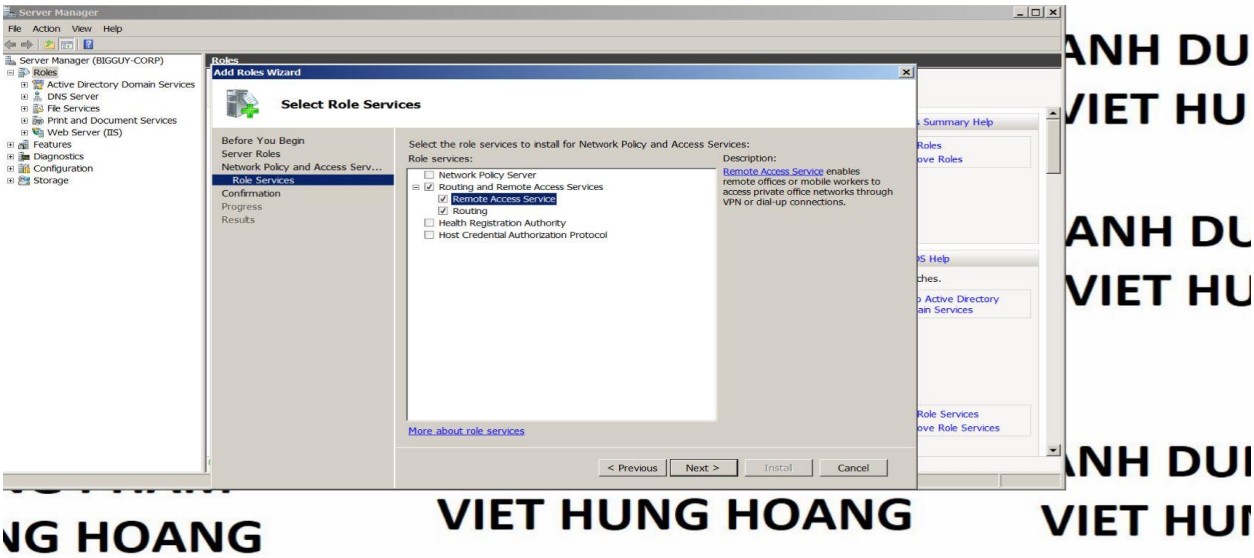
10) Create a crontab entry that will run the daily backup

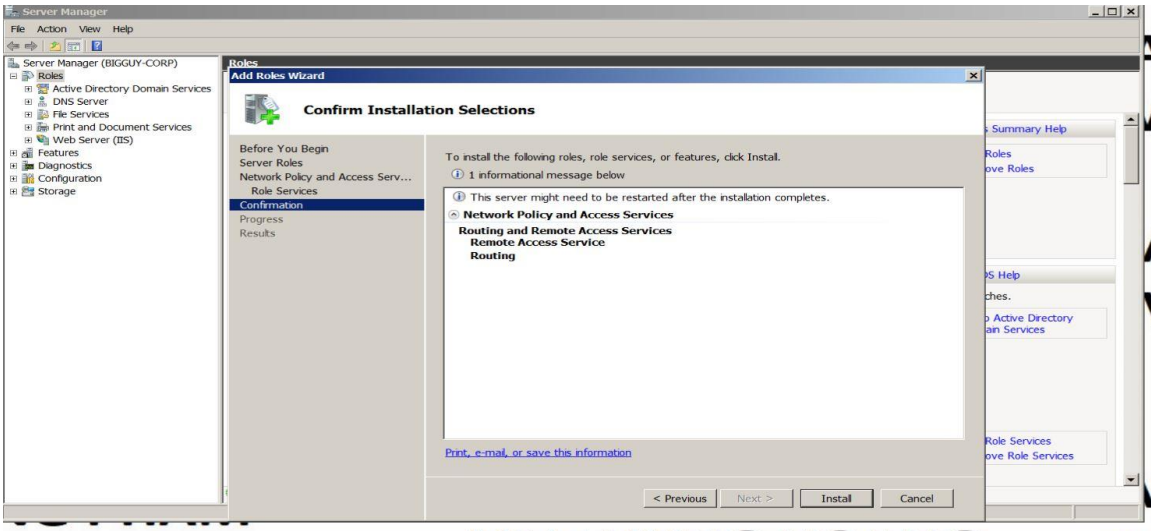
- crontab -e
- 0 1 * * * root /var/lib/mysql/backup_script/sql_script.sh
- systemctl restart crond

