Difference between RIPv1 and RIP v2

1) Classful & Classless routing

Classful routing : Routing Protocol that do not send subnet mask information when a route update is sent out. All devices in the network must use the same subnet mask

Eg : RIP V1

Classless routing : Routing that sends subnet mask information in the routing updates. Classless routing allows VLSM(Variable Length Subnet Masking)

Eg : RIP V2

Routing Information Protocol Version 1 (RIPv1)

• RIPv1 is a Distance- Vector Routing protocol.

• RIPv1 is a Classful routing protocol. Classful routing protocols support only the networks which are not subnetted. Classful routing protocols do not send subnet mask information with their routing updates. In other words, if you have a subnetted network in your RIPv1 routing domain, RIPv1 will announce that network to other as unsubnetted network.

• RIPv1 does not support VLSM(Variable Length Subnet Masking).

• RIPv1 support maximum metric (hop count) value of 15. Any router farther than 15 hops away is considered as unreachable.

• RIPv1 send routing updates periodically every 30 seconds as broadcasts using destination IP address as limited broadcast IP adddress 255. 255. 255. 255. Since the updates are sent using the destination IP address of limited broadcast IP adddress 255. 255. 255. 255, every router need to process the routing update messages (whether they are running RIPv1 or not).

• RIPv1 does not support authentication of update messages (plain-text or MD5).

Routing Information Protocol Version 2 (RIPv2)

RIPv2 is a Hybrid Routing Protocol. A Hybrid Routing Protocol is basically a Distance- Vector protocol which some characteristics of Link State routing protocols.

RIPv2 is classless routing, which allows us to use subnetted networks also. RIPv2 has the option for sending network mask in the update to allow classless routing.

• RIPv2 support VLSM(Variable Length Subnet Masking).

• RIPv2 support maximum [metric](hop count) value of 15. Any router farther than 15 hops away is considered as unreachable.

• RIPv2 supports triggered updates.

• RIPv2 routing updates are sent as [Multicast traffic](at) destination multicast address of 224.0.0.9. Multicast updates reduce the network traffic. The Multicast routing updates also helps in reducing routing update message processing overhead in routers which are not running RIPv2. Only the routers running RIPv2 join to the multicast group 224.0.0.9. Other routers which are not running RIPv2 can simply filter the routing update packet at Layer 2.

• RIPv2 support [authentication of RIPv2 update messages](plain-text) (plain-text or MD5). [Authentication](helps) in confirming that the updates are coming from authorized sources.