9

Network

Enlighten**DSM** gives you the tools to set up and modify your network configurations. You also use this menu to establish and update any DNS and/or NIS servers, and to configure and manage NFS servers. The actual options are:

- Host Entries
- Host Configuration
- Host Naming Services
- Naming Service Overrides
- DNS
- NIS and NIS+
- NFS

Host Entries

Each system has a host database containing a list of known hosts and their TCP/IP address on the network. You can use this module to concurrently manage the host database of multiple machines. When you choose this command, the Host Entry Configuration window will appear (**Figure 9-1**).
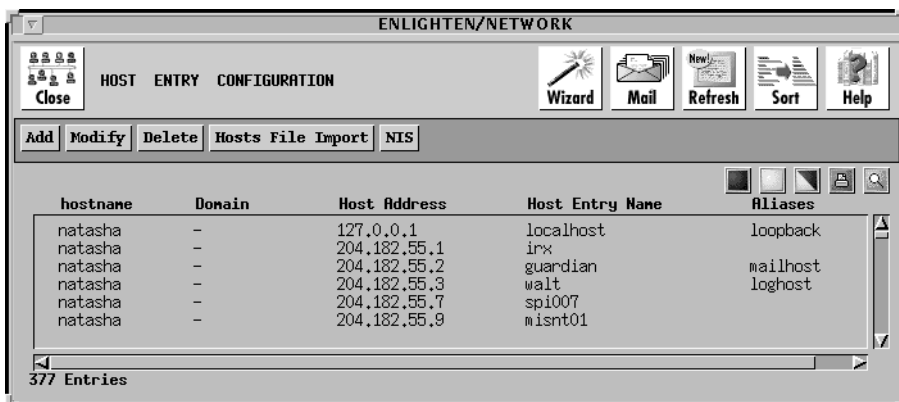

Figure 9-1 Host Entry Configuration window

The list box will show all known host entries in the current pool, their domains, TCP/IP addresses, host entry names, and any aliases. From here, you can:

• Add	Add new host entries
• Modify	Modify existing host entries
• Delete	Delete existing host entries
• Hosts File Import	Import a file defining the host entries for any active hostname servers
• NIS	Push the NIS maps on active NIS servers

The rest of this section details how to use this window's buttons.

Add

Click the Add button to bring up the Add Host Entry window (**Figure 9-2**).
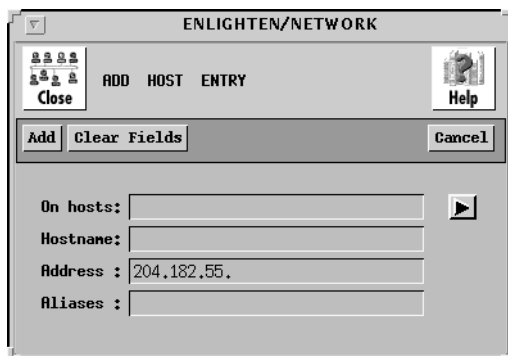

Figure 9-2 Add Host Entry window

Then you can create new host entries by entering the name of the new host, its TCP/IP address, and any host alias names it has.

Fields

This window contains the following fields:

On hosts

You can use this field to limit which hostname server(s) will be configured. Leave a blank space between hostnames for multiple entries. You can also click the arrow button to the right to pop up a pick list of all hosts within the current pool and make your selection(s) from there.

Hostname

The hostname should be unique for the server where you're adding this host. Use this field to specify the host's name.

Address

This field is initialized with the base address of the current system. You can select a different network from the one shown or simply add the last part of the address.

Aliases

You can use this field if you want to specify any alias(es) this host uses. Leave a blank space between alias names for multiple entries.

Buttons

This window contains the following buttons:

Add

After you've entered all the information, click the Add button. Enlighten**DSM** will create the new host entries on the hostname servers for all hosts in the current pool. If you specified an incorrect address, or if the address is already being used, Enlighten**DSM** will display an appropriate error message telling you so.

Clear Fields

Click this button to clear the existing choices in all fields.

Cancel

Click this button to close the window without making any changes.

Modify

If you wish to change the address of a host or modify the alias list of a host, highlight the desired entries and click the Modify button. A window similar to the Add Host Entry window will appear, except you cannot modify the Hostname field.

There are also two button differences in the Modify window:

- You can use the Modify button (rather than the Add button) after you've made all your changes, and

- You can use the Next button to modify additional host entry configurations if you've selected more than one to modify from the Host Entry Configuration list.

For a description of the rest of the buttons and fields in this window, see **"Add" on page 9-3**.

Delete

Click the Delete button to delete the highlighted host entries. Enlighten**DSM** will prompt you to confirm your action.

Hosts File Import

If you want to load the host entries from an existing file into the current host naming services server(s) (or this host database from a local file you've already created), click this button to import that file. The Import Host Entries File window appears (**Figure 9-3**).
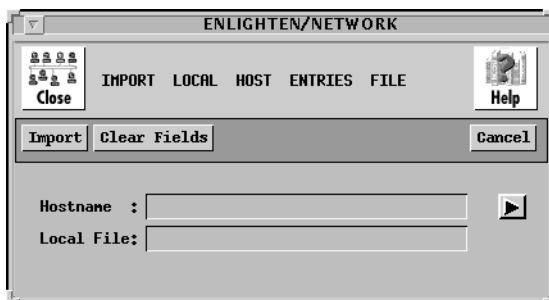

Figure 9-3 Import Host Entries File window

Fields

This window contains the following fields:

Hostname

You can use this field to limit which server(s) should be configured when importing this file. Leave a blank space between hostnames for multiple entries. You can also click the arrow button to the right to pop up a pick list of all hosts within the current pool and make your selection(s).

Local File

Use this field to specify the full pathname for the local file containing the host entry information.

Buttons

This window contains the following buttons:

Import

After specifying your choices, click this button to import your local host entries file to the selected host's database(s).

Clear Fields

Click this button to clear the existing choices in all fields.

Cancel

Click this button to close the window without making any changes.

NIS

Click this button to push/remake the NIS maps on any active NIS servers. This updates the NIS servers and hosts on your network with any Host Entry changes you've made to the Configuration list. If there are no NIS servers to update for your choice(s), Enlighten**DSM** will display a dialog box telling you so.

