Project acronym: EDGeS

Project full title: Enabling Desktop Grids for e-Science

Grant agreement no.:RI 211727

Tutorial:

Desktop Grid Server Installation

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1 Prerequisites

The following software packages should be first installed on the PC:

- MySQL server

- Apache web server

- PHP

- Mail server (only if you want to send out registration details to the users)

We will first install and configure these packages. Detailed description of the installation of these packages can be found at http://www.desktopgrid.hu.

2 Installation of the DG Server

2.1 Login to assigned virtual machine

ssh root@vm1XX.terem

Enter the root password if prompted (**kanuka**).

2.2 Open the /etc/hosts file in your preferred editor

2.3 The file should contain the following:

127.0.0.1	**localhost.localdomain**	**localhost**
190.168.132.1XX	**vm1XX.terem**	**vm1XX**

Change the IP and the address of the second line in the example to the values of your own!

2.4 Install the following packages

apt-get install apache2-mpm-prefork libapache2-mod-auth-plain

apt-get install libapache2-mod-php5 php5-cli

apt-get install mysql-server-5.0 php5-mysql

apt-get install pwgen

2.5 Generate a password for the MySQL root user

pwgen –s 10

2.6 Set this password as the new root password

mysqladmin -u root password <password>

Replace the text <password> with the previously generated password.

2.7 The BOINC scripts will access the database; to automate them, create a /root/.my.cnf file with the following:

```
[mysql]
user = root
password = <password>
[mysqladmin]
user = root
password = <password>
```

Replace the text <password> with the previously generated password.

2.8 Open the /etc/apt/sources.list file with your preferred editor

```
jed /etc/apt/sources.list
```

or

```
mcedit  /etc/apt/sources.list
```

2.9 Add the following line to the end of sources.list

```
deb  http://www.desktopgrid.hu/debian/  etch  szdg
```

2.10 Save the changes and close the editor

```
F10
```

in mcedit or

```
CTRL+x,s and CTRL+x,c
```

in jed.

2.11 Import the GPG key of the repository with the following command

```
wget -q http://www.desktopgrid.hu/szdg-key.gpg -O- | apt-key add -
```

2.12 Update the package list

```
apt-get update
```

2.13 Issue the following command to install the BOINC packages

```
apt-get install  boinc-server boinc-skin-ldg
```

Your BOINC server is now installed on your PC. The next step is to create your own BOINC project.

3 Creating a BOINC Project

3.1 Still as root, issue the boinc_create_project command

```
boinc_create_project --name=<short-name> --long-name=<long-name>
```

Give your project a short identifier and a descriptive name, e.g.:

```
boinc_create_project  --name=sample --long-name="Sample Project"
```

3.2 Grant project administrator rights to one or more Linux users - OPTIONAL

```
adduser <username>
```

```
boinc_admin --name=<project's short-name> --add <username>
```

Use the short name of the project as specified previously, e.g.:

```
boinc_admin --name=sample --add atisu
```

Our new project is up and running. If everything went well, you can load the website of your project into your browser.

The URL of the project website has the following format: http://<FQDN>/<short-name>.

Where

- FQDN is the fully qualified domain name of your PC
- short-name is your project's short name

