

COMS/SE 319: Software Construction and User Interface

Spring 2019

LAB Activity 5 – Setting up Web Server & MySQL on VM

Contents

- Login/ssh to 319 server
- Start http service
- Host an HTML file to server (using terminal and FileZilla)

Task 1: Web Server Setup

Connecting to 319 Server

- We will connect to the server using ssh (Secure Shell is a cryptographic network protocol for operating network services)
- Use the command in terminal (mac and linux). If you are using Windows use GIT Bash terminal.
- Command: `ssh netid@cs319-###.misc.iastate.edu`
- E.g., `ssh abc@cs319-###.misc.iastate.edu`
- password will be the net-id password

Note: you can find your VM No. (###) inside the provided Spring19_319 Students-VMs List

Apache http server

- Start the http service by following command
`$ sudo service httpd start`
- You can check that the service is running by:
`$ sudo service httpd status`
- If you want you can stop the service by:
`$ sudo service httpd stop`
- The configuration file for the http server is httpd.conf. All the configurations like port number, Document Root and Access Controls will be in this file.
- Apache Httpd Config directory: `/etc/httpd/conf`

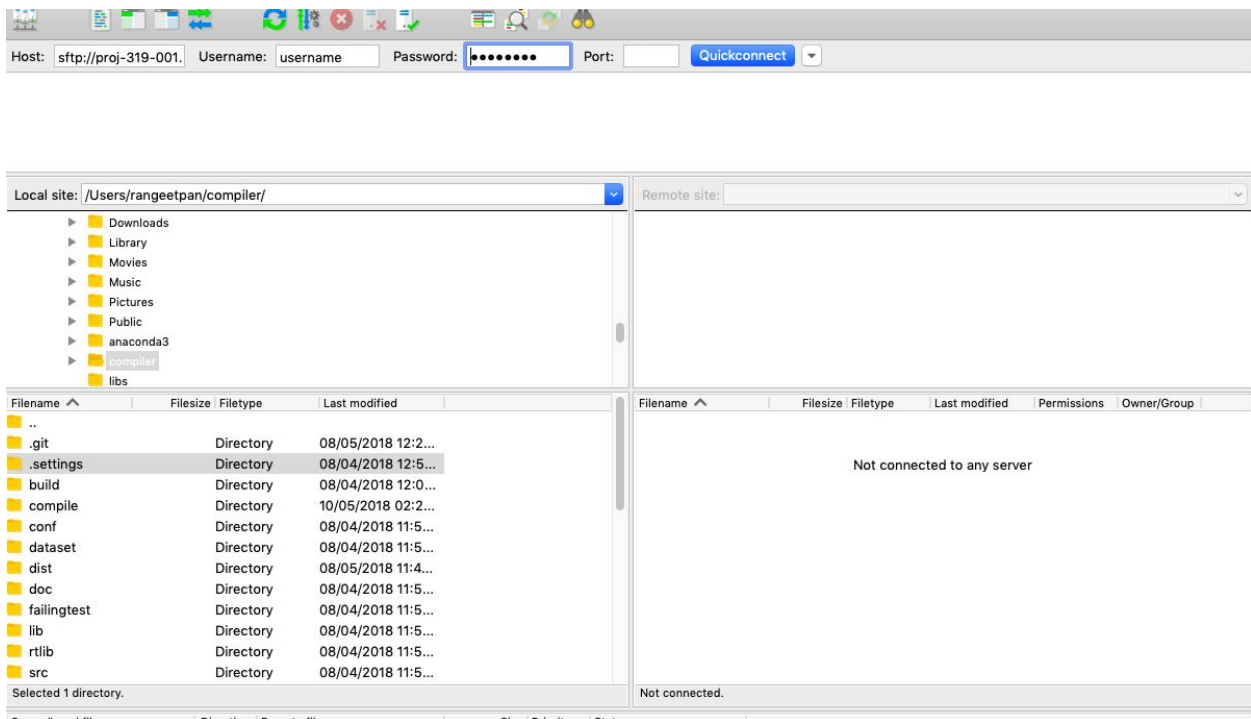
Create a Webpage

- Create a demo webpage and save it as index.html

```
index.html Welcome Guide
1  <!doctype html>
2  <html>
3
4  <head>
5  <title>Test Page</title>
6  </head>
7  <body>
8    <h1>Lab Activity 07</h1>
9    <h3> Website under construction </h3>
10 </body>
11 </html>
```

Transfer Webpage

- You can use Filezilla, FTP/SFTP file transfer GUI tool to copy your webpage to the server.
- Host: sftp://server-address
- Username: Net ID
- Password: Net ID-password
- Port is not needed
- Drag and drop the index.html from your local machine to the “/var/www/html” directory of the server (You can copy “/var/www/html” and paste it in Remote site path).



