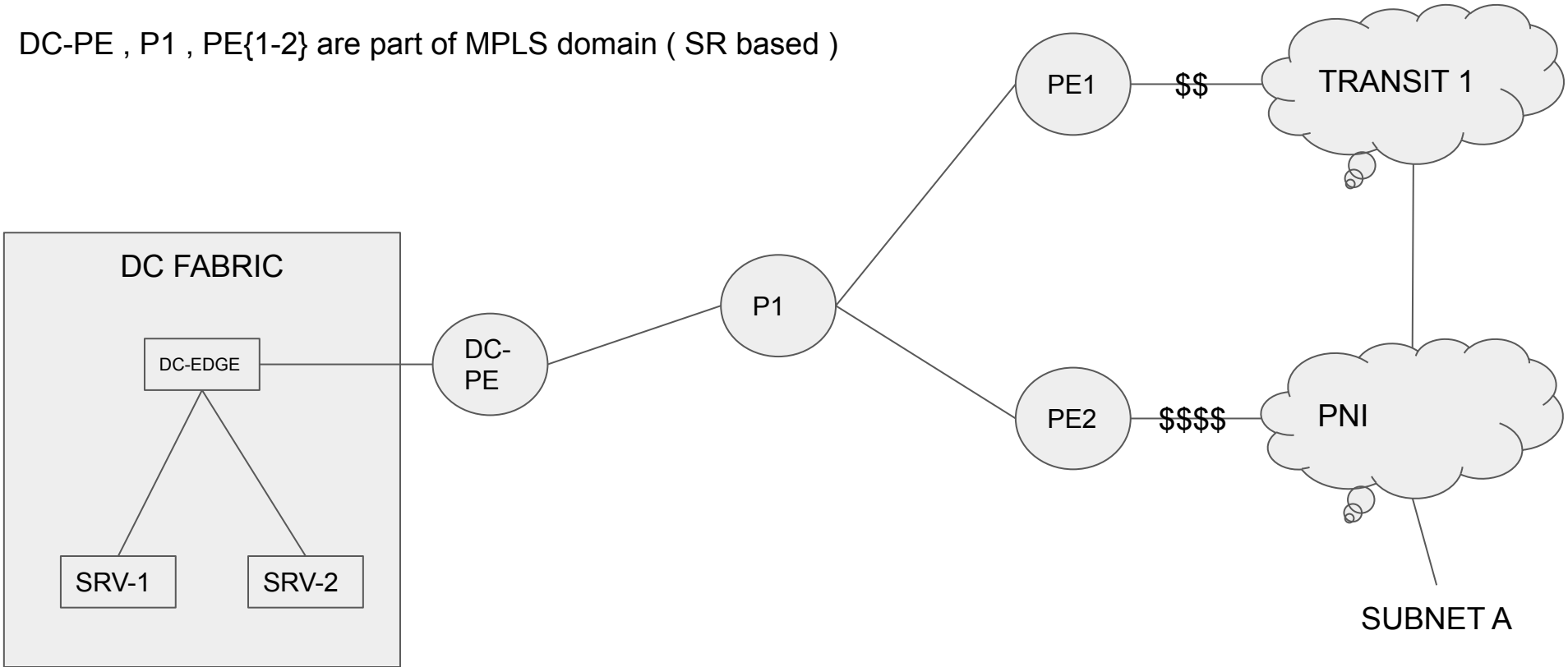
