This Guide is intended to help users install and configure Open Meetings 2.X

Parts of the guide have been updated from the previous installation documentation from Alvaro Bustos – greenes. -Thanks

This guide has been written step by step with screenshots to aid in the successful build of OM.

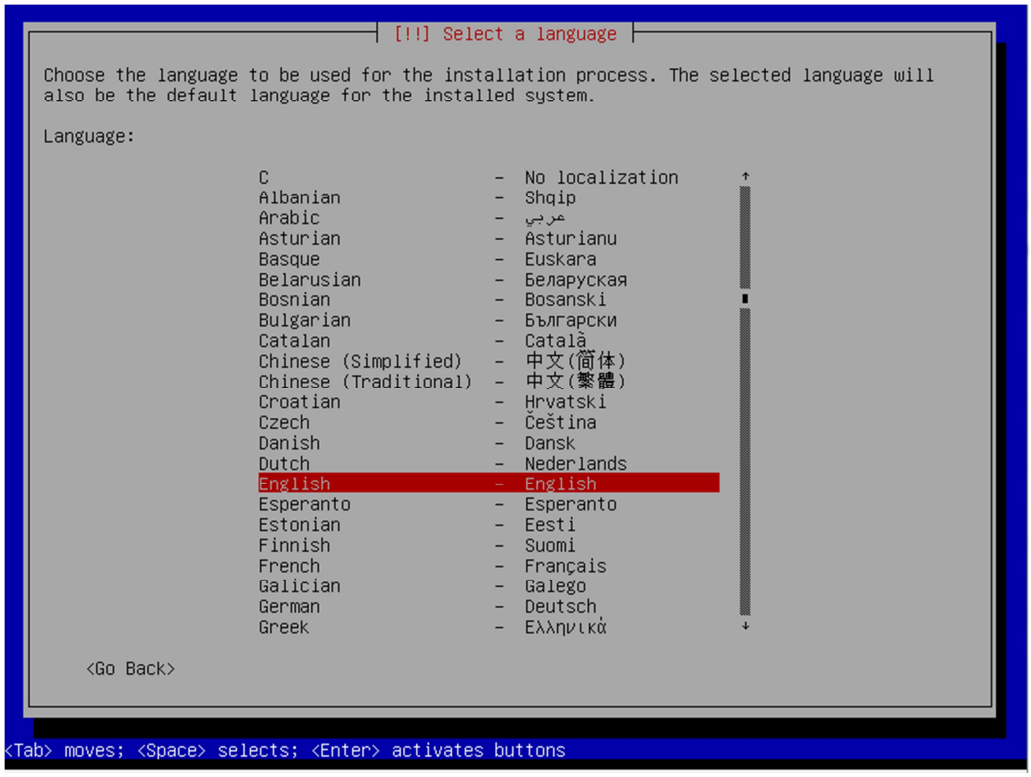
SSL and Reverse proxy steps have been added but are optional.

Stephen Cottham **15/05/2012**

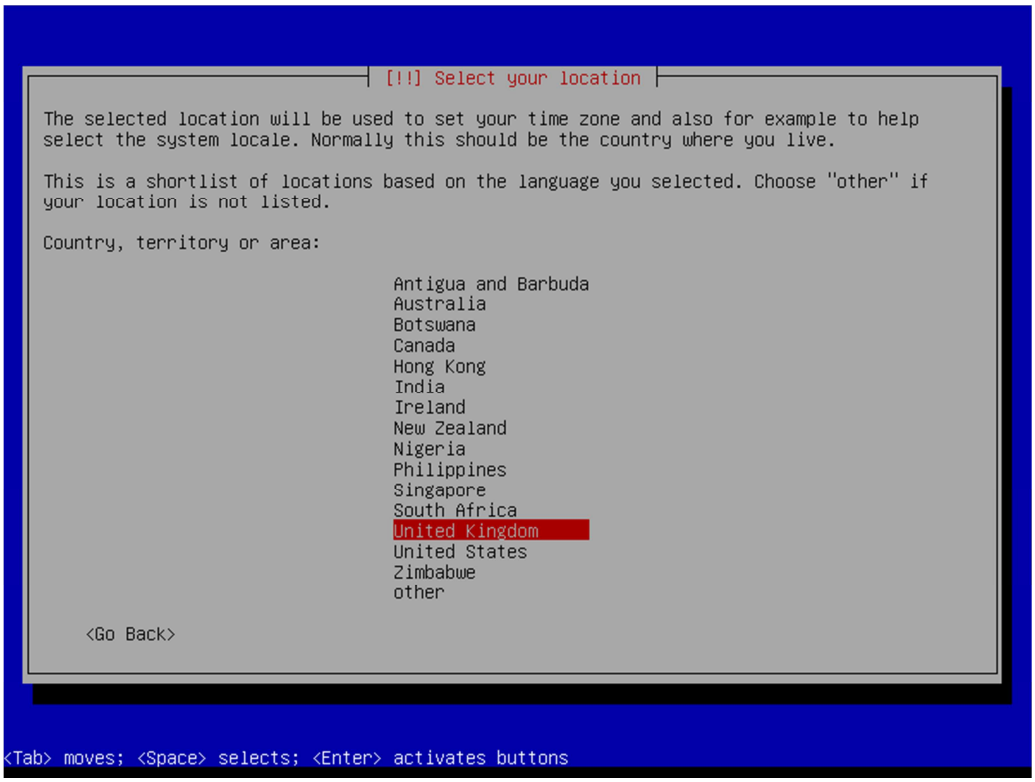
Installing Debian (Minimal Headless System)

Step 1: - Base System

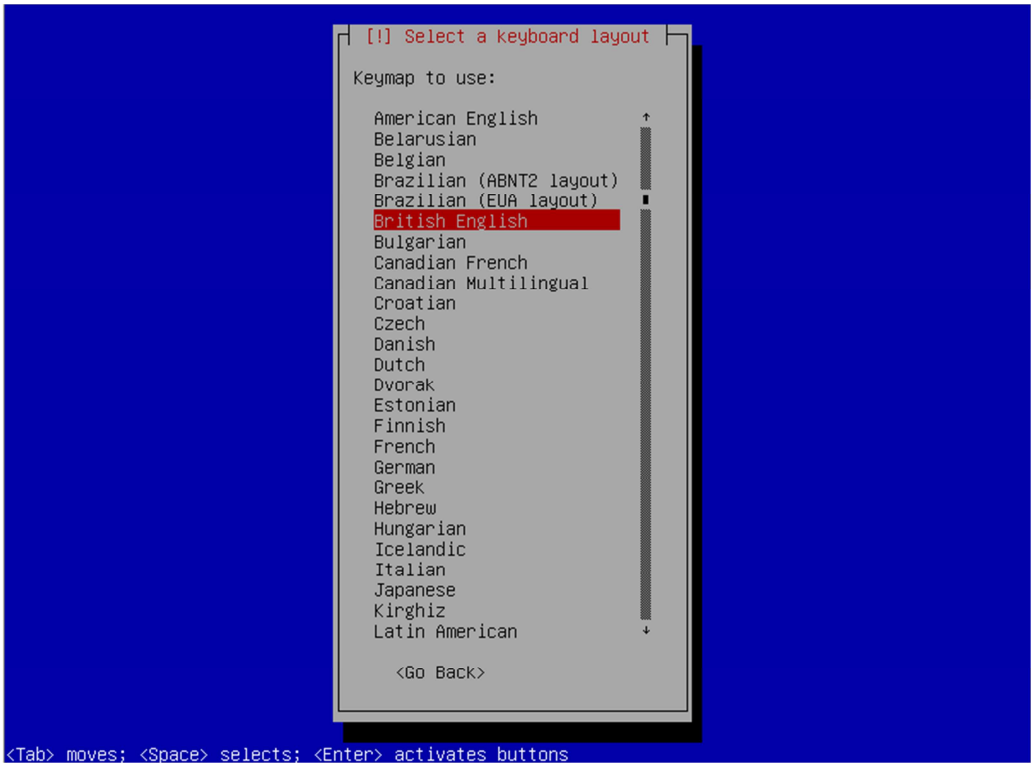
Choose 64 Bit install



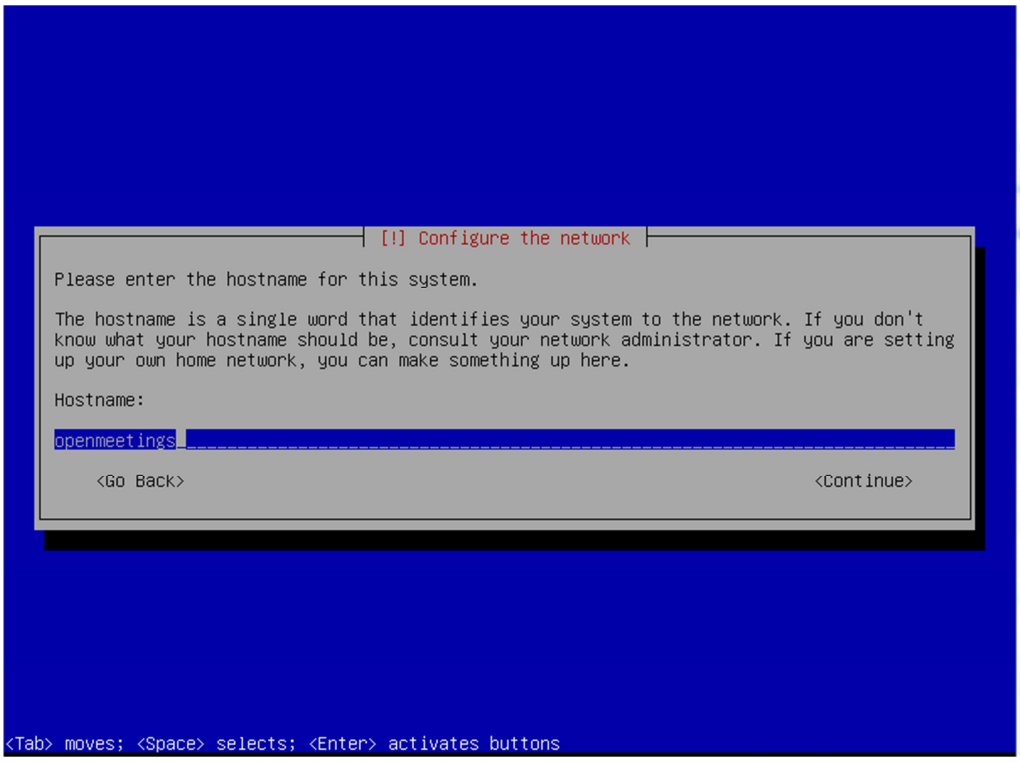
Choose English



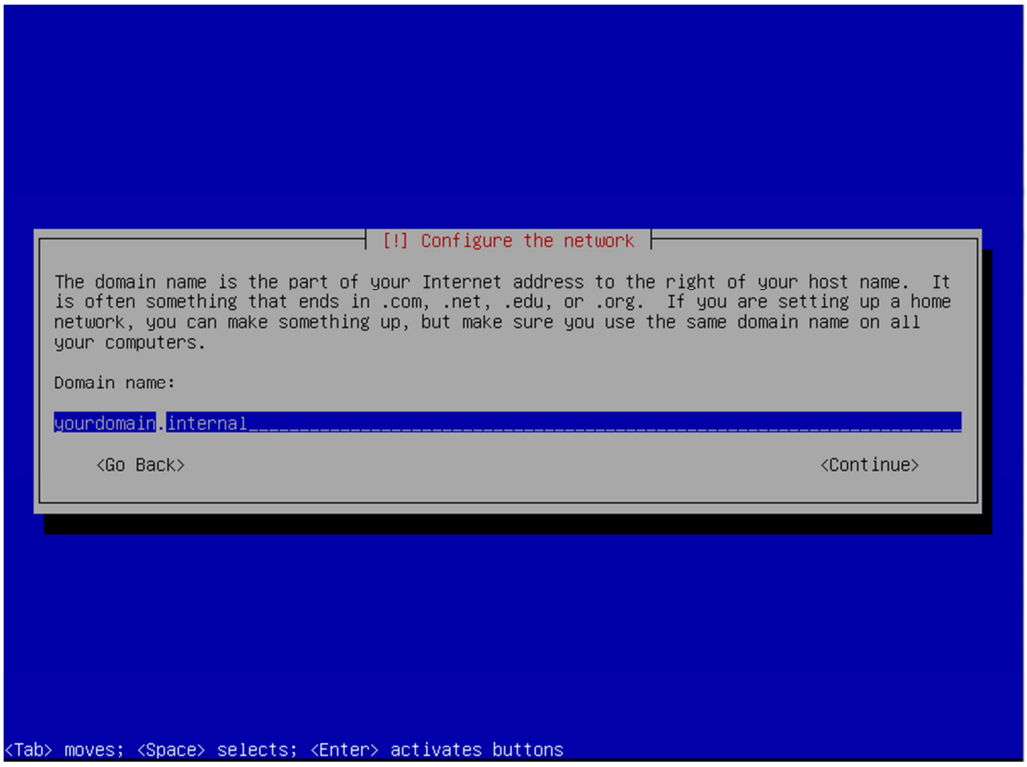
Choose “United Kingdom”



