Creating and running applications on the NGS

Policy for re-use

- This presentation can be re-used for academic purposes.

- However if you do so then please let training-support@nesc.ac.uk know. We need to gather statistics of re-use: no. of events, number of people trained. Thank you!!

Acknowledgements

- This presentation re-uses material
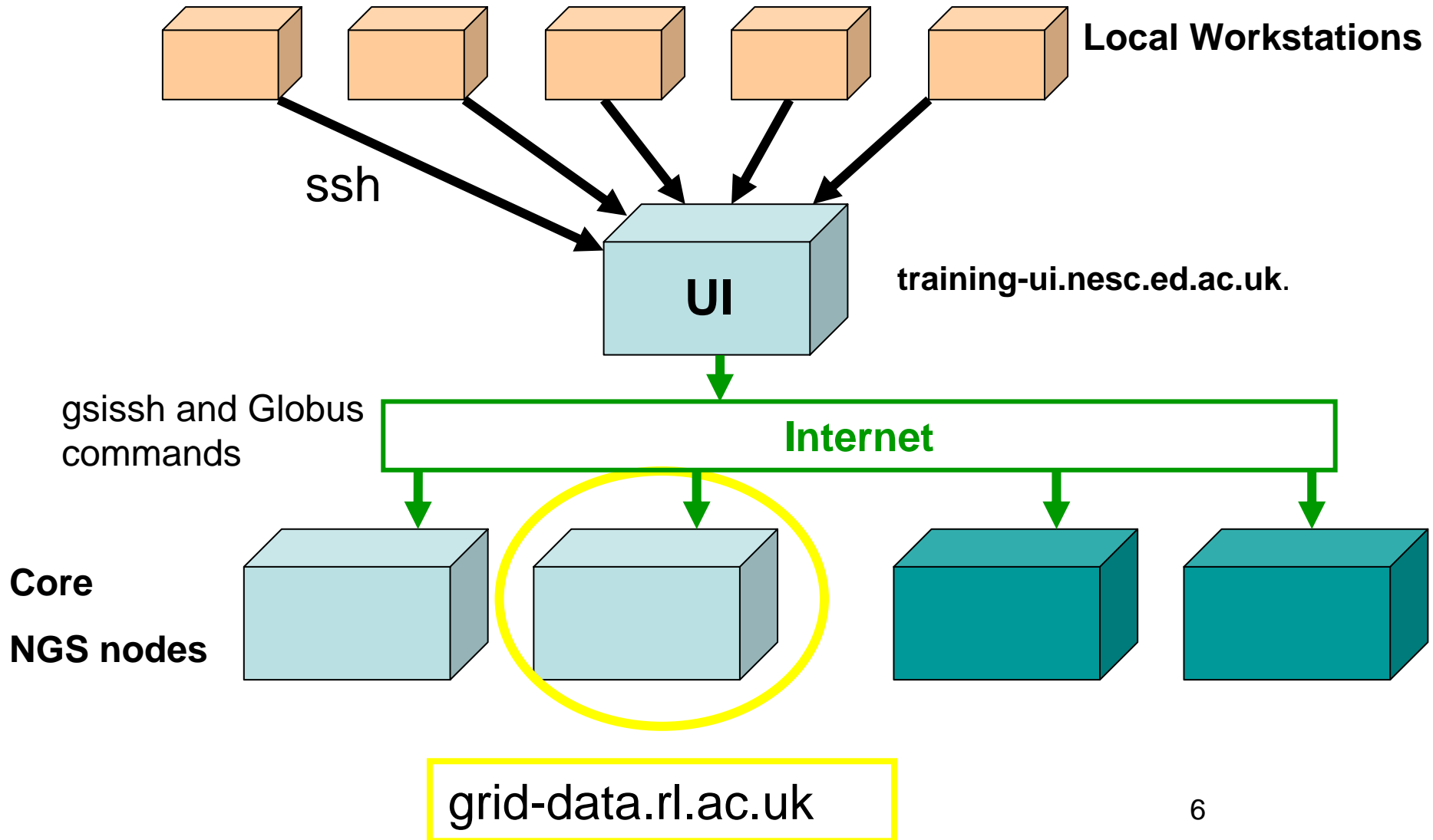 - on globus commands from Stephen Pickering (University of Leeds)

Outline

- A "User interface" machine and our set-up today

- How to:

  – Port code and data from desktop/UI to the NGS compute nodes

  – Compile and run code

  – Invoke your application from the UI machine

- Practical

The "UI" machine

- The users interface to the grid
  - Where you upload your certificate for your session
  - Where you create proxy certificates
  - Where you can run the various commands, including…
    - The clients and development tools from Globus Toolkit 2.4.3
    - GSI enabled Secure Shell
    - Storage Resource Broker (more on this tomorrow)
    - OGSA-DAI (more on this tomorrow)

Our setup

NGS
National Grid Service

Local Workstations

ssh

UI

training-ui.nesc.ed.ac.uk.

