

IOAM Deployment

draft-brockners-opsawg-ioam-deployment-02

IETF 110 - IPPM WG, March 8th, 2021

Scope

Document IOAM deployment, tying all the different IOAM related specifications together.

IOAM Data Fields

- <https://tools.ietf.org/html/draft-ietf-ippm-ioam-data-12>
- <https://tools.ietf.org/html/draft-ietf-ippm-ioam-flags-00>
- <https://tools.ietf.org/html/draft-ietf-ippm-ioam-direct-export-03>
- <https://tools.ietf.org/html/draft-brockners-ippm-ioam-data-integrity-01>

YANG/Operations

- <https://tools.ietf.org/html/draft-ietf-ippm-ioam-yang-00>
- <https://tools.ietf.org/html/draft-mizrahi-ippm-ioam-profile-03>

Data Export

- <https://tools.ietf.org/html/draft-spiegel-ippm-ioam-rawexport-04>

IOAM Encapsulations

- **IPv6**
 - <https://tools.ietf.org/html/draft-ietf-ippm-ioam-ipv6-options-05>

IOAM Encapsulations (contd.)

- **Protocols which use Ethertype for next protocol (e.g GRE)**
 - <https://tools.ietf.org/html/draft-weis-ippm-ioam-eth-04>
- **NSH**
 - <https://tools.ietf.org/html/draft-ietf-sfc-ioam-nsh-05>
- **Geneve**
 - <https://tools.ietf.org/html/draft-brockners-ippm-ioam-geneve-05>
- **Segment Routing for IPv6**
 - <https://tools.ietf.org/html/draft-gandhi-mpls-ioam-sr-05>
 - <https://tools.ietf.org/html/draft-ali-spring-ioam-srv6-03>
- **VXLAN**
 - <https://tools.ietf.org/html/draft-brockners-ippm-ioam-vxlan-gpe-03>

Overview

Document focuses on IOAM deployment, detailing how the different components relate to each other; as such not a new framework but BCP.

IOAM Deployment: Domains And Nodes

Types of IOAM

- Per-hop Tracing IOAM
- Proof of Transit IOAM
- Edge to Edge IOAM
- Direct Export IOAM

IOAM Manageability

Security Considerations

IOAM Data Export

IOAM Deployment Considerations

- IOAM Namespaces
- IOAM Layering
- IOAM Trace Option Types
- Traffic-sets That IOAM Is Applied To
- IOAM Loopback Mode
- IOAM Active Mode
- Brown Field Deployments:
IOAM Unaware Nodes

IOAM Encapsulations

- IPv6
- NSH
- GRE
- Geneve
- Segment Routing
- Segment Routing for IPv6
- VXLAN-GPE

Discussion & Next Steps

- Discussion
 - Document started in OPSAWG, though with IPPM covering “all things IOAM”, IPPM is the natural place to progress the work
 - draft-ietf-ippm-ioam-data-12 includes an informational reference, following last call comments and request from Shawn Emery (Security Area Directorate)
- Todo
 - Next revision is to evolve the security section: Discuss mitigating against eavesdropping, DoS/DDoS, and time synchronization attacks
- WG adoption?