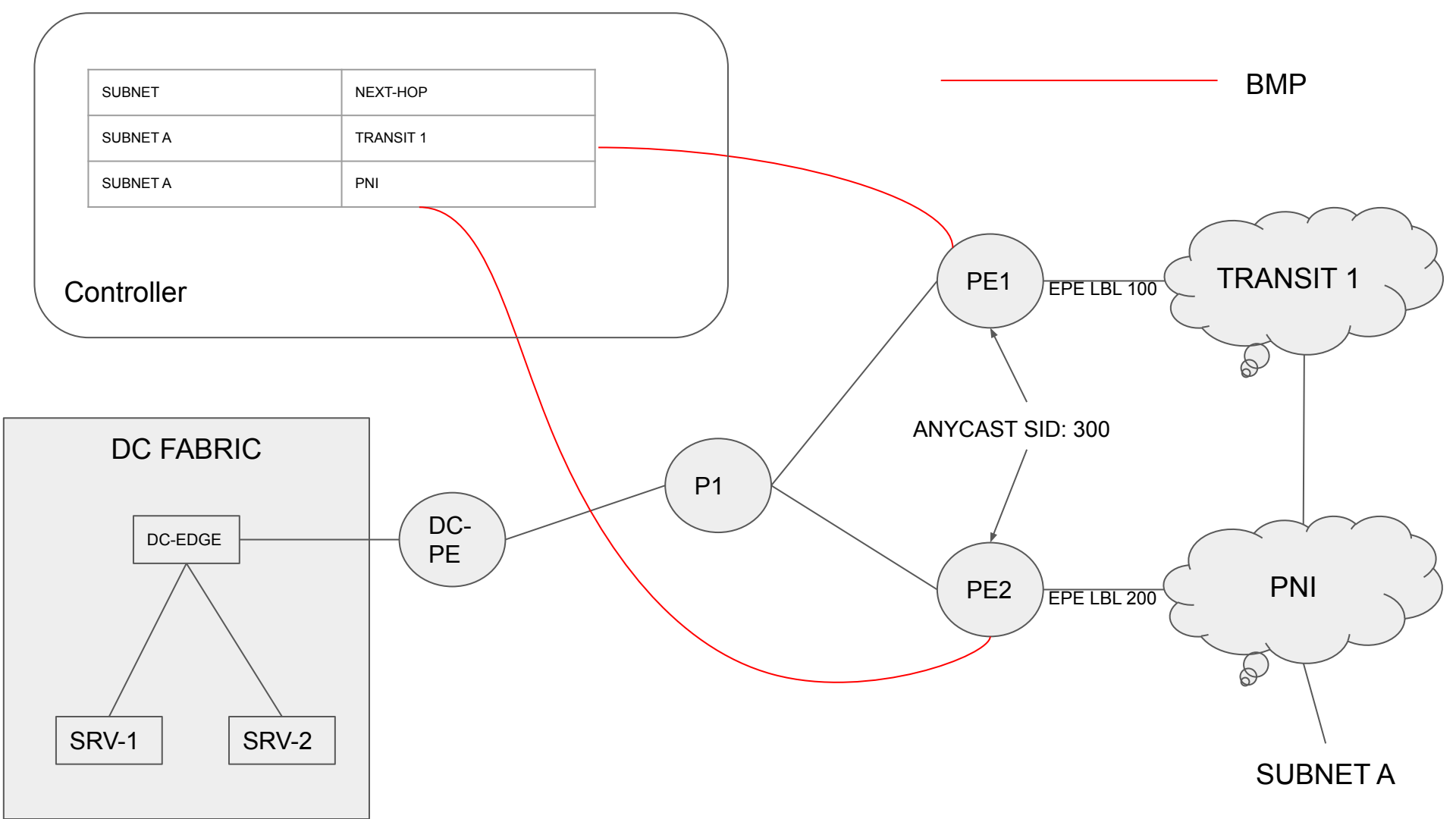
