UPS & USB: íå äàäèì ñèñòåìå óìåðåòü.

Ðàçäåë : Ñèñòåìà. Àäìèíèñòðèðîâàíèå

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Â äàííîé ñòàòüå ïîñòàðàåòñÿ ïðèìåì ïîäêëþ÷åíèÿ ÈÁÏ ÷åðåç usb-ïîðò, à òàê æå ðåøåíèå íåêîòîðûõ òðóäíîñòåé.

×àñòü I.

Äëÿ ñ-àñòîëèâûõ îáëàäàòåëåé ÈÁÏ ôèðìû APC äîñòàòî÷íî ñêà÷àòü è óñòàíîâèòü ñëåäóþùèå ïàêåòû:
http://open-suse.ru/repo/opensuse11.1/i586/apcupsd-3.14.6-1.su111.i586.rpm
http://open-suse.ru/repo/opensuse11.1/i586/apcupsd-gapcmon-3.14.6-1.su111.i586.rpm
http://open-suse.ru/repo/opensuse11.1/i586/apcupsd-multimon-3.14.6-1.su111.i586.rpm

Äëÿ íà÷àëà ìîæíî ïîïðîáîâàòü GUI-óòèëèòó **gapcmon** (apcupsd-gapcmon-3.14.6-1.su111.i586.rpm):

Îñíîâíîå îêíî

Îêíî ñ ïàðàìåòðàìè UPS

Òàì, ó êîãî ñòîèò ñèñòåìíûé ìîíèòîð **conky**, âîçìîæíî ïðåãëàäèòñÿ âîò ýòîãî êîíôèã, íàïèñàíûé ìíîé:
${apcupsd localhost 3551}UPS: ${color FFFFCB}${alignr}APC ${apcupsd_model}
(${apcupsd_cable})${color}
Status:${color FFFFCB}${alignr}${apcupsd_status}${color}
Timeleft:${color FFFFCB}${alignr}${apcupsd_timeleft} min${color}
Battery charge:${color FFFFCB}${alignr}${apcupsd_charge BAT1} %${color}
Load:${color FFFFCB}${alignr}${apcupsd_load} %${color}
${apcupsd_loadbar 4}

Êîìàíäû (âûïîëíÿþòñÿ ñ ïðàâàìè root):
apcupsd - çàïóñê äåìîíà

apcaccess - âûâîä èíôîðìàöèè î èáï:
apcaccess
APC   : 001,038,1011
DATE   : Sat Jul 18 23:26:54 OMSST 2009
HOSTNAME : home_SuSE_linux
VERSION : 3.14.6 (16 May 2009) suse

```
UPSNAME  : home_SuSE_linux
CABLE    : USB Cable
MODEL    : Back-UPS ES 525
UPSMODE  : Stand Alone
STARTTIME: Sat Jul 18 12:16:11 OMSST 2009
STATUS   : ONLINE
LINEV    : 231.0 Volts
LOADPCT  :  43.0 Percent Load Capacity
BCHARGE  : 100.0 Percent
TIMELEFT :  27.6 Minutes
MBATTCHG : 5 Percent
MINTIMEL : 3 Minutes
MAXTIME  : 0 Seconds
SENSE    : Medium
LOTRANS  : 195.0 Volts
HITRANS  : 255.0 Volts
ALARMDEL : Always
BATTV    : 13.6 Volts
LASTXFER : Unacceptable line voltage changes
NUMXFERS : 1
XONBATT  : Sat Jul 18 23:25:37 OMSST 2009
TONBATT  : 0 seconds
CUMONBATT: 5 seconds
XOFFBATT : Sat Jul 18 23:25:42 OMSST 2009
SELFTEST : NO
STATFLAG : 0x07000008 Status Flag
SERIALNO : 4B0829P10471
BATTDATE : 2008-07-18
NOMOUTV  : 230 Volts
NOMINV   : 230 Volts
NOMBATTV :  12.0 Volts
NOMPOWER : 300 Watts
FIRMWARE : 851.t3.I USB FW:t3
APCMODEL : Back-UPS ES 525
END APC  : Sat Jul 18 23:26:56 OMSST 2009
```

apctest - òåñòèðîâàíèå ñèñòåìû:
```
# apctest
2009-07-19 05:36:22 apctest 3.14.6 (16 May 2009) suse
Checking configuration ...
Attached to driver: usb
sharenet.type = DISABLE
cable.type = USB_CABLE

You are using a USB cable type, so I'm entering USB test mode
mode.type = USB_UPS
Setting up the port ...
apctest FATAL ERROR in device.c at line 71
Unable to create UPS lock file.
```

If apcupsd or apctest is already running,
please stop it and run this program again.
apctest error termination completed

×àñòü II.
Äëÿ òåõ, ó êîãî èìåþòñÿ íåêîòîðûå ïðîáëåìû ñ ïîäêëþ÷åíèåì ÈÁÏ.

