# Solaris Nerwork configuration

Setting up Solaris networking often becomes challenging for the new sysadmins and new owners of Sun systems . This document details the steps involved in setting up of Solaris networking and can be used as a check list if you are already familiar with Solaris network configuration .

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Ifconfig command is used in Solaris to configure the network interfaces . The following lines describes the activities needed to configure a freshly installed network card from the root prompt .

1. Enable the network card

#ifconfig hme0 plumb

ifconfig -a command should show following type of output which means device is enabled and is ready to configure ip address and netmask :

hme0:
flags=842<BROADCAST,RUNNING,MULTICAST>
mtu 1500
inet 0.0.0.0 netmask 0
ether 3:22:11:6d:2e:1f

2. Configuring ipaddress and netmask and making the interface status as up .

*#ifconfig hme0 192.9.2.106 netmask 255.255.255.0 up*

#ifconfig -a will now show the ip address , netmask and up status as follows :

*hme0:*

Server , Clients setup and commands.

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*flags=843<UP,BROADCAST,RUNNING,MULTICAST>
mtu 1500
inet 192.9.2.106 netmask ffffff00 broadcast 192.9.2.255
ether 3:22:11:6d:2e:1f*

The file /etc/netmasks is used to define netmasks for ip addresses .

127.0.0.1, is the standard loop back route and 127.0.0.0 is the default loopback ipaddress used by the kernel when no interface is configured this will be the only entry dispalyed by the system on invoking ifconfig -a command..

3. Configuring Virtual interface :
Vitual interface can be configured to enable hme0 reply to more then one ip addresses. This is possible by using hme0 alias which can be configured by ifconfig command only . The new alias device name now becomes hme0:1 hme:2 etc.

*#ifconfig hme0:1 172.40.30.4 netmask 255.255.0.0 up*

ifconfig -a will show the original hme0 and alias interface :

*hme0:
flags=843<UP,BROADCAST,RUNNING,MULTICAST>
mtu 1500
inet 192.9.2.106 netmask ffffff00 broadcast 192.9.2.255
ether 3:22:11:6d:2e:1f
hme0:1:
flags=842<BROADCAST,RUNNING,MULTICAST>
mtu 1500
inet 172.40.30.4 netmask ffff0000 broadcast 172.40.255.255*

4. Ip-forwarding :

IP forwarding allows you to forward all requests coming for a certain port or URL to be redirected to a specified IP address.

ip forwording becomes enabled automatically when system detects more then one interface at the booting time . The file involed is /etc/rc2.d/S69inet .

ipforwording is on by default but can be turned off by following command :

*#ndd -set /dev/ip ip_forwarding 0*

5. Router Configuration

After interfaces and ipaddess have been configured the system needs a default router which will allow the machine to talk to world outside of local network .

You can specify a particular route for a particular address as in following example

*#route add -net 10.0.0.0 -netmask 255.0.0.0 172.40.30.1 1*

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if the the destination ipaddess is not defined in this manner system forwards all requests to the default router .

default route is defined manually by editing /etc/defaultrouter file and putting router's ipaddress entry in it. This file is read by /etc/rc2.d/S69inet file during the booting process and entry added to the routing table .

The route can be defined online also using routeadd command but the changes will be lost on reboot .To make changes permanent make sure to put an entry in /etc/defaultrouter.

#route add default 205.100.155.2 1

#route change default 205.100.155.2 1

The 1 at the end is the number of hops to the next gateway.

If an interface is not responding to the network, check to be sure it has the correct IP address and netmask , network cables are fine .

6. Network Terms
CIDR :
CIDR : Classless Inter-Domain Routing - the notation often used instead of writing the subnet mask along with ip-address . It has network prefix at the end of a address as / number of network bits.This means that the IP address 192.200.20.10 with the subnet mask 255.255.255.0 can also be expressed as 192.200.20.10/24. The /24 indicates the network prefix length, which is equal to the number of continuous binary one-bits in the subnet mask (11111111.11111111.11111111.000000). Zeros are for addressing the hosts on this network.

VLSM :
network can be variably subnetted into smaller networks, each smaller network having a different subnet mask .This functionality is avaiable in Solaris 2.6 above. the ipaddresses



## 7. Next Steps :

Reference books on Networking at Amazon.com

This article tried to cover the solaris network configuration . Network configuration is a part of broader area of network managment .If you wish to gain more knowledge about the networking concepts there are some good books available for online buying from Amazon.com in the display panel below.

Two suggested books to understand the networking concepts are :

1. TCP/IP Network Administration (3rd Edition; O'Reilly Networking)
2. Internetworking with TCP/IP Vol.1: Principles, Protocols, and Architecture (4th Edition)

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