

## The Network Initialization Process: (or *A Daemon is Born*)

By: Micah Altman

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### Overview

This is an overview of the steps the system goes through to initialize network services, starting at the network script. (For a description of steps from power up until starting the network script, see *The System Initialization Process*.)

### The Chain of Events

#### *The Network Scripts*

- Most network services get started by the network script: `/etc/init.d/network`. (Although a few, like `sendmail` have their own scripts in the `rc2.d` directory) This script does the following:

1. Checks if the *verbose* flag has been set with `chkconfig`, to determine whether to echo its actions to the console. Checks whether the network flag has been set with `chkconfig`, in order to determine whether to initialize the network. (Assume it has been set to "on")
2. Checks the `/etc/config/netif.options`, `/etc/config/ifconfig-*.options`, `/etc/hosts`, and `/etc/sys_id` files, and configures the network interfaces using `ifconfig`.
3. Runs the packet filter daemon, `ipfilterd`, with `ipfilterd.options` if the `chkconfig` flag is set.
4. Initializes static routes, loopback routes.
5. Runs the real time networking daemon, `rtnetd`, if the `chkconfig` flag is set.

6. Start routing daemons `gated` or `routed`, with their setup files if the `chkconfig` flag is set.
7. Start multicast routing `mouted`, with its setup file, if the `chkconfig` flag is set.
8. Start RPC with `portmapper` or `rpcbind` (SVR4) with the `portmapper.options`, `rpc.passwd.options`, and `rpc.passwd`
9. Starts the name services: `named` for DNS, and/or `ypbind`, etc. for NIS.
10. Starts the other application service daemons.
11. Starts `inetd`, which both provides application services and initializes important RPC services. (check `/usr/etc/inetd.conf` `/etc/config/inetd.options`, `/etc/services`, `/etc/RPC`)
12. starts: `sac`, `timed`, `rwhod`, `snmpd`, for network monitoring and synchronization.
13. initializes scripts for DECNET or token-ring if appropriate.

## *THE NETWORK IS UP!*

### **Getting More Information from the Startup Process**

If a service is failing on startup, or is not being initialized correctly, obtain as much information as possible about the startup process of that service.

- Configure `syslogd.conf` so that all messages from that service are logged.
- Ask the service to report more information. Most daemons support a *trace*, *verbose* or *debugflag* for reporting more information. Check the manual pages.
- Set `chkconfig verbose on` to trace the startup process in more detail.
- If a shell script is run to start the service, use the `-x` flag to trace the execution of that shell script.

- Check the manual pages, administration documents, and release notes for the existence of additional log files, and the interpretation of messages in those files.