GLIF Control Plane WG Meeting Update

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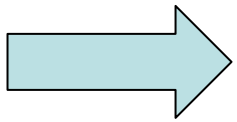
Glif Meeting San Diego

Why is the Control Plane important to GLIF?

Today

End-to-end Optical connections between two laboratories across the Globe:

- **takes "lots of phone calls"**
- **takes "lots of emails"**
- **tens of people**
- **connection becomes relatively static**
- **over three weeks!!!!**
- **Failed link may result in days of out-of service**



We want to…

- **applications/sensors/end-users/instruments to initiate an end-to-end connection**
- **Resources for short periods of time or long depending on application**
- **We want automatic recovery - restoration/protection**

- **How do we as a community go from where we are today to what we really want?**
- **We need to use the Morphnet concept in the GLIF community….**
  (Part of the infrastructure for vertical integration research and other part as production)

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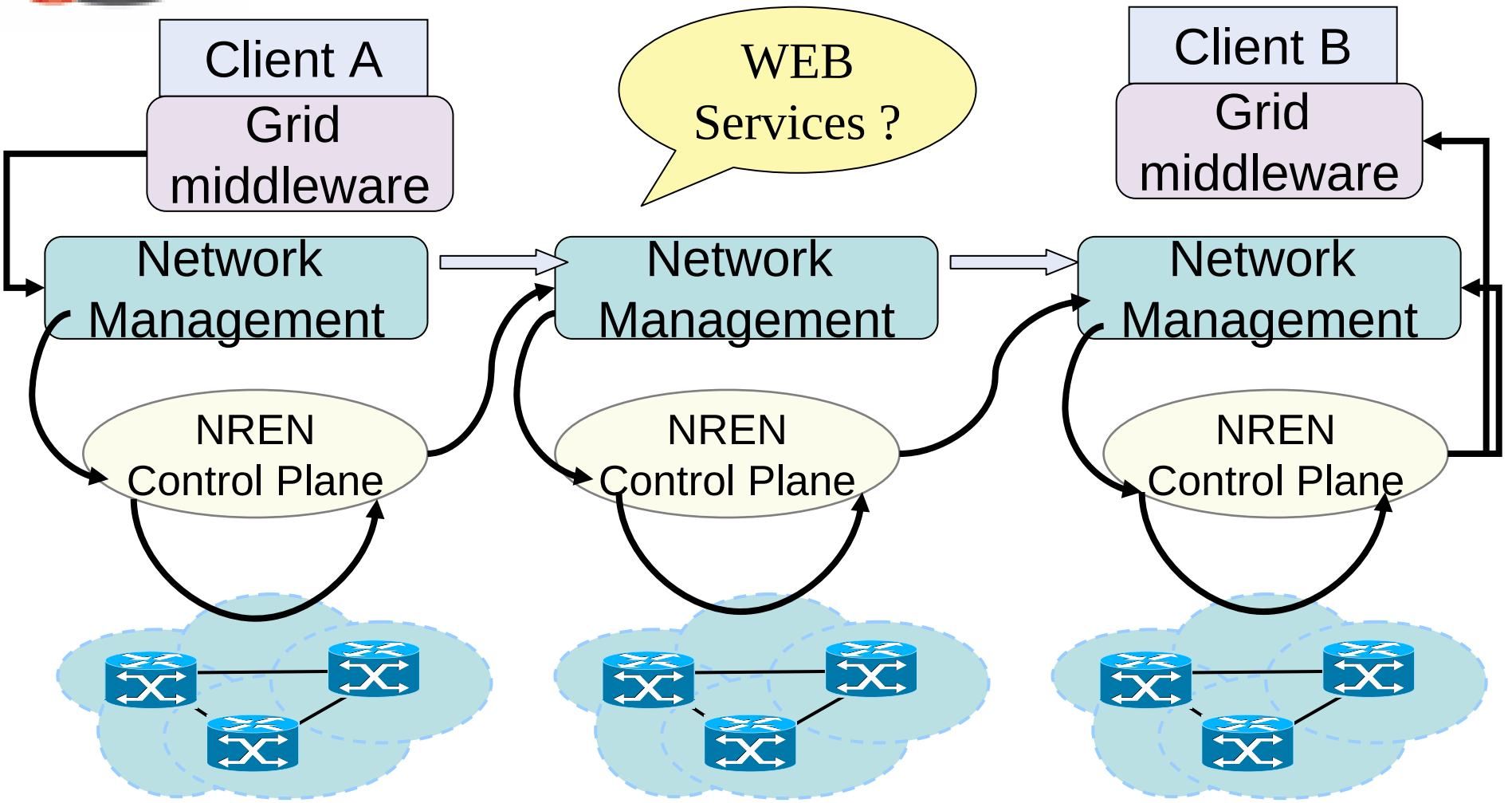
GLIF Automation?



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Control Plane Challenges For GLIF Migrating towards Automation….

Taking one baby step at a time …

- **CIM - Common Information Base - translation of repository to machine based**
- **Common Services repository**
- **WEB services based services towards automation**
- **Translation of administrative policy to low-level policy for automation**
- **Scheduling services**
- **Automated Testing and monitoring**
- **Control plane protocols (GMPLS, SIP, OBS)**
- **Policy and Security**
- **Interdomain routing**

GLIF Control Plane and Grid Middleware Integration

Mission: **To agree on the interfaces and protocols to automate and use the control planes of the contributed Lambda resources to help users on a global scale access optical resources on-demand or pre scheduled.**

several key areas we need to focus on:

- Define and understand real operational scenarios
- Defining a set of basic/common services:
  - Precise definitions
  - Developing semantics the whole community agrees to for machine to machine communications
- Interdomain exchange of information for both control planes and management planes
  - Determine what information needs to be monitored
  - How to abstract monitored information to share
- Determine what existing standards are useful vs. where Grid requirements are unique and new services and concepts are required
  - How do we standardize mechanisms and protocols that are unique to the Grid community
- Define a Grid control plane architecture
- Work closely with E-science applications to provide vertical integration

Last meeting

- iGrid 2005 San Diego, Ca 9/30/05
- Joint session w/ Tech group
  - Explored means of collecting and administrating GLIF repository
  - Repository - three talks
    - Steve Wallace - DNS approach
    - Greg Cole - database and maps
    - Jeroen van der Ham - RDF meta-data approach
- Afternoon Control Plane working group session
  - Focus was on defining Common Service definitions and monitoring and testing for verification of services.
  - We also explored SOA as a means for automation

Session Talks

- **Common Service Definitions** - Jerry Sobieski
  - Common Service Definition that describes what a service should deliver detailed parameters, ie.
  - The same model should be used by users to indicate what they have received - verify service
- **UCLP and SOA** - Bill St. Arnaud
  - UCLP web services allows end users to self provision and dynamically reconfigure optical networks
  - Service Oriented Architecture, (SOA) :
    - Utilizing a concept known as Google Mash-ups
- **Testing and Monitoring** - Matt Zekauskas
  - For end-2-end connections
  - Some requirements for verification
  - Automation

ACTIONS

- Three task teams:
  - 1) Repository task team
  - 2) Common Service Definitions task team - Meet at SC05
  - 3) Management vs. Control plane white paper task team
- Update and work closely with GGF's ghnp group
- Progress report will be circulated in 2 months