DOCUMENTS

TUTORIALS

Configuring networking

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Networking information in Solaris is stored in text files. Configuration is done by filling in appriopriate data to these files and invoking specific commands in a terminal window.

1. Pop up the menu above the "Text Note" icon and click on Text Editor. Use the editc open the file:

   ```
   /boot/solaris/devicedb/master
   ```

   and use the Find feature (under Edit on the menu bar) to locate the model numbe your NIC - example: 3C905 (3Com) or 9432 (SMC). Note that the Find feature is c sensitive in the CDE text editor.

2. If your NIC is in the HCL it will be in the `master` file. The line for the SMC 9432 using in my system looks like this:

   ```
   pci10b8,a011 pci10b8,a011 net pci spwr.bef
   ```

   I have the "spwr.bef" bolded because this is the driver name and you'll need to know driver name for other files. Remember it.

   I'll save you some work if you have a 3Com 3C905 NIC. The line will be:

   ```
   pci10b7,9200 pci10b7,9200 net pci elxl.bef
   ```

3. Use the editor to open the file:

   ```
   /etc/driver_aliases
   ```

   (Opening this file will automatically close the `master` file.) If your NIC is supported it be listed here also. The line for my SMC NIC was:

   ```
   spwr "pci10b8,a011"
   ```

   which you can see is the same information found in the `master` file just rearrange bit.

4. If you know what is the actual device driver name for your NIC you can verify if device was properly detected and the driver loaded by looking in `/dev` directory searching for files which names begin with the driver name, eg. `/dev/spwr0` `/dev/elxl0` for devices used in our example. The number after the driver name in file name is the consecutive number of the NIC in your system (numbered 0, 1, 2, e using the same driver.

5. Use the editor to open the file:

   ```
   /etc/hosts
   ```

   and enter a new line in it with the IP address you want to give the system on y network and its' hostname. I called my machine "solarisi" so I entered:

```
192.168.10.20     solarisi solarisi.bigsunfan.com     loghost
```

Make sure you press Enter after typing this in to create a new (blank) line beneath it!

With your changes, the resulting the file should look like this:

```
127.0.0.1          localhost
192.168.10.20      solarisi solarisi.bigsunfan.com     loghos
```

Note that the `bigsunfan.com` domain need not to be a registered domain. I simply it as an example.

Don't forget to save the file. Click on File on menu and select Save.

> A note about Sendmail and the `hosts` file.
>
> Sendmail is a mail server, or more professionally, a Mail Transport Agent, MTA short. It is installed by deafult and started automatically when you boot your syster Sendmail is picky when it comes to FQDNs (Full Qualified Domain Names). Whe you booted your system you may have seen the infamous Sendmail error:
>
> ```
> sendmail[nnn]: My unqualified host name (solarisi) unknown;
> sleeping for retry
> ```
>
> If you are not going to run a mail server, simply turn Sendmail off by renaming i startup file:
>
> ```
> mv /etc/rc2.d/S88sendmail /etc/rc2.d/noS88sendmail
> ```
>
> Otherwise, you need to specify FQDN of your host in `/etc/hosts` file. For mo details see Configuring Sendmail tutorial.

6. Check if the file

   ```
   /etc/hostname.driver_nameNIC_number
   ```

   exists. Use the ACTUAL WORD "hostname" in the name of the file, NOT the hostna you gave your system. The driver_name is the name I said you should remem above, and the NIC_number is the number of the NIC in your system. Since I only h one NIC in my system, my file was named:

   ```
   /etc/hostname.spwr0
   ```

   The file should contain your host name, the same as in `/etc/hosts` file. If there is such file, or it contains improper value you need to correct it.

   You could also enter the IP address instead of the host name which is needed if want to assign multiple IP addresses to a single interface, such as with hosting mult Web sites on a single server (Apache's virtual hosting), create multiple files using above naming convention but append a `:1` and `:2` etc. to the file name for e additional file. Each file should have a single, different IP address. For example:

`/etc/hostname.spwr0`	contains 192.168.10.20
`/etc/hostname.spwr0:1`	contains 192.168.10.21
`/etc/hostname.spwr0:2`	contains 192.168.10.22

7. Now you set up an appropriate subnet mask. Open the file

   ```
   /etc/netmasks
   ```

   and the top of the file has comments that explain the contents. You basically just e your "network number" (NOT your system's IP address) followed by the subnet mask your network. Given that the address I gave my system above (192.168.10.20) Class C IP address, my `netmasks` file looked like this:

```
192.168.10.0        255.255.255.0
```

