

PCS-2

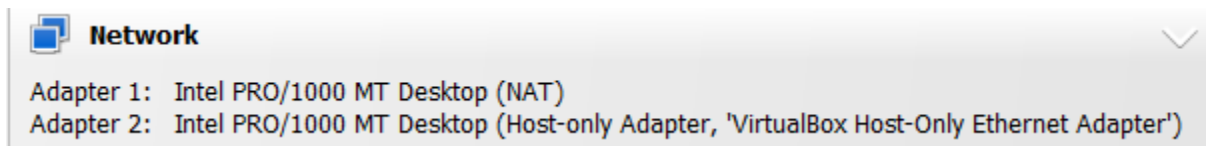
Lab Assignment

Nakkina Vinay
B21AI023

Youtube Link : https://youtu.be/xOI_YGoUSMg

First Virtual Machine (VM_B21AI023_1)

- Installed Apache web server
- Installed PHP and extension of php with mysql for storing the input values in the Mysql database
- Network classification of this VM is

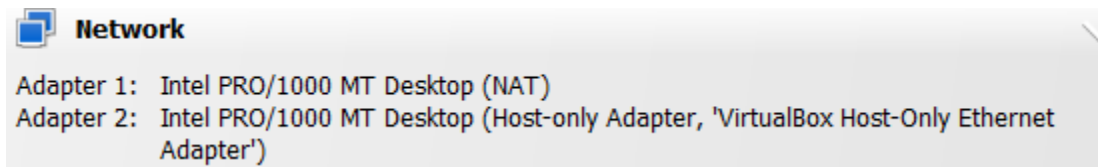


- IP Address of this VM is **192.168.56.102**

```
vinay-1@vinay1:~$ ip addr show
1: lo: <LOOPBACK,UP,LOWER_UP> mtu 65536 qdisc noqueue state UNKNOWN group default qlen 1000
    link/loopback 00:00:00:00:00:00 brd 00:00:00:00:00:00
    inet 127.0.0.1/8 scope host lo
        valid_lft forever preferred_lft forever
    inet6 ::1/128 scope host
        valid_lft forever preferred_lft forever
2: enp0s3: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc fq_codel state UP group default qlen 1000
    link/ether 08:00:27:0e:9b:36 brd ff:ff:ff:ff:ff:ff
    inet 10.0.2.15/24 brd 10.0.2.255 scope global dynamic noprefixroute enp0s3
        valid_lft 86371sec preferred_lft 86371sec
    inet6 fe80::21ac:cdd8:d79e:d280/64 scope link noprefixroute
        valid_lft forever preferred_lft forever
3: enp0s8: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc fq_codel state UP group default qlen 1000
    link/ether 08:00:27:89:09:ff brd ff:ff:ff:ff:ff:ff
    inet 192.168.56.102/24 brd 192.168.56.255 scope global dynamic noprefixroute enp0s8
        valid_lft 572sec preferred_lft 572sec
    inet6 fe80::cdde:ca78:4adc:5b0/64 scope link noprefixroute
        valid_lft forever preferred_lft forever
vinay-1@vinay1:~$
```

Second Virtual Machine (VM_B21AI023_2)

- Installed Mysql database
- In the root user of Mysql created a database named '**mysql**'
- In the mysql database created a table named '**user**' which consists of
 - Automatic increment integer
 - Name - VARCHAR
 - Email - VARCHAR
- Network classification of this VM is

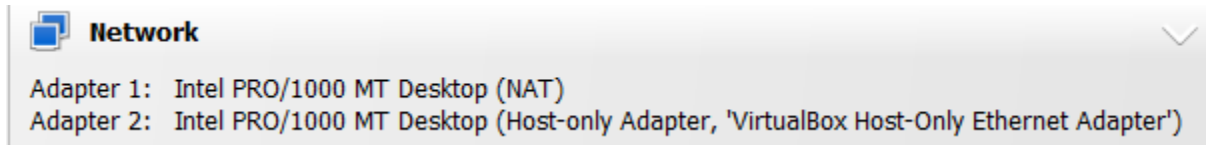


- IP address of this VM is **192.168.56.103**

```
vinay-2@vinay2:~$ ip addr show
1: lo: <LOOPBACK,UP,LOWER_UP> mtu 65536 qdisc noqueue state UNKNOWN group default qlen 1000
    link/loopback 00:00:00:00:00:00 brd 00:00:00:00:00:00
    inet 127.0.0.1/8 scope host lo
        valid_lft forever preferred_lft forever
    inet6 ::1/128 scope host
        valid_lft forever preferred_lft forever
2: enp0s3: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc fq_codel state UP group default qlen 1000
    link/ether 08:00:27:a6:9c:36 brd ff:ff:ff:ff:ff:ff
    inet 10.0.2.15/24 brd 10.0.2.255 scope global dynamic noprefixroute enp0s3
        valid_lft 86379sec preferred_lft 86379sec
    inet6 fe80::715a:5b3:ccb9:a97f/64 scope link noprefixroute
        valid_lft forever preferred_lft forever
3: enp0s8: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc fq_codel state UP group default qlen 1000
    link/ether 08:00:27:7e:23:c7 brd ff:ff:ff:ff:ff:ff
    inet 192.168.56.103/24 brd 192.168.56.255 scope global dynamic noprefixroute enp0s8
        valid_lft 580sec preferred_lft 580sec
    inet6 fe80::55b4:374b:2b7f:fde0/64 scope link noprefixroute
        valid_lft forever preferred_lft forever
vinay-2@vinay2:~$
```

