DTU Compute
Department of Applied Mathematics and Computer Science

High-Performance Computing

DTU Unix Systems
&
High-Performance Computing

Using the DTU Unix systems
for your computations

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Department of Applied Mathematics and Computer Science

High-Performance Computing

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Today's goal

There is a world 'outside' your laptop –
so let's make the first steps!

YOU ARE LEAVING THE COMFORT ZONE

вы выезжаете из зона комфорта

VOUS SORTEZ DU ZONE DE CONFORT

SIE VERLASSEN DEN WOHLFÜHLBEREICH

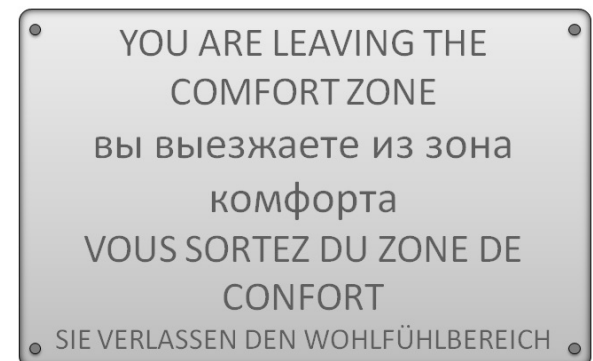High-Performance Computing

The G-bar/HPC Unix systems

a remote databar

Access to the system
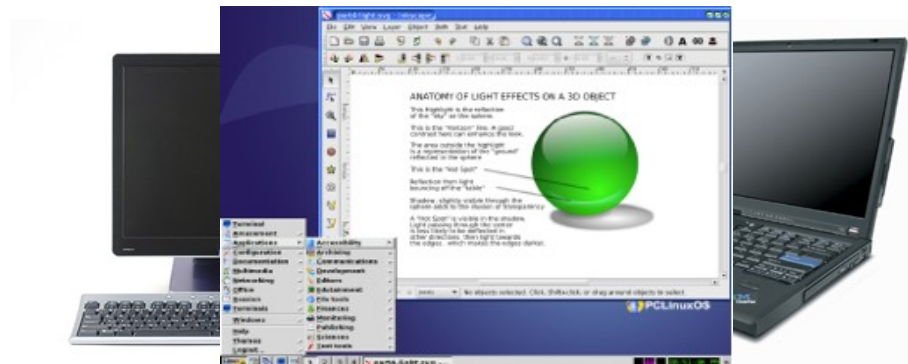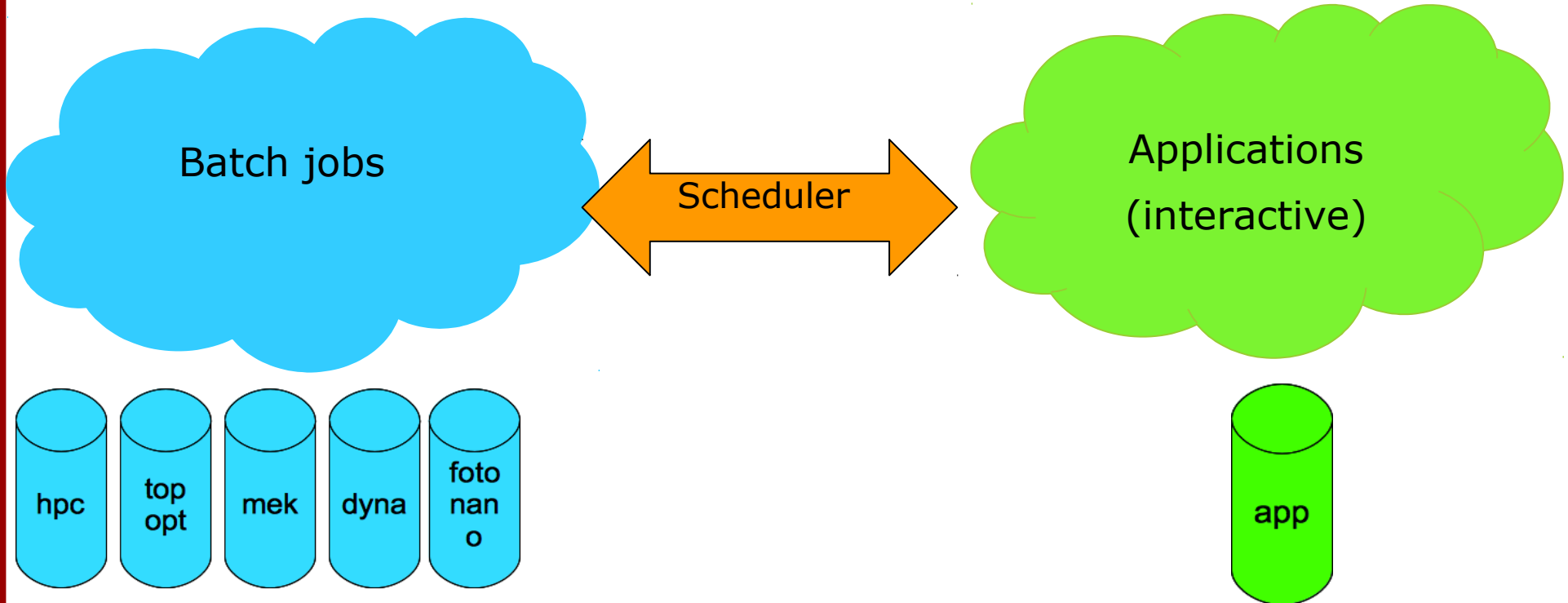
❐ Remote access – from everywhere:

    ❐ ThinLinc remote desktop session:

        ❐ download ThinLinc client from www.thinlinc.com

        ❐ start client & connect to thinlinc.gbar.dtu.dk

        ❐ on mobile devices: https://thinlinc.gbar.dtu.dk/

        ❐ preferred way, if you work a lot with GUIs

    ❐ Secure SHell (ssh) connection (login.gbar.dtu.dk)

        ❐ for the command line oriented users   :-)

❐ On Campus:

    ❐ ThinLinc from Windows computers (Winbar)

The G-bar/HPC Unix system

❑ But why – and when – should you use it?

❑ Sooner or later ...

  ❑ you want to solve problems that don't fit your laptop any longer!

  ❑ you have to solve many problems, and you run out of time!

❑ This happens (usually late) in your BSc or MSc project – so you'll better be prepared!

❑ So why not start today ... ???

  ❑ it's free!

  ❑ trust me: *"it doesn't hurt!"*

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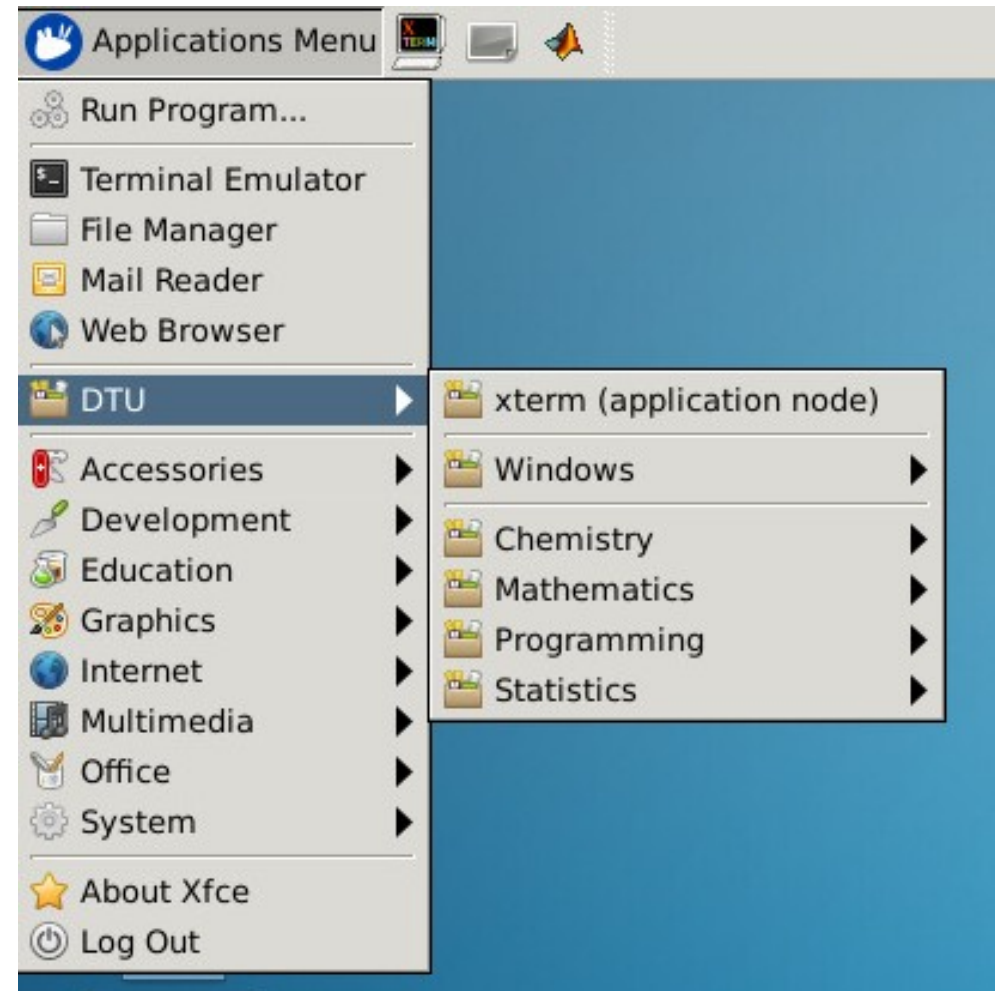YOU ARE LEAVING THE COMFORT ZONE
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Our Setup

Batch jobs

Scheduler

Applications (interactive)

hpc   top opt   mek   dyna   foto nano

app

Interactive Work

- **Starting applications from the desktop menu**

- **Most desktop apps will run on the same server as your desktop (th1, ..., th4)**

- **Applications from the DTU menu get dispatched on to one of the application nodes**

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Interactive Work

❒ "Code of conduct":

 ❒ applications from the menu run on multi-user systems – so please behave

