
# CCNx 1.0 Wire Format

Computer Science Laboratory
Networking & Distributed Systems

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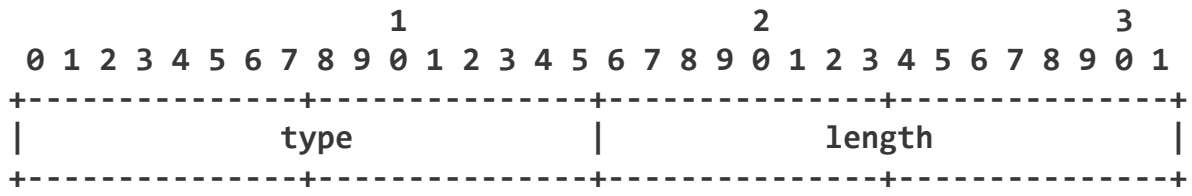


**New wire format uses Type-Length-Value (TLV)**
**2 byte Type**
**2 byte Length**
**Up to 64KB value**





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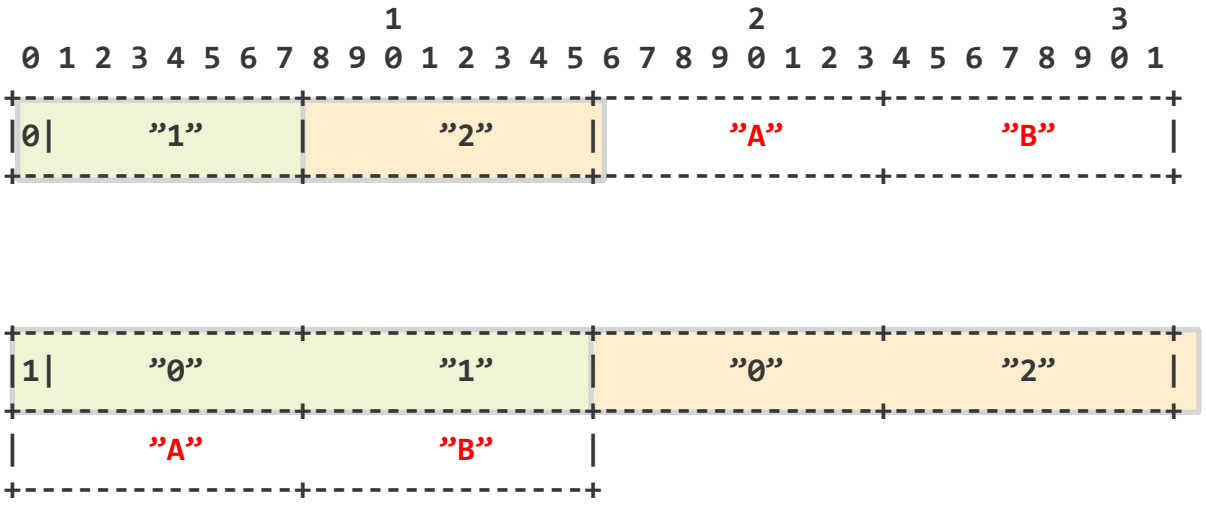


# Variable TL alternative — and problems
# How to normalize aliases?
# Is type “01” same as “1”?
# Is length “02” same as “2”?
# If they are the same, how will a hash detect that?





