Using UKCA

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With thanks to: Luke Abraham, Jeff Cole, Rosalyn Hatcher, Lois Steenman-Clark and all UKCA users so far

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UKCA Launch, 12 January 2008
http://www.ncas.ac.uk
• This talk is relevant for NCAS and NCAS affiliated UM/UKCA users.
• It is a general overview, not a comprehensive tutorial.
• Versions etc. have not been decided for the new shared HPC platform hosted at the Met Office under JCRP …
• … but NCAS and NCAS affiliated users will use the described procedure to create jobs and run the model on the shared HPC partition.
• Note: The shared HPC partition at the Met Office is relatively small and should be used to facilitated collaboration not to run “heavy” production (portability to NCAS HPC might be an issue …)
UKCA HOME: a community resource!

Welcome to UKCA

UKCA is a joint NCAS-Met Office programme funded by NCAS, GMR and DEFRA. Project partners are the Hadley Centre and the Universities of Cambridge and Leeds. Our objective is to develop, evaluate and make available a new UK community atmospheric chemistry-aerosol global model suitable for a range of topics in climate and environmental change research.

Welcome to UKCA

UKCA Launch, 12 January 2008

Today's talks will be here!
UKCA Launch, 12 January 2008

Release imminent... but slightly delayed by influenza:

Transmission electron microscopy picture of negatively stained influenza virons, magnified approximately 100,000 times.
Getting started

- PUMA account: to set-up the run
  - PUMA: Providing UM access
  - www.cms-ncas.ac.uk to apply for PUMA access
- Hector Account: to run the model
  - www.hector.ac.uk
  - NCAS accounts are managed by Lois Steenman-Clark, Reading
- Both services are accessible using ssh with X forwarding
  - ssh -X -l username login.hector.ac.uk
  - ssh -X -l username puma.nerc.ac.uk
NCAS-CMS and PUMA

Welcome to NCAS Computational Modelling Services

The National Centre for Atmospheric Science (NCAS) provides a national capability in atmospheric science research through its research programmes and a facilities and support infrastructure.

The NCAS facilities and support infrastructure comprises of:
- High performance computing and modelling (CMS)
- Data archives (BADC)
- Airborne observations (FAAM)
- Ground based observations (UFAM)

Numerical Modelling

High Performance Computing

Development Maintenance Support Training

Information Tools Utilities

Allocation Management Help and advice

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http://www.ncas.ac.uk
On PUMA (provided by NCAS-CMS)

- Signing up to PUMA enables UM and UKCA access!

Other services (e.g. ancillary file creation) require PUMA access! See e.g. NCAS Ancillary File Service on CMS web pages
UMUI + first steps

1) Create an experiment
2) Search for a template job
3) Copy the experiment
4) Edit the experiment
Over to HECTOR …

1) Save the job
2) Check the job – only basic mistakes are picked up!
3) Process (creates namelists)
4) Submit to specified computer

UKCA Launch, 12 January 2008

http://www.ncas.ac.uk
On HECTOR

Does it run?

- Users should not leave backgrounded scripts running on login nodes. Any processes running that are disconnected from a tty are liable for termination.
- Please address all queries to "support@hector.ac.uk"

System is now running UNICOS/lc version 2.0.62

SERIAL BATCH JOBS NOW SUPPORTED - users should be using these for large compilations, external file transfers, or any other activity that currently makes significant use of 'interactive' resources.

Does it produce data?

- All users should note that the /work filesystem is unbacked-up scratch space and should always be considered to be "at risk". Only /home filesystem is subject to a backup policy.
- It should be noted that /tmp filesystems are regularly purged and should not be used by users for the storing of any data.
- Users should not leave backgrounded scripts running on login nodes. Any processes running that are disconnected from a tty are liable for termination.
- Please address all queries to "support@hector.ac.uk"

System is now running UNICOS/lc version 2.0.62

SERIAL BATCH JOBS NOW SUPPORTED - users should be using these for large compilations, external file transfers, or any other activity that currently makes significant use of 'interactive' resources.

PathScale PrgEnv loaded
peterb@nid15876:~> qstat -u peterb

PathScale PrgEnv loaded
peterb@nid15876:~> xconv &
Data and tools

• Data required to run the model (on ukca work):
  • Initial conditions: dumps and ancillary files
  • Boundary conditions: ancillary files, e.g. SSTs, sea-ice, emissions, and many more
  • Files to constrain the nudged model: netcdf format, pre-processed ECMWF and Met Office

• Tools (on ukca home or um home)
  • Data processing
  • Simple plotting
  • User contributions (Please contribute!)
Note

• Much detail has been omitted …
• … but will be mentioned in the forthcoming documentation.
• This talk did not cover specific background requirements for changing the chemistry or the aerosol scheme!
• Default jobs will be provided via the ukca account on PUMA and should be run unchanged first! Obviously only for a short integration period … (include “ukca” in your umui filter settings)
• After the default job run, start with your modifications …
• … and enjoy the new science!
What next?

1) Register with mailing list:
   ukca-announce@atm.ch.cam.ac.uk

2) Announcement of availability soon …

3) Point of contact: Luke Abraham
   Luke.Abraham@atm.ch.cam.ac.uk

4) Read documentation on www.cms-ncas.ac.uk and
   www.ukca.ac.uk

5) Try it, enjoy it, …

6) … and provide feedback, please!
Thank you for your attention!