



On the Use of YANG Provenance Signatures

IETF Hackathon

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Prov·e·nance | 'prävən(ə)ns |

- More specifically, *data provenance*
 - A documented trail accounting for the origin of a piece of data and where it has moved from to where it is presently
- Assurance of the origin and integrity of YANG datasets
 - Whenever the dataset is used beyond an original online flow
 - Use of data intermediaries, such as data lakes
 - AI/ML training and validation
 - Audit trails, including forensics evidence
- Related drafts
 - Motivated by the discussion on metadata manifests: draft-ietf-opsawg- collected-data-manifest
 - Defined in a specific draft: draft-lopez-opsawg-yang-provenance

YANG Provenance Reference Implementation

- What we brought, written in Java
 - Signing and verification procedures
 - JSON and XML
- Available for demonstration as microservices
- Exercised with a wide variety of YANG fragments
- Using the four enclosing methods proposed in the draft
- Code available in GitHub
- Containers available in DockerHub

What Comes Next

- Enhancements to the design of the reference implementation
 - Core libraries
 - Enclosing methods
 - Interfacing
 - Canonicalization issues
- Implementation status for the base draft
- Integration with other YANG modules
 - To be demonstrated in Madrid