The SuSE Distribution Network Configuration

Networking with YaST

With an *ifconfig* here, and a *route* there – the network configuration commands are anything, but intuitive. Most people are only too happy to let distribution specific tools such as SuSE's YaST lend a helping hand.

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You have probably been through this before; of course it is fantastic to have a new network card, but after putting it into your machine you step back and wonder where to go from there. SuSE users can relax and leave the hard work to YaST ("*Y*et *a*nother *S*etup *T*ool"), a comprehensive tool provided by the distributor that allows you to configure more or less everything, and luckily, that also includes the network environment.

There are various ways of launching the program, for example by typing the following command

```
kdesu /sbin/yast2 &
```

in an **X terminal**. After launching the program, you need to provide the *root* password. You should then see that the "Network" configuration area is divided into two sections *Network/Basic* and *Network/Advanced* (see Figure 1).

GLOSSARY

DHCP: *A Server can use the "Dynamic Host Configuration Protocol" to assign important network configuration data, such as the IP address, the gateway address, and name server to client computers.*

The view is slightly different if you launch the KDE Control Center to load the required YaST module. To do so, select *YaST2 Modules* in the *Index* tab.

What to configure

Setting up a network adapter is certainly a basic network configuration task, so let's go for *Network/Basic*. This selection opens the way to a collection of items that allow the admin user to choose whether she wants to set up a network adapter, configure a modem, an ISDN or adapter for Internet access, or set up a *Mail Transfer Agent*. You can also specify the network services to be launched on starting up your machine *Start/stop services*).

To attach a machine to the local network, *Network card configuration* is the place to start. When you click the

icon, YaST automatically shows the Ethernet cards in your computer. You can normally rely on the network card being recognized correctly, unless you are using exotic or ancient hardware.

If your computer has multiple network cards, YaST will display all of them. You can now click on a card to select it and then click *Configure….*

If the device has already been configured, you can select *Edit…* to change the configuration (this may be called

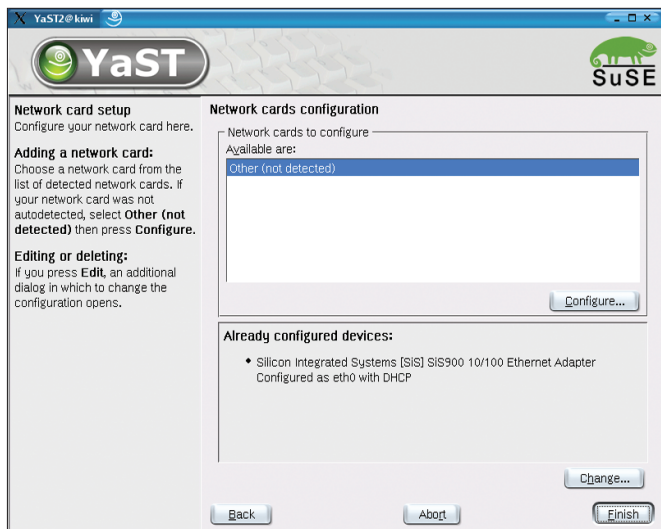Figure 1: Setting up network adapters is just one of many basic network configuration options

Figure 2: You can select "Edit..." to change the configuration for a pre-installed card

Figure 4: Specifying the IP address and network mask manually rather than the DHCP option

Modify… in some distributions) (see Figure 2).

This will take you to an overview window (Figure 3) where you can select the device whose settings you want to modify. Normally (that is, for a machine with only one network card), the list will only contain the device *eth0*. Now click the *Edit* button to enter details for the network card.

If a **DHCP** server is available to supply the machine with a suitable IP address for your network, you will want to select the *Automatic address setup (via DHCP)*. If not, you should select *Static address configuration* and enter the *IP address* and *Subnet mask* yourself (Figure 4). The latter is simply another word for *Network mask*.
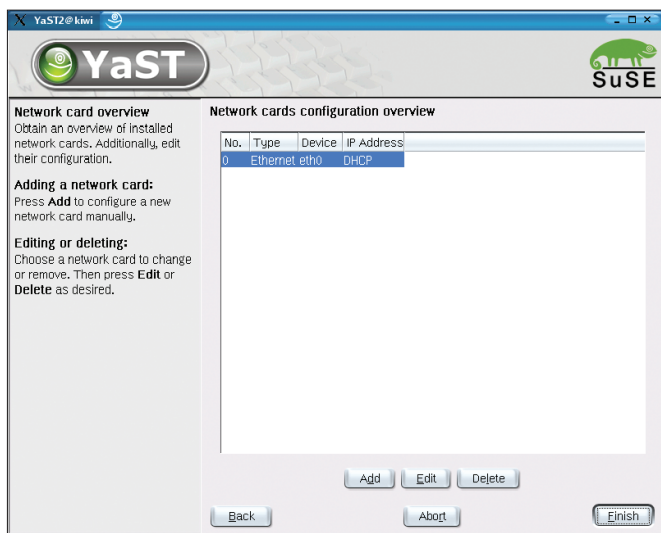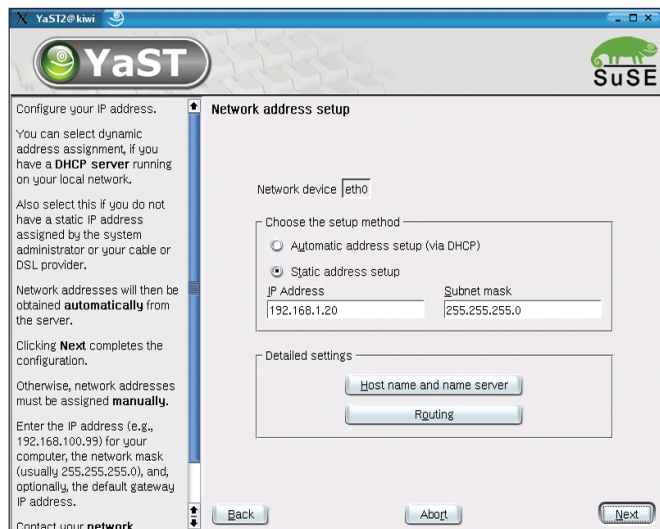
Naming Your Computer and Name Services