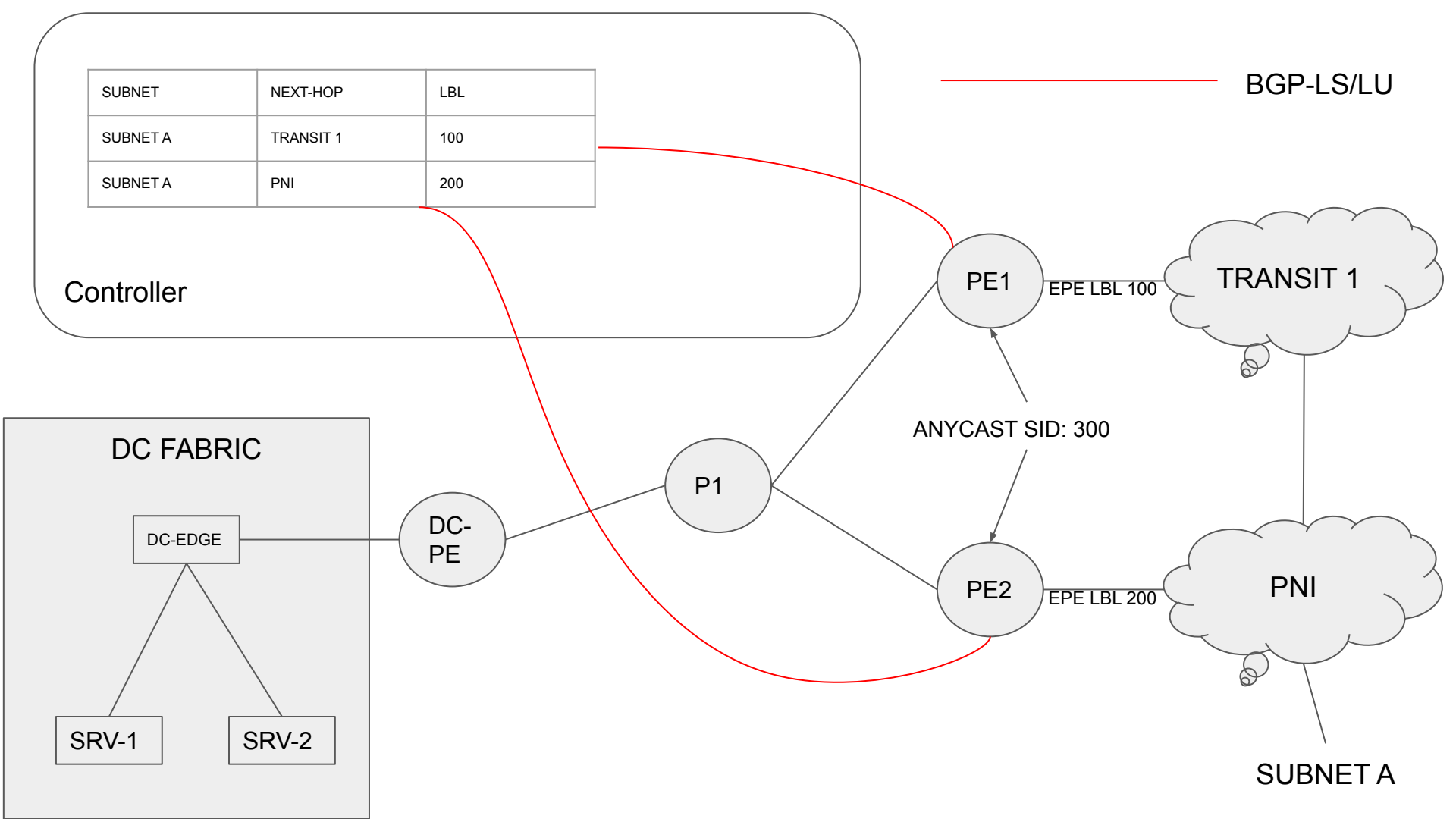
Requirements:

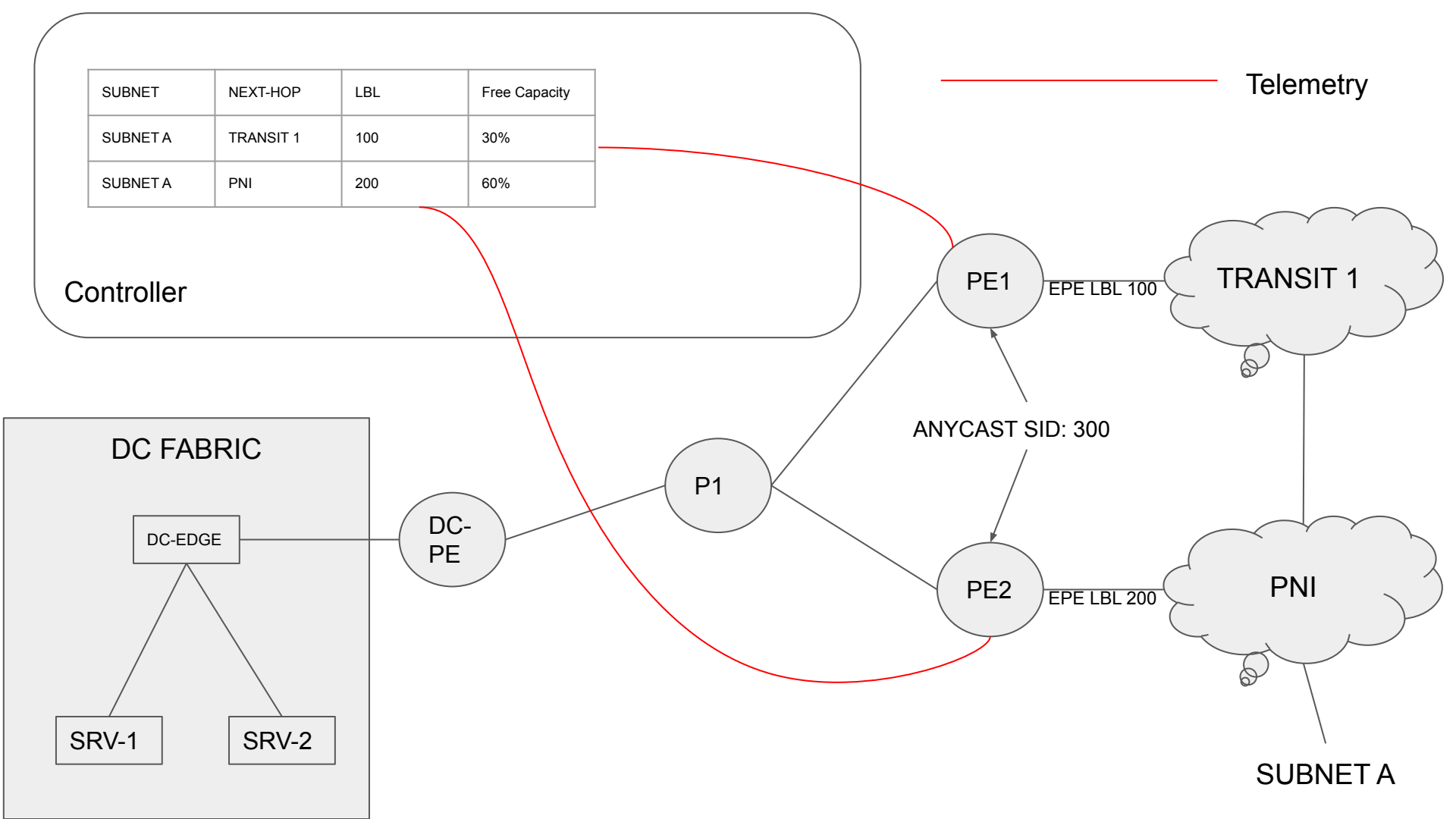
1. SRV1 to PNI will use TRANSIT 1 if available
2. SRV1 will fall back to PNI if TRANSIT 1 is not available
3. SRV2 to SUBNET A will use PNI
4. SRV2 will fall back to TRANSIT 1 if PNI is not available

