Лекция16

Демоны в Linux

- Каталоги /etc/init.d/atd и /usr/sbin.
- Демонизация процесса в Linux.
- Сценарий управления службой.

Каталог /etc/init.d

```
ewgenij@dew:~$ ls -l /etc/init.d
total 660
-rwxr--r-- 1 root root  3649 Jul 16  2012 acpid
-rwxr--r-- 1 root root   520 Feb 27  2013 after.local
-rwxr-xr-x 1 root root  5155 Aug  4  2012 alsasound
…………………………………………………………………………
-rwxr--r-- 1 root root 11400 Jul 31 19:36 apache2
…………………………………………………………………………
-rwxr-xr-x 1 root root  3955 Nov 27  2012 atd
-rwxr-xr-x 1 root root  3885 Jul 31  2012 autofs
-rwxr-xr-x 1 root root  2988 Sep  3  2012 autoyast
-rwxr-xr-x 1 root root  1217 Aug  4  2012 avahi-daemon
…………………………………………………………………………
-rwxr--r-- 1 root root  4385 Feb  4  2013 cron
-rwxr-xr-x 1 root root  5665 Dec  4  2012 cups
…………………………………………………………………………
-rwxr-xr-x 1 root root  6895 Aug 17  2012 xdm
-rwxr-xr-x 1 root root  2165 Jul 16  2012 xfs
-rwxr-xr-x 1 root root  5882 Jul 16  2012 xinetd
-rwxr-xr-x 1 root root  4450 Jul 16  2012 ypbind
```

Сценарий для демона *atd*

```
#! /bin/sh
# Copyright (c) 1995-2002 SuSE GmbH Nuernberg, Germany.
#
# Author: Kurt Garloff <feedback@suse.de>
#
# /etc/init.d/at
#
#   and symbolic its link
#
# /sbin/rcat
#
# System startup script for the at daemon
#
…..………………………………………………………………………….
ATD_BIN=/usr/sbin/atd
test -x $ATD_BIN || exit 5

ATD_CONFIG=/etc/sysconfig/atd
test -r $ATD_CONFIG && source /etc/sysconfig/atd
…..………………………………………………………………….
```

Сценарий для демона (*продолжение*)

```
.....................................................................................
case "$1" in
   start)
        echo -n "Starting service at daemon"
        ATD_ARGS=""
        if [ -n "$ATD_BATCH_INTERVAL" ]; then
           ATD_ARGS="-b $ATD_BATCH_INTERVAL";
        fi
        if [ -n "$ATD_LOADAVG" ]; then
           ATD_ARGS="$ATD_ARGS -l $ATD_LOADAVG"
        fi
        ## Start daemon with startproc(8). If this fails
        ## the echo return value is set appropriate.
        # NOTE: startproc return 0, even if service is
        # already running to match LSB spec.
        startproc $ATD_BIN $ATD_ARGS

        # Remember status and be verbose
        rc_status -v
        ;;
   stop)
        echo -n "Shutting down service at daemon"
        ## Stop daemon with killproc(8) and if this

.....................................................................................
```

Исполняемые модули демона (каталог /usr/sbin)

```
ewgenij@dew:~$ ls -l /usr/sbin
total 42320
lrwxrwxrwx 1 root root           10 Feb 27  2013 accept -> cupsaccept
-rwxr-xr-x 1 root root       109800 Jul 16  2012 accessdb
-rwxr-xr-x 1 root root        47272 Jul 16  2012 acpid
-rwxr-xr-x 1 root root        15112 Jul 16  2012 acpidump
-rwxr-xr-x 1 root root        50048 Jul 16  2012 acpisrc
-rwxr-xr-x 1 root root         3126 Jul 16  2012 addgnupghome
-rwxr-xr-x 1 root root         6408 Nov  5  2012 addpart
-rwxr-xr-x 1 root root        44592 Nov  5  2012 adjtimex
-rwxr-xr-x 1 root root        31656 Nov  5  2012 agetty
………………………………………………………………………………………………
-rwxr-xr-x 1 root root         6392 Mar 27  2013 arpaname
-rwxr-xr-x 1 root root        43840 Nov 28  2012 arpd
-rwxr-xr-x 1 root root        18992 Jul 16  2012 arping
-rwxr-xr-x 1 root root        27600 Nov 27  2012 atd
-rwxr-xr-x 1 root root         1713 Jun 23  2012 atmel_fwl
-rwxr-xr-x 1 root root           67 Nov 27  2012 atrun
-rwxr-xr-x 1 root root       254480 Jul 31  2012 automount
-rwxr-xr-x 1 root root        35712 Aug  4  2012 avahi-autoipd
………………………………………………………………………………………………
```

