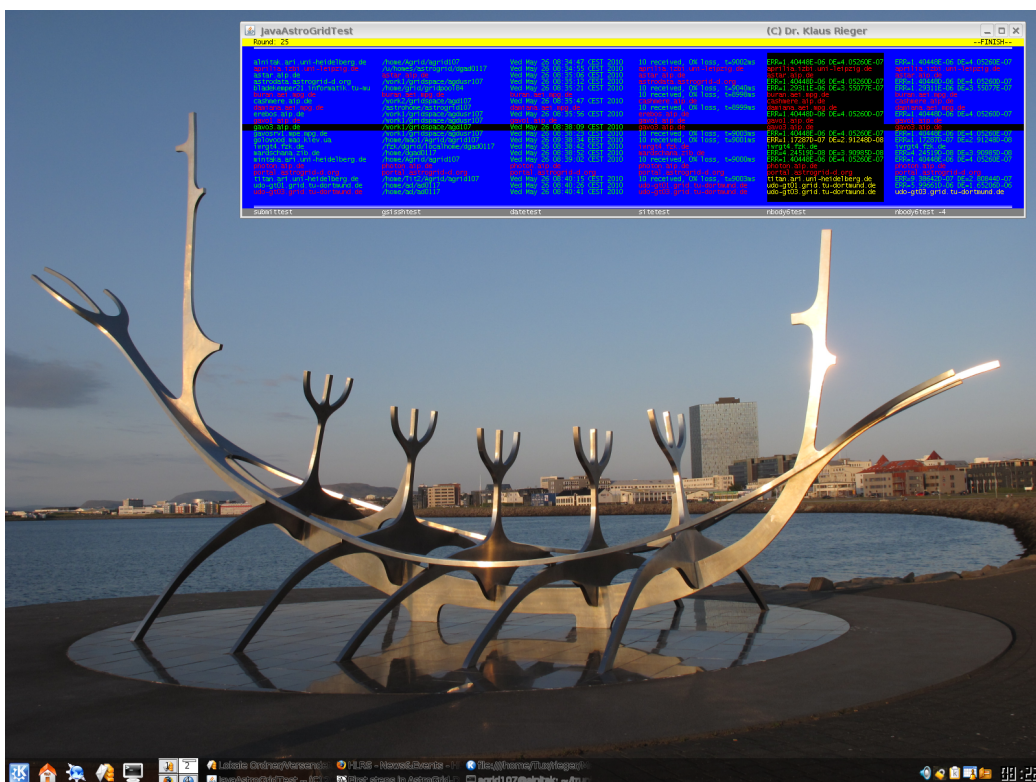


# AstroGridTest



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## **Abstract**

**AstroGridTest** is a compilation of several scripts and two kinds of graphical user interfaces. The programs have been written during the years 2009 to 2012 by Klaus Rieger using the script language *Bash* and the programming language *Java*. Their intention is to check hosts and to obtain more information about the grid—especially within the AstroGrid-D community.

## **Zusammenfassung**

**AstroGridTest** ist eine Zusammenstellung von mehreren Skripten und zweierlei grafischen Benutzeroberflächen. Die Programme wurden in den Jahren 2009 bis 2012 von Klaus Rieger in der Skriptsprache *Bash* und in der Programmiersprache *Java* geschrieben. Ihre Aufgabe ist die verschiedenen Hosts zu überprüfen und weitere Informationen über das Grid zu erhalten – insbesondere innerhalb der AstroGrid-D Community.

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# Chapter 1

## How to test AstroGrid-D hosts

### 1.1 How to run the scripts

1. `gsissh [host of your choice, e.g. titan.ari.uni-heidelberg.de] -X`
2. `svn checkout svn://svn.gac-grid.org/software/AstroGridTest/trunk`
3. `cd trunk`
4. Run tests:
  - `./submittest.sh` – Checking status of AstroGrid-D hosts using a Java program.
  - `./gsisshstest.sh` – Checking status of AstroGrid-D hosts using command “gsissh”.
  - `./datetest.sh` – Checking status of AstroGrid-D hosts using command “date” or “sleep”.
  - `./sitetest.sh` – Checking status of AstroGrid-D hosts using command “ping” or “wsrf-query”.
  - `./gramtest.sh` – Checking GRAM of AstroGrid-D hosts using command “globusrun” or “globus-job-run”.
  - `./nbody6test.sh` – Checking status of AstroGrid-D hosts using Nbody6++.

