

draft-tschudin-icnrg-flic-01

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Outline

- Review
- FLIC structure and grammar
- Implementation status

Review

Name: FLIC = File-Like ICN Collection

Summary: A data structure built on the UNIX inode concept

Primary goals:

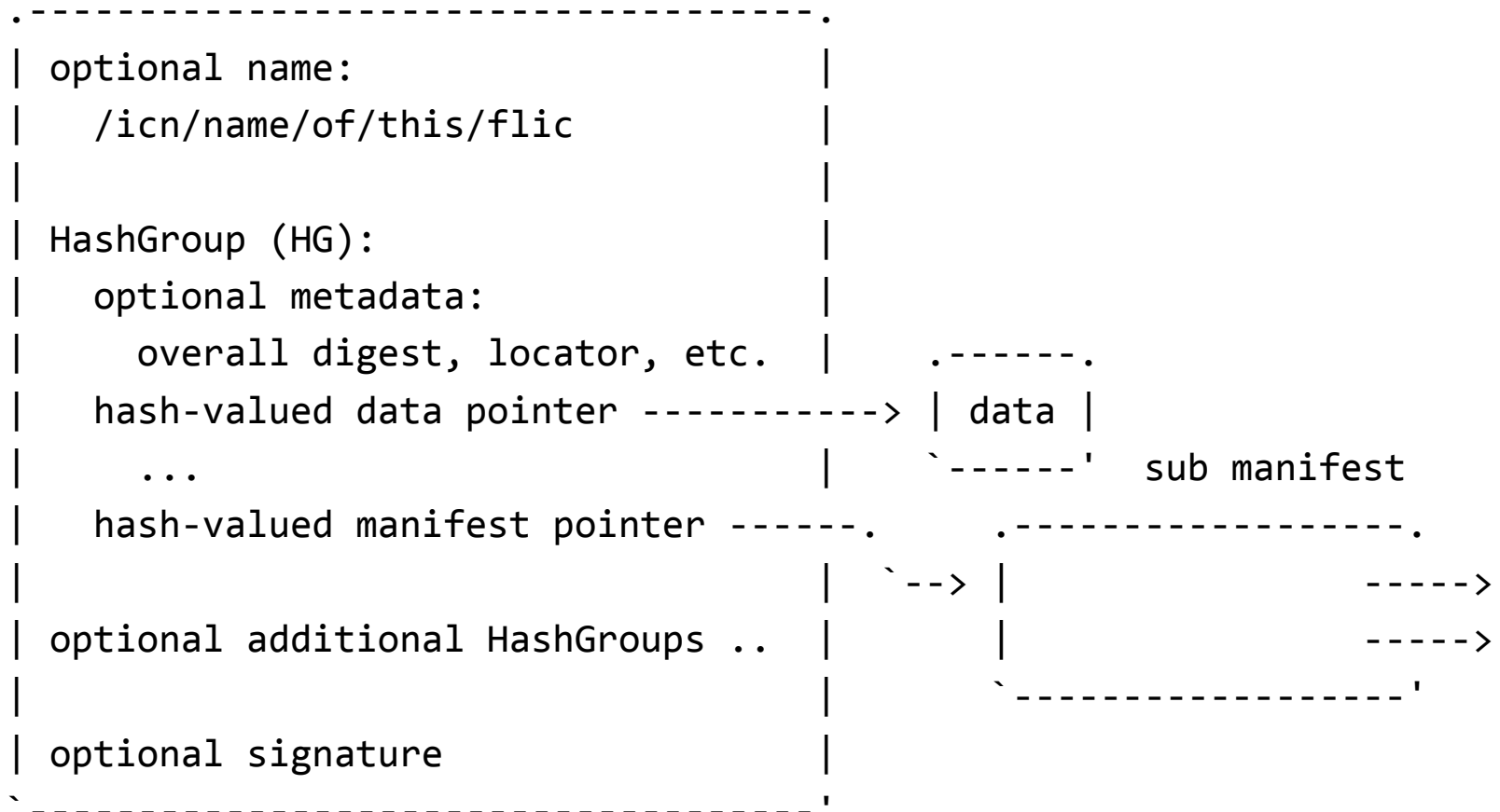
- Simple design
- Single signature for a collection of content objects
- Aid retrieval of nameless objects

Supported Features and Use Cases

- Seeking
- Block encoding
- Nameless objects and manifests
- Growing collections
- Variable size chunks

FLIC In One Picture

root manifest



FLIC Grammar #1

ManifestMsg := Name? HashGroup+

HashGroup := MetaData? (DataPointer | ManifestPtr)+

DataPtr := HashValue

ManifestPtr := HashValue

HashValue := OCTET[32]

MetaData := Property*

Property := Locator | DataSize | EntrySize | BlockSize |
DataDigest | TreeDepth | ...

FLIC Grammar #2

ManifestMsg := Name? HashGroup+

HashGroup := MetaData? (**SizeDataPtr** | **SizeManifestPtr**)+

BlockHashGroup := MetaData? **SizePerPtr** (DataPtr | ManifestPtr)+

DataPtr := HashValue

ManifestPtr := HashValue

SizeDataPtr := **Size HashValue**

SizeManifestPtr := **Size HashValue**

SizePerPtr := Size

HashValue := See {{CCNxMessages}}

Size := OCTET[8]

MetaData := Property*

Property := **Locator** | **OverallByteCount** | **OverallDataDigest** | ...

FLIC Grammar #2

ManifestMsg := Name? HashGroup+

HashGroup := MetaData? (**SizeDataPtr** | **SizeManifestPtr**)+

BlockHashGroup := MetaData? **SizePerPtr** (DataPtr | ManifestPtr)+

DataPtr := HashValue

ManifestPtr := HashValue

SizeDataPtr := **Size HashValue**

SizeManifestPtr := **Size HashValue**

SizePerPtr := Size

HashValue := See {{CCNxMessages}}

Size := OCTET[8]

MetaData := Property*

Property := **Locator** | **OverallByteCount** | **OverallDataDigest** | ...

Change List

- Drop unused metadata
- Support pointer hash agility
- Add “sized pointers”
- Add “block hash group” with equally sized pointers

(Example) Encoding

```
[FIXED_HEADER OCTET[8]]
(ManifestMsg/T_MANIFEST
  (Name/T_NAME ...)
  (HashGroup/T_HASHGROUP
    (MetaData/T_HASHGROUP_METADATA
      (HGLocator/T_HASHGROUP_METADATA_LOCATOR (T_NAME ...))
      (HGOverallByteCount/T_HASHGROUP_METADATA_BYTECOUNT INT)
      (HGOverallDataDigest/T_HASHGROUP_METADATA_DATADIGEST T_HASH)
    )
    (SizeDataPtr/T_HASHGROUP_SIZEDATAPTR OCTET[8] (T_HASH ...))
    (SizeMfstPtr/T_HASHGROUP_SIZEMANIFESTPTR OCTET[8] (T_HASH ...))
  )
  (BlockHashGroup/T_BLOCKHASHGROUP
    (MetaData/T_HASHGROUP_METADATA (...))
    (SizePerPtr/T_SIZEPERPTR OCTET[8])
    (DataPtr/T_HASHGROUP_DATAPTR (T_HASH ...))
    (MfstPtr/T_HASHGROUP_MANIFESTPTR (T_HASH ...))
  )
)
```

Implementation Status

- Full support in CCNx 1.0
- In-progress changes for ccn-lite