

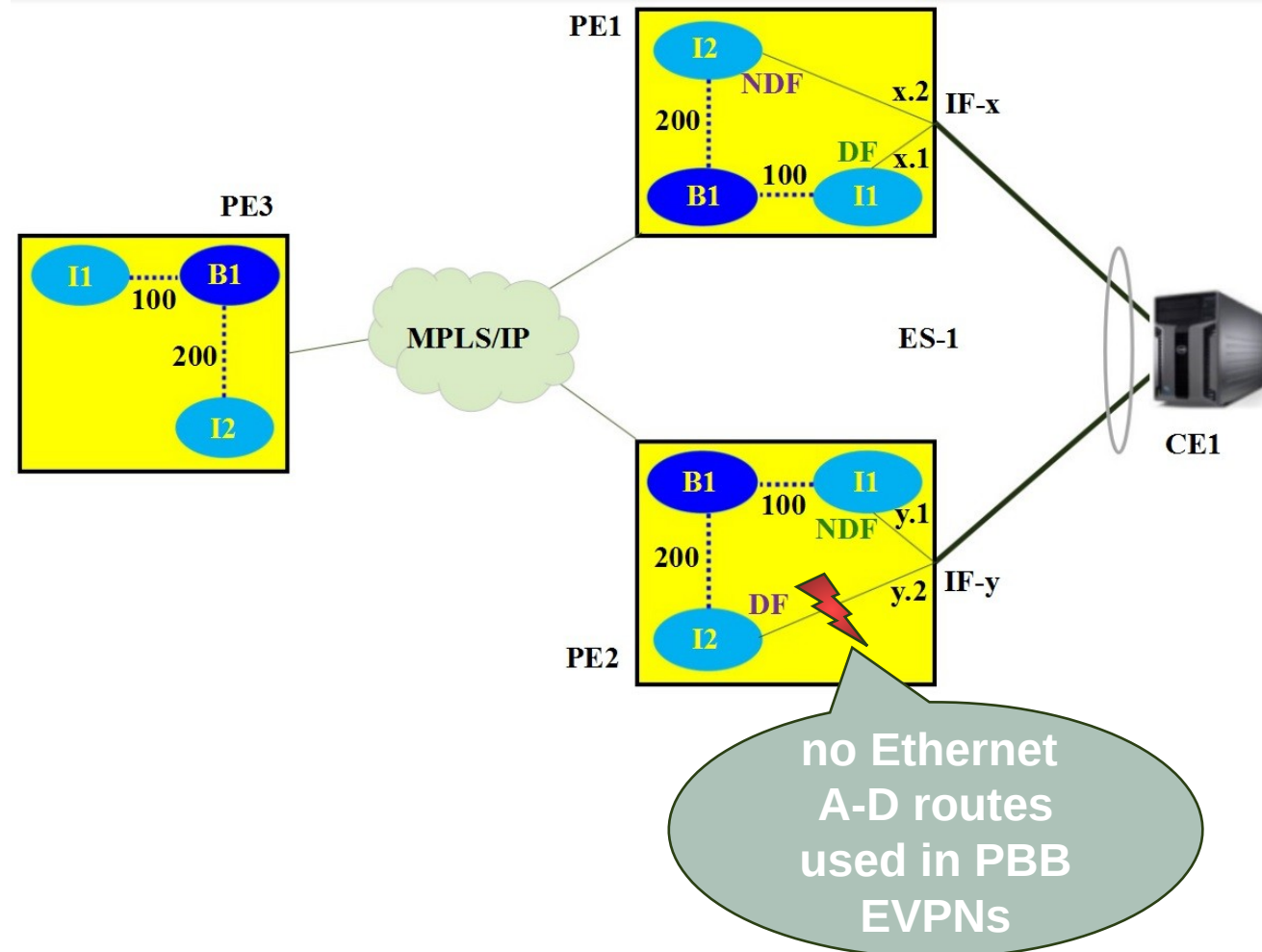
AC-DF per EVI

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Problem Statement

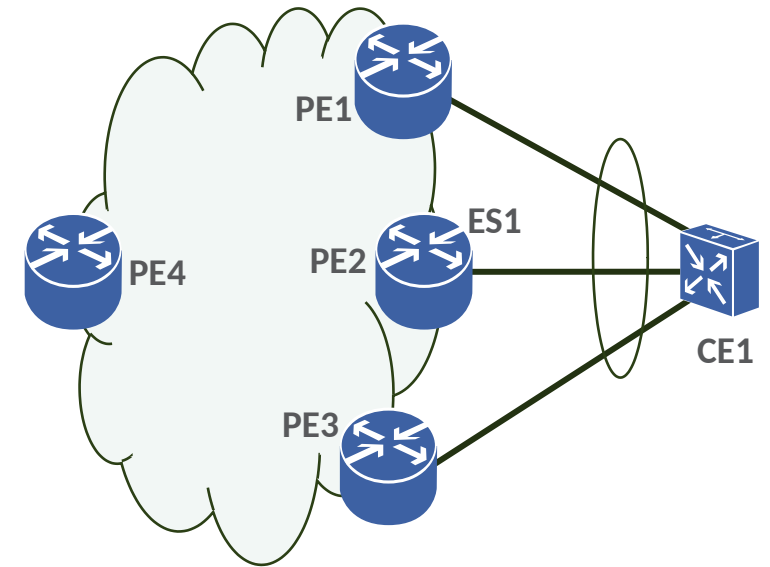
- IF-x and IF-y are two interfaces on ES-1
 - <ES-1, 100>'s DF is subinterface x.1, non-DF is subinterface y.1
 - <ES-1, 200>'s DF is subinterface y.2, non-DF is subinterface x.2
- No AC-DF for PBB EVPN
 - y.2 fails but IF-y still works
 - but <ES-1, 200>'s DF unchanged after that failure
 - so I-VPLS 200's BUMs (from PE3 to CE1) are dropped by x.2 even after that failure

Notes: I-VPLS I1's I-SID is 100, I-VPLS I2's I-SID is 200, and they use the same B-VPLS B1.



