Destination/Source Routing
draft-lisyang-rtgwg-dst-src-routing-02

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Draft History

- Oct 2014: David Lamparter propose this draft
- July 2019: the authors asked for WGLC on drafts-ietf-rtgwg-dst-src-routing
- WGLC never happened
- We still need to take source into account while making routing decision
- July 2022: draft-ietf-rtgwg-dst-src-routing-07 resubmitted as draft-llsyang-rtgwg-dst-src-routing-00, and now it is -02
Use Cases

- IPv6 multihoming using PA space
- Traffic Engineering/Traffic Segmentation
- Walled-Garden and limiting access to specific sources only ...
- and a few others...
MTR, PBR and L3-VPN can solve the problem
But we still need the ability and flexibility in routing protocol
Scope and Key Principles

- For IPv6

- The document defines expected behaviour, not exact algorithm

- The source prefix is matched after the destination prefix
Implementation and Deployment Status in CERNET

- 20 updated src/dst routers
- Divert traffic from Shanghai-Wuhan-Tsinghua to Shanghai-Jinan-Tsinghua
- Advantages:
  - Easy to configure
  - Less headers compared with SRv6
  - Less errors or loops
Implementation and Deployment Status

- FRR has already supported it
- Cisco has implemented a prototype of dst/src router
Related Drafts

"IPv6 Multihoming with Source Address Dependent Routing (SADR)", Ole Troan, Lorenzo Colitti, 2013-02-18

"Two Dimensional-IP Routing Protocol in Home Networks", Mingwei Xu, Shu Yang, Jianping Wu, Dan Wang, 2013-02-18

"Using IS-IS with Role-Based Access Control", Fred Baker, 2013-02-17


"Using OSPFv3 with Role-Based Access Control", Fred Baker, 2013-05-02


"Two Dimensional IP Routing Architecture", Mingwei Xu, Jiangping Wu, Shu Yang, Laizhong Cui, Dang Wang, 2022-02-24
Call for Adoption?
Thank You!!!