GLIF Technical Working Group
13th Meeting, 3-4 February 2010
University of Utah, Salt Lake City, United States

1. Welcome

Erik-Jan welcomed everyone to the meeting, and outlined the aims and resources of GLIF. He also provided an overview of the task forces activities that operated under auspices of the Technical Working Group, and said the main focus of the meeting would be to review their progress.

Thanks were extended to Internet2/ESCC and the University of Utah for hosting the meeting.

2. Approval of minutes

There were no comments on the minutes of the last meeting, and were therefore taken to be approved.

3. Dynamic GOLE Service Task Force

John V provided an update on the automated GOLE pilot that involved MAN LAN, NetherLight, NORDUnet and StarLight (see http://www.glif.is/meetings/2010/winter/vollbrecht-automated-gole.pdf). He described the components needed for an automated GOLE, and the requirement to be able to interconnect Ethernet VLANs using Fenius requests.

The aim was to have an initial demonstration of automated GOLE operation at the 10th Annual Global Lambda Workshop in October 2010, followed by a multi-GOLE pilot for demonstrations and applications by January 2011. It was anticipated that automated GOLE capability would become generally available by June 2011.

Gerben then gave an overview of the NetherLight contribution to the pilot (see http://www.glif.is/meetings/2010/winter/vanmalenstein-automated-gole.pdf). They had replaced their Nortel HDXc with an Nortel OME6500 in May 2010 which had support for DRAC. However, they would map requests using Fenius as a common interface. Immediate aims were to support lightpaths on request to the e-VLBI project, for 4K high-definition video, and for GridFTP-based storage.

Lars followed with an overview of the NORDUnet contribution to the pilot (see http://www.glif.is/meetings/2010/winter/fischer-dyngole.pdf). They would provide dynamic switching at the NREN interconnect in Hamburg, which was facilitated by Juniper EX2500 and EX4500s. These utilised OSCARS, although they would also support Fenius as a common interface. The plan was extend dynamic switching to the NORDUnet nodes in Copenhagen and Stockholm, possibly offering OTN switching as well.

4. GNI API Task Force

Evangelos provided an update on the GNI API activities (see http://www.glif.is/meetings/

2010/winter/chaniotakis-gni-api.pdf). The aim was to develop a standard network interface specification to allow bandwidth reservation requests to be made regardless of the underlying control mechanisms. In addition, to develop a software framework (Fenius) to facilitate translation of requests between the API and these control mechanisms.

The task force had brought together engineers and developers, and software contributions had been received from G-lambda, IDC, Harmony, KISTI and NCSU. The aim was also to provide support for DRAC and AutoBAHN, whilst aligning the Fenius and Harmony systems.

Fenius had already been successfully run by ESnet, G-lamba, Internet2, JGN-II. A joint demonstration had also been undertaken by Internet2 and NICT at SC'09, which provided a lot of useful feedback. Whilst the software behaved within expected parameters, it highlighted that more debugging and testing was required. It also revealed that further refinements were necessary with respect to the interface, and that a more scalable security model needed to be developed.

The next phase was start development on Fenius 2.0 to fix some of the problems that had been experienced with Fenius 1.0, and to add support for VLAN translation, SONET/SDH, and multi-layer service requests. They also proposed to work with the newly formed topology task force to determine what information needs to be available for interdomain path computation (this is outside the scope of the Fenius task force).

The plan was to specify the next version of the API by March/April 2010, and to add the new features by June 2010. This would allow testing and debugging to be undertaken over the summer, with a view to demonstrating Fenius 2.0 at GLIF 2010 and SC'10 in the Autumn of 2010. In conjunction with this, developer and deployment guides should be produced in order to encourage usage of the framework.

A longer term aim was to provide key input from the Fenius experience to the standards working group in OGF, the NSI Working Group.

John G asked who was maintaining Fenius as ongoing support was an issue if GOLEs became reliant on it. Evangelos replied this was currently down to him, although maintenance effort would need to be found in the long-term.

5. perfSONAR Task Force

Thomas gave an update on the perfSONAR Task Force activities (see http://www.glif.is/meetings/2010/winter/tam-perfsonar.pdf). This had been formed to address the issues of monitoring end-to-end lightpaths, and to evaluate perfSONAR as a multi-domain monitoring tool. It also undertook demonstrations at various events, most recently during GLIF 2009 in Daejeon.

Based on their operational experiences, a revised monitoring architecture was proposed in order to address some of the limitations of the current system. Support was needed for global identifiers, topology services and dynamic circuit configuration, and this would be discussed with the perfSONAR developers.