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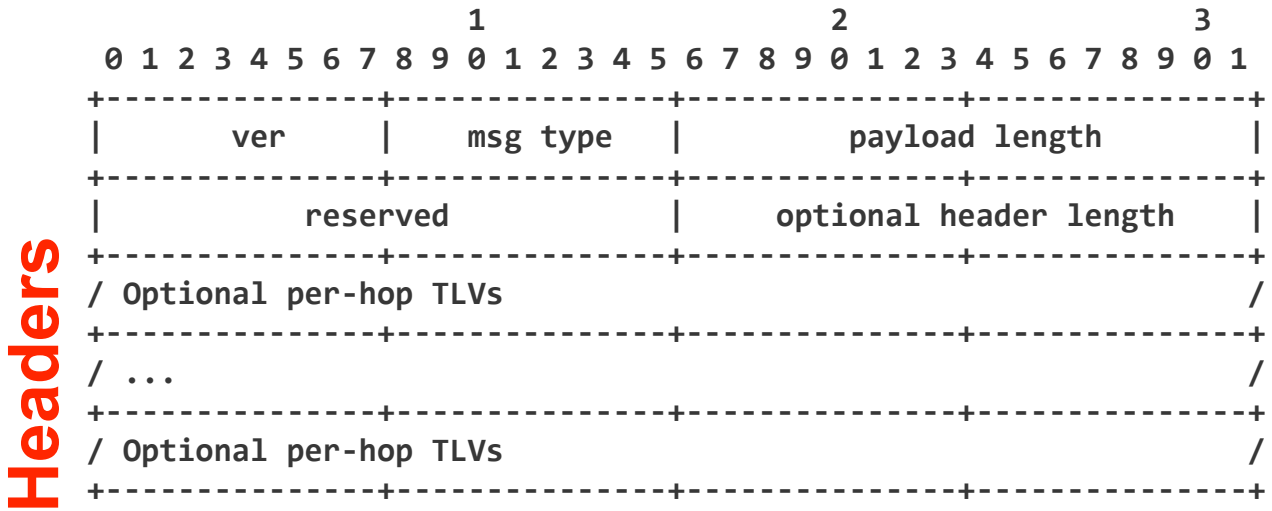
# Packet Headers




- ver: the version of the packet.
- optional header length: The length of optional per-hops headers. The minimum value is "0".
- msg type: 0 = content object, 1 = interest
- payload length: Total octets following the headers (fixed header plus optional headers).





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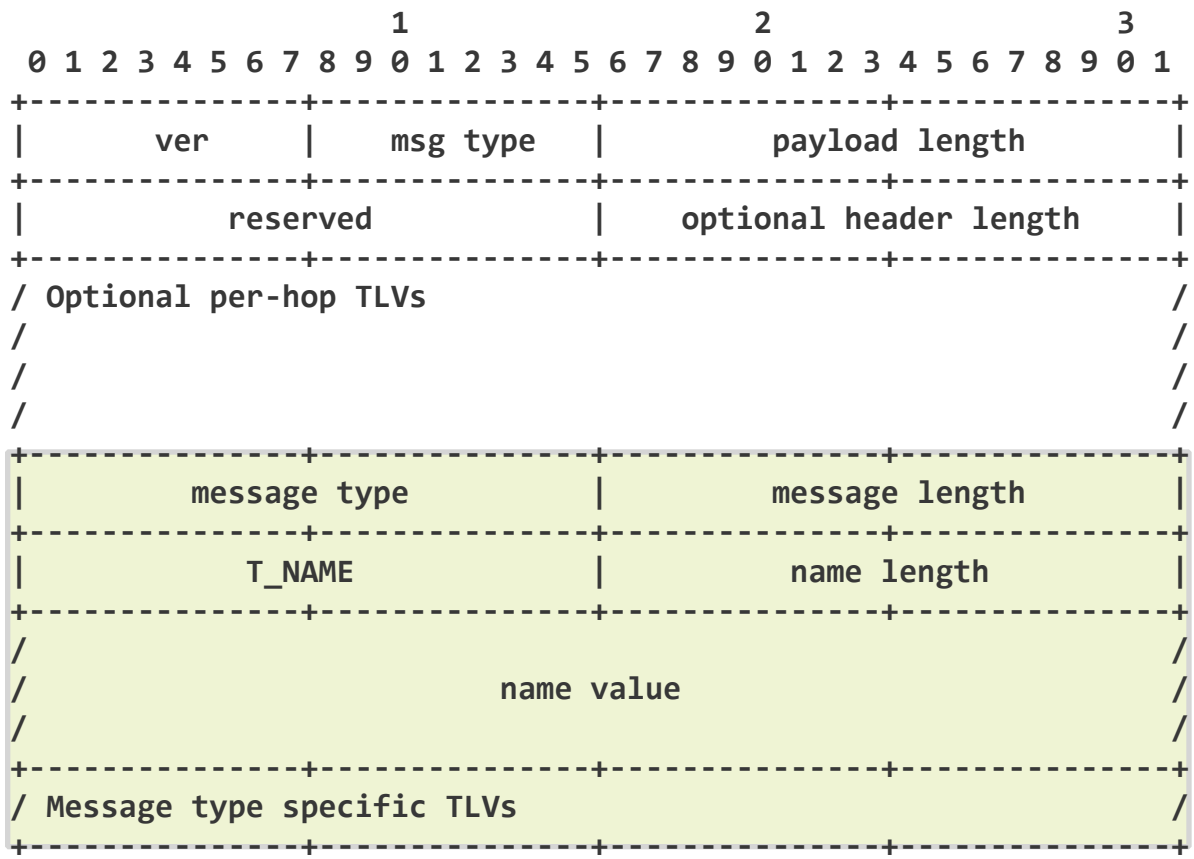
# CCNx Message





