



Training Outreach and Education

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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

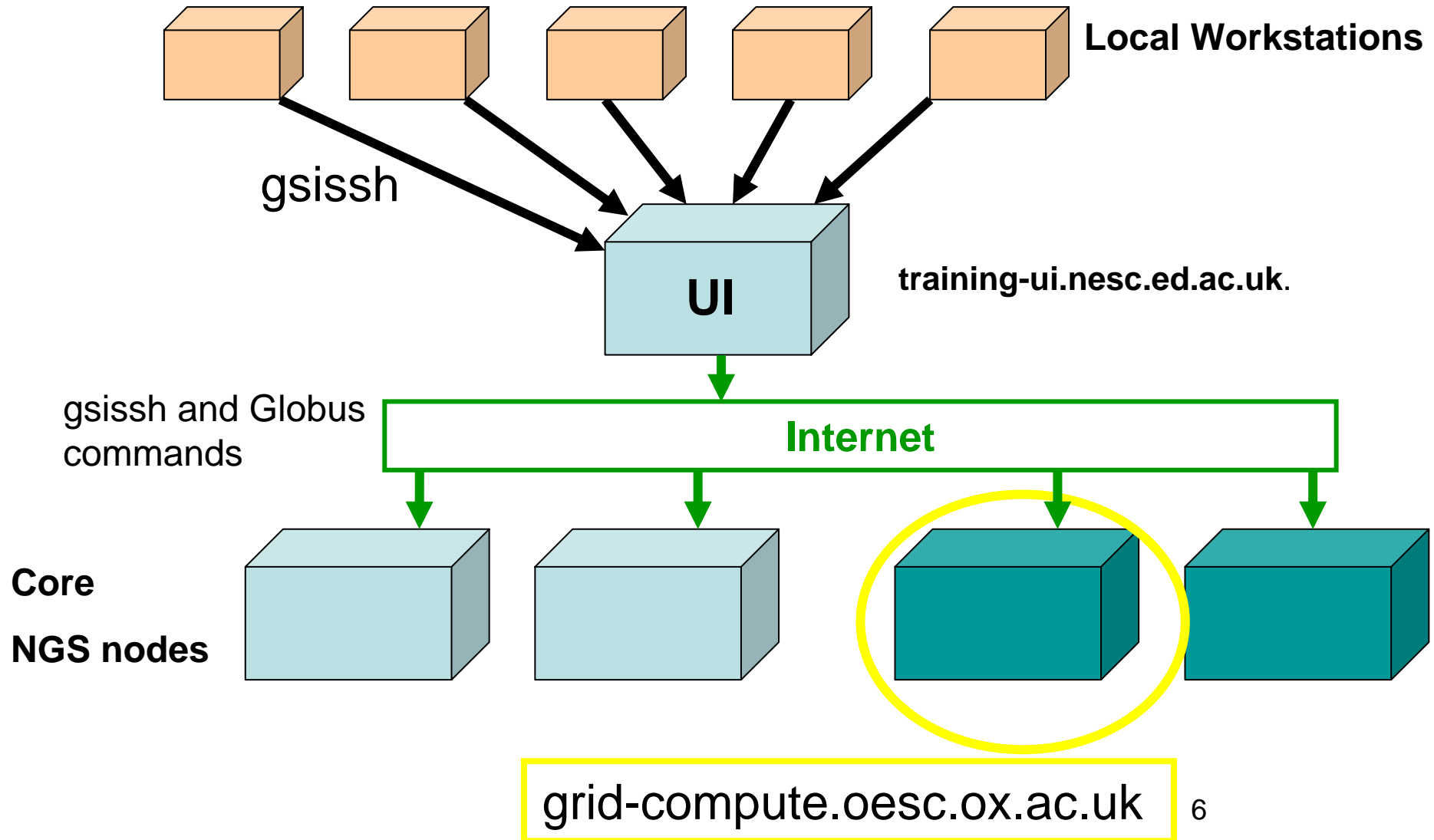
- A “User interface” machine and our set-up today
- How to:
 - Port code and data from desktop/UI to the NGS compute nodes
 - Compile and run code
 - Invoke your application from the UI machine
- Practical



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 4.0.3 pre-ws
 - GSI enabled Secure Shell
 - Storage Resource Broker (more on this tomorrow)
 - OGSA-DAI (more on this tomorrow)

Our setup



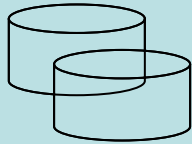


GSI enabled Secure Shell and Secure CoPy

- Openssh patched to additionally use proxy certificate for authentication and authorization
- Often run on port 2222