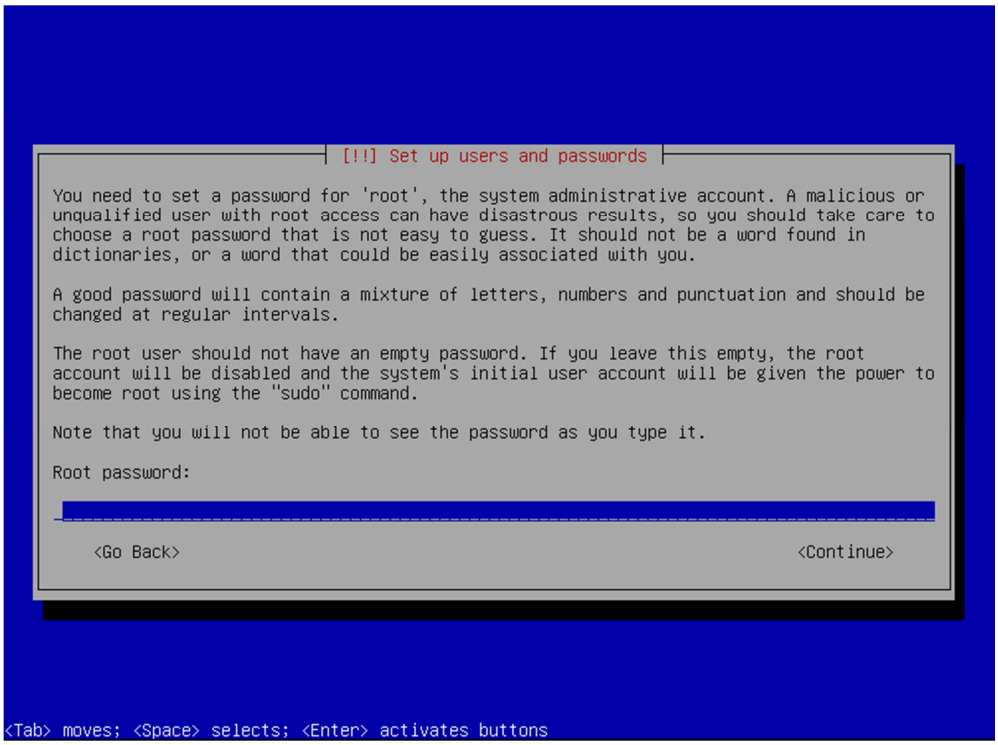
Choose “British English”



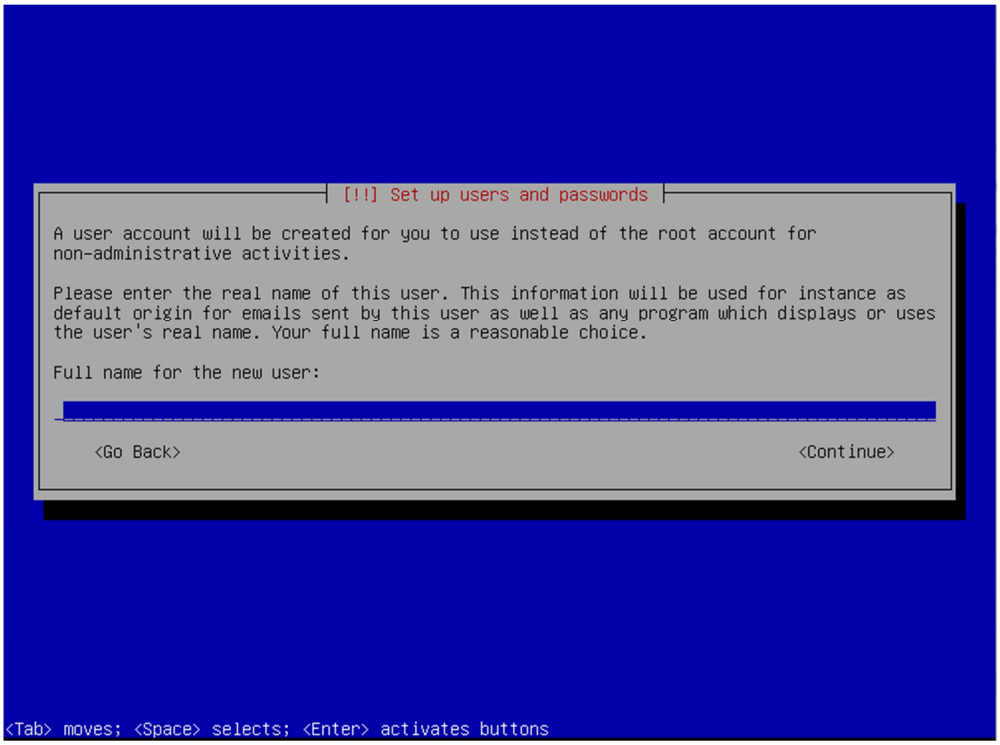
Set the hostname, in this case its “openmeetings”



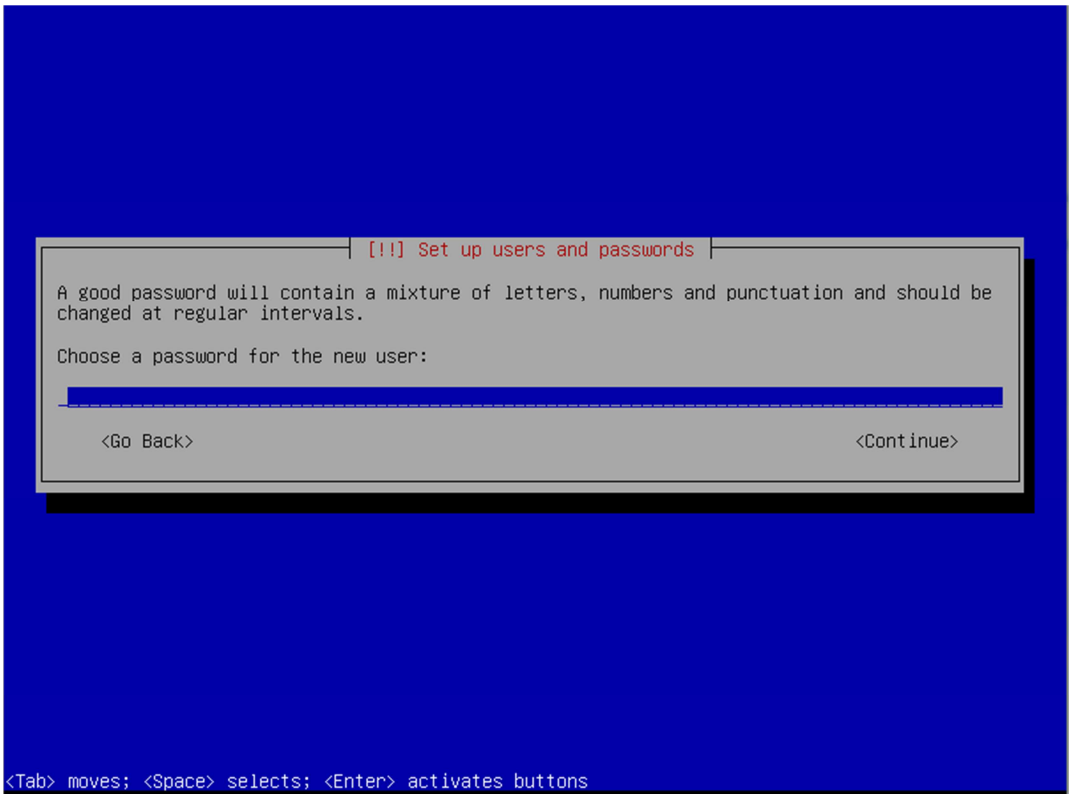
Set your domain, in this case we have used “yourdomain.internal”



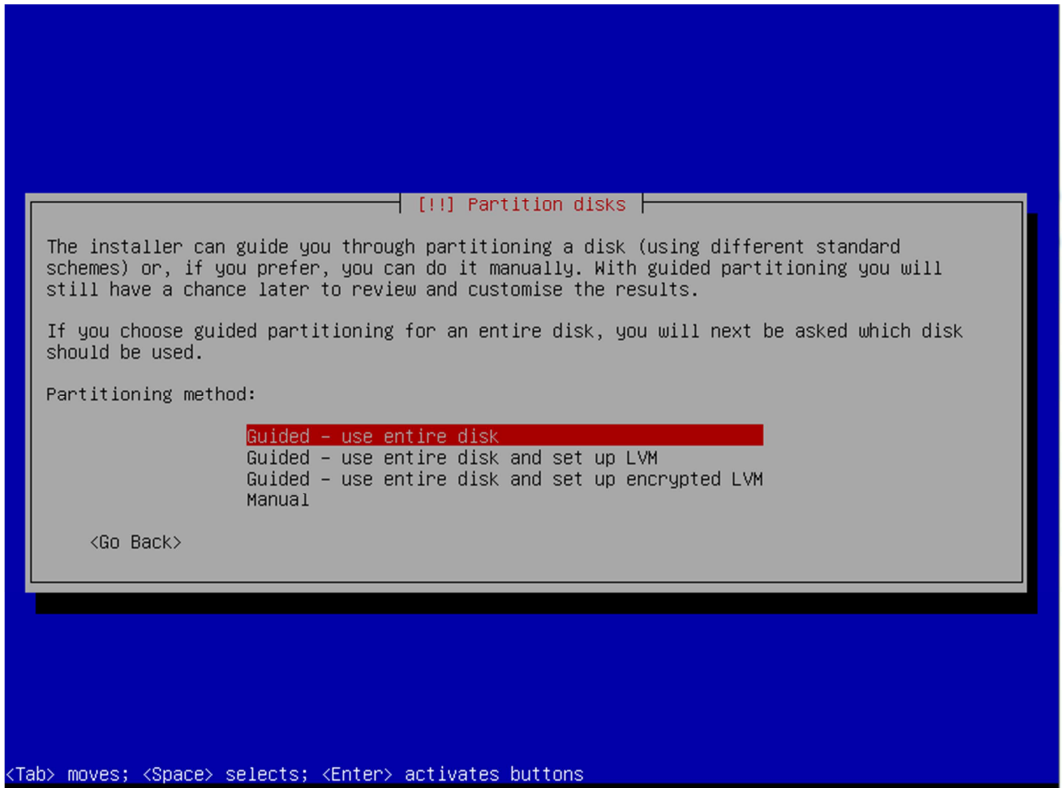
Set the root password.



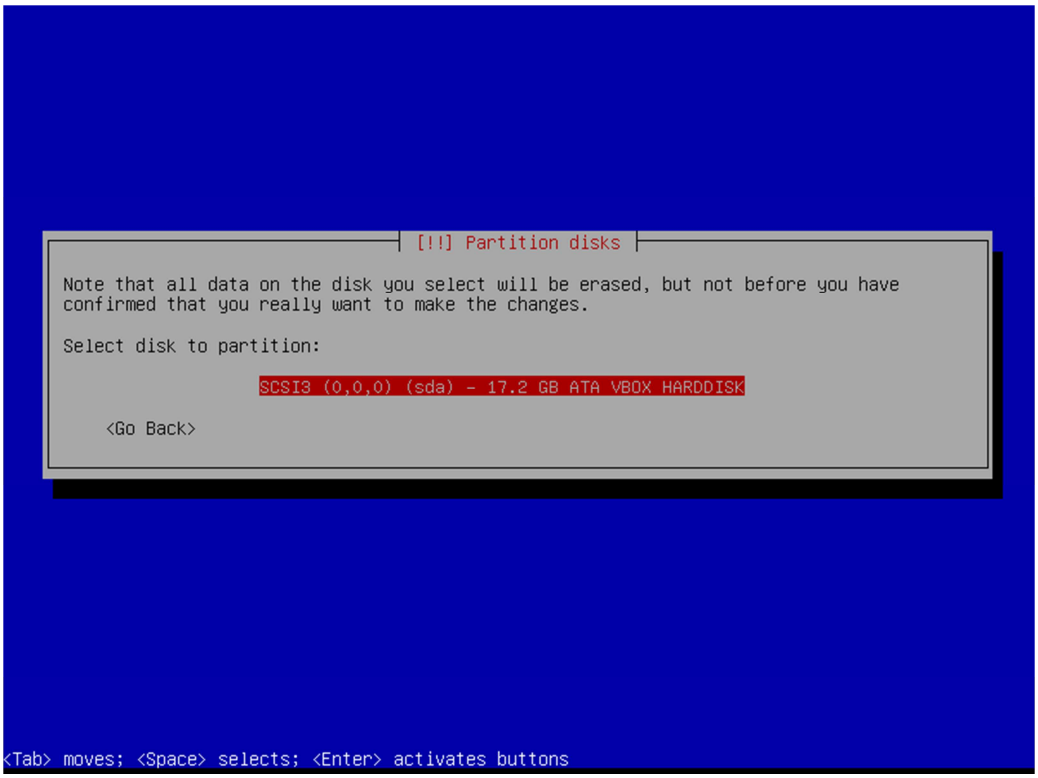
Create new user for server (Non-priv)



