SSN College of Engineering, Kalavakkam
Department of Computer Science and Engineering
CS6712 - Grid & Cloud Computing

Software and Packages Required

Exercise 1 : Web Services using JAX-WS

    1. Net Beans IDE 7.0 or 8.1

Exercise 2: Web Services using Apache Axis

    1. Net Beans IDE 8.1 / eclipse-jee-neon-1-RC3-linux-gtk-x86_64.tar.gz
    2. Apache axis Plugins / package
    3. Tomcat Server
    4. Java Package
    5. WAR.zip file to be downloaded from Internet and place it in below path
/home/Tomcat/webapps

    Create a folder named **websvc** under
/home/.netbeans/8.1/config/preferences/org/netbeans/modules/ directory. Place the file
axis2.properties in websvc

Exercise 3: Creation of Virtual Machine and Running a Java Program in Virtual Machine

    1. Virtual Box
    2. Ubuntu 16.04 Desktop.iso from amd64
    3. Install Netbeans 8.1 inside Virtual Machine

    Network Configuration

    IP Address: 10.6.3. x   // (x is given IP Address)
    Netmask : 255.255.128.0
    Gateway : 10.6.0.1
    DNS Server list: 192.168.1.4

Exercise 4: Remote login to a VM

    1. Virtual Box
    2. Ubuntu 16.04 server .iso for amd64
    3. Install openssh-server

    Network Configuration in   /etc/network/interfaces
        address 10.6.3. x   // (x is given IP Address)
        netmask 255.255.128.0
        gateway 10.6.0.1
        DNS server list 192.168.1.4

    Network Configuration in   /etc/resolv.conf

        nameserver 192.168.1.4

Remote login using SSH command
1. Virtual Box
2. Ubuntu 16.04 Ubuntu Server .iso for amd64
3. Install openshh-server
4. Use ssh command to login remotely with password
5. For remote login without password.
        i. Create ssh keypair.
        ii. Copy id_rsa.pub from VM1 to VM2
        iii. Use ssh command to login remotely

Exercise 5: File Transfer between Virtual Machines using SCP

1. Virtual Box
2. Ubuntu 16.04 server .iso for amd64
3. Install openssh-server

Network Configuration in   /etc/network/interfaces
        address   10.6.3. x   // (x is given IP Address)
        netmask 255.255.128.0
        gateway 10.6.0.1
        DNS server list 192.168.1.4

Network Configuration in   /etc/resolv.conf
        nameserver   192.168.1.4

Exercise 6: Private Cloud Setup using Eucalyptus

1. Virtual Box
2. Ubuntu **10.04 server .iso** for amd64 (Ubuntu Enterprise Cloud server iso image)
3. One VM with Ubuntu **10.04 server .iso** amd64 for Cloud Controller, Cluster Controller, Walrus and Storage Controller
4. One VM with Ubuntu **10.04 server .iso** amd64 for Node Controller
5. One VM with **16.04 Ubuntu Desktop .iso** for Client accessing Cloud Controller

Exercise 7: Private Cloud Setup using OpenNebula

1. Virtual Box
2. Ubuntu 16.04 Desktop.iso from amd64 for both Front End and Node.

Exercise 8: Creation of Virtual Machine Template, Installing C Compiler and Attaching Virtual Block

1. Virtual Box
2. Ubuntu 16.04 Ubuntu Desktop .iso for amd64
3. Install openssh-server
4. OpenNebula installation

Exercise 9: Live Migration of Virtual Machine
1. Virtual Box
2. Ubuntu 16.04 Desktop.iso for amd64
3. Opennebula installation
4. Deploy and VM Migration Commands

Exercise 10: Installation of Single Node Hadoop and Executing WordCount Program
1. Virtual Box
2. Ubuntu 16.04 Desktop.iso for amd64
3. jdk-8u45-linux-x64.tar.gz
4. hadoop-2.7.1.tar.gz
5. wordcount.jar

Exercise 11: Mount Hadoop using FUSE
1. Virtual Box
2. Ubuntu **14.04** Desktop.iso for amd64
3. jdk-8u45-linux-x64.tar.gz
4. hadoop-2.7.1.tar.gz
5. hdfs-fuse-0.2.linux2.6-gcc4.1-x86.tar.gz

Exercise 12: Installation of Globus Toolkit
1. Virtual Box
2. Ubuntu 16.04 Desktop.iso for amd64
3. globus-toolkit-repo_latest_all.deb
4. Use update command
5. Install Globus Components using commands

Exercise 13: GridFTP
Study Experiment
1. Virtual Box
2. Ubuntu 16.04 Desktop.iso for amd64
3. globus-toolkit-repo_latest_all.deb
4. Use update command
5. Install Globus Components using commands
6. Creating a MyProxy Server
7. User Credentials
8. User Authorization
9. Setting up GridFTP
10. Transfer of file from client to GridFTP server