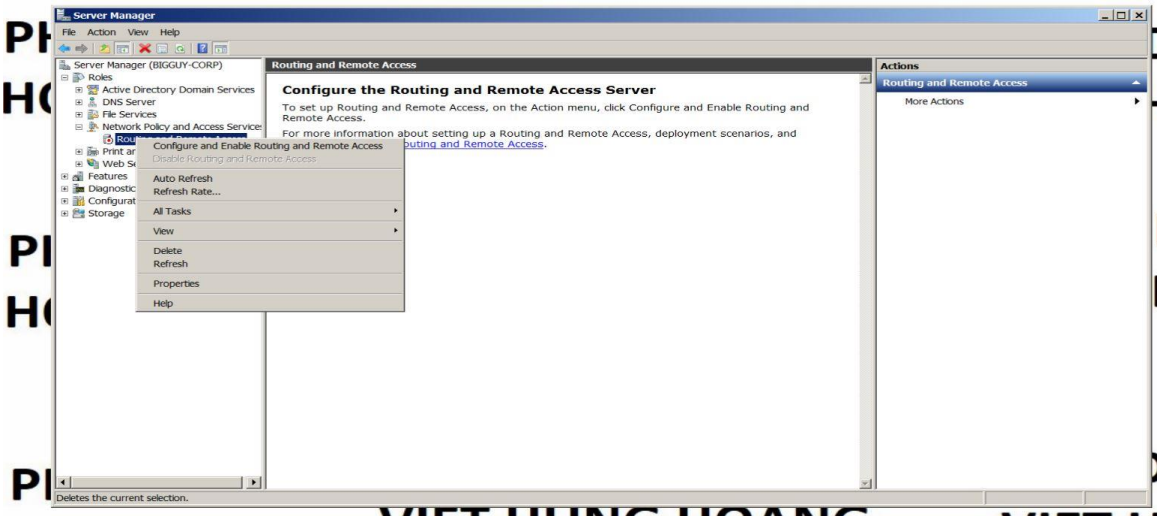


Configure VPN IPsec/L2TP






Server Manager
File Action View Help
Server Manager (BIGGUY-CORP)
Roles
Active Directory Domain Services
DNS Server
File Services
Print and Document Services
Web Server (IIS)
Features
Diagnostics
Configuration
Storage
Roles
Add Roles Wizard
Confirm Installation Selections
Before You Begin
Server Roles
Network Policy and Access Serv...
Role Services
Confirmation
Progress
Results
To install the following roles, role services, or features, click Install.
1 informational message below
This server might need to be restarted after the installation completes.
Network Policy and Access Services
Routing and Remote Access Services
Remote Access Service
Routing
Print, e-mail, or save this information
< Previous
Next >
Install
Cancel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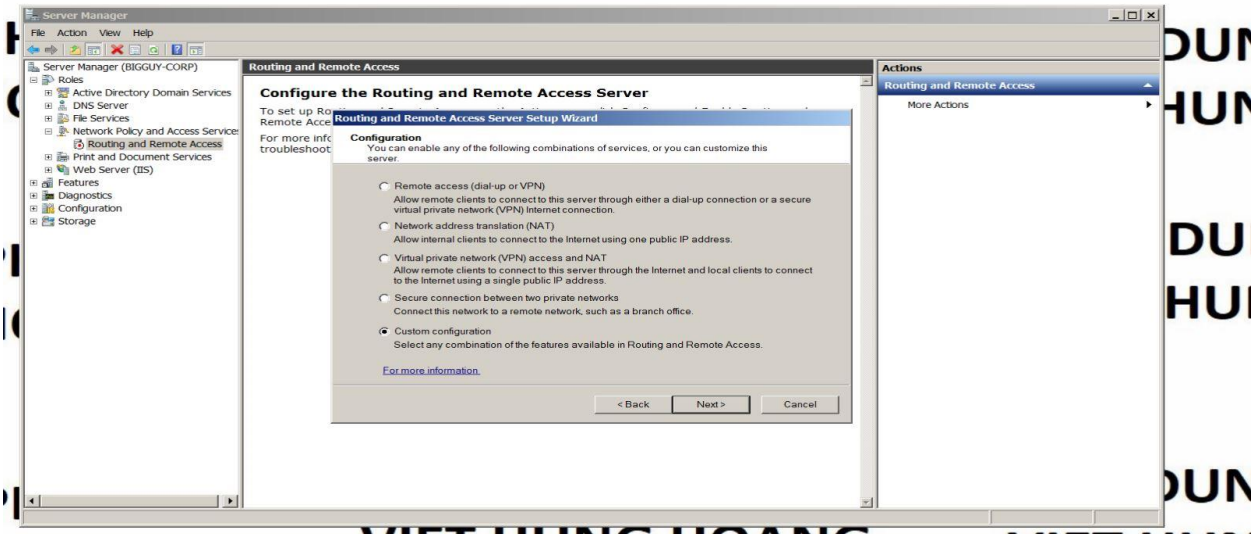
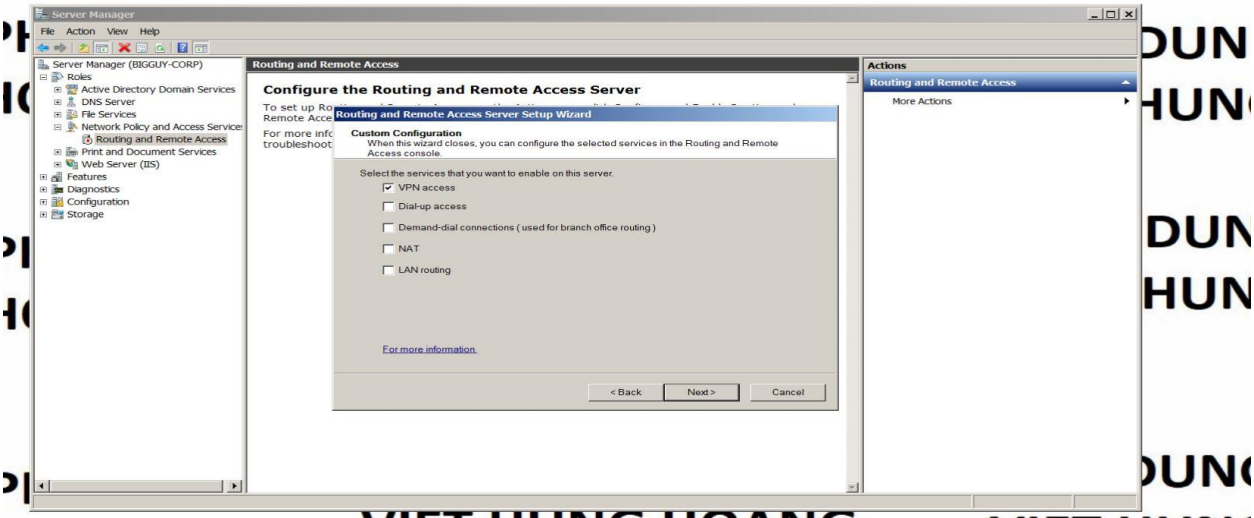
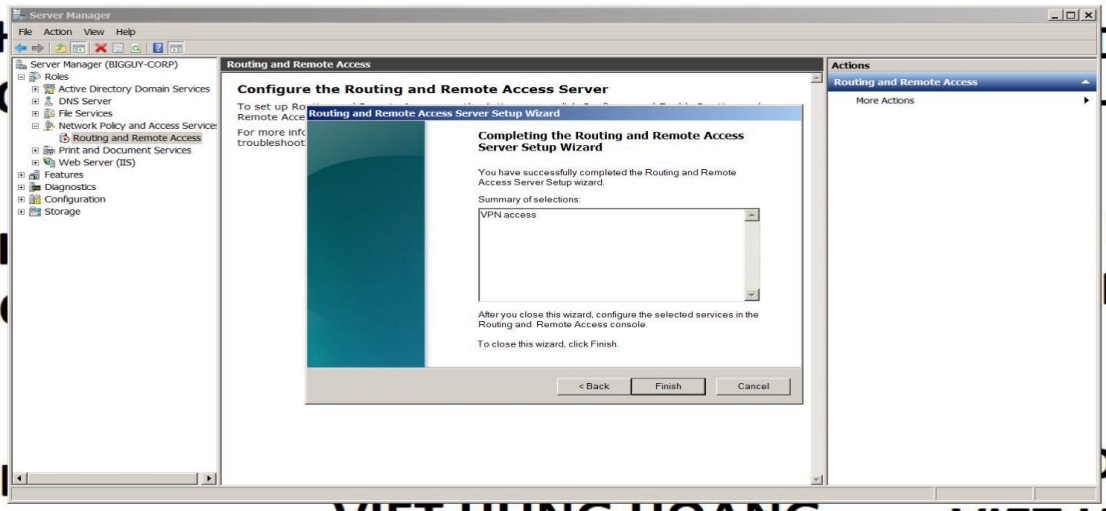
Routing and Remote Access
Configure the Routing and Remote Access Server
To set up Routing and Remote Access, on the Action menu, click Configure and Enable Routing and Remote Access.
For more information about setting up a Routing and Remote Access, deployment scenarios, and
Configure and Enable Routing and Remote Access
Disable Routing and Remote Access
Auto Refresh
Refresh Rate...
All Tasks
View
Delete
Refresh
Properties
Help
Actions
Routing and Remote Access
More Actions
Deletes the current selection.



