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Outline

Global Identifiers Task Force

- The task force was established during the GLIF meeting in Honolulu (January 2008).
- Members of the task force:
  - Ronald van der Pol, SARA (leader)
  - Lars Fisher, NORDUnet
  - Tom Lehman, USC ISI
  - Thomas Tam, Canarie

Why Do We Need Global Identifiers?

- Many GLIF lightpaths cross multiple domains.
- Network operators need a way to uniquely identify interdomain lightpaths.
  - during provisioning
  - when announcing planned work on a lightpath
  - during outages
- Current pratice is to use local domain identifiers in trouble tickets.
  - Every domain uses different a name for the same lightpath
  - Very time consuming and error prone to map foreign local identifiers to you own local identifiers
- Note: Global IDs do *not* replace local IDs.
  - Global IDs are just aliases
  - Each domain is free to continue to use its own local naming scheme internally

Requirements

- Prefered format: *DomainPart-LocalPart*.
  - DomainPart: unique domain identifier
  - LocalPart: set by the domain to a unique string
- Centralized registries should be avoided.
- A maximum length of the identifier should be set.
- Well-defined character set.

DANTE Naming Scheme

The DANTE naming scheme is used in the LHCOPN and DEISA networks.

- Example: CERN-TRIUMF-LHCOPN-001
- Each domain has a unique identifier
- Each project has a unique identifier
- Global name consists of end site domains, project and sequence number

Internet2 Naming Scheme

The Internet2 naming scheme is used in Internet2. The identifiers are called Global Resource Identifiers (GRIs).

- Example: dcn.internet2.edu-6811
- Initiating domain constructs the name by:
  - domain id: DNS style name of initiating domain
  - service instance id: unique number generated by initiating domain

Sourcing Organisation Naming Scheme

This is a variant of the Internet2 naming scheme.

- Example: starlight:chi-van-42
- Sourcing organisation identifier instead of DNS style name as first part
- Sourcing organisation sets second part
- Second part is unique within the domain

URN Naming Scheme

Uniform Resource Names (URNs) are defined in RFC 2141. The format of URNs is:

```
<URN> ::= "urn:" <NID> ":" <NSS>
```

- Example: urn:glif:starlight:chi-van-42
- $<$NID$>$ is set to *glif*
- $<$NSS$>$ is similar to second part of Sourcing Organisation Naming Scheme

Naming Scheme Recommendation

- Many people seem te prefer a naming scheme that includes information about the organisation that has more information about the lightpath.
- The Internet2, Sourcing Organisation and URN naming schemes comply with this.
- A discussion about the semantics of global identifiers has started.

Questions about Global ID Semantics

- Hierarchy or flat namespace?
- Do we want information about end sites in the Global ID?
- Do we want information about sourcing organisation in the Global ID?
    - Useful during outages? (indicates who to contact, saves time?)
- Do we want information about a lookup service in the Global ID?
    - Or is a Global ID just a key for a lookup service?
- Central or distributed lookup service?
- Do GOLE operators need a lookup service?
    - Or is it just a key to their local information systems?

Resulting Operational Procedures for Lightpaths

- We need to start using the *Sourcing Organisation* concept.
- How do we handle tickets for planned work and outages? How about:
  - Domain that has the planned work or outage informs the sourcing organisation
  - Sourcing organisation informs all domains along the path and the end users
- When does a global identifier change? How about:
  - Rerouting does not change the global ID as long as the end-points stay the same
- Rerouting is:
  - A-B-C-D to A-E-C-D
  - Change in interface
  - change of link between two nodes

Summary

- There is an operational need for Global Identifiers.
- The Internet2 and URN like naming scheme seem to get most support.
- During provisioning we need to start following the Sourcing Organisation model.
- Next we need to work on operational procedures (planned work, outages).

Discussion