## 1.2 How to run JavaAstroGridTest

1. Only prior the first run it is necessary to run manually at least this test:

```
./gsisshstest.sh -i
```

(authenticity of hosts may have to be confirmed manually)

2. `java -jar JavaAstroGridTest.jar`

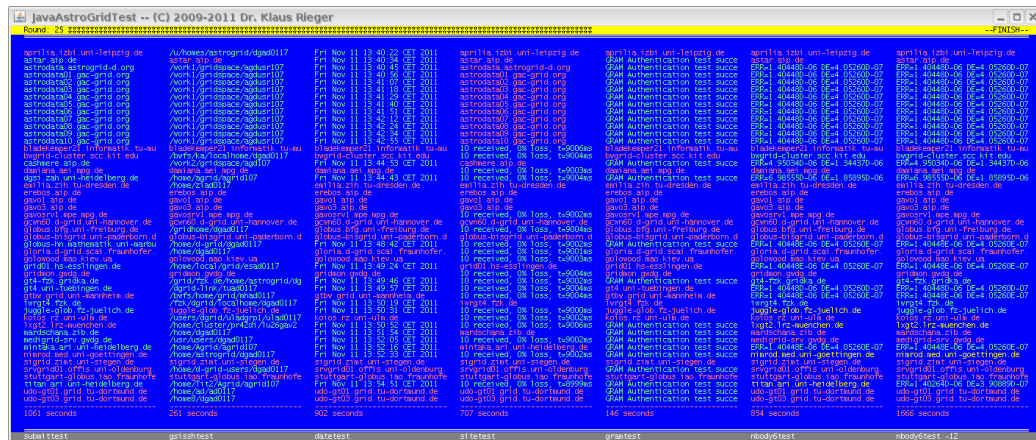


Figure 1.1: JavaAstroGridTest showing the results of the standard tests.

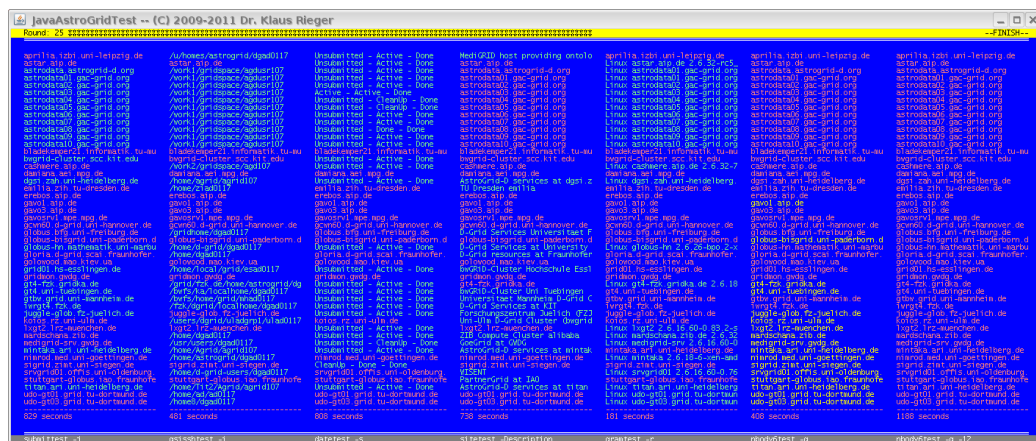


Figure 1.2: JavaAstroGridTest showing the results of the extra tests.

## 1.3 How to run AppletAstroGridTest

1. `./AppletAstroGridTest.sh`  
`./AppletAstroGridTest.sh` [browser of your choice, e.g. `konqueror`]  
(only if you don't like to use the default browser `firefox`)
2. Consider the webpage.