Host Configuration

You can use this module to modify network parameters such as the I.P. address, netmask, and broadcast address for a particular host. When you choose this command, the Network Host Configuration window appears (**Figure 9-4**).
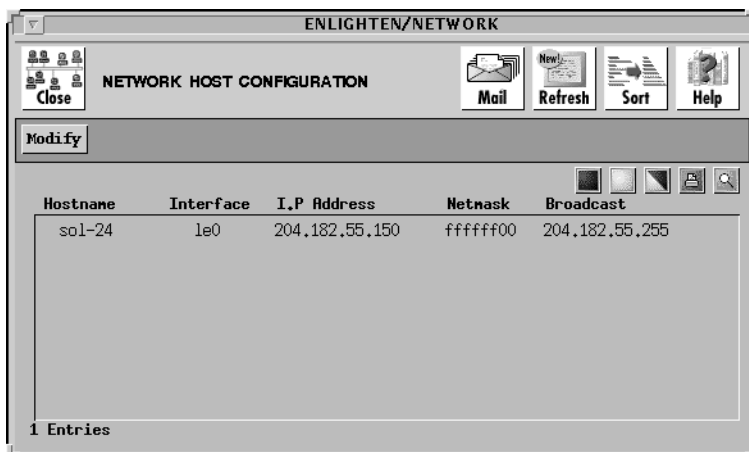

Figure 9-4 Network Host Configuration window

Highlight which host(s) you want to modify and click the Modify button to bring up the Modify Host Configuration window (**Figure 9-5**).
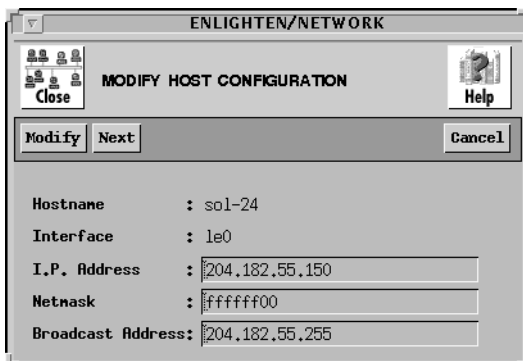

Figure 9-5 Modify Host Configuration window

The rest of this section describes how to modify your host's network parameters.

Modify Fields

This window contains the following fields:

Hostname

This view-only field shows the host whose configuration is currently being modified.

Interface

This view-only field shows the network interface name.

I.P. Address

You can use this field to change the current host's IP address.

Netmask

You can use this field to specify a new netmask. This is used to implement IP standard subnetting.

Broadcast Address

You can use this field to modify the host's broadcast address.

Modify Buttons

This window contains the following buttons:

Modify

Click this button to save the new network host configuration. This will modify the address for the specified host naming services. Enlighten**DSM** will prompt you to confirm your action.

Warning!   Be cautious if you're modifying the only host configured for your network. If you then reset your I.P. address, you might not be able to immediately access Enlighten**DSM**.

Next

Click the Next button to view and/or modify additional host configurations if you've selected more than one to modify.

Cancel

Click this button to close the window without making any changes.

Host Naming Services

You can use this module to configure which NIS, NIS+, and/or DNS servers a client host should use. When you use this module, the Host Naming Services Configuration window will appear (**Figure 9-6**).
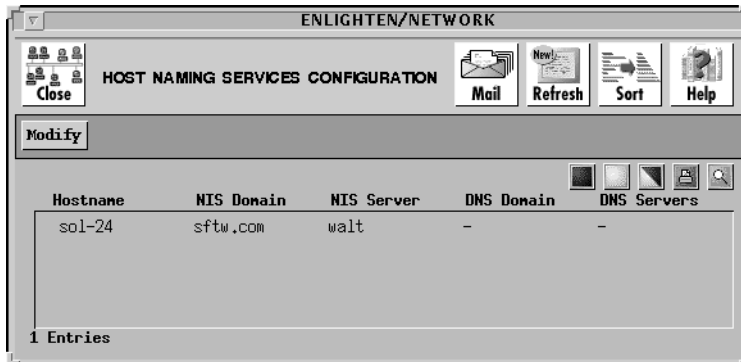

Figure 9-6 Host Naming Services Configuration window

Highlight which host-server configuration(s) you want to modify and click the Modify button to bring up the Modify Host Naming Services window (**Figure 9-7**).
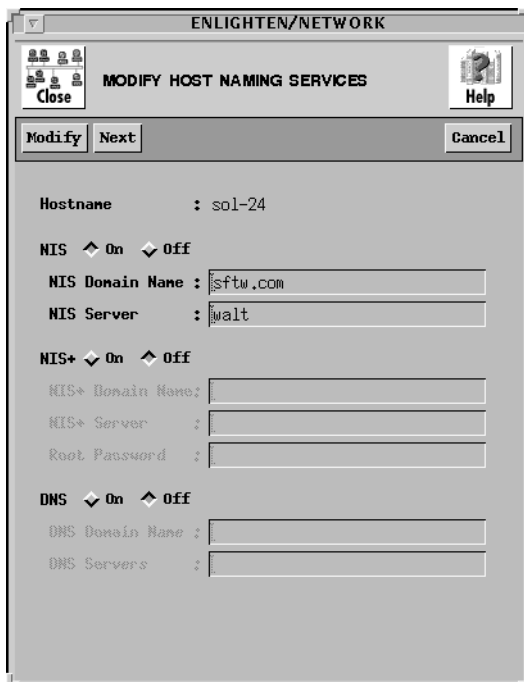
Figure 9-7 Modify Host Naming Services window

The rest of this section describes how to modify the combination of your host-server configuration(s) parameters.

Modify Fields

This window contains the following fields:

Hostname

This view-only field shows which host's naming service configuration is currently being modified.

NIS

You can use these toggles to specify if you're using the NIS naming service for this configuration. If you turn this field on, the NIS+ fields will be automatically turned off; these two naming services are mutually exclusive for any particular host.

These fields are only available if the NIS toggle is set to on.

NIS Domain Name

Use this field to specify the domain name for your NIS server.

NIS Server

Use this field to specify which NIS Server this host will use.

NIS+

You can use these toggles to specify if you're using the NIS+ naming service for this configuration. If you turn this field on, the NIS fields will be automatically turned off; these two naming services are mutually exclusive for any particular host.

These fields are only available if the NIS+ toggle is set to on.

NIS+ Domain Name

Use this field to specify the domain name for your NIS+ server.

NIS+ Server

Use this field to specify which NIS Server this host will use.

Root Password

Use this field to specify the root password for the server shown in the NIS+ Server field.

DNS

You can use these toggles to specify if you're using the DNS naming service for this configuration. These fields are only available if the DNS toggle is set to on.

DNS Domain Name

Use this field to specify the domain name for your DNS server.

DNS Servers

Use this field to specify which DNS Servers this host will use.

Modify Buttons

This window contains the following buttons:

Modify

Click this button to add the specified combination of NIS and/or DNS host-server connections. Enlighten**DSM** will prompt you to confirm your action, especially if you're disabling NIS, NIS+, and/or DNS.

Next

Click the Next button to view and/or modify additional host- server configurations if you've selected more than one to modify. No changes will be made to the configuration you're currently viewing.

Cancel

Click this button to close the window without making any changes.

Naming Service Overrides

Enlighten**DSM** auto-detects the naming services any particular host uses. You can use this module to create and update any naming service overrides an individual host or pool should use. You can establish overrides for password and group files, host entry files, and mail alias files within this option.

When you choose this command, the Naming Services Overrides window will appear (**Figure 9-8**).

