

University College London
MSc Data Communications, Networks & Distributed Systems

Deployment in Computational Distributed Grids
User Guide

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Users' Guide

1. Introduction

This guide includes detailed instructions for the operation of the Grid Services Control program.

2. Start-up

When the program starts it reads a server list from the file “servers.txt”. It displays those servers on a window and waits for you to make your selection. An example of such a window can be seen in **Figure 1**.

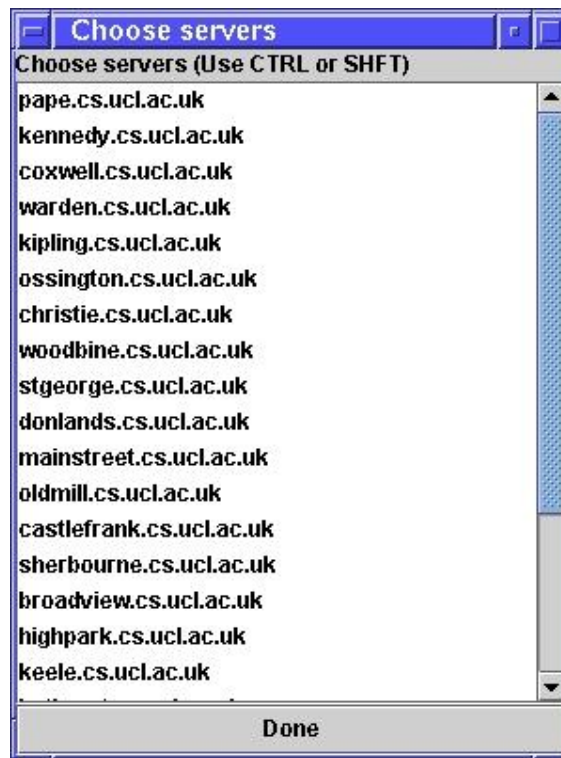


Figure 1

Servers can be chosen by using control and/or shift. It is possible to not select any server. Once you are ready press “Done” to move to the next screen.

Note: The servers that are chosen should already have SmartFrog's daemon running.

3. Main window

The main window contains all the controls that will be needed to manage the servers. All the changes that are made to the servers are stored in files which are read when the program starts. This means that you can close the window at any time and once you restart it the program will remember the state that the servers were at.