The next steps were to continue deployment of the current system, with more finely tuned alarms system. In addition, they proposed to develop an improved new web client, as the existing E2EMon web client was closely to the LHCOPN. The aim would be to demonstrate this at GLIF 2010.

6. Global Identifiers Task Force

Ronald gave the final report of the Global Identifiers Task Force (see http://www.glif.is/meetings/2010/winter/vdpol-global-id.pdf).

This had been formed to develop a standard naming scheme for static lightpaths, and the recommendations had been published in March 2009. Global IDs should be communicated during lightpath setup, and used in planned work announcements, tickets, and perfSONAR monitoring. The naming scheme had already been deployed by NetherLight, and had also been adopted by StarLight, KRLight and JANET Lightpaths.

Glenn asked whether there was anywhere to register lightpath identifiers. Ronald replied the OGF NML Working Group was currently drafting an RFC for this.

There were further discussions about whether dynamic lightpaths should also be allocated identifiers, and how this should be implemented. Ronald thought the current scheme could be adapted, and welcomed input on this.

In the meantime though, the task force had concluded its primary objectives and it was proposed to close it. Erik-Jan thanked the task force members and in particular Ronald for leading this activity and formulating the recommendations.

7. Proposed Next Generation GOLE Architecture Task Force

Eric gave a presentation on his proposal to establish a new task force to investigate future GOLE architectures (see http://www.glif.is/meetings/2010/winter/bernier-gole-ng.pdf). The aim would be to consider how GOLEs should evolve, particularly as some of the first-generation equipment was now coming to the end of its service life (e.g. in the Chicago and Seattle GOLEs).

The activity would examine the architecture of current GOLEs, and the services that are common and relevant to all of them. The implications of a change in emphasis from SONET/SDH to Ethernet and other carrier mechanisms would also be investigated, with a view to defining requirements for next generation GOLEs.

The plan would be to survey existing GOLEs and to produce a set of requirements by May 2010. From this, a reference architecture would be developed before GLIF 2010, which could be used for equipment re-procurements from early 2011.

Remco followed with a presentation on how SURFnet's GigaPort3 project would enable dynamic services (see http://www.glif.is/meetings/2010/winter/poortinga-gigaport3.pdf), as food for thought on possible next steps for the community.

It was agreed that a new task force should be formed with Eric Bernier as the leader, and that a mailing list <gole-ng@glif.is> should be established that initially included Eric Bernier, Gerben van Malenstein, Dale Finkelson, Lars Fischer, Cees de Laat and John Vollbrecht.

Action 20100202-1: Kevin Meynell to establish mailing list for the Next Generation GOLE Architecture Task Force.

8. Proposed Campus Networking Task Force

Ronald gave a presentation on a proposed new task force on campus networking issues (see http://www.glif.is/meetings/2010/winter/vdpol-campus-networking.pdf). The aim would be to reach out to campus networkers by determining their needs and requirements; producing information on how to setup and use lightpaths; and through encouraging and supporting tests and demos.

In particular, this would be undertaken by investigating use cases, and producing BCPs based on these. In addition, information would be produced on how to request and configure lightpaths from a user perspective, and how to deal with outages and problems. Another aspect would be to investigate those technologies suitable for campus use, based on the applications that would benefit from lightpaths. This work would be undertaken in conjunction with the GLIF Research and Applications Working Group, as well as the UNINETT GigaCampus programme.

John G thought this was a interesting idea as GLIF didn't have many hard-core campus networkers at its meetings. He said he would speak to the campus people at Indiana University, and suggested that others could do the same to make this initiative more of a success.

Dave R suggested approaching the Quilt Coalition as although this was more of a purchasing consortium, they might have some useful technical contacts.

Action 20100203-2: All to provide local campus networking contacts to Ronald van der Pol.

It was agreed that a new task force should be formed with Ronald van der Pol as the leader, and that a mailing list <campus@glif.is> should be established that initially included Ronald van der Pol, Dale Finkelson, Hui-Lan Lee and Iara Machado.

Action 20100202-3: Kevin Meynell to establish mailing list for the Campus Networking Task Force.

9. Discussions and Conclusions

Erik-Jan said there had been a lot of real progress in the GLIF community over the past year, and there appeared to be a consensus that the GLIF Technical Working Group bridged the gap between research projects and standardisation groups such as the IETF and OGF. It had been successful at coordinating disparate networking resources and personnel, and organising trials and demonstrations on a global scope to provide proof-of-concept.

To this end though, it was important that participants continued to convey their views on how they felt the Working Group was doing, and in particular whether the task forces were focused on the right areas. The system of having small, focused task forces had been productive, but it was important to evaluate the list of activities from time-to-time.