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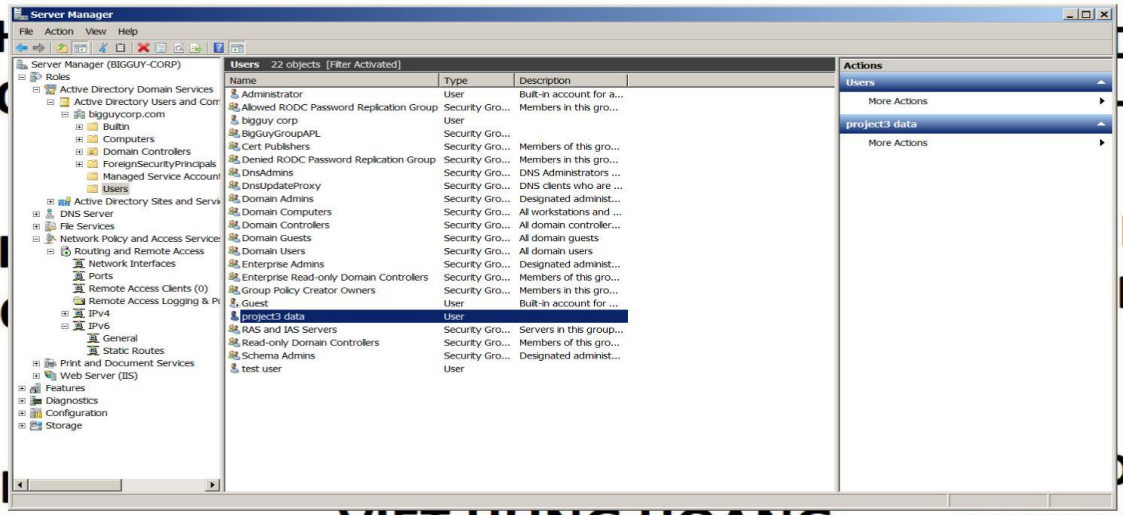
Routing and Remote Access
Configure the Routing and Remote Access Server
Routing and Remote Access Server Setup Wizard
Completing the Routing and Remote Access Server Setup Wizard
You have successfully completed the Routing and Remote Access Server Setup wizard.
Summary of selections:
VPN access
After you close this wizard, configure the selected services in the Routing and Remote Access console.
To close this wizard, click Finish.
< Back
Finish
Cancel
Actions
Routing and Remote Access
More Actions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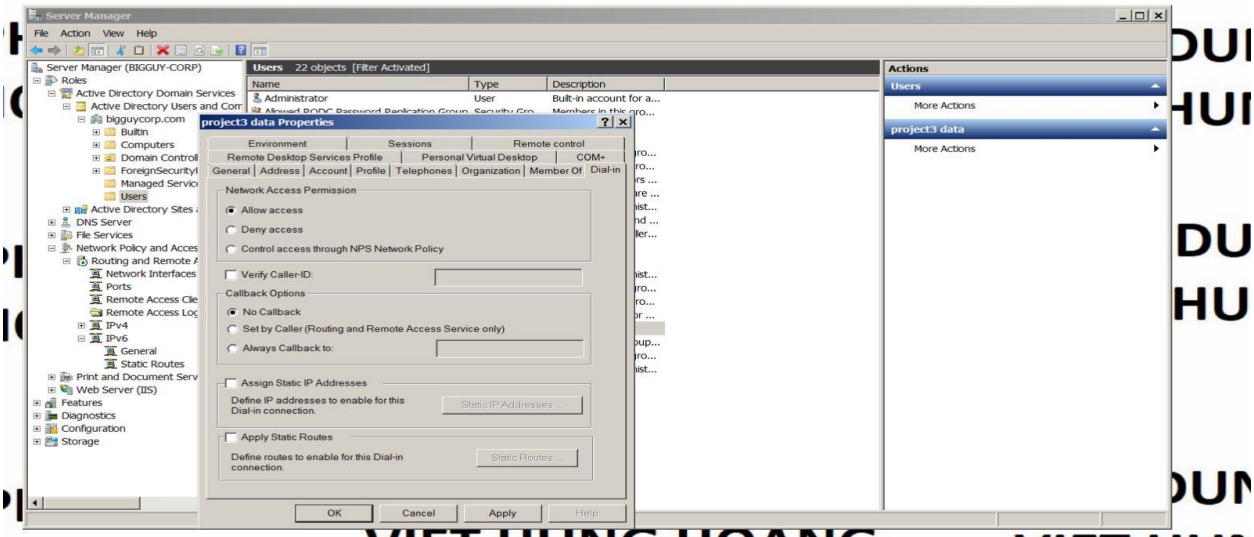
Active Directory Users and Com
bigguycorp.com
Builtin
Computers
Domain Controllers
ForeignSecurityPrincipals
Managed Service Account
Users
Active Directory Sites and Servi
DNS Server
File Services
Network Policy and Access Service
Routing and Remote Access
Network Interfaces
Ports
Remote Access Clients (0)
Remote Access Logging & P
IPv4
IPv6
General
Static Routes
Print and Document Services
Web Server (IIS)
Features
Diagnostics
Configuration
Storage
Users 22 objects [Filter Activated]
Name
Type
Description
Administrator User Built-in account for a...
Allowed RODC Password Replication Group Security Gro... Members in this gro...
bigguy corp User
BigGuyGroupAPL Security Gro...
Cert Publishers Security Gro... Members of this gro...
Denied RODC Password Replication Group Security Gro... Members in this gro...
DnsAdmins Security Gro... DNS Administrators ...
DnsUpdateProxy Security Gro... DNS clients who are ...
Domain Admins Security Gro... Designated administ...
Domain Computers Security Gro... All workstations and ...
Domain Controllers Security Gro... All domain controller...
Domain Guests Security Gro... All domain guests
Domain Users Security Gro... All domain users
Enterprise Admins Security Gro... Designated administ...
Enterprise Read-only Domain Controllers Security Gro... Members of this gro...
Group Policy Creator Owners Security Gro... Members in this gro...
Guest User Built-in account for ...
project3 data User
RAS and IAS Servers Security Gro... Servers in this group...
Read-only Domain Controllers Security Gro... Members of this gro...
Schema Admins Security Gro... Designated administ...
test user User
Actions
Users
More Actions
project3 data
More Actions



