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Procedure: The importance of loopback interface (Linux)
Source: **LINK**
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Created by: HeelpBook Staff
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THE IMPORTANCE OF LOOPBACK INTERFACE (LINUX)

The very first interface to be activated is the loopback interface:

```
# ifconfig lo 127.0.0.1
```

Occasionally, you will see the dummy hostname localhost being used instead of the IP address. **ifconfig** will look up the name in the **hosts** file, where an entry should declare it as the hostname for 127.0.0.1 :

```
# Sample /etc/hosts entry for localhost


localhost 127.0.0.1
```

To view the configuration of an interface, you invoke **ifconfig** , giving it only the interface name as argument:

```
$ ifconfig lo
lo Link encap:Local Loopback
inet addr:127.0.0.1
Mask:255.0.0.0
UP LOOPBACK RUNNING MTU:3924 Metric:1
RX packets:0 errors:0 dropped:0 overruns:0 frame:0
TX packets:0 errors:0 dropped:0 overruns:0 carrier:0
Collisions:0
```

As you can see, the loopback interface has been assigned a netmask of 255.0.0.0 , since 127.0.0.1 is a class A address.

Now you can almost start playing with your mini-network. What is still missing is an entry in the routing table that tells IP that it may use this interface as a route to destination 127.0.0.1 . This is accomplished by using:

```
# route add 127.0.0.1
```

Again, you can use localhost instead of the IP address, provided you've entered it into your **/etc/hosts**.

Next, you should check that everything works fine, for example by using **ping** . **ping** is the networking equivalent of a sonar device. The command is used to verify that a given address is actually reachable, and to measure the delay that

occurs when sending a datagram to it and back again. The time required for this process is often referred to as the "round-trip time":

```
# ping localhost

PING localhost (127.0.0.1): 56 data bytes

64 bytes from 127.0.0.1: icmp_seq=0 ttl=255 time=0.4 ms

64 bytes from 127.0.0.1: icmp_seq=1 ttl=255 time=0.4 ms

64 bytes from 127.0.0.1: icmp_seq=2 ttl=255 time=0.4 ms

^C

— localhost ping statistics —

3 packets transmitted, 3 packets received, 0% packet loss round-trip min/avg/max =
0.4/0.4/0.4 ms #
```

When you invoke **ping** as shown here, it will continue emitting packets forever, unless interrupted by the user. The **^C** marks the place where we pressed Ctrl-C.

The previous example shows that packets for 127.0.0.1 are properly delivered and a reply is returned to **ping** almost instantaneously. This shows that you have successfully set up your first network interface.

If the output you get from **ping** does not resemble that shown in the previous example, you are in trouble. Check any errors if they indicate that some file hasn't been installed properly. Check that the **ifconfig** and **route** binaries you use are compatible with the kernel release you run, and above all, that the kernel has been compiled with networking enabled (you see this from the presence of the **/proc/net** directory). If you get an error message saying "Network unreachable," you probably got the **route** command wrong. Make sure you use the same address you gave to **ifconfig**.

The steps previously described are enough to use networking applications on a standalone host. After adding the lines mentioned earlier to your network initialization script and making sure it will be executed at boot time, you may reboot your machine and try out various applications. For instance, **telnet localhost** should establish a **telnet** connection to your host, giving you a **login:** prompt.

However, the loopback interface is useful not only as an example in networking books, or as a test bed during development, but is actually used by some applications during normal operation.

Therefore, you always have to configure it, regardless of whether your machine is attached to a network or not.