



A Discussion of Metadata in ForCES

`draft-dekok-forces-metadata-00.txt`

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What is metadata?

- Usually defined as "data about data"
 - What metadata? Where in the network?
 - It's "metadata", without being more specific
 - My idea of metadata may not be your idea of metadata

- We need new vocabulary to enable communication

The following discussion is about concepts, not requirements

It proposes no standard for metadata format

Orthogonal axes of Metadata

- Internal versus External

- Ethernet MAC retransmission timer

has physical existence in the MAC, but cannot be queried or seen

- **Packet is forwarded to output port of switch fabric**
physical signals about the packet coming from outside the fabric

- Implicit versus Explicit

- **Ethernet MAC assumes it receives Ethernet packets**
nothing tells the MAC that the packet is Ethernet

- **A switch fabric is told packet X goes out port Y**
that command has physical existence in signalling to the fabric

Scope of metadata

- Metadata is often seen in only in certain scopes

- Output port for switch fabric is inside of an FE

- Does not exist outside of the scope of the FE

- This has been one of the main points of confusion

- Metadata means different things in different scopes

- Scopes are levels of "zoom" or "scale" when viewing the network

Scale of Metadata

- Metadata may be visible only at certain scales
- Metadata may change structure or form with scale changes
 - Concepts
 - I want to build a router*
 - this wire carries IPv4*
 - Functional Element
 - packet X goes out port Y*
 - Forwards IPv4 packets*
 - Network Device
 - Interactions with local systems*
 - Local Network
 - Larger interactions*
 - Internet