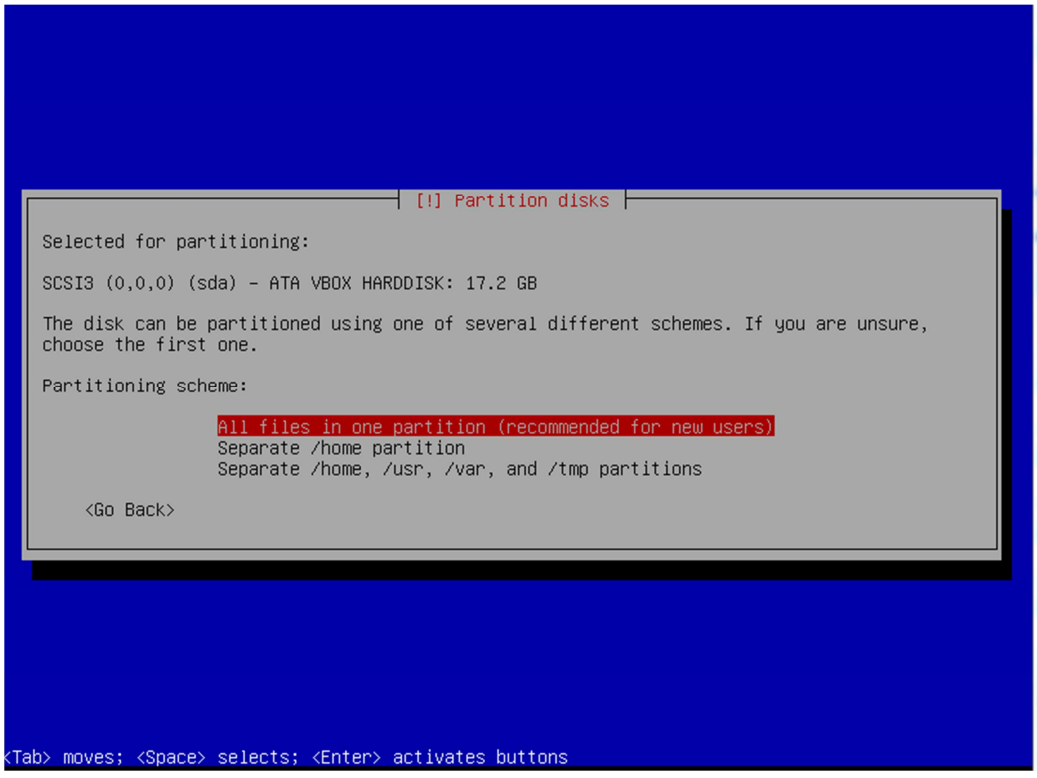
Set password for new user



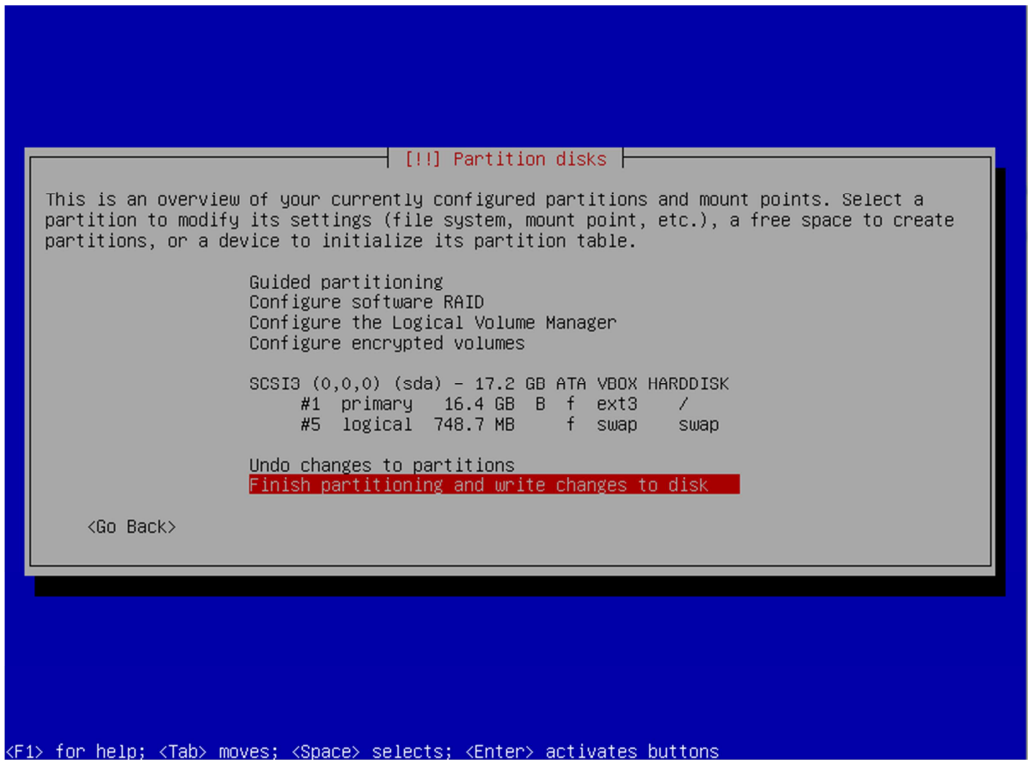
Use guided – entire disk



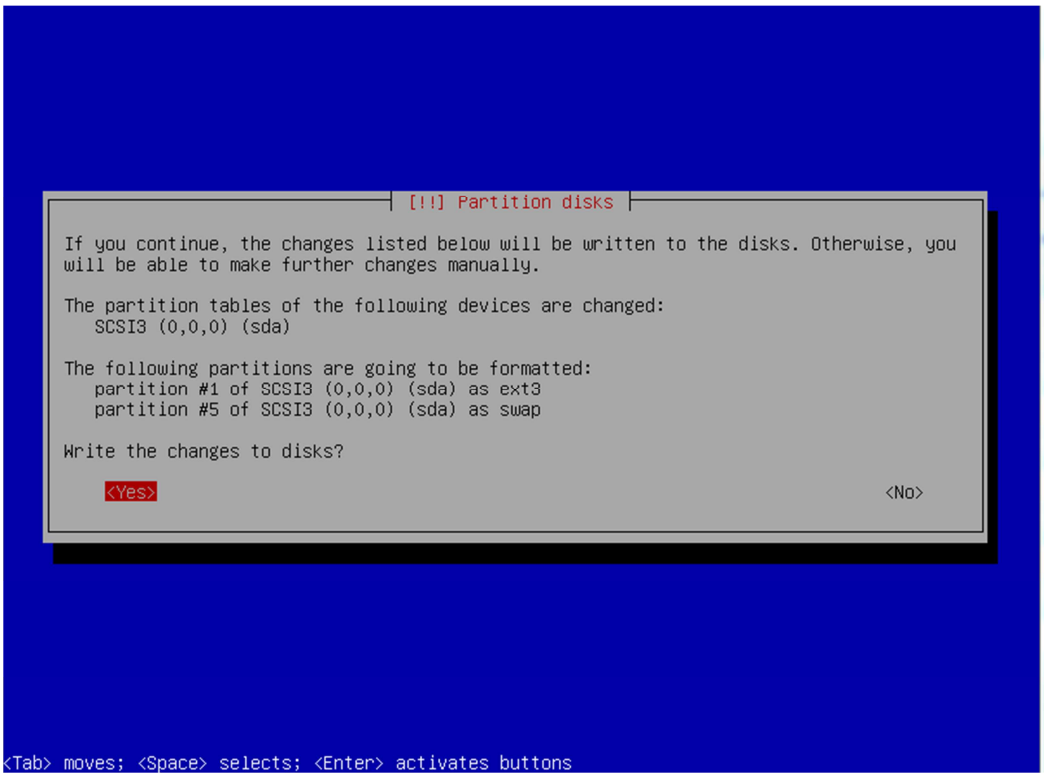
Select Disk to partition



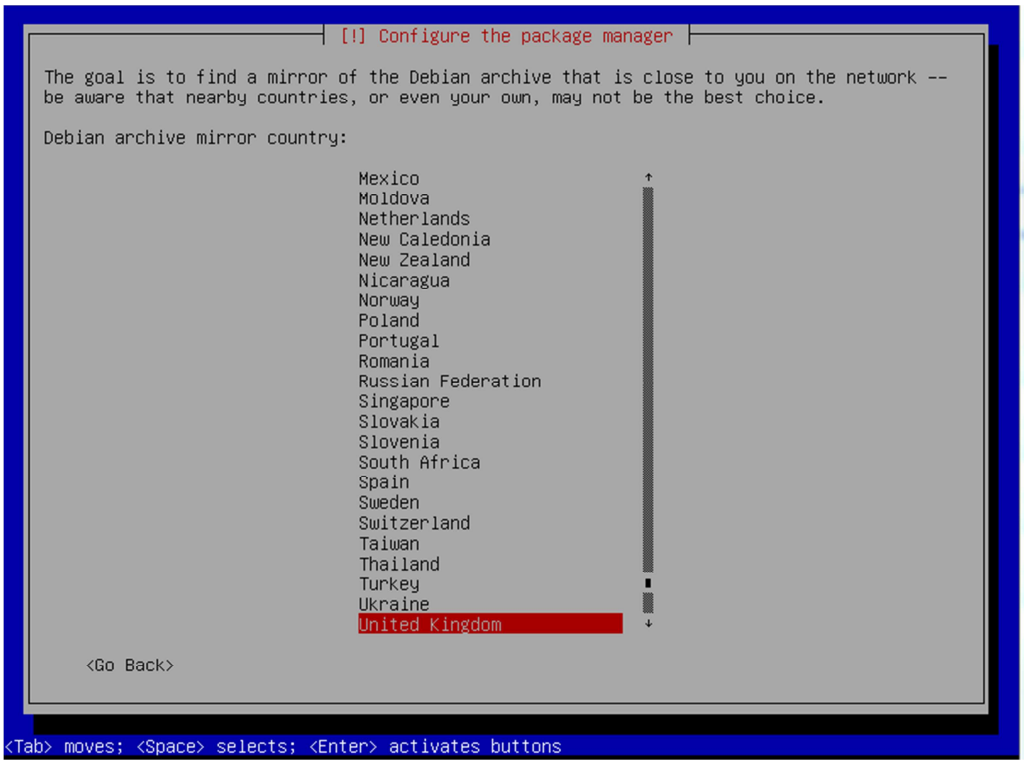
Choose “All files in one partition”



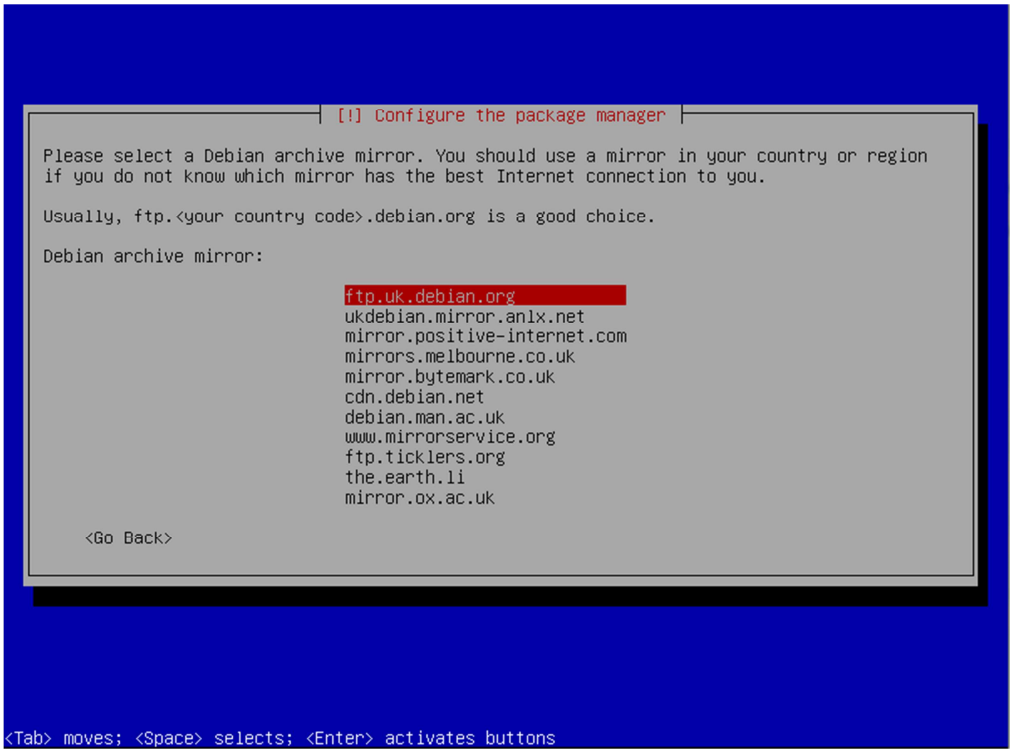
Choose “Finish partitioning and write changes to disk”



