DetNet WG

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Online Agenda and Slides at:

https://datatracker.ietf.org/meeting/interim-2018-detnet-03/session/detnet

WG Information: https://datatracker.ietf.org/wg/detnet/

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Note: RFC8179 published May 2017

Meeting Administrativia

- Webex: https://ietf.webex.com/ietf/j.php?MTID=mca0b929db5297a5867bc7585429ad35b
- Joint minute taking   = Please contribute
  - o http://etherpad.tools.ietf.org:9000/p/notes-ietf-interim-2018-detnet-03
- Online Agenda and Slides at:
  - o https://datatracker.ietf.org/meeting/interim-2018-detnet-03/session/detnet
- Blue sheets
  - o **Please add your name to etherpad**

Issues

- General desire to work through issues in WG at a faster/higher bandwidth pace
  o More frequent than in person meetings
- Failed initial try at in person meeting
  o Travel budget/availability remains a concern for most
- Current plan: periodic working meetings
  o Frequency
    - Weekly for an hour?
    - Every 2 weeks for 1-2 hours?
- Extended meeting at IETF 101
  o Friday until 1:30 or 2pm (based on room availability)
- Considering in person interim between 101 and 102
  o Based on progress through IETF101

Agenda

1500GMT – Scheduled to 1.5 hours, but can runover 30 minutes if needed

Session should be less formal, and discussion oriented!

- Administrativa (chairs)
- Draft status update (authors)
   see https://tools.ietf.org/html/draft-ietf-detnet-dp-sol
       https://github.com/jounikor/draft-dt-detnet-dp-sol
- Contributions to address open issues (contributors)
- Next steps, including future meetings

Focusing Today's Discussion

- Detnet services
  1. Congestion protection and latency control: usage of allocated resources (queuing, policing, shaping).
  2. Explicit routes: select/apply the flow specific path.
  3. Service protection: recognize DetNet compound and member flows for replication an elimination.

- Key open question:
  - IP end to end support
    - Converging on D-CW/MPLS service and PREF, so not focus of today's discussion

- Detnet scenarios (simplified)
  - IPvX end to end service
  - TSN over DetNet

IPvX End to End Service

```
DetNet              Relay          Transit          Relay          DetNet
End System          Node           Node             Node           End System
+--------+                                                         +--------+
| Appl.  |<--------------- End to End Service ---------->| Appl.  |
+--------+    +--------+                      +--------+  +--------+
| Service |<---| Service |--- DetNet flow ---: Service :-->| Service |
+--------+    +---+-+---+      +--------+     +---+-+---+  +--------+
|Transport|    |Trp| |Trp|     |Transport|    |Trp| |Trp|  |Transport|
+-------.-+    +-.-+ +-.-+      +--.-----.-+   +-.-+ +-.-+  +---.-----+
       :  nk  :    /  ,-----   \   :  ink  :   /  ,----.. \
       .....+     +-[  Sub  ]-+    +.....+     +-[  Su  ]-+
                  [Networ ]                       [Netwo ]
                  `---                              `-
```
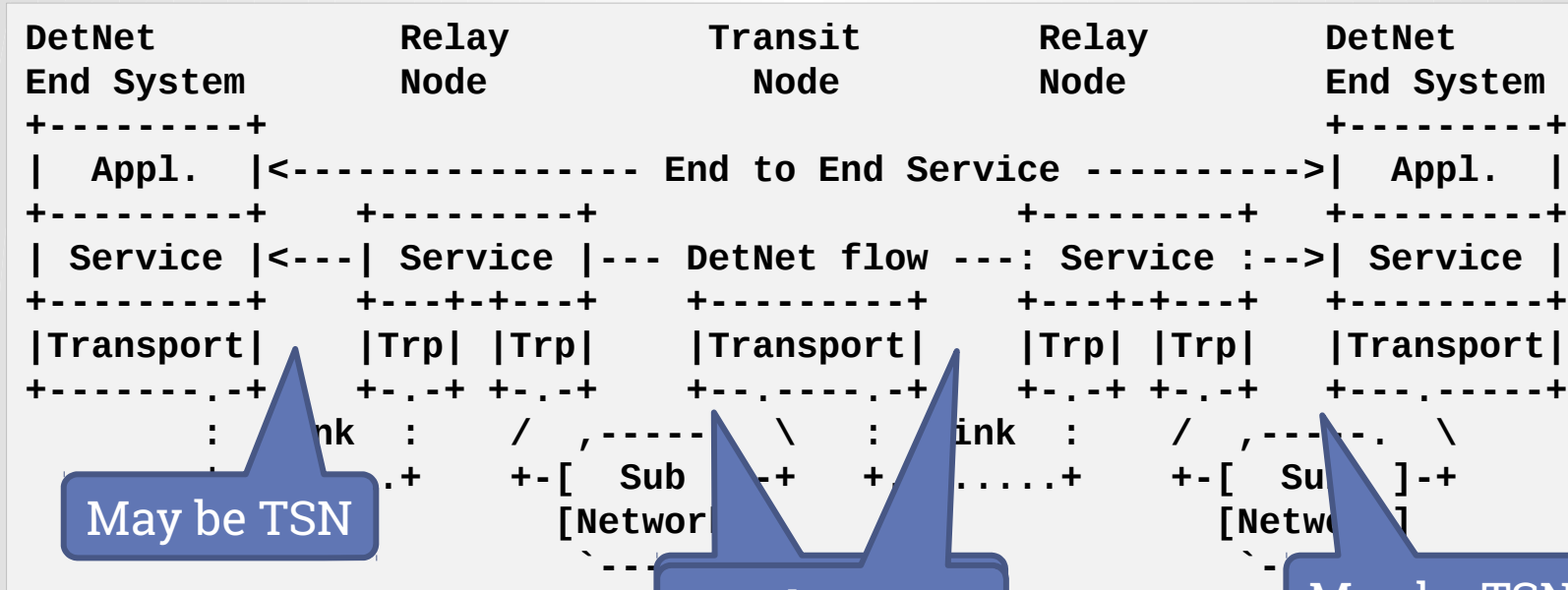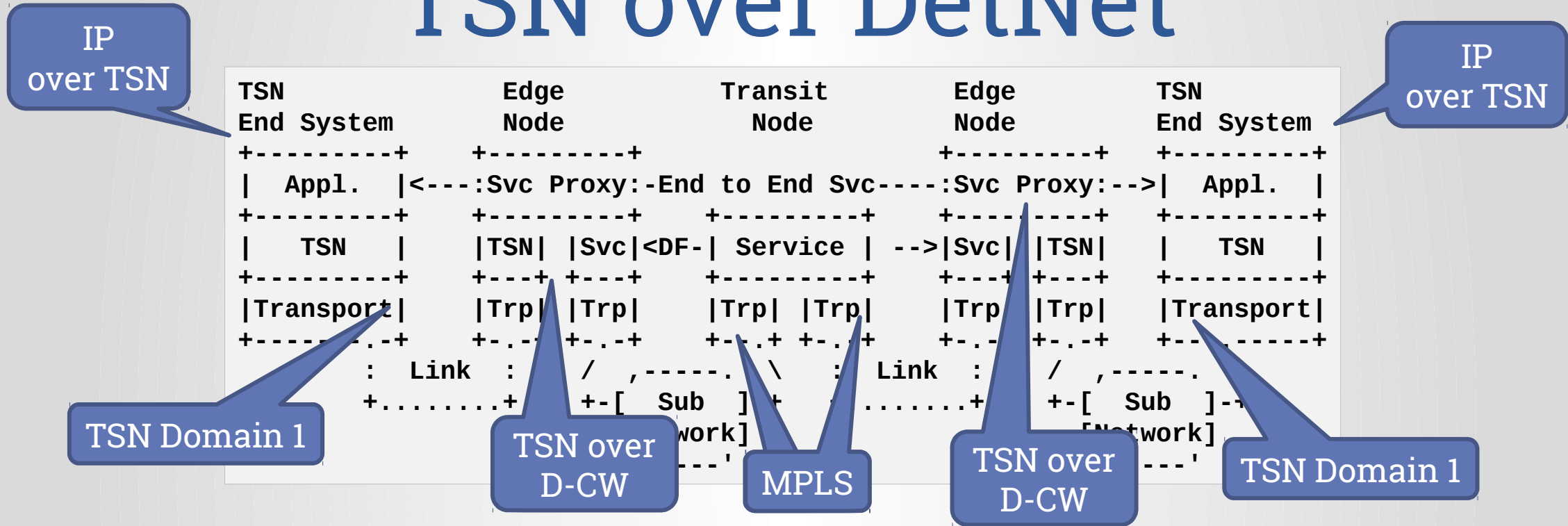
May be TSN