1. Äëÿ íà÷àëà ñêà÷èâàåì èñõîäíûå êîäû ïðîãðàììû è óñòàíàâëèâàåì åå â
ñèñòåìó, íè÷åãî íåîáû÷íîãî íà ýòîì øàãå íåò, ïîýòîìó âûïîëíÿþòñÿ îáû÷íûå
ïðîöåäóðû:

wget http://eu1.networkupstools.org/source/2.2/nut-2.2.1.tar.gz
tar -xvzf ./nut-2.2.1.tar.gz
cd ./nut-2.2.1.tar.gz
./configure && make && make install

Ïîñëå óñòàíîâêè ïîÿâëÿþòñÿ ñëåäóþùèå êàòàëîãè (/usr/local/ups/):

bin - êàòàëîã ñ äðàéâåðàìè ïîä ïîääåðæèâàåìûå ìîäåëè UPS'îâ
etc - ôàéëû êîíôèãóðàöèè äåìîíîâ, íàñòðîéêè ïîäêëþ÷åíèÿ ê ups
sbin - ñèñòåìíûå äåìîí, äåìîí ìîíèòîðèíãà, è åùå
html, cgi-bin, include, lib è share - â íèõ íè÷åãî ïðàâèòü íå ïðèäåòñÿ, òàê ÷òî èõ ìîïîñâÿâîòü íå îáÿçàòåëüíî

2. Äëÿ íà÷àëà, êàê äåëàåò ýòî âïåðâûå, íóæíî îïðåäåëèòüñÿ ñ UPS, ïîäêëþ÷åí
ëè îí, âèäèò ëè åãî ÿäðî. âîñïîëüçóåìñÿ óòèëèòîé èç ïàêåòà usbutils:

lsusb

âûâîä ïîêàæåò, êàêèå usb-óñòðîéñòâà åñòü â ñèñòåìå, åñëè âû åãî íå âèäèòå.

3. Äàëåå â êàòàëîãå ñ èñõîäíûìè êîäàìè, åñòü ïîäêàòàëîã data, â íåì åñòü
ñïèñîê ïîääåðæèâàåìîãî îáîðóäîâàíèÿ - **driver.list**, òàì ìîæíî íàéòè
ïîääåðæèâàåòñÿ ëè âàø UPS è êàêîé äðàéâåð ïîäõîäèò äëÿ íåãî.

Òåïåðü êîãäà îïðåäåëèëèñü ñ ìîäåëüþ ups è äðàéâåðîì, ìîæíî ïðèñòóïàòü ê
íàñòðîéêå êîíôèãîâ.

Ðåäàêòèðóåì **/usr/local/ups/etc/ups.conf**

user = nobody
[usbhid]
driver = usbhid-ups
port = /dev/hiddev0

 îáùåì, ñòðîêà **user** ïîêàçûâàåò îò êîãî áóäåò çàïóñêàòüñÿ äðàéâåð, îí
çàïóñêàåòñÿ ñ ïðàâàìè nobody è ïîýòîìó â íà÷àëå íå ìîæåò ïîëó÷èòü
äîñòóïà ê íåêîòîðûì ðåñóðñàì (â êàòàëîãå /dev/, íå ìîæåò ñîçäàòü .pid è

ïðî÷åå)

[usbhid] － èìÿ íàøåãî UPS, ðåêîìåíäóþ çàïîìíèòü, ïîòîìó ÷òî åùå ïðèãîäèòñÿ;
driver － äðàéâåð äëÿ íàøåãî UPS, ðàñïïîëàãàåòñÿ â êàòàëîãå ups/bin;
port － ìåñòî ãäå äåìîí óçíàåò âçàèìîäåéñòâîâàòü ñ ups (â íåêîòîðûõ äèñòðèáóòèâàõ, ïóòü ìîæåò èìåòü âèä /dev/usb/hiddev0);

*Ïðèìå÷àíèå: âîîáùå â êàòàëîãå /bin åñòü îòäåëüíûé äðàéâåð äëÿ UPS'îâ
ôèðìû ÀÐÑ, èñïîëüçóåòñÿ usbhid-ups, ïîòîìî êàê UPS ïîäêëþ÷åí ÷åðåç USB.*

4. Ïåðåä çàïóñêîì ðåêîìåíäóþ îòêðûòü â îòäåëüíîì îêíå tail -f
/var/log/messages, äàáû ïðîñìàòðèêàòü ñèñòåìíûå ñîîáùåíèÿ, âûâîäèìûå äåìîíàìè.

Äàëåå çàïóñêàåì upsdrvctl äëÿ ñîåäèíåíèÿ ñ UPS:

ups/bin/upsdrvctl start usbhid

Âîò òóò êàê ðàç è óêàçûâàåì èìÿ íàøåãî UPS - usbhid, òàê ìû ÿâíî
óêàçûâàåì ÷òî íóæíî èñïîëüçîâàòü ñåêöèþ [usbhid].

Âîîáùå ó upsdrvctl åñòü 2 ïîëåçíûõ ïàðàìåòðà, -t - òåñòîâûé ðåæèì,
upsdrvctl âûâîäèò íà ýêðàí îò ÷òî áû îí äåëàë, íî ðåàëÿ íîîìàëüíîãî
çàïóñêà; è -D - îòëàäî÷íûé çàïóñê (debug).

