Boot Time Scripts on FreeBSD

Sometimes you need to run a script at a specific point during the FreeBSD boot process. For example:

- **Synchronizing the system clock:** If your system clock drifts too far out of sync, `ntpd` may not be able to correct it. Running `ntpdate` before `ntpd` starts can solve this.
- **Creating directories on tmpfs:** If you mount `/var/log` or other directories on a ramdisk (tmpfs), some applications may fail if their required directories do not exist. You need to create these directories after filesystems are mounted but before daemons start.

FreeBSD's rc(8) system makes this easy. You can create custom scripts in `/usr/local/etc/rc.d/`, make them executable, and enable them in `/etc/rc.conf`.

Key rc(8) Script Directives

- **PROVIDE:** The service this script provides. Used to determine execution order.
- **REQUIRE:** Services that must start before this script runs.
- **BEFORE:** Services that must start after this script runs.

Below are two example scripts.

Example 1: Create Directories on tmpfs

Create `/usr/local/etc/rc.d/create_tmp_dirs` with the following content:

```
#!/bin/sh
#
# PROVIDE: create_tmp_dirs
# REQUIRE: FILESYSTEMS
# BEFORE: DAEMON

. /etc/rc.subr

name="create_tmp_dirs"
rcvar=`set_rcvar`

start_cmd="create_dirs"
create_dirs() {
    mkdir -p /mnt/tmpfs/dir1
    mkdir -p /mnt/tmpfs/dir2
    # Add more directories as needed
}

load_rc_config $name
```

```
run_rc_command "$1"
```

Example 2: Run ntpdate Before ntpd

Create `/usr/local/etc/rc.d/ntpdate_enable` with the following content:

```
#!/bin/sh
#
# PROVIDE: ntpdate
# REQUIRE: NETWORKING
# BEFORE: NTPD

. /etc/rc.subr

name="ntpdate"
rcvar=`set_rcvar`

start_cmd="sync_time"

sync_time() {
    /usr/sbin/ntpdate -u 0.pool.ntp.org  # Change to your preferred NTP
server
}

load_rc_config $name

run_rc_command "$1"
```

Final Steps

1. **Make the scripts executable:**

```
chmod +x /usr/local/etc/rc.d/create_tmp_dirs
chmod +x /usr/local/etc/rc.d/ntpdate_enable
```

1. **Enable the scripts in `/etc/rc.conf`:**

```
create_tmp_dirs_enable="YES"
ntpdate_enable="YES"
```

Now, when you reboot, `create_tmp_dirs` will run after filesystems are mounted but before daemons start, and `ntpdate` will run after networking is up but before `ntpd` starts.

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