http://www.grid-support.ac.uk

http://www.ngs.ac.uk

Creating and running applications on the NGS

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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
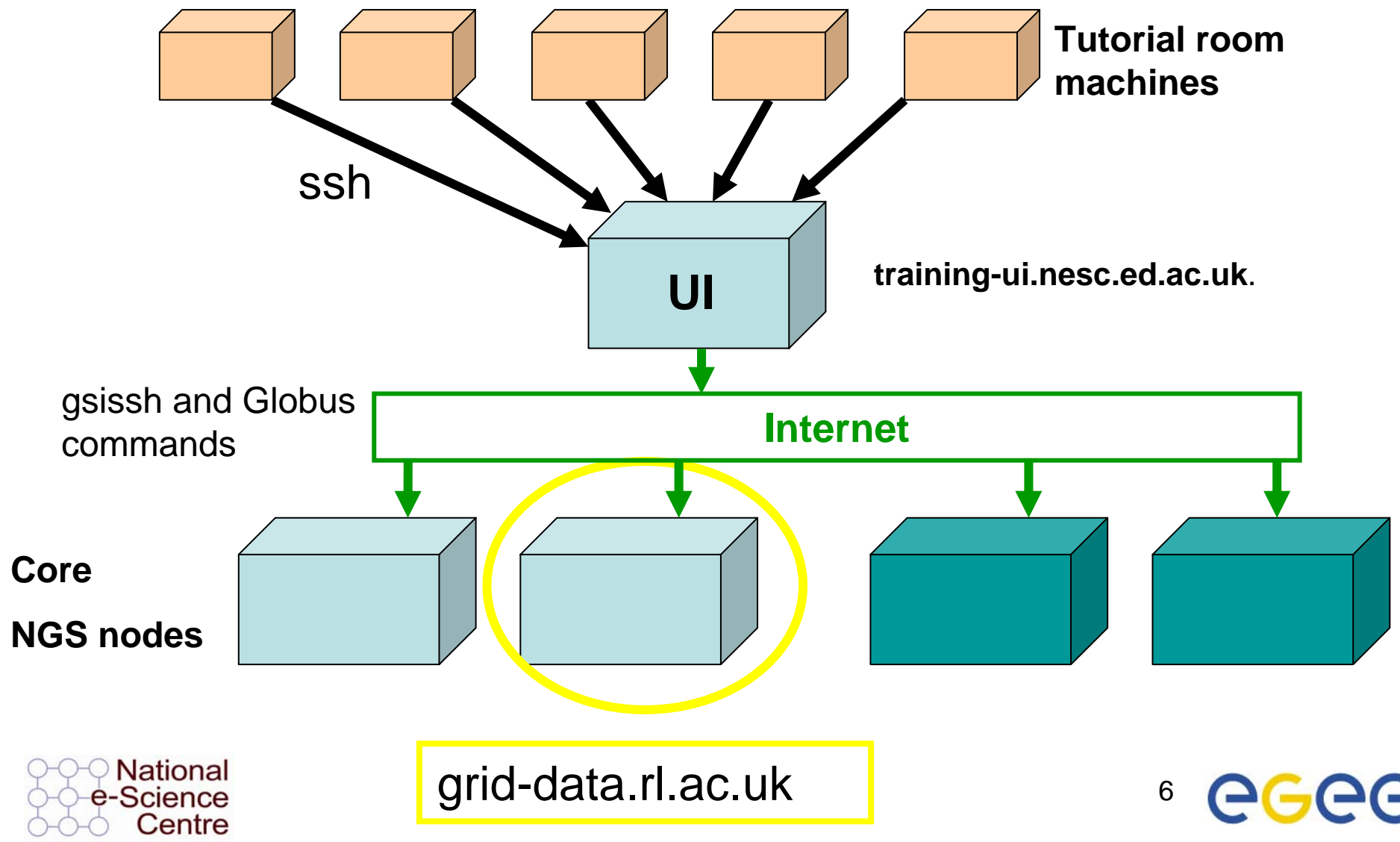 - Invoke your application from the UI machine
- Practical