The following table may help you determine what your network number and sub mask should be based on the first number of your system's IP address:

IP Number Class	Network Address Range	Subnet Mask	Private Address Range
A	1.0.0.0 to 126.0.0.0	255.0.0.0	10.x.x.x
B	128.0.0.0 to 191.255.0.0	255.255.0.0	172.16.x.x to 172.31.x.x
C	192.0.0.0 to 223.255.255.0	255.255.255.0	192.168.0.x to 192.168.255

If you're setting up a small network in your home or office and you're not sure wha address to use, use any address given in the "Private Address Range" above fo Class C network. This will allow you to have up to 254 nodes (aka "hosts" in TCI lingo) on your network.

Once you've got the appropriate network and mask addresses entered, save the file.

8. The `/etc/hosts` file mentioned above is used to resolve machine names to addresses on your local network. If you are connecting your system to a network tha connected to the Internet and you plan to use it to surf the Web, or have another n to resolve Internet domain names, you'll need to specify your ISP's DNS servers. Th done using another file called

   ```
   /etc/resolv.conf
   ```

   Note: When you save the following newly created files the `/etc` directory sho already be selected as the target for the saved file. That's why no path is specifiec file saves. However, verify that `//etc/` is in the "path or folder name" field when sav these files.

   Create the new file using the text editor by clicking on File and then on New and e the following lines:

   ```
   domain enter-your-ISP's-domain
   nameserver enter-IP-address-of-primary-DNS-server
   nameserver enter-IP-address-of-secondary-DNS-server
   ```

   Be sure to hit Enter at the end of the last line and then save the file with the na `resolv.conf`

   The above file is used if your system is not part of a domain. If it is, ex: you are goin use your system as an Internet server, you have to list your domain name on `domain` line and list your ISP's domain (for DNS) using the `search` keyword. example:

   ```
   domain your-domain.com
   nameserver 172.31.214.78
   nameserver 10.138.14.2
   search your-ISPs-domain.com
   ```

9. If your system is on a network that has a default gateway, you'll need to create

   ```
   /etc/defaultrouter
   ```

   file for tha. If your system is going to be an Internet server the default gateway is li the address of the router interface that connects you to your ISP.

   Create a new file using the text editor (click on File and then on New) and simply e one IP address. This IP address however will be for your default gateway. Be sure to Enter at the end of the address and then save the file as `/etc/defaultrouter`

10. Unfortunately, simply creating the `resolv.conf` file earlier doesn't mean your sys will automatically start to use it. Again, this file is only necessary if you will use y

system to access the Internet or other large network where DNS servers are use resolve system names. This includes simply using your system as a workstation to the Web. It doesn't have to be a server.

Yet another file called `nsswitch.conf` is used to "tell" your system which na resolution methods to use (host files, DNS, etc) and in which order to use th Fortunately, the Solaris installation includes several different pre-written versions of `nsswitch` file. The default file only uses the host file to resolve machine names.

In order for your system to use DNS servers, you'll have to issue the following comm at the `#` prompt in a "This Host" window:

```
cp /etc/nsswitch.dns /etc/nsswitch.conf
```

Note: At this stage all files related to network configuration are filled in, but notworking on your system is not yet working properly. You can either reboot y system by typing in `init 6` to make Solaris to reread configuration files and se networking accordingly, or alternatively perform the following steps.

11. Plumb the network interface with the following command

    ```
    ifconfig spwr0 plumb
    ```

12. Make the interafce up by typing in

    ```
    ifconfig spwr0 192.168.10.20 netmask 255.255.255.0 up
    ```

    The IP part 192.168.10.20 of the above command is the IP assigned to the interface other words the IP of your host, and the netmask part 255.255.255.0 is the netm specified in `/etc/netmasks` file.

    You should now be able to communicate with systems on your local network. You verify this with `ping` command.

13. Add the default route to routing table as follows

    ```
    route add default 192.168.10.1
    ```

    where 192.168.10.1 is the IP of the gateway on your network. This should be the specified in `/etc/defaultrouter` file discussed above.

You should now be able to communicate with all systems on the Internet. Verify this with `p` command, or simply fire up a web browser.

Related man pages:

- hosts,
- resolv.conf,
- nsswitch.conf,
- netmasks,
- defaultrouter,
- ifconfig
- route
- ping.

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Original text: http://www.execpc.com/~keithp/bdlogsol.htm