 ❒ there are resource limits, too:

  ❒ CPU usage: max. 24 hours CPU time

  ❒ memory: max. 16 GB

❒ If you need more than that, you have to use the batch system!

Access to your files

- ❐ To be able to work on the Unix systems, you'll need to transfer your files

- ❐ There are several ways to do that:

  - ❐ copying: WinSCP, FileZilla, scp, ...

  - ❐ mounting your Unix home-directory on your laptop

    - ❐ works while on a DTU network, e.g. eduroam

    - ❐ for more details see http://gbar.dtu.dk/faq/78-home-directory

- ❐ Best practices:

  - ❐ avoid spaces and national characters in file names

  - ❐ some applications require Unix text format

Batch jobs

Interested? Take a look at
www.hpc.dtu.dk/?page_id=2534

Using the system

- On-line demo:

  - logging in

  - creating folder and files

  - writing a simple program

  - compile and run

02635 - Mathematical software programming

Summary

Summary – G-bar/HPC systems

❒ a general computing resource

❒ Linux based

❒ accessible

  ❒ from everywhere

  ❒ for everybody with a DTU account

❒ extends the compute power of your own computer/laptop

❒ Not to forget: your data is backed up!

Where to get help?

❒ Today:

   ❒ ask us – we are here to help!

❒ Later:

   ❒ check our webpages:

      ❒ www.gbar.dtu.dk

      ❒ www.hpc.dtu.dk

   ❒ send e-mail to:

      ❒ gbar-support@databar.dtu.dk (general help)

      ❒ support@hpc.dtu.dk (HPC related help)

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