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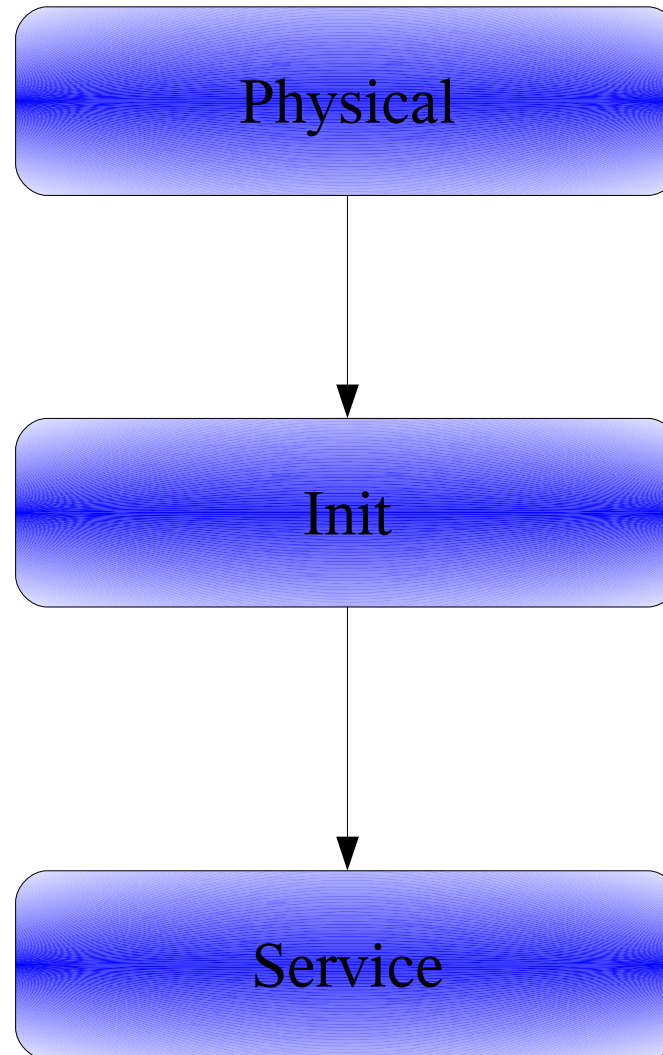
Solaris 10 Network Setting

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Network Configuration Loading at OS Boot





Network Configuration Loading at OS Boot

svc:/network/physical:default *//lib/svc/method/net-physical*

- Read /etc/hostname.interface & /etc/hostname6.interface
- Plumb IPv4 & IPv6
- Run dhcp if dhcp.interface exists

svc:/network/initial:default *//lib/svc/method/net-init*

- Run in.mpathd IPMP daemon
- Load IPsec configuration
- Configure gateway by loading "/etc/defaultrouter configuration
- If no static default router configuration, run dynamic routing daemon: in.routed or in.rdiscd.
- Load IP Tunnel configuration

svc:/network/service:default *//lib/svc/method/net-svc*

- update name service configuration file (updated by dhcp or NIS)
- Setting up configuration for multicast
- Load IPQoS configuration



IP Address Setting

To set IP Address:

```
ifconfig interface plumb x.x.x.x netmask y.y.y.y broadcast z.z.z.z up
```

File configuration:

- /etc/inet/netmasks
- /etc/inet/hosts & /etc/inet/ipnodes
- /etc/hostname.interface
- /etc/nodename



Configure Logical IP Address

- Two way to configure:

```
ifconfig interface:n plumb x.x.x.x netmask y.y.y.y broadcast z.z.z.z up
```

```
ifconfig interface addif x.x.x.x netmask y.y.y.y broadcast z.z.z.z up
```

- Per physical network interface:
Maximum 8192 Virtual interface.



Static Routing Configuration

- Setting gateway
/etc/defaultrouter

- Setting some static routing
route -p add network router
route -p delete network router

Configuration is saved in */etc/inet/static_routes* file & is loaded at boot time.



Connection Test

- **Ping:** check the response of hosts on the network
- **Traceroute:** show all routers which network packet passed through to destination machine.
- **Snoop:** capture packets from the network
- **Spray:** send Packets to hosts on the network
- **Netstat:** check the Network Status



VLAN Setting

- Specify Physical Point of Attachment (PPA) value by using this formula:

*driver-name + VID * 1000 + device-instance*

Note that the device-instance number must be less than 1000.

Example:

create the following PPA for a ce2 interface to be configured as part of VLAN 543:

$ce + 543 * 1000 + 2 = ce543002$

ifconfig ce543002 plumb up



IPMP Setting – Probe Detection

IP MultiPathing (IPMP) & Network interface trunking/Link aggregation are availability & redundancy feature of Solaris OS.

