

Charter

GLIF OpenFlow Interdomain Task Force v1.0

January 17, 2013

1. GLIF, the Global Lambda Integrated Facility, is an international virtual organization that promotes the paradigm of lambda networking. The GLIF participants provide lambdas internationally as an integrated facility to support data-intensive scientific research and network research, and supports middleware development for lambda networking. GLIF has a number of working groups, which include have a number of task forces.
2. The Technical Issues working group (GLIF Tech) is the platform within GLIF to share experiences and collaboratively develop best common practices for an international LambdaGrid infrastructure. Its participants identify which equipment is being used, which interfaces and protocols should be used for connections and the control planes, and which functions and services should be provided for a seamlessly functioning multi-domain environment giving researchers and scientists the global perspective on using networked resources.
3. During the 12th Global LambdaGrid Workshop in Chicago in October 2012, an OpenFlow Interdomain Task Force was proposed under the GLIF Tech, after the existence of several cross-domain experiments became apparent. Specific points of reference include the Jim Williams-organized BoF at the Internet2 FMM 2012 and Eric Boyd's talk on GLIF and SDN.
4. The purpose of the GLIF OpenFlow Interdomain Task Force is to develop the theory and practice of the interconnection of OpenFlow *domains* within a time frame short enough to influence the architectures and products of vendors, to which the concept is foreign. It is expected that October, 2012 through October, 2013 is a likely window in which a significant impact could be fashioned.
In this case, an OpenFlow domain is preliminarily defined as a network or exchange point that implements OpenFlow under the control of a single controller (at least within a slice or virtual network). It is expected that the Task Force will refine this and other necessary definitions.
5. The GLIF OpenFlow Interdomain Task Force will tackle the problem in the following order:
 - Determine a framework to extend working GLIF capabilities up and down the stack from interdomain vlans to add support for software defined networking concepts and specifically interdomain OpenFlow. (ex, add knowledge and ability to access flow characteristics of neighboring domains).

- Determine what new network algorithms could do to improve network behavior (performance, security, efficiency, etc.) with information from neighboring domain(s).
- Determine what information would need to be shared between domains to implement such network algorithms
- Determine what protocol(s) (existing, extension of existing, or new) are appropriate share such information

Specific tasks will:

- Actively solicit vendor participation in its work;
- Survey the several current experiments to interconnect OpenFlow *domains* which are under independent administrative control;
- Provide means for experiments to exchange information such as methodology, results, pitfalls, etc.;
- Coordinate, to the extent desired by the participating experiments, plans for future experiments; and
- Spawn, as appropriate, independent groups to suggest interconnection standards, best current practices, and similar recommendations.
- Provide input to the GLIF architecture working-group discussing next-generation GLIF/GOLE architectures

6. The GLIF OpenFlow Interdomain Task Force will report its progress at each meeting of the GLIF Tech, until dissolved by the co-chairs of the GLIF Tech.

- Preliminary presentations about work in progress or ideas in this space will be solicited by the chairs and presented to the GLIF Tech at the January 2013 TIP meeting.
- Additional work products of the GLIF OpenFlow Interdomain Task Force will also be commissioned at the January 2013 TIP.
- As soon as feasible, the GLIF OpenFlow Interdomain Task Force will prepare a white paper and slideshow for presentation at the ONF or other appropriate industry forum.

7. Travel costs for a member of the GLIF OpenFlow Interdomain Task Force participating in a meeting will be borne by the member's organization. The time needed to work as part of the Task Force will be supplied by the member's organization.

8. Initially, the Task Force will be co-chaired by Eric Boyd (Internet2) and Steve Wolff (Internet2). The chairs will solicit GLIF-All and other interested parties to join a task force specific mailing list, arrange regular phone calls, and organize a set of presentations in consultation with the GLIF Tech co-chairs in advance of the TIP 2013 meeting.