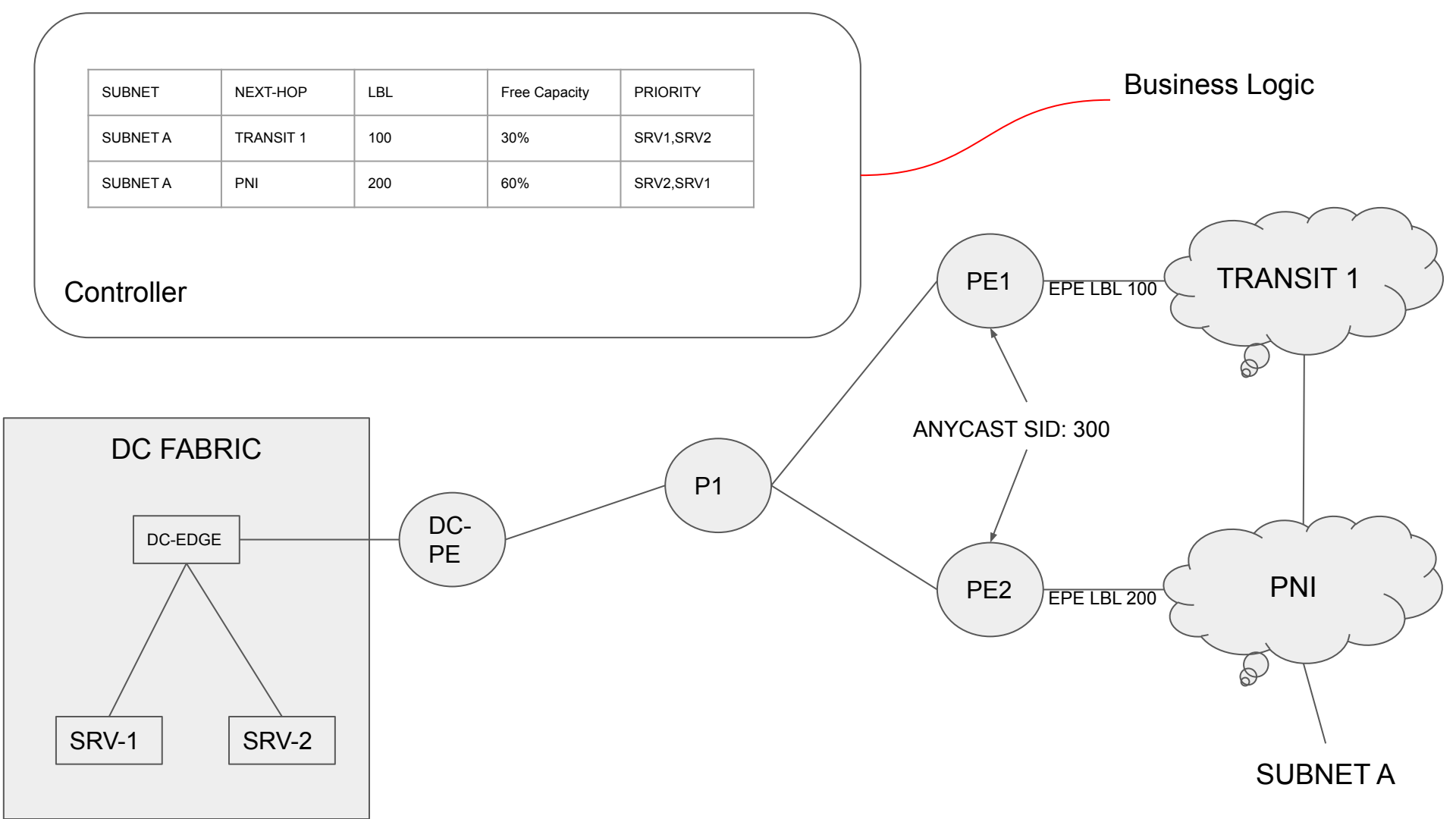
DC-PE , P1 , PE{1-2} are part of MPLS domain (SR based)

