

Installing Java CAPS 6.2 Runtime on the Basic JeOS Appliance for HL7 Resilience Testing

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Introduction

From time to time prospective clients ask for a proof that Java CAPS will not loose HL7 messages in the event of machine or network failure.

This note walks through the process of installing a Java CAPS 6.2 runtime on the Base OpenSolaris-based VMware Virtual Appliance, discussed in the Blog Entry “GlassFish ESB v2.x Field Notes - Preparing Basic JeOS Appliance for GlassFish ESB LB and HA Testing” at <http://blogs.czapski.id.au/?p=15>.

At the end of the Note we will have a Java CAPS 6.2 VMware Appliance with Java CAPS 6.2 Runtime infrastructure, ready to use for reliability testing, or any other purpose for which a Java CAPS 6.2 runtime appliance might be appropriate.

Obtain Java CAPS 6.2

Unlike GlassFish ESB or OpenESB, Java CAPS 6.2 is not freely downloadable software. To get hold of Java CAPS 6.2 you must be a customer or you must have come to an arrangement with Sun / Oracle sales organization to obtain Java CAPS 6.2 as trial software. I don't know how to go about doing that. Speak to the nearest Sun / Oracle software sales person.

Install Java CAPS 6.2 On the Appliance

In this Note the JeOS VMware Appliance named jc6202, built following the steps discussed in “GlassFish ESB v2.x Field Notes - Preparing Basic JeOS Appliance for GlassFish ESB LB and HA Testing”, will be used – see <http://blogs.czapski.id.au/?p=15>.

Start the jc6202 VMware Appliance.

Using the WinSCP (as I do) or another means of transferring files using SSH, copy the Java CAPS 6.2 installer, `solaris_ml.tar`, to the jc6202's `/export/home/osol/downloads` directory.

Start a SSH session on the jc6202 and login as osol.

As root, create a directory jccaps62 as a subdirectory to /opt, owned by osol.

```
pfexec mkdir /opt/jccaps62
pfexec chown osol:staff /opt/jccaps62
```

On headless OpenSolaris, which is what we are dealing with here, it is not possible to run the GUI-based Java CAPS installer (<http://dlc.sun.com/pdf/820-3207/820-3207.pdf>). Document at http://docs.sun.com/app/docs/doc/821-0447/jccapsinstcli_intro?l=en&a=view discusses how to perform a CLI-based installation. This is what we will do.

In a console window / SSH Session window:

Set the JAVA_HOME variable to point to your JDK or set it in the /etc/profile for all users, or set it in the .bashrc for the osol user or both.

```
su -
cat >> /etc/profile <<-EOF
JAVA_HOME=/jdk1.6.0_16
export JAVA_HOME
PATH=$PATH:/jdk1.6.0_16/bin
export PATH
EOF
exit

cat >> ~/.bash_profile <<-EOF
JAVA_HOME=/jdk1.6.0_16
export JAVA_HOME
PATH=$PATH:/jdk1.6.0_16/bin
export PATH
EOF
. ~/.bash_profile

cat >> ~/.profile <<-EOF
JAVA_HOME=/jdk1.6.0_16
export JAVA_HOME
PATH=$PATH:/jdk1.6.0_16/bin
export PATH
EOF
. ~/.profile
```

Prepare the Java CAPS 6.2 installer for execution.

```
cd /export/home/osol/downloads
tar xvf Solaris_ml.tar
```

Before running the installation please make sure there is at least 1024Mb of memory assigned to the guest VM. If possible, assign 1536Mb or more. Once installation is done it will be possible to reduce the amount of memory assigned to the guest to a lesser value.

