

UCLP

User controlled LightPaths

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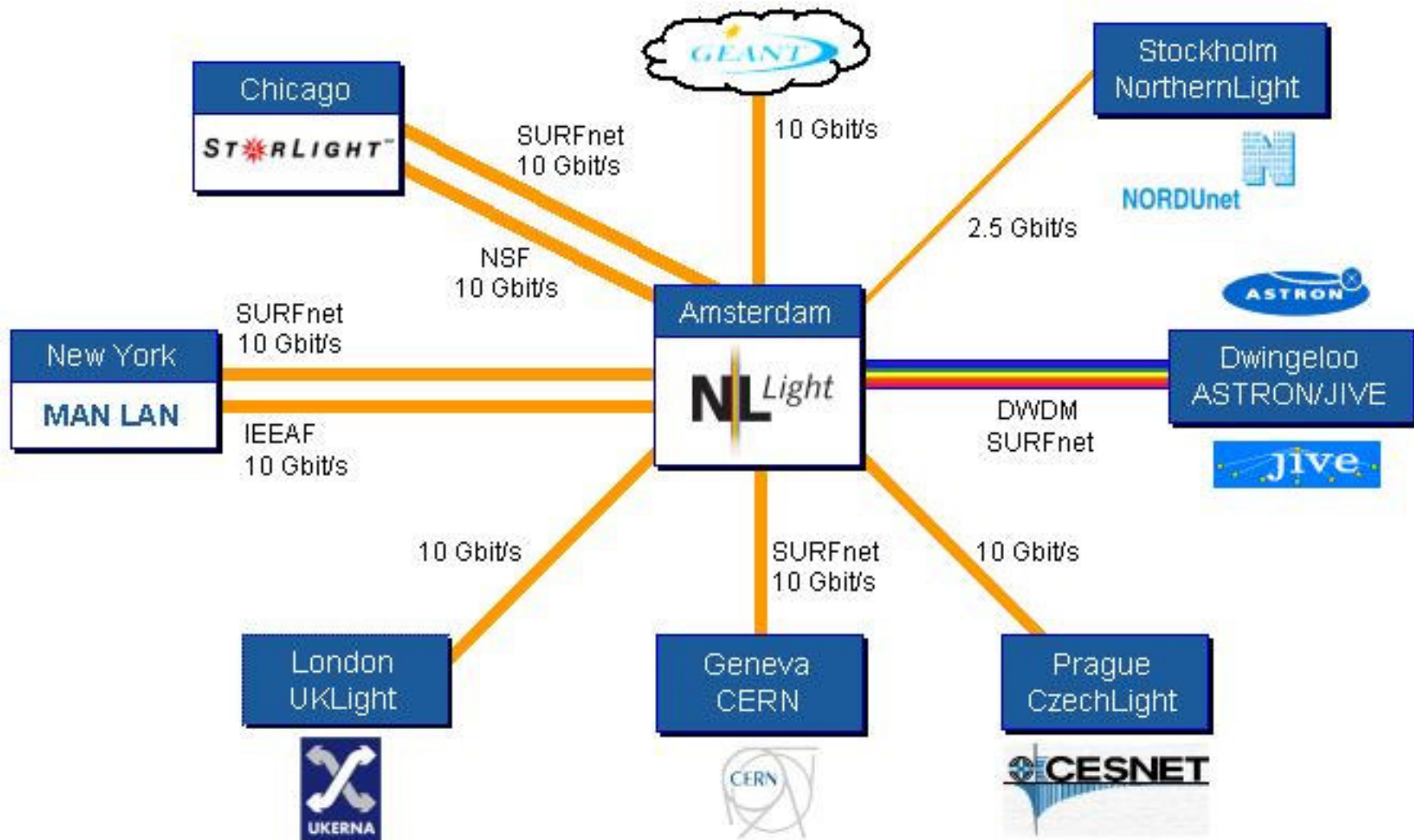
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Introduction