You need to supply a few more details under *Host name and name server* (Figure 5). Type a name for the local machine in (*Host name*) and add the *Domain name*, followed by up to three name servers and a domain search list.

If you do not have a domain of your own, you can use one of the reserved domains, *example.com*, *example.net*, or *example.org* for your *local network*. You should steer clear of any domain names that might really exist on the Web!

Your provider or network administrator will be able to supply details of the name server – if you happen to be the administrator for this LAN, it is your responsibility to decide whether you

need a DNS Server of your own for the local network, or if you will be using an */etc/hosts* file on each machine to provide name resolution.

Use the *Domain search* or *Domain search list* boxes to specify the domains in which to search for hosts by name only i.e. without specifying a domain. If you type *example.org* here, you will be able to access the host *comp1.example.org* simply by referring to it as *comp1*.

If you intend to access the Internet from this machine, do not forget to click the *Routing* button shown in Figure 4. This is where you specify the gateway through which your machine will access the global Internet (Figure 6).

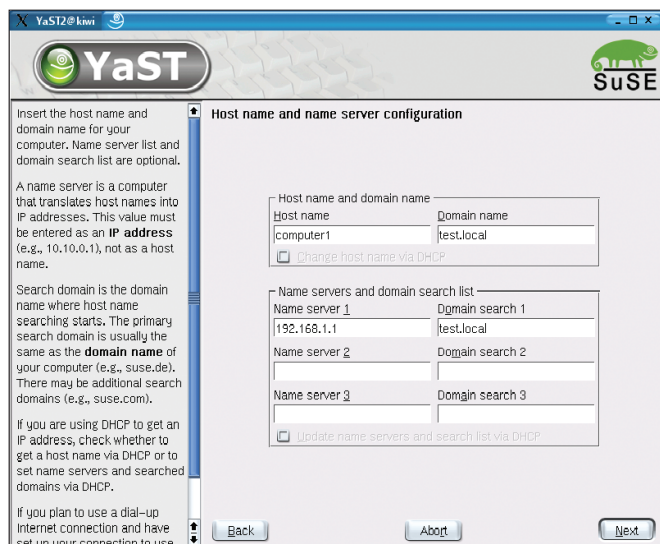You can now finish configuring the network card and return to the tab

Figure 3: Overview of network cards

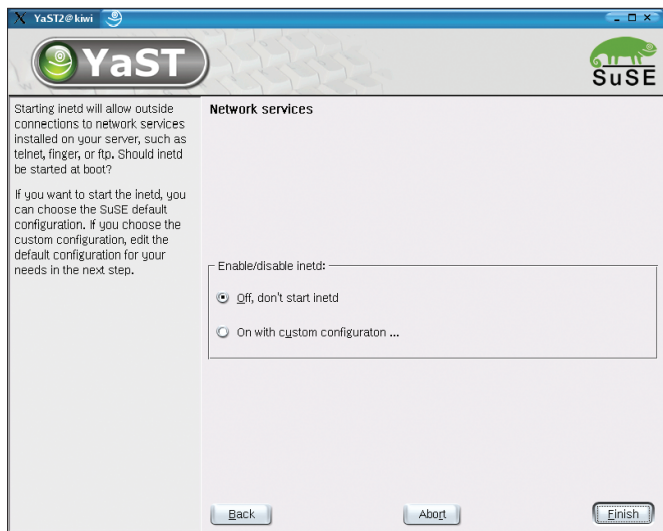**Figure 5: Host name, name server and co**

