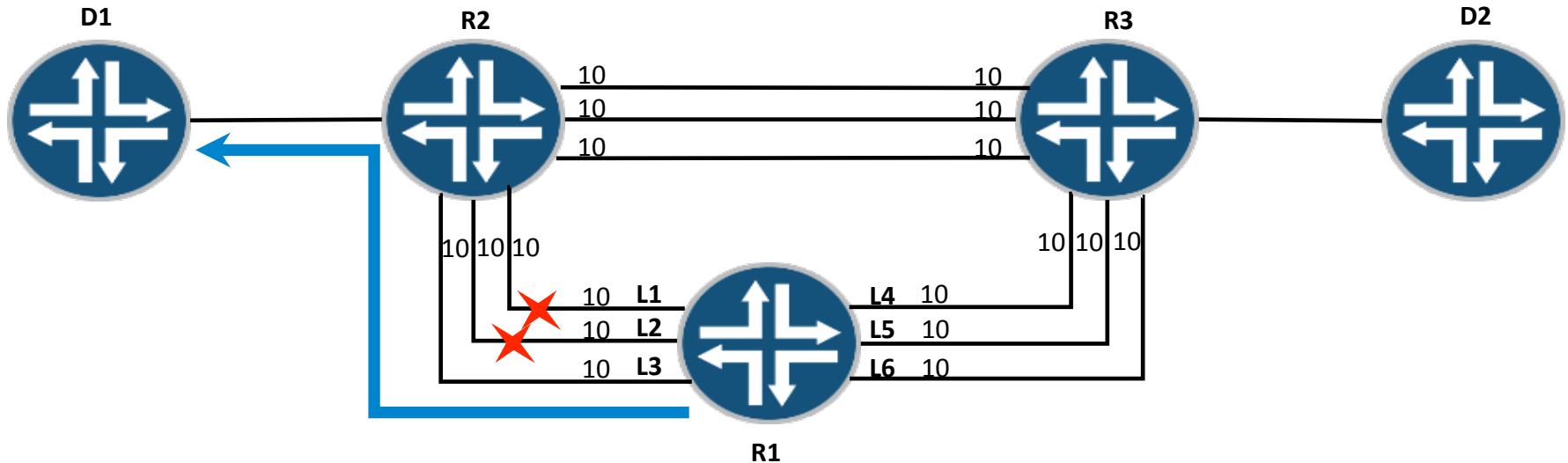# IGP bandwidth based metric

(draft-spallagatti-rtgwg-bandwidth-based-metric-00.txt)

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Problem Statement

- A path with lower cost is always preferred to reach destination.

- R1 can reach D1 via ECMP next-hops L1, L2 and L3.

- If Link L1 and/or L2 goes down L3 will still be best path to reach D1 from R1.

- R1 will use single next-hop (L3 - lower bandwidth path)to reach R1 when it could use less congested higher cost ECMP path L4, L5 and L6.

