



GLIF Technical Working Group meeting
5 March 2009
“Le Ciminiere” Conference Centre, Catania, Italy

GLIF Technical Working Group meeting

The GLIF Technical Working Group (Tech) winter meeting was held in conjunction with the EGEE 4th User Forum, OGF25 and 2nd OGF-Europe events in Catania, Sicily, Italy. Approximately 40 people attended this GLIF Tech meeting chaired by Erik-Jan Bos (SURFnet). The secretary was Peter Szegedi (TERENA).

1. Welcome and Apologies

The meeting was opened by Erik-Jan Bos (SURFnet), the co-chair of the working group. He started with a brief introduction to GLIF for the dozen new participants then gave an overview on the task forces under the GLIF Technical Working Group. Gigi Karmous-Edwards (MCNC), the other co-chair of the working group, was partly available via Skype conference and apologized for not being able to be present in person in Catania.

<Slides: <http://www.glif.is/meetings/2009/winter/ejb-intro.pdf>>

2. Minutes of last meeting and approval of agenda

All the actions specified at the last meeting in Seattle have been achieved, the minutes approved. The attendees agreed on the agenda with the small changes that the discussions on the VLAN Scheme Task Force and the Security aspects of the GNI-API Task Force will be postponed because of the absence of the task force participants due to illness and other commitments respectively.

3. Global Identifier Task Force

Ronald van der Pol (SARA), the leader of the GIid Task Force, introduced the Global Identifier proposal prepared by Lars Fischer, Tom Lehman, Thomas Tam, and Ronald himself. The proposal contains a domain part, as a DNS-like name identifying the sourcing organisation, and a local part with strict syntax rules for the unique naming. The proposed format can easily be extended to the URN naming scheme (i.e., by prefixing it) agreed by the OGF-NML Working Group earlier that week in Catania. So, the finally approved GI schema is:

urn:ogf:network:<domain part>:<local part>

It is the responsibility of the domain owner to ensure that the local part of the GIid is unique. The participants discussed the maximal length of the identifier concerning the limitations of e.g., the interface descriptions on the equipment line cards, the e-mail subject fields. The proposal should leave enough characters (around 30) to describe the local part, as well. The group agreed to set the upper limit of the GIid length to 128 characters with the suggestions to

use only 64 characters for now. The agreed proposal will be circulated via the mailing list as the first deliverable provided by the task force.

Action 20090305-1: on Ronald van der Pol (SARA) to distribute the agreed Global Identifier proposal for final approval via the mailing list.

The group also discussed the usage of the Global Identifier in daily operations. The sourcing organization should create the unique GID, but care should be taken to determine the sourcing organization (i.e., Open Lightpath Exchange, NREN or University). However, some US universities set up lightpaths via IDC already today, and this is likely to happen soon in other parts of the world. We have to be prepared for this scenario.

The GID should be used for planned maintenance announcements and trouble ticketing. The end users (i.e., scientists) should have the opportunity to get the tickets and identify their circuits, especially in case of planned maintenance. At the end of the discussion it was noted that the open questions will be further discussed by the Global Identifier Task Force and reported in a separate deliverable.

<Slides: <http://www.glif.is/meetings/2009/winter/rvdp-gid.pdf>>

4. GNI-API Task Force

Evangelos Chaniotakis (ESnet), the leader of the task force, summarised the short history and main objectives of the GNI-API Task Force created in Hawaii, USA. The task force aims to have the first reference implementation of the GNI - Application Programming Interface that facilitates translating from common interfaces to GOLE domain controllers. That might not become a standard but could be a major interim step which is iteratively improved to provide useful feedback for the OGF standardization processes.

The API framework has been completed and the first, bare-bones interface was implemented and exposed as a web service. The interface implementation is data plane agnostic, just specifying the minimum components that every domain controller has. At the architecture level it was suggested to clearly separate the NNI and UNI functions. The main goal of the API development is to help the rapid adaptation of new interfaces (not a standardization activity), and not to deal with the path finding and authentication and authorization issues at protocol level. The software development team of the task force requires more resources in addition to the already active participants (e.g., G-Lambda, IDC, Harmony). The main reason for delay in interface development is the underestimated difficulties of the software coding and testing work. The Task Force issued a call for joining the developers!

