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A/UX: NFS Auto-Mount and other Support Issues (9/94)

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TOPIC -----

- 1) What are secured RPCs, and does Apple support this in A/UX?
- 2) Does A/UX 3.0 have the NFS auto-mount feature? Also, what is auto-mount?
- 3) Does Apple support TCP/IP over Token Ring with A/UX?

DISCUSSION -----

- 1) Secure RPC is an additional authentication flavor for ONC RPC that uses a public-key system to ensure that nobody is passing forged credentials over the wire.

The RPC protocol allows arbitrary authentication "flavors". Normally, the flavor "NULL" is used, or "UNIX", which carries around a UID and GID list, must be used from a reserved port to be trusted. The idea was that secure RPC would use DES encryption, based on keys obtained through a public-key distribution scheme.

Unfortunately, I don't know anyone who has successfully set up secure RPC (the primary application is, of course, secure NFS). There are also some ad-hoc changes done by Athena to use Kerberos authentication to NFS.

It differs from non-secure RPC in that it uses a different authentication flavor. ONC RPC supports multiple flavors of credentials:

AUTH_NONE - No credentials; the server has no idea who the user was who made the request, so there better not be any risks of an unauthorized user making the request.

AUTH_UNIX - UNIX user ID, group ID, and group list passed over the wire; if you work hard enough, and it's not *that* difficult, you can send somebody else's user ID over the wire--NFS servers often map user ID 0 to the user ID for "nobody", and may do other mappings, but few other servers do that kind of mapping.

AUTH_DES - "network name" passed over the wire, which is converted to the appropriate native machine credentials (for UNIX, a user ID, group ID, and group set) on the server. The credentials are encrypted using a public-key system, which makes it more difficult to forge credentials, but, allegedly, the public-key cryptosystem in question *is* breakable if you burn enough cycles.

"Secure RPC" in SunOS/ONC terms is RPC using AUTH_DES authentication.

Other flavors of authentication can be added by developers.

There is a very good writeup on Secure RPC in the "Security Features Guide" (part number: 800-1735-10), May 1988 for SunOS 4.0.x, section 6.3 "RPC Authentication." This information was moved to "Network and Communications Administration" (part number 800-3805-10), March 1990 in the SunOS 4.1 DocBox set, section 14.9 "RPC Authentication".

- 2) The auto-mount feature of NFS provides a mechanism to mount automatically NFS exported filesystems on the fly. This allows dynamic mounting of NFS partitions without having to explicitly mount the partitions from within the "/etc/fstab" file or by using the mount(1) command.

A/UX 2.0 does NOT have the NFS automount feature. However, A/UX 3.0 DOES have this feature.

- 3) There are no plans to support Token Ring under A/UX. Therefore, there are no plans to support TCP/IP running over Token Ring.

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