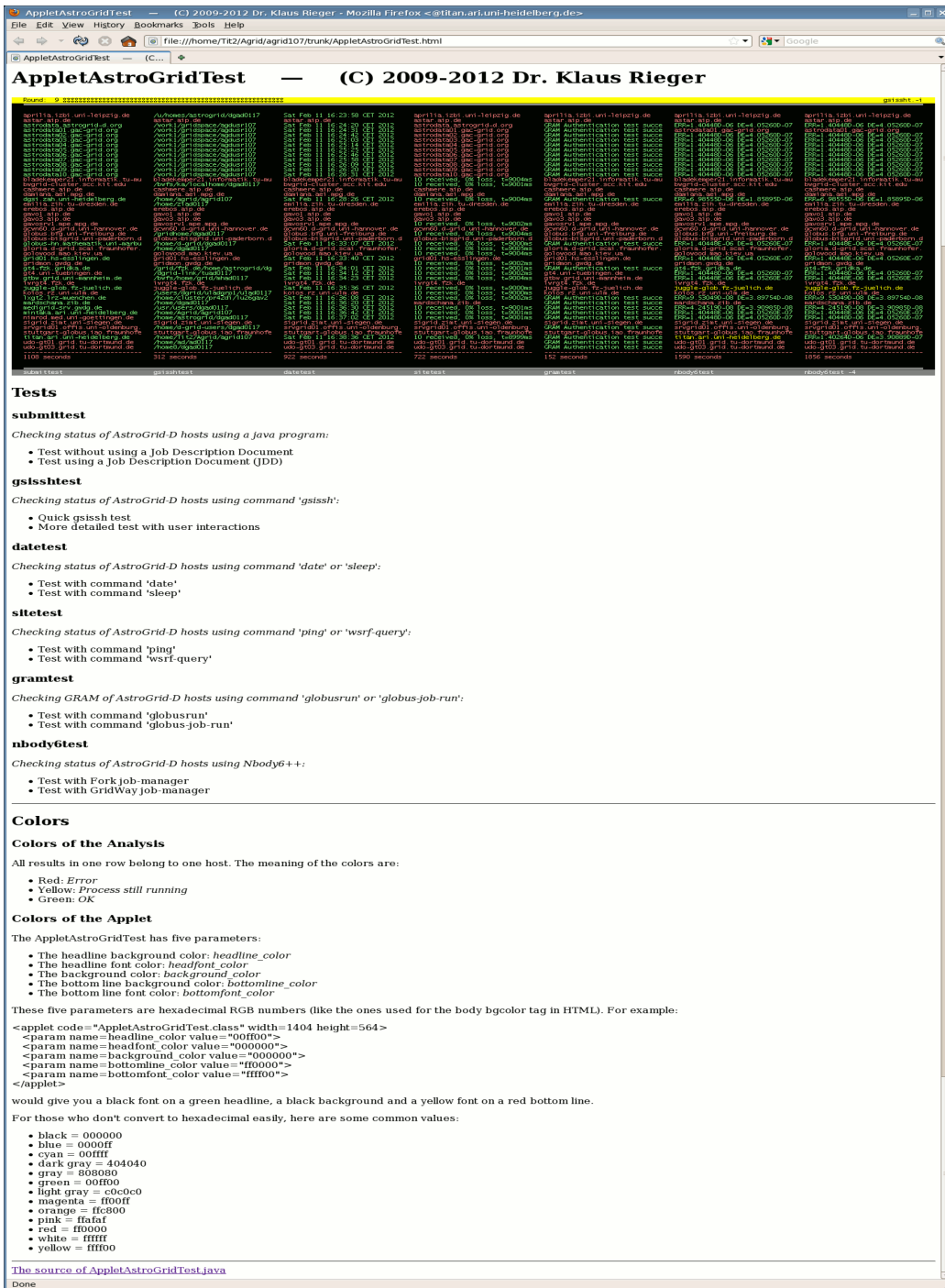


Figure 1.3: AppletAstroGridTest embedded in its webpage.



## Chapter 2

# Use of JavaAstroGridTest/ AppletAstroGridTest

### 2.1 Mouse Operations

**Click the title bar to change background color.**

- Clicking three times within one round may end the program/applet.
- Alternatively you can use your keyboard pushing “Esc”.

**Click the footer to switch between the page showing the results of the standard tests and the page showing the results of the extra tests.**

- Alternatively you can use your keyboard pushing “Space”.

**Click the output data to mark the row and the column.**

- To highlight a row only click outside any column.
- To highlight a column only click outside any row.

Figure 2.1: Row of **AstroGridTest** marked.