It was clear that a lot of good thinking and coding has happened so far, but the focal points of the task force are not yet clearly defined. The chair was asked to come up with an activity plan for the next steps, to be discussed at the Korea meeting.

Action 20090305-2: on Evangelos Chaniotakis (ESnet) to come up with a one-page activity plan for the next steps in the GNI-API Task Force.

<Slides: <http://www.glif.is/meetings/2009/winter/ec-gni-api.pdf>>

After the discussions the reservation process and monitoring function of the GUSI/G-Lambda simple interface implementation was successfully demonstrated by Ryousei Takano (AIST), showing the ease of using this system.

<Slides: <http://www.glif.is/meetings/2009/winter/rt-gusi.pdf>>

5. Policy for Dynamic GOLEs Task Force

The Policy for Dynamic GOLEs Task Force, chaired by John Vollbrecht (Internet2), is a brand new activity created right after the last meeting in Seattle, Washington, USA. The basic idea is that once we have dynamic lightpaths running within domains, the functions needed at GOLEs have to be clearly defined. A number of these questions were touched upon by the participants during the lively discussions.

<Slides: <http://www.glif.is/meetings/2009/winter/jv-gole-policy.pdf>>

Eric Boyd (Internet2) summarised the strategic plan of Internet2 for the Dynamic Circuit Network (DCN) which has been used for “proto-duction” services since about two years. The IDC protocol is implemented by ESnet OSCARS, GÉANT2 AutoBAHN, Internet2 DCN Software Suite and tested by global demonstrations. It was mentioned that some of the US universities are already able to set up lightpaths dynamically via IDC.

Internet2 is both a user and operator of Optical Lightpath Exchanges. The current DCN connects to 3 GOLEs: MANLAN, StarLight and PacWave. The connection in all current cases is static Ethernet with VLANs, but right now dynamic circuit GOLEs are being investigated. The Dynamic GOLE must be policy neutral. It means that Dynamic GOLE facilitates decisions made by link/port owners i.e., every link is in a separate policy domain.

<Slides: <http://www.glif.is/meetings/2009/winter/eb-i2-dcn.pdf>>

Bram Peeters (SURFnet) mentioned DRAC as an enabler for NetherLight, the dynamic GOLE in the Netherlands. NetherLight has interfaces for any inter-domain brokers (e.g., IDC, Phosphorus and other clients), but it is important to note that different brokering models exist (centralized, distributed approach). In the NetherLight model, port owners should decide on the policy for third parties, i.e., NetherLight delegates the trust to the port owners. It means that the policy management issues are pushed outside the GOLE.

<Slides: <http://www.glif.is/meetings/2009/winter/bp-netherlight.pdf>>

Lars Fischer (NORDUnet) proposed a trial for establishing a simple Dynamic GOLE test bed with one or two use cases. The main goal is to have real experience with infrastructure and applications. The first use case should be as simple as possible; Tier-2 to Tier-1 data transfers using dynamic lightpaths over dynamic GOLEs. Technology stitching, e.g., from VLAN to time slots, could be an interesting challenge.

<Slides: <http://www.glif.is/meetings/2009/winter/lf-dynamic-testbed.pdf>>

Cees de Laat (University of Amsterdam) summarised the objectives of the GOLEs: to enable lightpath cross-connection among the peers and to adapt encoding or wrapping formats when necessary. The Optical Lightpath Exchange should be agnostic to what is exchanged and should work on a ‘need to know’ basis. I.e., the connection request has to be acknowledged

by both peers and the GOLE should decide on the level of forwarding (e.g., VLAN, SDH time slot) and should not ask/tell more. GOLEs are policy free.

It is important to understand that GOLEs can be interconnected a) by lightpath/lambda capable networks or b) by just lambdas. Networks usually have control agents but in real-life it is unlikely to have an agent for a link to apply the policy. The main conclusion is that the policy should not be homed inside the GOLE but should clearly be part of the resource. The implementation of the policy at the GOLE could very well accommodate this.