Run the command shown below. You will be prompted for specific information. Remember that jc6202 is a headless system (No UI) so it is useless to install NetBeans.

```
cd /export/home/osol/downloads
JAVA_HOME=/jdk1.6.0_16
export JAVA_HOME
PATH=$PATH:/jdk1.6.0_16/bin
export PATH
Solaris_ml/Solaris/JavaCAPS.bin -i console
```

Provide responses:

DO YOU ACCEPT THE TERMS OF THIS LICENSE AGREEMENT? (Y/N): Y

ENTER AN ABSOLUTE PATH, OR PRESS <ENTER> TO ACCEPT THE DEFAULT:
/opt/jcaps62

INSTALL FOLDER IS: /opt/jcaps62 IS THIS CORRECT? (Y/N): Y

ENTER THE NUMBER FOR THE INSTALL SET, OR PRESS <ENTER> TO ACCEPT THE DEFAULT: 2

Please choose the Features Not to be installed by this installer.:
1,2,4,5,6

Java Developer Kit (JDK) Directory (DEFAULT: /jdk1.6.0_16):

Admin User (DEFAULT: admin):

Admin Password (8-character minimum): adminadmin

Master Password (8-character minimum):changeit

Admin Port (DEFAULT: 4848):

HTTP Port (DEFAULT: 8080):

HTTPS Port (DEFAULT: 8181):

JMS Port (DEFAULT: 7676):

JMX Admin Port (DEFAULT: 8686):

IIOP Port (DEFAULT: 3100):

IIOP SSL Port (DEFAULT: 3820):

IIOP Mutual Auth Port (DEFAULT: 3920):

Pre-Installation Summary

Please review the following before continuing.

Product Name:
Java CAPS

Install Folder:
/opt/jcaps62

```
Install Set
  Custom
```

```
Product Components:
  Sun Java System Application Server,
```

```
PRESS <ENTER> TO CONTINUE:
```

The process will start and will continue for some time until finally you get to see:

```
Installation Complete: "SUCCESS"
```

To allow the GlassFish Application Server to be automatically started at boot time, and automatically shut down at shutdown time, we need to create a file containing authentication credentials and use the GlassFish Application Server Command Line Console's built-in facility to add GlassFish to the OpenSolaris' Service Management Facility.

Create a text file, /opt/jcaps62/passwd

```
cat > /opt/jcaps62/passwd <<-eof
AS_ADMIN_USER=admin
AS_ADMIN_ADMINPASSWORD=adminadmin
AS_ADMIN_PASSWORD=adminadmin
AS_ADMIN_MASTERPASSWORD=changeit
eof
```

Change directory to GlassFish's bin and run the appropriate asadmin command:

```
cd /opt/jcaps62/appserver/bin
pfexec ./asadmin create-service --passwordfile /opt/jcaps62/passwd
/opt/jcaps62/appserver/domains/domain1
```

Successful execution of this command will show something along the lines of:

```
The Service was created successfully. Here are the details:
Name of the service:application/SUNWappserver/domain1
Type of the service:Domain
Configuration location of the service:/opt/jcaps62/appserver/domains
Manifest file location on the
system:/var/svc/manifest/application/SUNWappserver/domain1_opt_jcaps62_appserver_do
mains/Domain-service-smf.xml.
The service could be enabled using svcadm command.
Command create-service executed successfully.
```

To enable this service execute the following command:

```
pfexec svccfg -s domain1 setprop start/user = astring: osol
pfexec svccfg -s domain1 setprop start/group = astring: staff
pfexec svcadm enable domain1
```

