NSH MD Type 1 Allocation: Timestamp

Tal Mizrahi[*], Ilan Yerushalmi[*], David Melman[*], Rory Browne[◊]

[*]Marvell, [◊]Intel

draft-mymb-sfc-nsh-allocation-timestamp-02

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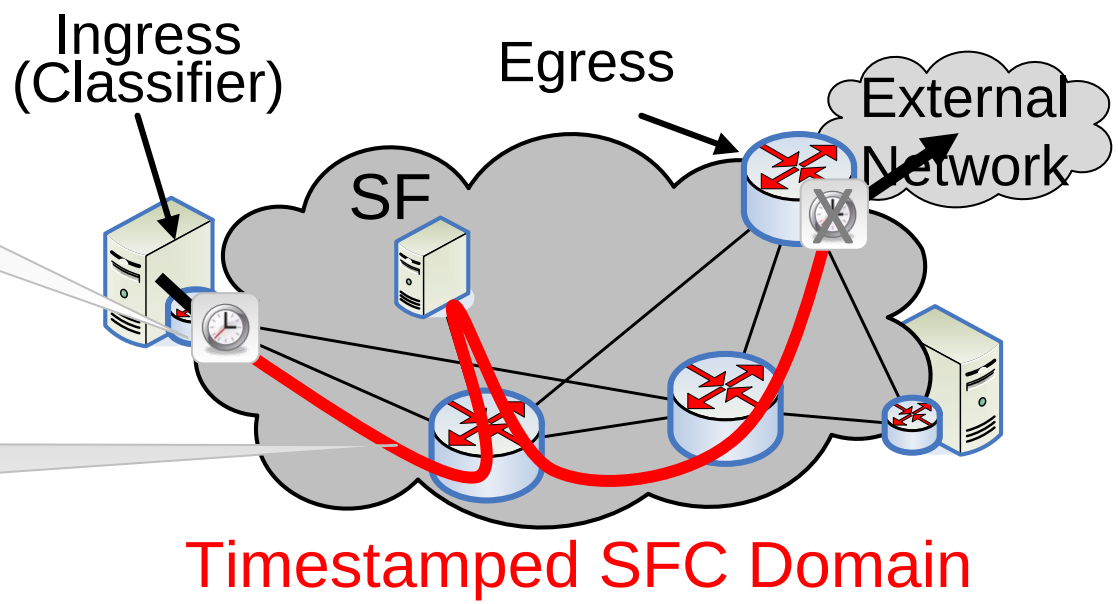
The NSH Timestamp in a Nutshell

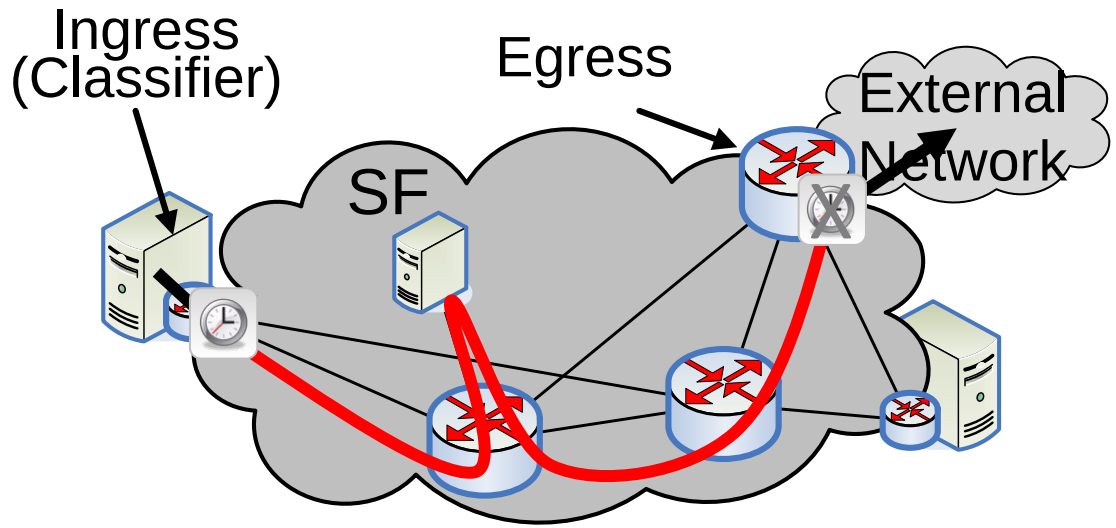
Timestamp is incorporated in metadata (MD Type 0x1).

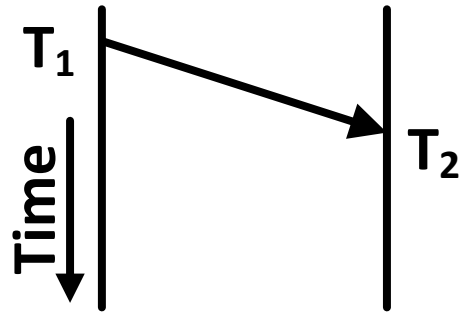
Timestamp can be read / used by SFFs / SFs.



What is this useful for?

- One-way network delay.
- Logging for flow monitoring.





