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