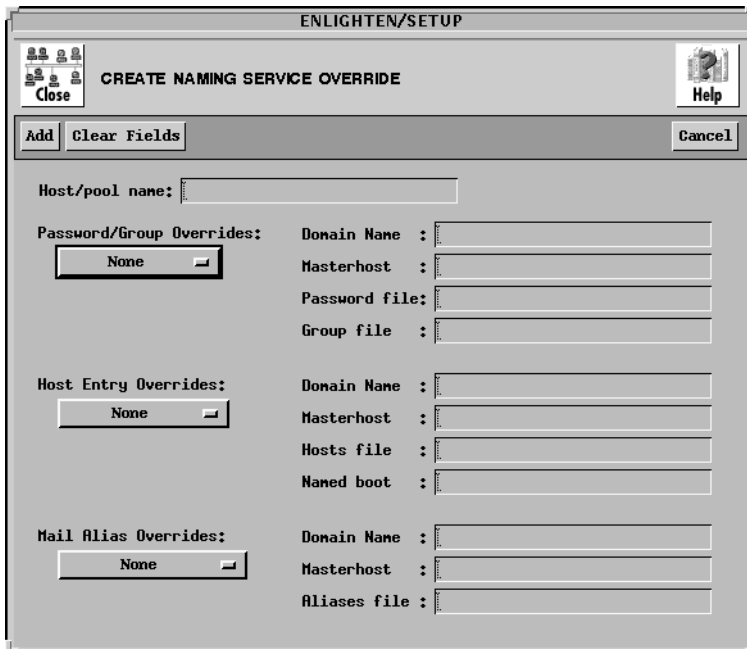Figure 9-8 Naming Services Overrides window

The list box will show all host/pools that already have overrides assigned and the type of user accounts, host entry, and mail aliases overrides. From here, you can:

- Add   Create a new set of overrides for a host/pool

- Modify   Modify an existing set of overrides for a host/pool

- Delete   Remove the set of overrides for a host/pool

The rest of this section details how to use this window's buttons.

Add

Click the Add button to bring up the Create Naming Service Override window (**Figure 9-9**).

Figure 9-9 Create Naming Service Override window

Then you can create a new set of overrides for a host/pool by filling in the form as needed. The rest of this section describes this window's fields and buttons.

Fields

This window contains the following fields:

Host/pool name

Use this field to specify which host or pool will use these overrides.

Password/Group Overrides

You can use this toggle to set up the overrides for user accounts. Use this if you want to use an alternate account naming service rather than those determined by Enlighten**DSM** for your host/pool. You can use overrides from the following types of naming services:

- None (the default; no overrides are used in this area)
- /etc/... files
- NIS
- NIS+

Domain Name

If you've selected the NIS or NIS+ option in the Password/Group Overrides field, use this field to specify the Masterhost domain name.

Masterhost

If you've selected the NIS or NIS+ option in the Password/Group Overrides field, use this field to specify the NIS server providing the user account and user group services.

Password file

If you've selected the NIS option in the Password/Group Overrides field and you want to use a different password file (besides `/etc/passwd`), use this field to specify that password file pathname.

Group file

If you've selected the NIS option in the Password/Group Overrides field and you want to use a different group file (besides `/etc/group`), use this field to specify that group file pathname.

Host Entries Overrides

You can use this toggle to set up the overrides for host entries. Use this if you want to use an alternate host naming service rather than those determined by Enlighten**DSM** for your host/pool. You can use overrides from the following types of naming services:

- None (the default; no overrides are used in this area)
- `/etc/hosts` files
- NIS
- NIS+
- DNS

Domain Name

If you've selected the NIS+ or DNS option in the Host Entry Overrides field, use this field to specify the Masterhost domain name.

Masterhost

If you've selected the NIS, NIS+, or DNS option in the Host Entry Overrides field, use this field to specify the DNS server providing the host entry services.

Hosts file

If you've selected the NIS option in the Host Entry Overrides field, use this field to specify an alternate to the `/etc/hosts` file.

Named boot

If you've selected the DNS option in the Host Entry Overrides field, use this field to specify an alternate to the `/etc/named.boot` file. This file is used by the BIND daemon to locate the DNS configuration files at system start-up.

Mail Alias Overrides

You can use this toggle to set up the overrides for mail aliases. Use this if you want to use an alternate aliases service rather than those determined by Enlighten**DSM** for your host/pool. You can use overrides from the following types of naming services:

- None (the default; no overrides are used in this area)
- `/etc/aliases` files
- NIS
- NIS+

Domain Name

If you've selected the NIS+ option in the Mail Aliases Overrides field, use this field to specify the Masterhost's domain name.

Masterhost

If you've selected the NIS or NIS+ option in the Mail Aliases Overrides field, use this field to specify the NIS server name providing the aliases services.

Aliases file

If you've selected the NIS option in the Mail Aliases Overrides field and you want to use a different set of aliases, use this field to specify that alias file pathname.

Buttons

This window contains the following buttons:

Add

After you've entered all the relevant information, click the Add button. Enlighten**DSM** will create your specified overrides for the designated host or pool.

Clear Fields

Click this button to clear the existing choices in all fields.

Cancel

Click this button to close the window without making any changes.

Modify

Click the Modify button to modify an existing set of overrides for a host/pool. A window similar to the Create Naming Services Override window will appear, except you cannot modify the Host/pool name field.

There are also two button differences in the Modify window:

- You can use the Modify button (rather than the Add button) after you've made all your changes, and

- You can use the Next button to modify additional sets of naming services overrides if you've selected more than one to modify from the Naming Services Overrides list.

For a description of the rest of the buttons and fields in this window, see **"Add" on page 9-15**.

Delete

Click this button to remove the selected set of overrides for a host/pool. Enlighten**DSM** will prompt you to confirm your action.

DNS

You can use this module to configure and manage Domain Name Servers (DNS) on a network. You can configure Primary Domain Name Servers, Secondary Domain Name Servers, Mail Exchangers, and Hosts in a Domain. The options are:

- Server Configuration
- Mail Exchangers

The rest of this section details how to use these options.

Server Configuration

You can use this program to configure primary and secondary domain name servers. When you activate this program, the window shown in **Figure 9-10** appears.

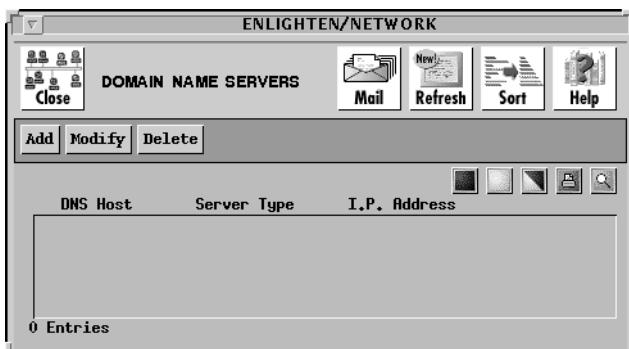
Figure 9-10 Domain Name Servers window

The list box will display all known Domain Name Server hostnames, the server type (either primary or secondary), and the host's I.P. Address.

From here, you have the option to:

- Add   Add a Domain Name Server to your network

- Modify   Modify an existing DNS configuration

- Delete   Delete all selected DNS configurations

The rest of this section details how to use this window's buttons.