<Slides: <http://www.glif.is/meetings/2009/winter/cdl-gole-philosophy.pdf>>

Gigi Karmous-Edwards (MCNC) made a proposal (via Skype) for using the ERON (Edge Reconfigurable Optical Network) model in GLIF. In this model the network can only be represented by a) the “GOLE virtual switch” and b) the static links connected to its ports. This way we can simplify the case and come up with best practices for GOLEs. The model itself is the inverse model of today's Internet (where the exchanges in the Internet do not appear). Enlightened Computing test bed and the G-lambda test bed are test cases for this model.

The conclusion from this lively discussion is that a GOLE itself is policy free and that the policy, whether or not to allow for a cross-connect, is determined by the connectors. Also, the important function of the GLIF Open Lightpath Exchange was stressed as a location where two or more lightpath capable infrastructures meet.

John Vollbrecht (Internet2) agreed to be the leader of the task force and to continue the discussions in the future.

6. perfSONAR Task Force

The perfSONAR Task Force concluded in a successful demonstration during the Seattle meeting but still there are some open questions and room for enhancements e.g., supporting the Global Identifier schema just agreed. Among the future work it was mentioned to continue the collaboration with Internet2 and developers incorporating the enhancement. We should keep a close eye on the perfSONAR development including the dynamic circuit monitoring capabilities. It is planned to invite other networks to participate and deploy perfSONAR as a NOC monitoring tool. A perfSONAR demonstration will be prepared for the next lambda workshop to show the new functionality.

Action 20090305-3: on Thomas Tam (CANARIE) to prepare a perfSONAR demonstration on the enhanced system and new features for the Korea meeting.

<Slides: <http://www.glif.is/meetings/2009/winter/tt-perfsonar.pdf>>

7. SLA Task Force

Erik-Jan Bos (SURFnet) presented the SLA Task Force achievements. The task force needs to be renamed since it deals more with the Service Level Specifications (SLS) as a template for GOLEs. The draft version (v0.7) of the SLS document (prepared by Walter van Dijk, Christian Todorov, Geoff Lakeman and Jim Williams) has been circulated via the mailing list

and the participants have agreed on the contents. The minor comment was that the usage of the node and port availability terms was not consistent in the draft document (to be fixed).

Action 20090305-4: on Erik-Jan Bos (SURFnet) to work with the team to finalise the SLS document as version 1.0 and circulate that on the mailing list.

The final version (v1.0) of the SLS document will soon be circulated via the mailing list and the GOLE operators will be asked to fill in the parameters. The compiled matrix of the SLS parameters will be available on the GLIF website for the public.

Action 20090305-5: on GOLE operators (all) to fill in the requested SLS parameters on a monthly basis.

Action 20090305-6: on GLIF Secretariat (TERENA) to compile the SLS parameter overview (matrix) and publish that on the GLIF website.

The group agreed to close this task force, after the work is done. In the next meeting in Korea, the GLIF Tech will further discuss the open questions regarding e.g., the harmonization of the maintenance windows (if possible) and the domain level SLSs.

<Slides: <http://www.glif.is/meetings/2009/winter/ejb-sls.pdf>>

8. Closing, date and venue of next meeting

Erik-Jan Bos (SURFnet), the Co-Chair of the GLIF Technical Working Group, said that organising the meeting in conjunction with OGF and EGEE had helped in furthering collaboration between the two communities. He thanked the participants for the fruitful and lively discussions, as well as the local organisers for the great facilities in Sicily.

Peter Szegedi (TERENA) announced that the next meetings will be held during the 9th Annual LambdaGrid Workshop in Daejeon, Korea, on 27-28 October 2009, hosted by KISTI. The draft agenda will be uploaded to the GLIF website and the registration will be opened before the summer holiday season.

Open Actions

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Action 20090305-2: on Evangelos Chaniotakis (ESnet) to come up with a one-page activity plan for the next steps in the GNI-API Task Force.

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List of participants

NAME		ORGANISATION
Artur	Barczyk	CALTECH
Erik-Jan	Bos	SURFnet
Eric	Boyd	Internet2
Kwangjong	Cho	KISTI
Paul van	Daalen	SURFnet
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Lars	Fischer	NORDUnet
Jarda	Flidr	MAX
Jeroen van der	Han	UvA
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Petr	Holub	CESNET
Richard	Hughes-Jones	DANTE
Lee	Hui-Lan	TWAREN
Chen	Hui-Min	TWAREN
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