The service will be started. The server.log will show the message to that effect.

```
tail -f /opt/jcaps62/appserver/domains/domain1/logs/server.log
```

```
[#|2010-04-08T16:02:49.645+0000|INFO|sun-
appserver2.1|com.sun.caps.jms.resource|_ThreadID=18;_ThreadName=Thread-
30;|EventForwarderMBean MBean is ready|#]

[#|2010-04-08T16:02:49.646+0000|INFO|sun-
appserver2.1|com.sun.caps.jms.resource|_ThreadID=18;_ThreadName=Thread-
30;|EventForwarderMBean MBean is ready|#]

[#|2010-04-08T16:02:49.804+0000|INFO|sun-
appserver2.1|javax.enterprise.system.core|_ThreadID=10;_ThreadName=main;|Applicatio
n server startup complete.|#]

[#|2010-04-08T16:02:50.710+0000|INFO|sun-
appserver2.1|com.sun.caps.jms.resource|_ThreadID=18;_ThreadName=Thread-
30;|AlertEventListener is ready|#]

[#|2010-04-08T16:02:56.330+0000|WARNING|sun-
appserver2.1|org.apache.coyote.tomcat5.CoyoteRequest|_ThreadID=19;_ThreadName=httpS
SLWorkerThread-8080-0;_RequestID=79247cf7-fbdc-4c58-b71b-c90cd429db03;|PWC4011:
Unable to set request character encoding to UTF-8 from context /amserver, because
request parameters have already been read, or ServletRequest.getReader() has
already been called|#]

[#|2010-04-08T16:03:09.560+0000|INFO|sun-
appserver2.1|javax.enterprise.system.stream.out|_ThreadID=20;_ThreadName=httpSSLWor
kerThread-8080-1;|Realm Request:
Create Realm: sunamhiddenrealmdelegationsservicepermissions in Realm /
|#]

[#|2010-04-08T16:03:10.516+0000|INFO|sun-
appserver2.1|javax.enterprise.resource.webservices.rpc.server.http|_ThreadID=19;_Th
readName=httpSSLWorkerThread-8080-0;|JAXRPCSERVLET56: JAX-RPC servlet: init|#]

[#|2010-04-08T16:03:15.592+0000|INFO|sun-
appserver2.1|javax.enterprise.system.stream.out|_ThreadID=20;_ThreadName=httpSSLWor
kerThread-8080-1;|Realm Request:
Set Attributes for Service sunIdentityRepositoryService in Realm /
|#]

[#|2010-04-08T16:03:19.771+0000|INFO|sun-
appserver2.1|javax.enterprise.system.stream.out|_ThreadID=21;_ThreadName=Thread-
31;|INFO: Access Manager post configuration successful.|#]

[#|2010-04-08T16:07:49.676+0000|INFO|sun-
appserver2.1|com.sun.eventmanagement.webapp.EventManagementChannelSupportMBean|_Thr
eadID=22;_ThreadName=eManager Startup Alerter;|Enterprise Manager channel is not
ready to send start up notification Alert|#]
```

To delete the service, if needs be, issue the following commands, bearing in mind that disabling the service will cause it to be shut down, which takes some time:

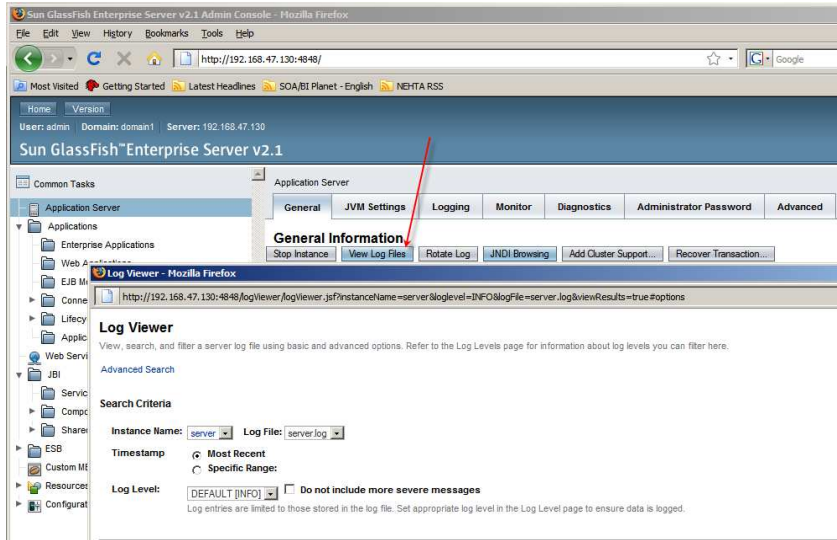
```
svcadm disable domain1
svccfg delete domain1
```

Once these commands are executed the service will no longer be started at boot.

