



Services & Settings



Basic Services

Common Flow of Running a Service

1. Installation

- Through ports, packages, or source tarballs
 - `pkg install kde4`

2. Configuration

- Service specific configuration file(s)
- `/etc/rc.conf`
 - `kdm4_enable="YES"`

3. Start

- `rc.d/*`
 - `/usr/local/etc/rc.d/kdm4 start`
 - `service kdm4 start`

4. Maintenance

- Updating 、 Restarting

Configuration Files (1/3)

- ❑ Local installed programs' configuration files are located under `/usr/local/etc`
 - Daemon → *program-name.conf*
 - `pure-ftpd.conf`
 - user-program → *program-namerc*
 - `vimrc`
 - `screenrc`

- ❑ Default config file usually installed with `.sample` or `.default` suffix
 - `pure-ftpd.conf.sample`or different suffix for different purpose
 - `php.ini-dist`
 - `php.ini-recommended`copy and rename before use it

Configuration Files (2/3)

- ❑ A program with multiple config files are usually located in */usr/local/etc/program-name/*
 - apache*
 - postfix

- ❑ Most configuration files have clear comment at the beginning or before each description

- ❑ Most popular styles
 - *key <space>value*
 - *key = value*

Read documents to know each option's meaning

```
# pure-ftpd.conf

# IP address/port to listen to (default=all IP
and port 21)
Bind                                127.0.0.1,21

# Fork in background
Daemonize                            yes
```

Configuration Files (3/3)

❑ Some with local effectiveness (e.g. http server)

- Markup language-like

```
<directory /path>
    setting-for-this-path...
</directory>
```

- Samba 、rsync 、devfs...

```
[xxxx]
settings...
```

```
[yyyy]
settings....
```

```
<VirtualHost _default_:443>
ServerAdmin lctseng@cs.nctu.edu.tw
DocumentRoot "/usr/local/www/nic2015/"
ServerName nic2015.nctu.cs.tw:443
ErrorLog "/var/log/www.nic2015.error"
CustomLog "/var/log/www.nic2015.common" common
TransferLog "/var/log/www.nic2015.access"

<Directory "/usr/local/www/nic2015/">
    AllowOverride All
    Require all granted
</Directory>
<Directory "/usr/local/www/nic2015/wp-admin">
    Require ip 140.113
</Directory>
<If "%{REQUEST_URI} =~ /wp-login.php/i">
    Require ip 140.113
</If>
```

```
[system=10]
add path 'usb/*' mode 0660 group operator
```

RC Script

Scripts for starting / stopping a service

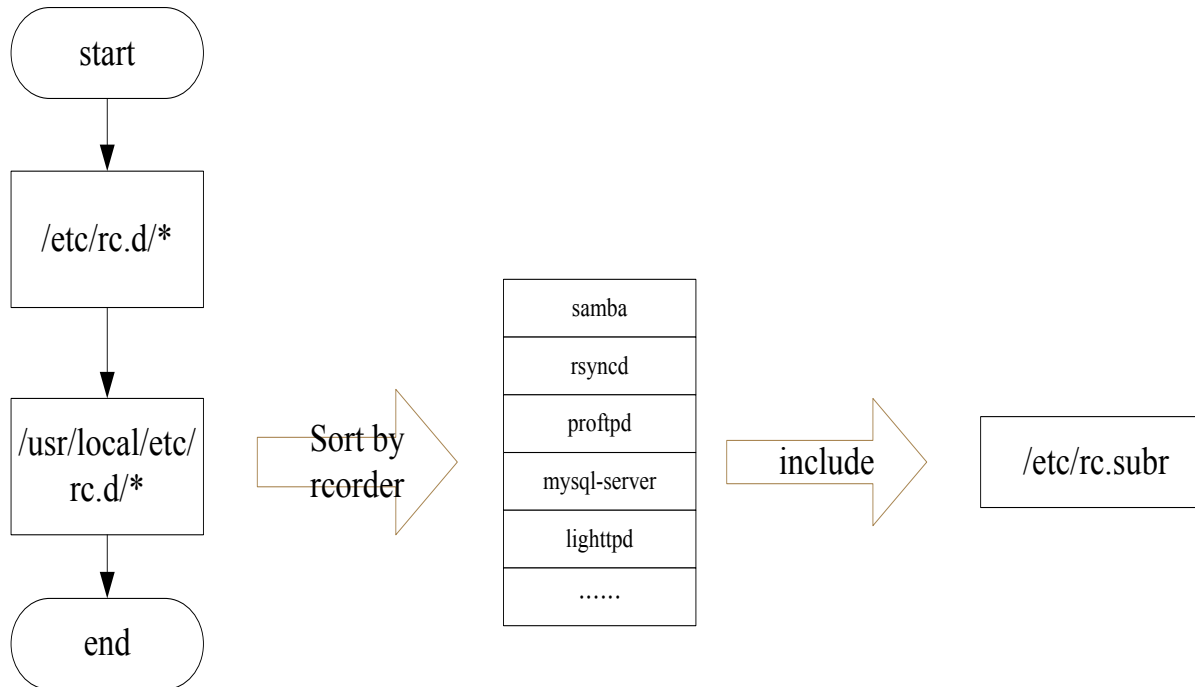
What does RC means?