Navigate to the Address

- Type the address (http://server-address) in browser and navigate to the webpage.



Opening Apache port

- If the above method does not work, you might need to open the server port. Use the following two commands for opening the port.
- Port 80 is open to be accessible from web browser. You can do that by:

```
$ sudo firewall-cmd --add-port 80/tcp --permanent
```
- You need to reload the setting by using:

```
$ sudo firewall-cmd --reload
```

Setting up MySQL on VM

Contents

- How to create SSH into your VM?
- How to initiate SQL instance?
- How to create new database?
- How to create new users for any host?
- How to grant permissions for an user?
- How to log into the sql instance using the new user.

SSH into your VM

- The host name for your VM is provided. you can find your VM No. (###) inside the provided list
- Open terminal.
- Command `ssh netid@cs319-###.misc.iastate.edu`
- Eg. `ssh netid@cs319-001.misc.iastate.edu`
- And enter your NetId Password.

```
rangeetpan — rangeet@proj-319-001:~ — ssh rangeet@proj-319-001.misc.iastate.edu
Last login: Fri Oct 5 13:49:40 on ttys000
[rangeets-air:~ rangeetpan$ ssh rangeet@proj-319-001.misc.iastate.edu ]
[rangeet@proj-319-001.misc.iastate.edu's password: ]
Last login: Thu Oct 11 15:08:08 2018 from rangeets-air.student.iastate.edu

NOTE:
  These systems are designed to automatically update and restart on Monday
  mornings between 1:00 am and 6:00 am.

A few useful commands:

  isu_enable_gui    - Switches the VM to start and run in GUI mode.
  isu_disable_gui   - Switches the VM to start and run in CLI mode (default).

  isu_mount_risa    - Mounts the Research IT Software Archive (https://researchi
t.las.iastate.edu/available-software).
  isu_mount_myfiles - Mounts my.files.iastate.edu for copying data in and out of
the system.
  (Note: The isu_mount_* commands are not persistent. Whenever the VM is rebo
oted, the command must be run again.)
  (Note: For modules to work please first run isu_mount_risa)
[rangeet@proj-319-001 ~]$
```

Accessing MySQL on VMs

(If Apache server is running, stop it using “\$ sudo service httpd stop” command before accessing Mysql server.)

MySQL is already installed on the VMs.

- Just create an instance of Database.
- Also create tables if you want. (It's a better practice to create table using the server script)
e.g. Use Hibernate or PHP to create tables.
- Commands **mysql -uroot -p**
- Password is: **Abundant space 421 points!**
- Note : This is the password for your VMs DB for COMS 319 Fall2018.

Accessing MySQL on VMs

```
rangeetpan — rangeet@proj-319-001:~ — ssh rangeet@proj-319-001.misc.ias...
(Note: For modules to work please first run isu_mount_risa)
[[rangeet@proj-319-001 ~]$ mysql -uroot -p
[Enter password:
ERROR 1045 (28000): Access denied for user 'root'@'localhost' (using password: YES)
[[rangeet@proj-319-001 ~]$ mysql -uroot -p
[Enter password:
ERROR 1045 (28000): Access denied for user 'root'@'localhost' (using password: YES)
[[rangeet@proj-319-001 ~]$ mysql -uroot -p
[Enter password:
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 32
Server version: 8.0.12 MySQL Community Server - GPL

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owners.

Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.

mysql>
```

Useful DB Commands

- **Show Databases;** (This will show the list of DBs available and granted for that user. Note: There will be already some default DBs created by Mysql. Please create new one for your project.)
- **Create DATABASE Db-name;** (This will create a database with the given name.)
- **Use db-name;** (This will switch the database to the given Db-name. And you can start accessing the Tables under that db-name database.)