- Bandwidth critical applications needs bandwidth to be satisfied.
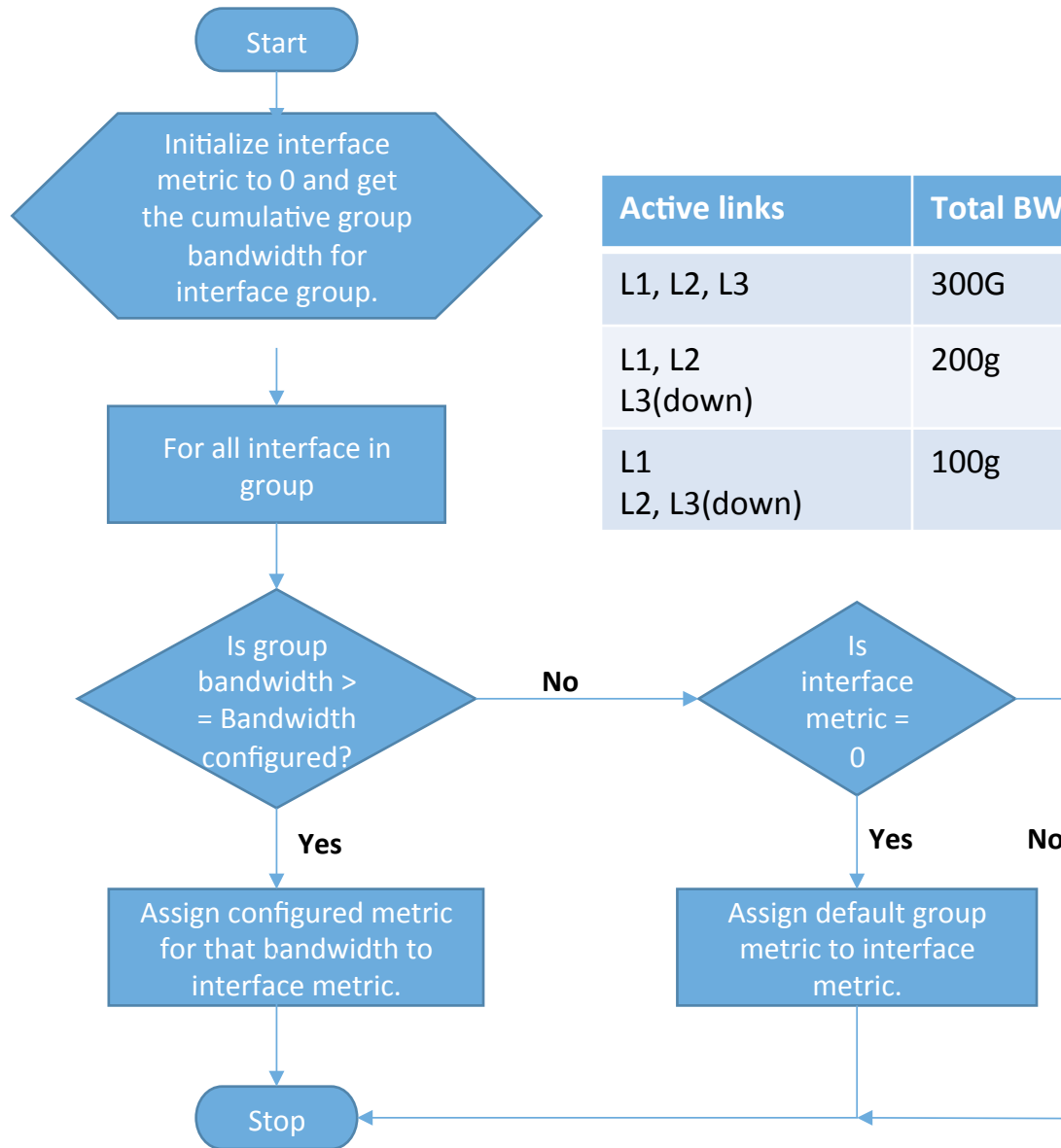
Desired behavior
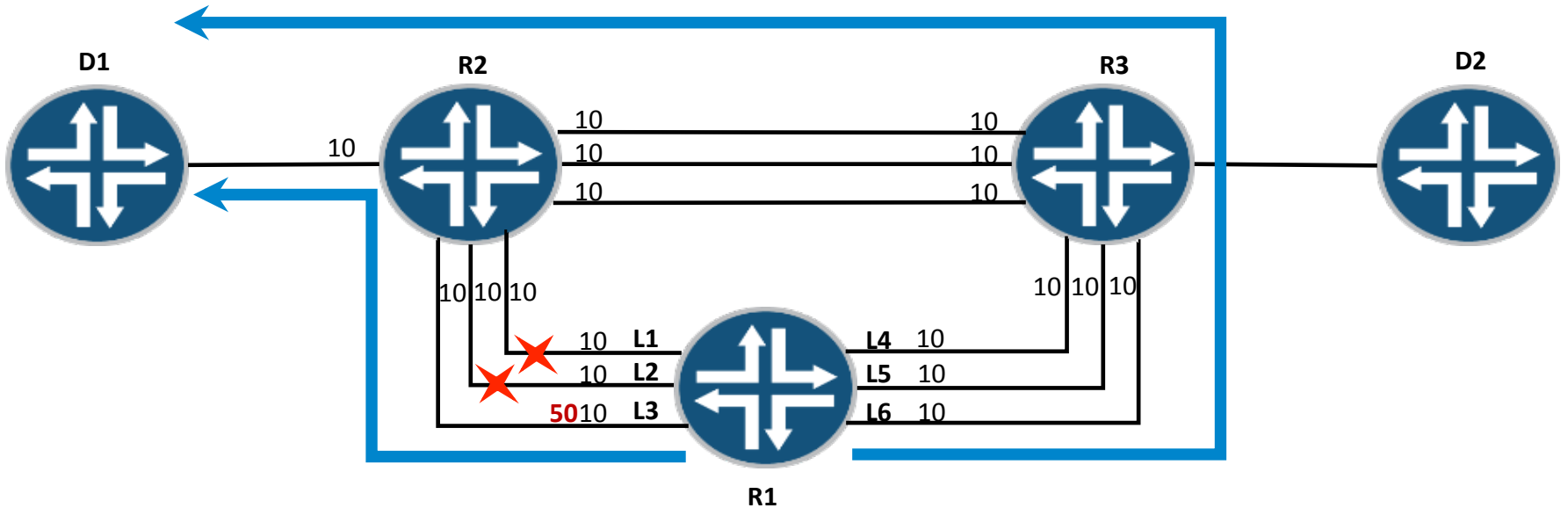
- Assume that link L1 to L6 are 100G each.

