



*JBoss Operations Network
Hands on Lab*

JON

Table of Contents

Introduction	3
Overview	3
System Expectations	3
What is Expected of You	3
Lab Number 1: Install JON Server	4
Get the File	4
Just Unzip and Go	4
Lab Number 2: JON Agent Install	14
Lab Number 3: Explore the JON Interface	20
Conclusion	27
What you learned	27

Introduction

Overview

JBoss Operations Network (JON) is a tool that allows you to monitor and manage the JBoss instances you have installed on your network. It is simple Server Client/Agent architecture, whereby you install the JON server for production with an Oracle or Postgress database; for this example we will use an embedded Hypersonic database not intended for production. Then you install an agent and it will automatically discover the JBoss, OS and other instances that are running on the same computer as the Agent. We will then walk though some of the features of JBoss Operations Network.

Included Files

Several files are included with this workshop. These files are all included in the `$(User_Home)/Downloads` directory. You will need to get files out of the Platforms and JON directory, and we will walk you through those steps.

System Expectations

It is expected that you have a Windows, Linux or Mac notebook and you are comfortable working and running Java programs on it. It is expected you will have the environment PATH set to include a JDK 6.0 to use for these labs. It is also a good idea to have JAVA_HOME set to your JDK that you plan on using. Please make sure you do this before running any of the labs. Two examples of what these settings might look like is below:

```
PATH=${Some Path}/jdk1.6.0_20/bin:${Some Path}/ant/apache-ant-1.8.1: ${More Path Info}
JAVA_HOME=${Some Path}jdk1.6.0_20
```

To verify that this is correct you will have to look at these values on your system. One simple way to check the JDK version that you have is to run:

```
java -version
```

to see which one is in your path, and it should be a JDK 6 version to run this lab. Also note that Ant has been installed for you and you will have to install a few other things as the lab progresses.

Please note that having an existing CLASSPATH environment variable set may cause odd issues with jar class loading, it is recommended to have this empty and not set. Please make sure to back up this value for when the lab is over. You are welcome to not do this, however weird things may happen when you are running through the labs.

What is Expected of You

Please feel free to raise your hands with any questions that you have about the lab; feel free to ask why it is you are doing something, or if something does not feel right. Please know that all care was made in creating this user guide, but all screen shots and steps along the way might be off by just a little so please be patient with any issues.

Lab Number 1: Install JON Server

Get the File

In the `$(USER_HOME)Downloads/JON` directory you will find the JON installer, it is platform agnostic and it should look something like this:

```
downloadJBNLICENSE.xml
jon-plugin-pack-eap-2.3.1.GA.zip
jon-server-2.3.1.GA.zip
```

Just Unzip and Go

Installing the JON is very very simple, and has the following high level steps:
Create a ServersJON directory in the user home directory, make this unique
Unzip the contents of the jon-server* file above into that directory

```
mkdir ${UserHome}/ServerJON
cd ${UserHome}/ServerJON
unzip ~student/Downloads/JON/jon-server-2.3.1.GA.zip
```

Your command should look something like this:

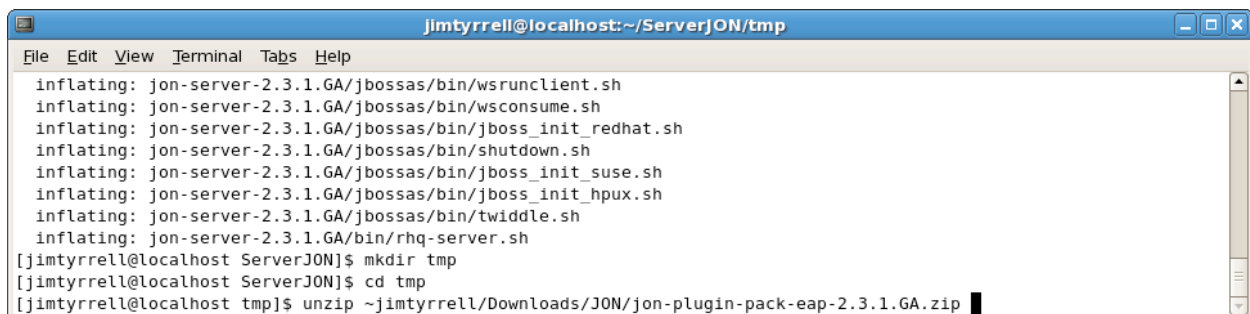
A terminal window titled "jimtyrrell@localhost:~/ServerJON" with a menu bar (File, Edit, View, Terminal, Tabs, Help). The terminal shows the following commands and output:

```
[jimtyrrell@localhost ~]$ mkdir ServerJON
[jimtyrrell@localhost ~]$ cd ServerJON
[jimtyrrell@localhost ServerJON]$ unzip ~jimtyrrell/Downloads/JON/jon-server-2.3.1.GA.zip
```

Now make a temp directory for the jon-plugin pack and unzip it

```
mkdir tmp
cd tmp
unzip ~student/Downloads/JON/jon-plugin-pack-eap-2.3.1.GA.zip
```

It should look like this:

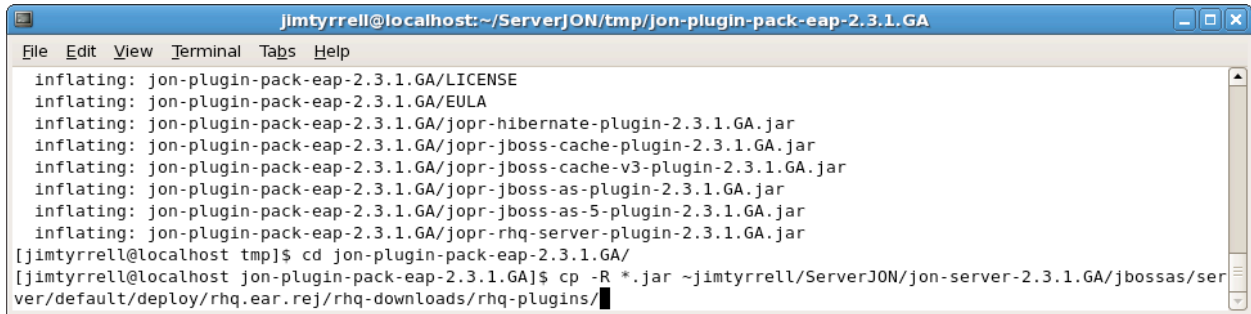
A terminal window titled "jimtyrrell@localhost:~/ServerJON/tmp" with a menu bar (File, Edit, View, Terminal, Tabs, Help). The terminal shows the following commands and output:

```
inflating: jon-server-2.3.1.GA/jbossas/bin/wsrunclient.sh
inflating: jon-server-2.3.1.GA/jbossas/bin/wsconsume.sh
inflating: jon-server-2.3.1.GA/jbossas/bin/jboss_init_redhat.sh
inflating: jon-server-2.3.1.GA/jbossas/bin/shutdown.sh
inflating: jon-server-2.3.1.GA/jbossas/bin/jboss_init_suse.sh
inflating: jon-server-2.3.1.GA/jbossas/bin/jboss_init_hpux.sh
inflating: jon-server-2.3.1.GA/jbossas/bin/twiddle.sh
inflating: jon-server-2.3.1.GA/bin/rhq-server.sh
[jimtyrrell@localhost ServerJON]$ mkdir tmp
[jimtyrrell@localhost ServerJON]$ cd tmp
[jimtyrrell@localhost tmp]$ unzip ~jimtyrrell/Downloads/JON/jon-plugin-pack-eap-2.3.1.GA.zip
```

The next step is to copy those unzipped jar files into the correct location, by opening the README.txt above we can see the home for those files.

```
cd jon-plugin-pack-eap-2.3.1.GA
cp -R *.jar
~student/ServerJON/jon-server-2.3.1.GA/jbossas/server/default/deploy/rhq.ear.rej/rhq-downloads/rhq-plugins
```

As shown below:



Please note if you have already started the JON server at least once this path is slightly different as noted in the README.txt

Okay we are now almost done, while we are here, lets unzip a JBoss EAP instance so we have something to discover.

```
cd ../../
unzip ~student/Downloads/Platforms/jboss-eap-5.0.0.GA.zip
as shown:
```



Now lets startup a tail -f session so we can see our server log output.

```
cntrl-shift-n
cd jon-server-2.3.1.GA
tail -f logs/rhq-server-log4j.log
```

This will open up a new window to view the logfile as it is generated, as shown:

A screenshot of a terminal window titled "jimtyrrell@localhost:~/ServerJON/jon-server-2.3.1.GA". The window has a menu bar with "File", "Edit", "View", "Terminal", "Tabs", and "Help". The terminal content shows the following sequence of commands and output:

```
[jimtyrrell@localhost ~]$ cd ServerJON/
jboss-eap-5.0/      jon-server-2.3.1.GA/ tmp/
[jimtyrrell@localhost ~]$ cd ServerJON/jon-server-2.3.1.GA
[jimtyrrell@localhost jon-server-2.3.1.GA]$ ls
bin  etc  EULA  jbossas  LICENSE
[jimtyrrell@localhost jon-server-2.3.1.GA]$ tail -f logs/rhq-server-log4j.log
tail: cannot open `logs/rhq-server-log4j.log' for reading: No such file or directory
tail: no files remaining
[jimtyrrell@localhost jon-server-2.3.1.GA]$ █
```

Opps you can see we have an error, lets just leave that window there for a second, so we can go back to it.