Create Database:

- A database can be thought of as a collection of related tables.
- One can create many databases in the SQL instance.
- Create a Database using the command **CREATE DATABASE your-dbname;**
- e.g. **CREATE DATABASE MyProject;**

```
rangeetpan — rangeet@proj-319-001:~ — ssh rangeet@proj-319-001.misc.ias...
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owners.

Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.

[mysql> CREATE DATABASE TEST
-> ;
Query OK, 1 row affected (0.24 sec)

[mysql> show Databases
-> ;
+-----+
| Database |
+-----+
| TEST     |
| information_schema |
| mysql    |
| performance_schema |
| sys      |
| test     |
+-----+
6 rows in set (0.01 sec)

mysql> █
```

Create user for your DataBase

You can create ONE USER per team for your group project.

- The Passwords must have “a-z,A-z,0-9” and some special characters.
- e.g. Password: Group_1projectuser.
- Command: **CREATE USER team1'@'%' IDENTIFIED BY 'Yourpasswordhere ';**
- Use ‘%’ to connect from any host. (RECOMMENDED).
- e.g. **CREATE USER 'team1'@'%' IDENTIFIED BY 'group_1projectuser';**
- Note :You should inform your other members of the group “the user credentials to access your DB while doing the group project.

Create user for your DataBase:

```
[mysql> show databases;
+-----+
| Database |
+-----+
| information_schema |
| myProject         |
| mysql             |
| performance_schema |
| sys               |
+-----+
5 rows in set (0.00 sec)

[mysql> CREATE USER 'team1'@'%' IDENTIFIED BY 'Helloworld1_';
Query OK, 0 rows affected (0.58 sec)

mysql> █
```

Grant Permissions to the user

Make sure you Give all the permissions that you need.

- **GRANT SELECT,INSERT,UPDATE,DELETE,CREATE,DROP ON MyProject.* TO 'team1'@'%';**
- Please Refer to “<https://dev.mysql.com/doc/mysql-securityexcerpt/5.7/en/adding-users.html>” on setting the Grants.

```
[mysql> GRANT SELECT,INSERT,UPDATE,DELETE,CREATE,DROP ON myProject.* TO 'team1'@'%';  
Query OK, 0 rows affected (0.20 sec)
```

```
mysql> █
```

Now Access Mysql using the new User from any host.

Login to MySQL instance using the new user.

- Use “**show databases;**” To see the list of databases.
- You can only see the databases linked to this user.
- “**use DB-Name;**” allows you to select your database.
- You can use terminal/Command Prompt to test your queries by following these steps.
- You can also use MySql workBench to test your queries

```
[Enter password:  
Welcome to the MySQL monitor.  Commands end with ; or \g.  
Your MySQL connection id is 28  
Server version: 8.0.12 MySQL Community Server - GPL  
  
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affiliates. Other names may be trademarks of their respective  
owners.  
  
Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.  
mysql> show databases;  
+-----+  
| Database |  
+-----+  
| information_schema |  
| myProject |  
+-----+  
2 rows in set (0.00 sec)  
  
mysql> use myProject;  
Database changed  
mysql> █
```

To Access your Mysql instance using MySQL Workbench

For encryption purpose, please alter the User that you created.

- Login into MySQL on your VM using the root user.
(Please refer to page 4 “Accessing MySQL on VM”)
- ALTER USER 'your_user'@'localhost' IDENTIFIED WITH mysql_native_password BY 'your_password';
- e.g. **ALTER USER 'team1'@'%' IDENTIFIED WITH mysql_native_password BY 'Helloworld1_';**

```
[mysql> ALTER USER 'team1'@'%' IDENTIFIED WITH mysql_native_password BY 'Hellowor]
ld1_';
Query OK, 0 rows affected (0.53 sec)

mysql> █
```

References

- <https://dev.mysql.com/doc/refman/8.0/en/creating-database.html>
- <https://dev.mysql.com/doc/mysql-security-excerpt/5.7/en/addingusers.html>

Tutorial Courtesy:

[Sumon Biswas](#)

[Vamsi Krishna Calpakkam](#)
