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Apple License Mgr: How Much Network Traffic Generated? (2/94)

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TOPIC -----

I need some information on Apple License Manager, which controls the software serial number tracking feature of AppleShare 4.x. I understand that Apple License Manager searches across the network to check serial numbers.

My questions are:

- How much network traffic does Apple License Manager generate?
- How often do the searches occur?
- Does Apple License Manager search LAN or WAN wide?
- How big are the packets?
- When a serial number violation is found, is server performance affected in any way?

DISCUSSION -----

We designed Apple License Manager (ALM) to keep the generated traffic as low as possible, especially when two LANs are connected by a router over a slow link such as X.25. This is one of the reasons we did not use Name Binding Protocol (NBP) directly. The Apple License Manager implements a new protocol Apple Serial Number Registration Protocol (ASNRP) and in its first implementation uses Datagram Delivery Protocol (DDP) and Routing Table Maintenance Protocol (RTMP).

RTMP is used to acquire network information, which is basically the network number range tables. It refreshes this information every hour by sending an RTMP request to A-router. RTMP is described in Inside AppleTalk. The number of RTMP packets is not significant (Our engineering net is composed of about 700 network number ranges; this gives 1 request and 5 responses every hour).

ASNRP also implements a general purpose multiplexed sharing socket protocol - known as broadcast protocol. It utilizes a static socket reserved by Apple for this purpose.

When an application has registered a Network Serial Number, ALM will be able to respond to any request matching this serial number, but it does not generate any requests until an application calls for a search. Then, every "X" seconds, ALM will pick a network number and send a request on this net. "X" can vary from 30 seconds to 2 minutes, depending of the size in network numbers of the internet. So, the search can take a long time to complete, but

it generates little traffic. Once the search is completed, the application is free to call for another search.

AppleShare 4.0, for example, is continuously searching the entire internet sorted by hops during the first search at startup and then randomly. If a duplicate is found, then it requests the Apple License Manager to search using the cache of duplicates every 5 minutes to verify that the duplicate has not gone away. This search does not generate more traffic; it only changes the order the network numbers are searched.

The size of a request is just less than 100 bytes, and a response would be 40 bytes more.

Here is what AppleShare 4.0 does when it finds a duplicate serial number:

Time	Action
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1) First Detection	Duplicate detection dialog displayed on each server
2) Four hours later	Set the greeting message to the duplicate detection dialog
3) 76 hours since first detection	Start sending out the duplicate detection dialog every hour
4) 112 hours since first detection	Start sending out the duplicate detection dialog every 30 min
5) 148 hours since first detection	Start sending out the duplicate detection dialog every 15 min

If at any time during the duplicate detection process, no more duplicate servers are detected, the duplicate detection dialog will go away.
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