

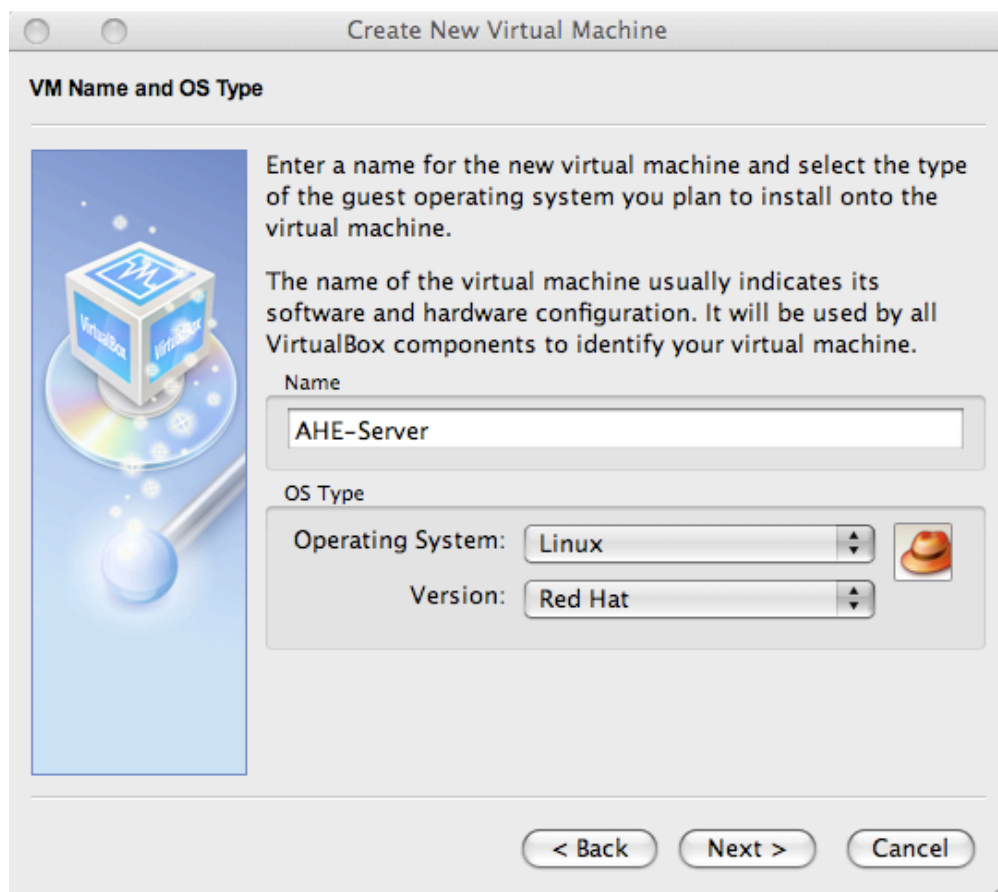
AHE Server 2.0 Quick Start Guide

Version 2 of the AHE server is distributed as a VirtualBox VM image, making it quick and easy to deploy. The VM is based on the CentOS 5.0 Linux distribution.

This guide describes the minimum steps needed to install and launch the AHE server VM. For details on configuring the AHE server once deployed, please refer to the documentation at <http://www.realitygrid.org/AHE>.