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**/utf8=foo/binary=0x656060/serial=24/segment=3**

Name path segments have types

Binary

Application Specific

Nonce

KeyId

Metadata

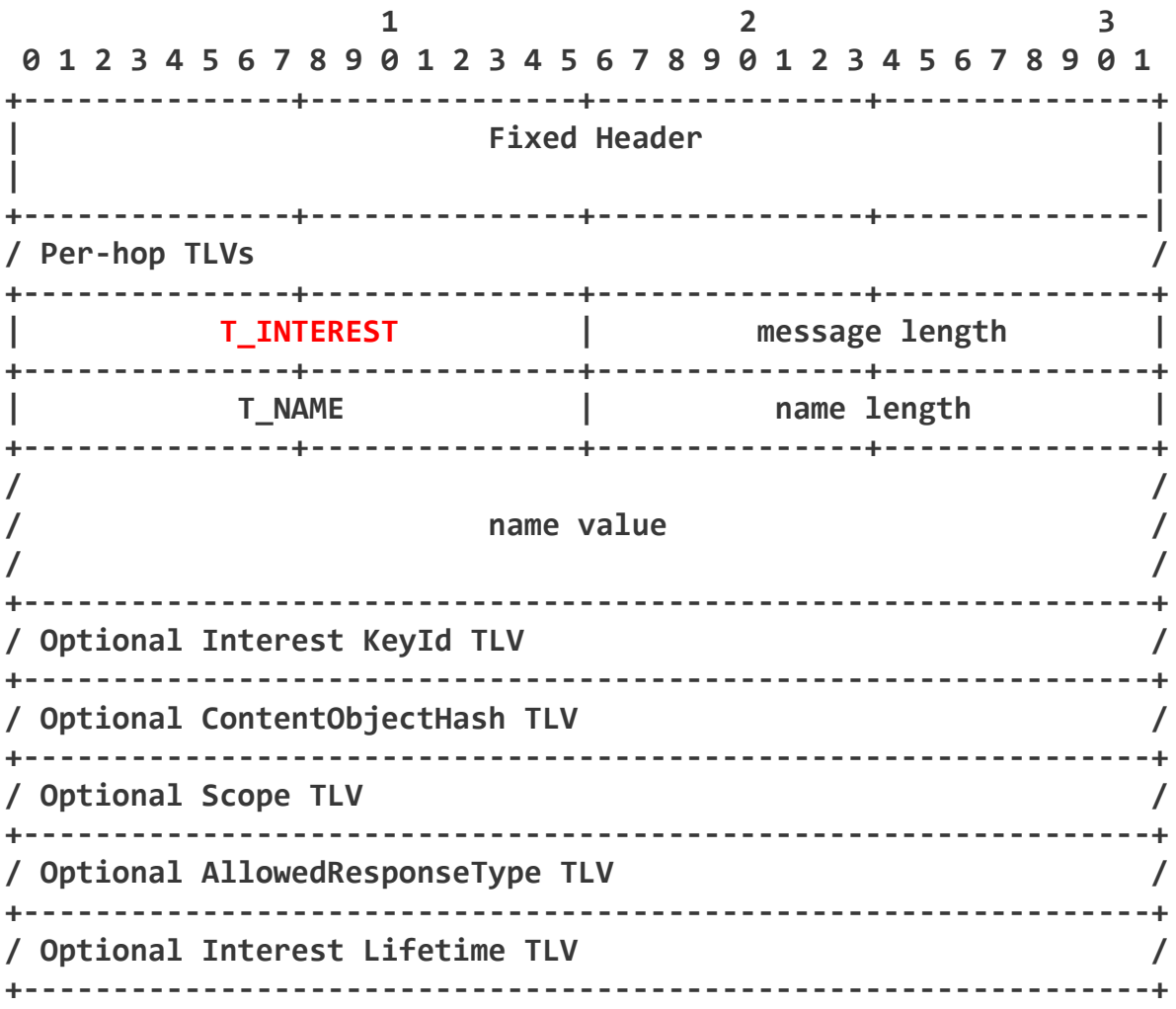
Content Object Hash

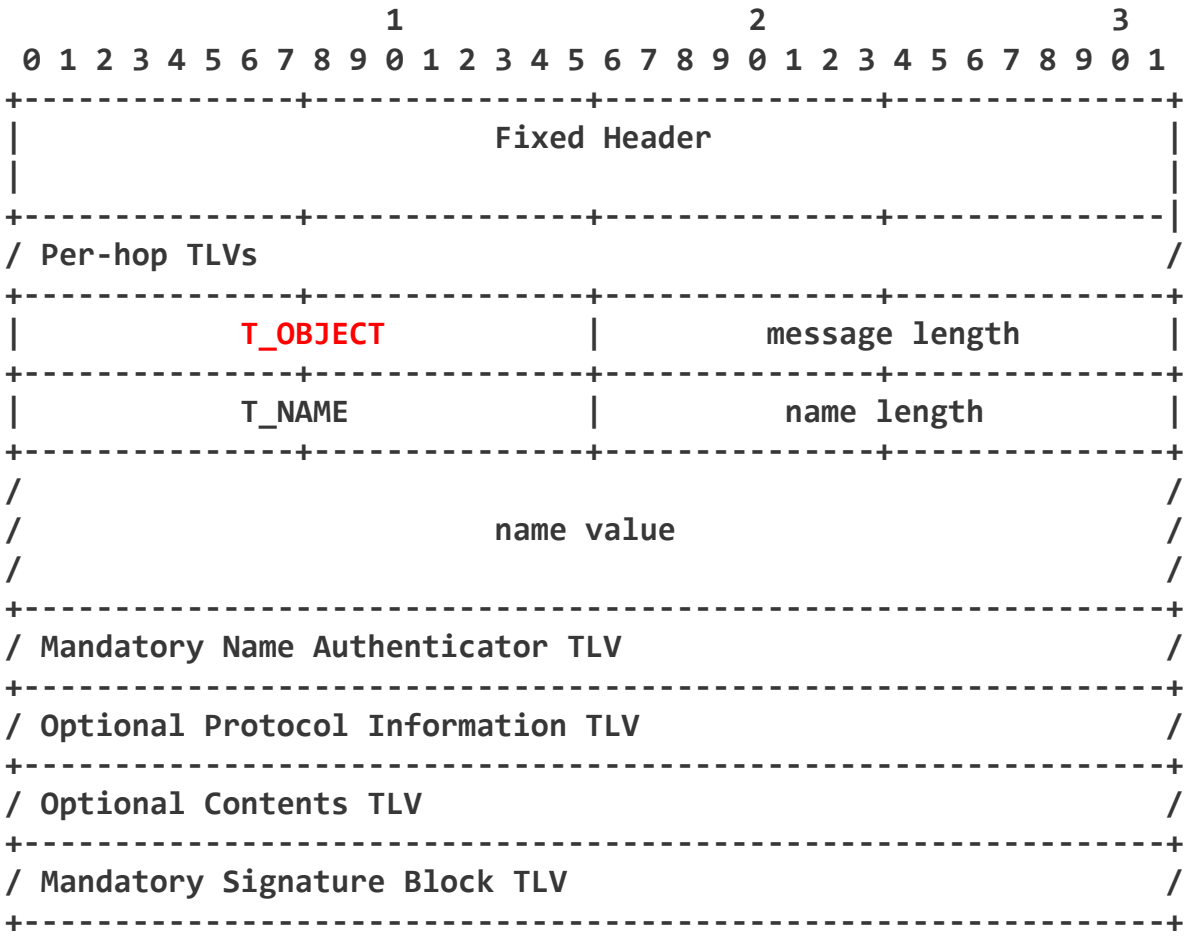
Content Object Segment

Version Timestamp

Version Serial Number

