Multicast Address-Set Claim (MASC) Deployment

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MASC Functions

- Associates group ranges(prefixes) with AS's. Ranges are used by:
  - Local Multicast Address Allocation Servers (e.g. MDHCP)
  - Children MASC domains
- MASC to inject local associations into G-RIB (to be used by BGMP)

MASC deployment is orthogonal to BGMP. This talk is only about deploying MASC to allow dynamic address allocation.

MASC in the long-run

- Each AS will be a MASC domain
- MASC topology will follow the network topology
- Parent-child relation will be based on provider-client relation
- Typically, MASC will be run by BG(M)P border routers; no additional configuration required
- A limited number of Top-Level Domains (TLDs): only the large providers

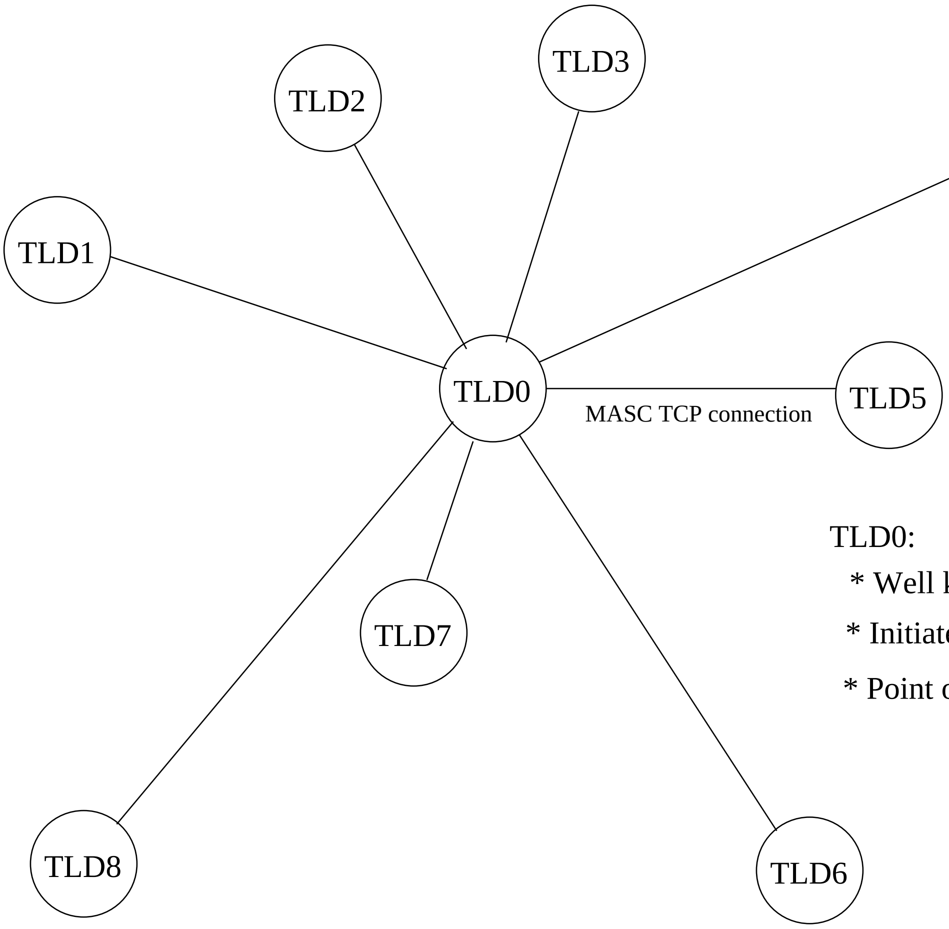
MASC deployment stages

Two stages:

- Experimental/centralized stage
- Decentralized stage

There is no strict line between the two stages; as the number of participants increase, the first stage will gradually evolve into the second.