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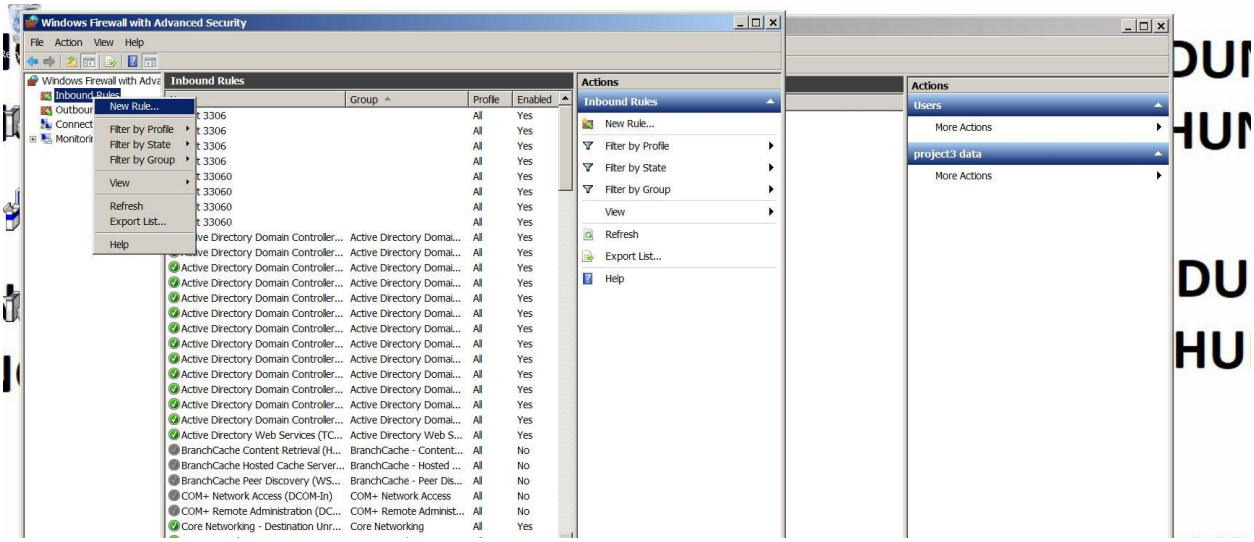
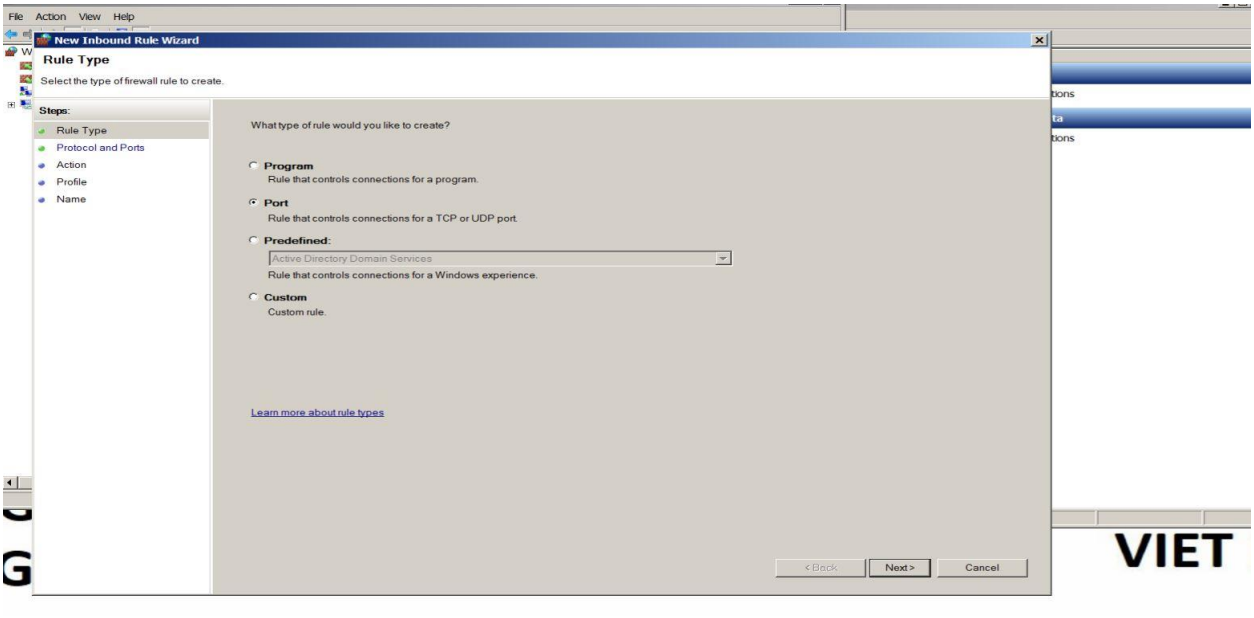