Lets go back to our other window and start up JON.

```
cd jon-server-2.3.1.GA/bin
./rhq-server.sh start
```

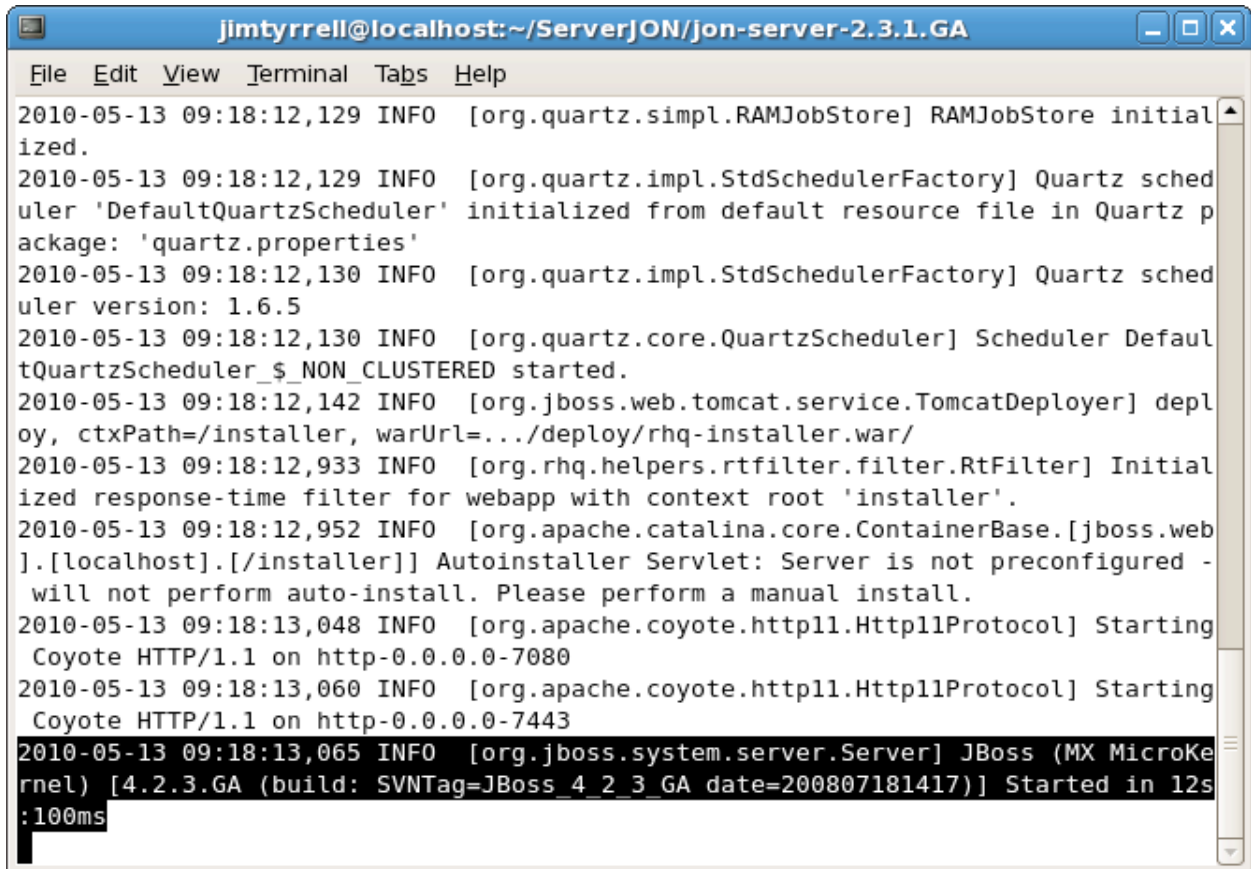
As shown below:



It should be noted that this command will return after starting up JON. You can then use it to “stop” the server also.

Hit enter, and then up arrow in your other window to watch the log output. You might have to try a few times until the server starts generating the log output.

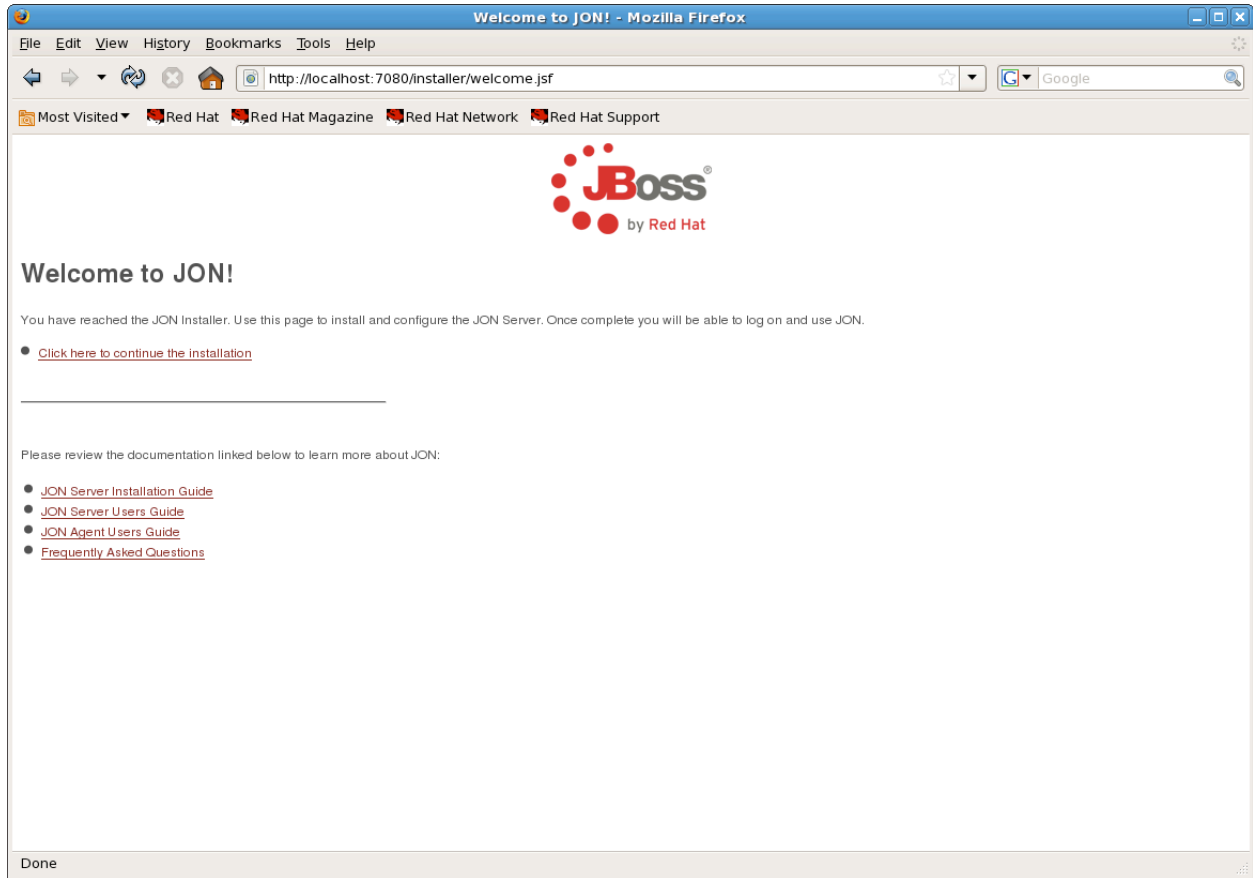
That window at server completion will look like this, notice the “Started” message in the bottom:



Now that the server is started, lets open it via a web browser:

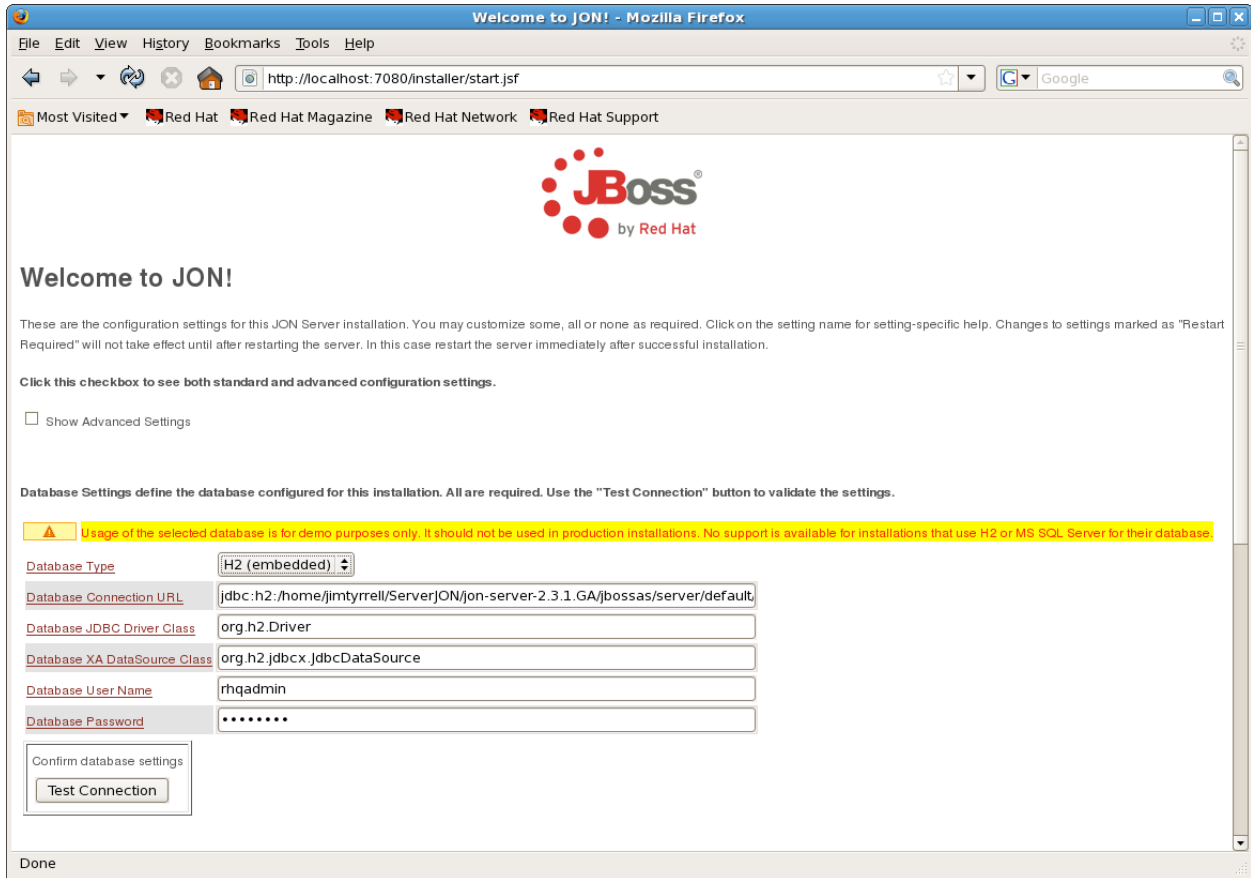
<http://localhost:7080>

It should look like this:

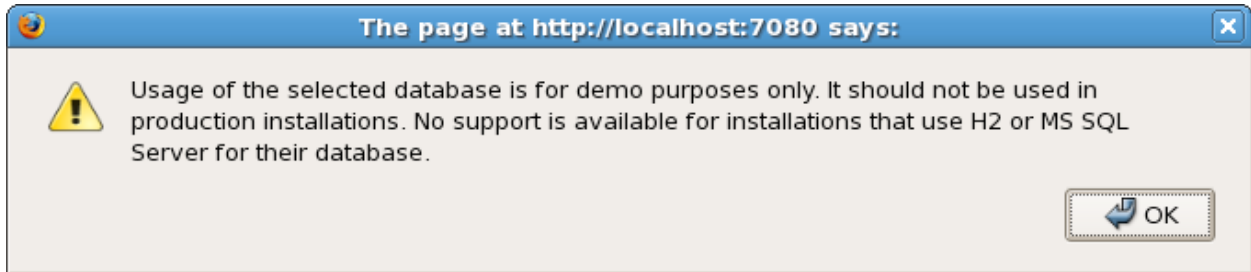


Click on the Click here to continue the installation

Change the Database Type to H2(embedded) as shown:



Click OK on the pop up window

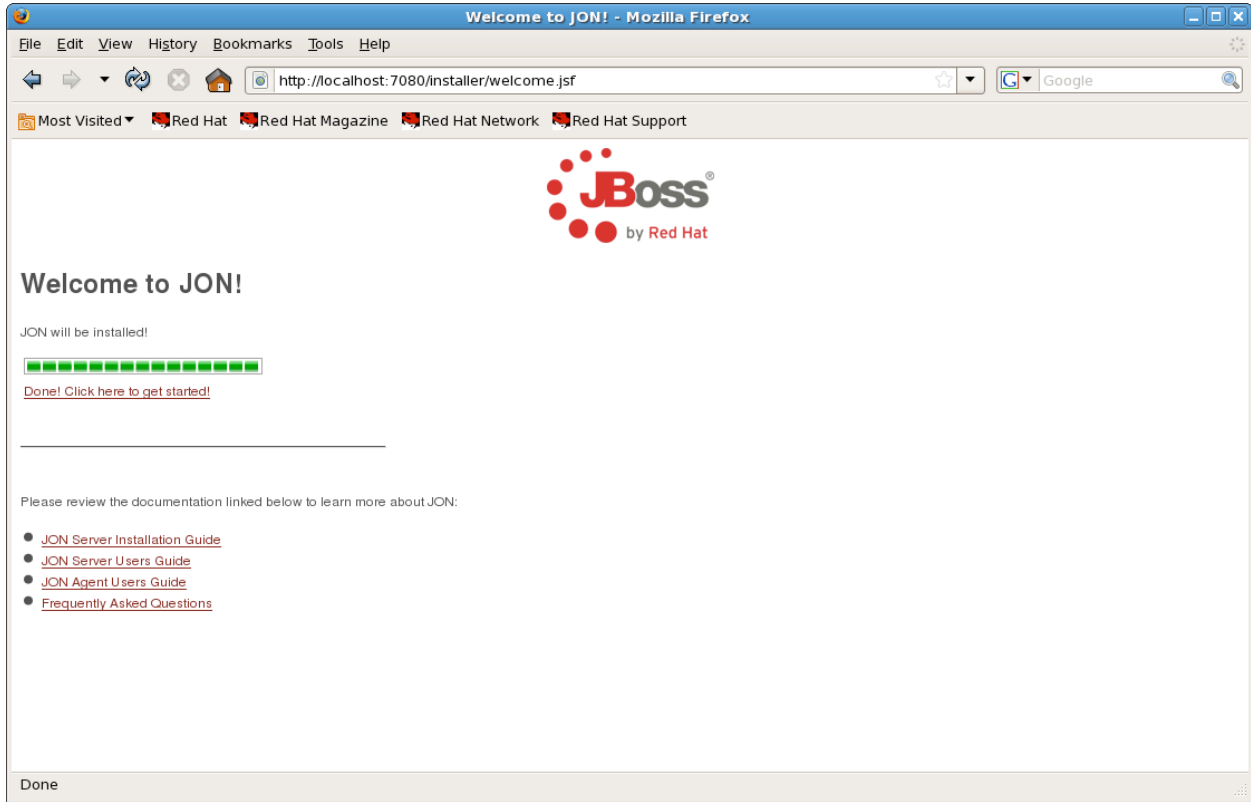


Scroll to the bottom and Click Install Server:

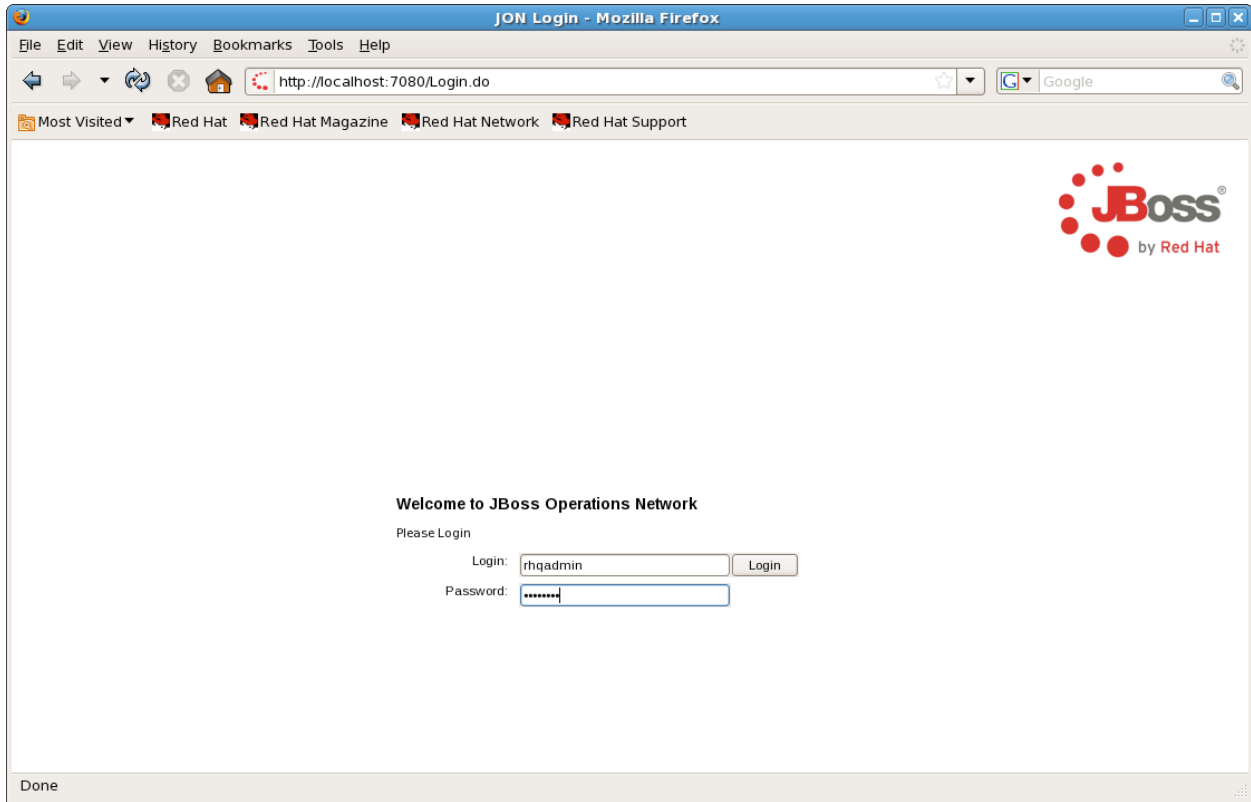


Wait until JON is finished installing. To kill time you can watch the log output scroll by in your tail -f terminal window.