Figure 7: If you are not offering Internet services, you should seriously consider disabling inetd
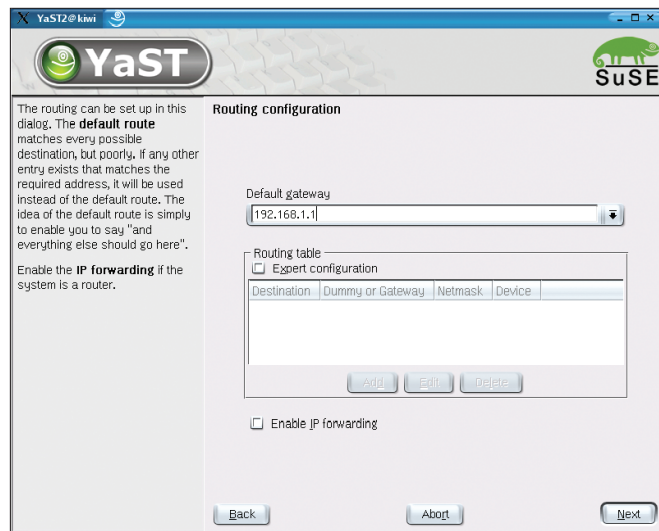

Figure 6: The route to the Internet is via the gateway. Here you need to enter the IP Address that gives you access

overview page that now shows the configured options. Check the upper panel to see if there are any other unconfigured cards that need your attention. If you now click on *Finish*, the *SuSEconfig* tool is launched and writes the new data to the appropriate configuration files below the */etc/sysconfig/network* directory.

To tidy up your network configuration you might now like to select *Start/stop services* in YaST's *Network/Basic* panel (Figure 1), in order to specify the services provided by the "super server" *inetd*. On normal home computers you should disable *inetd*, since every network service you start, without really knowing why, is a potential security hazard. Of course this is no substitute for a firewall configuration.

Ye Olde YaST

Users of older SuSE versions can use the older YaST1 instead of the colorful YaST2 we have discussed so far. This text based tool was ditched in SuSE 8.0 – a fact that provoked severe criticism from some users as there is no real text based substitute for this tool. Also many users still prefer YaST1 to it successor.
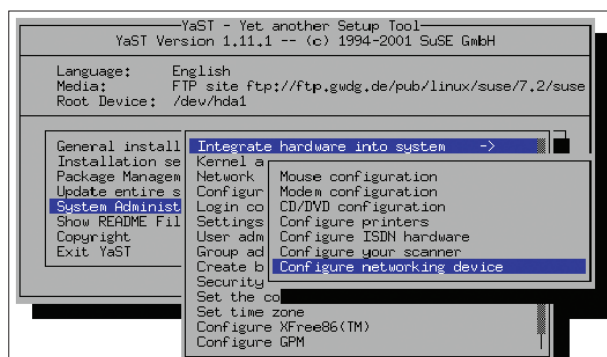

Figure 8: You can use the old YaST1 tool just as well as YaST2 for all of your network configuration tasks
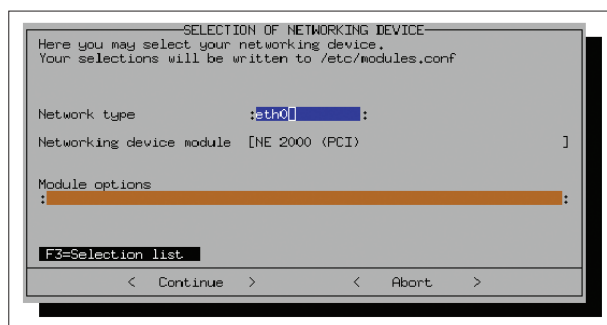

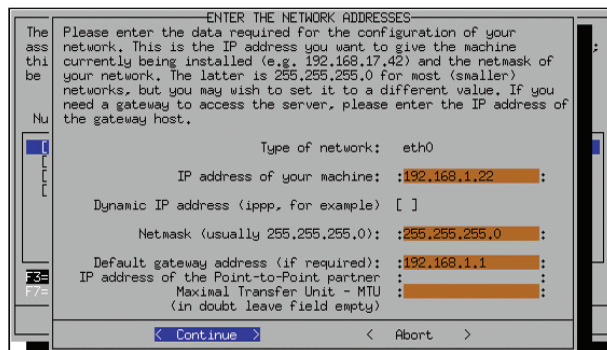**Figure 9: Configuring a networking device**

Figure 10: Configuring a static IP address for a machine

Select the *System Administration* menu item, and then *Integrate hardware into system* and finally to *Configure networking device* (Figure 8).

At the *Network type* prompt (Figure 9) enter the type of network card you are configuring. This will normally be *eth0*. *Networking device type* allows YaST1 users to specify a kernel module to load, that is a driver. If the exact device type is unknown, you might like to take a look at the card itself; the type is normally printed on a chip somewhere.

Now you need to set your networking numbers. Use the *Networking configuration* menu item and select *Network base configuration* to do so. YaST1 distinguishes between *Auto IP* and *IP address*, where the former item means you will be using a DHCP server to provide networking information and the latter is used for manual configuration (Figure 10).

After completing the base configuration, you can additionally change the host name and specify the name server. Finally, you might like to take a look at the network services before jumping in at the deep end of your network. ∎