





 () , . , .

- DD
 - TAR
 - - - Netcat (nc)
 - SSH
 - - GRUB
 - Netcat (nc)
 - SSH
 - RSYNC
 - - - - rsync.service
 - luckyBackup
 -
 - Astra Linux Special Edition
- , Astra Linux:
- dd;
 - tar;
 - rsync;
 - luckyBackup.

-  :
- Astra Linux Special Edition .10015-01 (1.7)
 - Astra Linux Special Edition .10015-10 (,).
 - Astra Linux Special Edition .10015-17
 - Astra Linux Special Edition .10015-37 (7.7)
 - Astra Linux Special Edition .10015-03 (7.6)
 - Astra Linux Special Edition .10152-02 (4.7)
 - Astra Linux Special Edition .10015-01 (1.6)
 - Astra Linux Special Edition .10015-16 . 1
 - Astra Linux Special Edition .10015-16 . 2
 - Astra Linux Special Edition .10265-01 (8.1)
 - Astra Linux Common Edition 2.12 (,).

 BACULA. BACULA, , .

 . , .

 , (Astra Linux Special Edition -).

DD

dd .

:

- (, ,);
- ;
- .

, dd , .

(" " /dev/sda1 /media/not-sda1-device/sda1.bin:

```
sudo dd if=/dev/sda1 of=/media/not-sda1-device/sda1.bin bs=4096
```

if	.

of	.
bs	<div>Ext2/Ext3/Ext4</div> <div>tune2fs -l /dev/sda1 grep Block</div>

/ dd :

```
sudo dd if=/dev/sda1 bs=4096 | sudo gzip > /media/not-sda1-device/sda1.bin.gz
```

(, ,):

```
sudo dd if=/media/mountpoint/sda1.bin of=/dev/sda1 bs=4096
```

, :

```
sudo gzip -dc /media/not-sda1-device/sda1.bin.gz | sudo dd of=/dev/sda1 bs=4096
```

dd () :

```
sudo mount -o loop /media/mountpoint/sda1.bin /mnt
```

TAR

tar .

/backup.tar.gz ():

```
sudo tar --xattrs --acls -czf backup.tar.gz \
--exclude=/proc --exclude=/lost+found \
--exclude=/backup.tar.gz \
--exclude=/mnt \
--exclude=/sys \
--exclude=/parsecfs \
/
```

:

--xattrs	
--acls	(POSIX Access Control Lists, ACL)
-czf	: <div>-C -</div> <div>-z - gzip</div> <div>-f - , (- backup.tar.gz)</div>

--exclude	, ., :
	<ul style="list-style-type: none"> • ; • /parsecfs/ • : ◦ /tmp ◦ /var/lib/samba/private/msg.sock/ ◦ /var/lib/samba/winbindd_privileged/pipe ◦ /var/lib/sss/pipes/
/	, .



-S (--sparse). "" (sparse). , , - "" .



"/".
:
• , / ;
• , (, LiveCD) .



tar Midnight Commander, Astra Linux.

tar
netcat (nc) tar.

Netcat (nc)

nc , .



, nc .

nc netcat :

```
sudo apt install netcat
```

(tar):

1. nc . (-l) 1024 (-p 1024) backup.tar.gz. , IP- - 192.168.32.97.:

```
nc -l -p 1024 > backup.tar.gz
```

2. tar . (stdout). Stdout (pipe, "", " ") nc. nc (IP- 192.168.32.97 1024).
-q 0 .:

```
tar -cvpz / | nc -q 0 192.168.32.97 1024
```

SSH

SSH. SSH .
:

```
sudo tar -cvpz / | ssh 192.168.32.97 "( cat > ssh_backup.tar.gz )"
```

:

- tar , (stdout);
- ssh;
- ssh ;

:

```
echo 1 | sudo tee /parsecfs/unsecure_setxattr
sudo /usr/sbin/execaps -c 0x1000 -- tar --xattrs --xattrs-include=security.
{PDPL,AUDIT,DEF_AUDIT} --acls -xzf backup.tar.gz -C /
echo 0 | sudo tee /parsecfs/unsecure_setxattr
```

:

/	
echo 1 sudo tee /parsecfs/unsecure_setxattr	, /parsecfs/unsecure_setxattr 1, PARSEC_CAP_UNSAFE_SETXATTR (.).
/usr/bin/execaps -c 0x1000	, PARSEC_CAP_UNSAFE_SETXATTR, -. /parsecfs/unsecure_setxattr 1.
--	, .
tar	, , PARSEC_CAP_UNSAFE_SETXATTR
--xattrs	
--xattrs-include=security.{PDPL,AUDIT,DEF_AUDIT}	
--acls	(POSIX Access Control Lists, ACL)
-xzf	: -x - -z - gunzip -f - , (backup.tar.gz)
-C /	, ("/"). ,"/".
echo 0 sudo tee /parsecfs/unsecure_setxattr	PARSEC_CAP_UNSAFE_SETXATTR (Astra Linux Special Edition).



, (, , LiveCD),
--numeric-owner, / .

GRUB



tar rsync grub. :

- , /mnt
- , dpkg-reconfigure grub-pc , :

```
sudo -s
for f in dev dev/pts proc sys ; do mount --bind /$f /mnt/$f ; done
chroot /mnt
dpkg-reconfigure grub-pc
exit
exit
```

, () /etc/fstab, . UUID, :

```
sudo blkid
```

Netcat (nc)

1. , nc. 1024 tar . tar (stdin) (f). -C /tmp , (/tmp).:

```
nc -l 1024 | tar -xvpzf - -C /tmp
```

2. , - nc 10.0.2.2 1024.:

```
cat backup.tar.gz | nc -q 0 10.0.2.2 1024
```

SSH

:

```
cat ssh_backup.tar.gz | ssh 10.0.2.2 "tar -xvpzf - -C /tmp"
```

RSYNC

rsync rsync rsync.service, .

tar,
, (, git subversion, luckyBackup, [LXC](#)), .
, :

- ;
- ;
- , ;
- ;
- ;
- ""

rsync.service , .
rsync.service, SSH.

tar, /backup:

```
sudo /usr/sbin/execaps -c 0x1000 -- sudo rsync -a --xattrs --acls --exclude=/proc --exclude=/lost+found --exclude=/backup --exclude=/mnt --exclude=/sys --exclude=/parsecfs / /backup
```

:

-a	, . : -r - -l - -p - -t - -g - -o - -D -
--xattrs -X	
--acls -A	(POSIX Access Control Lists, ACL)
--exclude	, , .
/	(-)
/backup	,



.
SRC DST, SRC SUB (.. SRC/SUB) .
cp cp -a SRC DST cp -a SRC/ DST : DST/SRC/SUB.
rsync -a SRC DST DST/SRC/SUB
rsync -a SRC/ DST DST/SUB.
- '/' -.

, (- ssh host.astradomain.ru admin ~admin/backup/):

```
sudo rsync -a --exclude=/proc --exclude=/lost+found --exclude=/mnt --exclude=/sys/ / admin@host.astradomain.ru:backup
```

, rsync.service - , ssh.
, SSH.



, admin -, .




, . Ext4 () . Ext2/Ext3 user_xattr. . .

:

```
sudo rsync -a --X --A --exclude=/proc --exclude=/lost+found --exclude=/mnt
--exclude=/sys --exclude=/parsecfs -M --fake-super / / admin@host.
astradomain.ru:backup
```

--xattrs --acls (-X -A), -M, . --fake-super, (extended attributes) . .. rsync (/ , , rsync ,), - , rsync, -.

 rsync , rsync --rsync-path="rsync --fake-super" --rsync-path="sudo rsync --fake-super". -M --fake-super , sudo .
rsync , ssh. .

 Astra Linux Special Edition PARSEC_CAP_UNSAFE_SETXATTR rsync.


, (, . tar):

```
echo 1 | sudo tee /parsecfs/unsecure_setxattr
/usr/sbin/execaps -c 0x1000 -- sudo rsync -a --xattrs --acls /backup/ /
echo 0 | sudo tee /parsecfs/unsecure_setxattr
```

, --fake-super :

```
sudo rsync -a --X --A -M --fake-super / admin@host.astradomain.ru:backup /
```

rsync.service

 , rsyncd (rsync.service) __,
:
, , .