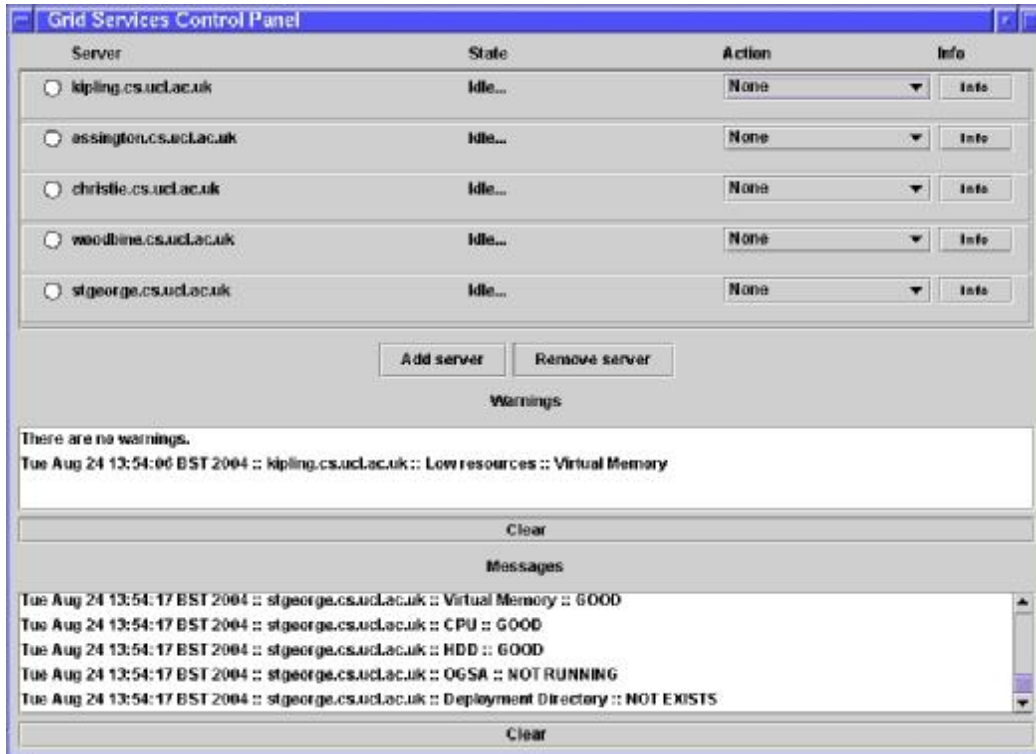


Figure 2

In Figure 2 you can see the main window which just started. The servers have been initiated and you can see the messages which have been received in the “Messages” list. A warning has also been received which states that kipling.cs.ucl.ac.uk has low virtual memory, which could possibly be a problem. The servers can be seen in the upper half of the window.

Refer to Figure 3 for the following characteristics:

Server List: This is the list of servers which can be used to deploy grid services and their infrastructure. The list may display a scrollbar in order to accommodate a larger number of servers.

Server Name: The name of each server which is also the hostname of the server.

Server State: The state of the server. Possible states are:

- Idle... (This means that there has been no action on the server yet)
- Starting full deployment...
- Starting partial deployment...
- Starting full undeployment...
- Full deployment has finished.
- Partial deployment has finished.
- Full undeployment has finished.
- Partial undeployment has finished.
- FAILED (This means that the last action taken on the server has failed. There is an error in the server)

Grid Services Control Panel

Server Condition	Server Name	Server State	Server Action	Server Info
Server		State	Action	Info
<input type="radio"/>	kipling.cs.ucl.ac.uk	Idle...	None	Info
<input type="radio"/>	ossington.cs.ucl.ac.uk	Idle...	None	Info
<input type="radio"/>	christie.cs.ucl.ac.uk	Idle...	None	Info
<input type="radio"/>	woodbine.cs.ucl.ac.uk	Idle...	None	Info
<input type="radio"/>	stgeorge.cs.ucl.ac.uk	Idle...	None	Info

Server List

Add server Remove server

Add/Remove Server

Warnings

There are no warnings.
Tue Aug 24 13:54:06 BST 2004 :: kipling.cs.ucl.ac.uk :: Low resources :: Virtual Memory

Warnings List

Clear List

Messages

Tue Aug 24 13:54:17 BST 2004 :: stgeorge.cs.ucl.ac.uk :: Virtual Memory :: GOOD
Tue Aug 24 13:54:17 BST 2004 :: stgeorge.cs.ucl.ac.uk :: CPU :: GOOD
Tue Aug 24 13:54:17 BST 2004 :: stgeorge.cs.ucl.ac.uk :: HDD :: GOOD
Tue Aug 24 13:54:17 BST 2004 :: stgeorge.cs.ucl.ac.uk :: OGSA :: NOT RUNNING
Tue Aug 24 13:54:17 BST 2004 :: stgeorge.cs.ucl.ac.uk :: Deployment Directory :: NOT EXISTS

Messages List

Clear List

Figure 3

Server Condition: The condition of the server. It is represented with the color of the circle. Possible colors are:

- White: Idle
- Blue: Infrastructure is deployed
- Green: Infrastructure and one or more grid services are deployed
- Red: A deployment or undeployment attempt has failed, or the resources are low.

Server Action: By using this combo box you can choose the action that should be taken on this server. Possible choices are:

- Full deployment (Deploy infrastructure and one grid service)
- Partial deployment (Deploy one grid service)
- Full undeployment (Undeploy infrastructure and all grid services)
- Partial undeployment (Undeploy one grid service)

Server Info: Clicking this button will manifest a window which has information about the specific server. There is a different section dealing with the Server Info in more detail.

Add/Remove Server: These two buttons may add and remove servers from the server list. Clicking the button to add a server will manifest the dialog shown in **Figure 4**.



Figure 4

In the dialog window you should enter the hostname of the server that you want to add. Remember once again that SmartFrog's daemon *must* be running on that server before you add it to the list. The dialog to remove a server is similar to the one in **Figure 4**. You should give the name of the server as it appears in the server list, ie. the hostname.