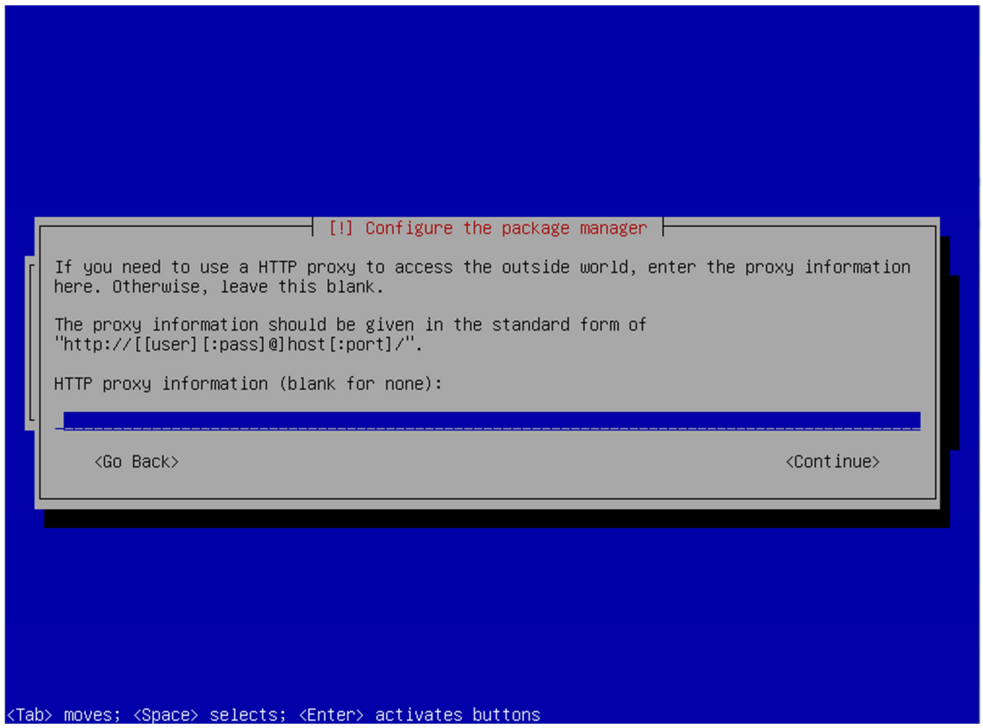
And finally choose “yes”



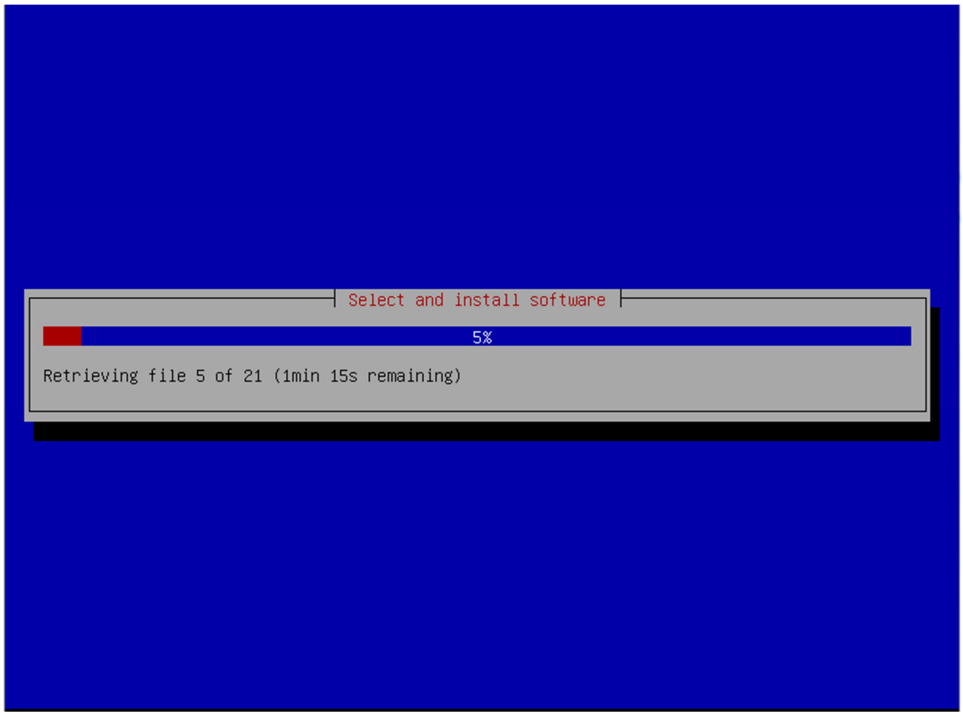
Choose Debian archive – in this case we are using “United Kingdom”



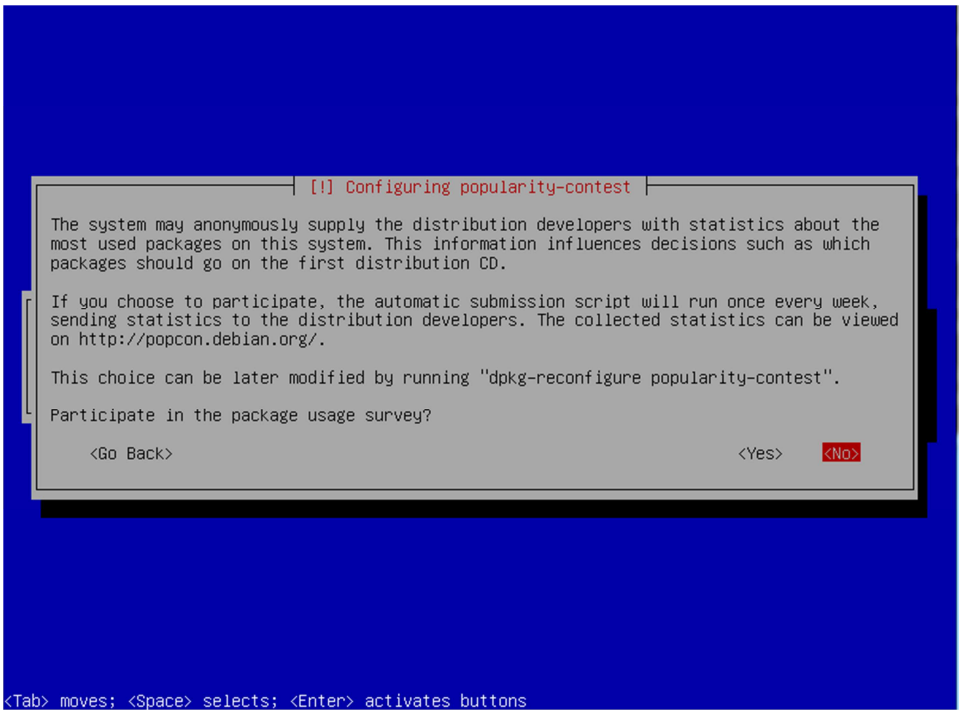
Any archive will do closest to you; in this case we are using ftp.uk.debian.org



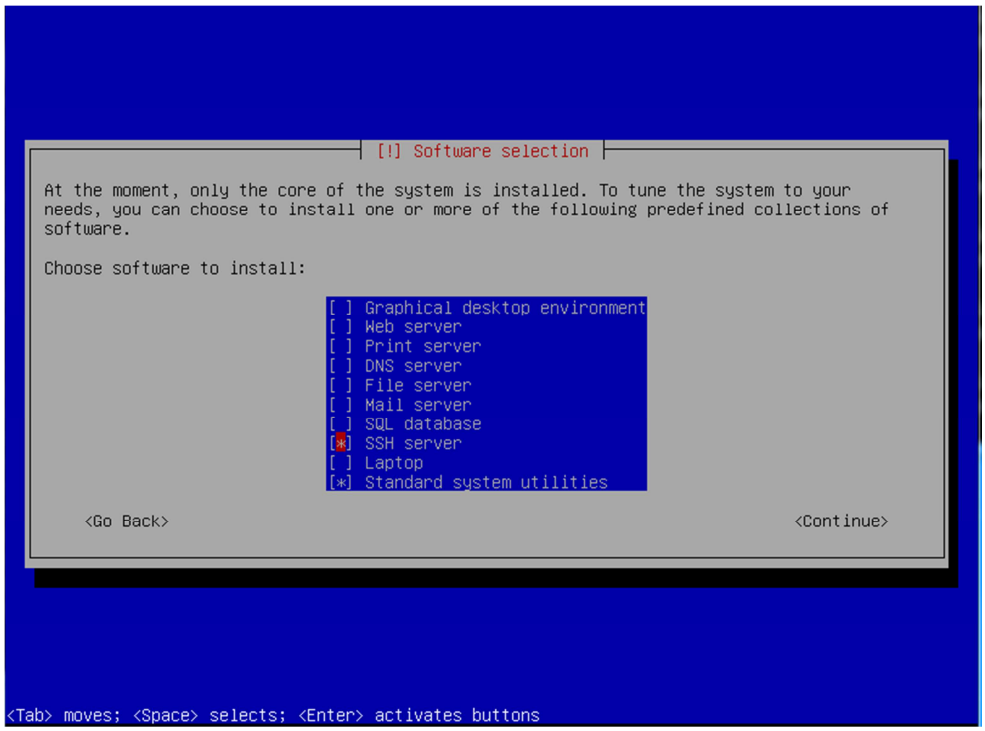
If you use a proxy server then add the details here, if you have full outbound access then just choose continue.



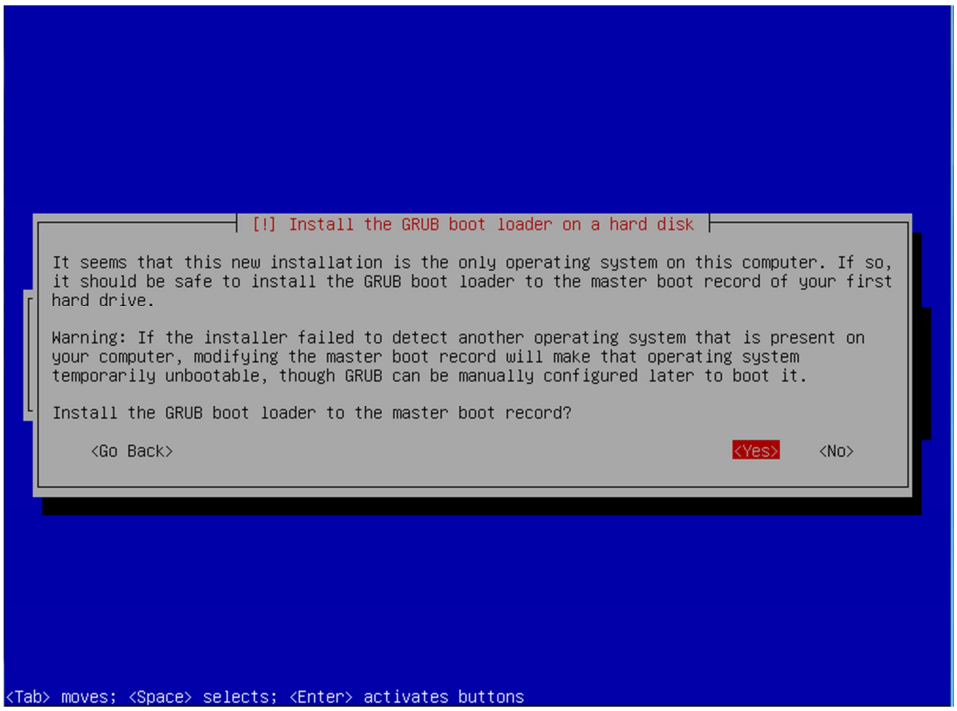
“apt” will now update the local repository information.



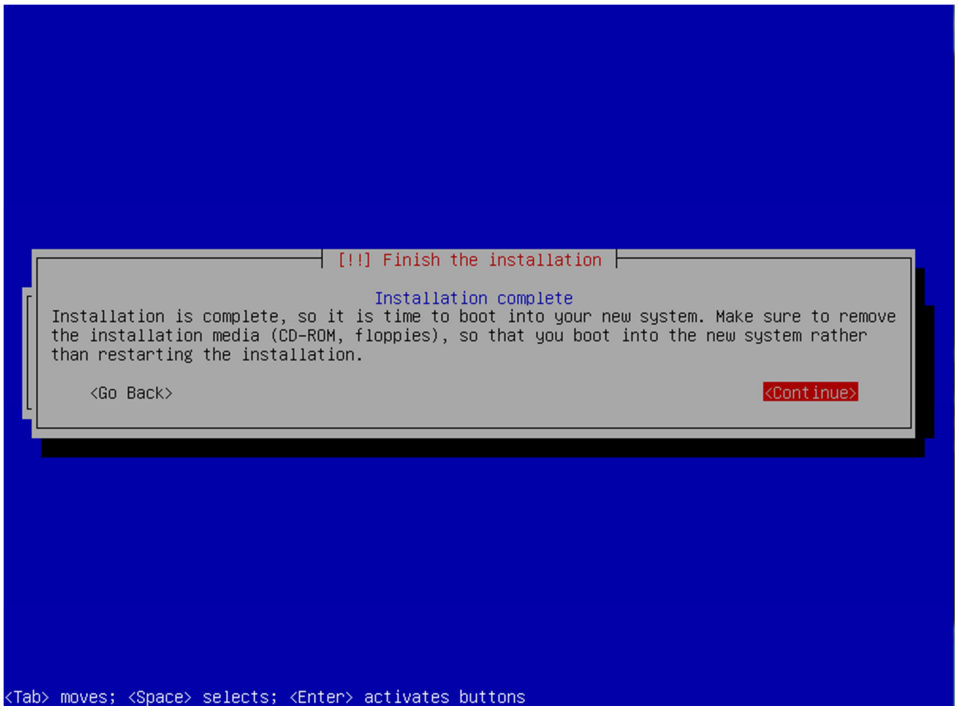
Choose not to participate in the survey.



