Interworking of GMPLS Control and Centralized Controller System

TEAS WG, IETF110
draft-ietf-teas-gmpls-controller-inter-work-05

Authors:
Haomian Zheng (zhenghaomian@huawei.com)
Xianlong Luo (luoxianlong@huawei.com)
Yi Lin (yi.lin@huawei.com)
Yunbin Xu (xuyunbin@caict.ac.cn)
Yang Zhao (zhaoyangyjy@chinamobile.com)
Sergio Belotti (sergio.belotti@nokia.com)
Dieter Beller (Dieter.Beller@nokia.com)
Overview & Summary of Changes

• Overview of this draft: Describe how GMPLS distributed control plane can interwork with a centralized controller system in different scenarios:
  – Topology Collection & Synchronization
  – Multi-domain Service Provisioning
  – Multi-layer Service Provisioning
  – Recovery
  – Controller Reliability

• Main Changes (04 --> 05):
  – Added the description about LSP recovery in GMPLS <--> Controller interworking scenario
GMPLS-Controller Interwork

* Controller can be any SDN controller or EMS/NMS

* Controller can be any SDN controller or EMS/NMS
GMPLS - Controller Interworking: LSP Recovery

**Span Protection**
- Controller
- GMPLS
- A → B → C
  - Link level protection
  - No new changes

**LSP Protection**
- Centralized disjoint path computation
- Controller
- GMPLS
- A → B → C
  - distributed way to trigger protection switchover

**LSP Restoration**

1. Pre-planned LSP rerouting
   - Centralized rerouting path computation (with resource sharing)
   - Controller
   - GMPLS
   - A → B → C
   - May share with other protecting LSP
   - 1

2. Full LSP rerouting
   - Pre-compute rerouting path
   - Trigger the refreshment when network changes
   - Controller
   - GMPLS
   - A → B → C
   - 2
   - 3

- Take the advantage of **centralized path computation** (disjoint path, resource sharing, ...)
- **Distributed way** to enable faster reaction (switchover, activation, ...)

Page 4
Next Steps

- Most of the work has been finished

- Kindly ask the experts in TEAS WG to review on it and feedback to us, before asking for WG LC
Thank you