Secure file copy

UI



Code and data

gsiscp: copies file
using proxy
certificate to allow
AA

NGS node

Open shell on NGS CN

UI

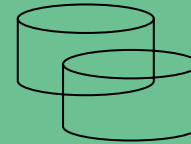


Code and data

gsissh

Can be an X-
windows client

NGS node



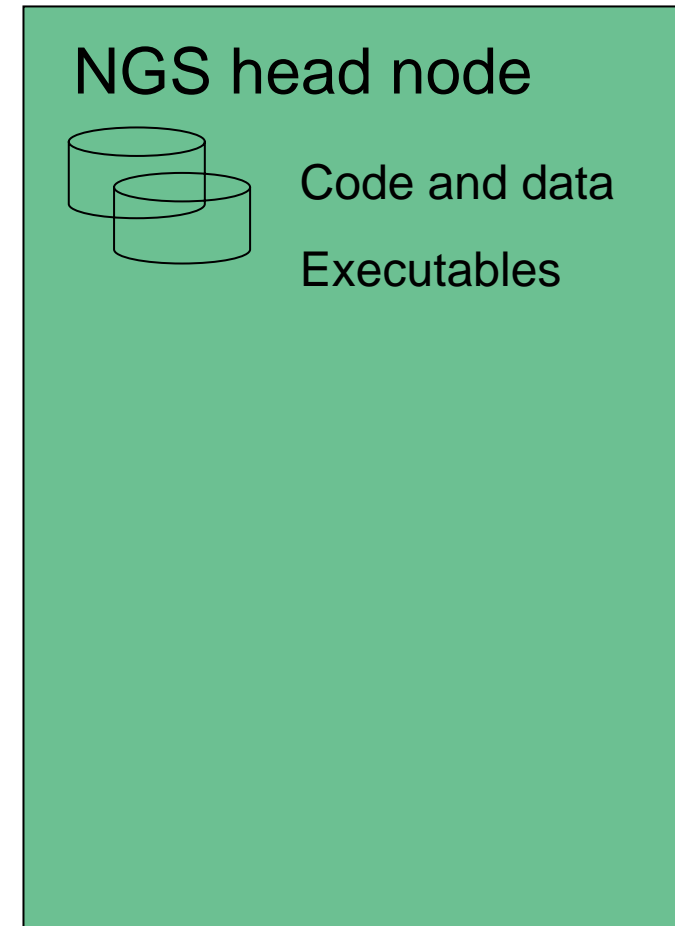
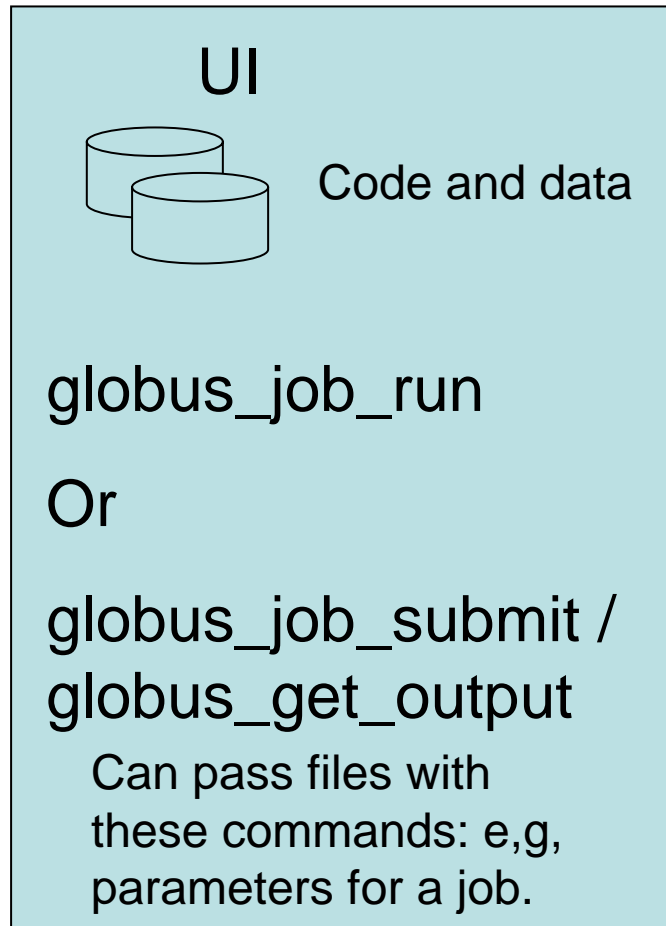
Code and data

Compile, edit, recompile,
build

SHORT interactive runs
are ok (sequential)

Totalview debugger.

Run jobs from the UI





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.



<http://homepages.nesc.ac.uk/~gcw/NGS/GRAM.html>

Queue Number = R315839



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>