Choose <u>only</u> SSH Server and Standard System utilities.

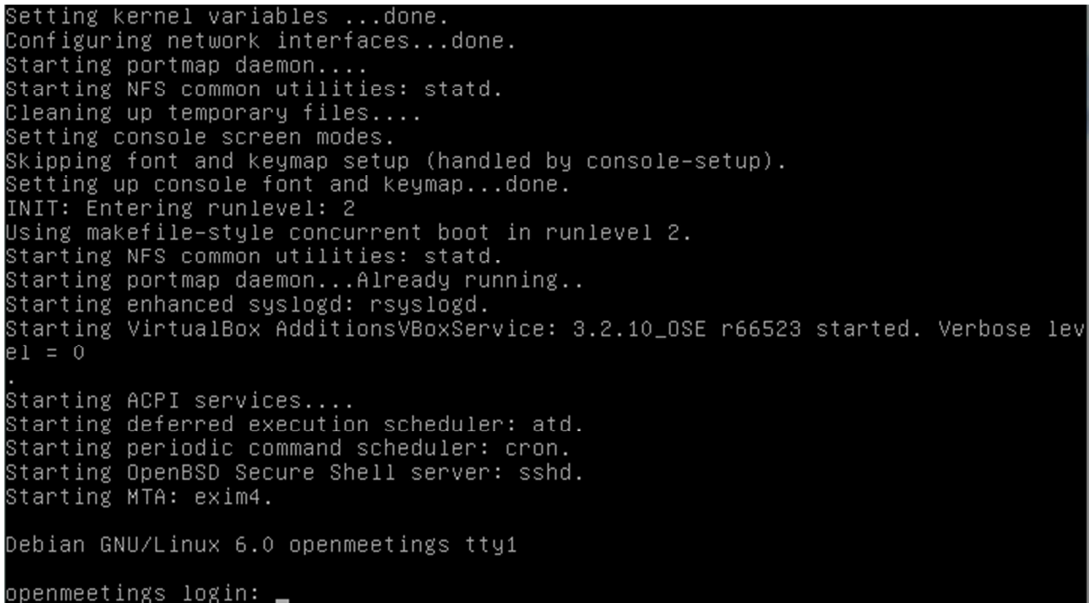


Choose Yes to install Grub.



Base install has now completed, choose continue to reboot into your new system.

Step 2: - Setup SSH Environment

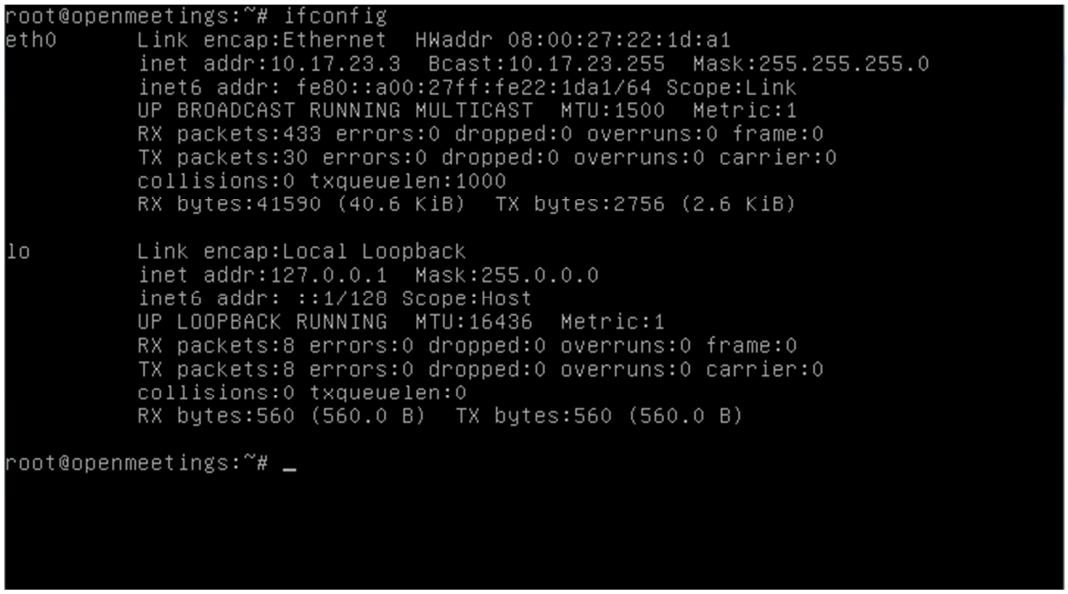


You should now be at the following screen, the next steps are easier done from a remote desktop using an SSH client such as putty. – But first we need to know our IP address, in most cases this was issued by your DHCP server (unless you specified manual network setup during install)

To find your IP address, first logon to your physical machine using root, then issue the following command:

ifconfig

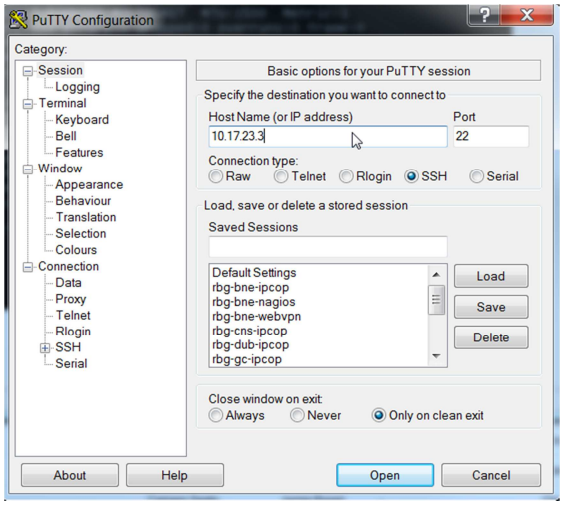
This will show the following screen:



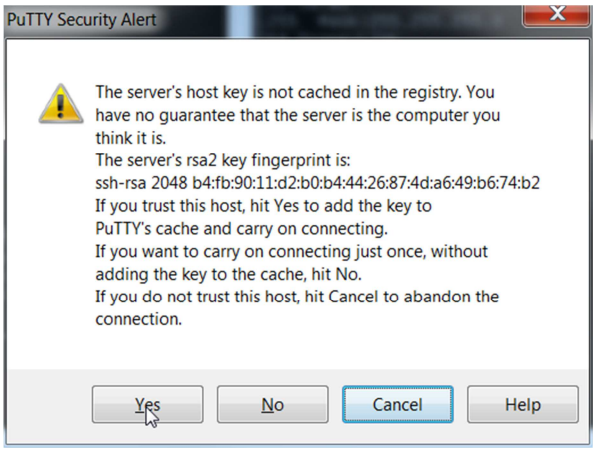
You can see the IP Address in this case is 10.17.23.3 (Interface eth0)

You can now log off of the server.

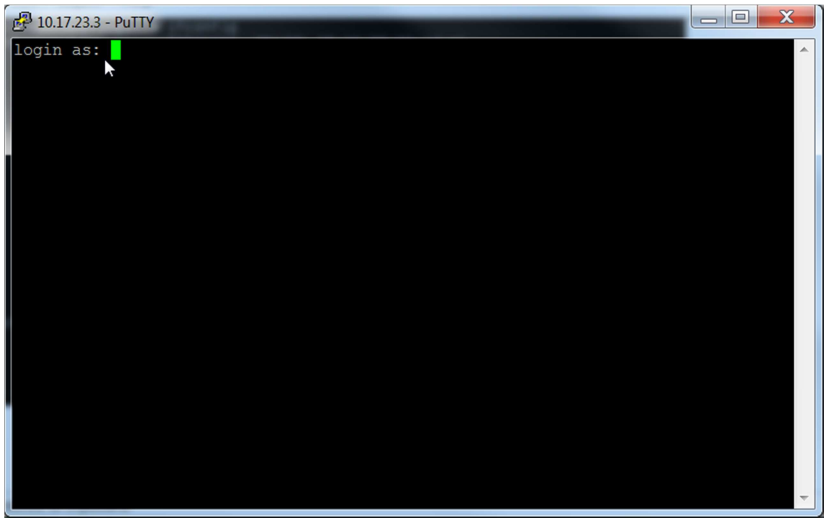
From your desktop machine open your SSH client, in this case we will be using the putty client to connect to our new Server.



Enter the details and choose open



The first log on you will receive this message; you can choose yes here and accept the key.



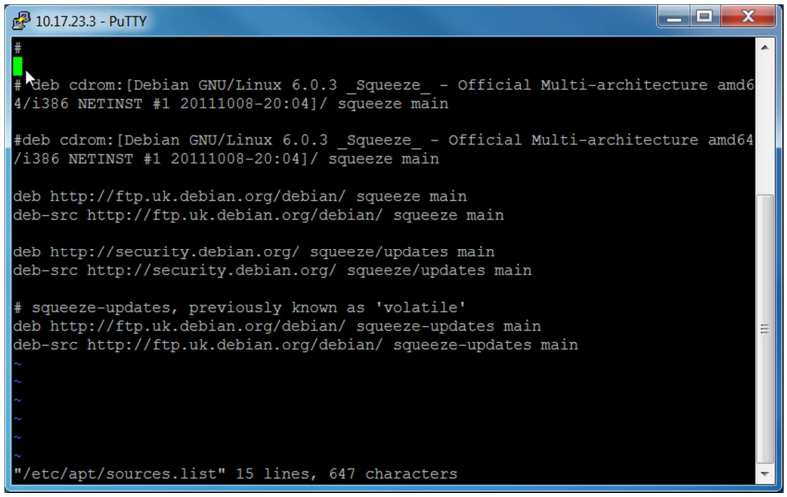
Now log in with your root credentials.

Step 3: Install Dependent software

Firstly we need to add some repos to apt to get the required Java version, so first issue this command:

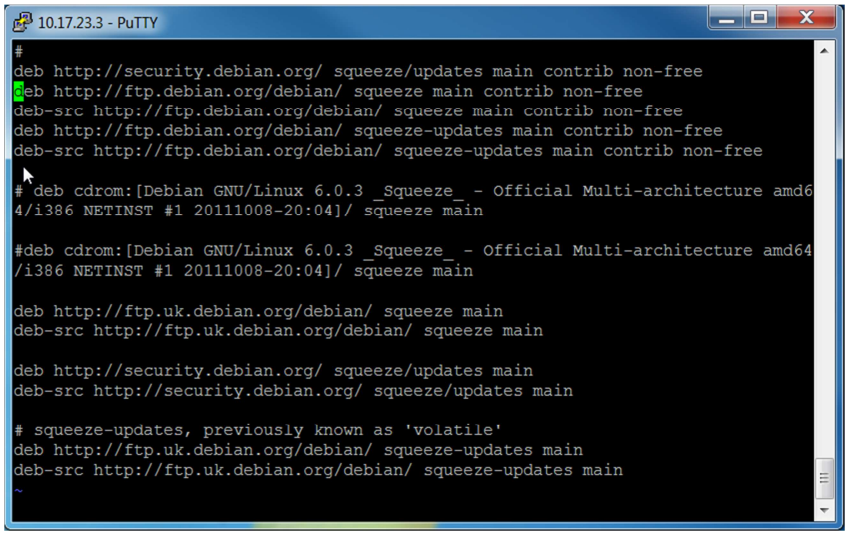
vi /etc/apt/sources.list

This will open the following file in vi: (you can use whatever file editor you are comfortable with)



Now at the top of this file add the following entries:

deb http://security.debian.org/ squeeze/updates main contrib non-free
deb-src http://security.debian.org/ squeeze/updates main contrib non-free
deb http://ftp.debian.org/debian/ squeeze main contrib non-free
deb-src http://ftp.debian.org/debian/ squeeze main contrib non-free
deb http://ftp.debian.org/debian/ squeeze-updates main contrib non-free
deb-src http://ftp.debian.org/debian/ squeeze-updates main contrib non-free
deb http://ftp2.de.debian.org/debian squeeze main non-free
deb http://www.debian-multimedia.org squeeze main

