CLUG TALK

Cape Linux User Group
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Upstart

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History

- BSD /etc/rc
- System V /etc/inittab
  - /etc/rcX.d
  - /etc/networking/if-up.d
  - /etc/pm/sleep.d
- Initng etc

Upstart Objectives

- Proper Service Manager
- API
- Remove Sleep Loops (Event Based)
- Only run necessary daemons (hardware)
- Backwards Compatible
- Performance is a side-effect

Upstart History

- Version 1.0 by the end of the year
- Started in May 2006
- 0.2.7 used in Ubuntu 6.10
- 0.3.x in 7.04–9.04 Fedora 9–11
- 0.5.0 D-Bus, Fork following
- 0.6.3 in Ubuntu 9.10

Sample Initscript

```
#! /bin/sh
### BEGIN INIT INFO
# Provides:                  ntlmaps
# Required-Start:            $syslog $network
# Required-Stop:             $syslog $network
# Default-Start:             2 3 4 5
# Default-Stop:                              0 1 6
# Short-Description:         Start the ntlmaps daemon.
### END INIT INFO
PATH=/usr/local/sbin:/usr/local/bin:/sbin:/bin:/usr/sbin:/usr/bin
DAEMON=/usr/share/ntlmaps/main.py
NAME=ntlmaps
DESC=ntlmaps
DAEMON_OPTS="-c /etc/ntlmaps/server.cfg"
test -x $DAEMON || exit 0
set -e
case "$1" in
  start)
    echo -n "Starting $DESC: "
    start-stop-daemon --start --quiet --pidfile /var/run/$NAME.pid \
        --background --exec $DAEMON -- $DAEMON_OPTS
    echo "$NAME."
    ;;
  stop)
    echo -n "Stopping $DESC: "
    for pid in `pidof -x $DAEMON`; do
      kill $pid;
    done
    echo "$NAME."
    ;;
  restart|force-reload)
    echo -n "Restarting $DESC: "
    for pid in `pidof -x $DAEMON`; do
      kill $pid;
    done
    sleep 1
    start-stop-daemon --start --quiet --background --pidfile \
        /var/run/$NAME.pid --exec $DAEMON -- $DAEMON_OPTS
    echo "$NAME."
    ;;
  *)
    N=/etc/init.d/$NAME
    echo "Usage: $N {start|stop|restart|force-reload}" >&2
    exit 1
    ;;
esac
exit 0
```
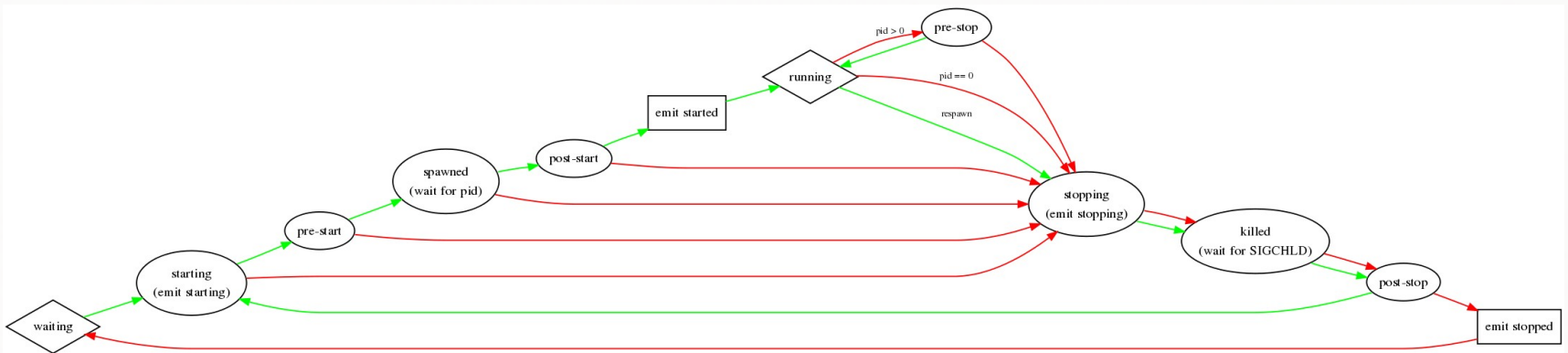
Sample Upstart Job

```
exec /usr/share/ntlmaps/main.py \
     -c /etc/ntlmaps/server.cfg
```

Better Upstart Job

```
description "NTLM Authenticating Proxy"
author "Stefano Rivera <stefano@rivera.za.net>"
version "0.1"
start on runlevel [2345] \
        and started rsyslog \
        and started networking
stop on runlevel [!2345] \
        or stopping rsyslog \
        or stopping networking
respawn
exec /usr/share/ntlmaps/main.py \
        -c /etc/ntlmaps/server.cfg
```

Events!

Other Features

- Script … end script
- {pre,post}-{start-stop}
- Env, export, instance
- Normal exit

Yet More Features

- console output|owner
- umask *UMASK*
- nice *NICE*
- oom *ADJUSTMENT*|never
- {chroot,chdir} *DIR*
- limit *LIMIT SOFT*|unlimited *HARD*| unlimited
- kill timeout *INTERVAL*

Successful Start

- expect fork
- expect daemon
- expect stop
- post-start ...

Future

- Dynamic Services
- Actions (sub-jobs)
- Time-based events

Problems

- Copyright Assignment
- Re-exec loses state

Questions?

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More Information:
$ man upstart
upstart.ubuntu.com