- ❑ Run Commands (RunCom)
- ❑ Command scripts for auto-reboot and daemon startup
- ❑ rc(8)
- ❑ <https://www.freebsd.org/doc/handbook/configtuning-rcd.html>

Why do we need RC Script?

- ❑ Start services on system startup
- ❑ Starting and Stopping services in a standard way
 - Without rc
 - `/usr/local/sbin/pure-ftpd -g /var/run/pure-ftpd.pid -A -c50 -B -C8 -D -fftp -H -I15 -lpam -lunix -L10000:8 -m4 -s -U133:022 -u100 -k99 -Z`
 - V.S.**
 - With rc
 - `service pure-ftpd start`

RC Script



- ❑ Dependency between each service is described in header of the script
- ❑ rccorder is used to find out dependency ordering of each script
- ❑ Each rc script defines what to do when start / stop ...
- ❑ `/etc/rc.subr` defines what to do & check before / after start stop
- ❑ `rc.subr(8)`

Inside the RC Script

❑ Example: /etc/rc.d/inetd

```
#!/bin/sh
#
# $FreeBSD: release/9.1.0/etc/rc.d/inetd 231653 2012-02-14
#
```

```
# PROVIDE: inetd
# REQUIRE: DAEMON LOGIN cleanvar
# KEYWORD: shutdown
```

for rcorder(8) to sort.

```
. /etc/rc.subr
```

need to be included
by every RC script.

```
name="inetd"
rcvar="inetd_enable"
command="/usr/sbin/${name}"
pidfile="/var/run/${name}.pid"
required_files="/etc/${name}.conf"
extra_commands="reload"
```

what to do with
start/stop/....

```
load_rc_config $name
run_rc_command "$1"
```

How to use rc script (1/2)

❑ Example: ntpd

```
nctucs [~] -wangth- /etc/rc.d/ntpd
```

```
Usage: /etc/rc.d/ntpd [fast|force|one|quiet](start|stop|restart|rcvar|enabled|fetch|status|poll)
```

❑ After booting... (rc.conf)

- Pidfile: Record (master) process id of the service

```
nctucs [~] -wangth- cat /var/run/ntpd.pid
```

```
660
```

```
nctucs [~] -wangth- ps aux | grep ntp
```

```
root    660  0.0  0.4 26132 18052 - Ss   9Sep17   1:27.13 /usr/sbin/ntpd -g -c  
/etc/ntp.conf -p /var/run/ntpd.pid -f /var/db/ntpd.drift
```

❑ Start / Stop / Restart (Start after stop)

❑ An easy way to access: “**service**”

- \$ service ntpd start/stop/restart/reload/...
- Search /etc/rc.d and /usr/local/etc/rc.d

How to use rc script (2/2)

❑ Status

- Check the service is running or not

❑ Reload

- Reload configuration file if the service support

❑ [one | fast | force]

- One
 - Skip the check of rcvar="YES"
 - Start the service even if XXXX_enable="NO"
- Force
 - Force start the service
 - Ignore any error it encountered (no prerequisite test)
 - ignore rcvar="YES" and set rc_force="YES"
- Fast
 - Skip the check for an existing running process (pid check)
 - Set rc_fast="YES"

Local installed service

- ❑ Use *path-to-rcscript* `rcvar` command to know which variable should set to “YES” to enable this service

```
nctucs [~] -wangth- /usr/local/etc/rc.d/pure-ftpdcrcvar
# pureftpd
#
pureftpd_enable="no"
# (default: "")
```

- ❑ For further information, read comments from that script
 - `/usr/local/etc/rc.d/pure-ftpdcrcvar`

```
# Add the following lines to /etc/rc.conf to enable pure-ftpdcrcvar:
#
pureftpd_enable="yes"
pureftpd_flags="<set as needed>"
#
# Add the following lines to /etc/rc.conf to enable pure-authd daemon:
#
pureftpd_authd_enable="yes"
pureftpd_authdscript="/full/path/to/auth_script"
pureftpd_authsocket="/var/run/ftpdcrcvar.sock"
#
# Add the following lines to /etc/rc.conf to enable uploadscript daemon:
#
pureftpd_upload_enable="yes"
pureftpd_uploadscript="/full/path/to/upload_script"
```