

RC Script

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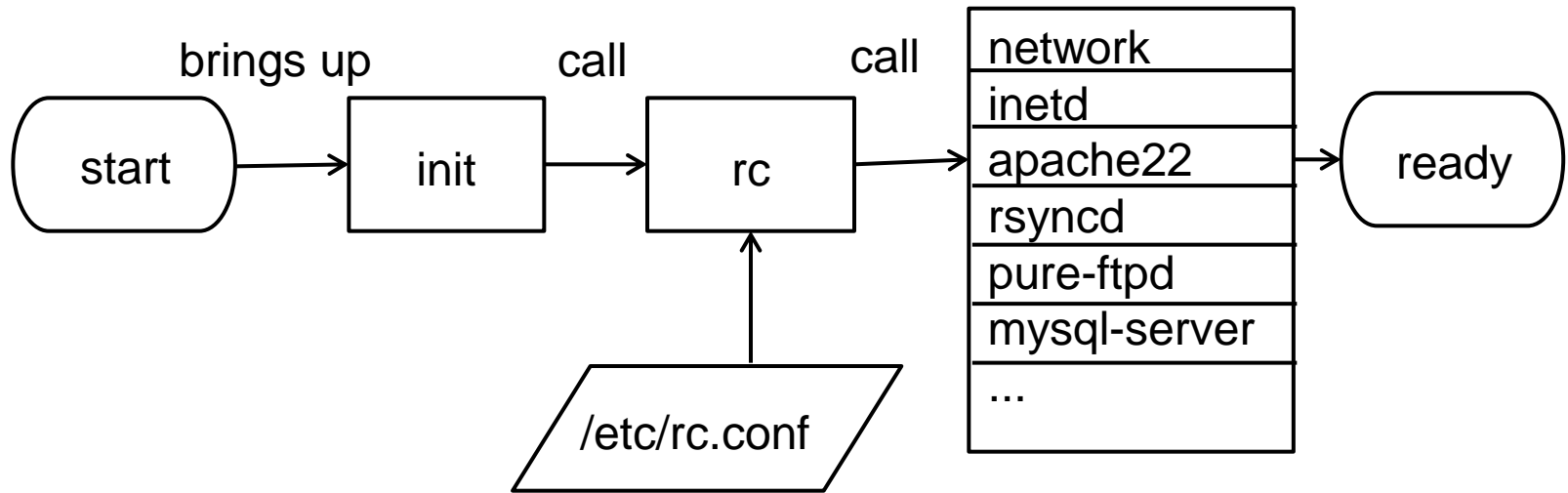
What does RC means?

- ❑ 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?

- ❑ Start services on system startup.
- ❑ Starting and Stopping services in a standard way.
 - `/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.
 - `service pure-ftpd start`

Use RC Script on system startup (1/3)



- ❑ Dependency between each service is described in header of the script.
- ❑ `rcorder(8)` is used to find out dependency ordering of each script.
- ❑ Each rc script define what to do when start/stop/....

Use RC Script on system startup (2/3)

- ❑ /etc/rc.conf
 - rc.conf(5)

```
# NFS server
nfs_server_enable="YES"
nfs_server_flags="-u -t -n 4"
mountd_enable="YES"
mountd_flags="-r"

pureftpd_enable="YES"
apache22_enable="YES"
```

Use RC Script on system startup (3/3)

❑ RC Script of system services are in /etc/rc.d/

- root
- ntpd
- netif
- ...

```
└─[/etc/rc.d] >ls
DAEMON*          cron*            ip6addrc
FILESYSTEMS*    ddb*            ipfilter
LOGIN*          defaultroute*  ipfs*
NETWORKING*     devd*           ipfw*
SERVERS*        devfs*          ipmon*
abi*            dhclient*       ipnat*
accounting*     dmesg*          ipsec*
addswap*        dumpon*         ipxroute
adjkerntz*     encswap*        jail*
amd*            faith*          kadmind*
```

❑ RC Script of user installed services are in /usr/local/etc/rc.d/

- apache22
- pure-ftpd
- ...

```
└─[/usr/local/etc/rc.d] >ls
avahi-daemon*   bitlbee*        git_daemon*
avahi-dnscfnd* dbus*           hald*
```

Use RC Script to manage services (1/3)

- ❑ Call RC Script directly:
 - ❑ /etc/rc.d/ntpd start
 - ❑ /usr/local/rc.d/pure-ftpd restart

- ❑ Use service(8) command:
 - ❑ service ntpd start
 - ❑ service pure-ftpd restart

Use RC Script to manage services (2/3)

❑ Example: ntpd

```
└─[/usr/local/etc] >/etc/rc.d/ntpd
Usage: /etc/rc.d/ntpd [fast|force|one|quiet](start|stop|restart|rcvar|status|poll)
```

❑ Start / Stop / Restart (Start after stop)

- ❑ /etc/rc.d/ntpd start or service ntpd start
- ❑ /etc/rc.d/ntpd stop or service ntpd stop
- ❑ /etc/rc.d/ntpd restart or service ntpd restart

❑ rcvar

- Display which rc.conf variable are used to control the startup of service

```
└─[/usr/local/etc] >/etc/rc.d/ntpd rcvar
# ntpd
#
ntpd_enable="YES"
# (default: "")
```


Use RC Script to manage services (3/3)

❑ Status

- Check the service is running or not

❑ Reload

- Reload configuration file if the service support

❑ [One | fast | force]

- One
 - set rcvar = yes
 - Start the service even if XXXX_enable=NO
- Force
 - Set rcvar= yes and set rc_force=yes
- Fast
 - Skip pid check

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
```

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

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

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

for rcorder(8) to sort.

need to be included
by every RC script.

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



Basic Services & Settings

e.g. http, ftp, etc.

Common Flow of Running a Service

1. Installation
 - Through ports, packages, or source tarballs
2. Configuration
 - Service specific config file(s)
 - rc.conf
3. Start
 - rc.d/*
4. Maintenance
 - Updating
 - Log

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-name.rc*
 - wgetrc
 - screenrc

- ❑ Default config file usually installed with .sample or .default suffix
 - pure-ftpd.conf.sampleor different suffix for different purpose
 - php.ini-dist
 - php.ini-recommended

copy before use it!!

Configuration Files (2/3)

- ❑ A program with multiple config files are usually located in */usr/local/etc/program-name/*
 - apache22
 - 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

- Markup language-like

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

- Samba 、 rsync

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

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