AutoGOLE Dashboard

presented by

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On behalf of

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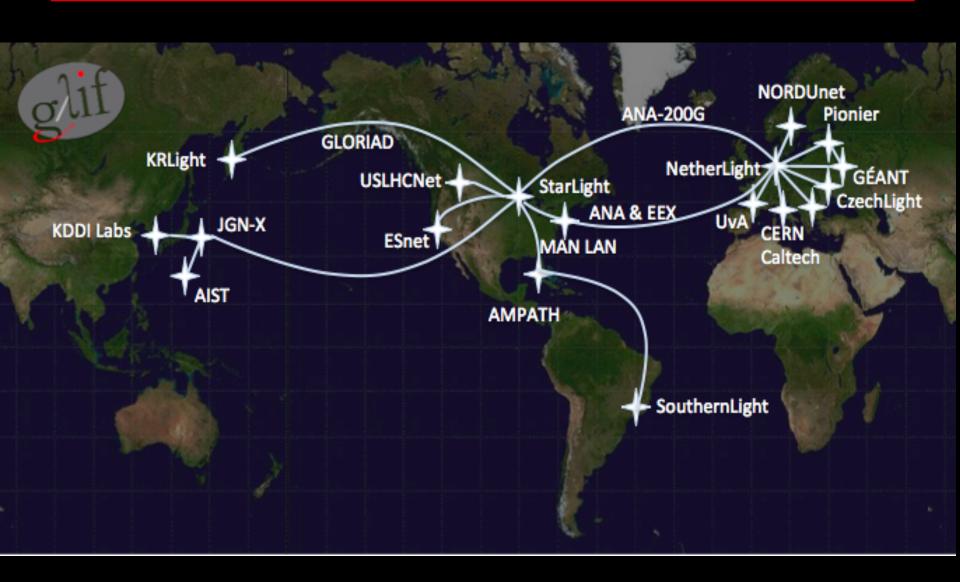John MacAuley (Esnet).

AutoGOLE

- Collaboration of GLIF Open Lightpath Exchanges (GOLEs) and networks to deliver dynamic circuits end-to-end

- Uses VLANs and QoS on the switching infrastructure

- Underlying standard (NSI) is technology agnostic

AutoGOLE

How it works

- Each domain runs a Network Service Agent (NSA)
    - Can be provider and/or requester
    - NSA aggregators know all domains

- NSAs have peering relationships with their neighbouring domains
    - Control plane peerings

- NSAs control their local switching infrastructures
    - Topologies are used to define these infrastructures
    - Topologies also have (data plane) peering relationships with their neighbors

Why?

- Frequent operational and maintenance issues
  - Often only found when things are already broken and "it doesn't work"

- Configuration of each domain should be checked often to ensure it is correct

- Changes in the switching infrastructures lead to broken paths without notice
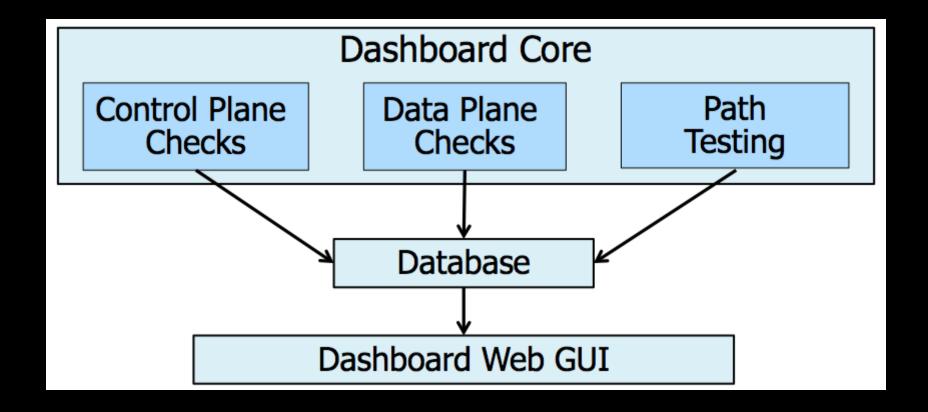
The Dashboard