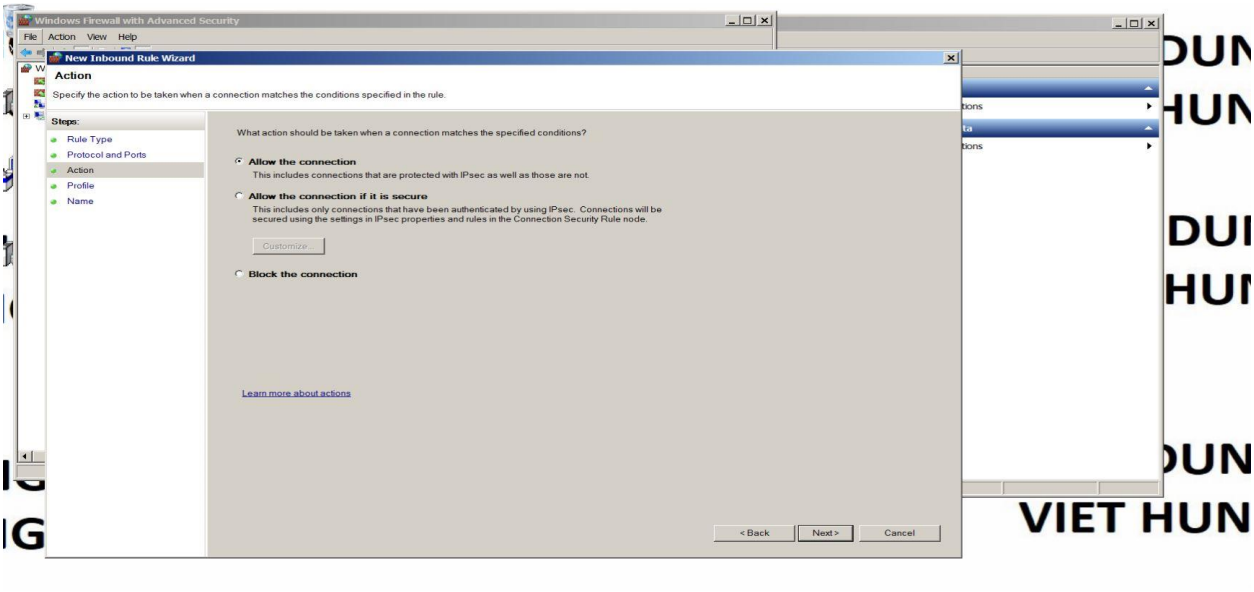
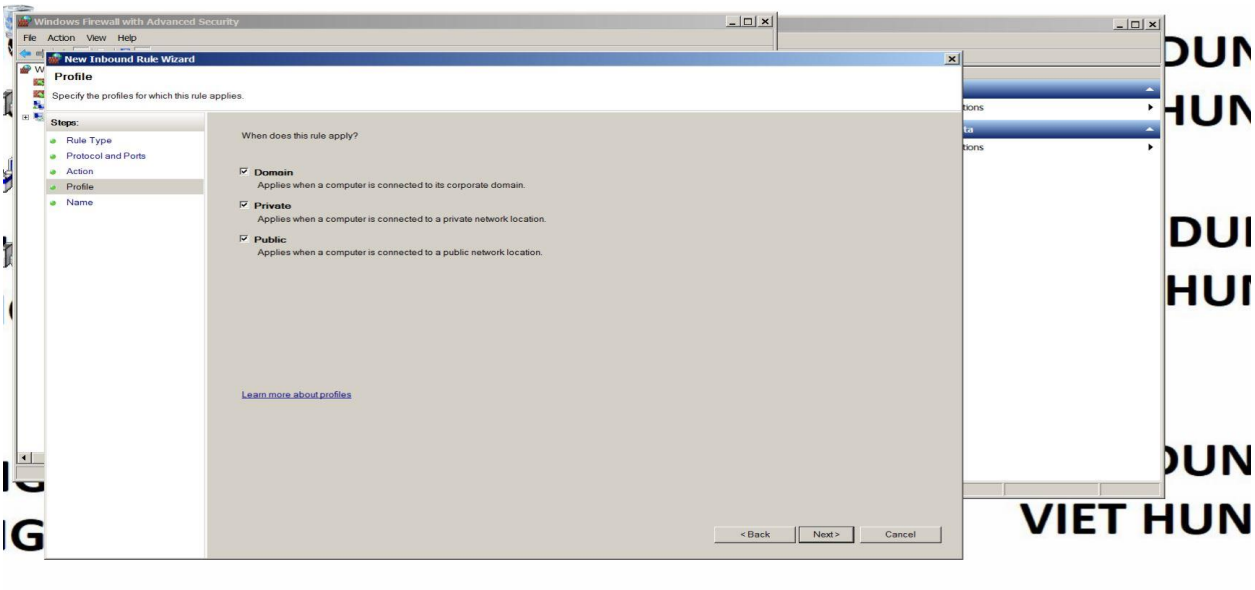
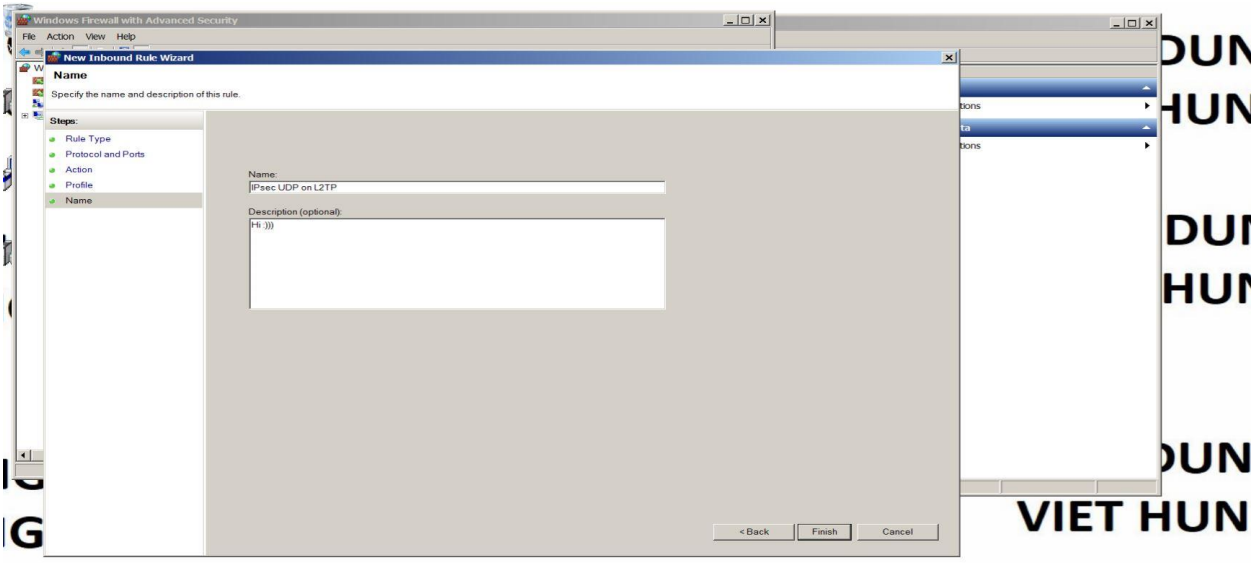


