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## AURP: History, Architectural Model, and Events (2/93)

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### TOPIC -----

This article describes AppleTalk Update-Based Routing Protocol (AURP) history, architectural model, and AURP events.

### DISCUSSION -----

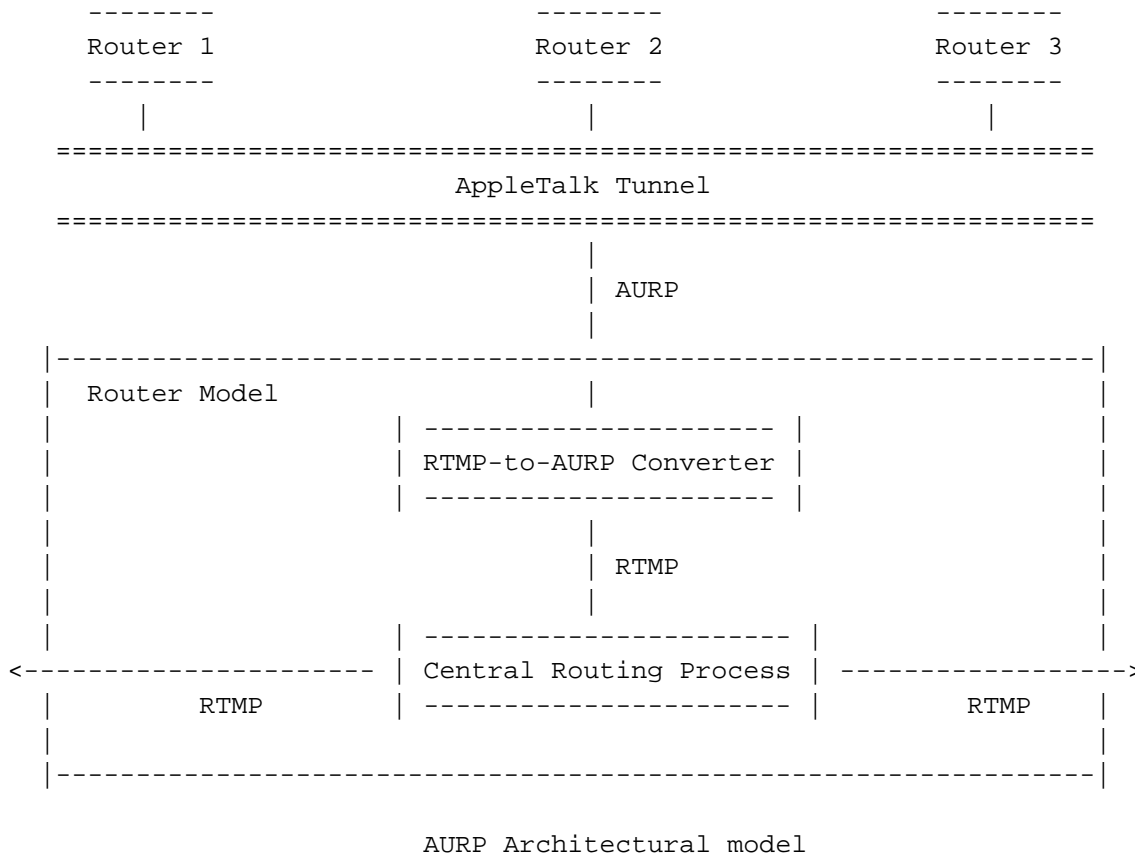
Routing Table Maintenance Protocol (RTMP) works by having the router tables broadcast to other routers every 10 seconds. This transportation of data can reduce network bandwidth as well as incur traffic costs on lines that are per/packet charged. Originally this implementation worked fine because networks existed primarily in LAN configurations, and in LAN environments the overhead incurred by RTMP was not significant. The development of AURP has been going on for quite some time. AURP has been under development for over 2 years in concert with the Internet Engineering Task Force (IETF). This group works on networking issues and in the case of AURP has helped to define the standard for AURP.

As networks branch out in terms of connectivity there is a need to support solutions such as half-routing and network tunneling. Half-routing, is good in that it is inexpensive, but it doesn't have high bandwidth. LocalTalk is 230 kbps and the router requires a minimum of 9600 bps modems for half-routing. It is not difficult to see that the through-put will be less in the half-routing environment. The problem is that while LocalTalk can afford the overhead of RTMP traffic it become problematic on lower capacity links. With the ability to tunnel and interconnect large internets, if the RTMP model was still being used there would be significant bandwidth reduction as a result of propagating the routing information between tunneled networks.

### The AURP Architectural Model

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The goal of AURP is to provide all the functionality of RTMP and Zone Information Protocol (ZIP) with almost none of the traffic overhead currently associated with these AppleTalk routing protocols. AURP only exports information about networks in its local AppleTalk internet. This is known as split-horizon data reduction. That is, AURP never exports information about networks accessible out the tunnel. In the simple case

it would be like we are having a conversation and I tell you that by the way I can talk to you. This wouldn't be very useful to know since we are already talking. In the following figure we see how an exterior router supports both RTMP and AURP.



Routers will speak AURP out the tunnel via an RTMP to AURP converter. This allows the new router to extend the network while maintaining compatibility with the internet that it will be connected to.

#### AURP Events

It is important to remember that a router will notify other connected routers of certain events that take place. The following is a list of the type of events that will be sent to routers that have requested notification if these updates occur:

- The addition of a new, exported network, that is visible to the receiving router.
- A change in the path to an exported network—which causes the exterior router to access that network through its local internet, rather than through a tunneling port.
- The removal of an exported network from the exterior router's routing table.
- A change in the path to an exported network—which causes the exterior

router to access that network through a tunneling port, rather than through its local internet.

- A change in the distance to an exported network.
- A change to a zone name in the zone list of an exported network—an event not currently supported by ZIP.
- The exterior router goes down or is shut down.

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