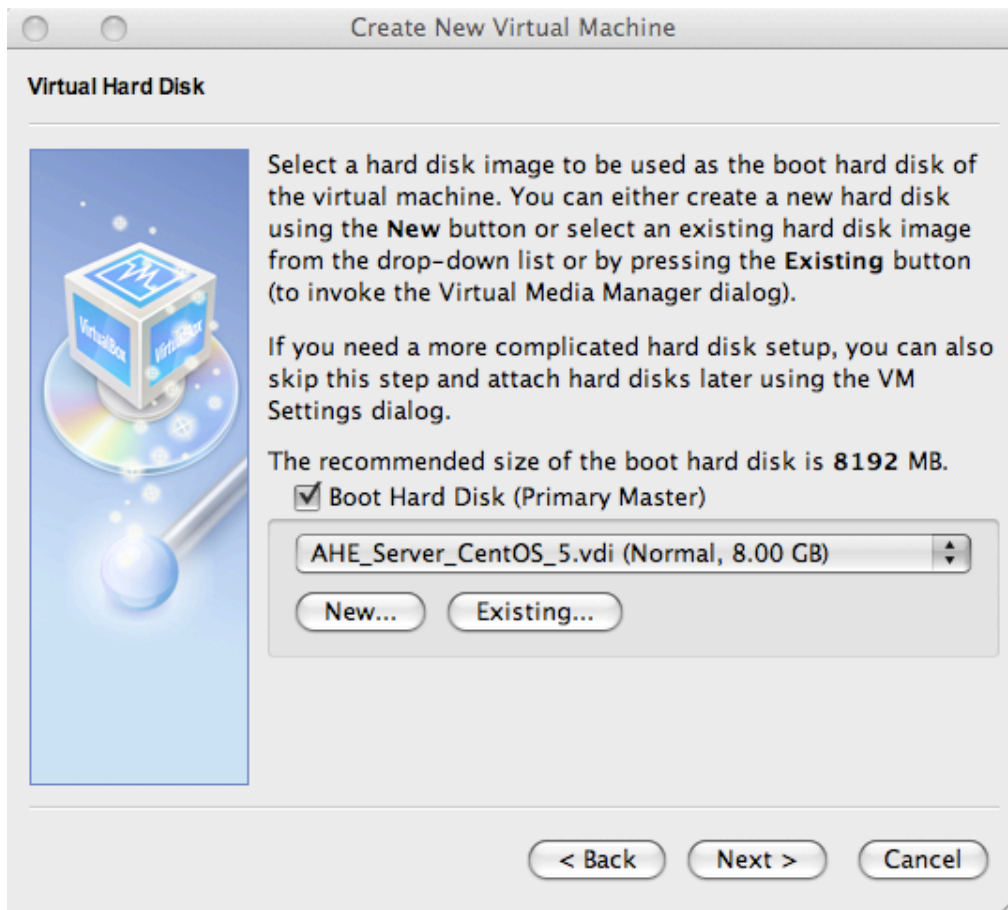
Deploying AHE

1. Download and install the VirtualBox VM software from <http://www.virtualbox.org>.
2. Download and unzip the AHE Server image file from <http://www.realitygrid.org/AHE>
3. Start VirtualBox by opening a terminal and typing **VirtualBox** followed by **[Return]**.
4. Click **File > Virtual Media Manager**.
5. Click **Add**, select the **AHE_Server_CentOS_5.vdi** file and click **Open > OK**.



Configure the Virtual Machine options

6. Click **New > Next**, type **AHE-Server** as the name of your virtual machine, set the operating system to **Linux** and the version to **Red Hat**.
7. Click **Next > Next**, select the **AHE_Server_CentOS_5.vdi** image file and click **Next > Finish**.



8. Close VirtualBox, and from the terminal run the shell script: `./conf-net.sh`. This will configure the VirtualBox NAT system to forward traffic from ports 18443 and 18080 on your local machine to the AHE server VM. This will mean that the AHE server is accessible from those ports on your local machine, for example for a host foo.bar.com, the AHE Job Registry Endpoint would be <https://foo.bar.com:18443/ahe/AppWSResource> and the AHE Job Factory Endpoint would be <https://foo.bar.com:18443/ahe/AppServerRegistryDBI>,
9. Launch the AHE VM with the command: `VBoxHeadless -s AHE-Server`.
10. Log in to your VM from your VM host with `ssh ahe-user@localhost -p 2222`. The ahe-user user account is set with a password of l3tm31n as is the root user account. We recommend that you log in to the VM and change both passwords immediately.
11. Finally, start the database server and Tomcat container. From the VM command line type:
 - `cd ~/OMII`
 - `./database_service.pl start ./postgres`
 - `cd bin`
 - `./startomii`

Your AHE server will now be up and running

Running the test application

By default the AHE server is configured to run a word sorting test app on its virtual machine, via the GridSAM job submission service. This application is preconfigured and ready to run. The AHE client

is also installed on the VM for testing purposes. Both client and server are configured with certificates issued by a test certificate authority.

To test the application, follow these steps.

1. Log in to the VM image as the ahe-user user account.
2. At the command line, type **cd aheclient-2.0.0/bin** to change to the AHE client directory.
3. To list the available applications type **./ahe-listapps** followed by [Enter]. Enter the password **l3tm31n** to unlock the AHE client certificate. You will see the following output:

```
[ahe-user@localhost bin]$ ./ahe-listapps
Enter your keystore password:
Job factory endpoints:

Application: sort
Package: AHE
Description: sort
Endpoint: https://localhost.localdomain:18443/ahe/AppWSResource
```

4. Prepare a new application with the ahe-prepare command as follows:
**./ahe-prepare -app sort -RMCPUCount 1 -s testsim -e **
https://localhost.localdomain:18443/ahe/AppWSResource
Enter the password **l3tm31n** to unlock the AHE client certificate. You will see the following output:

```
[ahe-user@localhost bin]$ ./ahe-prepare -app sort -RMCPUCount 1 -s
testsim -e https://localhost.localdomain:18443/ahe/AppWSResource
Enter your keystore password:

Job sucessfully prepared
Job endpoint:
https://localhost.localdomain:18443/ahe/AppWSResource/AppWSResource/29
512093109498078537
Service Group EPR:
https://localhost.localdomain:18443/ahe/ServiceGroupDBI/ServiceGroupDB
I/5441883109397012451

Potential resources
=====
EPR: https://localhost.localdomain:18443/gridsam/services/gridsam
Name: local
JSDL: config/JSDLTemplates/sort.local.jsdl
Type: LocalGridSAM
CPUCount: 1
Application:
Arch: ia32
Disk:
Memory: 5000
Virtual Memory: 10000
OS: RHEL
IP: 127.0.0.1
```

