SUGGESTIONS FOR IMPROVED HOST TABLE DISTRIBUTION

     This RFC may be something unique among modern-day RFC's, an RFC
that actually is a request for comments. The issue dealt with is that
of a naming registry update procedure, both as exists currently and what
could exist in the future. None of the proposed solutions are intended
as standards at this time; rather it is hoped that a general consensus
will emerge as the appropriate solution, leaving eventually to the
adoption of standards.

THE PROBLEM

     I am somewhat dissatisfied with the current level of Internet name
service and name registry updating. Each site is expected to
individually maintain a copy of the [SRI-NIC]<NETINFO>HOSTS.TXT file,
and in fact has to, since SRI-NIC is simply not reliable enough to
depend upon as a name server. Neither the Tenex operating system nor
the Foonly computer are known for exceptional reliability or
performance. Probably they serve the NIC's internal operations well;
that is not at issue. What is needed is a name service that is
available at all times. Only then could a site sacrifice maintaining
its own local copy of "the host table".

     The NIC indirectly acknowledges this, by providing a service by
which the entire Internet name registry can be dumped, as well as
ANONYMOUS FTP access to the <NETINFO>HOSTS.TXT file. The problem is,
some individual has to know to retrieve the latest version of the file
from the NIC. The NIC has not always been careful to announce updates
to the name registry. My experience with maintaining an independent
name registry from the NIC's in the past leads me to appreciate the
NIC's problems.

     There also seems to be no good automated way to cross-check the
version at the local site with the NIC's. It is clearly inefficient to
go to the effort of retrieving the same version of the host table that
already has been installed on site.

SOME SOLUTIONS

     One could argue that a solution is to replace or augment the
present SRI-NIC system with VAX Unix system(s) dedicated to name service
and network information. A reliable and highly-responsive name service
would ultimately lead to the elimination of the necessity to maintain
copies of the registry locally. This solution requires money, time, and
effort, which may or may not be immediately available; it must therefore
be considered a longer-term solution.

A more short-term solution is to make possible faster and more
thorough updating of the various local copies of the name tables. I
have several suggestions in this area, and would like to hear comments
(I said this was an RFC that requested comments!):

    (1) a new protocol by which the NIC could ship updated name
registries to the hosts itself. This would take the form of a server
process on each site listening on a registered port for updates from
certain "trusted" sites (specifically SRI-NIC but possibly other sites
as well). This would allow for nearly immediate updates for cooperating
sites, provided that the hosts in question are up. There should be some
sort of checksum applied to the updated name registry, to make sure it
arrived complete and intact.

    (2) a new protocol by which the NIC will report the current
"version" of the host table. Tenex and TOPS-20 sites would find the use
of the file generation number natural. I presently maintain a
SYSTEM:HOSTS.TXT with the same generation as it existed on the NIC, and
just check at the NIC from time to time to see if the generation number
changed there. I would like to automate this.

    (3) A variation on (1), whereby the NIC would mail the updated host
table to a mailing list of "host table update" recepients and each site
would establish its own update procedures. This is the simplest to
implement for the NIC, but is fraught with all sorts of problems. Mail
is not a good means for bulk-shipping files to many recepients,
especially when the files are likely to become hugh.

    I like (1) best of these three, because that would guarantee
immediate updating without a local necessity to periodically poll the
NIC. That does place the burden on the NIC to make sure all sites
receive the update, and also requires that the NIC remember which sites
are dead to retry the update later. This leads me to what I think is
the best solution, which is:

    (4) A combination of (1) and (2). The NIC will ship updates to all
hosts which are registered with it to receive the updates, and will try
only once. Each site, as part of its system startup procedure, will run
a program to poll the NIC for a possible update and if one is available
retrieve it. As a backup, there could also be a periodic poll on, say,
a daily basis.