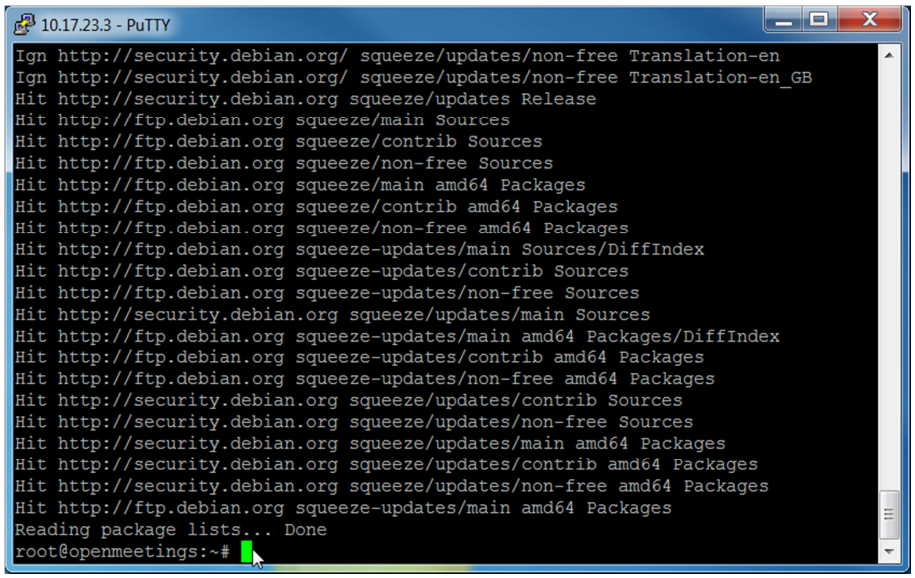


Example above – now save the file

To update the repos we need to issue the following command:

apt-get update

Once that has completed you will be here:



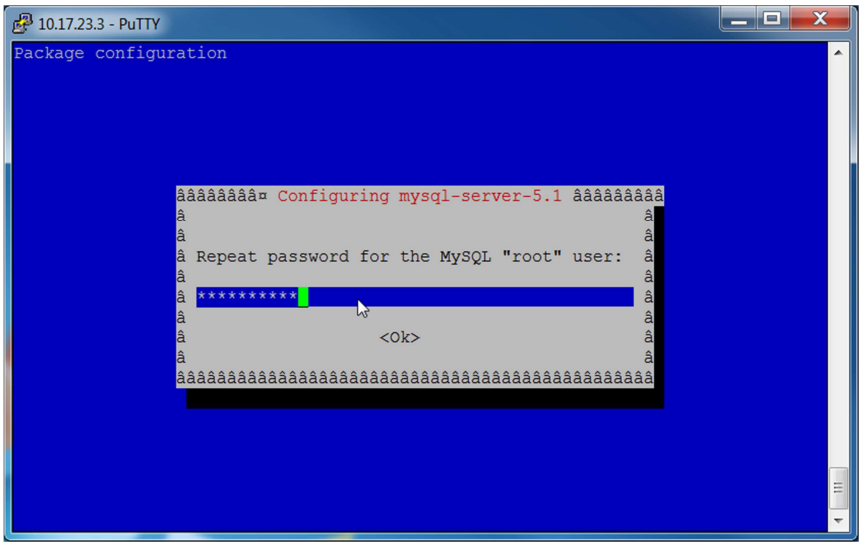
Let's install the needed software by issuing the following commands: (Please accept the **sun-java6-jre** license agreement during install)

apt-get install sun-java6-jdk
apt-get install openoffice.org-writer openoffice.org-calc openoffice.org-impress openoffice.org-draw openoffice.org-math
apt-get install imagemagick
apt-get install gs-gpl
apt-get install libgif-dev xpdf libfreetype6 libfreetype6-dev libjpeg62 libjpeg8 libjpeg8-dev
apt-get install g++
apt-get install libjpeg-dev
apt-get install libdirectfb-dev
apt-get install libart-2.0-2 libt1-5 zip unzip bzip2 subversion git-core checkinstall yasm texi2html libfaac-dev libfaad-dev libmp3lame-dev libsdl1.2-dev libx11-dev libxfixes-dev libxvidcore-dev zlib1g-dev libogg-dev sox libvorbis0a libvorbis-dev libgsm1 libgsm1-dev libfaad2 flvtool2 lame

Step 4: - Create mysql DB for OM

Now we need to install MYSQL, issue this command (In this case username and password are openmeetings : ompassword)

apt-get install mysql-server

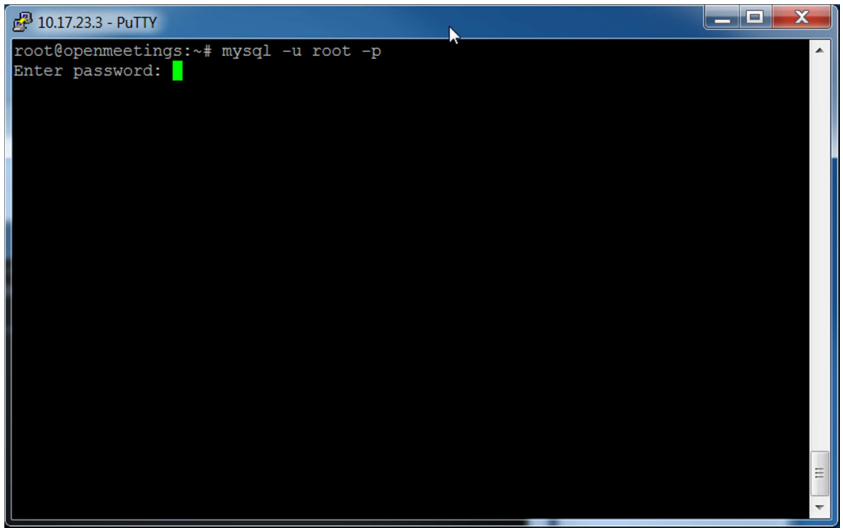


Enter the password as before “ompassword” and choose ok.

Now let’s crate the needed DB’s for OM 2.x

Issue these commands:

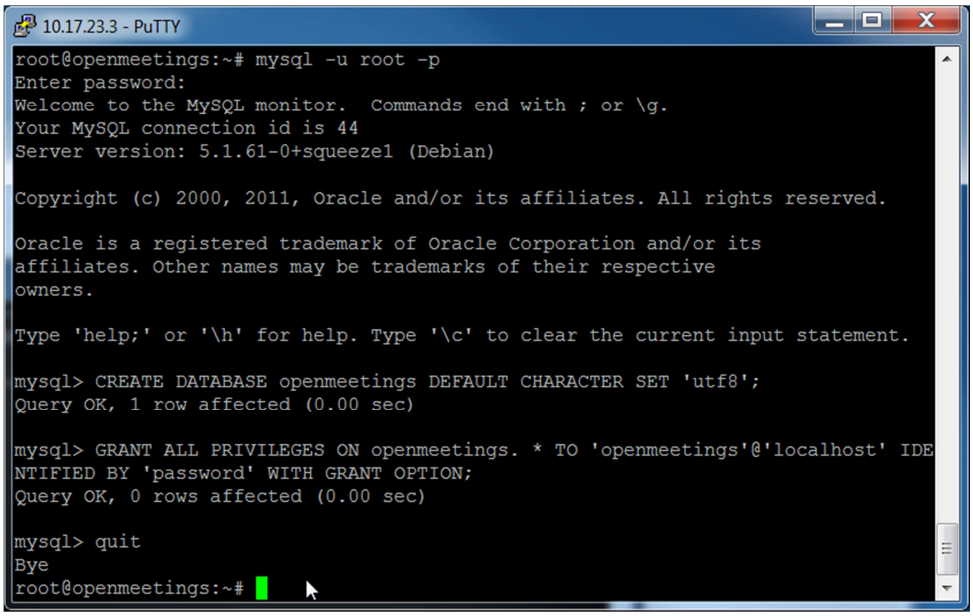
mysql -u root –p



Enter password “**ompassword**”

Now issue these: (Assuming username **openmeeting** and password = **password**)

CREATE DATABASE openmeetings DEFAULT CHARACTER SET 'utf8';
GRANT ALL PRIVILEGES ON openmeetings. * TO 'openmeetings'@'localhost' IDENTIFIED BY 'password' WITH GRANT OPTION;
quit



Successful DB creation shown above.

Step 5: Compile Install SWFTools

Now let's create a temporary working area by issuing these commands:

```
mkdir /usr/adm
cd /usr/adm
```

Download, compile and install swftools by issuing these commands:

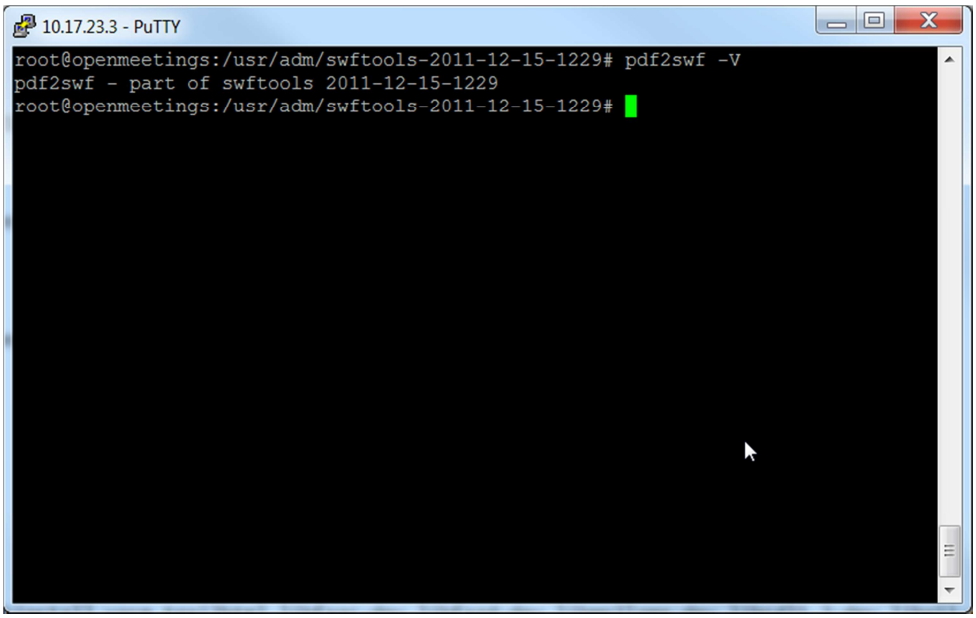
```
wget  http://www.swftools.org/swftools-2011-12-15-1229.tar.gz
tar -zvxf swftools-2011-12-15-1229.tar.gz
cd swftools-2011-12-15-1229
./configure --prefix=/usr/local
make
make install
```

You can now test it by issuing the following:

```
pdf2swf –V
```

Which should give you the following output:

```
pdf2swf - part of swftools 2011-12-15-1229
```



Successful swftools build.

Step 6: Compile and Install ffmpeg

Let's go back to our temporary working area

cd /usr/adm

Download, compile and install ffmpeg by issuing these commands:

wget http://ffmpeg.org/releases/ffmpeg-0.9.1.tar.gz
tar zxf ffmpeg-0.9.1.tar.gz
cd ffmpeg-0.9.1
./configure --enable-libmp3lame --enable-libxvid --enable-libvorbis --enable-libgsm --enable-libfaac --enable-gpl --enable-nonfree
make
checkinstall

N.B - You will be asked a series of question towards the end of the install, press return for each to continue.