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)
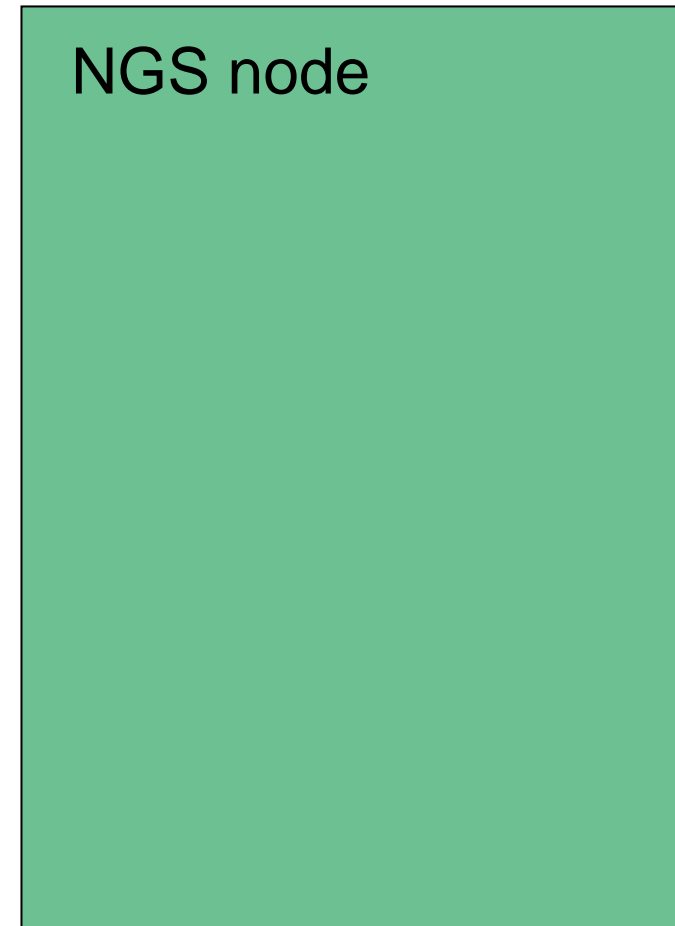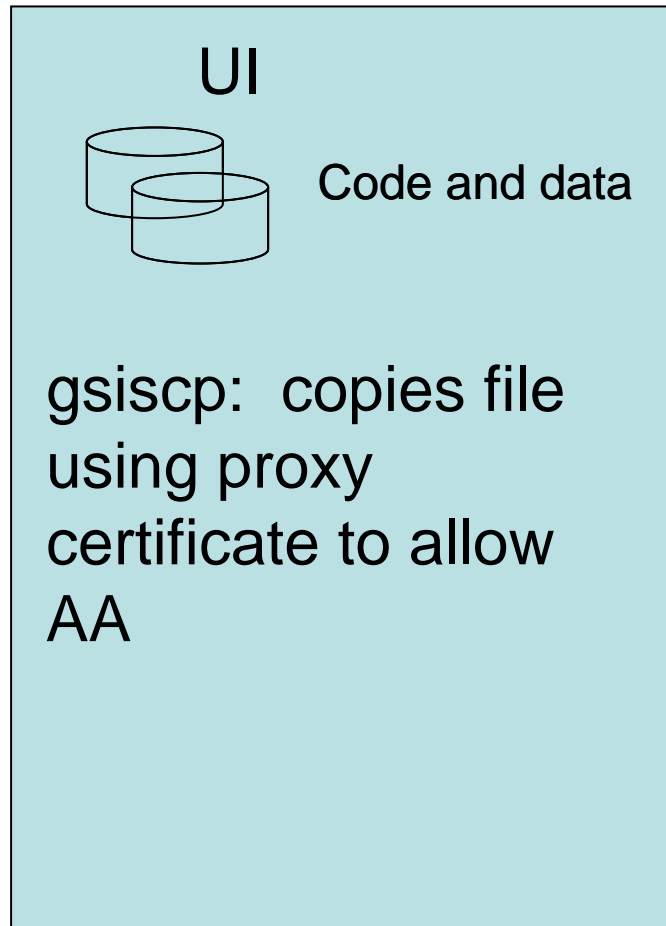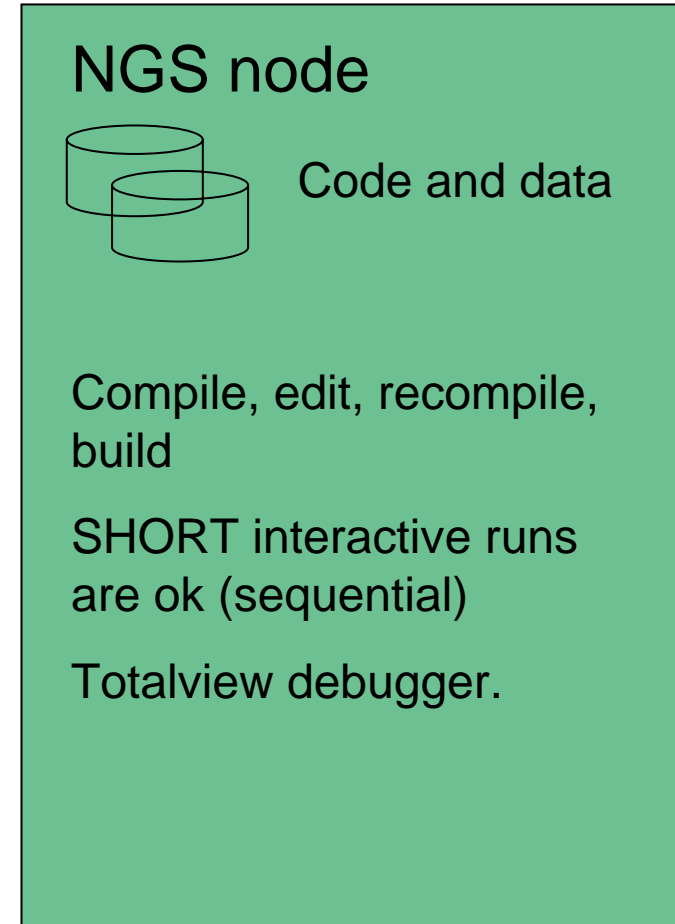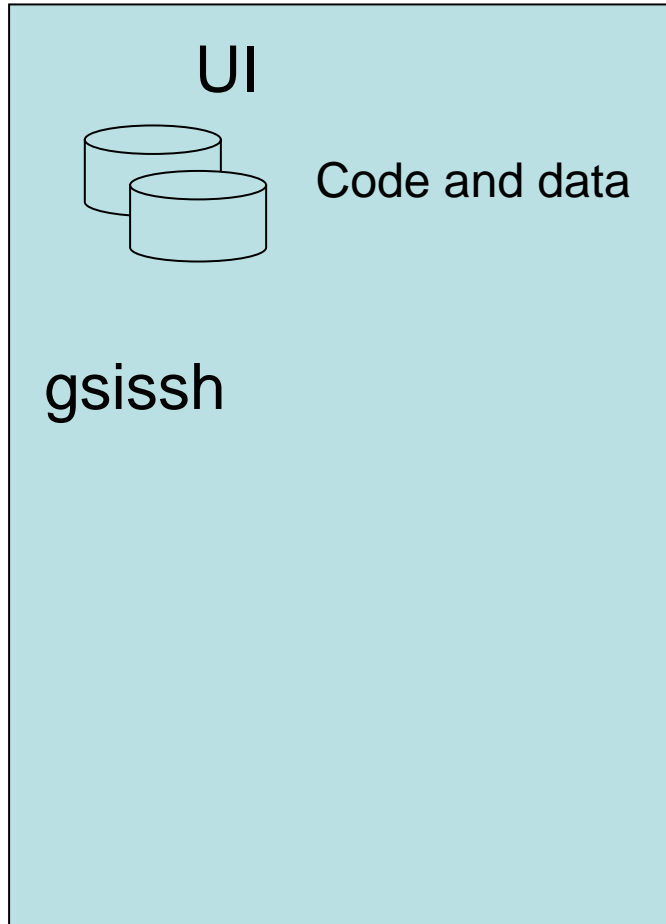   - OGSA-DAI (more on this tomorrow)

