Brief Background

- Service functions are used in almost every network
  - Types of network: enterprise, mobile, fixed-line, etc.
  - Types of deployment: central office, private data-center, public data-center, etc.
  - Types of service functions: firewalls, load balancers, http proxies, etc.
- Current service deployment models have not kept pace with changing technology and requirements
- SFC provides a new forwarding paradigm for sequenced service functions
  - policy-driven
  - common for all service functions
  - network transport agnostic
  - supports logical service function instances
  - supports sharing of information between nodes

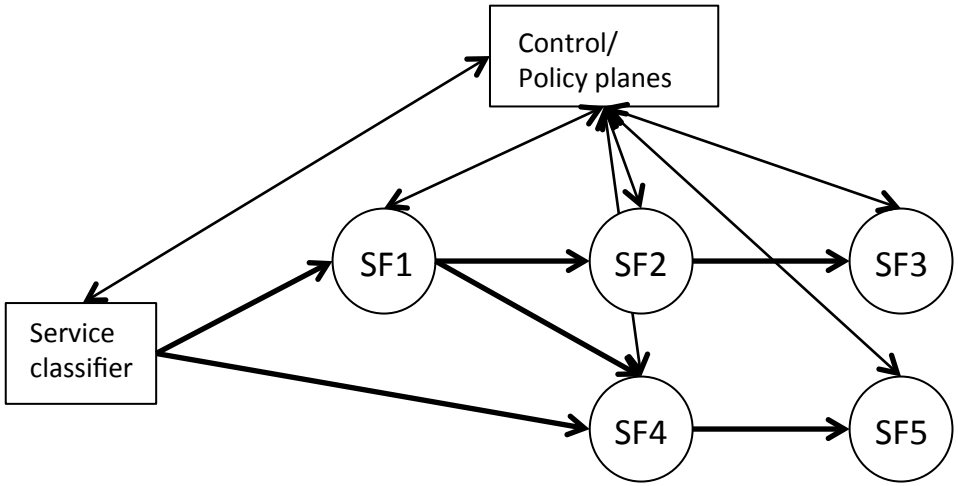
Alignment

- There are currently four drafts that address SFC architecture
  - draft-quinn-sfc-arch
  - draft-jiang-sfc-arch
  - draft-boucadair-service-chaining-framework
  - draft-beliveau-sfc-architecture
- Overall, architecture concepts are aligned, with similar goals
- Authors working together to create one common architecture document

Core Architecture Principles

1. Single administrative domain
   - Multiple administrative domains for future study
2. Multi-vendor interoperability
3. Network transport independence
4. Logical separation of classification function and service function
5. Logical identification of service functions
6. Sharing of metadata/context between nodes

Simplified Architecture



- 3 SFC:
  SF1->SF2->SF3
  SF1->SF4->SF5
  SF4->SF5
- Edges represent service overlay topology
- Vertices are logical service functions
- Service classifier “starts” the path
- Optional reclassification by service functions (i.e., with co-resident classifier)

SFC Components

- Service Function: viewed as logical resources for consumption, with attributes.
- Service Classifier: determine traffic to be SFC'd
- Overlay Service Topology: interconnects service functions and participating network elements
- Control/policy Planes: constructs SFC and provides resource management
- Shared Context: information exchanges between participant nodes