



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



<http://www.ngs.ac.uk>

Creating and running applications on the NGS

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JISC





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



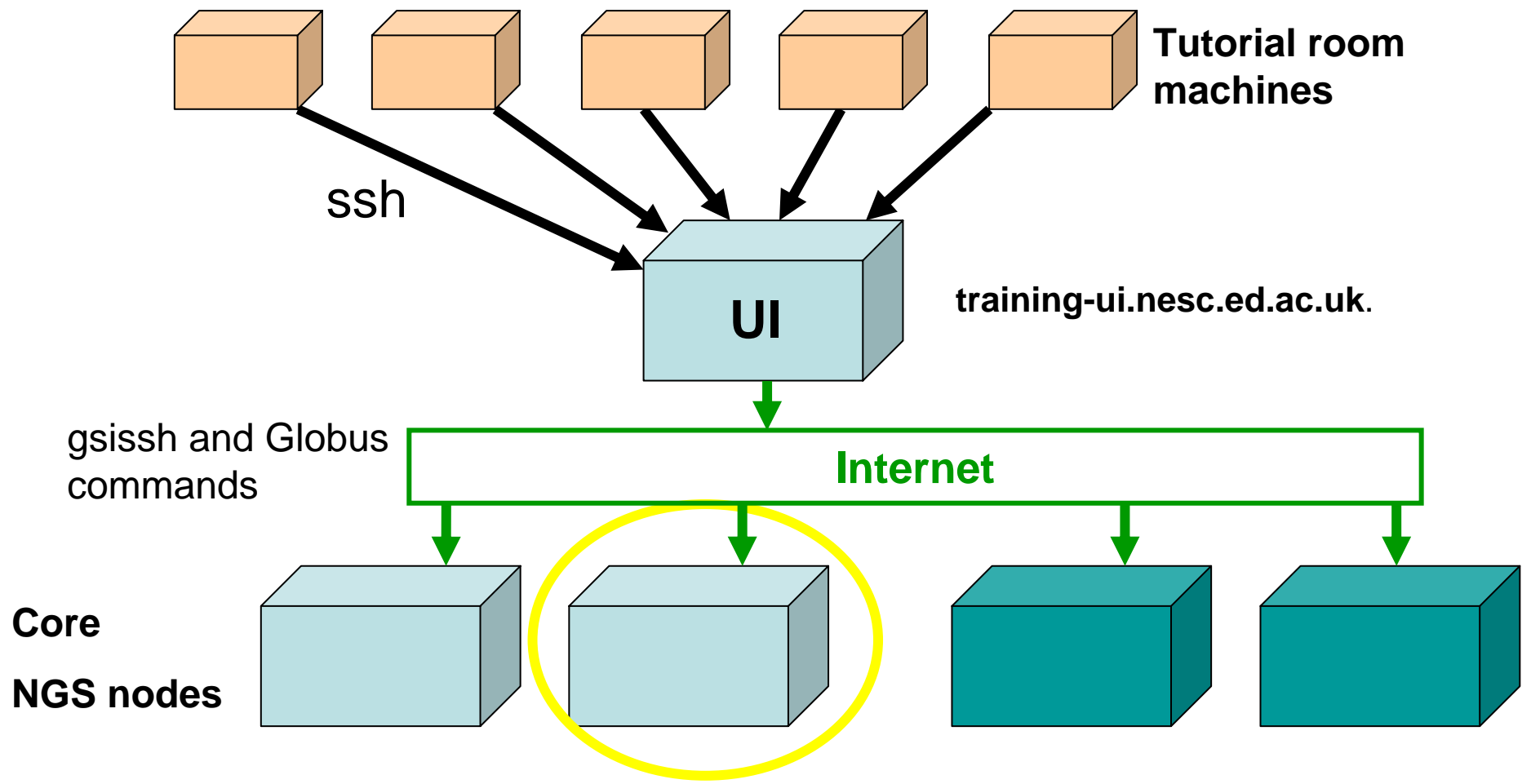
The “UI” machine



- 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



grid-data.rl.ac.uk



GSI enabled Secure Shell and Secure CoPy



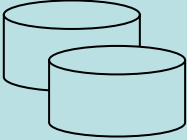
- Openssh patched to additionally use proxy certificate for authentication and authorization
- Often run on port 2222
- gsissh
 - Used from UI to get session on NGS head node
 - Compile, edit, recompile, build
 - SHORT interactive runs are ok (sequential)
 - Totalview debugger.
- gsiscp
 - Copy files between UI and NGS head node



Run jobs from the UI



UI



Code and data

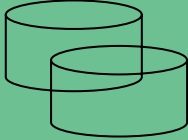
`globus_job_run`

Or

`globus_job_submit /
globus_get_output`

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

NGS head node



Code and data
Executables



Job Submission Tutorial



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://agenda.cern.ch/fullAgenda.php?ida=a061881>



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>