May be MPLS

May be TSN

IP   IP

- ## DetNet Service is end to end
  1. Congestion protection and latency control: usage of allocated resources (queuing, policing, shaping).
  2. Explicit routes: select/apply the flow specific path.

- ## Service protection is per link/sub net
  3. Service protection: recognize DetNet compound and member flows for replication an elimination.

TSN over DetNet


```
TSN                Edge             Transit          Edge             TSN
End System         Node             Node             Node             End System
+---------+      +---------+                       +---------+      +---------+
|  Appl.  |<---:Svc Proxy:-End to End Svc----:Svc Proxy:-->|  Appl.  |
+---------+      +---------+      +---------+      +----+----+      +---------+
|   TSN   |      |TSN| |Svc|<DF-| Service | -->|Svc| |TSN|      |   TSN   |
+---------+      +---+ +---+      +---------+      +---+ +---+      +---------+
|Transport|      |Trp| |Trp|      |Trp| |Trp|      |Trp| |Trp|      |Transport|
+--------.+      +-..+ +-.+      +-..+ +-.+      +-..+ +-.+      +-..-----+
        :   Link :     /  ,-----.  \   :  Link :     /  ,-----.
        +........+    +-[  Sub   ] +   +........+    +-[  Sub   ]-+
                         work]                          [Network]
                       ---'                           ---'
```

- TSN Service is end to end

- DetNet Service is edge to edge
    1. Congestion protection and latency control: usage of allocated resources (queuing, policing, shaping).
    2. Explicit routes: select/apply the flow specific path.
    3. Service protection: recognize DetNet compound and member flows for replication an elimination.

Open discussion

• • •

Some Open Questions

- How do we move beyond PREF discussions?
  - PREF is just an option for DetNet flows
    - DetNet function related scenarios:
      1. Congestion protection and latency control: usage of allocated resources (queuing, policing, shaping).
      2. Explicit routes: select/apply the flow specific path.
      3. Service protection: recognize DetNet compound and member flows for replication an elimination.   ≡ **PREF**
  - Current solution text primarily covers item 3!
    - Have section 7, but also have:
      - 5.6.1. Congestion protection
            TBD.
      - 5.6.2. Explicit routes
            TBD.
  - Perhaps focus on non-PREF text between now and IETF 101?

Some Open Questions

- IP handling -- Current proposal
  - Limit DetNet flow identification/support to existing header
    - 5-tuple, DSCP
  - Implies no DetNet PREF for IP end stations
  - Other DetNet services can still be provided end-to-end
  - PREF can be provided at the subnet level
    - DetNet/MPLS or TSN/802.1cb
  - Is this acceptable?

- Timing of document split?

Next Steps

- Next working meeting
  - o ~2 weeks for 1-2 hours?