IT490

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# First step:

## Download and install necessary software:

Install Oracle VM VirtualBox 6.0

Install Ubuntu 16.04 LTS

## After Ubuntu installation

**Open terminal window and type following commands:**

sudo apt-get install git

sudo apt-get install gitk

sudo apt-get install php

sudo apt-get install vim

sudo apt-get install aptitude

## Make directory and download github repository:

mkdir git

cd git

git clone <https://github.com/edortu1/IT490-C.E.N.P/tree/master>

## Time for package management:

sudo aptitude

When it loads press "/"

type "php amqp" and press enter

press "n" until "php amqp" is highlighted (it might be highlighted already)

press "+"

press "g" and then "g" again

when prompted, press "q" and then hit enter to quit aptitude

Sudo apt-get install rabbitmq-server

Make startup servers

You can create a small server using PHP by following this guide: <https://medium.com/@benmorel/creating-a-linux-service-with-systemd-611b5c8b91d6>

# RabbitMQ

Sudo apt-get install sendmail

Sudo rabbitmq-plugins enable rabbitmq\_management

Open firefox, go to localhost:15672

Login with username and password guest

Create a new vhost “testHost”

Add new user “admin” and make password

Give permissions for root “/” and “testHost”

Create another user “test” with pass “test”

Create a new exchange testExchange” for “testHost” settings

Create a new queueu “testQueue” for “testHost” routing key

Click on testQueue, bind with exchange “testExchange”

Sudo apt-get install mysql-server

Sudo apt-get install python3

Sudo apt-get install python3-pip

Sudo pip install pika

Sudo pip install mysql-connector

Install a firewall with UFW between back end and front end

# Web server

Install Apache

Sudo apt update

Sudo apt install apache2

Sudo ufw app list list

Cd /var/www/html

# Database

Sudo apt-get install mysql-server

Create root password

Login with the command “sudo mysql –u root p”

Type in commands:

CREATE USER ‘admin’@’localhost’ IDENTIFIED BY ‘pass’;

GRANT ALL PRIVILEGES on \*.\* TO ‘admin’@’localhost’ WITH GRANT OPTION;

FLUSH PRIVILEGES;

## Install php for mysql next:

Sudo apt-get install php-mysql

Database replication can be created by following the link bellow

<https://www.cloudjojo.com/how-to-setup-mysql-replication-on-ubuntu-16-04-master-slave/>

# Firewall

## Setting Up Default Policies

sudo ufw default deny incoming

sudo ufw default allow outgoing

## Allowing SSH

sudo ufw allow ssh

sudo ufw allow 22

## Enabling UFW

sudo ufw enable

**The firewall is now active, to see the rules:**

sudo ufw status verbose

## Allowing Other Connections

sudo ufw allow http

sudo ufw allow https

sudo ufw allow ftp

# DMZ

Sudo apt-get install python3

Sudo apt-get install python3-pip

Sudo pip install pika

Sudo pip install mysql-connector

# Deployment

Follow General VM instructions

Copy deployServer.service to /lib/systemd/system/ and enable and start deployServer

Mkdir versions

Create database versiondb;

Insert tables from createTable.txt into versiondb

Insert 0 versions for fe be dmz and deploy into deployTable.

Insert ip addresses for all machines based on sample in createTable.txt

Cd /etc/apache2/mods-available/

Sudo a2enmod

Proxy\_balancer

Proxy\_http

Proxy\_lbmethod\_byrequests

Copy 000-default.conf to /etc/apache2/sites-available

Restart apache