Figure 2.2: Column of **AstroGridTest** marked.

Figure 2.3: Row and column of **AstroGridTest** marked.

## 2.2 Interpreting the Display Output

### Title Bar

- There is a progress bar made of stars. In general the stars are black, however, above the running test they get red.
- The number of test rounds is shown on the left side.
- The name of the running test shown is on the right side.

### Footer

- In general the name of a test is white, however, under the running test it gets red.

### Output Data

#### Color

- Red, if test had failed.
- Yellow, if test was still running during evaluation.
- Green, if test was successful.

#### Time

- “0 seconds” below the dashed line means that the test was not performed.
- “... seconds” below the dashed line means that the test was performed.

#### nbody6test

- “ERR” is used as an abbreviation for “ERRTOT”.
- “DE” is used as an abbreviation for “DETOT”.

# Chapter 3

## Options of the scripts

### 3.1 submittest

Checking status of AstroGrid-D hosts using a Java program. Results are stored in `filename` or in the default file.

Options:

<code>-h, -help</code>	Shows Help
<code>--h, --help</code>	Shows Help
<code>-n</code>	Test without using a Job Description Document (default)
<code>-j</code>	Test using a Job Description Document (JDD)

Hints:

If all fail, use `grid-proxy-init` first.  
You must have the following files in the same folder to run this script:

- `java.sh`
- `java.jar`
- `java.xml`

Example (without JDD): `./submittest.sh mytest.txt`

Analysis:        `'Java successful!' => OK`  
                 `'' => Error`

Example (with JDD): `./submittest.sh -j mytest.txt`

Analysis:        `'Java successful!' => OK`  
                 `'Error: No output!' => Error`

## 3.2 gsisstest

Checking status of AstroGrid-D hosts using command `gsissh`. Results are stored in `filename` or in the default file.

### Options:

<code>-h, -help</code>	Shows Help
<code>--h, --help</code>	Shows Help
<code>-q</code>	Quick gsissh test (default)
<code>-i</code>	More detailed test with user interactions

Hints: If all fail, use `grid-proxy-init` first.

Example (quick): `./gsisstest.sh mytest.txt`

Interactions: If you get 'The authenticity of host ... can't be established.  
RSA key fingerprint is ... Are you sure ... connecting (yes/no)?'  
use once 'gsissh' manually for this host and repeat the test.  
If you press 'return' three times quickly in case of  
'agrid... password:', you'll get a more detailed output.

Analysis: 'SUCCESSFUL' => OK  
'Module ZIBenv loaded' => OK  
'Permission denied ...' => Error

Example (interactive): `./gsisstest.sh -i mytest.txt`

Interactions: After successful login type 'exit' and press 'return' to continue  
If you get 'agrid... password:' press 'return' three times  
If you get 'The authenticity of host ... can't be established.  
RSA key fingerprint is ... Are you sure ... connecting (yes/no)?'  
type 'yes' and press 'return'

Analysis: 'SUCCESSFUL' => OK  
'Module ZIBenv loaded' => OK  
'Permission denied ...' => Error  
'Received disconnect from ...' => Error  
'Connection closed by ...' => Error

## 3.3 datetest

Checking status of AstroGrid-D hosts using command `date` or `sleep`. Results are stored in `filename` or in the default file.

### Options:

<code>-h, -help</code>	Shows Help
<code>--h, --help</code>	Shows Help
<code>-d</code>	Test with command 'date' (default)
<code>-s</code>	Test with command 'sleep'

Hints: If all fail, use grid-proxy-init first.

Example (date): ./datetest.sh mytest.txt  
Analysis: 'Wed Feb 4 11:30:50 CET 2009' => OK  
' ' => Error

Example (sleep): ./datetest.sh -s mytest.txt  
Analysis: 'Unsubmitted - Active - Done' => OK  
'Unsubmitted - Done - Done' => OK  
'Unsubmitted - Unsubmitted - Unsubmitted' => Error  
'Unsubmitted - Failed - Failed' => Error  
'Failed - Failed - Failed' => Error  
'Done - Done - Done' => Error

## 3.4 sitetest

Checking status of AstroGrid-D hosts using command ping or wsrf-query.  
Results are stored in filename or in the default file.