Experimental stage example

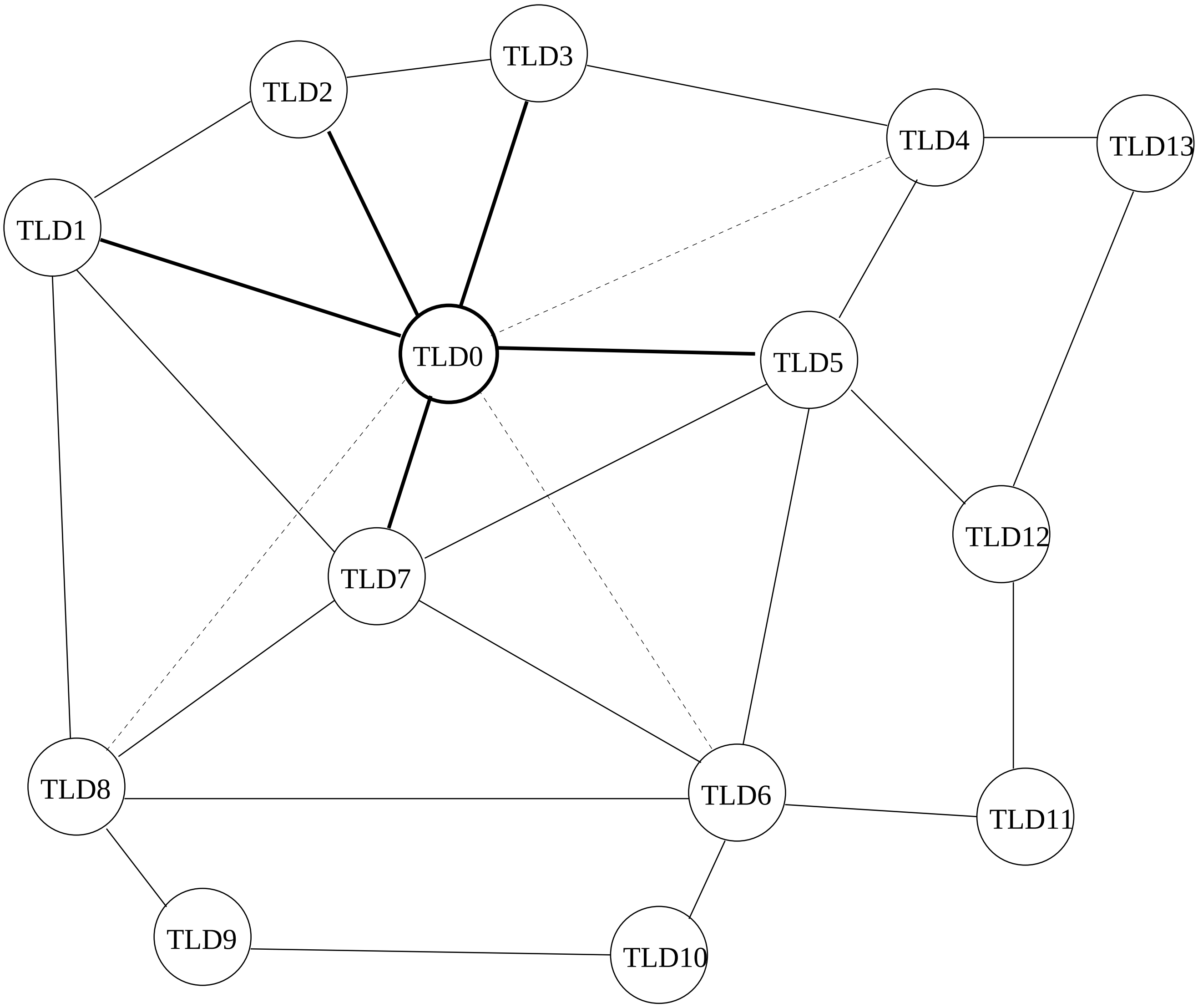


TLD0:
* Well known (during this stage)
* Initiates TLD advertisements
* Point of debugging

Experimental stage details

- Relatively small number of TLDs/participants (< 100); each participant is a TLD
- MASC nodes can be end-user machines; a single MASC node per domain
- TLD0 will be a well-known machine/address
- TLD0 will periodically advertise the global address space
- TLD0 will be also as a point of debugging and verification of new implementations
- Each TLD could have children at its own discretion

Decentralized stage example



Decentralized stage details

1. Motivation: too many TLDs/participants
2. Start adding short-cuts between TLDs; connections to TLD0 might be removed
3. If your provider/neighbors is/are not running MASC, start peering with the closest MASC domain (similar to Mbone)
4. MASC peering will gradually start following the network topology
5. A large TLD provider should not allow its clients to be TLDs
6. Over time TLD0 may disappear; somebody else must take over the function to advertise periodically the global address space

MASC protocol changes + status

- UPDATE messages (claims and withdraws) processing refined
- Introduced type-based ordering of exchanged messages after peering (re)established: simpler implementation and allows easier sanity check
- MASC domain ID changed from 16 to 32 bits
- Stand-alone implementation in progress