Add

Click the Add button to add a Domain Name Server to your network. The Add Domain Name Server window will appear (**Figure 9-11**).

Figure 9-11 Add Domain Name Server window

You can configure both primary and secondary Domain Name Servers. If you configure both and the primary server is busy or down, Enlighten**DSM** will utilize the secondary server. Use the Server Type field to select which type you want to configure. **Figure 9-11** shows the fields for configuring a primary server (the default setting).

The rest of this subsection describes the fields for adding a primary domain name server. See **"Secondary Server Add Fields" on page 9-23** for a description of the fields used when adding a secondary server.

Primary Server Add Fields

This window contains the following fields:

Server Type

Use this toggle button to specify whether a primary or secondary DNS server is being configured. The remaining fields in this window assume you selected the Primary option.

Domain Name

Use this field to specify the domain name of the new DNS server.

Primary Server Hostname

Use this field to enter which host will be the primary domain name server. You can also click the arrow button to the right to pop up a pick list of all hosts within the current pool and select one.

Network I.P. Numbers

You can use this field to enter the network I.P. Address of the subnets the DNS server will manage within the domain. For example, if you're managing hosts with the address range 192.57.36.01 through 192.57.36.254, then you should enter the value `192.57.36` in this field.

Dir. for DNS database files

Use this field to specify the full directory pathname for the DNS database files. The default is `/etc/named`.

Pathname to DNS config. files

Use this field to enter the full pathname for the `named.boot` file. This file is used by the BIND daemon to locate the DNS configuration files at system start-up. The default is `/etc/named.boot`.

Secondary Name Servers

You can use this field to specify the hostnames of any secondary name servers. Leave a blank space between server names for multiple entries.

Administrator e-mail address

Use this field to specify the DNS administrator's email address.

Database serial number

Use this field to enter the serial number associated with the DNS database. The default serial number is 1 (one). This serial number is incremented every time the primary database is altered.

DNS database refresh frequency

You can use this field to choose how often the secondary DNS database serial numbers are checked against the primary DNS database numbers. If the serial numbers are different, the secondary DNS updates itself. The default value is every three hours.

DNS query retry frequency

You can use this field to choose how frequently the secondary DNS server will attempt to reconnect with the primary DNS server if the initial contact with the primary server failed. The default value is every hour.

DNS data expiry

You can use this field to choose the maximum time the hostname and IP address information will live in a secondary server when the Primary server is unreachable. The default value is one week.

Minimum TTL

You can use this field to choose the maximum time a cached hostname and IP address will live in a DNS server before the secondary server contacts the primary server to resynchronize the data. The default value is one day.

Secondary Server Add Fields

This subsection describes the fields for adding a secondary domain name server. See for a description of the fields used when adding a primary server.

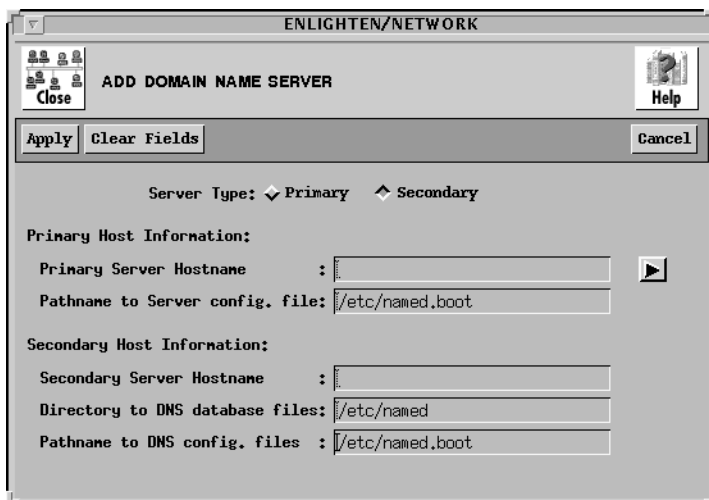The default Add Domain Name Server window is shown in .

Figure 9-12 Add Domain Name Server window

This window contains the following fields:

Server Type

Use this toggle button to specify whether a primary or secondary DNS server is being configured. The remaining fields in this window assume you selected the Secondary option.

Primary Server Hostname

Use this field to enter the hostname of the primary domain name server for which the secondary server is being configured. You can also click the arrow button to the right to pop up a pick list of all hosts within the current pool and select one.

Pathname to Server config. files

Use this field to enter the full pathname for the named.boot file. This file is used by the BIND daemon to locate the server configuration files at system start-up. The default is /etc/named.boot.

Secondary Server Hostname

You can use this field to specify the name of one or more hosts on which to configure secondary servers. Leave a blank space between server names for multiple entries.

Directory to DNS database files

Use this field to specify the full directory pathname for the DNS database files. The default is `/etc/named`.

Pathname to DNS config. files

Use this field to enter the full pathname for the `named.boot` file. This file is used by the BIND daemon to locate the DNS configuration files at system start-up. The default is `/etc/named.boot`.

Add Buttons (both types of servers)

This window contains the following buttons:

Apply

Click this button to begin the configuration of the new DNS server.

Clear Fields

Click this button to clear the existing choices in all fields.

Cancel

Click this button to close the window without making any changes.

Modify

Click the Modify button to modify an existing DNS configuration. The Modify Domain Name Server window is similar to the Add Domain Name Server window, except you cannot modify the Domain Name, Primary Server Hostname, Network IP Numbers, Dir. for DNS database files, and Pathname to DNS config. files fields.

There are also two button differences in the Modify window:

- You can use the Modify button (rather than the Add button) after you've made all your changes, and

- You can use the Next button to modify additional DNS configurations if you've selected more than one to modify from the Domain Name Servers list.

For a description of the rest of the buttons and fields in this window, see .

Delete

Click the Delete button to disable the DNS server on the selected host(s). Enlighten**DSM** will prompt you to confirm your action.

Mail Exchangers

You can use this program to configure mail exchange information. When you activate this program, the window in **Figure 9-13** will appear.
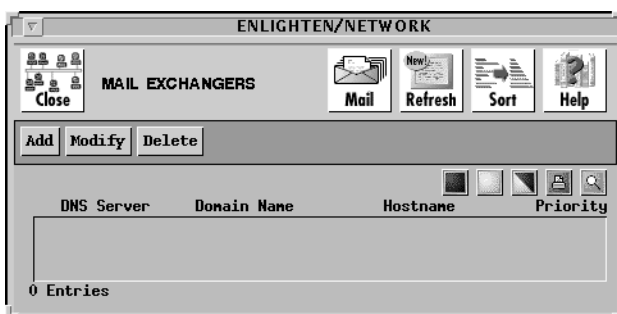

Figure 9-13 Configuring Mail Exchange Information

The list box will display the DNS Server name, Domain name, Hostname, and priority for all configured routes.

From here, you have the option to:

- Add   Add a Mail Exchanger host to your network

- Modify   Modify an existing Mail Exchanger configuration

- Delete   Delete all selected Mail Exchanger configurations

The rest of this section details how to use this window's buttons.