Options:

-h, -help	Shows Help
--h, --help	Shows Help
-a	All infos as separate files in one folder
-p	Ping test (default)
-s	Shows complete info about the site
-Description	Shows 'Description' of the site
-Latitude	Shows 'Latitude' of the site
-Location	Shows 'Location' of the site
-Longitude	Shows 'Longitude' of the site
-Name	Shows 'Name' of the site
-OtherInfo	Shows 'OtherInfo' of the site
-SecurityContact	Shows 'SecurityContact' of the site
-Sponsor	Shows 'Sponsor' of the site
-SysAdminContact	Shows 'SysAdminContact' of the site
-UserSupportContact	Shows 'UserSupportContact' of the site
-Web	Shows 'Web' of the site

Hints: If all fail, use grid-proxy-init first.  
The host has to enable the sending of 'ping'.

Example (ping): ./sitetest.sh mytest.txt  
Results: 'PING alnitak.ari.uni-heidelberg.de (129.206.110.246) 56(84) bytes of data.'  
'10 packets transmitted, 10 received, 0% packet loss, time 8996ms'

```

Example (wsrf-query): ./sitetest.sh -s mytest.txt
Results:              '<Site UniqueID="alnitak.ari.uni-heidelberg.de" xmlns="..." xmlns:ns1="...">'
                      '<Description>D-Grid services at alnitak</Description>'
                      '<Latitude>49.41780</Latitude>'
                      '<Location>Moenchhofstrasse 12-14, 69120 Heidelberg, Germany</Location>'
                      '<Longitude>8.68788</Longitude>'
                      '<Name>Astronomisches Rechen-Institut</Name>'
                      '<OtherInfo>Orunning GT 4.0.5</OtherInfo>'
                      '<SecurityContact>tbruese@ari.uni-heidelberg.de</SecurityContact>'
                      '<Sponsor>http://www.bmbf.de</Sponsor>'
                      '<SysAdminContact>admin@ari.uni-heidelberg.de</SysAdminContact>'
                      '<UserSupportContact>rieger@ari.uni-heidelberg.de</UserSupportContact>'
                      '<Web>http://www.ari.uni-heidelberg.de</Web>'
                      '</Site>'

```

## 3.5 gramtest

Checking GRAM of AstroGrid-D hosts using command `globusrun` or `globus-job-run`.  
Results are stored in `filename` or in the default file.

```

Options:
  -h, -help           Shows Help
  --h, --help         Shows Help
  -a, -authenticate   Test submits a gatekeeper 'ping' request only. Don't parse RSL or submit job (default)
  -r, -run            Run command '/bin/uname -a' remote in a grid environment

```

```

Hints:                If all fail, use grid-proxy-init first.

```

```

Example (authenticate): ./gramtest.sh mytest.txt
Analysis:              'GRAM Authentication test successful' => OK
                      'GRAM Authentication test failure: connecting to the job manager failed...' => Error
                      'Error: No output!' => Error

```

```

Example (run):        ./gramtest.sh -r mytest.txt
Analysis:              'Linux dgsi.zah.uni-heidelberg.de 2.6.18-194.3.1.el5 ... GNU/Linux' => OK
                      'Sender: LSF System ...' => Error
                      'Error: No output!' => Error

```

## 3.6 nbody6test

Checking status of AstroGrid-D hosts using Nbody6++. Results are stored in filename or in the default file.

### Options:

-h, -help	Shows Help
--h, --help	Shows Help
-f	Test with Fork job-manager (default)
-g	Test with GridWay job-manager
-0	Results after starting all jobs
-2	Results after starting all jobs and two minutes later
-4	Results after starting all jobs and two and four minutes later (default)
-6	Results after starting all jobs and two, four and six minutes later
-8	Results after starting all jobs and two, four, six and eight minutes later
-10	Results after starting all jobs and two, four, six, eight and ten minutes later
-12	Results after starting all jobs and two, four, six, eight, ten and twelve minutes later

### Hints:

If all fail, use `grid-proxy-init` first.  
If the output of the latest time contains 'StageIn', 'StageOut' or 'Active', increase the time for the next run.  
Since a huge amount of data is produced during this test in `nb6deployment/nbody6src`, delete this folder regularly.