Third Virtual Machine (VM_B21AI023_3)

- Network classification of this VM is



- IP address of this VM is **192.168.56.105**

```
vinay-3@VM-B21AI023-3:~$ ip addr show
1: lo: <LOOPBACK,UP,LOWER_UP> mtu 65536 qdisc noqueue state UNKNOWN group default qlen 1000
    link/loopback 00:00:00:00:00:00 brd 00:00:00:00:00:00
    inet 127.0.0.1/8 scope host lo
        valid_lft forever preferred_lft forever
    inet6 ::1/128 scope host
        valid_lft forever preferred_lft forever
2: enp0s3: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc fq_codel state UP group default qlen 1000
    link/ether 08:00:27:20:12:0f brd ff:ff:ff:ff:ff:ff
    inet 10.0.2.15/24 brd 10.0.2.255 scope global dynamic noprefixroute enp0s3
        valid_lft 86377sec preferred_lft 86377sec
    inet6 fe80::8298:8664:3b53:ad33/64 scope link noprefixroute
        valid_lft forever preferred_lft forever
3: enp0s8: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc fq_codel state UP group default qlen 1000
    link/ether 08:00:27:be:97:c8 brd ff:ff:ff:ff:ff:ff
    inet 192.168.56.105/24 brd 192.168.56.255 scope global dynamic noprefixroute enp0s8
        valid_lft 578sec preferred_lft 578sec
    inet6 fe80::7c21:8e80:58da:c9c2/64 scope link noprefixroute
        valid_lft forever preferred_lft forever
vinay-3@VM-B21AI023-3:~$
```

After creation of all VMs and installation is done in VM-1

- I created a folder named 'myapp' in in Apache2 web root directory which is **/var/www/html**
- In that folder I created a php file and wrote the code for taking the input from the user using a form
- After writing the code for html we need to keep two attributes in form element
 - Method attribute which is post
 - Action attribute indicating the php file where we wrote the code for connecting the form with mysql database

```
<h1>My App</h1>
<form method="post" action="process.php">
    <label for="name">Name:</label>
    <input type="text" name="name" id="name" required>
```

- With the help of php we will be storing the input values from the form to the mysql database table.

```
// Create connection
$conn = new mysqli($servername, $username, $password, $dbname);

// Check connection
if ($conn->connect_error) {
    die("Connection failed: " . $conn->connect_error);
}

// Insert data into database
$name = $_POST['name'];
$email = $_POST['email'];
$sql = "INSERT INTO user (name, email) VALUES ('$name', '$email')";

if ($conn->query($sql) === TRUE) {
    echo "Data inserted successfully!";
} else {
    echo "Error: " . $sql . "<br>" . $conn->error;
```

- After clicking on the submit button, there appears 'Data inserted successfully' on the page
- I created another html form element for searching the value in the mysql database for which the method attribute will be 'post' and the action attribute will be the php file code for searching the input element in the mysql database.

```
<form method="post" action="search.php">
    <label for="search">Search:</label>
    <input type="text" id="search" name="search">
```

- The code for searching the input elements in mysql database is

```
// Create connection
$conn = new mysqli($servername, $username, $password, $dbname);

// Check connection
if ($conn->connect_error) {
    die("Connection failed: " . $conn->connect_error);
}

// Select data from database
$sql = "SELECT * FROM user";
$result = $conn->query($sql);

// Display data
if ($result->num_rows > 0) {
    echo "<table><tr><th>ID</th><th>Name</th><th>Email</th></tr>";
    while($row = $result->fetch_assoc()) {
        echo "<tr><td>".$row["id"]."</td><td>".$row["name"]."</td><td>".
        $row["email"]."</td></tr>";
    }
    echo "</table>";
} else {
    echo "No data found!";
}
```

Accessing Web Application from VM-3

- Open the browser in VM-3
- After opening the browser type the IP address of the VM in which the php files are present
- Open the path of the files
- Form appears for inputting the values
- After inputting the values we will click on submit button
- Data inserted successfully message appears
- If we want to see the database table values in web browser, I wrote the code for this in a file by opening the path of this file we can see the database table values which are stored
- If we want to search for any value in a database, by entering the input value and clicking on the submit button we can see if it is present in the database or not

Accessing Web Application from Host Application

- The same process which we followed for VM-3, that only we will follow for Host application

All the procedure explained is present in the above attached youtube video.

Index.php -> It contains the html form code

Process.php -> It contains the code for storing the input values in the database

Search.php -> It contains the code for searching the input value in the database

Show.php -> It contains the code for showing the database values in web browser