5. Start the application with the ahe-start command as follows;
./ahe-start -s testsim -n 1 -RM local -config /home/ahe-user/sortapp-input/config.txt
This starts the sort application with the list of words configured in /home/ahe-user/sortapp-input/config.txt as the input file, using 1 CPU on the local machine. Enter the password **l3tm31n** to unlock the AHE client certificate. You will see the following output:

```
[ahe-user@localhost bin]$ ./ahe-start -s testsim -n 1 -RM local -
config /home/ahe-user/sortapp-input/config.txt
Enter your keystore password:
Creating SORTConfParser
Staging => 1000
Staging => 1042
Staging => 1445
Staging => 1488
Application => SORT
Simulation Name => testsim
Number of CPUs => 1
Resource ID => 29512093109498078537
Job End Point =>
https://localhost.localdomain:18443/ahe/AppWSResource/AppWSResource/29
512093109498078537
Grid Resource => local
Configuration File => /home/ahe-user/sortapp-input/config.txt
Job Argument => config.txt.ahe
App Service Group =>
https://localhost.localdomain:18443/ahe/ServiceGroupDBIEntry/ServiceGr
oupDBIEntry/5441883109397012451-3051209310949805596
Stdin =>
Stdout => stdout.txt
Stderr => stderr.txt
Conf file => /home/ahe-user/sortapp-input/config.txt
Steering EPR => none
Steering type => none

Job state is: pending
  Time: 2009-04-09T21:55:44.848+01:00
  Description: job is being scheduled

Cache updated sucessfully
```

6. Once the application is launched, you can monitor its progress with the ahe-monitor command, thus:
./ahe-monitor -s testsim
Enter the password **l3tm31n** to unlock the AHE client certificate. You will see output similar to the following:

```
[ahe-user@localhost bin]$ ./ahe-start -s testsim -n 1 -RM local -
config /home/ahe-user/sortapp-input/config.txt
Enter your keystore password:
Creating SORTConfParser
Staging => 1000
Staging => 1042
Staging => 1445
```

Staging => 1488
Application => SORT
Simulation Name => testsim
Number of CPUs => 1
Resource ID => 29512093109498078537
Job End Point =>
https://localhost.localdomain:18443/ahe/AppWSResource/AppWSResource/29512093109498078537
Grid Resource => local
Configuration File => /home/ahe-user/sortapp-input/config.txt
Job Argument => config.txt.ahe
App Service Group =>
https://localhost.localdomain:18443/ahe/ServiceGroupDBIEntry/ServiceGroupDBIEntry/5441883109397012451-3051209310949805596
Stdin =>
Stdout => stdout.txt
Stderr => stderr.txt
Conf file => /home/ahe-user/sortapp-input/config.txt
Steering EPR => none
Steering type => none

Job state is: pending
Time: 2009-04-09T21:55:44.848+01:00
Description: job is being scheduled

Cache updated sucessfully
[ahe-user@localhost bin]\$./ahe-monitor -s testsim
Enter your keystore password:
Job status for job testsim:

Job state is: pending
Time: 2009-04-09T21:55:44.848+01:00
Description: job is being scheduled

Job state is: staging-in
Time: 2009-04-09T21:55:46.266+01:00
Description: staging files...

Job state is: staged-in
Time: 2009-04-09T21:55:46.916+01:00
Description: 3 files staged in

Job state is: active
Time: 2009-04-09T21:55:47.009+01:00
Description: '/home/ahe-user/apps/ahe_sort.pl config.txt.ahe' is being forked

Job state is: executed
Time: 2009-04-09T21:55:47.261+01:00
Description: '/home/ahe-user/apps/ahe_sort.pl config.txt.ahe' completed with exit code 0

Job state is: staging-out
Time: 2009-04-09T21:55:47.329+01:00
Description: staging files out...

```
Job state is: staged-out
Time: 2009-04-09T21:55:47.601+01:00
Description: 3 files staged out
```

```
Job state is: done
Time: 2009-04-09T21:55:47.641+01:00
Description: Job completed
```

7. Once the job is complete, you can download the ahe-getoutput command as follows:
./ahe-getoutput -s testsim -l /home/ahe-user/sortapp-input/
Enter the password **l3tm31n** to unlock the AHE client certificate. The output data (sorted list of words) will be downloaded to directory /home/ahe-user/sortapp-input/. You will see output similar to the following:

```
[ahe-user@localhost bin]$ ./ahe-getoutput -s testsim -l /home/ahe-
user/sortapp-input/
Enter your keystore password:
Staging => 403
Staging => 806
Staging => 806
```

Following these steps has shown that your AHE server installation is up and running correctly. For further details on how to configure your AHE server, visit <http://www.realitygrid.org/AHE>