Our setup

Tutorial room machines

ssh

UI

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

gsissh and Globus commands

Internet

Core

NGS nodes

grid-data.rl.ac.uk

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

NGS node

Code and data

Compile, edit, recompile, build

SHORT interactive runs are ok (sequential)
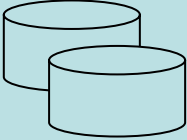
Totalview debugger.

Run jobs from the UI
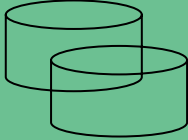
UI

Code and data

globus_job_run

Or

globus_job_submit /
globus_get_output

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

NGS node

Code and data

Executables

http://www.grid-support.ac.uk

http://www.ngs.ac.uk

Job Submission Tutorial
Guy Warner
NeSC, Training Team

http://www.nesc.ac.uk/

http://www.pparc.ac.uk/

http://www.eu-egee.org/

Overview

- This tutorial will look at

  - Job submission, monitoring and retrieving output

  - Error diagnosis.

  - Compiling code suitable for running on the NGS

  - Using NGS modules

- Please remember the systems you are using are part of a production level service.

Instructions

- Use the putty ssh client to connect to pub-234.nesc.ed.ac.uk

- Open a browser window at
  http://homepages.nesc.ac.uk/~gcw/NGS/GRAM.html.

- Follow the instructions from there.

http://homepages.nesc.ac.uk/~gcw/NGS

Questions -1

- "How do I know which compute node to use?"
  - Use the Information Service (Not covered in this event)
  - The core nodes of the NGS all run the same software
- Is my NGS Compute Node account shared across all machines??
  - NO – You must synchronise your accounts on different machines yourself. Your account names may be different on each machine. Use GridFTP (from portal) or gsi-scp
  - You can hold files in the SRB,(Storage Resource Broker –see tomorrow) and read/write these from any compute node

Questions -2

- "Should I stage an executable?" (stage = Send it to a compute node from my desktop/UI)
  - Only if the UI is binary-compatible with the execution node
    - Not all nodes are running Linux.
    - Not all head nodes are running the same operating system as their execution nodes
  - Safer to
    - Check it compiles locally
    - Copy to a head node
    - Compile it there (or submit job to compile it)

Further information

- Globus 2.4.3 Documentation:
  http://www-unix.globus.org/toolkit/docs/2.4/

- NGS user pages
  http://www.ngs.ac.uk/users/userguide.html