etc







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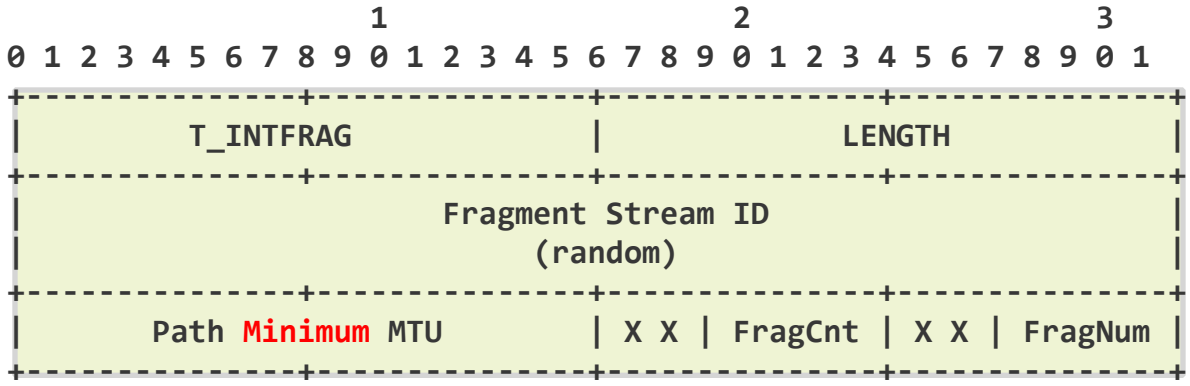
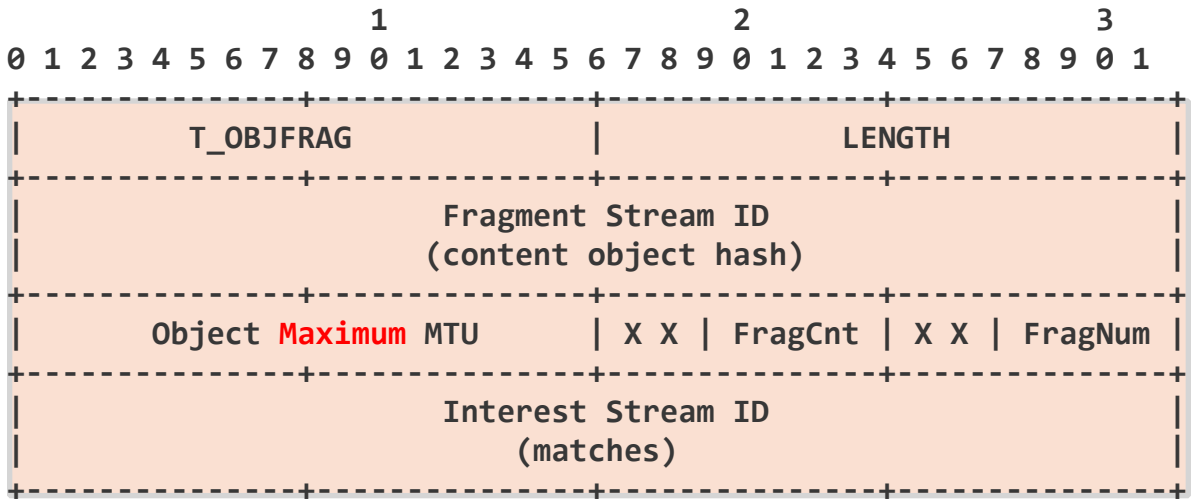
## Interest Fragment Header