You should see a page similar to the one shown on Figure 1. Have a look at the different sections of the site!
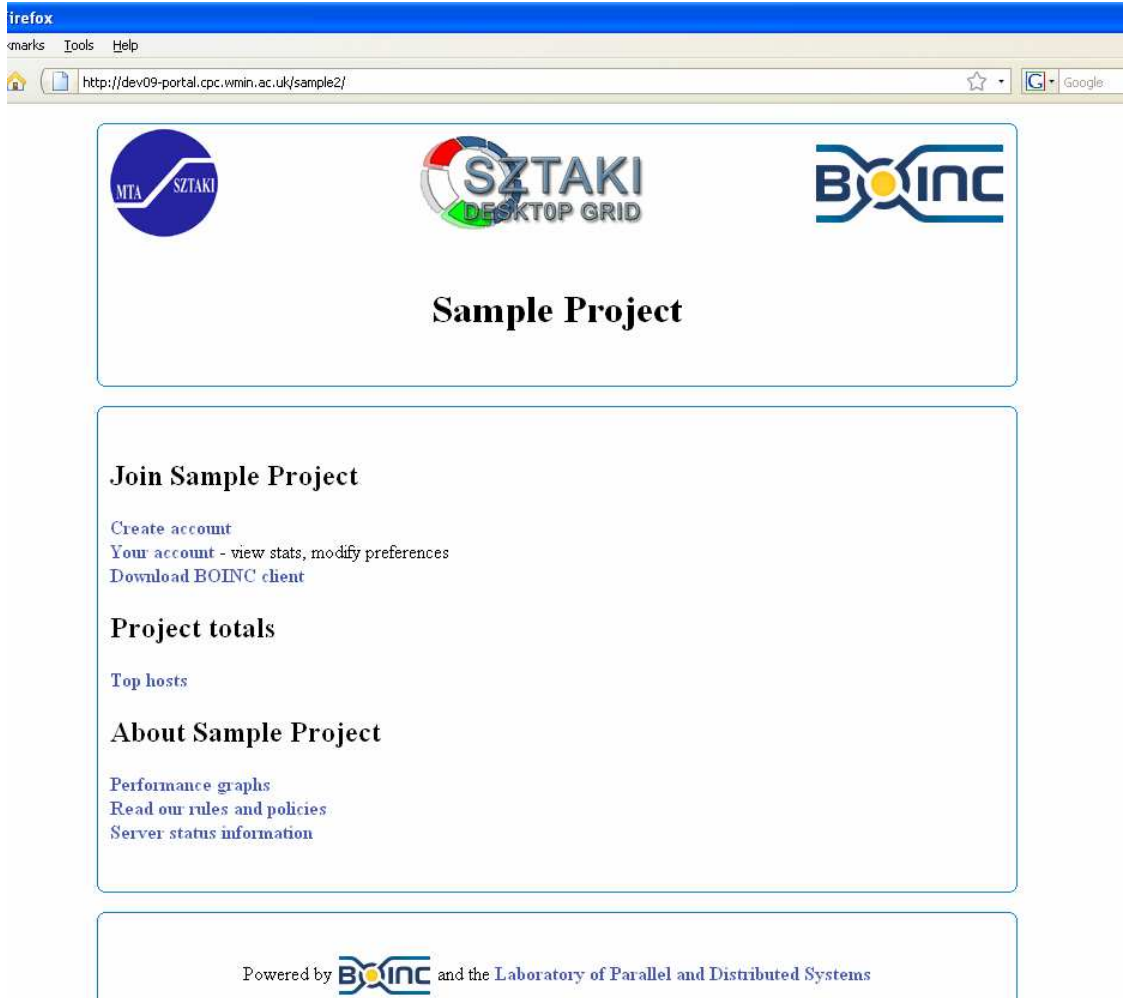
Figure 1 The project website

4 Deploying the sample application

4.1 Change to the project user

```
sudo su boinc-<project's short name>
```

e.g.:

```
sudo su boinc-sample
```

4.2 Download the necessary files

```
wget http://www.lpds.sztaki.hu/~atisu/edges-tut-files.tar.gz
```

4.3 Extract the files from the archive

```
tar -xzf  edges-tut-files.tar.gz
```

4.4 Run the deployment script

```
boinc_appmgr --add  ./edges-tut-files/deploy/dsp_1.00.tar.gz
```

We will see the detailed description of this script later when we deploy our own application. At the moment, just run the script as shown. If the script finishes properly, you can start to use the DSP application.

5 Running the sample application

5.1 Start the server as the project user

```
start
```

The previous script installed the DSP application as a daemon, so it starts automatically when the server starts.

6 Starting the BOINC client

6.1 Open a shell on the local (tnXX) machine

6.2 Create a directory and enter

```
mkdir BOINC
cd BOINC
```

6.3 The BOINC client should be started with the following command

```
boinc –gui_rpc_port 6667
```

6.4 Open another terminal, enter the BOINC directory and start the manager

```
cd BOINC
boincmgr
```

6.5 Switch to advanced view

6.6 Go Advanced > Select Computer, and enter the following as host name

```
localhost:6667
```

The password field should fill out automatically.