Add

Click the Add button to add a Mail Exchanger host to your network. The Add Mail Exchanger Host window will appear (**Figure 9-14**).
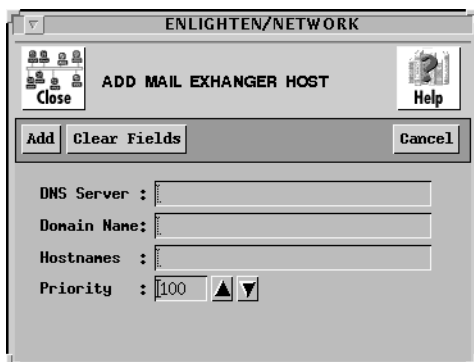
Figure 9-14 Add Mail Exchanger Host window

The rest of this section details how to use this window's functionality.

Add Fields

This window contains the following fields:

DNS Server

You can use this field to specify the DNS Server for this mail exchanger. If you leave this field blank, it defaults to the default DNS Servers value set in Network —> Host Naming Services. Refer to **"Host Naming Services" on page 9-10** to change this value.

Domain Name

You can use this field to specify the Internet domain name for this mail exchanger. If you leave this field blank, it defaults to the default domain name value set in Network —> Host Naming Services. See **"Host Naming Services" on page 9-10** for more information on changing this value.

Hostnames

Use this field to specify which host machine(s) will act as mail host, or mail dispatcher, for the machines in the Domain Name field. Leave a blank space between hostnames for multiple entries.

Priority

You can use this field to associate a priority, or preference, to using this hostname as a mail host. The number can range from 0 to 65536

inclusive. The lower the number, the higher the priority. You can also use the counter buttons to increment or decrement this number.

Add Buttons

This window contains the following buttons:

Add

Click this button to save the current information as a mail exchanger for the Internet domain set in the Domain Name field.

Clear Fields

Click this button to clear the existing choices in all fields.

Cancel

Click this button to close the window without making any changes.

Modify

Click the Modify button to modify an existing mail exchanger configuration. The Modify Mail Exchanger Host window is similar to the Add Mail Exchanger Host window, except you cannot modify the DNS Server and Domain Name fields.

There are also two button differences in the Modify window:

- You can use the Modify button (rather than the Add button) after you've made all your changes, and

- You can use the Next button to modify additional mail exchanger configurations if you've selected more than one to modify from the Mail Exchangers list.

For a description of the rest of the buttons and fields in this window, see **"Add" on page 9-26**.

Delete

Click the Delete button to remove the selected mail exchanger configurations from the Mail Exchangers list. Enlighten**DSM** will prompt you to confirm your action.

NIS and NIS+

You can use this module to configure Network Information Servers NIS and NIS+ servers. You can configure master servers (NIS and NIS+), slave servers (NIS), and replica servers (NIS+). When you choose this command, the Network Information Servers window will appear (**Figure 9-15**).
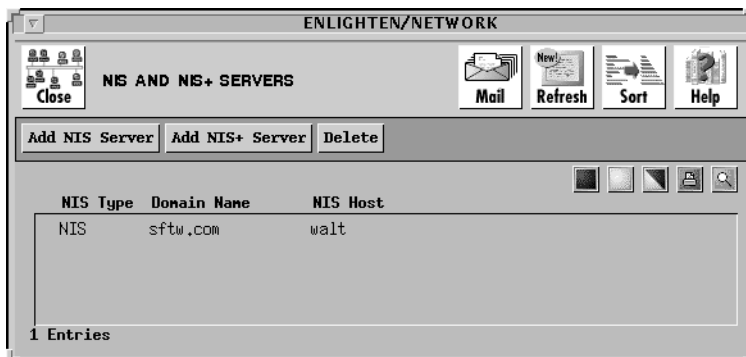

Figure 9-15 Configuring Servers

The list box will display all configured NIS and NIS+ servers. Each line in the list will show the type, domain, and hostname for each server.

From here, you have the option to:

- Add NIS Server   Add an NIS server or slave to your network

- Add NIS+ Server   Add an NIS+ server or replica server to your network

- Delete   Delete all selected NIS configurations

☞ You must first disable a host as an NIS server or client before reconfiguring that host as an NIS+ server or client.

The rest of this section details how to use this window's buttons.

Add NIS Server

Click this button to configure NIS master servers or NIS slave servers. The Add NIS Server window will appear (**Figure 9-16**).
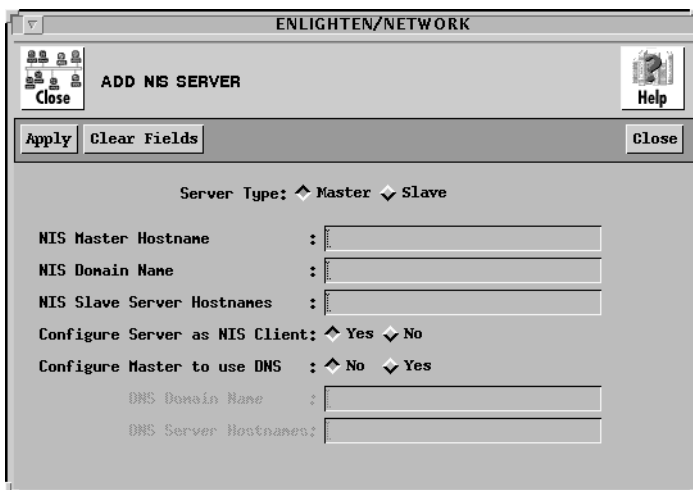
Figure 9-16 Add NIS Server window

The rest of this section details how to use this window's functionality.

Master Fields

This window has the following fields:

Server Type

Use this toggle to specify what type of NIS server to configure, a Master (the default) or Slave server. If you set this to be a Slave server, the window will be redrawn to show the fields listed in **"Slave Fields" on page 9-32**.

NIS Master Hostname

Use this field to specify the hostname of the NIS master server.

NIS Domain Name

Use this field to specify the domain name for this server.

NIS Slave Server Hostnames

You can use this field to specify any NIS slave servers for this domain.

Configure Server as NIS Client

Use this toggle to specify if this server should also be configured as an NIS client. The default is Yes.

Configure Master to use DNS

Use this toggle to specify if the NIS master server should use DNS as a fallback. The default is No.

DNS Domain Name

You can only use this field if you set the Configure Master to use DNS field to Yes. If so, you can use this field to specify the domain name of the DNS servers the NIS master should reference.

DNS Server Hostnames

You can only use this field if you set the Configure Master to use DNS field to Yes. If so, you can use this field to specify the hostnames of the DNS servers the NIS master should reference.

