



# Services & Settings

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lctseng

## Basic Services

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e.g. ssh, http, ftp, etc.

# Common Flow of Running a Service

## 1. Installation

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

## 2. Configuration

- Service specific config file(s)
- `rc.conf`
- E.g. `kdm4_enable="YES"`

## 3. Start

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

## 4. Maintenance

- Updating 、 Restarting

```
1 hostname="lctseng.nasa"
2 ifconfig_em0="DHCP"
3 sshd_enable="YES"
4 ntpd_enable="YES"
5 # Set dumpdev to "AUTO" to enable
6 dumpdev="NO"
7 # X windows
8 hald_enable="YES"
9 dbus_enable="YES"
10 kdm4_enable="YES"
11 # VBOX
12 vboxnet_enable="YES"
13 devfs_system_ruleset="system"
14 vboxguest_enable="YES"
15 vboxservice_enable="YES"
```

# Configuration Files (1/3)

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

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Scripts for starting/stopping a service

# What does RC means?

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- ❑ Run Commands (RunCom)
- ❑ command scripts for auto-reboot and daemon startup
- ❑ rc(8)
- ❑ <http://www.freebsd.org/doc/en/books/handbook/configuring-rcd.html>

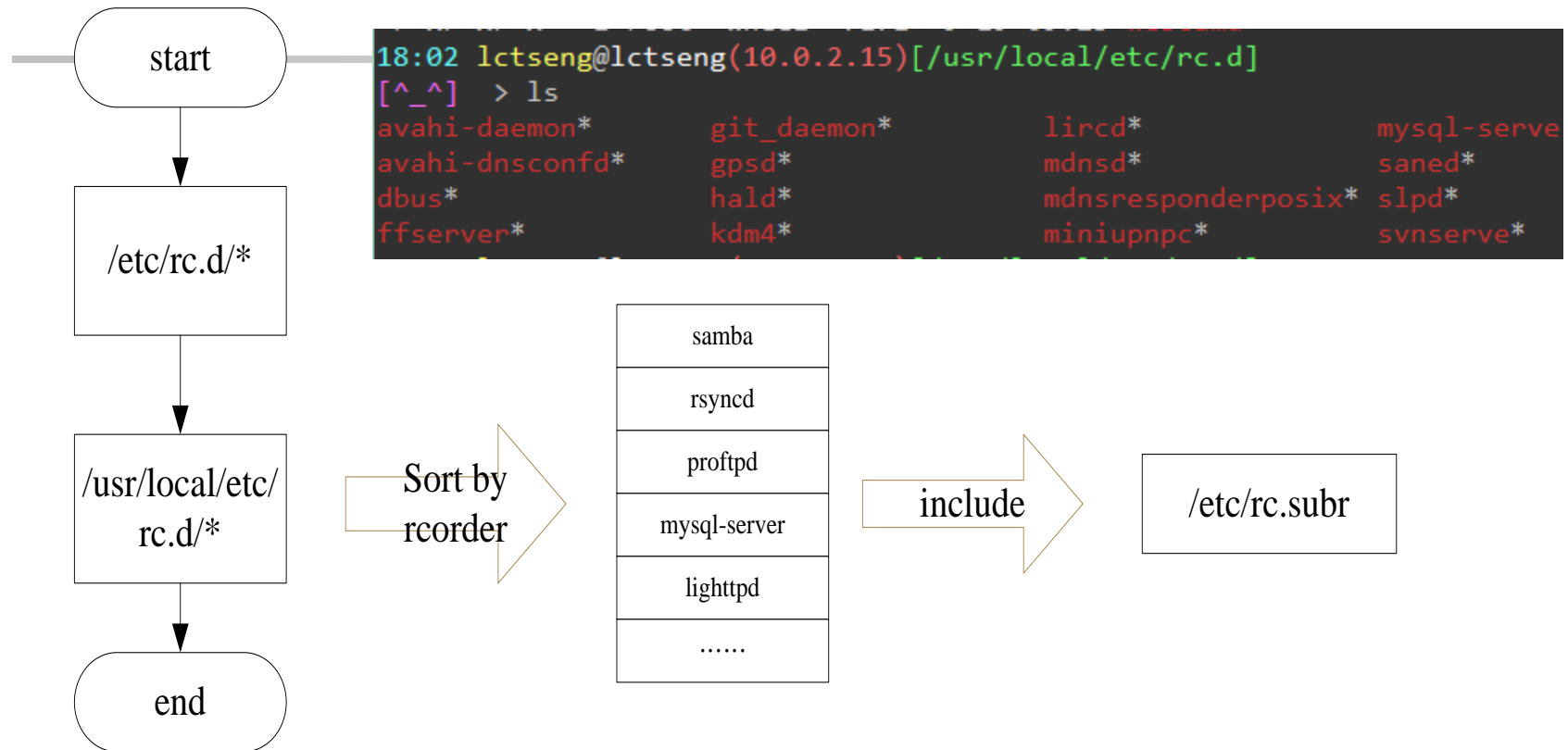


# Why do we need RC Script?

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- ❑ 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
- ❑ `rorder` is used to find out dependency ordering of each script
- ❑ Each rc script define 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

```
> /etc/rc.d/ntpd
Usage: /etc/rc.d/ntpd [fast|forcelone](start|stop|restart|rcvar|status|poll)
```

## ❑ After booting... (rc.conf)

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

```
> less /var/run/ntpd.pid
2087
> ps aux|grep ntpd
root      2087  0.0  0.1 11296  2624  ??  Ss
```

## ❑ 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)

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## ❑ 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

```
18:09 lctseng@lctseng(10.0.2.15)[~]
[^_^] > /usr/local/etc/rc.d/kdm4 rcvar
# kdm4
#
kdm4_enable="YES"
# (default: "")
```

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

```
# Add the following lines to /etc/rc.conf to enable pure-ftpd:
#
# pureftpd_enable="YES"
#
# For launch uploadscript daemon define
# pureftpd_upload_enable="YES"
# pureftpd_uploadscript="/full/path/to/launch_script"
```