

Review on Enhanced Interior Gateway Routing Protocol

Aditi Chadha¹ and Anuj K. Gupta²

¹ RIMT-IET, Mandi Gobindgarh

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Abstract

Routing means to select path in a network and forward a packet through the network to another device on different network. Routing protocols play a vital role in computer network infrastructures. In this research comparison of various routing protocols is made. It been seen that OSPF and EIGRP are the protocols mostly used nowadays. On comparison, EIGRP is considered as the best routing protocol because it maintains the backup routes and also due to its simple configuration and also it supports the unequal cost load balancing which is not supported by other routing protocols.

Index terms— EIGRP, DUAL, OSPF, RIP, hybrid.

1 Introduction

outing means to select path in a network and forward a packet through the network to a device on a different network. Routing protocols play a vital role in computer network infrastructures. Routers know that how to find the remote network if a network is directly connected to the router but if network is not directly connected to the router then there are two ways to get to the remote network: Dynamic routing and Static routing. Static routing means to manually type all network locations into the routing table whereas dynamic routing protocols automatically inform all the routers about the event. Thus in large networks the combination of both static as well as the dynamic routing protocol are used. IP routing is to move the packets from one network to another network by using routers. There is a difference between routed protocol and routing protocol. Routers use routing protocol to dynamically find all the networks in the internetworks and ensure that all routers have the same routing table. Routing protocol also determines the path of a packet through an internetwork. Some of the examples of routing protocol are RIP, EIGRP, OSPF. Whereas, routed protocol is used to send packets through the established enterprise. Examples of routed protocol are IP and IPv6. To route a packet the router must know the following: ? Destination address. ? Neighbor routers which tells about remote networks. ? Routes possible to all remote networks. ? Determines the best route to each remote network. ? How to verify and maintain routing information.

2 II. Classification of Routing Protocols a) Distance Vector Routing Protocol

This protocol finds the best path to a remote network by determining the distance. In this every time packet travels through a router which is named as a 'hop'. The route that has the least number of hops is considered as the best route. The direction of the network is indicated by using the vector. RIP and IGRP is the distance vector routing protocols which sends the entire routing table to directly connected neighbors. IV.

3 Conclusion

In this paper, the taxonomy of routing protocol is discussed and also classifies the different routing protocols. From the whole it is concluded that Distance vector routing protocol finds which sends the entire routing table to directly connected neighbors whereas link state routing protocols maintain the three tables. Hybrid protocol

42 considers the best of both above mentioned routing protocols. Thus hybrid routing protocol that is EIGRP is
 43 the best of other routing protocols like OSPF and RIP. But sometimes it is seen that while configuring EIGRP
 is not able to achieve maximum efficiency due its some in-built features. ^{1 2}

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? RIP (Routing Information Protocol): In this the best path to a network is determined by using only hop counts. But if more than one link with same hop count to the network is obtained then RIP automatically perform a round-robin load balancing. RIP can consider up to six equal-cost links. The disadvantage of this protocol is that the problem arises when the two links to a remote network have the different bandwidth but same hop counts. ? protocol which is used in large networks. It uses an autonomous system number for activation and gives a full route table update after every 90 seconds. It uses use the bandwidth and delay as a metric to determine the best route to an internetwork. IGRP has the maximum hop count of 255(default as 100). IGRP is no longer supported by the Cisco. b) Link-State Routing Protocol In this the routers maintain the three separate tables. Volume XIII Issue VI Version I (D D D D D D D D)

[Note: ? Reported/advertised distance: The neighbor that reports the metric of a remote network is known as ?
 ? Backup Routes: EIGRP is the only routing protocol that supports backup routes. As in other routing protocols like OSPF, loose its best route in a network due to some failure then it has to broadcast for a help whereas EIGRP simply look at its backup routes which are maintained in the topology table. ? Simple Configuration: EIGRP considers the best of both distance-vector and link-state routing protocol.E]

Figure 1: Table 1 :

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