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AppleTalk Phase 2: Split Horizon RTMP

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TOPIC -----

We have a large Internet distributed over five major hubs arranged in a star pattern. The main hub network (Network A) has a Hayes InterBridge half-bridge (using Hayes V9600 modems) to each of four other sites (Network B, Network C, Network D, and Network E). In addition to the main connection to Network A, Network D has a Hayes InterBridge half-bridge (with V9600 modems) to Network B and another to Network C. These redundant links have been working fine under AppleTalk Phase 1, and we expect them to work under AppleTalk Phase 2.

Questions

- 1) With these redundant links, will we see the benefit of the split horizon RTMP on the routers that make up this redundant link? If we highlighted the circular route that exists through the redundant links, would the routers on this path show a reduction in the size of the RTMP tables that are sent from each port of the InterBridge?
- 2) On the link to Network E, where there is no redundant link, will the size of the RTMP packets sent over the modem link be reduced versus the size of the packets under AppleTalk Phase 1? An example, assuming that there are five network numbers at Network E and 95 network numbers elsewhere in the network, AppleTalk Phase 1 would imply that there are 100 network entries in the RTMP packets sent from each end of the modem link. Would this number decrease to 95 from Network A to Network C and only five from Network C to Network A, which would, in effect, yield a reduction in overhead of 50% on this slow link?

DISCUSSION -----

- 1) Split horizon reduces the number of redundant routing table entries exchanged by routers. The split horizon algorithm is: all entries whose forwarding port in the routing table is equal to the port out that the entry is being sent are omitted from the RTMP data packet. In other words, Router A will not include network numbers in RTMP packets broadcast on Network X when Network X is the path (forwarding port) for Router A to reach these other networks. The forwarding port is the shortest distance, in hops, from the sending router.

If there is more than one route from Network A to Network X, the router in Network A stores in its routing table the shortest distance, in hops, to Network X. If more than one of these routes is the same distance, in hops, and is the shortest distance, the router's routing table will be modified each time an RTMP packet is received from Network X via this route.

The split horizon algorithm reduces the amount of RTMP data broadcast onto the Internet. The RTMP data would be less if there were no redundant links. From what you have told us of the customer's Internet, the redundant links do not eliminate the benefits of the split horizon algorithm.

- 2) You are correct, an AppleTalk Phase 1 router would broadcast an RTMP packet that contained 100 network tuples to Network A and Network E networks. An AppleTalk Phase 2 router will broadcast an RTMP packet containing 95 network tuples on the TriCounty network and only five network tuples on Network A.

Note: Hayes has recently released a ROM upgrade for the Hayes InterBridge that is necessary for AppleTalk Phase 2 compatibility.
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