6.7 The client will show you a pop-up window, where you can attach your client to a project
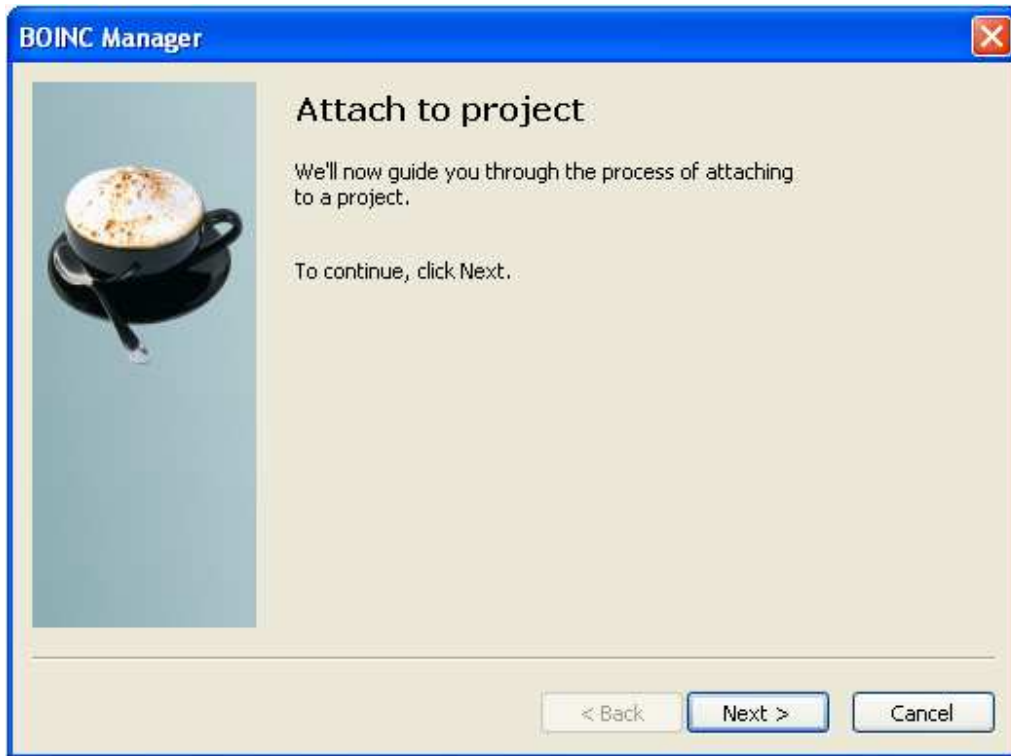
6.8 Click on Next

Figure 2 Attaching a project

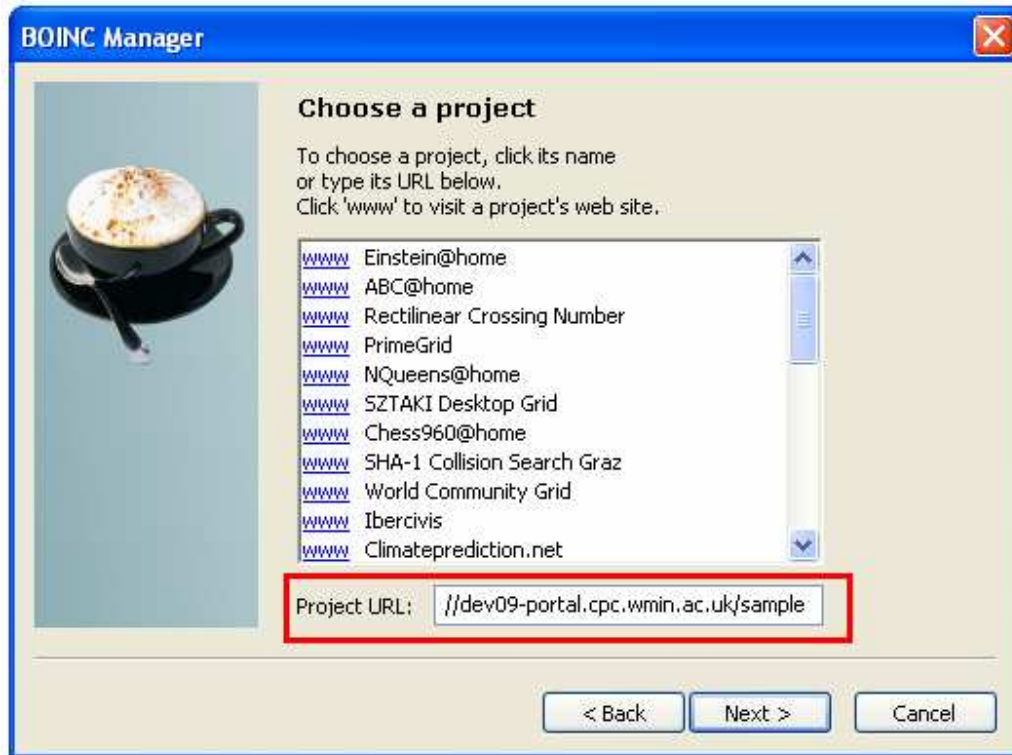## 6.9 Enter the URL of your project (same as the URL of the website) and click Next