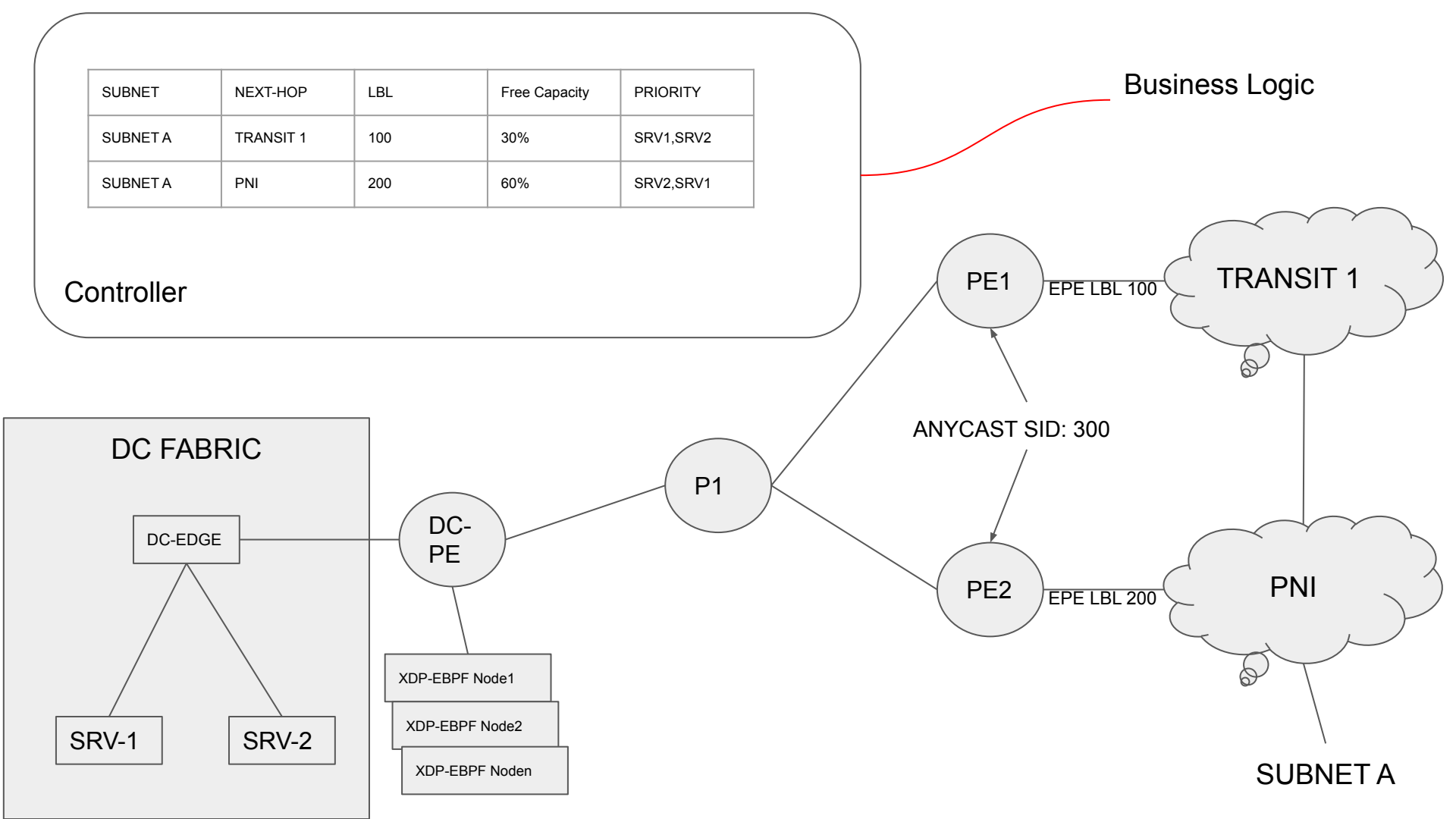



SUBNET
NEXT-HOP
SUBNET A
TRANSIT 1
SUBNET A
PNI
Controller
BMP
PE1
EPE LBL 100
TRANSIT 1
ANYCAST SID: 300
DC FABRIC
DC-EDGE
DC-PE
P1
PE2
EPE LBL 200
PNI
SRV-1
SRV-2
SUBNET A


SUBNET
NEXT-HOP
LBL
SUBNET A
TRANSIT 1
100
SUBNET A
PNI
200
Controller
BGP-LS/LU
PE1
EPE LBL 100
TRANSIT 1
ANYCAST SID: 300
DC FABRIC
P1
DC-EDGE
DC-PE
PE2
EPE LBL 200
PNI
SRV-1
SRV-2
SUBNET A


SUBNET
NEXT-HOP
LBL
Free Capacity
SUBNET A
TRANSIT 1
100
30%
SUBNET A
PNI
200
60%
Controller
Telemetry
PE1
EPE LBL 100
TRANSIT 1
ANYCAST SID: 300
DC FABRIC
DC-EDGE
DC-
PE
P1
PE2
EPE LBL 200
PNI
SRV-1
SRV-2
SUBNET A

