

Design Concern	Option A	Option B	Option C
Scalability	Less scalable, due to VRF and sub interface configuration requirement for each customer VPN	Scalable since VRF doesn't have to be provisioned on the ASBR and no need to have separate VRF per customer	Very scalable since doesn't have to have VRF and VPN information on the ASBRs, VPN information is kept on the Router Reflectors
Secure	Most secure since routing information is not shared between the domains	Secure since only interlink between ASBR is leaked between domains if next-hop self is not implemented on the local ASBR	Worst. All the PE loopback subnets and the Route Reflector subnets need to be leaked between two Autonomous Systems. Thus, Option C is preferred between the two AS of the same company, not between two different companies.
Quality of Service support	Most flexible but hard to manage	Only MPLS EXP bits and one link for every customer	Same as Option B, 3 EXP bit for every customer but easy to manage compare to Option A
Staff Experience	Easy to understand, reduces training cost	Moderate, MPLS VPN operation needs to be understood	It requires MPLS VPN, route reflector knowledge so training cost would be high and hard to find already experienced engineers
MPLS between Carriers	No	Yes	Yes
Complexity	Easy	Hard to implement and understand	Most complex
Resource Requirement on the ASBR	VRF, VPN and BGP info on the ASBR that's why require too much resource on the ASBR	Moderate, ASBR doesn't keep VRF information of all the customers but still VPN routing table is kept for the all customers on the ASBR	Best. ASBRs doesn't have to keep VRF or VPN information for all the customers. If ASBR also a PE, then it only keeps VRF routing table and the VPN route information for the directly connected customers.
Default Converge in case of a ASBR failure	Slow, VRF, RIB, FIB, LFIB needs to converge	Fast, only LFIB needs to converge	Very fast due to only LDP adjacency between ASBRs
Troubleshooting	Easy	Moderate	Hard, requires MPLS VPN, Route reflector and good routing knowledge
Redistribution	Yes for each customer VRF	Only interlink between two domains are redistributed if the next-hop self is not implemented on the local ASBR	Yes Provider Edge router loopbacks and Route Reflector subnets
Merger&Acquisition	Not suitable if there is time constraint for the operation each and every customer VRF needs to be provisioned thus it requires very long time for the migration	Requires MPLS between ASBRs and VPN configuration on the ASBRs but there is no configuration for each and every customer thus operation can be much faster compare to Option A migration	Same as Option B additionally, since it is required to leak internal routing information between two AS, Option C is suitable for the same company's different administrative domain. That's why it is very suitable for the company merger design