- Link L1 goes down and it is ok to use L2 and L3 keep metric 10.

- Link L2 also goes down, path L4, L5 and L6 could be used as that is less congested. Increase metric of link L3 to 50.

BBM - Interface Group
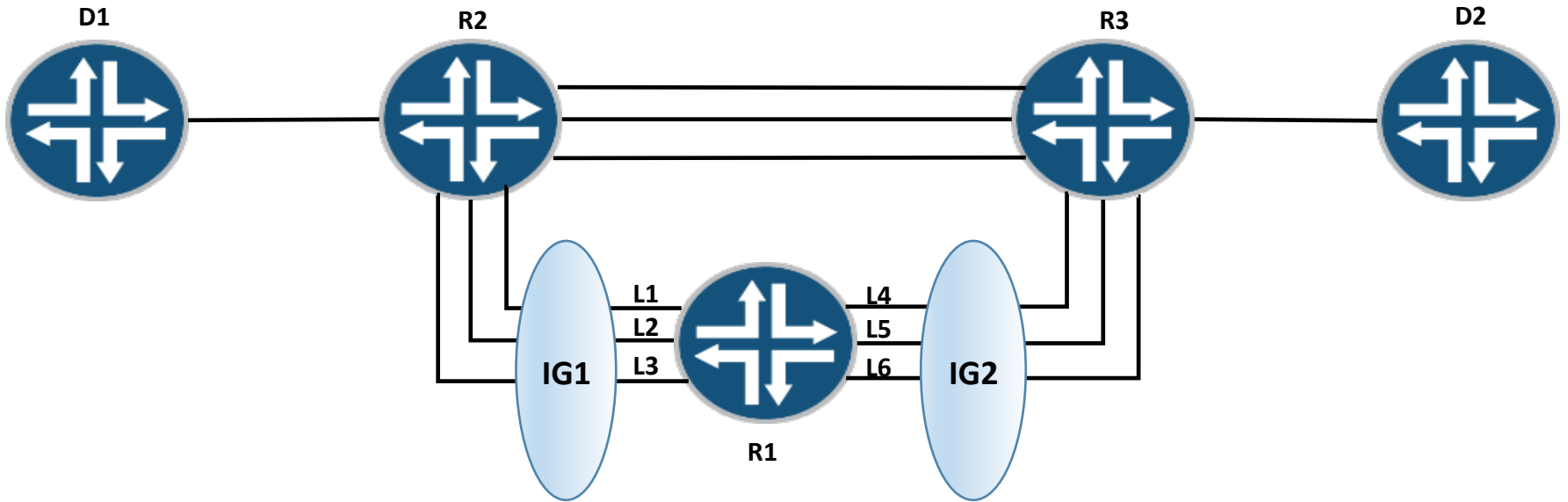
Group	Group Bandwidth	Metric
IG1	200 G	10
	100G	50
	Default	1000
IG2	200G	10
	100G	50
	Default	1000

BBM – Metric derivation

Active links	Total BW	BBM-metric	Remarks
L1, L2, L3	300G	10	Total BW >= 200
L1, L2 L3(down)	200g	10	Total BW >= 200
L1 L2, L3(down)	100g	50	200 > Total BW >= 100

Start

Initialize interface metric to 0 and get the cumulative group bandwidth for interface group.

For all interface in group

Is group bandwidth >= Bandwidth configured?

No →

Is interface metric = 0

Yes ↓ (from first diamond)

Assign configured metric for that bandwidth to interface metric.

Yes ↓ (from second diamond)

Assign default group metric to interface metric.

No

Stop

Thank you