

Topology Representation for FE Model (and ForCES Protocol)

<draft-wang-forces-model-topology-00.txt>

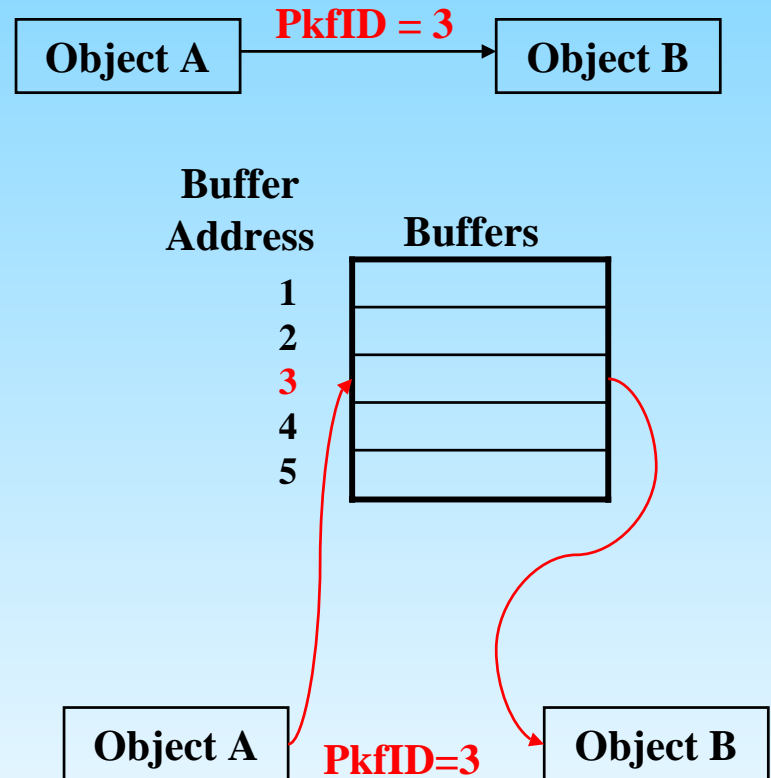
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Topology Representation

- To represent a topology is to semantically describe the interconnection state of objects in the topology.
- May be needed for
 - ◆ LFB topology manipulation
 - ◆ LFB capability description

Packet Flow Identifier (PkfID)

- Is a name assigned to a single connection (PkfSID) or a group of connections (PkfGID)
- To understand it, may virtually think it as a buffer address (though may in implementation layer not be such an address)



Example of Topology Representation Based on PkfIDs in GRMP

Use LFB action manipulate (action type = add) message as an example

- Suppose FE get 3 LFB add messages as:

LFB add message1:

(LFB = Meter1;
Ingress: PkfSID1;
Egress: PkfGID1[1:2];)

List of PkfIDs in Ingresses of the LFB

List of PkfIDs in Egresses of the LFB

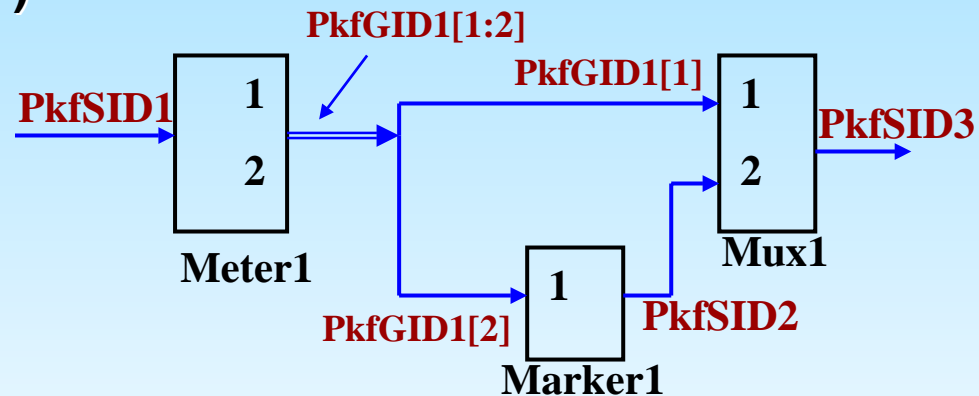
“Single individual LFB Topology”