Figure 3 Entering the Project URL

e.g.:

http://vm128.terem/sample

6.10 Create a new user account and click Next

Figure 4 Creating a user account

6.11 If everything is OK, you should see the following
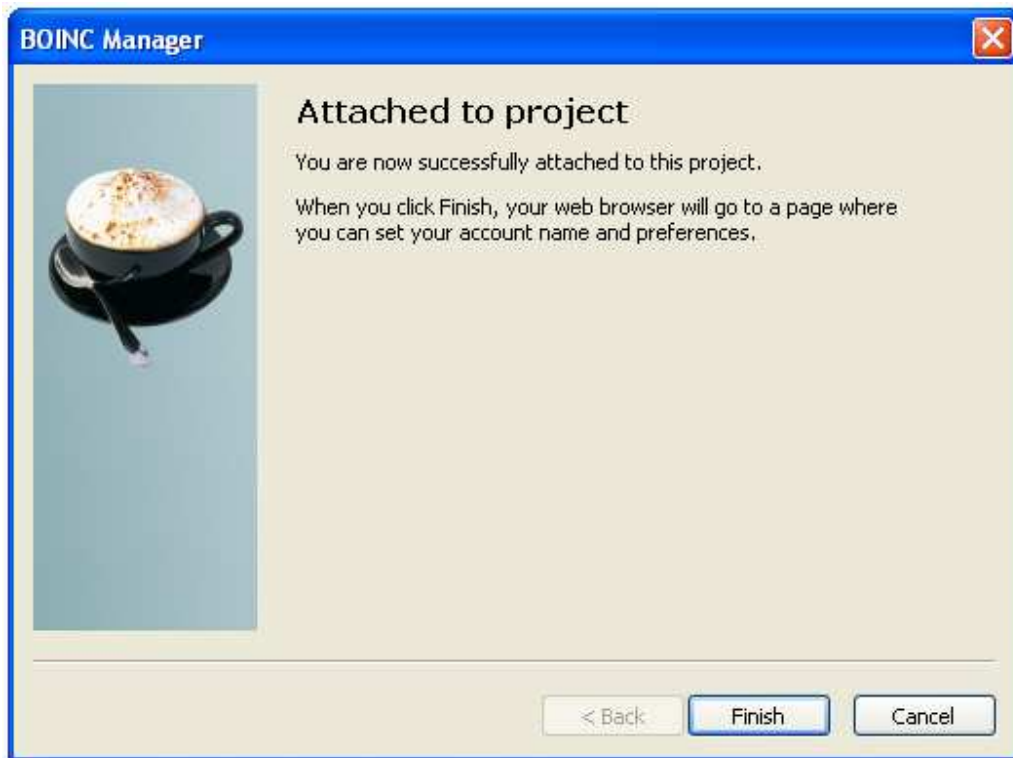

Figure 5 Successfully attached to the project

7 Checking the status of the computation

7.1 Click on the Tasks tab to see the status of the computation
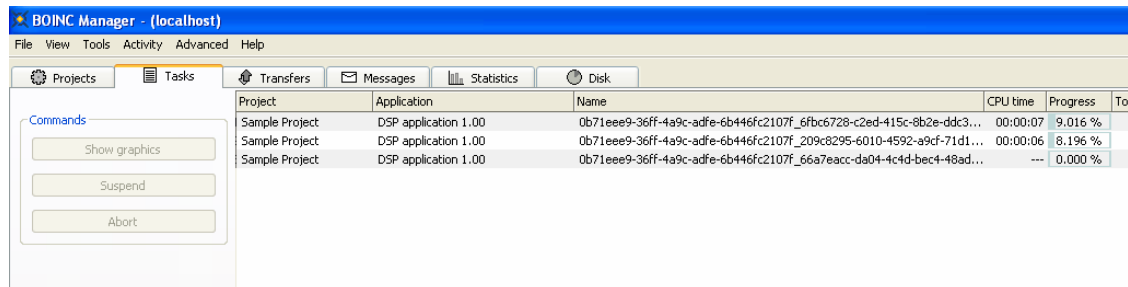

Figure 6 Progress of the computation

The master will receive the results in a few minutes. In the meantime, connect your client to your neighbours' projects as an exercise.