Warnings List: The warning messages that are sent by the servers when something is wrong will appear in this list. The warnings include failed deployments or undeployments and low resources at the server. You should be the judge of what action may be needed.

Note: The messages that show low resources are based on our judgment on what low resources are. That should be configured according to the requirements.

Messages List: All the messages that the servers send will appear in this list. That includes the results of deployment/undeployment as well as resource messages.

Clear List: Each "Clear" button clears the contents of the corresponding list.

4. Server Info Dialog

Clicking on the “Info” button which can be found next to each server pops up the Server Info dialog which contains information on the particular server.



Figure 5

In **Figure 5** you can see the dialog. It contains three buttons on the top with which you can browse through the three cards:

Info: The default card that you see when the “Info” button is clicked. Contains the name of the server, whether the infrastructure has been installed or not, and whether OGSA is running or not. It may also show any deployed grid services, if there are any. In **Figure 5**, there aren't.

Resources: It shows the resources of the server. It should be noted that resource messages are sent by the server in specified intervals. Thus, the information in this card are updated but possibly not current. An example is shown in **Figure 6**.

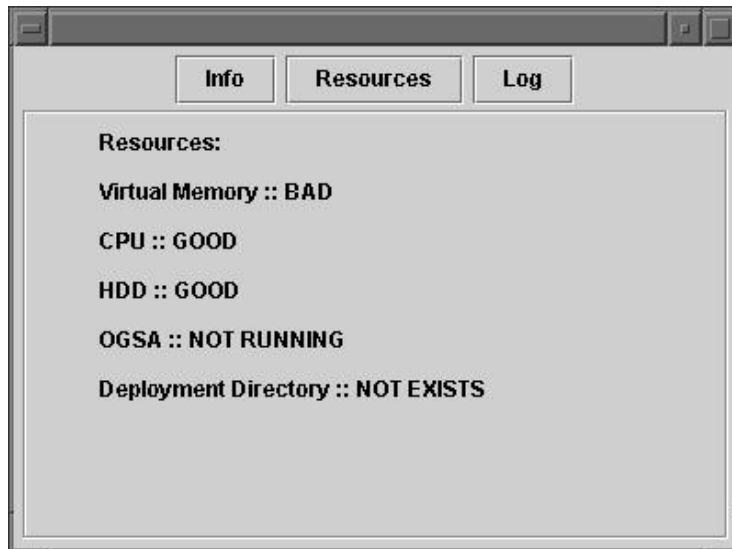


Figure 6

Log: This card shows the log file of the server. All the messages that are sent by the server are kept in a log file. This card shows the contents of the log file. An example can be seen in Figure 7.

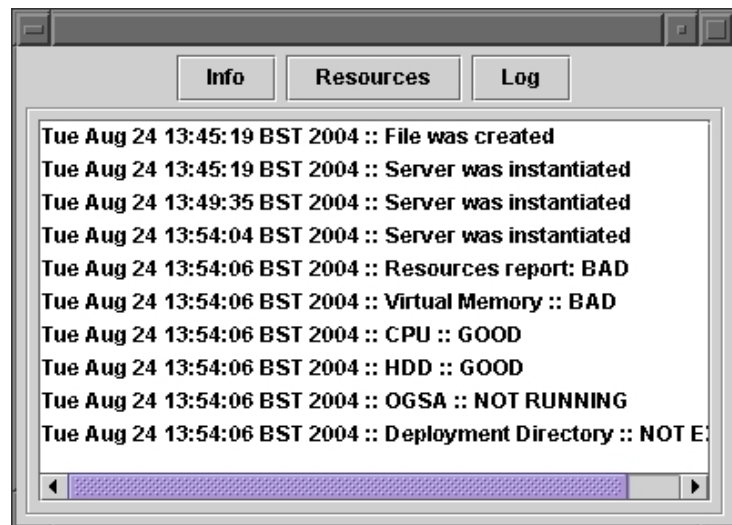


Figure 7

5. Using the program

When the program starts running, components that check the resources are deployed on each server. They send back messages containing the level of the resources of each server. If the resources are low, a warning will appear in the “Warnings” list.