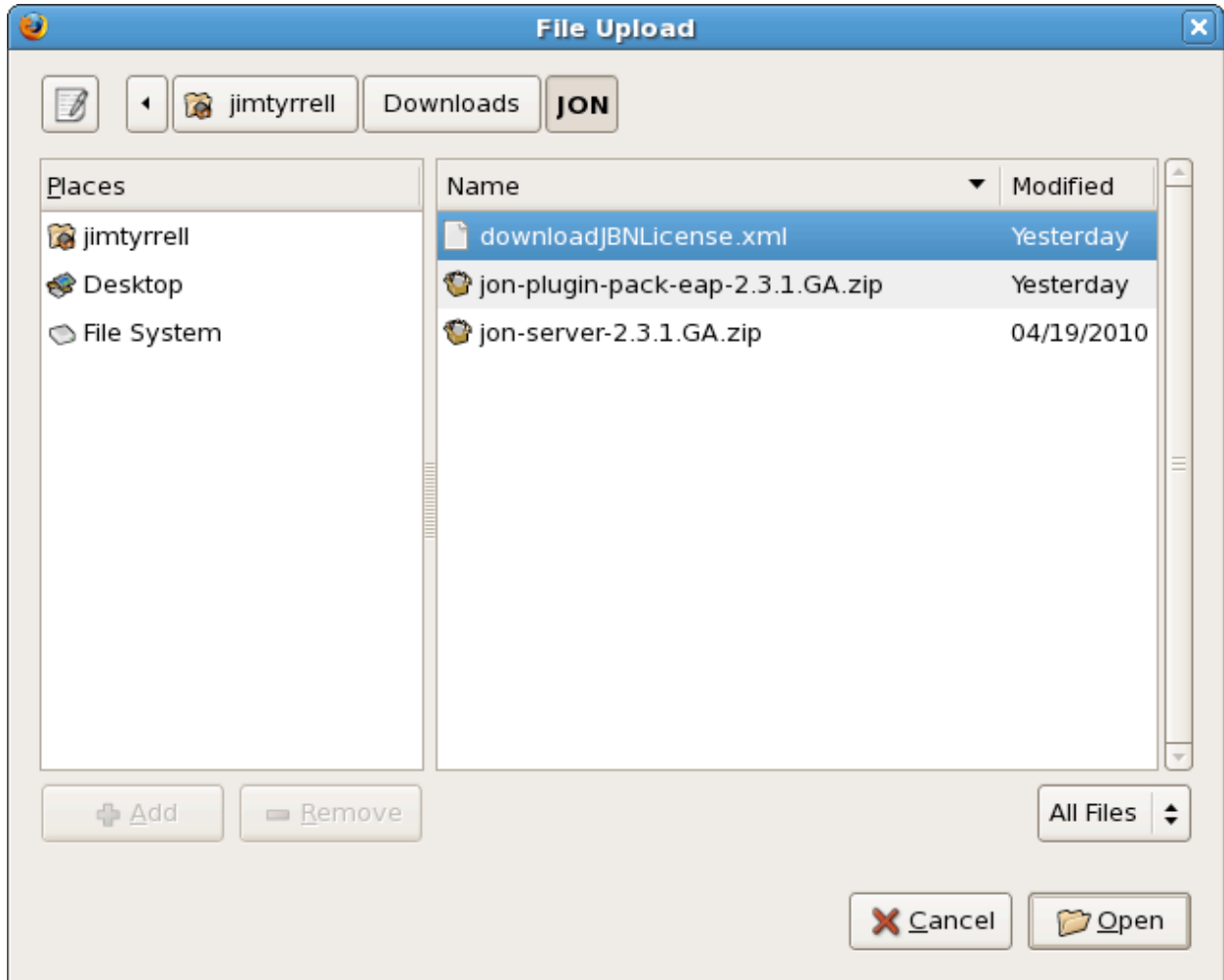
Once it is finished installing, click on the "Done! Click here to get started"



Clicking this will bring you to the main login page. Your username and password are rhqadmin and rhqadmin. Click login when done.

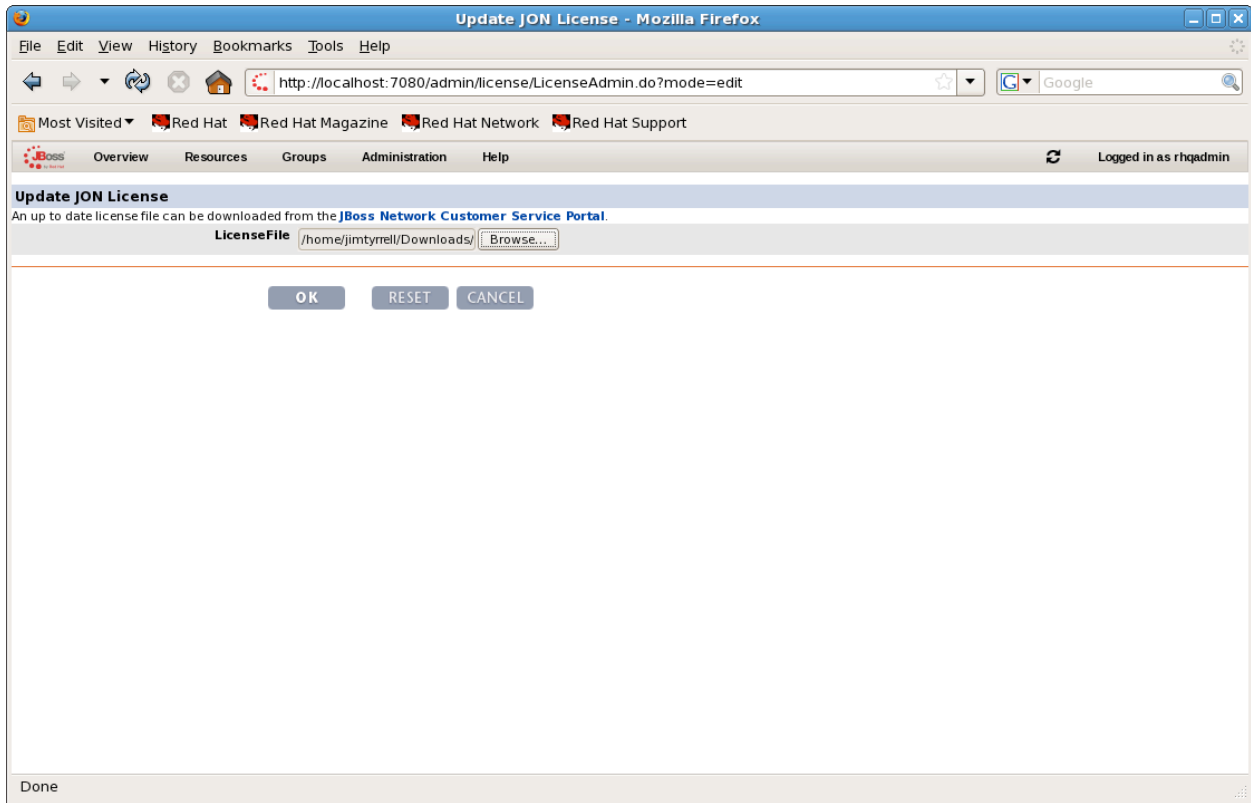


This will bring you to a page that tells you No license file loaded, click on Update License and load the file from the ~student/Downloads/JON directory as shown.



