a simple way to start a network

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Setting up a network for a group of UNIX® computers used to require the patience of a saint and the wisdom of Solomon. Even if you were able to follow the circuitous step-by-step instructions, carefully editing what you thought were the right files, it seemed like something always went wrong. Either the permissions weren't exactly right or the correct file systems weren't mounted. If your worst fears were realized, the server went down, taking the network with it, and work ground to a halt.

To address this problem, NeXT developed a solution based on a combination

of database technology and a suite of easy-to-use network administration tools. The first step of the solution was to collect all the network administration information in a single database known as the NetInfo™ database. The second was to develop a set of easy-to-use Manager applications with which to manage the network and update the NetInfo database. Although this was a vast improvement over older methods, managing networks still required too much system administration knowledge and training.

As a result, engineers at NeXT took on the challenge of developing an application to make starting a network so simple you wouldn't need to be a networking expert. The result? SimpleNetworkStarter.

what SimpleNetworkStarter does for you
SimpleNetworkStarter assumes that you are not, and do not wish to become, a networking expert. Rather, you simply want to get your systems set up and

networked so you can get on with your real work. Even if you are a networking expert, you probably still want to get the repetitive setup tasks done quickly. With SimpleNetworkStarter, you just start up the application and click your way through the entire network setup process, making choices about how you want your network set up. SimpleNetworkStarter creates the NetInfo database, edits the appropriate files, mounts the right file systems, and gives users the permissions they need to access file servers and get their jobs done.

The biggest advantage of SimpleNetworkStarter is that both the relative novice and experienced system administrator will find it useful. Whether you have a basic understanding of network concepts (which means, for instance, that you know what servers and clients are) or you are a seasoned system administrator bored with performing routine network setup, you can use SimpleNetworkStarter to link together NeXT computers in a simple network. Although its primary function is to configure NetInfo networks of about 20 or fewer computers, SimpleNetworkStarter can come in handy for configuring

networks of any size.

Also, because SimpleNetworkStarter is primarily just a user interface for the NetInfo database, any network you build with SimpleNetworkStarter can be reconfigured later on by using the full NetInfo administration suite of applications. SimpleNetworkStarter lets you build simple networks quickly and then later, as necessary, go on to more complex administration tasks, such as linking groups of smaller existing networks.

what SimpleNetworkStarter doesn't do
SimpleNetworkStarter is intended for simple networks; it doesn't give you the complete range of administrative options provided by the other NetInfo administration applications. For example, if you want to add host aliases or create a three-level NetInfo domain hierarchy, you must use the other Manager applications. Remember, however, that you can use SimpleNetworkStarter to set up the simple network before adding these

advanced features.

Also, SimpleNetworkStarter is not intended to be a network management tool. After you use it to set up the network, you must use UserManager, HostManager, NFSManager, PrintManager, and NetInfoManager to maintain and modify your network.

how to use SimpleNetworkStarter

Just as when you move into a new house you must determine the optimal locations for the tv, stereo speakers, and sofa, so must you determine the configuration of your network. Before using SimpleNetworkStarter, ask yourself, "Which system has enough horsepower to be the master server for this network? Which system would make the best clone server in case the master goes down? Have we chosen sufficiently bizarre and aptly descriptive host names for all the systems in this network? Did I get an Internet address for the master server? And what about file servers and mail servers?" If you

want more help planning your configuration, you'll probably find "behind the scenes of NeXT networking" in volume 2, issue 2 of the *support bulletin* useful. You may also want to read up on basic networking concepts and tools in the *NeXTSTEP Network and System Administration* manual.

Once you have the answers to these questions and have formulated your network plan, you can fire up SimpleNetworkStarter and begin setting up your network. SimpleNetworkStarter provides a series of check boxes and makes the required modifications based on your choices.

To configure your master server, start up SimpleNetworkStarter, which is located in /NextAdmin. If you're not already logged in as root, SimpleNetworkStarter asks for the root password. Once you've supplied the password, the main window appears (see figure 1).

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First, you need to specify what kind of computer you're setting up. Does it stand alone, or is it a client or a server of a network? Next, enter the host name and Internet address. Finally, if your computer is a server, specify the kind of services it will provide.

For each selection in section 3, click the buttons that apply to your network plan. Then click Build The Network. That's all there is to it. Once you have configured the master and clone servers, the process becomes even easier. For each new host, you need only turn on the system and supply the host name when prompted (assuming you're using automatic host addition).

If you're curious about the specifics of how each file server is configured, see "mounting and exporting: the inside story" at the bottom of this page. You'll also find more details in the NeXTSTEP Networking and System Administration manual.

how to get SimpleNetworkStarter

Because SimpleNetworkStarter is a feature of NeXTSTEP Release 3, it's a part of every new system. You can also get SimpleNetworkStarter by upgrading your NeXT computer to Release 3. For particulars about how you can get Release 3, see ``ordering information'' on page 7.

A version of this article was also printed in the summer issue of *NeXT On Campus*, a NeXT publication for higher education. For more information about *NeXT On Campus*, please call 1-800-848-NeXT.

mounting and exporting: the inside story

When you use SimpleNetworkStarter to set up file sharing, it stores information in NetInfo. This includes export options, mount options, and server locations. All shared directories exported with SimpleNetworkStarter are exported with the option root=server, where server is the host name of the file server. All imported directories are mounted with the options bg, intr,

and noquota. Directories exported from home directory and general purpose servers add the option net.

The locations directory in NetInfo holds information about servers. There you'll find the subdirectories homes (home directory servers), general (general purpose servers), and localapps (shared applications). Under these NetInfo directories are individual directories for each server. These directories store the name of the exported directory and the name of the server from which it is shared. Also under locations is sendmail, a subdirectory that stores the host name of the mail server and the complete path of the sendmail configuration file.

Netinfo directory	contents
/exports/*directory*	name of exported directory
	root=*server (export options)*
/mounts/directory	name of imported directory

pathname of mount point
                                    bg,intr,noquota,net *(mount options)*

/locations/homes   name of shared file
/locations/general   host name of file server
/locations/localapps

/locations/sendmail   path to sendmail configuration file
                          host name of mail server