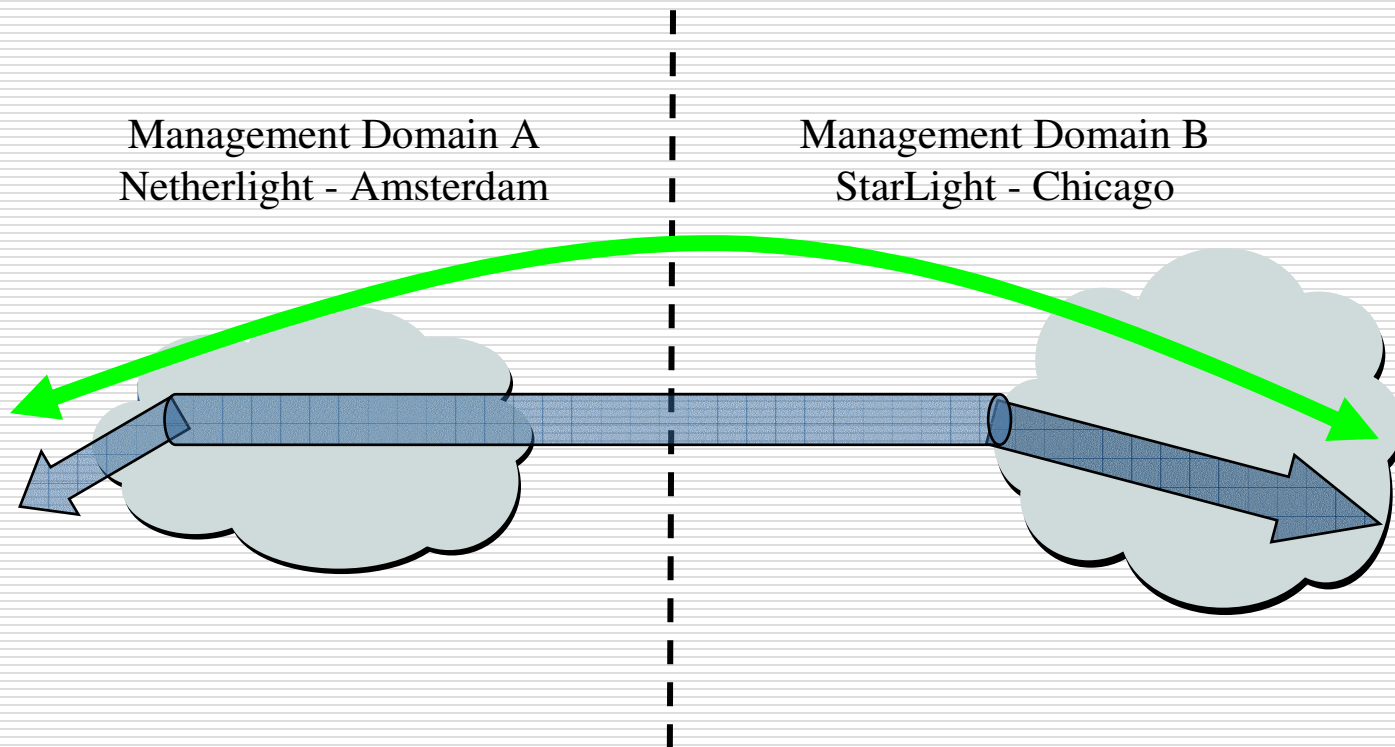
- What was our assignment?
 - Test different UCLP implementations
- Research questions:
 - Is UCLP useful in the Lighthouse lab?
 - Is UCLP deployable in the lab with its current equipment?
 - What are the possibilities in a multi-domain environment?

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?