Управление службами
(/etc/init.d/atd)

```
ewgenij@dew:~$ sudo /etc/init.d/atd status
redirecting to systemctl
atd.service - Execution Queue Daemon
      Loaded: loaded (/lib/systemd/system/atd.service; enabled)
      Active: inactive (dead)
      CGroup: name=systemd:/system/atd.service

ewgenij@dew:~$ sudo /etc/init.d/atd start
redirecting to systemctl
ewgenij@dew:~$ sudo /etc/init.d/atd status
redirecting to systemctl
atd.service - Execution Queue Daemon
      Loaded: loaded (/lib/systemd/system/atd.service; enabled)
      Active: active (running) since Fri, 06 Dec 2013 15:04:30 +0700; 5s ago
     Process: 29913 ExecStart=/bin/bash -c [ -e /etc/sysconfig/atd ] && .
/etc/sysconfig/atd; exec /usr/sbin/atd $${ATD_BATCH_INTERVAL:+-b $
$ATD_BATCH_INTERVAL} $${ATD_LOADAVG:+-l $$ATD_LOADAVG}
(code=exited, status=0/SUCCESS)
    Main PID: 29914 (atd)
      CGroup: name=systemd:/system/atd.service
       29914 /usr/sbin/atd
```

Демонизация процесса

```c
#include <stdio.h>
#include <stdlib.h>
#include <unistd.h>

int main(int argc, char *argv[]) {

    pid_t pid, sid;

    pid = fork();

    if (pid < 0) { exit(EXIT_FAILURE); }

    if (pid > 0) { exit(EXIT_SUCCESS); } //Закрываем родительский процесс


    sid = setsid();
    if (sid < 0) { exit(EXIT_FAILURE); }

    if ((chdir("/")) < 0) { exit(EXIT_FAILURE); }

    printf("It's all right\n");
```

```c
close(STDIN_FILENO);
close(STDOUT_FILENO);
close(STDERR_FILENO);

{
  FILE* fp;
  int counter=0;
  while(true){
    fp=fopen("/home/malkov/test_daemon.txt", "a+");
   fprintf(fp,"%d\n", counter++);
    sleep(10);
   fclose(fp);
  }
}
}
```

Сценарий управления службой (init script):

```sh
#! /bin/sh

MYPROG2_BIN=/usr/sbin/myprog2

. /etc/rc.status

rc_reset

case "$1" in
    start)
        echo -n "Starting service MYPROG2 daemon"
        startproc $MYPROG2_BIN

        rc_status -v
        ;;
    stop)
        echo -n "Shutting down service MYPROG daemon"

        killproc -TERM $MYPROG2_BIN

        rc_status -v
        ;;
```

```
restart)
    $0 stop
    $0 start

    rc_status
    ::
    ;;
  status)
    echo -n "Checking for MYPROG daemon: "

    checkproc $MYPROG2_BIN
    rc_status -v
    ::
    ;;
  *)
    echo "Usage: $0 {start|stop|status|restart}"
    exit 1
    ::
    ;;
esac
rc_exit
```

System Services (Runlevel): Details

○ Simple Mode   ● Expert Mode

Set default runlevel after booting to:

Service	∨	Running	B	Description
esound		No		Sound daemon with network support
git-daemon		No		server for git repositories
gpm		No		Console mouse support
irq_balancer		No		irqbalance daemon providing irq balancing on MP-machines
joystick		No		Set up analog joysticks
kexec		No		Enables reboot through kexec
lighttpd		No		lighttpd
lirc		No		lirc daemon
mcelog		No		Machine Check Architecture/Error (MCA/MCE) implementations
mdadmd		No		mdadmd daemon monitoring MD devices
myprog2d		Yes		
myprogd		No		
mysql		Yes		
network		Yes		
nfs		No		
nmb		No		
ntp		No		
pcscd		No		
pm-profiler		No		
postfix		Yes		
postgresql		No		

malkov : bash – Konsole

File   Edit   View   Bookmarks   Settings   Help

```
malkov@linux-bx7d:~> sudo /etc/init.d/myprog2d start
root's password:
redirecting to systemctl start myprog2d
malkov@linux-bx7d:~> █
```