

Design Concern	BGP Add Path	BGP Shadow RR	BGP Shadow Sessions	MPLS Unique RD per PE per VRF
Best in MPLS	No	No	No	Yes
How many IBGP Session between RR and RR-Client	One IBGP session, Path IDs are different for different next-hop	One session per route reflector. If there is only one more Shadow RR which sends second best path, two IBGP sessions on the RR Client, one for each RR	One session per next-hop. Only one RR but multiple separate IBGP session is required between RR and RR Client	One IBGP session between VPN RR and RR Client, different RDs make the same IP prefixes unique
Resource Requirement	Best	Worst, requires separate RR and IBGP session per next-hop	Better than Shadow RR because doesn't require separate Route reflector, worse than ADD path because require extra IBGP session per next-hop	Same as Add-path, doesn't require extra IBGP session or Route Reflector
Migration of existing Route Reflectors	Very hard, all Route Reflectors and clients need to be upgraded to support Add-path	Easy, only Route Reflector code needs to be upgraded	Easy, only Route Reflector code needs to be upgraded	Easiest because there is no upgrade on any device. Only unique/separate Route Distinguisher needs to be configured on the PEs per VRF
Standard Protocol	Yes IETF Standard	Yes IETF Standard	Yes IETF Standard	Yes IETF Standard
Stuff Experience	Not well known	Not well known	Not well known	Known
Troubleshooting	Hard, default behaviour of BGP which is advertising only one best path is changing. Operation stuff needs to learn new troubleshooting skill	Easy	Easy	Easy
IPv6 Support	Yes	Yes	Yes	Yes
Provisioning	Easy, only one IBGP session between Route reflector and the client	Hard, one IBGP session per next-hop	Hard, one IBGP session per next-hop	Easiest, only the consideration is to have unique RD per VRF per PE