gsissh and Globus commands

Internet

Core

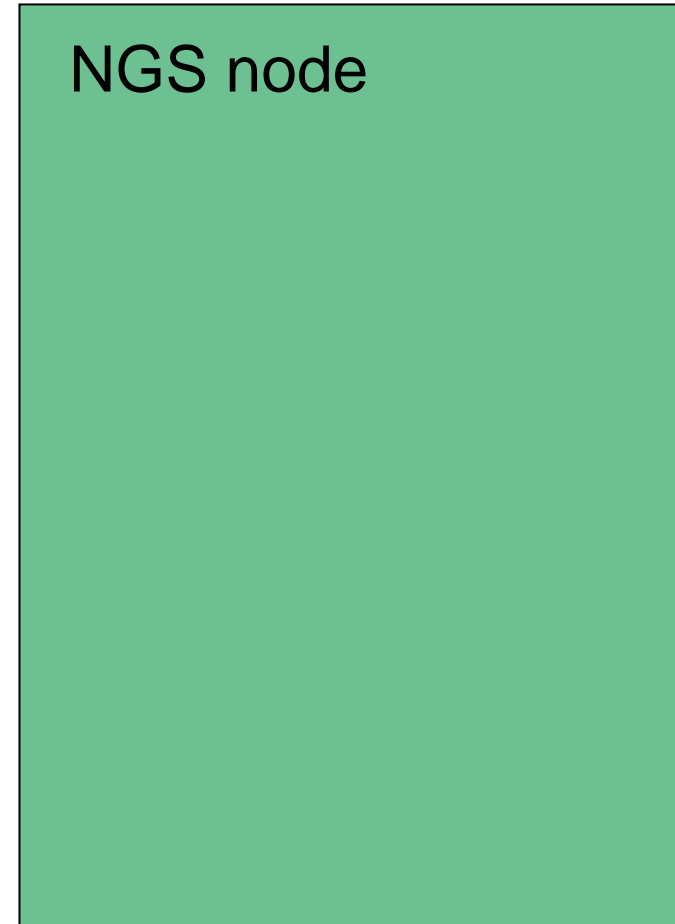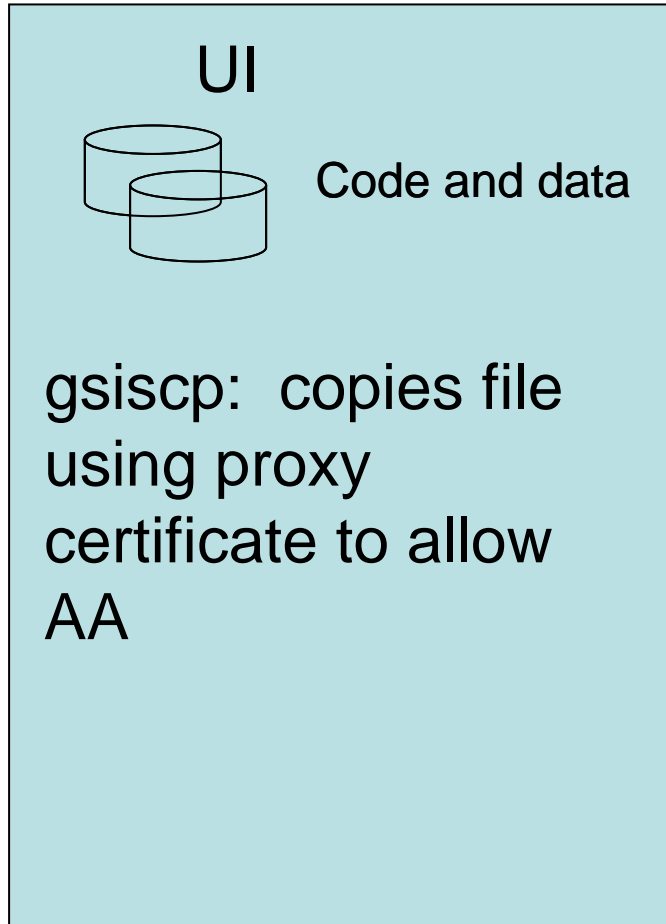**NGS nodes**

grid-data.rl.ac.uk

GSI enabled Secure Shell and Secure CoPy

- Openssh patched to additionally use proxy certificate for authentication and authorization

- Often run on port 2222

- These are used to permit execution of jobs on NGS sites as follows:
  - gsiscp to copy files
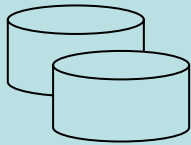 - gsissh to compile
  - globus-… commands to execute jobs

Secure file copy

UI

Code and data

gsiscp: copies file using proxy certificate to allow AA
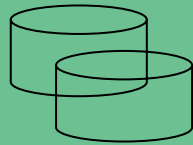
NGS node

Open shell on NGS CN

UI

Code and data

gsissh

Can be an X-windows client

NGS node

Code and data

Compile, edit, recompile, build

SHORT interactive runs are ok (sequential)
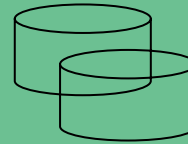
Totalview debugger.

Run jobs from the UI

NGS National Grid Service

UI

globus_job_run

Or

globus_job_submit /
globus_get_output

Can pass files with
these commands: e,g,
parameters for a job.

NGS head node

Code and data

Executables