RFC 2328 OSPF VER2

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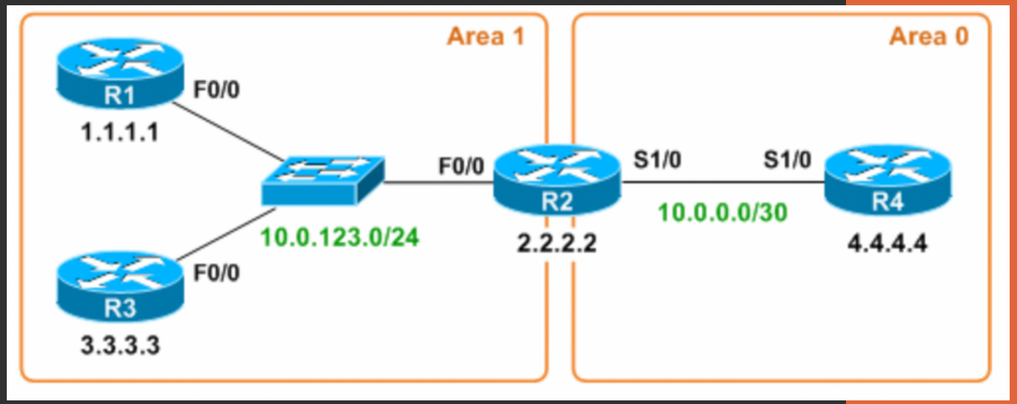
INTRODUCTION

OSPFv2 stands for Open Shortest Path First version 2. It is a link-state routing protocol. It is designed to be run internal to a single Autonomous System. Each OSPF router maintains an identical database describing the Autonomous System's topology. From this database, a routing table is calculated by constructing a shortest-path tree.

The metric that OSPFv2 uses is cost. It is an unsigned 16-bit integer in the range of 1 to 65,535.



PURPOSE OF PROTOCOL

It enables the flexible configuration of IP subnets. Each route distributed by OSPF has a destination and mask.
It also allows sets of networks to be grouped together called an area. The topology of an area is hidden from the rest of the Autonomous System. This information hiding enables a significant reduction in routing traffic.
Also, routing within the area is determined only by the area's own topology, lending the area protection from bad routing data.

MESSAGE FORMAT/ARCHITECTURE DETAILS

It uses flooding to exchange link-state updates between routers. Any change in routing information is flooded to all routers in the network. Areas are introduced to put a boundary on the explosion of link-state updates. All routers within an area have the exact link-state database. Routers that belong to multiple areas, and connect these areas to the backbone area are called area border routers (ABR).

The router links are an indication of the state of the interfaces on a router belonging to a certain area. Each router will generate a router link for all of its interfaces. Summary links are generated by ABRs; this is how network reachability information is disseminated between areas. Normally, all information is injected into the backbone (area 0) and in turn the backbone will pass it on to other areas. ABRs also have the task of propagating the reachability of the ASBR. This is how routers know how to get to external routes in other ASs.

USAGE

OSPFv2 is used in IPv4 networks. It was created for its use in large networks where RIP failed. This also improved the speed of convergence, provided for the use of VLSMs, and improved the path calculation.

CONCLUSION

OSPFv2 is used in large enterprise IPv4 networks.
It has a lot of characteristics like link-state routing protocol, cost metric, fast convergence, reduced bandwidth use. It makes use of Dijkstra's algorithm to calculate the SPF tree.
It also has very good scalability, which is recommended for large networks.

THANK YOU

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