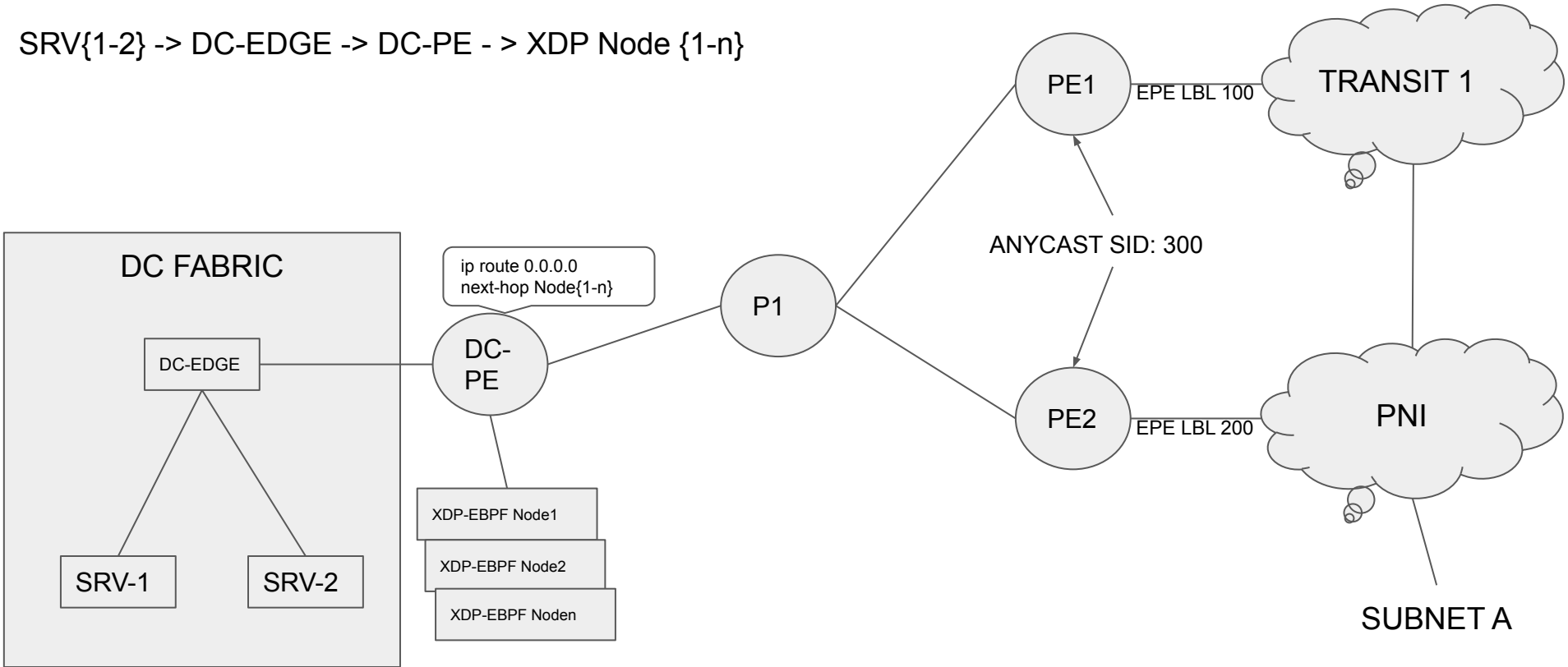

SUBNET | NEXT-HOP | LBL | Free Capacity | PRIORITY
SUBNET A | TRANSIT 1 | 100 | 30% | SRV1,SRV2
SUBNET A | PNI | 200 | 60% | SRV2,SRV1
Business Logic
Controller
PE1
EPE LBL 100
TRANSIT 1
ANYCAST SID: 300
DC FABRIC
DC-EDGE
DC-PE
P1
PE2
EPE LBL 200
PNI
SRV-1
SRV-2
SUBNET A


SUBNET | NEXT-HOP | LBL | Free Capacity | PRIORITY
SUBNET A | TRANSIT 1 | 100 | 30% | SRV1,SRV2
SUBNET A | PNI | 200 | 60% | SRV2,SRV1
Business Logic
Controller
PE1
EPE LBL 100
TRANSIT 1
ANYCAST SID: 300
DC FABRIC
DC-EDGE
DC-PE
P1
PE2
EPE LBL 200
PNI
XDP-EBPF Node1
XDP-EBPF Node2
XDP-EBPF Noden
SRV-1
SRV-2
SUBNET A

- Add XDP EBPF nodes into the network
- All nodes advertise an anycast ip
- DC-PE is configured to route all traffic to ANYCAST

Traffic flow is ip only:

SRV{1-2} -> DC-EDGE -> DC-PE - > XDP Node {1-n}



SUBNET	NEXT-HOP	LBL	Free Capacity	PRIORITY
SUBNET A	TRANSIT 1	100	30%	SRV1,SRV2
SUBNET A	PNI	200	60%	SRV2,SRV1

Controller

eBPF MAP priority_client

IP_SRC	NEXT-MAP
SRV2	BEST

eBPF MAP priority_dst

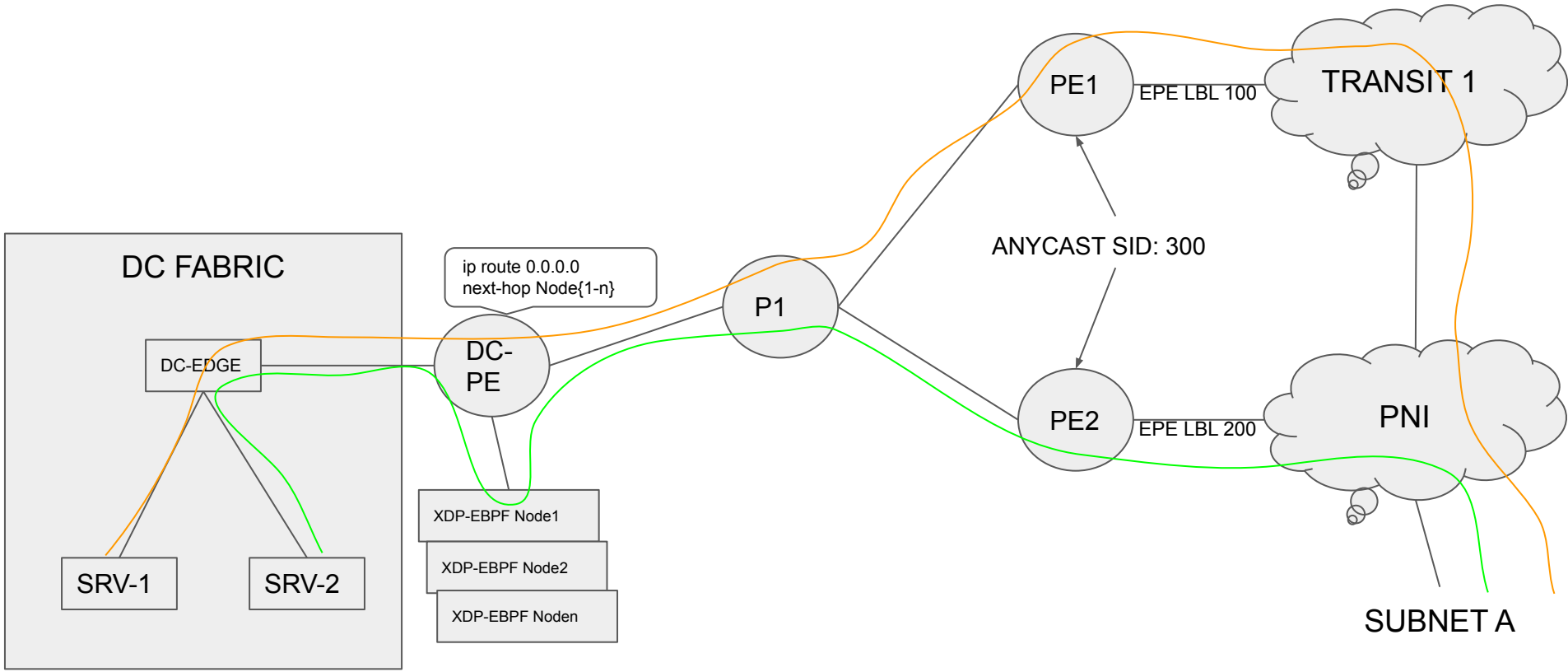
DEST	LBL
SUBNET-A	200
*	1000000

eBPF MAP default_dst

DST	LBL
SUBNET-A	100
*	1000000

- Packet received on eBPF node
- Lookup ip_src in SRC_MAP and get next_map
- Lookup ip_dst in next_map and get LBL
- If no match use 1000000 as label

Once Label is found
- Swap src_mac with dst_mac
- Add mpls header
- Send packet back to the same interface


DC FABRIC
DC-EDGE
SRV-1
SRV-2
ip route 0.0.0.0
next-hop Node{1-n}
DC-
PE
XDP-EBPF Node1
XDP-EBPF Node2
XDP-EBPF Noden
P1
PE1
EPE LBL 100
TRANSIT 1
ANYCAST SID: 300
PE2
EPE LBL 200
PNI
SUBNET A