Click on Open

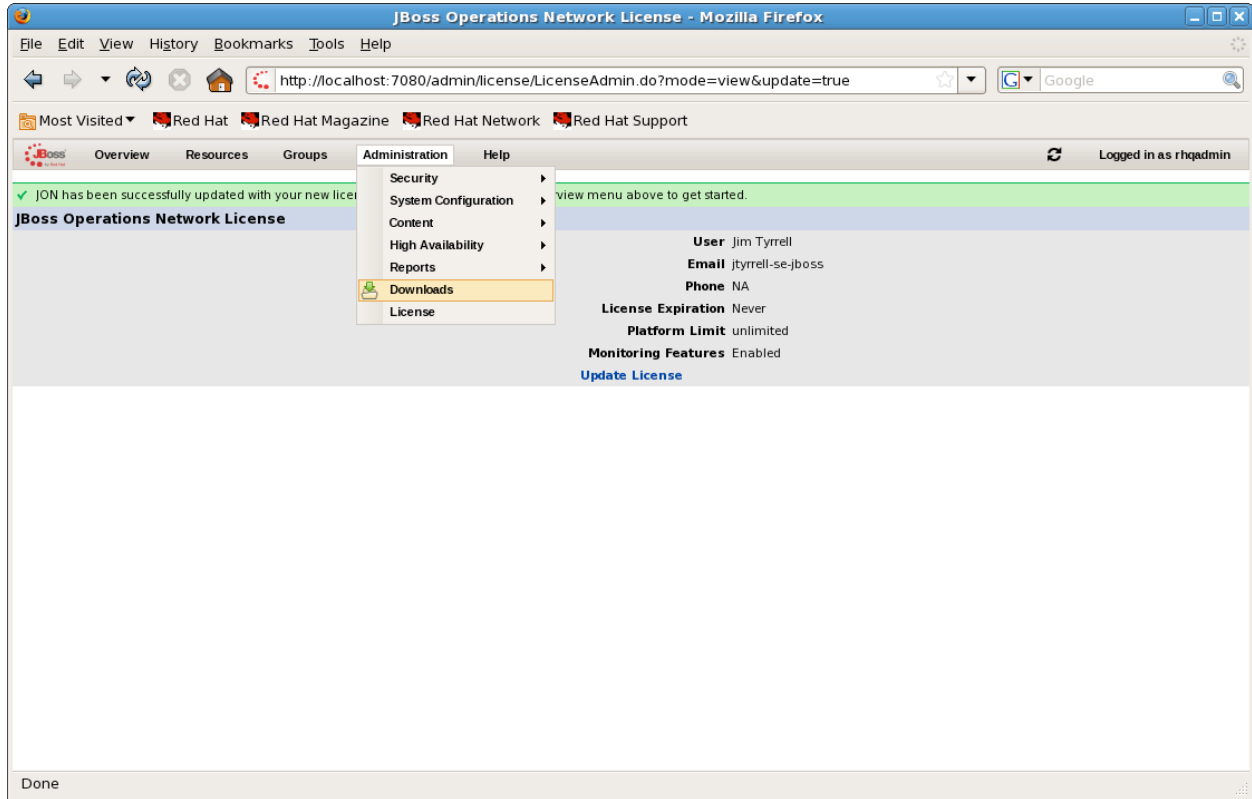
Click OK



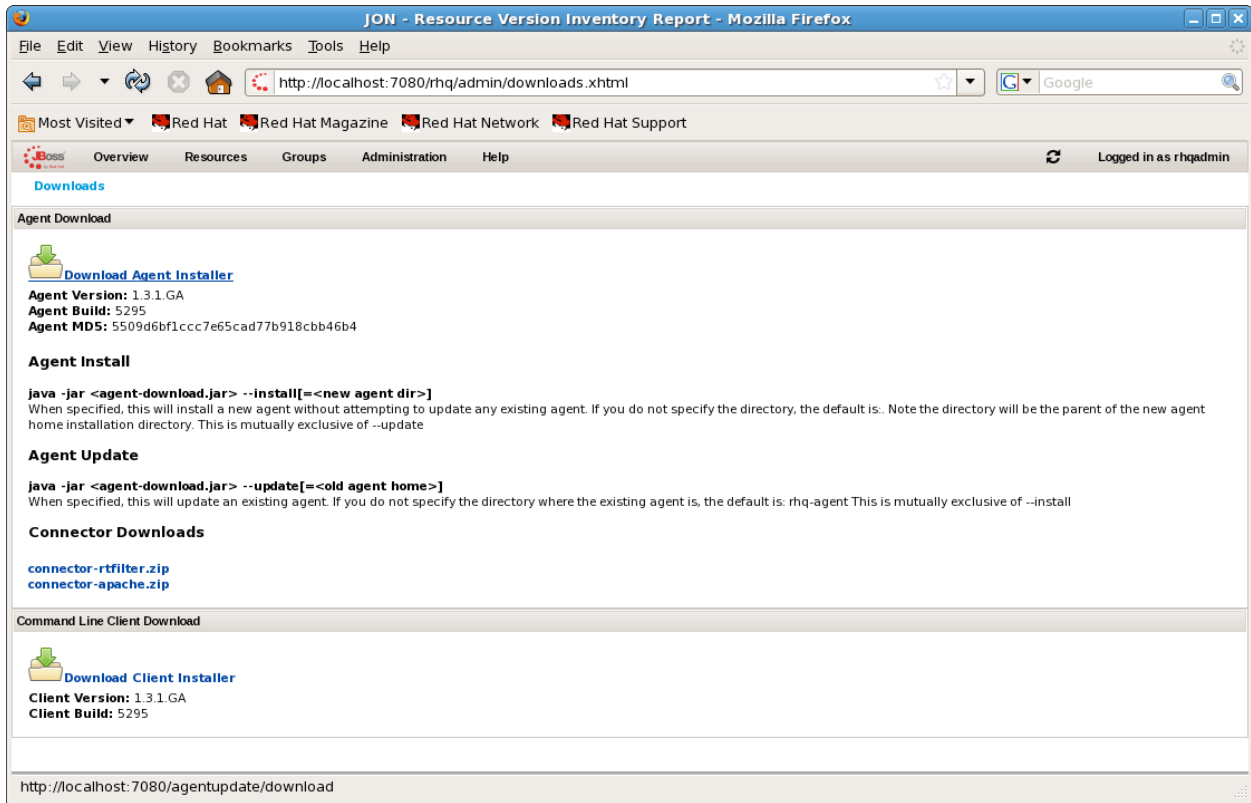
You are now ready to use JON, except we do not have an Agent nor any JBoss instance started, lets do that now.

Lab Number 2: JON Agent Install

In order to install the Agent, you need to click in the File menu at the top of the rendered Web Page Administration -> Downloads as shown



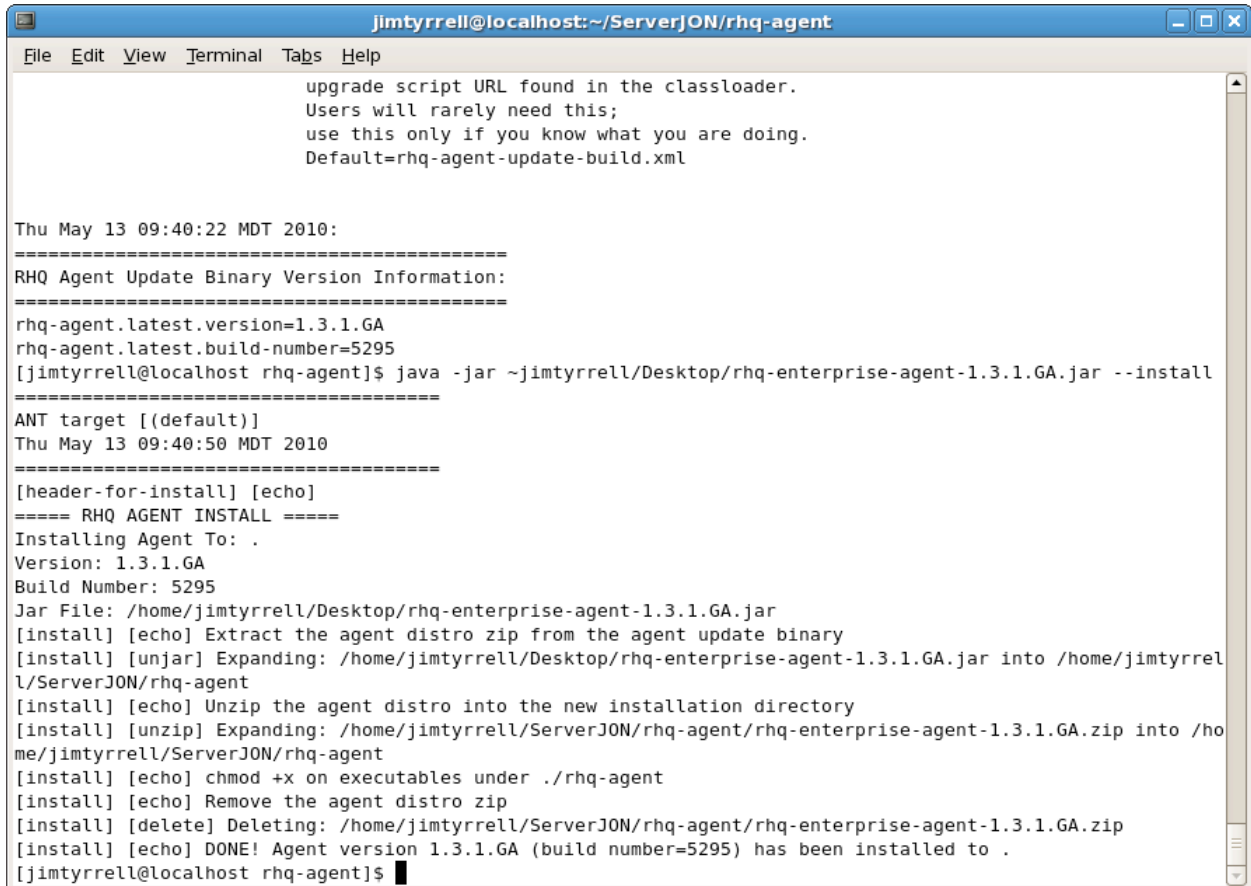
Then click on the Download Agent Installer:



This by default will save this file to your desktop. Open up a new terminal window cntrl shift n when a terminal is focused opening a new terminal session.

```
cd ~student/ServerJON/
mkdir jon-agent
cd jon-agent
java -jar ~student/Desktop/rhq-enterprise-agent-1.3.1.GA.jar --install
```

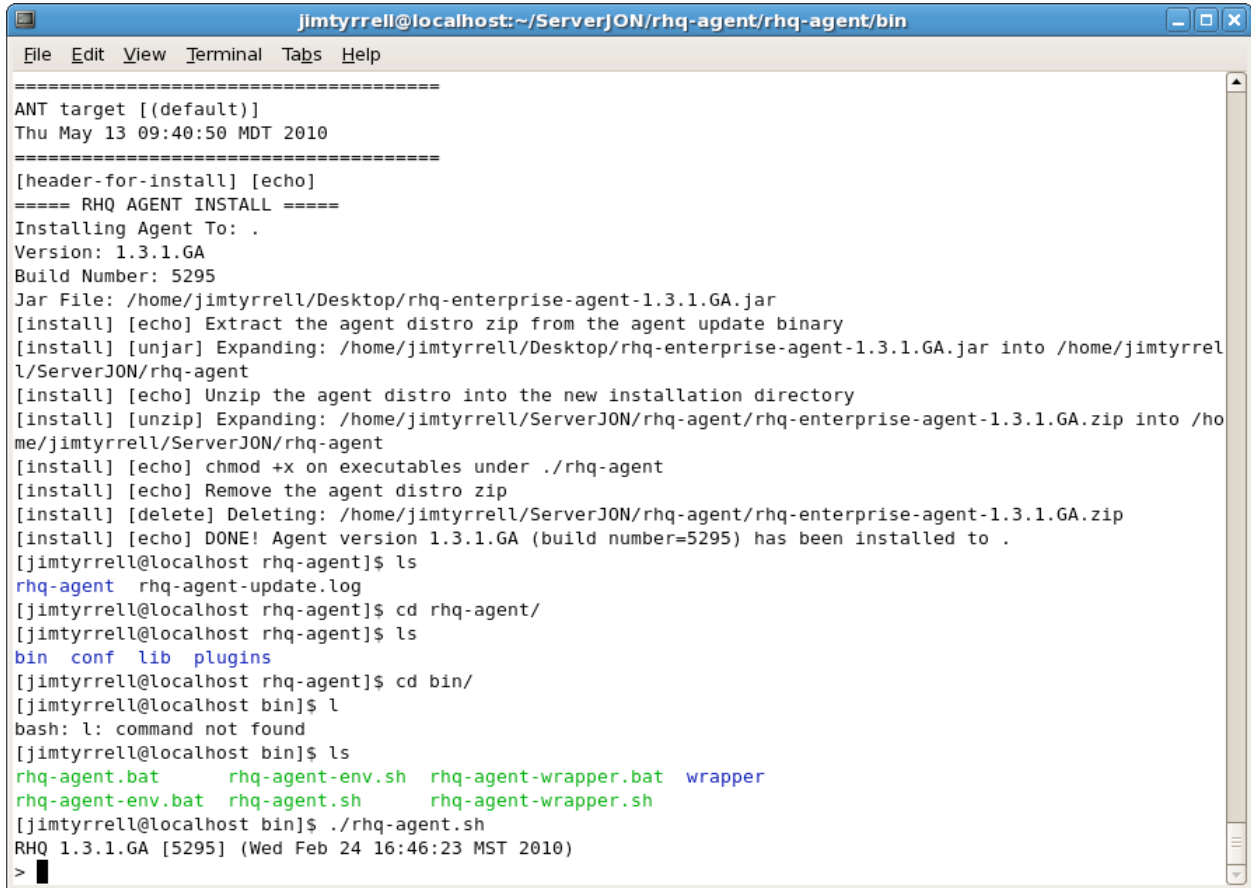
As shown:



Now it is time to start up the rhq-agent:

```
cd rhq-agent/bin
./rhq-agent.sh
```

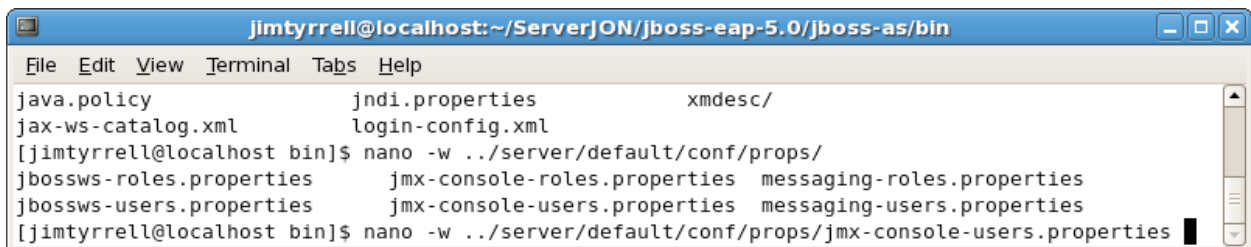
When it is done starting it will look like this:



Now open up two more terminal windows, and lets get two JBoss EAP instances started:

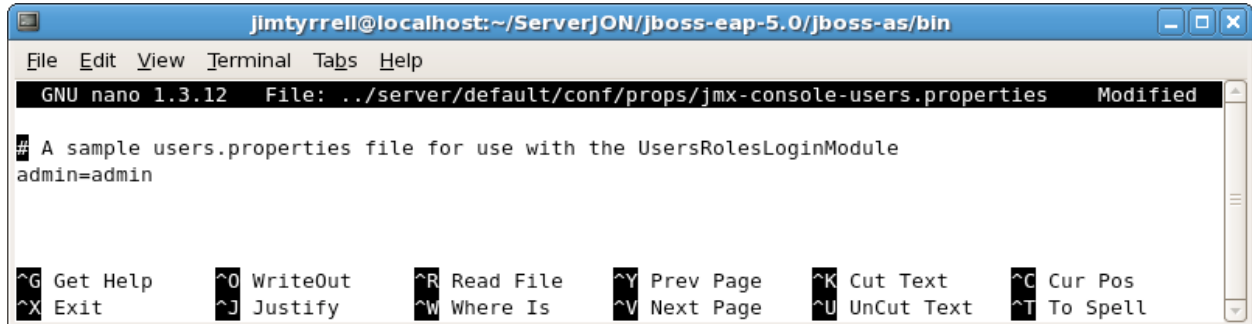
Before you do that, you will need to uncomment the admin=admin username in the all and default folder:

```
nano -w
${User_Home}/ServerJON/jboss-eap-5.0/jboss-as/server/default/conf/props/jmx-console-users.properties
```



and for all
 nano -w
 \${User_Home}/ServerJON/jboss-eap-5.0/jboss-as/server/all/conf/props/jmx-console-users.
 properties

In both directories the file needs to look like this:



Don't forget to make sure this is done for both all and default.

```
cd -student/ServerJON/jboss-eap-5.0/jboss-as/bin
./run.sh -c default -Djboss.service.binding.set=ports-01
```



in another window

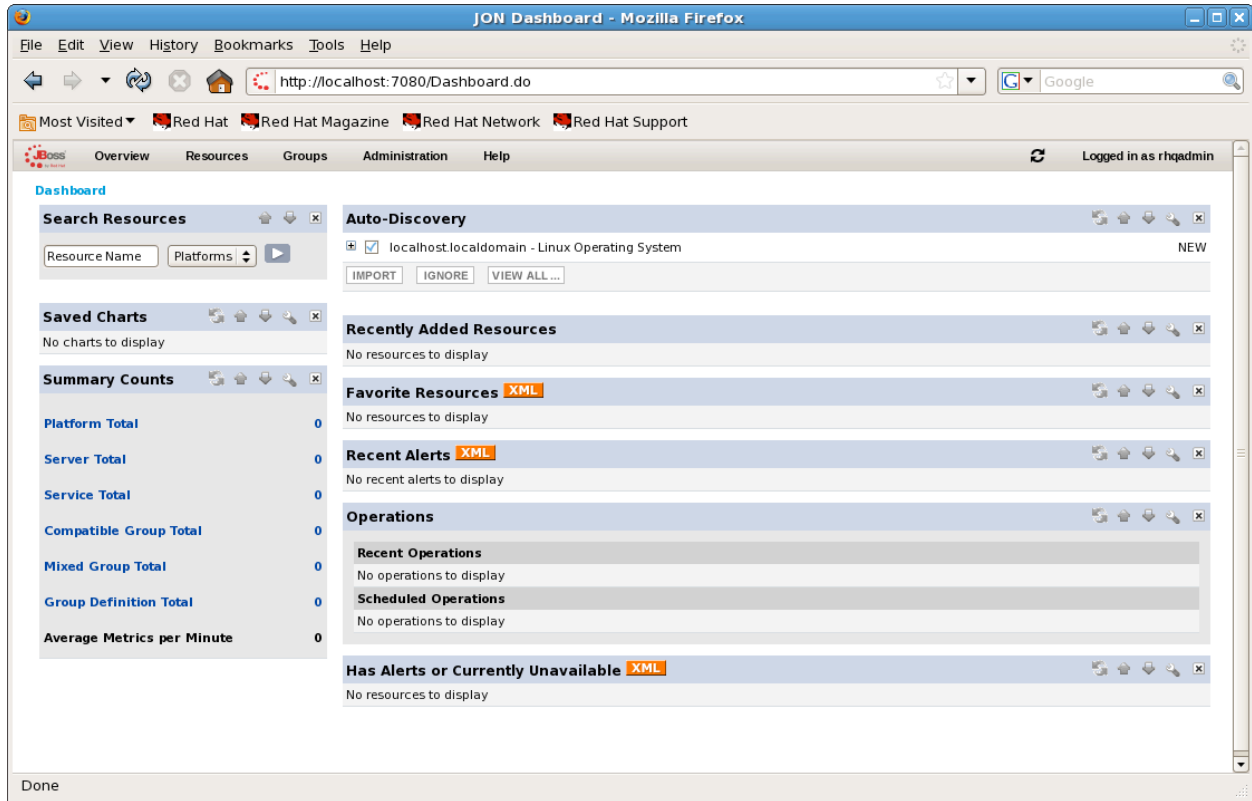
```
./run.sh -c all
```



Lab Number 3: Explore the JON Interface

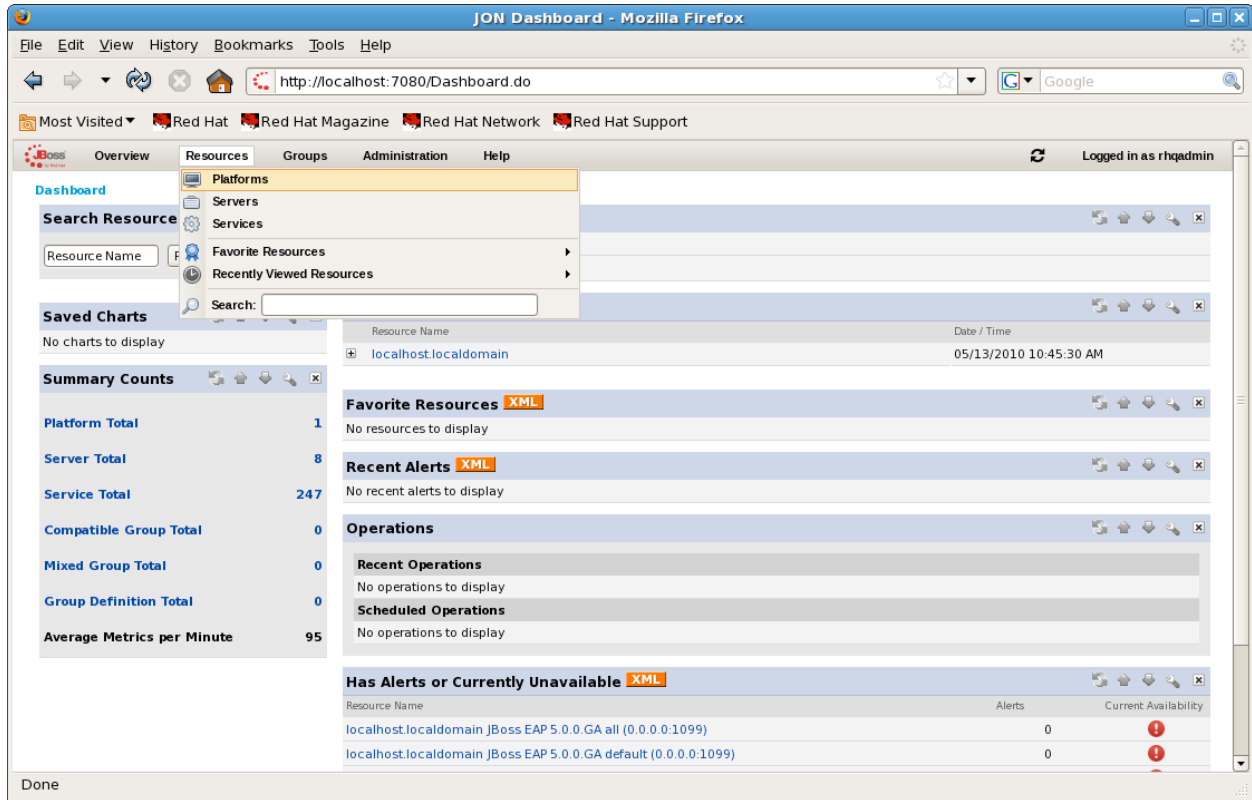
Either log back into JON, or go to the main Dashboard Overview -> Dashboard

