



# Grid Activities at UVIC

Graeme Smecher  
gsmecher@uvic.ca

Simon Fraser University





# What I'll cover

- General overview of the Grid
- UVIC's Grid testbed
- The upshot

# What is the Grid?

The Grid is...

- a framework for parallel computing
- clustering on an Internet scale
- tapping the global pool of unused resources

The “Power Grid” analogy

- commoditizes cycles
- requirements shift from peak to average
- brings new problems within reach



# Grid efforts

What exists today?

- local clustering products, (Condor, PBS, LSF)
- commercial Grid products (SUN, IBM)
- academic efforts (notably, Globus)



# The Globus Project

## The Globus Project

- `http://www.globus.org`
- Government and Academic collaboration
- a family of protocols and APIs
- under active development



# The Globus vision

The Short Term: Infrastructure for existing programs

- security infrastructure (GSI)
- “run my job” program (`globus-job-run`)
- information services (MDS)
- file transfer services (GridFTP)
- organizational infrastructure

# The Globus vision (cont'd)

## The Medium Term: Tools for developers

- Globus “bag of technologies”
- avoid re-inventing the wheel
- Remember CORBA?

## The Long Term: Science Fiction

- Grid achieves world peace

# UVIC Grid Work

Some context:

- the “Muse” cluster
  - 40-node Linux cluster
  - old nodes available for our use
  - using Condor scheduler
- Condor experiments on workstations
- Prototype terabyte file server
- computing resources used for BaBar production



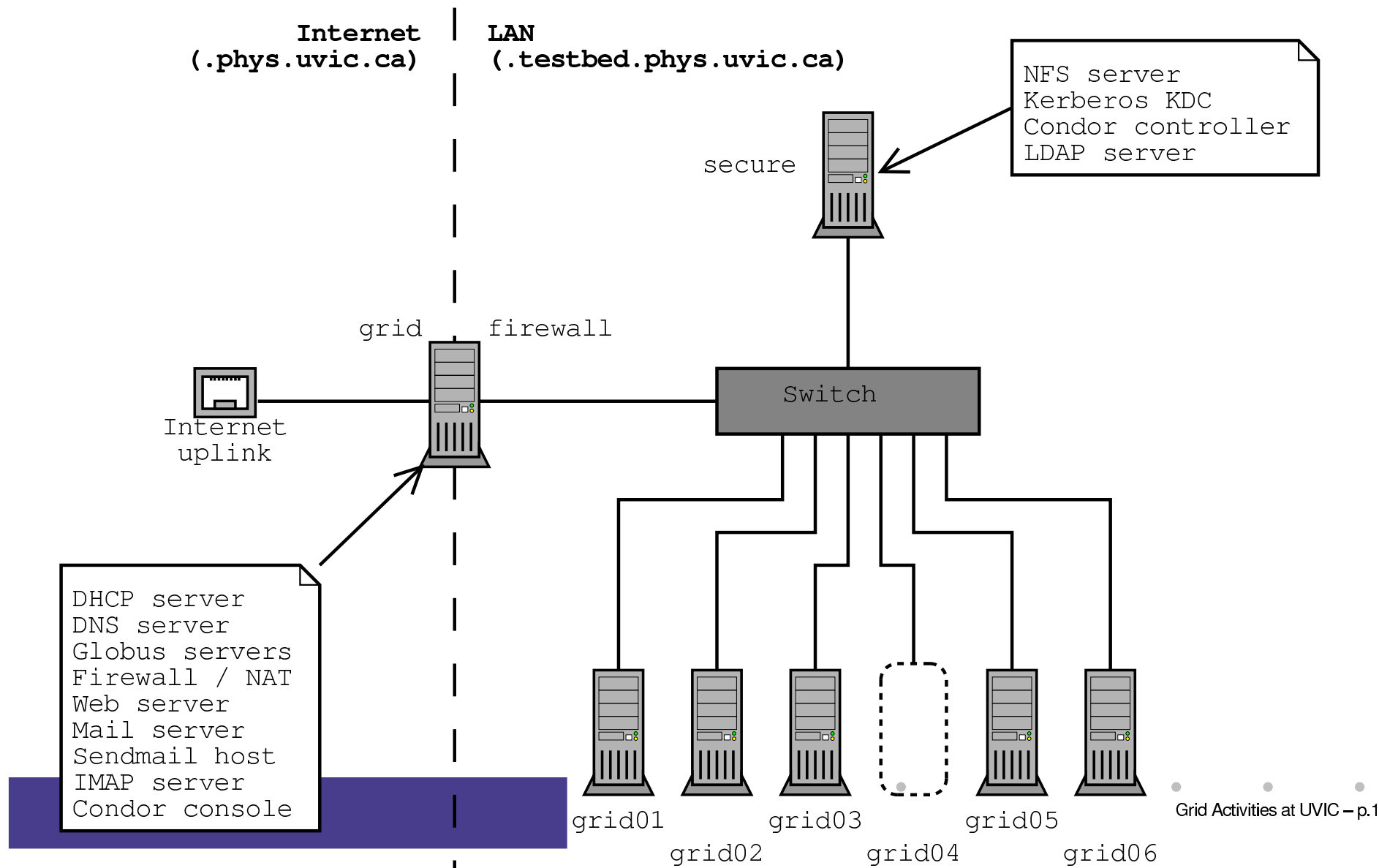


# The UVIC Grid Testbed

A Grid testbed should be:

- easy to administrate
- easy to scale
- secure
- reliable
- usable
- cheap

# Testbed Topology





# Technologies Used

## Infrastructure:

- LDAP and Kerberos
- DHCP
- DNS, NTP, e-mail
- NFS
- RedHat customized Kickstart



# Technologies Used (cont'd)

## Grid Software:

- Globus
- Condor
- Condor-G



# Grid Applications

- BaBar experiments
  - BaBar is not mobile!
  - ...we made it mobile.

# The Upshot

## Our installation:

- It's there — but it needs users
- **See** `http://grid.phys.uvic.ca` **for information**

## Other installations:

- technology exists
- community exists
- prototypes and experience exist

# What's Next?

- The Grid Canada effort
- Globus development
- Real Users for the testbed

## Contacts and Addresses

- <http://www.globus.org>
- <http://www.cs.wisc.edu/condor>
- <http://www.gridcanada.ca>
- <http://grid.phys.uvic.ca>