

OSPF Summarization:

- o Consolidation of multiple routes into one single advertisement is called Summarization.
- o Process of summarizing subnets into larger subnet to be advertised to upstream routers
- o A feature allows Routing Protocols to summarize its routes to their classful networks.
- o OSPF can do the summarization but it is impossible to summarize within an area.
- o The route summarization helps to reduce OSPF traffic and the route computation.
- o OSPF, unlike EIGRP, doesn't support automatic summarization or route aggregation.
- o Summarization between areas can be done on ABR by using single command under OSPF.
- o The area-id= command Identifier of the area about which routes are to be summarized.
- o OSPF can summarize the routes only on the **Area Boarder Router (ABRs) and on ASBRs**.
- o Inter-Area route summarization can only be done on the Area Boarder Router (ABR).
- o This means to summarize routes from one particular area into the another OSPF Area.
- o External route summarization is specific to external routes that are injected into OSPF.
- o OSPF summarize on an ABR or ASBR and OSPF can only summarize LSA type 3 and 5.
- o OSPF Summarization reduce Type 3 flooding and saves router CPU and RAM resource.
- o Summarization can be used for route manipulation by using longest match prefix concept.

Advantages of Summarization:

Saves Memory	Routing tables will be smaller which reduces memory requirements.
Saves Bandwidth	There are less routes to advertise so we save some bandwidth.
Saves CPU Cycles	Less packets to process and smaller routing tables to work on.
Stability	Prevents routing table instability due to flapping networks.

Routing tables increase in the number of entries as more and more networks are connected to the OSPF domain. To reduce the size of the routing table and LSDB, network prefixes must be summarized. Route summarization improves OSPF performance as fewer network entries are required. Route summarization involves consolidating multiple routes into a single advertisement. Proper route summarization reduces the bandwidth, memory, and CPU resources consumed by the OSPF process. OSPF routes can only be summarized between areas. Interarea route summarization is configured on ABRs using the area area-id range network subnet-mask [advertise | not-advertise] [cost metric] router configuration command.