LFB add message2:

(LFB = Marker1;
Ingress: PkfGID1[2];
Egress: PkfSID2;)

LFB add message3:

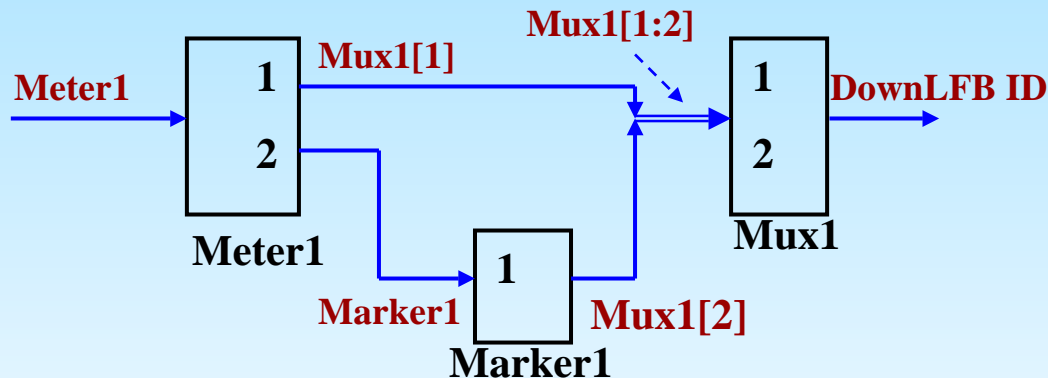
(LFB = Mux1;
Ingress: PkfGID1[1], PkfSID2;
Egress: PkfSID3;)



Examples of PkfID Representation Scheme (1)

■ Next LFB ID based scheme

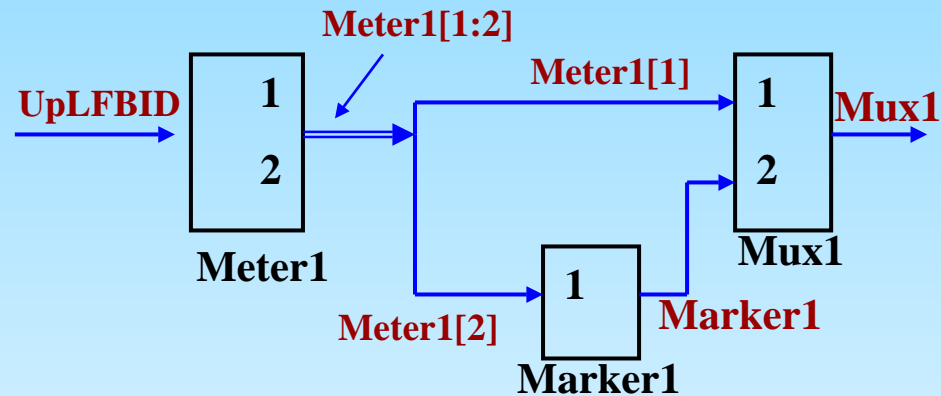
- ◆ All ingresses of a LFB are assigned with one PkfGID (PkfSID if there is only one input), and the PkfGID/PkfSID value assigned exactly same as this LFB ID. The result is as in the figure. This is quite the same as expression like “The datapath connects to the LFBx”



Scheme (2)

■ Up LFB ID based

- ◆ If all egresses of a LFB are assigned with one PkfGID(or PkfSID if only one output), and the PkfGID/PkfSID value is assigned the same value as this LFB ID, we can get a figure as below.



- ◆ This is quite the same as expression like “The datapath is from the LFBx”