Slave Fields

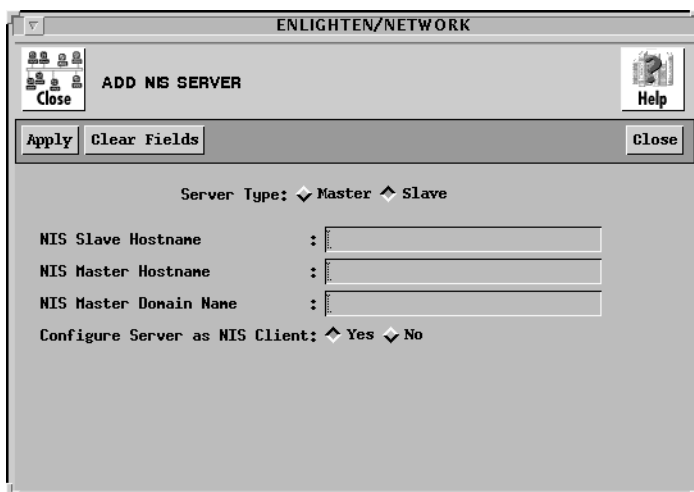This window has the following fields:

Figure 9-17 Add NIS Server

Server Type

Use this toggle to specify what type of NIS server to configure, a Master (the default) or Slave server. If you set this to be a Slave server, the window will be redrawn to show the fields listed in **"Master Fields" on page 9-30**.

NIS Slave Hostname

Use this field to specify the hostname of the NIS slave server.

NIS Master Hostname

Use this field to specify the hostname of the NIS master server.

NIS Master Domain Name

Use this field to specify the domain name for the NIS master server.

Configure Server as NIS Client

Use this toggle to specify if this server should also be configured as an NIS client. The default is Yes.

Buttons (both types of NIS servers)

This window contains the following buttons:

Apply

Click this button to add the new NIS server shown in the window.

Clear Fields

Click this button to clear the existing choices in all fields.

Close

Click this button to discard any changes and close the window.

Add NIS+ Server

Click this button to configure NIS+ master servers or NIS+ replica servers. The Add NIS+ Server window will appear (**Figure 9-18**).
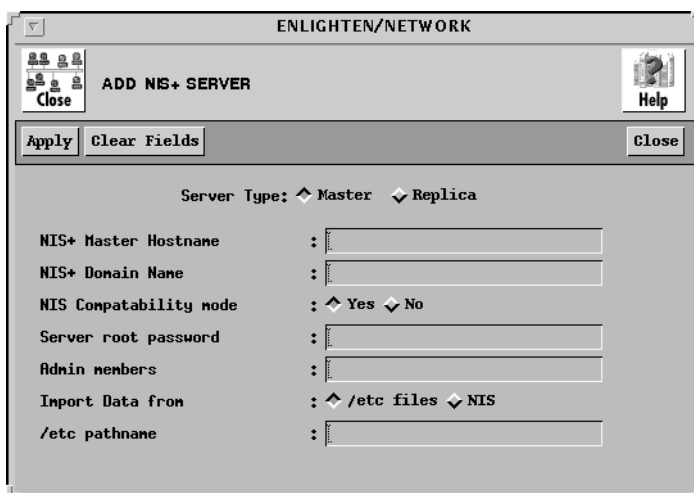

Figure 9-18 Add NIS+ Server

The rest of this section details how to use this window's functionality.

Master Fields

This window has the following fields:

Server Type

Use this toggle to specify what type of NIS+ server to configure, a Master (the default) or Replica server. If you set this to be a Replica server, the window will be redrawn to show the fields listed in **"Replica Fields" on page 9-35**.

NIS+ Master Hostname

Use this field to specify the hostname of the NIS+ master server.

NIS+ Domain Name

Use this field to specify the domain name for the NIS+ master server.

NIS Compatibility mode

Use this toggle to specify if this NIS+ should be made backward compatible with NIS. The default is Yes.

Server root password

Use this field to specify the root password for the NIS+ master server.

Admin members

Use this field to specify which users are allowed to administer this NIS+ host. Leave a blank space between names for multiple entries.

Import Data from

Use this toggle to specify if any existing imported data should come from the servers' `/etc` files or from an NIS server. The default is /etc.

/etc pathname

You can only use this field if you set the Import Data from field to `/etc files`. If so, you can use this field to specify these files' pathname.

NIS domain

You can only use this field if you set the Import Data from field to NIS. If so, you can use this field to specify the domain name of the NIS server from which to import the data.

NIS Server

You can only use this field if you set the Import Data from field to NIS. If so, you can use this field to specify the hostname of the NIS server.

Replica Fields

This window is similar to the Add NIS+ Server window for a Master server shown on **page 9-33**. It contains the following fields:

Server Type

Use this toggle to specify what type of NIS+ server to configure, a Master (the default) or Replica server. If you set this to be a Master server, the window will be redrawn to show the fields listed in **"Master Fields" on page 9-34**.

NIS+ Master Hostname

Use this field to specify the hostname of the NIS+ master server.

NIS+ Domain Name

Use this field to specify the domain name for the NIS+ master server.

Replica Hostname

Use this field to specify the hostname of the NIS+ replica server.

Replica Server root Password

Use this field to specify the root password for the NIS+ replica server.

NIS Compatibility mode

Use this toggle to specify if this NIS+ server can also interact with NIS servers. The default is Yes.

Buttons (both types of NIS+ servers)

This window contains the following buttons:

Apply

Click this button to add the new NIS server shown in the window.

Clear Fields

Click this button to clear the existing choices in all fields.

Close

Click this button to discard any changes and close the window.

Delete

Click this button to delete a highlighted server configuration from the NIS and NIS+ Servers list. The Delete NIS/NIS+ Server window will appear (**Figure 9-19**).

☞ Enlighten**DSM** does NOT automatically detect if a server is a master or slave/replica server.

Figure 9-19 Delete NIS and NIS+ Servers

The rest of this section details how to use this window's functionality.

Fields

This window has the following fields:

NIS Type

Use this toggle to specify what type of server to delete, an NIS (the default) or NIS+ server.

Server Type

Use this toggle to specify what type of server to delete, a Master (the default) or Slave/Replica server.

Domain Name

Use this field to specify the domain name for the server.

Server

Use this field to specify the hostname of the server.

Master Host

You can only use this field if you set the Server Type field to Slave/ Replica. If so, you can use this field to specify the hostname of the NIS/ NIS+ master server.

Remain as NIS Client

You can only use this field if you set the Server Type field to Slave/ Replica. If so, you can use this toggle to specify if this server should remain as an NIS client after deletion. The default is Yes.

Buttons

This window contains the following buttons:

Delete

Click this button to remove the specified server configuration from the NIS and NIS+ Servers list. Enlighten**DSM** will prompt you to confirm your action.

Close

Click this button to discard any changes and close the window.

NFS

There are two sides to Network File System (NFS) management: the client side where filesystems are mounted or unmounted on a given host, and the server side where directories are made available for export by a host. You can use this module to handle both sides. The actual options are:

- Mounted Directories
- Exported Directories

The rest of this section details how to use these options.