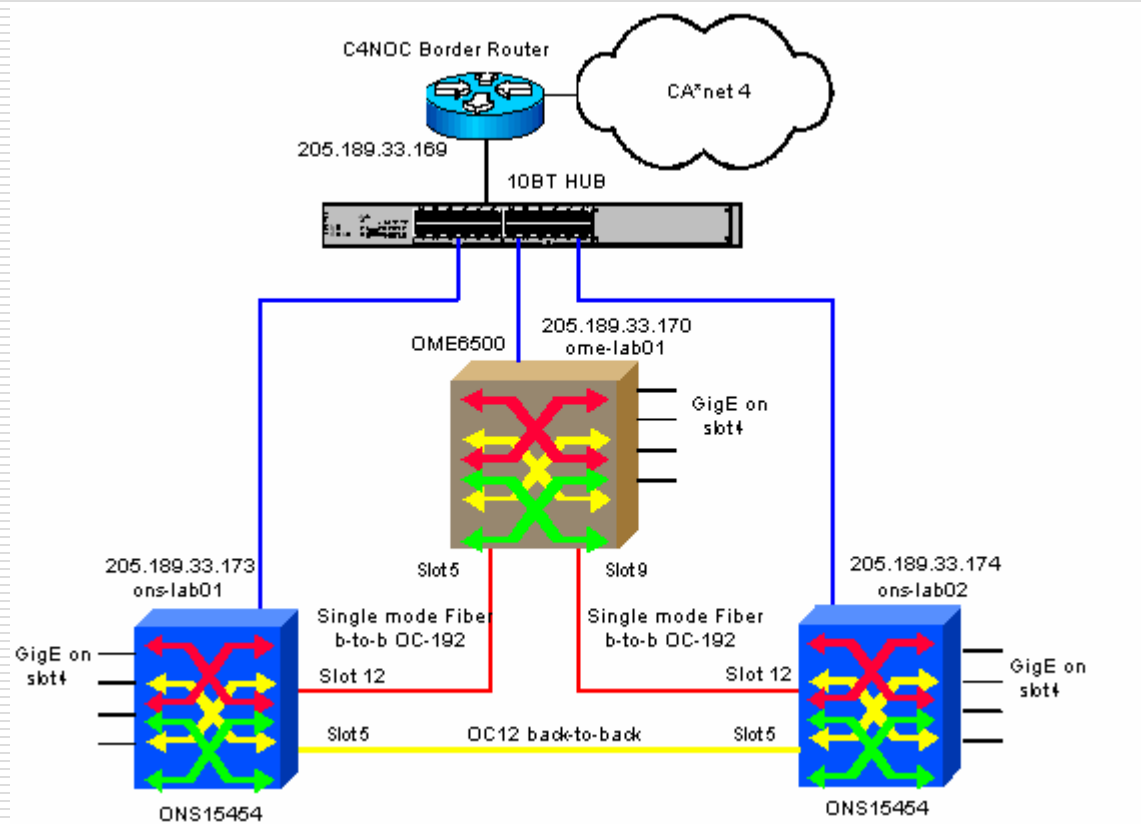
Why UCLP?

- ❑ 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

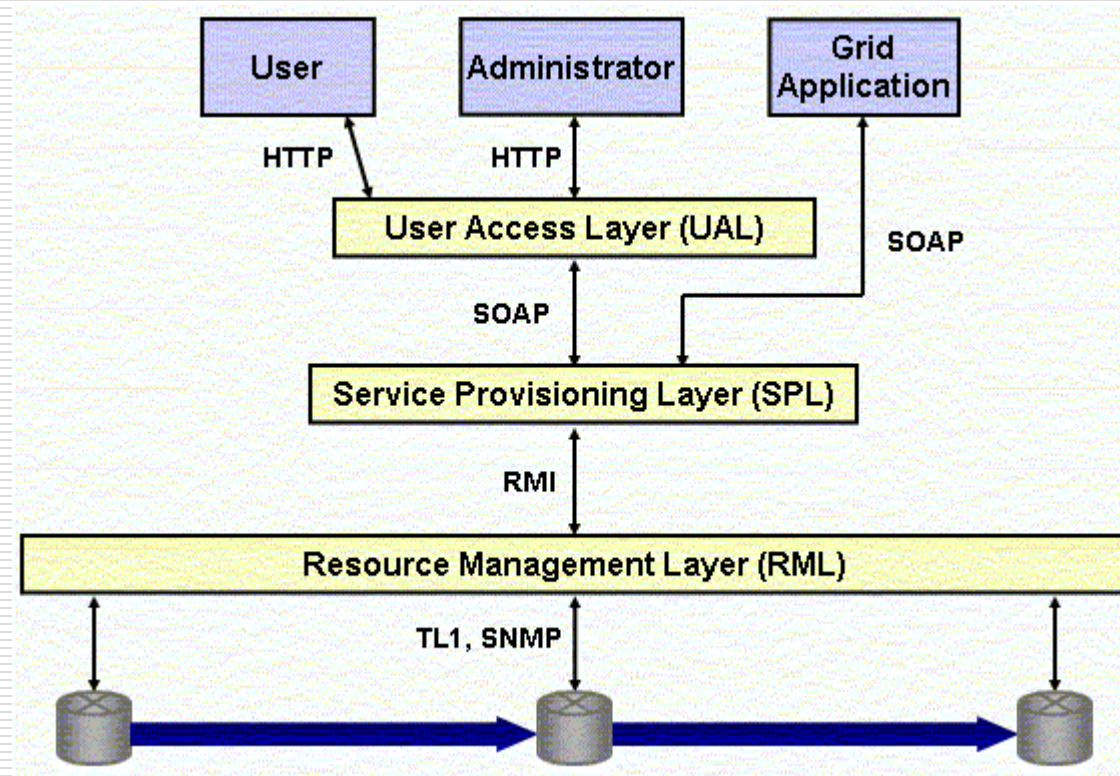
Canarie test lab



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???

