Software Pre-requisites

For the course, the lecturers created a Virtual Machine in advance that has the following software installed.

1) Ubuntu 14.04 Desktop edition 64-bit

   Default userid / password = ox-soa/ox-soa

2) Install vm-ware tools (see vmware docs)

3) Do an Ubuntu update
```
sudo apt-get update
sudo apt-get upgrade
```

4) Install gksudo (for Eclipse)
```
Sudo apt-get install gksu
```

5) Java Development Kit JDK 1.7, Oracle Edition
```
sudo apt-get install default-jdk
```

6) Set JAVA_HOME in .bashrc
```
export JAVA_HOME=/usr/lib/jvm/java-7-openjdk-amd64
```

7) Also CXF_HOME and Path in .bashrc
```
export CXF_HOME=~/servers/apache-cxf-2.7.13
export PATH=$PATH:~/servers/apache-cxf-2.7.13/bin
```

8) Apache Maven 3.1.3 or later*
   Apache Ant 1.9.3 or later*
   Curl 7.35.0 or later*
   Tree*

```
sudo apt-get install ant maven curl tree
```

9) Google Chromium* (or Chrome)
```
sudo apt-get install chromium
```

10) Google Chrome Advanced REST Client extension
    https://chrome.google.com/webstore/detail/advanced-rest-client/hgmloofddffdnphfgcellkdfbfbjeloo

(to be installed from Chromium)

11) SOAPUI 5.0.0 or later*
http://sourceforge.net/projects/soapui/files/soapui/5.0.0/SoapUI-x64-5.0.0.sh/download
```
chmod +x SoapUI-x64-5.0.0.sh
./SoapUI-x64-5.0.0.sh
```

12)   Some extra text editors
```
sudo apt-get install cream leafpad
```

13)   WSO2 Developer Studio 3.7.0*
http://wso2.com/products/developer-studio/

14) This was un-zipped into the ~/eclipse directory

Then we did
```
sudo mv eclipse /opt/
sudo ln –s /opt/eclipse/eclipse /usr/bin/eclipse
```
Start eclipse from the command line and then "Lock to Launcher"

15) Before you import any maven project, you do need to let Eclipse know where your Maven is installed.
You can do this manually in Eclipse by adding the M2_REPO variable, but there is also a command line tool for this:
mvn -Declipse.workspace=/home/ox-soa/workspace eclipse:add-maven-repo

16) Also need to set cxf.home in the ant config in Eclipse as a property.

17) Also we need already downloaded the following links into a common downloads folder:
Apache Tomcat 7.0.57: http://tomcat.apache.org/download-70.cgi#7.0.57
Unzip tomcat into the servers directory. Rename to tomcat.
```
chmod +x bin/*.sh
```

18) Apache CXF 2.7.13*: http://cxf.apache.org/download.html
Unzip cxf into the servers directory. (Not 3.0.2 because of Eclipse Kepler issues)

19) The following servers were downloaded and unzipped into the ~/servers/ directory:

WSO2 App Server 5.2.1*: http://wso2.com/products/application-server/
WSO2 ESB 4.8.1*: http://wso2.com/products/enterprise-service-bus/
(Download "Binary")
WSO2 Governance Registry 4.6.0 *:

http://wso2.com/products/governance-registry/ (Download binary)
WSO2 API Manager 1.7.0*: http://wso2.com/products/api-manager/
(Download Binary)
WSO2 Business Activity Monitor 2.4.1*:
http://wso2.com/products/business-activity-monitor/ (Download
Binary)
WSO2 Business Process Server 3.2.0 *:
http://wso2.com/products/business-process-server/ (Download Binary)

20) Unzipped Apache tcpmon into servers and did chmod +x tcpmon.sh

21) Changed the port offsets in the servers as follows:

Server	Offset	Directory	Admin Port / web
Tomcat	NA	~/servers/tomcat	http://localhost:8080
App Server	0	~/servers/wso2as-5.2.1	https://localhost:9443
Enterprise Service Bus	1	~/servers/wso2esb-4.8.1	https://localhost:9444
Governance Registry	2	~/servers/wso2greg-4.6.0	https://localhost:9445
Business Process Server	3	~/servers/wso2bps-3.2.0	https://localhost:9446
API Manager	4	~/servers/wso2am-1.7.0	https://localhost:9447
Business Activity Monitor	5	~/servers/wso2bam-2.4.1	https://localhost:9448

22) Download the code from Github into Downloads.

23) Download the keys (having maybe updated them!?) into backup_keys

24) Git clone into a repos directory

25) Configure BAM to talk to API Mgr (or is it the other way round?)

26) Install node.js and npm
```
sudo apt-get install node.js npm
```

27) sudo nano /etc/security/limits.conf
```
#<domain>    <type> <item>      <value>
#
*         soft  nproc     60000
*         hard  nofile    10000
*         soft  nofile    10000
```

28) Add the following .pam_environment

```
MOZILLA_FIVE_HOME=/usr/lib/Mozilla
LD_LIBRARY_PATH=${MOZILLA_FIVE_HOME}:${LD_LIBRARY_PATH}
```

Tidy up before handing to students:
1) Re-install any servers and edit offset.
2) Delete all Eclipse projects and make sure workspace is empty
3) Remove Eclipse Servers
4) Remove CXF environment
5) Remove any Tomcat webapps (or re-install and rename)
6) Delete any generated code projects
7) Check the keyboard setting

* All the items marked * are Open Source. This entire course can be done using 100% open source.