Ñìîòðèì â messages âñå ëè íîðìàëüíî, åñëè íåò, òî ðàçáèðàåìñÿ â ïðè÷èíàõ, åñëè äà èäåì äàëüøå.

5. Ïðàâèì **/usr/local/ups/etc/upsd.conf** è **/usr/local/ups/etc/upsd.users**:
â ôàéëå **upsd.conf** íàñòðàèâàþòñÿ ïðàâà äîñòóïà ê upsd:

ACL all 0.0.0.0/0
ACL localhost 127.0.0.1/32

ACCEPT localhost
REJECT all
LISTEN 127.0.0.1 3493

Â ôàéëå **upsd.users** íàñòðàèâàþòñÿ ïîëüçîâàòåëè èìåþùèå äîñòîï ê upsd:

[upsmon]
password = usbhidpassword
allowfrom = localhost
upsmon master

Äëëåå ñ ïðàâàìè äîñòóïà íà ôàéëû è äèðåêòîðèè, ó ìåíÿ ÷àñòî âûëàçèëè
ñîîáùåíèÿ ÷òî íå õâàòàåò ïðàâ äîñòóïà ê êàêèì òî ôàéëàì, ïîýòîìó ïðèøëîñü
íåìíîãî èõ ïîìåíÿòü, õîòÿ ñ òî÷êè çðåíèÿ áåçîïàñíîñòè ýòî íå õîðîøî:

chmod 666 /dev/hiddev0 - óêàçàíèå user = root â ups.conf, íå ïîìîãëî èçáåæàòü ïðîáëåìû äîñòóïà, ê
hiddev0

chmod 777 /var/state/ups - òàì upsd íå ìîã ñîçäàòü .pid ôàéë
chmod 640 ups/etc/upsd.conf

Òåïåðü çàïóñêàåì upsd è â ñëó÷àå óñïåøíîãî çàïóñêà ïðîâåðÿåì ñîåäèíåíèå ñ UPS:

ups/sbin/upsd
ups/bin/upsc usbhid@localhost

óñïåøíûé âûâîä äîëæåí áûòü ïðèìåðíî ñëåäóþùèé...

    battery.charge: 100
    battery.charge.low: 10
    battery.charge.warning: 50
    battery.date: 2001/09/25
    battery.mfr.date: 2007/06/12
    battery.runtime: 7177
    battery.runtime.low: 120
    battery.type: PbAc
    ...
    ups.status: OL
    ups.test.result: No test initiated
    ups.vendorid: 051d

Òåïåðü íàñòðàèâàåì upsmon äëÿ òîãî, ÷òîáû ñëåäèòü çà òåì êîãäà ðàçðÿäèòñÿ
áàòàðåÿ è âûêëþ÷èòü íàøó ìàøèíó. Ðåäàêòèðóåì **/usr/local/ups/etc/upsmon.conf**:

*Ïðèìåð ïîëíîñòüþ âçÿò èç ñòàòüè ñ opennet, ÷òî íåìíîãî íåëîãè÷íî ïîñ
æèçíü. Íî íå çàáûâàåì ïîìåíÿòü èìÿ UPS'à è ïàðîëü íà ñâîè (ñàìàÿ ïåðâàÿ
ñòðîêà).*

    MONITOR usbhid@localhost 1 upsmon usbhidpassword master
    NOTIFYCMD /usr/local/sbin/callwall
    NOTIFYFLAG ONLINE SYSLOG+EXEC
    NOTIFYFLAG ONBATT SYSLOG+EXEC
    NOTIFYFLAG LOWBATT SYSLOG+EXEC
    MINSUPPLIES 1
    SHUTDOWNCMD "/sbin/shutdown -h +0"
    POLLFREQ 5
    POLLFREQALERT 2
    HOSTSYNC 15
    DEADTIME 15
    POWERDOWNFLAG /etc/killpower
    RBWARNTIME 43200
    NOCOMMWARNTIME 300
    FINALDELAY 5

Âñå, òåïåðü çàïóñêàåì upsmon è è åñëè çàïóñê ïðîøåë óñïåøíî ìîæíî
ïðîòåñòèðîâàòü íàøó ðàáîòó - âûäåðãèâàåì øíóð ïèòàíèÿ èç ñåòè.

Ïðèìå÷àíèå: çàïóñòèëèñü ëè ïðîöåññû ìîæíî ïðîâåðèòü ÷åðåç ps, ñëåäóþùèì
îáðàçîì: **ps ax | grep ups**
ups/sbin/upsmon

Òàêæå ïðîâåðèòü, êàê îòðàáàòûâàåòñÿ ñèñòåìà ìîæíî, ñêàçàâ upsd, ÷òî UPS
ïîëó÷èë ñèãíàë âûêëþ÷åíèÿ ïèòàíèÿ:
upsmon -c fsd

P.S. Â ñòàòüå èñïîëüçîâàíû ìàòåðèàëû ñ ñàéòà http://www.opennet.ru/.