You can use the “Action” combo box in order to take actions on the servers:

Full deployment: Should be used in order to deploy the infrastructure and a grid service on a server. It can not be used if the infrastructure has already been deployed on this server.

Partial deployment: Should be used in order to deploy a grid service. The infrastructure should have been deployed already.

Full undeployment: Should be used when you want to undeploy everything from the server, including infrastructure and all the grid services.

Partial undeployment: Should be used to undeploy a single grid service.

When the action of full deployment or partial deployment takes place, the dialog in **Figure 8** will appear.



Figure 8

In this dialog you should give the location of the GAR file that contains the grid service that you want to deploy. It should be an HTTP location.

Full deployment takes a long time, around 5-6 minutes so, be patient.

Regarding any action that may be taken, messages will appear in the “Messages” window which will show the progress of that action. When the process finishes you will be notified by the “Server State” label, as well as the color indicator of the “Server Condition”.

The screenshot in **Figure 9** shows the main window during the full deployment on three servers.

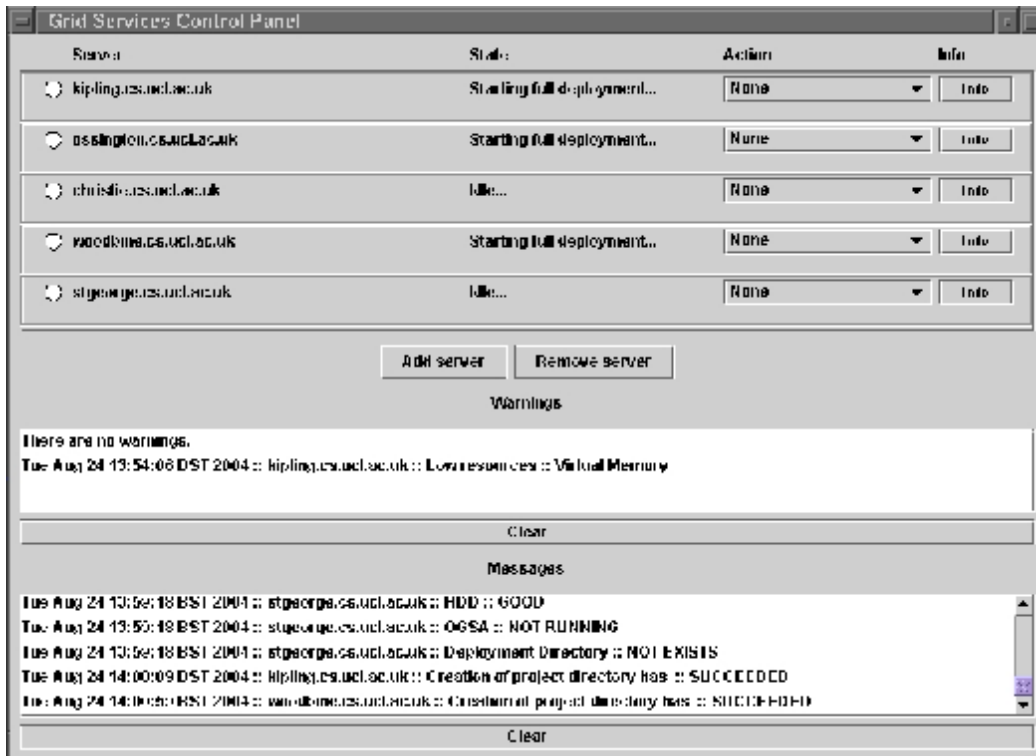


Figure 9

At the “Messages” list you can see the last two messages which show the results of the first two actions that have been successfully carried out as part of the full deployment, the creation of project directory. These messages may be either SUCCEEDED or FAILED. Their purpose is to give you information as to what is happening at any time. Also, they may help you pinpoint the reason of a possible failure. If any messages comes back as FAILED the process will halt. That will be clearly shown in the “Warnings” list, the “Server State” and the “Server Condition” color indicator.

The screenshot in **Figure 10** shows the main window after the successful full deployment on two servers. The “Server Condition” color indicator is green which means that the infrastructure has been deployed as well as the grid service.