## Content Object Fragment Header





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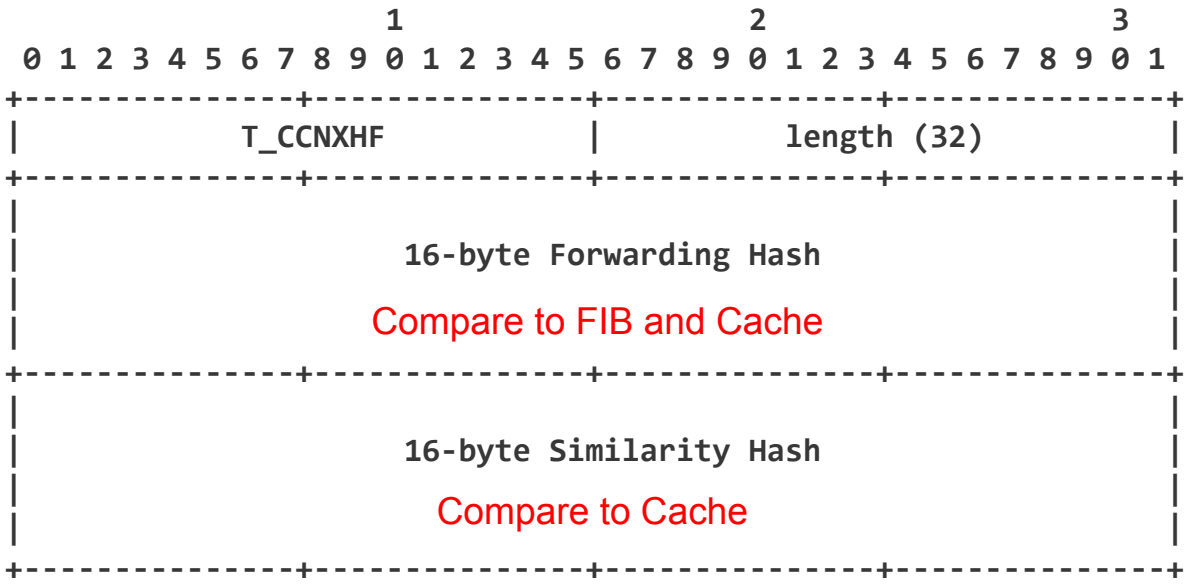
# Forwarding based on pre-computed values in Per-Hop Headers
# CCNx Hash Forwarding (CCNxHF)