Mounted Directories

Use this menu item to view a list of all currently mounted NFS partitions (directories), along with any unmounted directories slated for mounting at boot time. **Figure 9-20** shows the mounted filesystems on all hosts in the current pool.
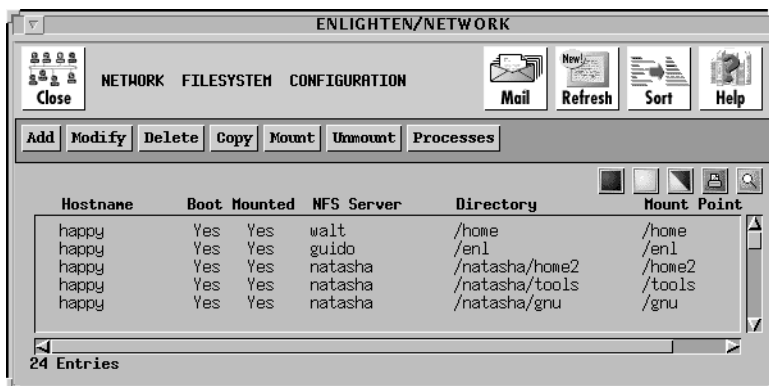

Figure 9-20 Mounted Filesystems on Hosts of the Current Pool

Each line in the list box will display the hostname, whether the filesystem is currently mounted and/or automatically mounted at boot time, the NFS Server name, the remote partition (directory) name, and the local mount point name.

You may select one or more filesystems for further processing by highlighting the desired NFS partition. Now you can perform the following operations to further manipulate your choice(s):

- Add   Add an NFS partition on one or more hosts

- Modify   Modify the mount parameters for an existing NFS configuration

- Delete   Remove the marked networked directories from the Network Filesystem Configuration list

- Copy   Copy the selected mount parameters and create a new partition to be mounted

- Mount   Mount an NFS partition immediately

- Unmount   Unmount the marked NFS partition(s)

- Processes   View the processes for the marked filesystem(s)

Add

Use this command to add an NFS partition on one or more hosts. You can mount this partition immediately, at boot time, or both. Click the Add button to bring up the Add an NFS Partition window (**Figure 9-21**).
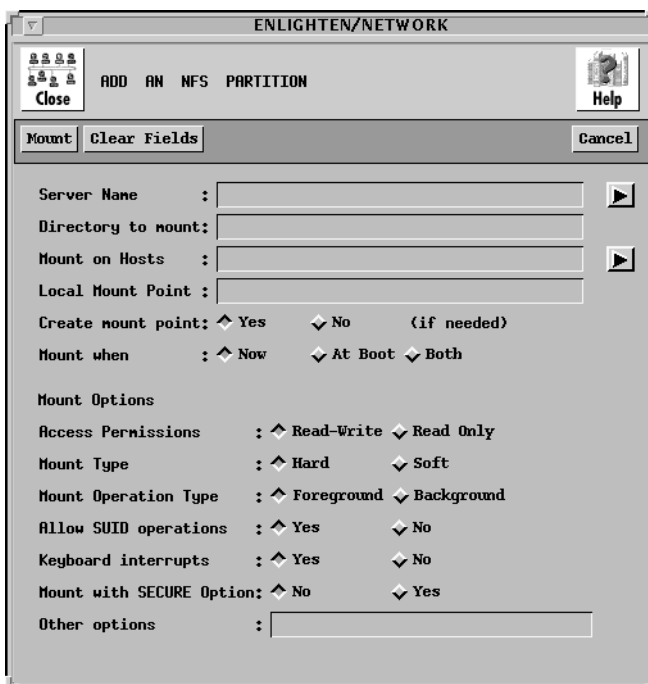

Figure 9-21 The NFS Partition window

Add Fields

This window has the following fields:

Server Name

Use this field to specify the NFS server from which the partition will be mounted. You can also click the arrow button to the right to pop up a pick list of all hosts within the current pool that may have partitions that you can mount.

Directory to mount

Use this field to specify the remote directory to be mounted. Leave a blank space between directory names for multiple entries.

Mount on Hosts

Use this field to specify the hosts where the directory will be mounted. Leave a blank space between host names for multiple entries. You can also click the arrow button to the right to pop up a pick list of all hosts within the current pool that may mount the partition specified above and make your selection(s) from there.

Local Mount Point

Use this field to specify the directory name where the exported partition will be mounted.

Create mount point

Use this toggle to specify if the local mount point directory should be created during a mount if that directory does not already exist. The default is Yes.

Mount when

Use these toggles to specify when the mount should take place. The options are Now (the default), On Reboot, or Both.

Access Permissions

Use this toggle to specify how the remote partition should be mounted: Read-Write (the default) or Read Only.

Mount Type

Use this toggle to specify if the mount should be a Hard (the default) or Soft mount. Filesystems that are mounted read-write or that contain executable files should be mounted with the hard setting. Applications using soft-mounted filesystems may produce unexpected I/O errors. Soft-mounted filesystems return errors on request; hard-mounted filesystems display a warning message and continue to try the request.

Mount Operation Type

Use this toggle to specify whether the mount should be performed in the Foreground (the default) or Background.

Allow SUID operations

Use this toggle to specify if setuid execution is allowed for this mount, but silently ignores requests to set the SUID bit.

Keyboard interrupts

Use this toggle to specify if keyboard interrupts are allowed to kill a process that is hung up while waiting for a response on a hard-mounted filesystem. The default is Yes.

Mount with Secure Option

Use this toggle to specify whether to mount with the authentication of RPC option. The default is No.

Other options

You can use this field to specify other NFS options. This field is not prechecked for syntax errors.

Add Buttons

This window has the following buttons:

Mount

Click this button to initiate the mount defined in the window.

Clear Fields

Click this button to clear the existing choices in all fields.

Cancel

Click this button to close the window without making any changes.

Modify

Click the Modify button to modify the mount parameters for an existing NFS configuration. You can do so only if the partition is mounted automatically at boot time (see the list box entry).

The Modify An NFS Partition window is similar to the Add An NFS Partition window, except you cannot modify the Server Name, Directory to mount, or Mounted on Host fields.

There are also two button differences in the Modify window:

- You can use the Modify button (rather than the Add button) after you've made all your changes, and

- You can use the Next button to modify additional NFS partitions if you've selected more than one to modify from the Network Filesystem Configuration list.

For a description of the rest of the buttons and fields in this window, see **"Add" on page 9-40**.

Delete

Click the Delete button to remove directories from the Network Filesystem Configuration list. Enlighten**DSM** will prompt you to confirm your action.

Copy

Use this command to copy the selected mount parameters and create a new partition to be mounted. Select the desired partition and click the Copy button. The Add An NFS Partition window will appear showing the highlighted partition's settings in each of the fields.

You can edit this window as needed and then click the Mount button to initiate the new mount defined in the window.

See **"Add" on page 9-40** for a description of how to use this window's fields and buttons.

Mount

Click this button to mount an NFS partition immediately. The Mount An NFS Partition window will appear. This window is similar to the Add An NFS Partition window, except you do not have a Mount when field here.

For a description of the buttons and fields in this window, see **"Add" on page 9-40**.

Unmount

Click this button to unmount the highlighted NFS partition(s). A pop-up window will appear asking you to confirm this action.

