

# Analysis of paths selection modes for Add-Paths

draft-vvds-add-paths-analysis-00

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# Agenda

- Quick reminder
- Rule out some path selection modes ?
- Next

# Add-Paths

- How to advertise multiple paths over a single iBGP session

# Goal

- draft-ietf-idr-add-paths-01.txt
  - Encode multiple paths to same NLRI over a BGP session
  - Doesn't tell which paths to select for advertisement
    - Different applications lead to different selection modes
    - (maybe) No interop issues when different path selection modes are applied by speakers in an AS

# Goal

- Informational draft
  - List the modes in one draft
  - Evaluate them (what it gives, what it costs)
  - Track potential interop issues

# Modes

- All paths
- N paths (max)
- AS-Wide best paths
- Neighbor-AS group best paths
- Best Loc Pref / Second best Loc Pref paths
- Decisive step -I
- (put your favorite mode here)

	Path optimality	Backup availability / optimality	Control plane load and stress	DP Complexity	MED osc. avoidance
All	OK	OK	Max	EASIEST	OK
N	good	OK / ~OK	Bounded	Hard or Okay (MED)	good
LPI/LP2	OK	OK	~MAX	EASIER	OK
Decisive-I	OK	OK	~MAX	Easy but "complex"	OK
AS-Wide	OK	KO / ~OK	~MAX	EASY	OK
Group best	KO ...	KO	~MAX	?	OK

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# Add-N-Paths

- My preferred
  - Does what we're really looking for
  - Bounded, "easily" predictable overhead
- If you'll only implement one, pick this one
  - Fails to provide some guarantees

# Coming soon

## Mix

- Different modes on different routers
  - Vendors making different choices
- Different modes for different sessions
  - One vendor allowing different modes for different “session types”

# “Session type” dependent mode

- Do Add-All-Paths / Add-LPI-LP2
  - over sessions with your RRs
  - over normal sessions
- Do Add-2-Paths
  - over session with your RR clients



# Why ?

- No longer issue a show ip bgp on your ASBRs...
- Fast BGP Add-Path Control Plane Convergence
  - RR -> RR-client updates only
- ASBRs loaded/stressed like with Add-2-Paths

# Coming soon configuring add-paths (?)

- per AFI/SAFI
- per prefix
- per session type
- “dynamic”