XIA Intra-Domain Routing Update 2013-08-28

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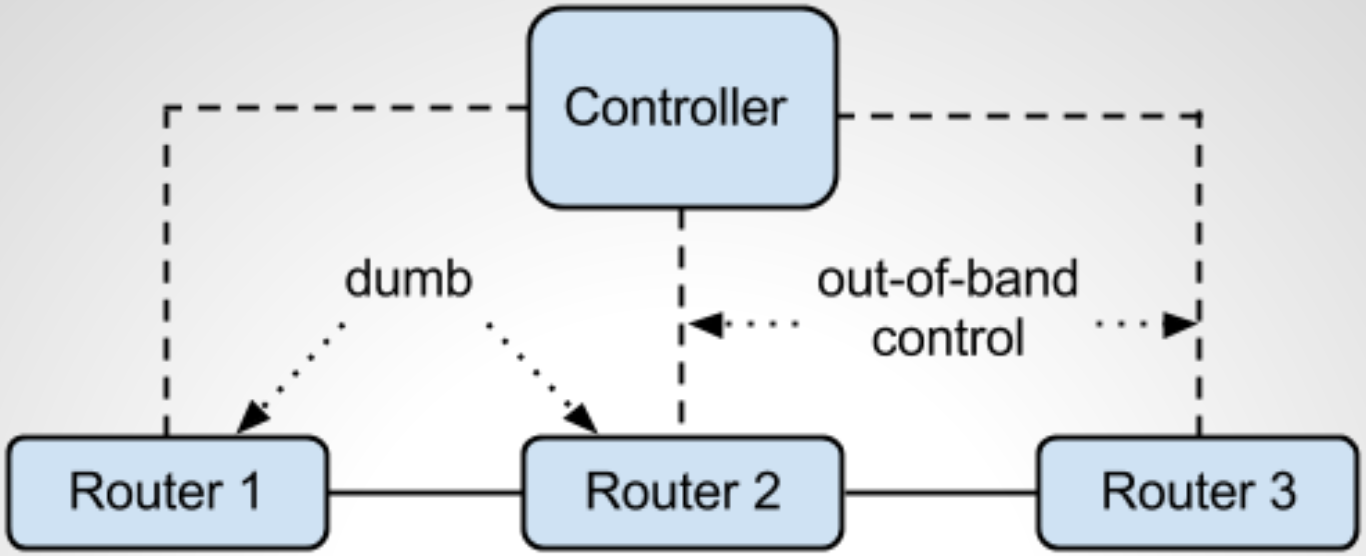


- Controller makes all routing decisions
- Controller communicates out-of-band with all routers (via Click control sockets)

Advantages:

- Controller has full decision-making capabilities
- Simple control plane architecture

Disadvantages:

- Need to build significant additional infrastructure to communicate all necessary link-state information via Click control sockets compared to reusing existing inter-domain OSPF code

Implementation

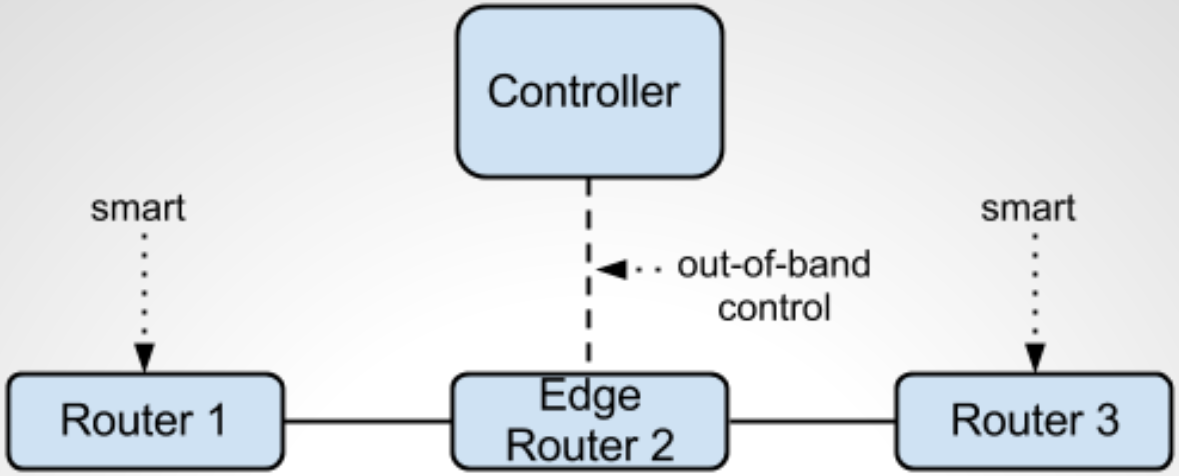
Add separate controller daemon that runs alongside router daemons	Done
Update routing daemons to collect intra-domain link-state information	Done
Add infrastructure to communicate all necessary link-state information via Click control sockets	**In progress**
Update controller to read router link-state information and calculate forwarding tables	
Update controller to disseminate forwarding tables to routers	

Ongoing work

- How to integrate with SCION?

- How are client SIDs advertised so that they can be added to forwarding tables?

Backup



- Controller makes only decisions at the inter/intra-domain interface (e.g. about which inter-domain routing protocol to use)
- Controller communicates out-of-band with all routers (via Click control sockets)
- Interior routers build their own forwarding tables via regular OSPF/flooding

Advantages:

- **Can easily reuse existing inter-domain XIA OSPF implementation**
- Simple control plane architecture

Disadvantages:

- Controller has limited intra-domain decision-making capabilities