Once that has completed you can now test it by issuing the following:

ffmpeg –version

Which should give you the following output:

ffmpeg 0.9.1

Step 7: Install JOD Converter

Let's go back to our temporary working area

cd /usr/adm

Download, extract JOD by issuing these commands: **(We will move the JOD location after the installation of OM 2.x)**

wget http://jodconverter.googlecode.com/files/jodconverter-core-3.0-beta-4-dist.zip
unzip jodconverter-core-3.0-beta-4-dist.zip

Step 8: Install ANT 1.8.3 for compiling latest OM 2.x

Let's go back to our temporary working area

cd /usr/adm

Download, extract ANT by issuing these commands:

wget http://mirror.catn.com/pub/apache//ant/binaries/apache-ant-1.8.3-bin.tar.gz
tar –zxvf apache-ant-1.8.3-bin.tar.gz

Once that has completed you can test it by issuing the following commands:

cd /usr/adm/apache-ant-1.8.3/bin
./ant –version

This should output the following:

Apache Ant(TM) version 1.8.3 compiled on February 26 2012

Step 9: Download and compile latest OM 2.x

Again back to our working area:

cd /usr/adm

Then check out the latest source code using the following:

svn checkout https://svn.apache.org/repos/asf/incubator/openmeetings/trunk/singlewebapp/

Once that has completed we can then build the source by issuing the following:

```
cd /usr/adm/singlewebapp
/usr/adm/apache-ant-1.8.3/bin/ant
```

This will take a little while depending on your system, once it has finished you should be left the following message:

```
BUILD SUCCESSFUL
```

Step 10: Install compiled OM 2.x

Now we need to move the compiled source into the correct location, in this system we are using /usr/lib/red5, so issue the following commands to move the root folder over:

```
cd /usr/adm/singlewebapp/dist
mv red5/ /usr/lib/
cd /usr/lib/red5
```

Let's move the JOD into place now

```
cp –R /usr/adm/jodconverter-core-3.0-beta-4 /usr/lib/red5/webapps/openmeetings
```

And set some permissions and ownerships

```
chown -R nobody /usr/lib/red5
chmod +x /usr/lib/red5/red5.sh
chmod +x /usr/lib/red5/red5-debug.sh
```

Set the start-up script for OM 2.x by issuing the following:

```
vi /etc/init.d/red5
```

and adding the following:

```
#!/bin/bash
# For RedHat and cousins:
# chkconfig: 2345 85 85
# description: Red5 flash streaming server
# processname: red5
# Created By: Sohail Riaz (sohaileo@gmail.com)
# Modified by Alvaro Bustos
PROG=red5
RED5_HOME=/usr/lib/red5
DAEMON=$RED5_HOME/$PROG.sh
```

```
PIDFILE=/var/run/$PROG.pid
# Source function library
# . /etc/rc.d/init.d/functions
[ -r /etc/sysconfig/red5 ] && . /etc/sysconfig/red5
RETVAL=0
case "$1" in
start)
# echo -n $"Starting $PROG: "
     /usr/lib/openoffice/program/soffice "-
accept=socket,host=127.0.0.1,port=8100,tcpNoDelay=1;urp;" -headless -nodefault -
nofirststartwizard -nolockcheck -nologo -norestore & sleep 5
cd $RED5_HOME
      start-stop-daemon --start -c nobody --pidfile $PIDFILE
$DAEMON >/dev/null 2>/dev/null &
RETVAL=$?
if [ $RETVAL -eq 0 ]; then
echo $! > $PIDFILE
# touch /var/lock/subsys/$PROG
fi
# [ $RETVAL -eq 0 ] && success $"$PROG startup" || failure $"$PROG startup"
echo
;;
stop)
      pkill soffice.bin
      start-stop-daemon --stop --quiet --pidfile $PIDFILE \
            --name java
      rm -f $PIDFILE
echo
[ $RETVAL -eq 0 ] && rm -f /var/lock/subsys/$PROG
;;
restart)
$0 stop
$0 start
;;
status)
status $PROG -p $PIDFILE
RETVAL=$?
;;
*)
echo $"Usage: $0 {start|stop|restart|status}"
RETVAL=1
esac
exit $RETVAL
```

Save the file and then set the permissions like below:

chmod +x /etc/init.d/red5
update-rc.d red5 defaults

Now we need to move the persistence files so we can connect to mysql, so issue the following:

Make backup copy
mv /usr/lib/red5/webapps/openmeetings/WEB-INF/classes/META-INF/persistence.xml /usr/lib/red5/webapps/openmeetings/WEB-INF/classes/META-INF/persistence.xml-ori

Rename mysql template to persistence.xml

mv /usr/lib/red5/webapps/openmeetings/WEB-INF/classes/META-INF/mysql_persistence.xml /usr/lib/red5/webapps/openmeetings/WEB-INF/classes/META-INF/persistence.xml

Edit the persistence file and add out mysql details, in this case we used "**openmeetings**" and "**password**" – so issue the following:

vi /usr/lib/red5/webapps/openmeetings/WEB-INF/classes/META-INF/persistence.xml

Then change the following

, Username=openmeetings
, Password=password"/>

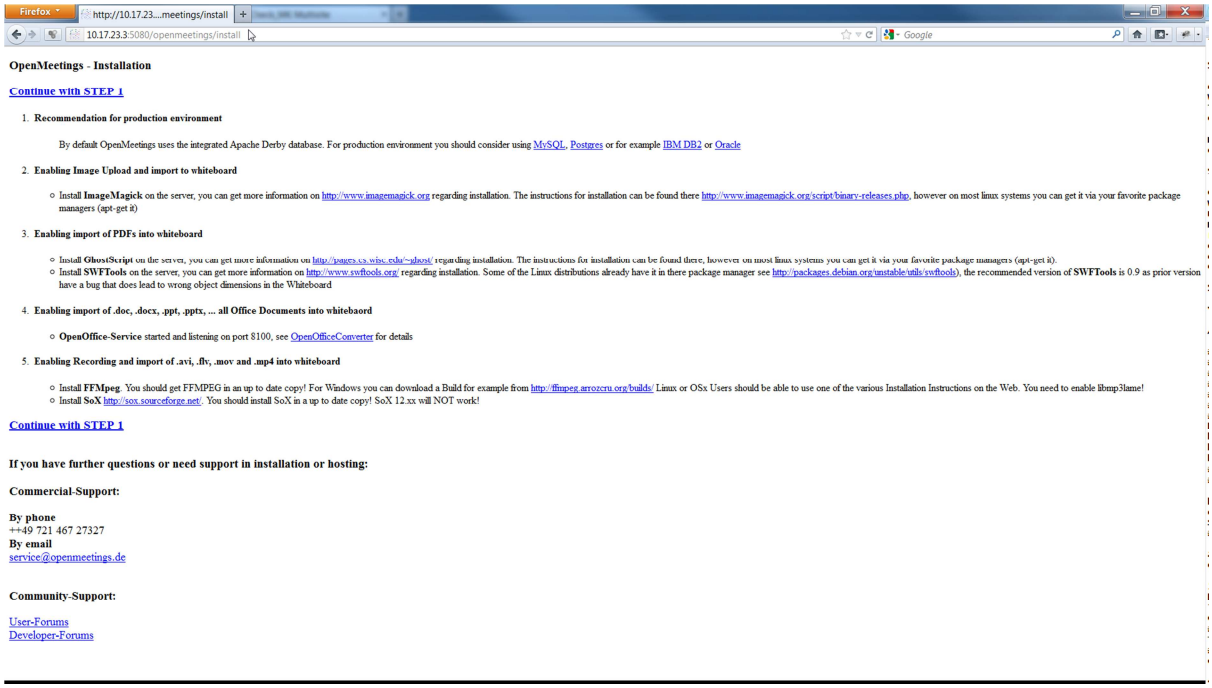
At this stage we are ready to start up OM 2.x for the first time.

/etc/init.d/mysql start
/etc/init.d/red5 start

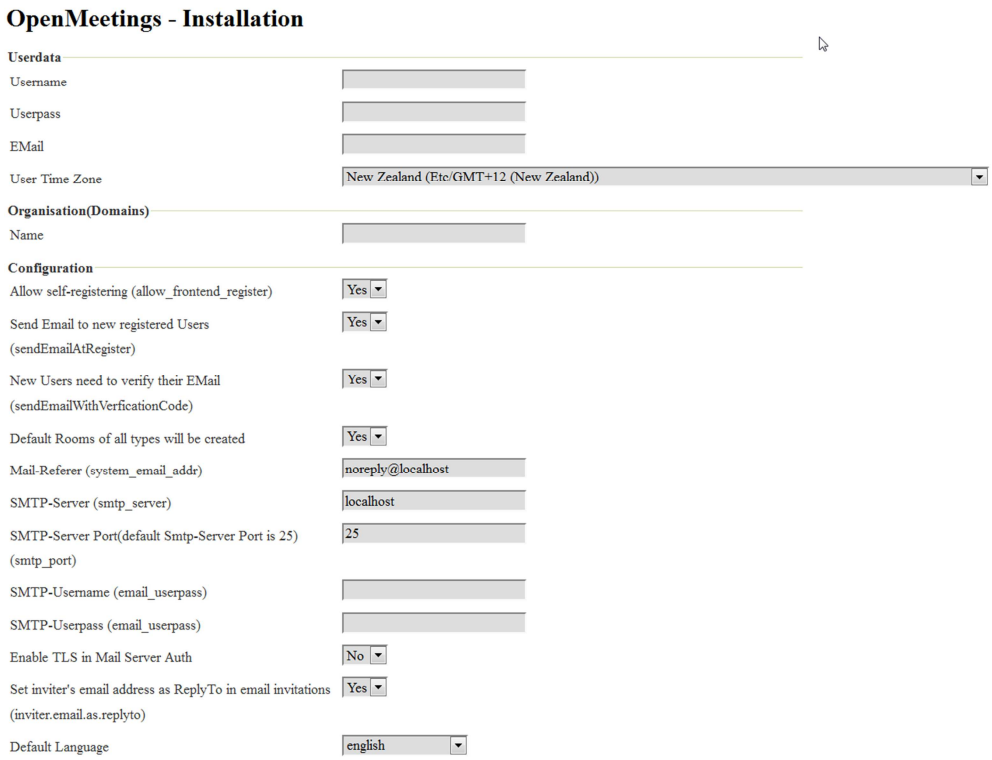
Now open the browser and go to the following link. **N.B remember to change the IP address to your OM2.x server, the one below 10.17.23.3 is just for this example.**

http://10.17.23.3:5080/openmeetings/install

If all went well you should now see this page:



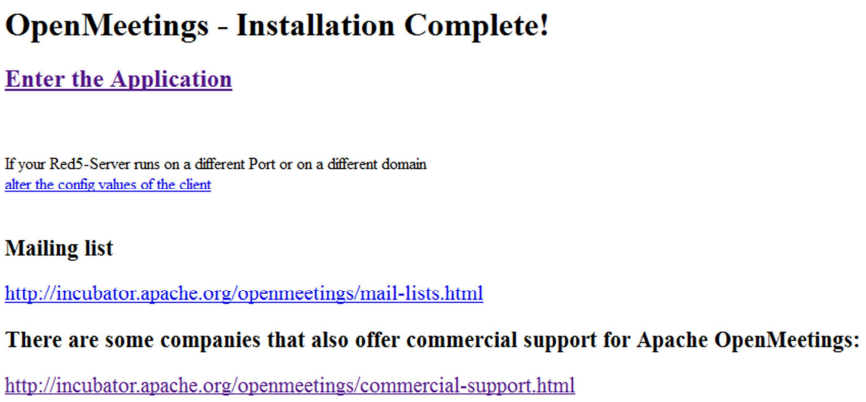
Choose the “Continue with STEP 1” link



The only section we need to fill out at this stage is the following:

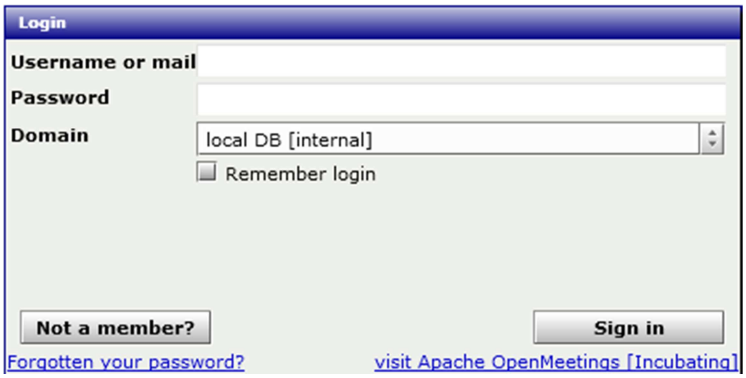
Username: **omadmin**
Userpass: **ompassword**
Email: **something@something.com**
TimeZone: **United Kingdom**
Domain Name: **somedomain**

Now click on INSTALL at the bottom of the page, this will then create all the needed tables etc.. - it can take a little while but be patient.



Once that has completed you can now enter the application by clicking on the "**Enter the Application**" link

You should see the following logon screen:

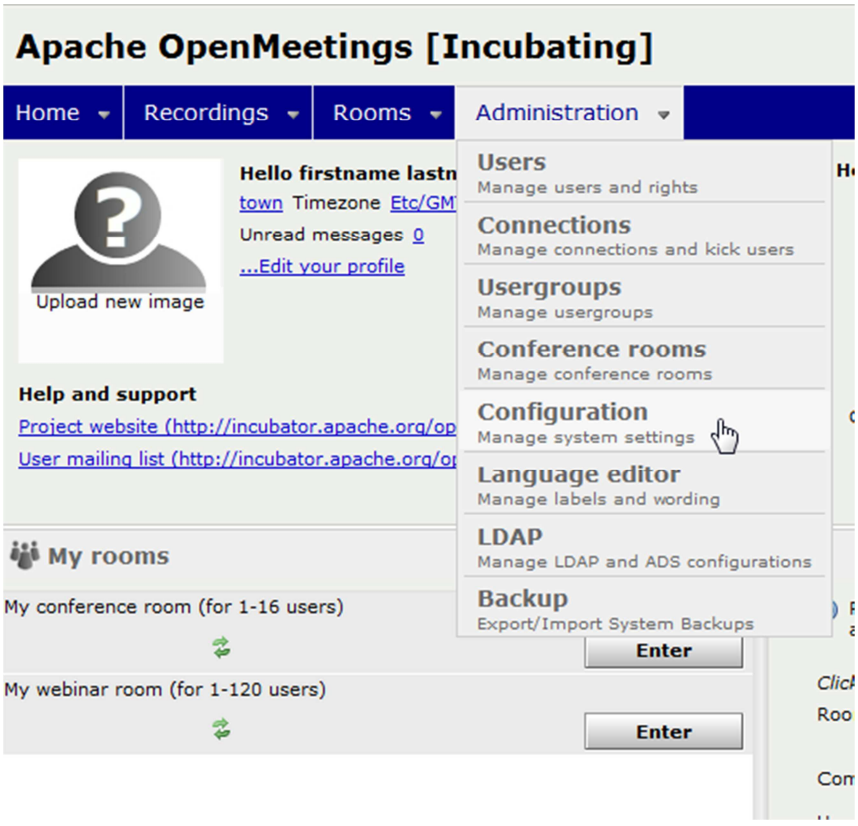


Enter these details to sign in.