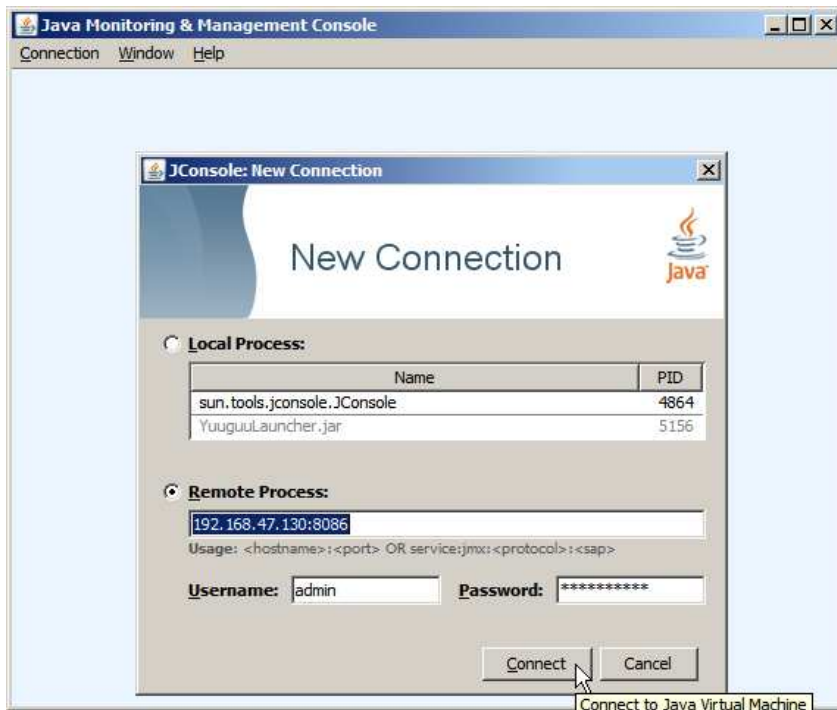
Manage the GlassFish Application Server

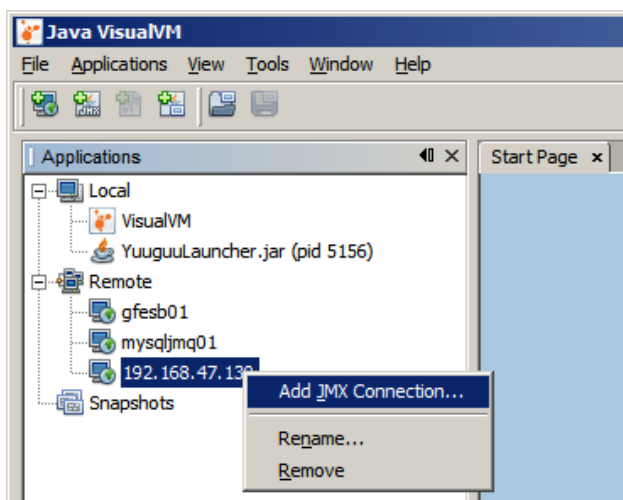
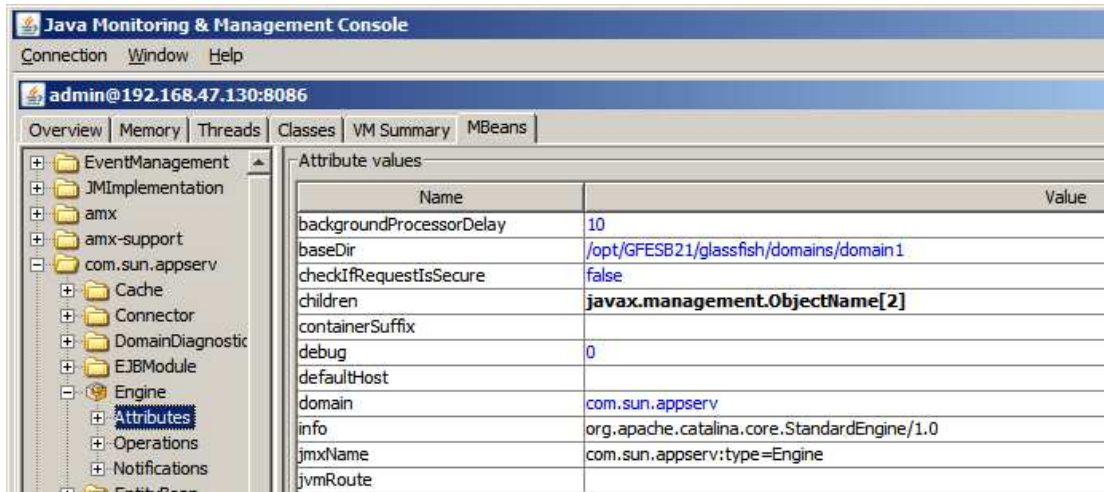
Use a web browser on the VMware Host, or another machine with a functioning modern web browser, to connect to the GlassFish Application Server Admin Console on jc6202:

<http://192.168.47.129:4848> or <http://jc6202:4848>

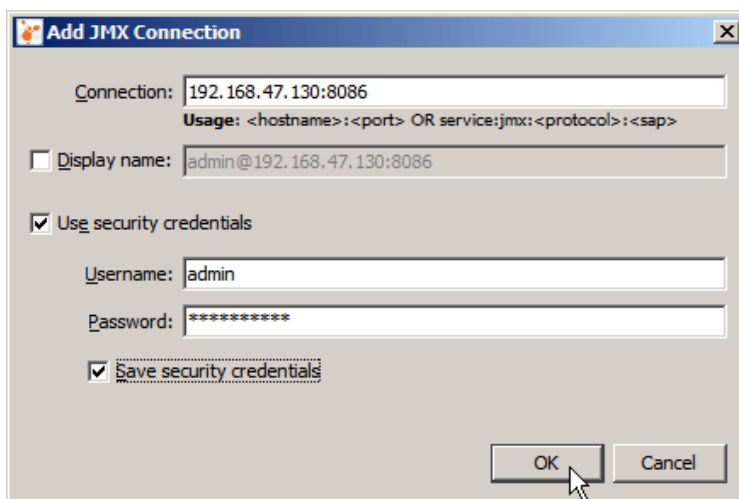


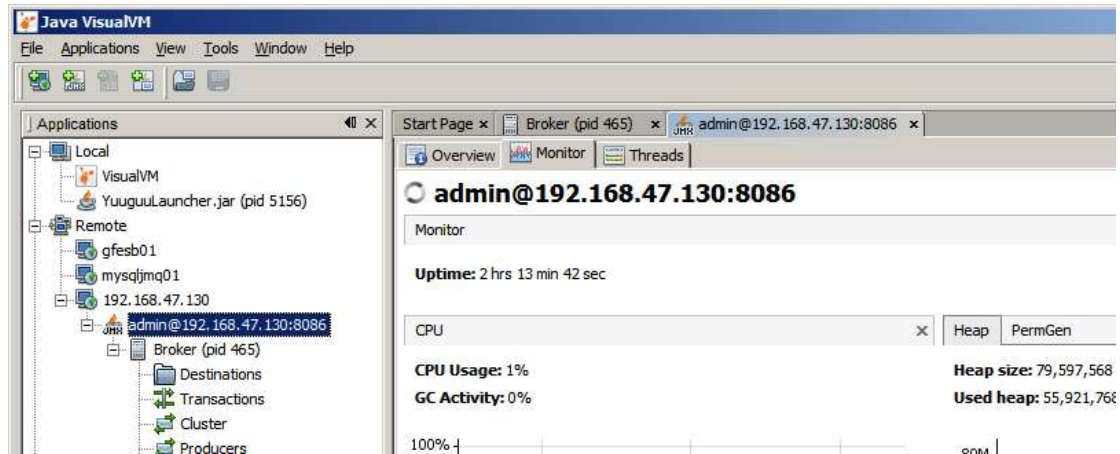
If you have a JDK 1.6 on another machine you can exploit the JMX instrumentation to look at the GlassFish Application Server in the Appliance, using the jconsole and the jvisualvm (uses port 8686 in Java CAPS).





Use port 8686.





The Java CAPS 6.2 Runtime Appliance is ready for use.

To develop solutions to be deployed to this runtime environment you will need a Java CAPS 6.2 Design Time installation, with the NetBeans IDE. Do this installation to a machine that has a screen, keyboard and mouse ☺ I will not discuss how to get and install regular Java CAPS.

If you only need to deploy existing applications you don't need the design time environment. All that is required is a modern web browser on a machine with a network connection to the appliance. GlassFish Application Server's command line tools on the appliance itself can also be used.

Summary

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We now have a Java CAPS 6.2 VMware Appliance with the Java CAPS 6.2 Runtime, ready to use for Java CAPS 6.2 HL7 resilience testing, or any other purpose for which a Java CAPS 6.2 runtime appliance might be appropriate.