Comparison with vESI solution

Items	AC-DF per EVI Solution	vESI Solution
ESIs	one per port	one per subinterface
RT-4 Routes	one per port	one per subinterface
B-MACs	one per port	one per subinterface
Service Carving	auto	manual configuration
Ethernet A-D per EVI	none	none
Reverse EAD per EVI	one per failed sub-interface	none
DF Preference(DF Alg 2)	per port	per subinterface



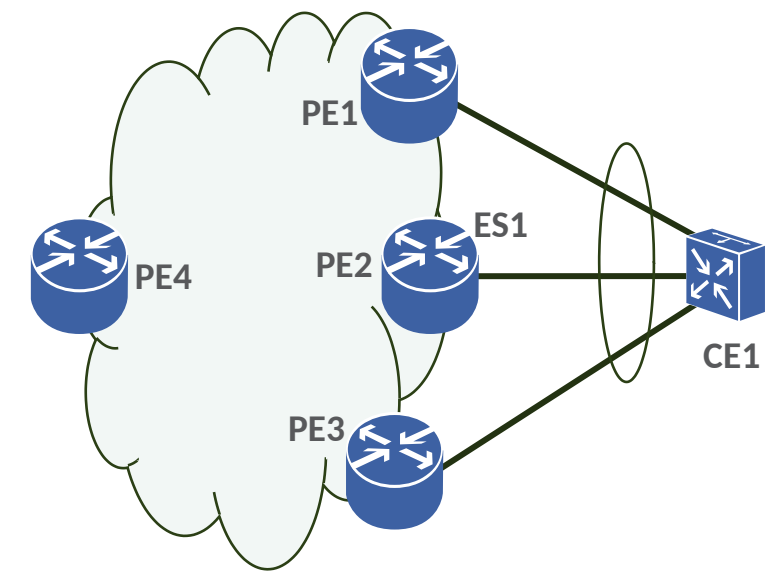
AC-DF per EVI Capability Encoding

0

1

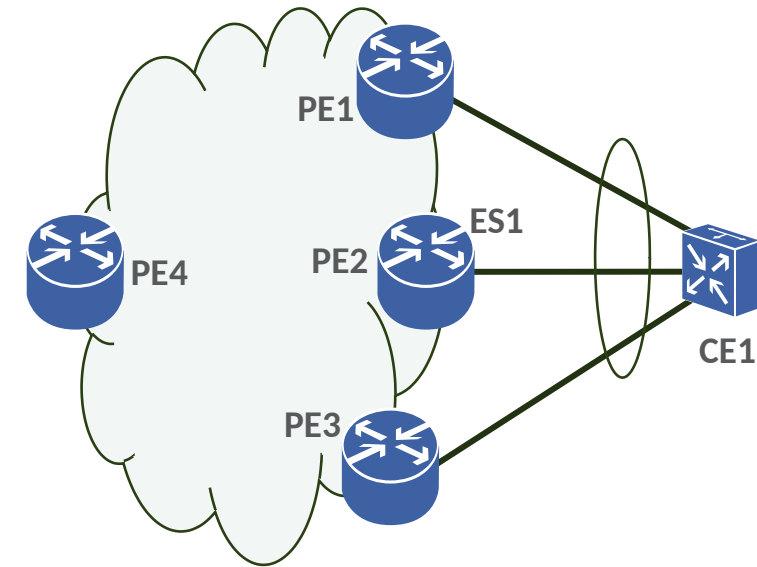
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AC-DF per EVI Capability Negotiation Use Cases

No.	PE1 Capabilities	PE2 Capabilities	PE3 Capabilities	Negotiated Capabilities
1	AC-DF per EVI	AC-DF per EVI	AC-DF per EVI	AC-DF per EVI
2	AC-DF per EVI	AC-DF	AC-DF (old device)	no Capabilities
3	AC-DF per EVI	AC-DF per EVI	no Capabilities	no Capabilities
4	AC-DF and AC-DF per EVI	AC-DF and AC-DF per EVI	AC-DF and AC-DF per EVI	AC-DF per EVI
5	AC-DF and AC-DF per EVI	AC-DF and AC-DF per EVI	AC-DF (old device)	AC-DF
6	AC-DF and AC-DF per EVI	AC-DF and AC-DF per EVI	AC-DF per EVI	AC-DF per EVI
7	DF Alg 1 and AC-DF per EVI	DF Alg 0 and AC-DF per EVI	DF Alg 2 and AC-DF per EVI	DF Alg 0 no Capabilities



Case 1~6: PE1,PE2 and PE3 use the same DF Alg which is also the negotiated DF Alg

Old Device: Old devices don't recognize the AC-DF per EVI Capability

Implementation Methods of Reverse EAD/EVI Route

- Method1: Based on Ethernet A-D per EVI
 - MP_REACH_NLRI on y.2's failure
 - ✓ Extended EVPN Layer 2 Attributes Control Flags
 - ✓ D bit: AC-Down on Advertising PE
 - MP_UNREACH_NLRI on y.2's recovery
- Method2: New Route type
 - MP_REACH_NLRI on y.2's failure
 - MP_UNREACH_NLRI on y.2's recovery