You should see the Auto Discovery has some things already automatically discovered. If not in the rhg-agent you can run the command discovery -f. Once resources are discovered, the UI should look like this:



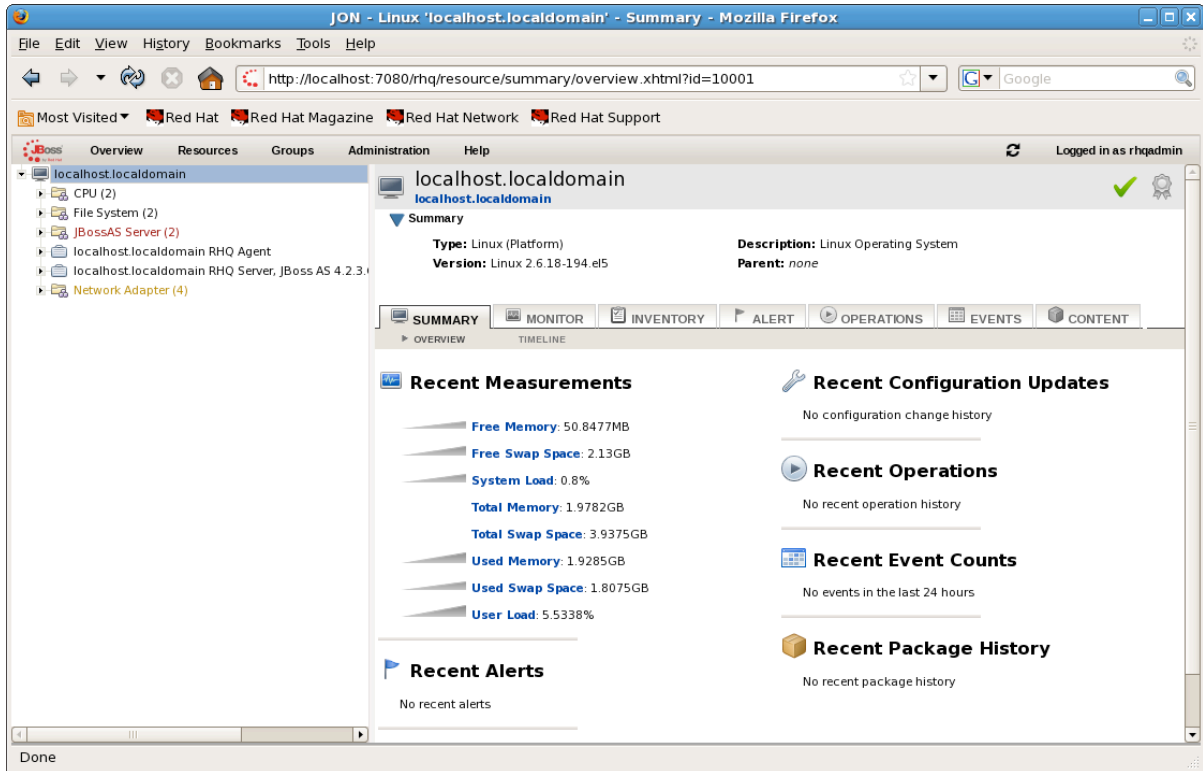
Feel free to click on the plus sign to the left of the localhost.localdomain, expanding the list of resources discovered. You will notice our JBoss instances, all, default, the Jon Server, the Agent, and of course your local Operating System. Click import

Once this is done you should notice the left hand side has Platform (OS), Server (JBoss), and Service totals as shown below. Also note that Resources Menu at the top as shown. This is one way to navigate to the specific resources that you wish to browse:



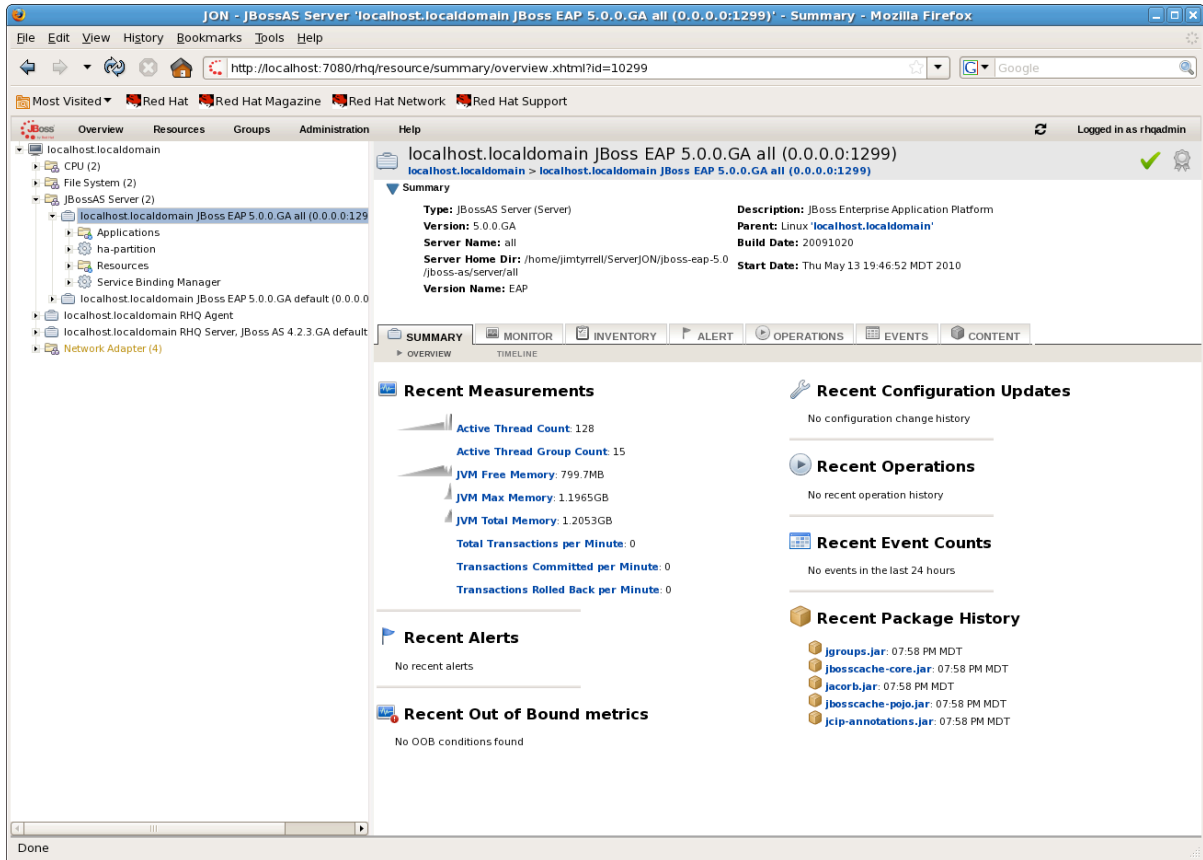
A few Activities:

1. Click on the Resources -> Platforms. Once this page loads, click on localhost.localdomain. You should see a page that looks like this:



Note the Summary, Monitor, Inventory...etc that go across the top. Also note the summary information, you can see at a glance information specific to the Operating System that you are running on.

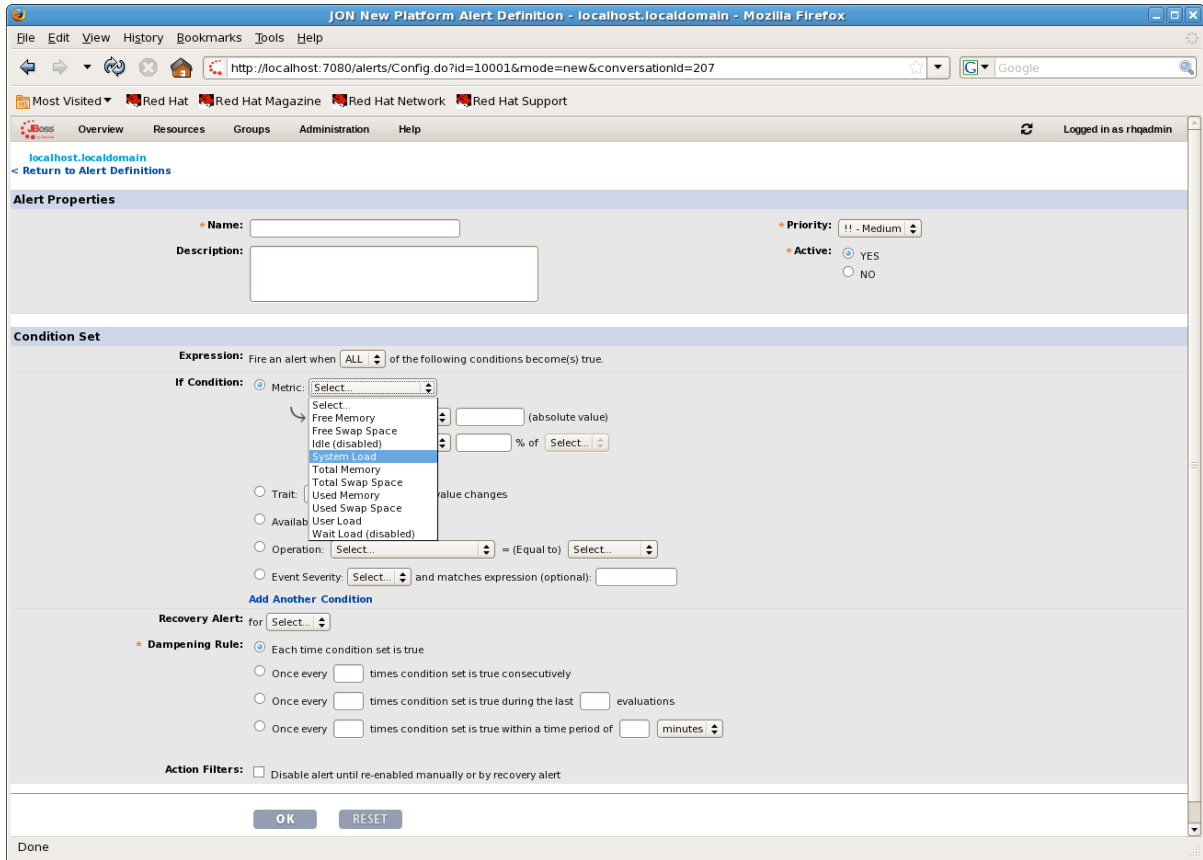
2. If you expand the JBossAS Server view you will see your two JBoss instances. Click on one of them. Notice that the theme or the decoration is the same based on the Resource type, in other words, Summary, Monitor, Inventor.... etc are repeated as makes sense for various resources.