Example (Fork): `./nbody6test.sh mytest.txt`  
Analysis: 'Done' => OK  
'ERROR' => Error

Example (GridWay): `./nbody6test.sh -g mytest.txt`  
Analysis: 'Done' => OK  
'ERROR' => Error



# Chapter 4

## Options of the Graphical User Interfaces

### 4.1 JavaAstroGridTest

Java program shows the status of AstroGrid-D hosts.

Options:

-h, -help	Shows Help
--h, --help	Shows Help
-0	Results of nbody6test after starting all jobs
-2	Results of nbody6test after starting all jobs and two minutes later
-4	Results of nbody6test after starting all jobs and four minutes later (default)
-6	Results of nbody6test after starting all jobs and six minutes later
-8	Results of nbody6test after starting all jobs and eight minutes later
-10	Results of nbody6test after starting all jobs and ten minutes later
-12	Results of nbody6test after starting all jobs and twelve minutes later

Hints:

If all fail, use grid-proxy-init first.  
In case of mintaka screensize is automatically enlarged (22, 31).

Use:

Click the title bar to change background color.  
- Clicking three times within one round may end the program.  
- Alternatively you can use your keyboard pushing 'Esc'.  
Click the footer to switch between the page showing the results of the standard tests and the page showing the results of the extra tests.  
- Alternatively you can use your keyboard pushing 'Space'.  
Click the output data to mark the row and the column.  
- To highlight a row only click outside any column.  
- To highlight a column only click outside any row.

Example (default):     `java -jar JavaAstroGridTest.jar`  
Result:                Run with default settings: nbodytest results after starting and after 4 minutes.

Example (alternative): `java -jar JavaAstroGridTest.jar -12 10 10`  
Result:                Run with additional borders of 10 pixel and second nbodytest results after 12 minutes.

## 4.2 AppletAstroGridTest

Shows the status of AstroGrid-D hosts using an applet within a webpage.

### Options:

<code>-h, -help</code>	Shows Help
<code>--h, --help</code>	Shows Help
<code>-d</code>	Use default browser (default)
<code>-b</code>	Use the browser given by the following argument (argument not necessary)
<code>-0</code>	Results of nbody6test after starting all jobs
<code>-2</code>	Results of nbody6test after starting all jobs and two minutes later
<code>-4</code>	Results of nbody6test after starting all jobs and four minutes later (default)
<code>-6</code>	Results of nbody6test after starting all jobs and six minutes later
<code>-8</code>	Results of nbody6test after starting all jobs and eight minutes later
<code>-10</code>	Results of nbody6test after starting all jobs and ten minutes later
<code>-12</code>	Results of nbody6test after starting all jobs and twelve minutes later

### Hints:

If all fails, use `grid-proxy-init` first.  
If you get a static picture with the tooltip  
'Your browser understands the `<applet>` tag but isn't running the applet',  
you have to enable Java in the settings of your browser.

### Use:

Click the title bar to change background color.  
- Clicking three times within one round may end the applet.  
- Alternatively, you can use your keyboard, pushing 'Esc'.  
Click the footer to switch between the page showing the results of the standard tests  
and the page showing the results of the extra tests.  
- Alternatively, you can use your keyboard, pushing 'Space'.  
Click the output data to mark the row and the column.  
- To highlight a row only click outside any column.  
- To highlight a column only click outside any row.

Example (default):     `./AppletAstroGridTest.sh`  
Result:                The webpage is shown in the default browser 'firefox'.

Example (alternative): `./AppletAstroGridTest.sh konqueror`  
Result:                The webpage is shown in the browser 'konqueror'.

# Chapter 5

## Troubleshooting

### 5.1 If svn fails ...

...with “Authentication realm: <svn://svn.gac-grid.org:3690> ... Password for ...:” try:

- Password for Lenya
- Press “return” until you can login as “anonymous” without password

### 5.2 If you get “Can’t connect to X11” ...

... while starting **JavaAstroGridTest** exit or open new shell and try again:

- `gsissh [AstroGrid-D host of your choice] -X`
- `cd trunk`
- `java -jar JavaAstroGridTest.jar`

### 5.3 If AstroGridTest.html shows you a static picture ...

... with the tooltip “Your browser understands the <applet> tag but isn’t running the applet”, you have to enable “Java” in the settings of your browser.