UCLP

User controlled LightPaths

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Introduction

☐ What was our assignment?
  ■ Test different UCLP implementations

☐ Research questions:
  ■ Is UCLP useful in the Lighthouse lab?
  ■ Is UCLP deployable in the lab with it's current equipment?
  ■ What are the possibilities in a multi-domain environment?
What is UCLP?

- A User Controlled Lightpath is a bandwidth-on-demand solution, a way to get instant bandwidth over great geographical distances. All intermediate devices will be automatically configured for this connection.
What is UCLP?

Management Domain A
Netherlight - Amsterdam

Management Domain B
StarLight - Chicago
Why UCLP?

- Great bandwidth is needed for research projects (GRID computing)
- Dedicated bandwidth (Bandwidth guaranties)
- High-speed routing is expensive
- Share costs of the optical network
Software releases

- Ottawa University - Communications Research Centre
  - Combination of Windows and Linux
  - Terrible documentation
  - [Add text here...]

- University of Waterloo
  - Linux based
  - Hard to get a hold of
  - Great installation manual

- Universite Quebec a Montreal (UQAM)
  - Closest to original definition
  - Uses OBGP
  - Windows based
  - Lousy installation manual
Canarie test lab
Waterloo implementation 1

- Linux-based
  - Java SDK
  - MySQL 4.0.16
  - Globus Toolkit 3
    - An open source software toolkit used for building grids
  - JBOSS
    - A popular open source Java application server
  - Tomcat
  - (Apache)
Waterloo implementation 2
Waterloo implementation 3

☐ Results
  ■ Got the application working
  ■ Communicated Canarie’s the Cisco ONS 15454’s
    ☐ State problems
  ■ Tested with dummy Cisco ONS 15454’s

☐ Recommendations
  ■ Implement Gigabit Ethernet with dedicated bandwidth
  ■ Give detailed error messages
  ■ Improve the agents
  ■ Make it multi-domain
Québec implementation

- Closest to original definition
- Uses OBGP
- Great developers group
- Security in mind
- Windows-based
- Lousy installation manual
Research question 1:
Is UCLP useful in the Lighthouse lab?

☐ Not so useful at the moment
☐ Depends on the future use of the Lighthouse
☐ Participation in high-bandwidth projects
Research question 2: Is UCLP deployable in the lab with it's current equipment?

☐ Not yet since only SOnet equipment is supported;
☐ The Force10 only supports Ethernet;
☐ The GlimmerGlass is a layer1 device.
Research question 3:
What are the possibilities in a multi-domain environment?

☐ Only Québec release supports true multi domain
☐ Trend to single domain
Questions???