Gigi said the discussions earlier in the meeting had highlighted the need for three new areas of work; namely inter-domain topology exchange, inter-domain path computation, and resource authorisation policy (see http://www.glif.is/meetings/2010/winter/karmous-edwards-ideas.pdf). There followed a discussion about whether to form new task forces to actively progress these issues, or whether additional investigation was required first.

It was agreed that a new task force should be formed to consider distributed topology exchange issues. This would be led by Jeroen van der Ham, and would investigate how to exchange inter-domain topology information based on existing intra-domain solutions. It would work in conjunction with the GNI-API and Dynamic GOLE Task Forces, and would also consider path computation issues. A mailing list <dtox@glif.is> should be established that initially included Jeroen van der Ham, Evangelos Chaniotakis, John MacAuley, Jerry Sobieski and John Vollbrecht.

Action 20100202-4: Kevin Meynell to establish mailing list for the Distributed Topology Exchange Task Force.

It was also agreed that resource allocation rather than just resource authorisation should be the subject of a new task force. This would be led by Gigi Karmous-Edwards, and would focus on how to exchange policy and authorisation information. It would start by looking existing practices, with a view to developing a mechanism which can be used within the GLIF community. A mailing list <res-alloc@glif.is> should be established that initially included Gigi Karmous-Edwards, Eric Bernier, Erik-Jan Bos, Evangelos Chaniotakis, Lars Fischer, John MacAuley and Dave Reese.

Action 20100202-5: Kevin Meynell to establish mailing list for the Resource Allocation Task Force.

10. Date of next meeting

The 10th Annual Global Lambda Workshop will be held on 13-14 October 2010 in Geneva, Switzerland, with CERN acting as the local host. This workshop will include a meeting of the Technical Working Group.

Open Actions

20100202-1 Kevin Meynell to establish mailing list for the Next Generation GOLE Architecture Task Force.

20100203-2 All to provide local campus networking contacts to Ronald van der Pol.

20100202-3 Kevin Meynell to establish mailing list for the Campus Networking Task Force.

20100202-4 Kevin Meynell to establish mailing list for the Distributed Topology Exchange Task Force.

20100202-5 Kevin Meynell to establish mailing list for the Resource Allocation Task Force.

Attendees (46)

Name	Organisation	Country
Artur Barcyk	Caltech	United States
Eric Bernier	CANARIE	Canada
Frank Blankman	NORDUnet	-
Jeff Boote	Internet2	United States
Erik-Jan Bos (Co-Chair)	SURFnet	The Netherlands
Evangelos Chaniotakis	ESnet	United States
Steve Corbato	University of Utah	United States
Lars Fischer	NORDUnet	-
John Graham	Global Research NOC	United States
Chin Guok	ESnet	United States
Aluizio Hazin	RNP	Brazil
Milo Hula	CESNET	Czech Republic
Andrei Hutanu	LSU	United States
Gigi Karmous-Edwards (Co-Chair)	NCSU	United States
Tomohiro Kudoh	AIST	Japan
Hui-Lan Lee	TWAREN/NCHC	Taiwan
Andrew Lee	NLR/IU	United States
Sidney Lucena	RNP	Brazil
John MacAuley	SURFnet	The Netherlands
Iara Machado	RNP	Brazil
Dan Magorian	MAX	United States
Kevin Meynell (Secretary)	TERENA	-
Inder Monga	ESnet	United States
Jeonghoon Moon	KISTI	South Korea
Alex Moura	RNP/RedCLARA	Brazil
Bram Peeters	SURFnet	The Netherlands
Remco Poortinga-van Wijnen	SURFnet	The Netherlands
David Reese	CENIC	United States
Glenn Ricart	NLR	United States
Ernesto Rubi	FIU/AMPATH	United States
Roberto Sabatino	DANTE	-
Woojin Seok	KISTI	South Korea
Chang Sheng-I	TWAREN/NCHC	Taiwan
David Sinn	Pacific NorthWest GigaPoP	United States
Michael Stanton	RNP	Brazil
Brent Sweeny	GRNOC/Indiana University	United States
Ryousei Takano	AIST	Japan
Jin-Shan Tseng	TWAREN/NCHC	Taiwan
Jeroen van der Ham	University of Amsterdam	The Netherlands
Ronald van der Pol	SARA	The Netherlands
Gerben van Malenstein	SURFnet	The Netherlands
Alan Verlo	StarLight	United States
Josef Vojtech	CESNET	Czech Republic
Fred Wan	University of Amsterdam	The Netherlands
Rodney Wilson	Nortel	Canada
Jason Zurawski	Internet2	United States