Processes

Click this button to bring up the Processes by Filesystem window. Only processes being run on the selected mounted partitions will be displayed. You can use this option to view any processes before forcefully unmounting a filesystem.

See **"Processes by Filesystem" on page 5-24** for details on how to use the Processes by Filesystem window and its buttons.

☞ The Processes By Filesystem functionality does not work correctly in version 4.1x of the Sun operating system. The resulting report may be incomplete and/or display processes that are NOT associated with the selected partitions.

Exported Directories

Use this menu item to view a list of all directories available for export and/or export one or more of them. The window shown in **Figure 9-22** will appear, displaying the exportable directories on all hosts in the current pool.
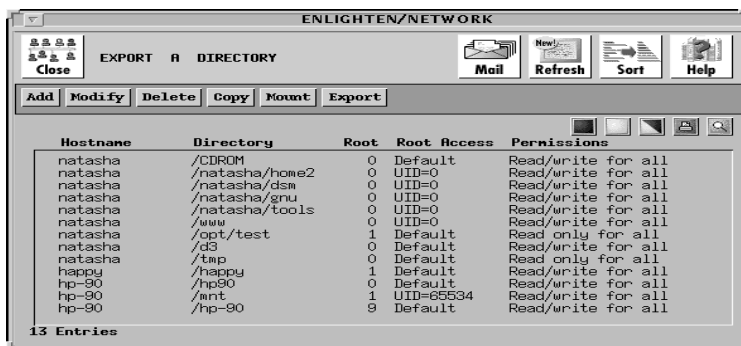

Figure 9-22 Exportable Directories

Each line in the list will display the hostname, exported partition, root access, and permissions. You may select one or more partitions for further processing by highlighting it and using the following operations to further manipulate your choice(s):

- Add   Make a directory exportable and export it

- Modify   Modify the export parameters for an existing NFS partition

- Delete   Remove the marked directory from the Export a Directory list

- Copy   Copy the selected export parameters and create a new exportable directory

- Mount   Mount an NFS partition immediately

- Export   Re-export the selected directory

Add

Use this command to define a new export criterion for a directory. Click the Add button to bring up the Export a Filesystem window (**Figure 9-23**).
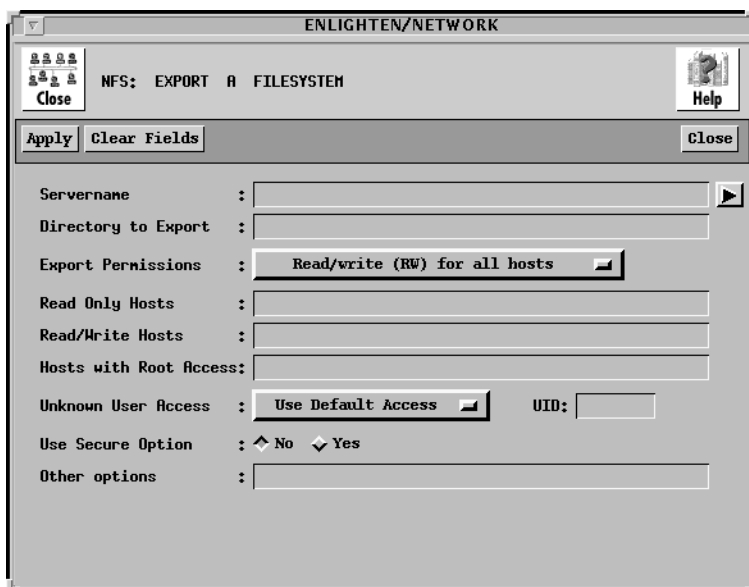

Figure 9-23 Export a Filesystem window

Add Fields

This window has the following fields:

Servername

Use this field to specify the NFS server from which the partition will be mounted. You can also click the arrow button to the right to pop up a pick list of all hosts within the current pool.

Directory to Export

Use this field to specify the full pathname for the directory to export. Leave a blank space between directory names for multiple entries.

Export Permissions

Use these toggles to specify what access permissions the client machines will have to the directory. The options are:

- Read/write (RW) for all hosts (the default)
- Read only (RO) for all hosts
- RW for specific hosts and RO for rest
- Read/write for specific hosts
- Read only for specific hosts

Read Only Hosts

This field is active only if you selected the Read only for specific hosts option in the Export Permissions field. Use this field to specify the read only hosts. Leave a blank space between hostnames for multiple entries.

Read/Write Hosts

This field is active only if you selected RW for specific hosts and RO for rest or Read/write for specific hosts options in the Export Permissions field. Use this field to specify the read/write hosts. Leave a blank space between hostnames for multiple entries.

Hosts with Root Access

Use this field to specify which hosts have root equivalency permissions on this partition. Leave a blank space between hostnames for multiple entries.

Unknown User Access

Use these toggles to determine how unknown user (UID) access should be handled. This will also determine how any root access (other than those hosts specified in the previous Hosts with Root Access field) should be handled. The options are to:

- Use Default Access (the default). UID_NOBODY if it is unknown.
- Disable Unknown Access. -1 access is denied.
- Select own UID. Only specified UID has access.

UID

This field is active only if you selected the Select own UID option in the Unknown User Access field. Use this field to enter a UID to which unknown users will be mapped.

Use Secure Option

Use this toggle to specify if the filesystem should be exported with the Secure option. The default is No.

☞ This does not work on all systems (e.g., SCO and HP). Both the server and the client must be configured to be "secure" for this to work properly.

Other options

You can use this field to specify other NFS options. This field is not prechecked for syntax errors.

Add Buttons

This window has the following buttons:

Apply

Click this button to export the directory.

Clear Fields

Click this button to clear the existing choices in all fields.

Close

Click this button to discard any changes and close the window.

Modify

Click the Modify button to modify the export parameters for an existing NFS partition. The Modify An Exported Filesystem window is similar to the Export a Filesystem window, except you can not modify the Servername or Directory to Export fields.

There are also two button differences in the Modify window:

- You can use the Modify button (rather than the Add button) after you've made all your changes, and

- You can use the Next button to modify additional NFS partitions if you've selected more than one to modify from the Network Filesystem Configuration list.

For a description of the rest of the buttons and fields in this window, see **"Add" on page 9-46**.

Delete

Click the Delete button to remove directories from the Export a Directory list. Enlighten**DSM** will prompt you to confirm your action.

Copy

Use this command to copy the selected export parameters and create a new exportable directory. Select the desired directory and click the Copy button. The Export a Filesystem window will appear showing the highlighted export definition.

You can edit this window as needed and then click the Apply button to create the new export definition.

See **"Add" on page 9-46** for a description of how to use this window's fields and buttons.

Mount

Click the Mount button to mount an NFS partition immediately. The Mount An NFS Partition window will appear, as detailed in the section **"Mount" on page 9-44**. The window's fields will already be initialized based on the exported directory's permissions.

For a description of the buttons and fields in this window, see **"Add" on page 9-40**.

Export

Click the Export button to immediately re-export the highlighted directories. A pop-up window will appear asking you to confirm this action.