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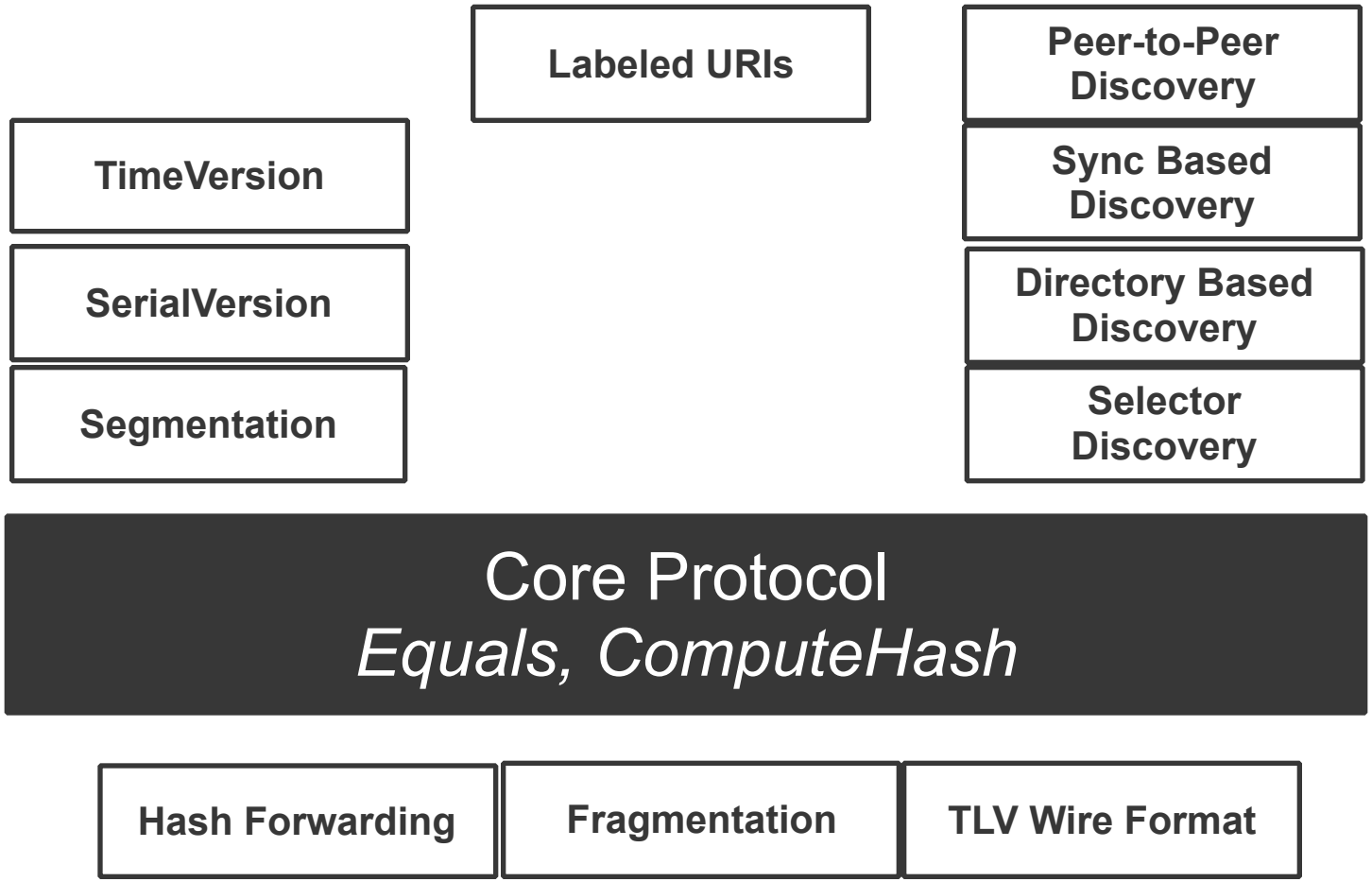
# CCNx 1.0 Protocol Roadmap





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# Documents

1. CCNx 1.0 Protocol Specification Roadmap
2. CCNx Semantics
3. TLV Packet Format
4. CCNx Messages in TLV Format
5. Labeled Segment URIs
6. Labeled Content Information URIs for CCNx
7. CCNx Content Object Caching
8. CCNx End-to-end Fragmentation
9. CCNx Content Object Segmentation
10. CCNx Publisher Clock Time Versioning
11. CCNx Publisher Serial Versioning
12. CCNx Selector Based Discovery
13. CCNx Hash Forwarding