At any time it is possible to check the information on a specific server by clicking the “Info” button.

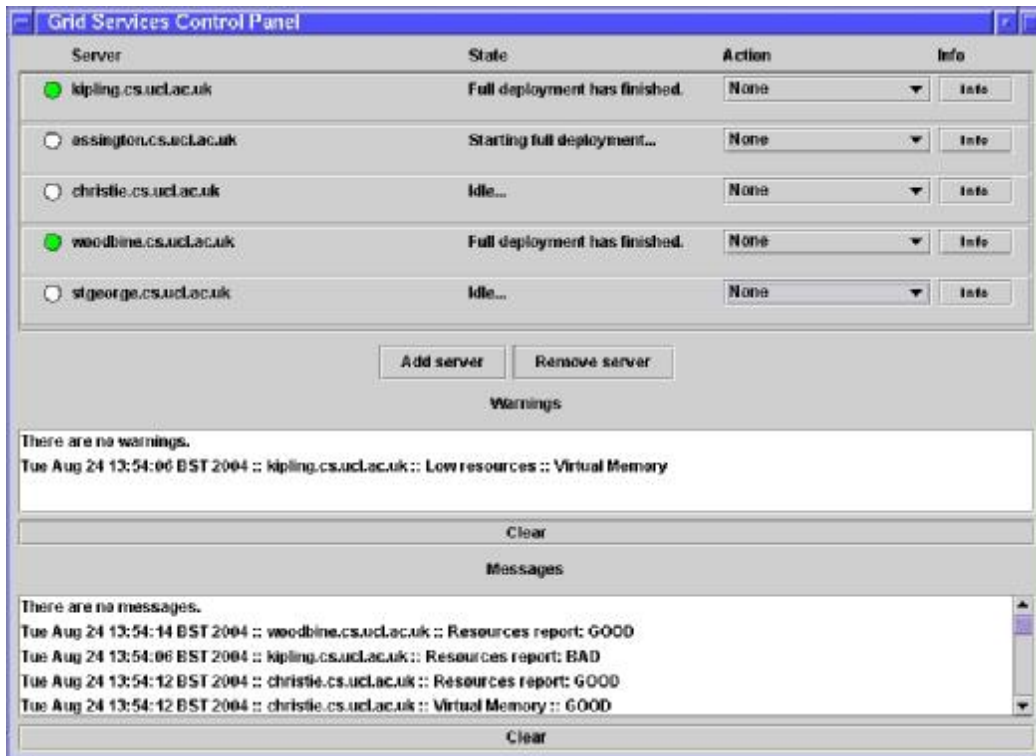


Figure 10

The Server Info dialog is shown in Figure 11. It has information about kipling.cs.ucl.ac.uk where the full deployment took place. Now you can see that the infrastructure is installed, OGSA is running and one grid service is also deployed.

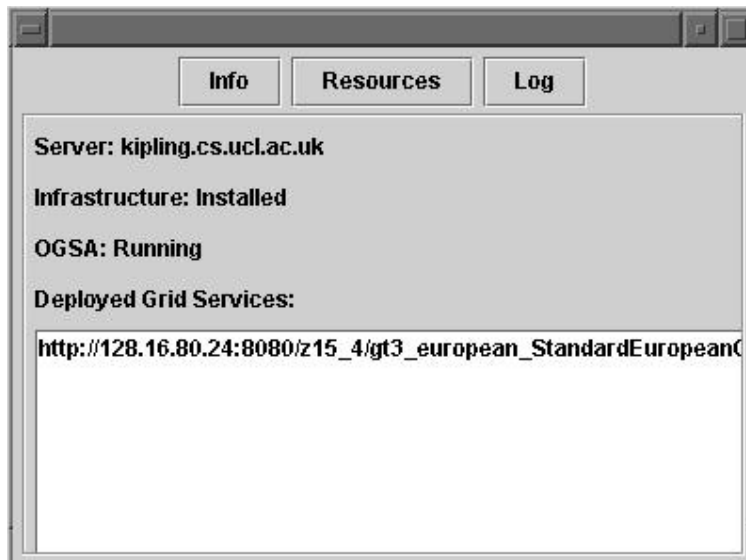


Figure 11