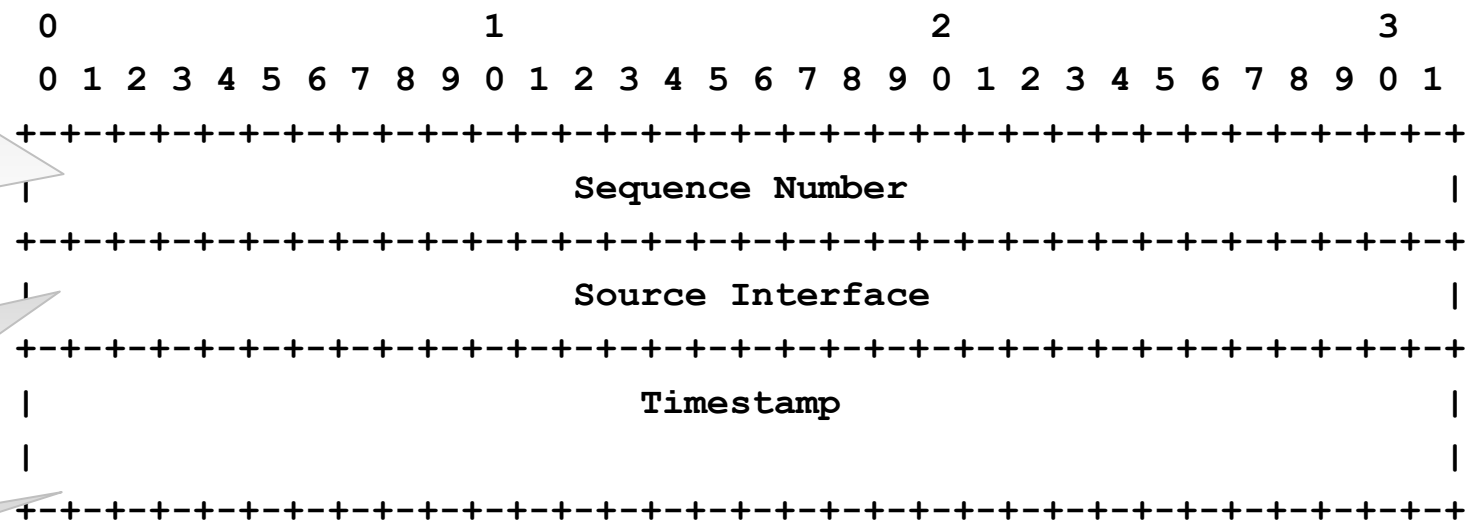
One-way delay: T_2-T_1

NSH Timestamp Allocation Format

Can be used for detecting:
- Out-of-order
- Duplicates
- Loops

Interface identifier at the classifier.

Timestamp in IEEE 1588 truncated format.



Draft Status and Next Steps

- January 2017 – draft 00 submitted.
- March 2017 – presented in IETF 98.
- August 2017 – draft 01 – updates based on comments from WG.
- August 2017:
  - SFC call for MD-1 documents.
- MD-1 with timestamp:
  - draft-guichard-sfc-nsh-dc-allocation
  - draft-mymb-sfc-nsh-allocation-timestamp
- Next steps:
  - Working group feedback.
  - Consider WG adoption.

Thanks!

Related Work

- This presentation summarizes [1].
- The NSH timestamp of this draft can be used in conjunction with [2] or [4], which also use timestamping in NSH.
- NSH timestamping can be used for various use cases ([1], [3], [5]) .
- Security considerations are discussed in [1] and in [2]. Security considerations of time protocols are discussed in [6].

References

[1] T. Mizrahi, I. Yerushalmi, D. Melman, R. Browne, “Network Service Header (NSH) Context Header Allocation: Timestamp”, draft-mymb-sfc-nsh-allocation-timestamp-02, work in progress, 2017.

[2] R. Browne, A. Chilikin, T. Mizrahi, “Network Service Header KPI Stamping”, draft-browne-sfc-nsh-kpi-stamp-02, work in progress, 2017.

[3] G. Fioccola, A. Capello, M. Cociglio, L. Castaldelli, M. Chen, L. Zheng, G. Mirsky, T. Mizrahi, “Alternate Marking method for passive and hybrid performance monitoring”, draft-ietf-ippm-alt-mark, work in progress, 2017.

[4] F. Brockners, S. Bhandari, C. Pignataro, H. Gredler, J. Leddy, S. Youell, T. Mizrahi, D. Mozes, P. Lapukhov, R. Chang, D. Bernier, "Data Fields for In-situ OAM", draft-ietf-ippm-ioam-data-00, work in progress, 2017.

[5] T. Mizrahi, Y. Moses, "The Case for Data Plane Timestamping in SDN", IEEE INFOCOM Workshop on Software-Driven Flexible and Agile Networking (SWFAN), 2016.

[6] T. Mizrahi, "Security Requirements of Time Protocols in Packet Switched Networks", RFC 7384, 2014.

[7] J. Guichard, M. Smith, S. Kumar, S. Majee, P. Agarwal, K. Glavin, Y. Laribi, T. Mizrahi, “Network Service Header (NSH) MD Type 1: Context Header Allocation (Data Center)”, draft-guichard-sfc-nsh-dc-allocation-07, work in progress, 2017.