- Probe Detection (Since Solaris 8)

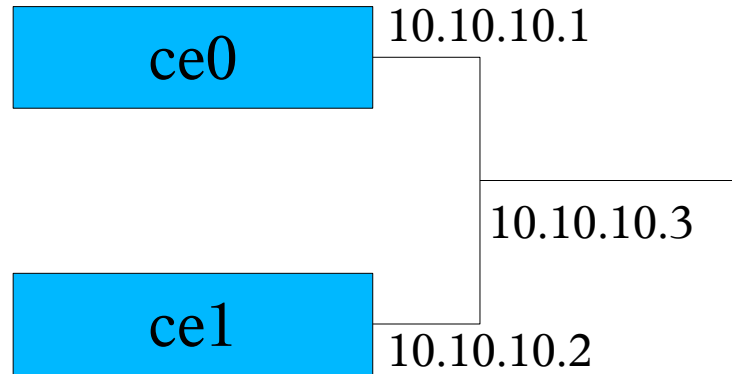
Interface A:

```
ifconfig interface plumb a.a.a.a netmask y.y.y.y broadcast z.z.z.z group ipmpname up  
addif c.c.c.c netmask y.y.y.y broadcast z.z.z.z -failover deprecated up
```

Interface B:

```
ifconfig interface plumb b.b.b.b netmask y.y.y.y broadcast z.z.z.z -failover deprecated  
group ipmpname up
```

IPMP Setting: Probe Detection Example



Interface ce0:

```
ifconfig ce0 plumb 10.10.10.1 netmask 255.255.255.0 broadcast
10.10.10.255 group ipmp0 up
```

```
addif 10.10.10.3 netmask 255.255.255.0 broadcast 10.10.10.255 -failover
deprecated up
```

Interface ce1:

```
ifconfig ce1 plumb 10.10.10.2 netmask 255.255.255.0 broadcast
10.10.10.255 -failover deprecated group ipmp0 up
```



IPMP Setting – Linked Based Detection

- Linked-Based Detection (Since Solaris 10)

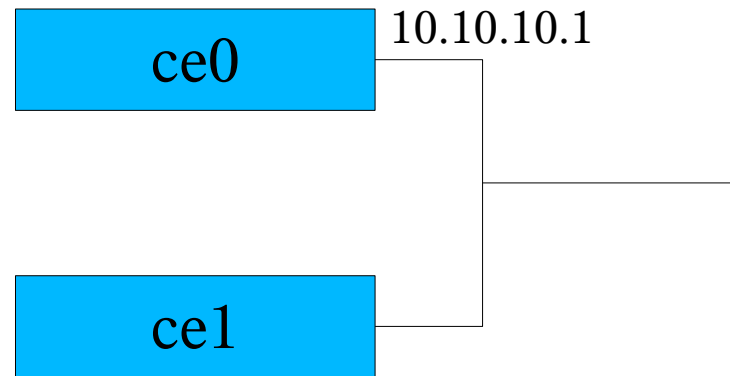
Interface A:

```
ifconfig interface plumb a.a.a.a netmask y.y.y.y broadcast z.z.z.z group  
ipmpname up
```

Interface B:

```
ifconfig interface plumb group ipmpname up
```

IPMP Setting: Linked-Based Detection Example



Interface ce0:

```
ifconfig ce0 plumb 10.10.10.1 netmask 255.255.255.0 broadcast 10.10.10.255  
group ipmp0 up
```

Interface ce1:

```
ifconfig ce1 plumb group ipmp0 up
```



Trunking Setting

1. Use DLADM Command:

Interfaces must be of the GLDv3 type: xge, e1000g, and bge.

- Create: `dladm create-aggr -d interface -d interface key`
- Show: `dladm show-aggr`
- Modify: `dladm modify-aggr -P policy key`
`dladm modify-aggr -l lacpmode -t time key`
- Remove: `dladm remove-aggr -d interface key`

2. Use Sun Trunking 1.3

- Interface are qfe, ge, or ce.
- Packages are install in `/etc/opt/SUNWconn` directory.
- Create: `nettr -setup key device interface members=n,n policy=policy`
- Show: `nettr -conf`
`nettr -stat key`
- Modify: `nettr -mod key policy=policy lacp=lacpmode ptimer=time`
- Remove: `nettr -release key`



IPQoS

- IP Quality of Service (IPQoS) enables to prioritize, control, and gather accounting statistics.
- IPQoS can provide consistent levels of service to users of the network. Traffic can be managed to avoid network congestion.
- Delegating levels of service to different groups, such as customers or departments in an Enterprise.
- Prioritizing network services that are given to particular groups or applications.



IPQoS Sample Setting

IPQoS Sample Setting Requirement:

- FTP max 50 kilo bits per second
- RSH max 1 mega bits per second
- Maximum total bytes outgoing packets of FTP & RSH at a time is 8 kilo bits per second.
- FTP & RSH traffic more than that limitations will be dropped.

IPQoS Setting - Continue

```

root@ray01 # cat /var/ipqos/ftp.qos
fmt_version 1.0
action {
    module ipgpc
    name ipgpc.classify
    params {
        global_stats TRUE
    }
    class {
        name ftp
        next_action meterftp
    }
    class {
        name rsh
        next_action meterrsh
    }
}

```

```

filter {
    name ftpout
    sport ftp
    class ftp
}
filter {
    name ftpdata
    sport ftp-data
    class ftp
}
filter {
    name rsh
    sport shell
    class rsh
}
action {
    module tokenmt
    name meterftp
}

```

```

params {
    committed_rate 50000
    committed_burst 8000
#    peak_rate 80000
#    peak_burst 8000
    red_action_name drop
    yellow_action_name drop
    green_action_name
continue
    global_stats TRUE
}
}
action {
    module tokenmt
    name meterrsh
    params {
        committed_rate 1000000
        committed_burst 8000
        red_action_name drop
        green_action_name
continue
        global_stats TRUE
    }
}
}

```

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Thank you!

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