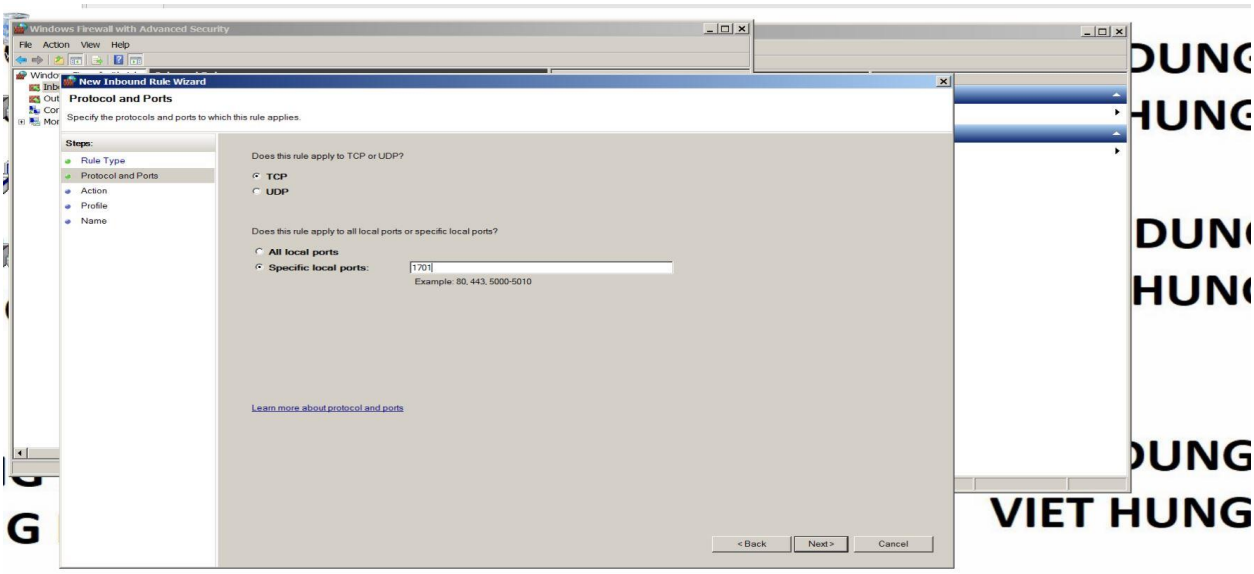

File Action View Help
New Inbound Rule Wizard
Rule Type
Select the type of firewall rule to create.
Steps:
Rule Type
Protocol and Ports
Action
Profile
Name
What type of rule would you like to create?
Program
Rule that controls connections for a program.
Port
Rule that controls connections for a TCP or UDP port.
Predefined:
Active Directory Domain Services
Rule that controls connections for a Windows experience.
Custom
Custom rule.
Learn more about rule types
< Back
Next >
Cancel