- The AutoGOLE Dashboard is the first monitoring solution for the AutoGOLE collaboration

- Periodically checks the configuration of all domains and looks for configuration issues
  - Incorrectly defined control and data plane peers
  - Peering ports with incorrect configuration

- Periodically performs test path reservations and connectivity tests

The Dashboard

AutoGOLE Dashboard

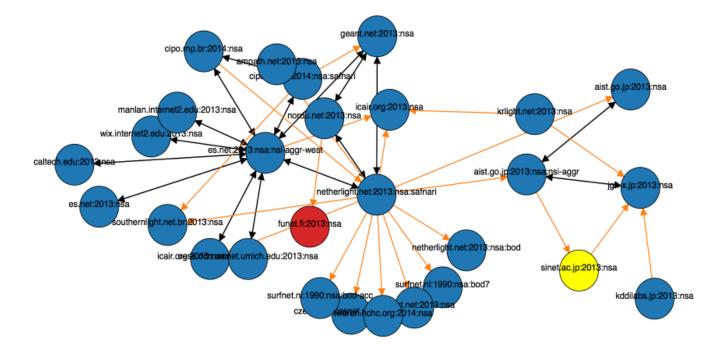Overview   Control Plane   Data Plane

Control Plane Overview

Domain	PeersWith (Bidirectional)	PeersWith (Unidirectional)	Has Peers?	Unknown Peers	Referenced by other domains?	Is Reachable?
jgn-x.jp:2013:nsa	1	0	Yes	0	Yes	Yes
surfnet.nl:1990:nsa:bod7	0	0	No	0	Yes	Yes
krlight.net:2013:nsa	0	2	Yes	0	No	Yes
nordu.net:2013:nsa	2	1	Yes	1	Yes	Yes
aist.go.jp:2013:nsa:nsi-aggr	2	1	Yes	0	Yes	Yes
icair.org:2013:nsa	0	0	No	0	Yes	Yes
es.net:2013:nsa:nsi-aggr-west	10	1	Yes	0	Yes	Yes
kddilabs.jp:2013:nsa	0	1	Yes	0	No	Yes
cipo.rnp.br:2014:nsa:safnari	2	3	Yes	0	Yes	Yes
southernlight.net.br:2013:nsa	0	0	No	0	Yes	Yes
manlan.internet2.edu:2013:nsa	1	0	Yes	0	Yes	Yes
netherlight.net:2013:nsa:safnari	3	12	Yes	0	Yes	Yes
czechlight.cesnet.cz:2013:nsa	0	0	No	0	Yes	Yes
aist.go.jp:2013:nsa	1	0	Yes	0	Yes	Yes

AutoGOLE Dashboard

Overview	Control Plane	Data Plane

The control plane graph shows the NSI control plane peerings. On the graph it is possible to see control plane peering mismatches, NSA host reachability and Unknown NSAs. Alive NSA hosts marked as unreachable might need to allow ICMP traffic. More information for each NSA can be seen by clicking on a node and by looking at the tables below.

dashboard.lab.uvalight.net

Bonjour ⌄   local ⌄   online ⌄   My Index ⌄   Bureaucracy ⌄   News ⌄   Mac ⌄   Wikies ⌄   delaat.net:10...6/1/image.jpg   Domain name /...e / IPv6 test   D-LINK   »

dashboard.lab.uvalight.net/dpm

AutoGOLE Dashboard

Overview	Control Plane	Data Plane

The data plane graph shows how topologies are connected. On the graph it is possible to see topologies with mismatches and Unknown topologiess. More information for each topology can be seen by clicking on a node and by looking at the tables below.

As seen on...

- A development version was shown at the GLIF meeting in Prague last September
    - Feedback received was used to develop and improve key functionalities
    - Some operators were already using it!
    - http://dashboard.lab.uvalight.net/overview

- Finished prototype shown at SC15
    - Very well received
    - More operators using the dashboard
    - http://sc.delaat.net/sc15

First babysteps.

- And see our poster here at TNC16!