Username: **omadmin**
Userpass: **ompassword**

Step 11: Add relevant paths to the configuration

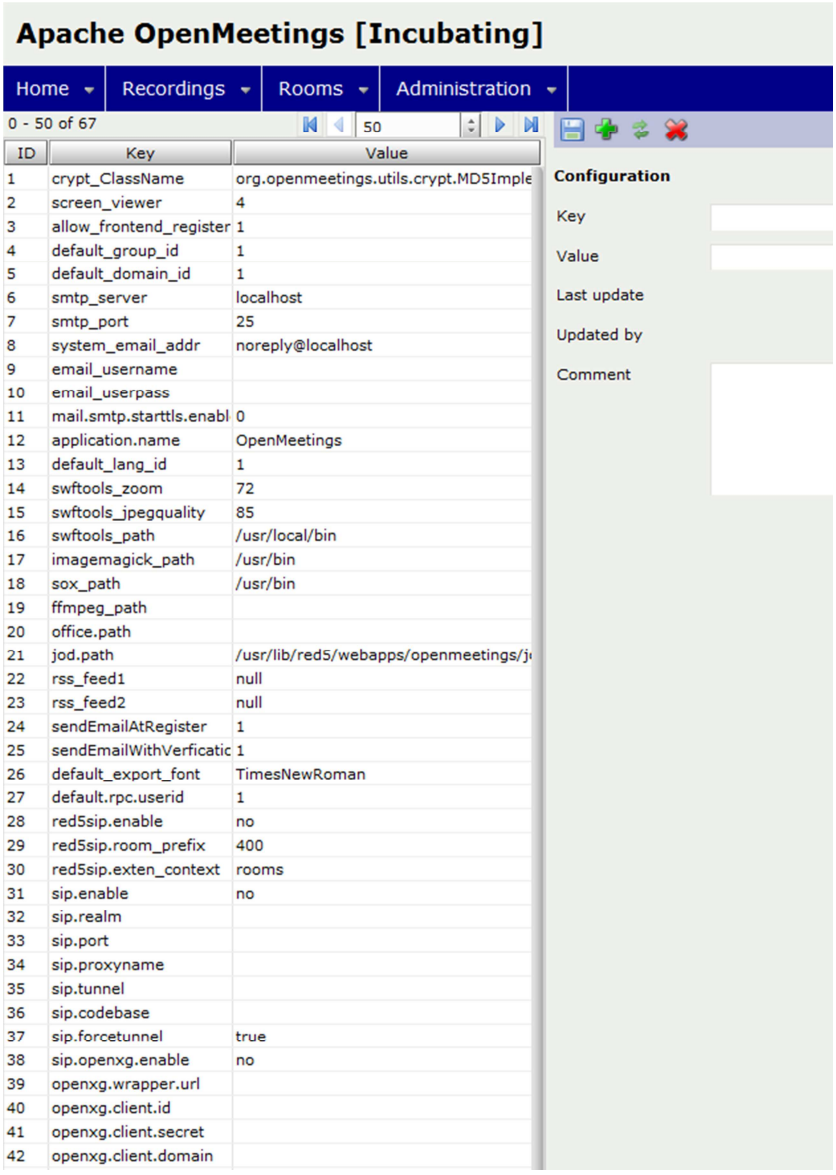
Once logged in go to **Administration > Configuration**



You will see on the left hand pane a list of keys and values, the ones we are interested in are

SWFTools Path	**/usr/local/bin**
ImageMagick Path	**/usr/bin**
FFMPEG Path	**/usr/local/bin**
SoX Path	**/usr/bin**
JOD Path	**/usr/lib/red5/webapps/openmeetings/jodconverter-core-3.0-beta-4/lib**

Click on the left hand pane option and then enter the value as above, click on the save button to apply the changes, once you have done each key you should see the following:



JOD will find open office in this case so we do not need to set the path.

OpenMeetings 2.X Installation on Debian 64bit Squeeze

Stephen Cottham **15/05/2012**

Step 12: Securing OpenMeetings using encryption (Optional)

12.1 - Generating CSR:

We can do this in a few ways, the first way I will show here is simply by generating a CSR and inserting these into OpenMeetings.

Create a new keystore and key, use the same password for both: (Taken from OM Website http://incubator.apache.org/openmeetings/RTMPSAndHTTPS.html)

keytool -keysize 2048 -genkey -alias red5 -keyalg RSA -keystore red5/conf/keystore
Enter keystore password:
Re-enter new password:
What is your first and last name?
[Unknown]: <your hostname, e.g demo.openmeetings.de>
What is the name of your organizational unit?
[Unknown]: Dev
What is the name of your organization?
[Unknown]: OpenMeetings
What is the name of your City or Locality?
[Unknown]: Henderson
What is the name of your State or Province?
[Unknown]: Nevada
What is the two-letter country code for this unit?
[Unknown]: US
Is CN=demo.openmeetings.de, OU=Dev, O=OpenMeetings, L=Henderson, ST=Nevada, C=US correct?
[no]: yes
Enter key password for <red5>

Generate a CSR:

keytool -certreq -keyalg RSA -alias red5 -file red5.csr -keystore red5/conf/keystore

Submit CSR to your CA of choice and receive a signed certificate
Import your chosen CA's root certificate into the keystore (may need to download it from their site - make sure to get the root CA and not the intermediate one)

keytool -import -alias root -keystore red5/conf/keystore -trustcacerts -file root.crt

(note: you may receive a warning that the certificate already exists in the system wide keystore - import anyway)

Import the intermediate certificate(s) you normally receive with the certificate:

keytool -import -alias intermed -keystore red5/conf/ keystore -trustcacerts -file intermediate.crt

Import the certificate you received:

keytool -import -alias red5 -keystore red5/conf/keystore -trustcacerts -file demo.openmeetings.de.crt

12.2 – Using Existing certs such as wild card certificates instead of generating a new CSR.

First let's go back to our work area:

cd /usr/adm/
mkdir certs
cd certs/

Using WinSCP or equivalent copy your wild card key and cert files: yourdomain.key.pem and yourdomain.cert.pem - **(These should be in PEM format)**

Now issue the following to convert the files to DER format

openssl pkcs8 -topk8 -nocrypt -in apache.key.pem -inform PEM -out key.der -outform DER
openssl x509 -in apache.cert.pem -inform PEM -out cert.der -outform DER

Now we need a couple of files to help us import the DER files into the keystore, so issue the following:

wget http://www.agentbob.info/agentbob/80/version/default/part/AttachmentData/data/ImportKey.java
wget http://www.agentbob.info/agentbob/81/version/default/part/AttachmentData/data/ImportKey.class

Then use these commands to import:

java ImportKey key.der cert.der

Finally move the keystore to the correct location

mv /root/keystore.ImportKey /usr/lib/red5/conf/keystore

N.B = Alias:importkey Password:importkey (When using the java import key files, you can change the password afterwards)

Stephen Cottham **15/05/2012**

Now that we have either a new Cert of the wild card cert inside our Keystore we need to make some changes to OM 2.x to use these certificates and thus encrypt communications using HTTPS and RTMPS.

To use RTMPS do the following:
First make some changes to the red5-core.xml file by issuing the following:

```
cd /usr/lib/red5/conf
vi red5-core.xml
```

now uncomment <!-- RTMPS --> section by removing the <!-- and the --> leaving this:

```
<bean id="rtmpsMinaIoHandler"
      class="org.red5.server.net.rtmps.RTMPSMinaIoHandler">
      <property name="handler" ref="rtmpHandler" />
      <property name="codecFactory" ref="rtmpCodecFactory" />
      <property name="rtmpConnManager" ref="rtmpMinaConnManager" />
      <property name="keyStorePassword" value="${rtmps.keystorepass}" />
      <property name="keystoreFile" value="conf/keystore" />
   </bean>

   <bean id="rtmpsTransport" class="org.red5.server.net.rtmp.RTMPMinaTransport" init-
method="start" destroy-method="stop">
      <property name="ioHandler" ref="rtmpsMinaIoHandler" />
      <property name="connectors">
         <list>
            <bean class="java.net.InetSocketAddress">
               <constructor-arg index="0" type="java.lang.String" value="${rtmps.host}" />
               <constructor-arg index="1" type="int" value="${rtmps.port}" />
            </bean>
         </list>
      </property>
            <property name="ioThreads" value="${rtmp.io_threads}" />
      <property name="jmxPollInterval" value="1000" />
      <property name="tcpNoDelay" value="${rtmp.tcp_nodelay}" />
   </bean>
```

Save this file and then do the following:

```
cd /usr/lib/red5/conf
vi red5.properties
```

set rtmps.port=**5443**
rtmps.keystorepass=**password** **(password = password you set on your new keystore)**

Now edit config.xml by doing the following:

cd /usr/lib/red5/webapps/openmeetings/
vi config.xml

Set these following values:

<rtmpsslport>**5443**</rtmpsslport>
<useSSL>**yes**</useSSL>
<proxyType>**best**</proxyType>

To use HTTPS do the following:

First make a backup of the original jee-container file by doing the following:

cd /usr/lib/red5/conf
mv jee-container.xml jee-container.xml.orig

Then rename the SSL jee template

mv jee-container-ssl.xml jee-container.xml

Now edit the config.xml

cd /usr/lib/red5/webapps/openmeetings/
vi config.xml

set

<protocol>**https**</protocol>
<red5httpport>**443**</red5httpport>

Lastly edit red5.properties by doing the following:

cd /usr/lib/red5/conf
vi red5.properties

set

https.port=**443**
http.port=**443**

Now restart OM using the following:

/etc/init.d/red5 restart

We can now connect using the following link:

https://yourdomain/openmeetings

Step 13: Installing Reverse Proxy using Apache Web Server (Optional)

Another way to secure the OpenMeetings service is to use Apache as a reverse proxy, to do this we need to do the following:

First install Apache2 and enabling relevant modules by running the following commands:

```
apt-get install apache2
a2enmod proxy
a2enmod proxy_http
a2enmod ssl
a2enmod headers
a2enmod rewrite
a2enmod cache
/etc/init.d/apache2 restart
```

We can now redirect port 80 (less secure) or port 443 (secure) to port 5080, to do this we need to create a virtual host, to do this do the following:

cd /etc/apache2/sites-enabled/

Now for SSL redirect **(using a Cert on Apache instead of keystore)** do the following

vi om.yourdomain.com-ssl

and add the following

```
<IfModule mod_ssl.c>
#NameVirtualHost *:443
ProxyRequests Off
<VirtualHost *:80>
  ServerAdmin hostmaster@domain.com
  ServerName om.yourdomain.com

  ProxyPreserveHost On
  RewriteEngine on
```

```
 # Redirect http traffic to https
 RewriteRule ^/(.*)$       https://om.yourdomain.com/$1 [L,R]
</VirtualHost>

<VirtualHost *:443>
 ServerAdmin hostmaster@domain.com
 ServerName om.yourdomain.com

 SSLEngine on
 SSLProxyEngine On
 RequestHeader set Front-End-Https "On"
 ProxyPreserveHost On
 RewriteEngine on
 CacheDisable *

 # Reverse proxy all requests
 RewriteRule ^/(.*)        http://om.yourdomain.com:5080/$1 [P]

 SSLCertificateFile /etc/ssl/certs/yourdomain.pem
 SSLCertificateKeyFile /etc/ssl/private/yourdomain.key

 SetEnvIf User-Agent ".*MSIE.*"    \
 nokeepalive ssl-unclean-shutdown  \
 downgrade-1.0 force-response-1.0
</VirtualHost>
```

You will need SSL certs for this to work, so copy your Key and Cert to the following **locations (use WinSCP or equiv)**

/etc/ssl/certs/ = yourdomain.pem
/etc/ssl/private/ = yourdomain.key

Now restart apache2

/etc/init.d/apache2 restart

You can now go to https://om.yourdomain.com/openmeetings which will encrypt ONLY the HTTPS components and re-write the address so it doesn't show the 5080 port; it still uses RTMP for flash.

And finally for HTTP redirect and re-write do the following: **(assuming no SSL don't use this in conjunction with the other config – both can be incorporated but this is just for example)**

vi om.yourdomain.com-http

Add the following:

```
ProxyRequests Off
<VirtualHost *:80>
  ServerAdmin hostmaster@domain.com
  ServerName om.yourdomain.com

  ProxyPreserveHost On
  RewriteEngine on
  CacheDisable *

  # Reverse proxy all requests
  RewriteRule ^/(.*)        http://om.yourdomain.com:5080/$1 [P]
</VirtualHost>
```

Then restart Apache with

/etc/init.d/apache2 restart

Now you can access OM with

http://om.yourdomain.com/