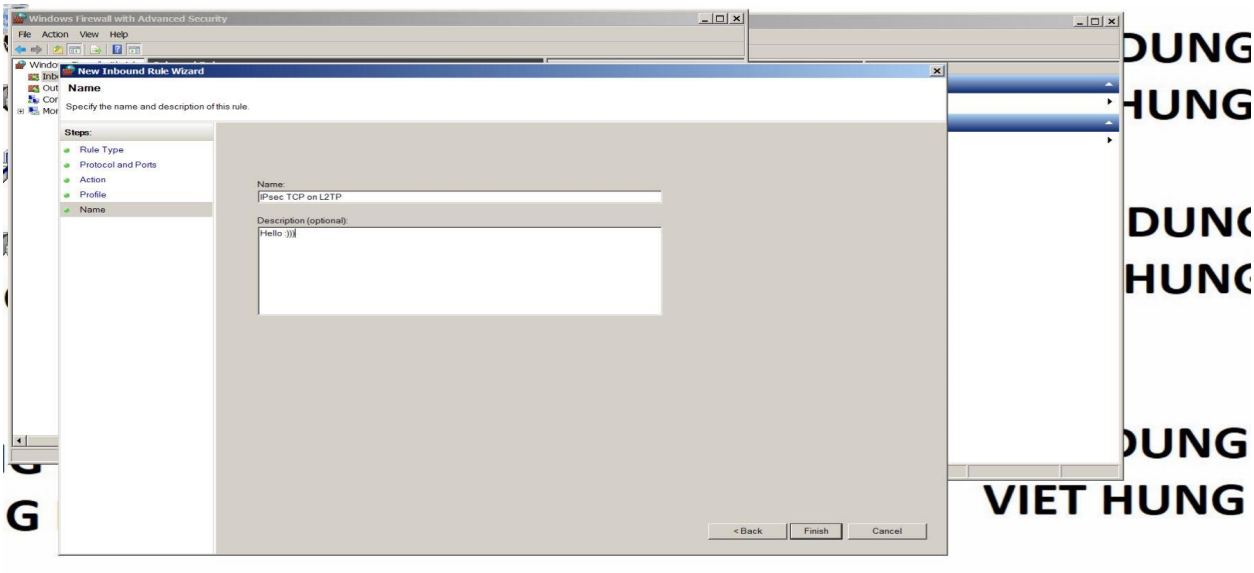

Windows Firewall with Advanced Security
File Action View Help
New Inbound Rule Wizard
Action
Specify the action to be taken when a connection matches the conditions specified in the rule.
Steps:
Rule Type
Protocol and Ports
Action
Profile
Name
What action should be taken when a connection matches the specified conditions?
Allow the connection
This includes connections that are protected with IPsec as well as those are not.
Allow the connection if it is secure
This includes only connections that have been authenticated by using IPsec. Connections will be secured using the settings in IPsec properties and rules in the Connection Security Rule node.
Customize...
Block the connection
Learn more about actions
< Back
Next >
Cancel