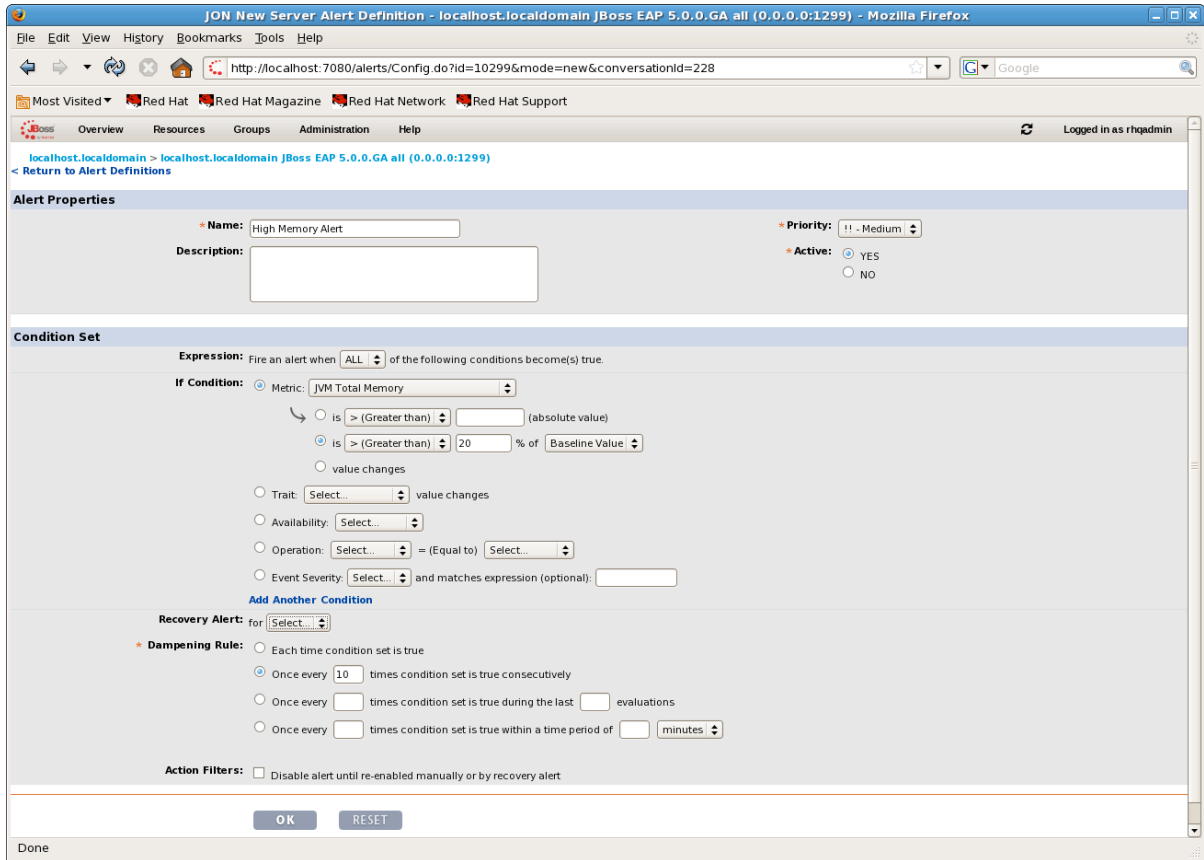
Also note there is a summary of JVM stats for that resource as shown above.

- For the JBoss instance click on the Monitor tab, this gives you a graph of past performance of the system. You might need to wait a few mins for this data to populate, but it will.
- Click on the localhost.localdomain in the upper left corner. Notice the "Monitor" tab was remembered. Nice user interface feature.

- Now go to the Alert tab this is where you can set alerts. Click on New Definition and note the Available Metric that you can search as you can see below:



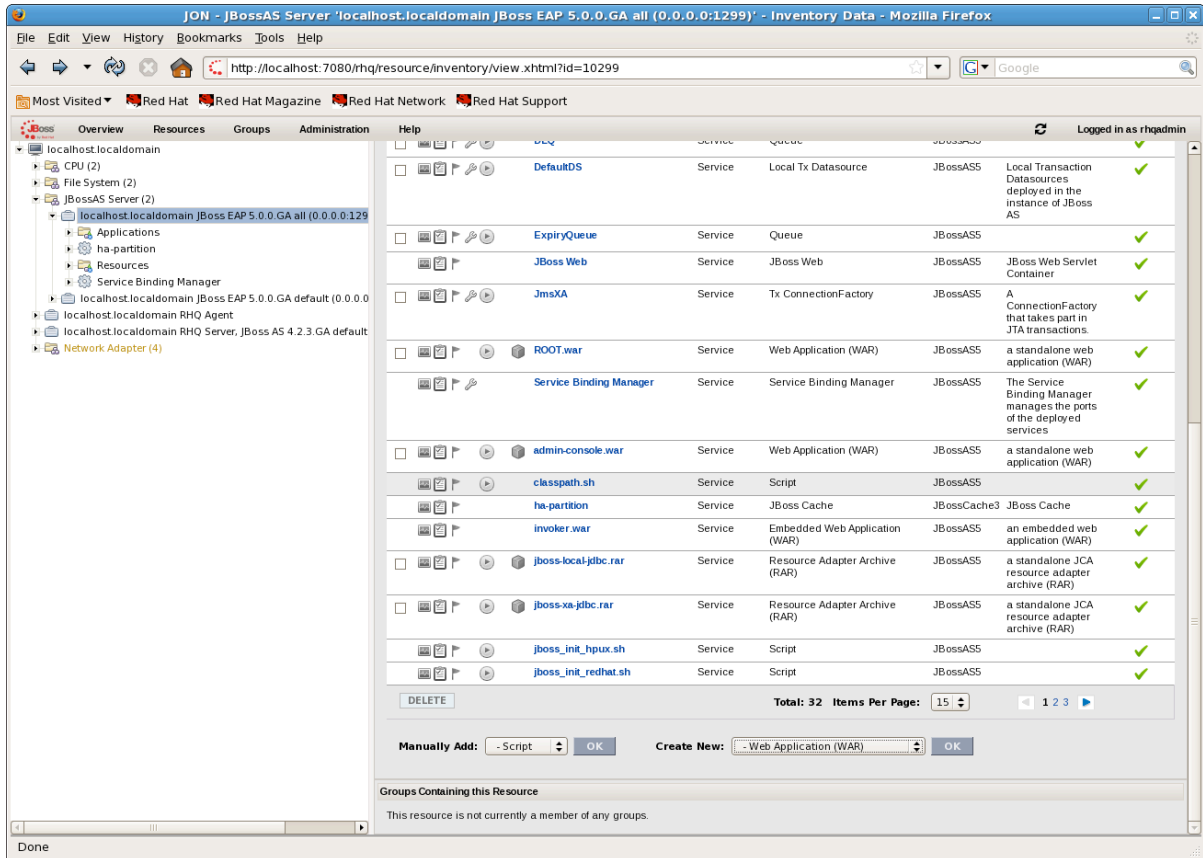
- Open up your JBoss view, and view the same metrics, see how they are different.
- Lets create a JBoss Metric, click on one of your JBoss Instances, and come to a screen that looks like this, set the Metric to be JVM Free Memory is less then 50% of Baseline Value, and Once ever 10 times condition is true consecutively, as shown below:



You can then set a control action if you want, feel free to do this. Click Edit under the Operation tab at the bottom, and select a control type, in this case select Restart. And Select Okay. Now pick a series of people to alert. Click on the Notify Other Recipients, and notice how you can type in free text email addresses. Check out how you can select individual JON Users via Notify JON Users. Check out how you can add in a JON Role via the Notify Roles Tab.

If you are having any problems, feel free to raise your hand.

- The last thing we will look at is how to deploy a war file. From a highlighted JBoss instance, go to the Inventory tab, at the bottom select, click OK:



- Click Upload File, and browse to the `${User_Home}/Downloads/JON` and select the `guess.war`. Click yes and okay as needed. Click create, wait for the file to be deployed. You should see the file deployed in one of your two JBoss EAP terminal windows: Browse to either <http://localhost:8080/guess> or <http://localhost:8280/guess> to see the application

You have now completed this lab, congratulations.

Conclusion

What you learned

- How to install JBoss Operations Network
- How to load in new resources
- How to explore the user interface