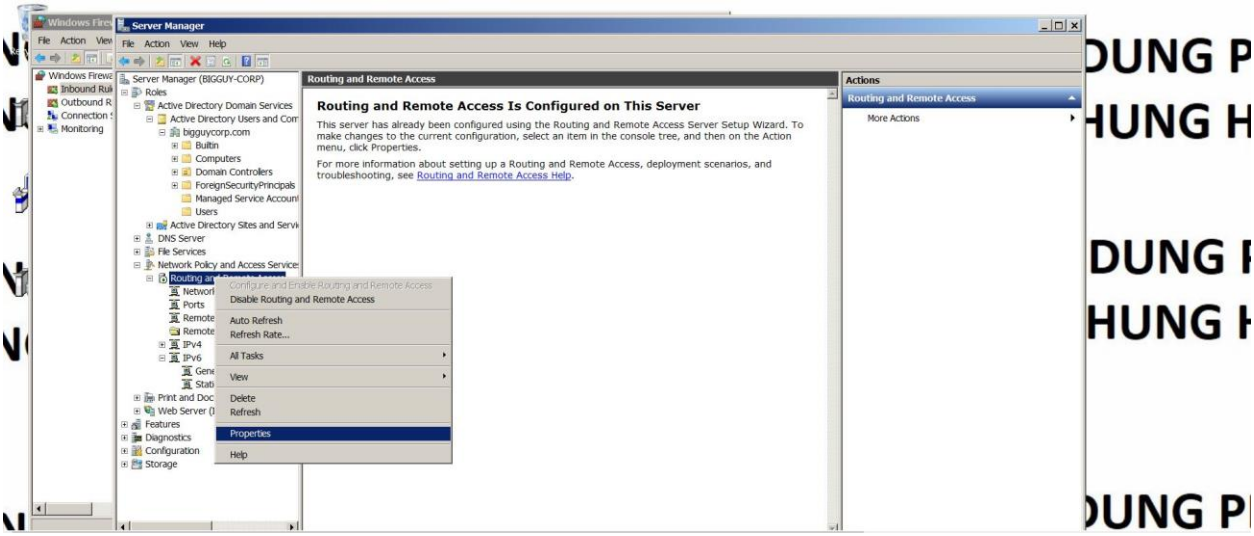




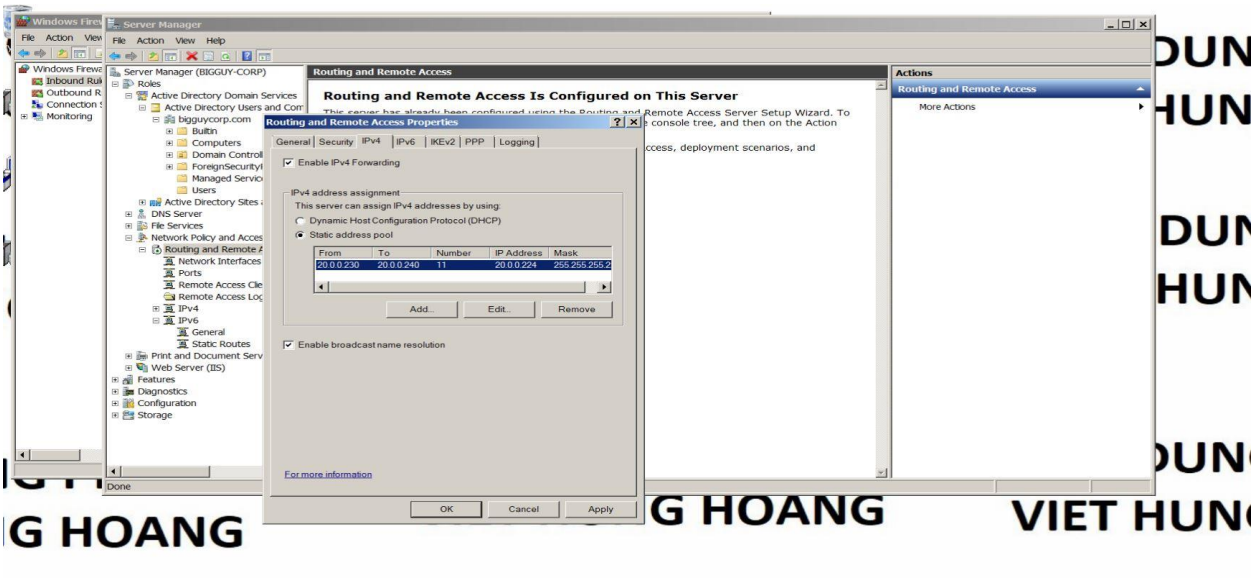
REPEAT THE SIMILAR STEP TO ADD TCP L2TP


Windows Firewall with Advanced Security
File Action View Help
New Inbound Rule Wizard
Protocol and Ports
Specify the protocols and ports to which this rule applies.
Steps:
Rule Type
Protocol and Ports
Action
Profile
Name
Does this rule apply to TCP or UDP?
TCP
UDP
Does this rule apply to all local ports or specific local ports?
All local ports
Specific local ports:
1701
Example: 80, 443, 5000-5010
Learn more about protocol and ports
< Back
Next >
Cancel
VIET HUNG


Windows Firewall with Advanced Security
File Action View Help
New Inbound Rule Wizard
Name
Specify the name and description of this rule.
Steps:
Rule Type
Protocol and Ports
Action
Profile
Name
Name:
IPsec TCP on L2TP
Description (optional):
Hello :)))
< Back
Finish
Cancel
VIET HUNG


Server Manager
File Action View Help
Server Manager (BIGGUY-CORP)
Roles
Active Directory Domain Services
bigguycorp.com
Builtin
Computers
Domain Controllers
ForeignSecurityPrincipals
Managed Service Account
Users
DNS Server
File Services
Network Policy and Access Services
Routing and Remote Access
Routing and Remote Access Is Configured on This Server
This server has already been configured using the Routing and Remote Access Server Setup Wizard. To make changes to the current configuration, select an item in the console tree, and then on the Action menu, click Properties.
For more information about setting up a Routing and Remote Access, deployment scenarios, and troubleshooting, see Routing and Remote Access Help.
Actions
Routing and Remote Access
More Actions
Configure and Enable Routing and Remote Access
Disable Routing and Remote Access
Auto Refresh
Refresh Rate...
All Tasks
View
Delete
Refresh
Properties
Help
Print and Doc
Web Server (I
Features
Diagnostics
Configuration
Storage


Server Manager
Routing and Remote Access
Routing and Remote Access Is Configured on This Server
Actions
Routing and Remote Access
More Actions
Routing and Remote Access Properties
General | Security | IPv4 | IPv6 | IKEv2 | PPP | Logging
Enable IPv4 Forwarding
IPv4 address assignment
This server can assign IPv4 addresses by using:
Dynamic Host Configuration Protocol (DHCP)
New IPv4 Address Range
Type a starting IP address and either an ending IP address or the number of addresses in the range.
Start IP address: 20 . 0 . 0 . 230
End IP address: 20 . 0 . 0 . 240
Number of addresses: 11
OK
Cancel
For more information
OK
Cancel
Apply
Network Interfaces
Ports
Remote Access Clie
Remote Access Log
IPv4
IPv6
General
Static Routes
Web Server (IIS)
Done


Server Manager
File Action View Help
Server Manager (BIGGUY-CORP)
Roles
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Remote Access Cle
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Web Server (IIS)
Features
Diagnostics
Configuration
Storage
Routing and Remote Access
Routing and Remote Access Is Configured on This Server
Actions
Routing and Remote Access
More Actions
Routing and Remote Access Properties
General Security IPv4 IPv6 IKEv2 PPP Logging
Enable IPv4 Forwarding
IPv4 address assignment
This server can assign IPv4 addresses by using:
Dynamic Host Configuration Protocol (DHCP)
Static address pool
From To Number IP Address Mask
20.0.0.230 20.0.0.240 11 20.0.0.224 255.255.255.2
Add... Edit... Remove
Enable broadcast name resolution
For more information
OK Cancel Apply
Done