, SSH rsync.service.
rsync.service :

- , rsync.service , ;
- , (, , ssh);

, , Bacula (.)

rsync.service :

1. , /etc/default/rsync
RSYNC_ENABLE=false

RSYNC_ENABLE=true
2. /etc/rsyncd.conf, :

i max connections = 10
 exclude = lost+found/ /tmp/
 dont compress = *.gz *.tgz *.zip *.z *.Z *.rpm *.deb *.bz *.rar *.7z *.mp3 *.jpg

```
[data1]
  path = /data1/
  comment = Public folders
  read only = yes
  list = yes
  auth users = rsync_d1
  secrets file = /etc/rsyncd.scr
  hosts allow = localhost 192.168.32.96 192.168.32.97
  hosts deny = *
```

:

max connections = 10	
exclude = lost+found/ /tmp/	,
dont compress = *.gz *.tgz *.zip *.z *.Z *.rpm *.deb *.bz *.rar *.7z *.mp3 *.jpg	, ()
[data1]	()
path = /data1/	
comment = Public folders	
read only = yes	
list = yes	
auth users = user1 user2	
secrets file = /etc/rsyncd.scr	
hosts allow = localhost 192.168.32.96 192.168.32.97	,
hosts deny = *	,

rsync.service .

- (- /etc/rsyncd.scr):

i user1:password1
 user2:password2
 backup:password3

:

```
sudo chmod 600 /etc/rsyncd.scr
```

- :

```
sudo systemctl start rsync
```

- rsync , SSH, - " ", rsync:

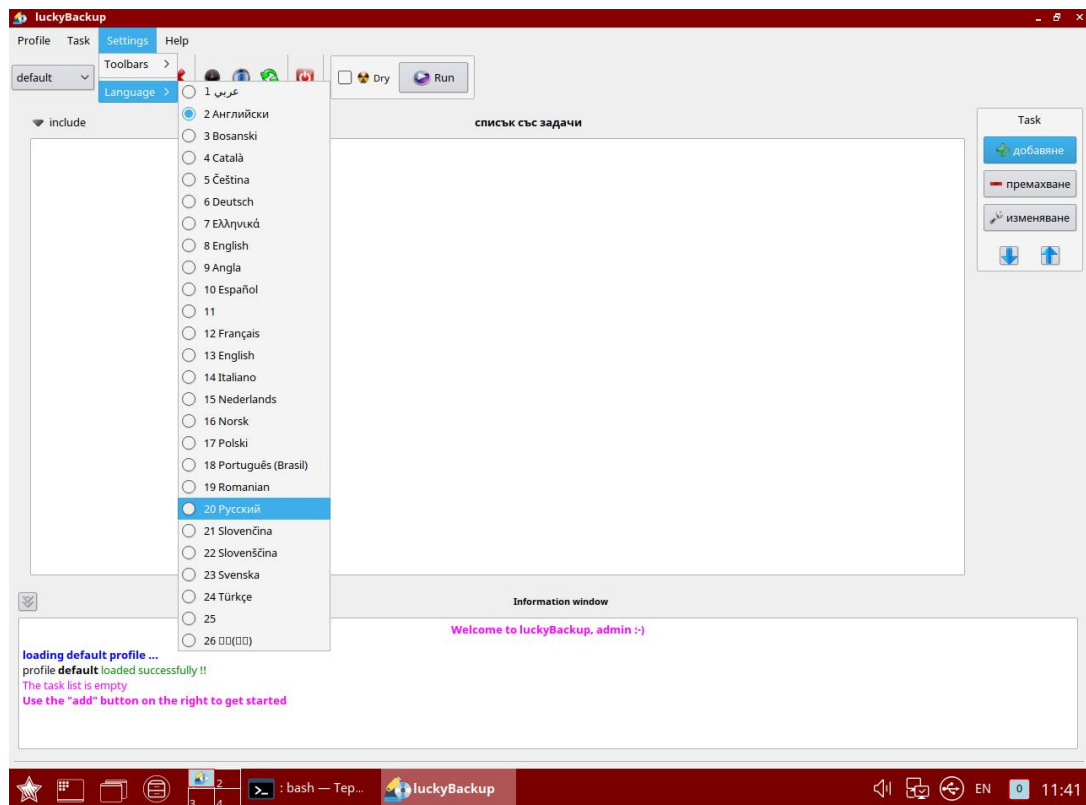
```
sudo rsync -a user1@host.astradomain.ru::data1 /tmp/
```

luckyBackup


```
rsync.  
, ( synaptic) :
```

```
apt install luckybackup
```

```
" - " - "luckyBackup ()".  
("Settings" - "Language"):
```

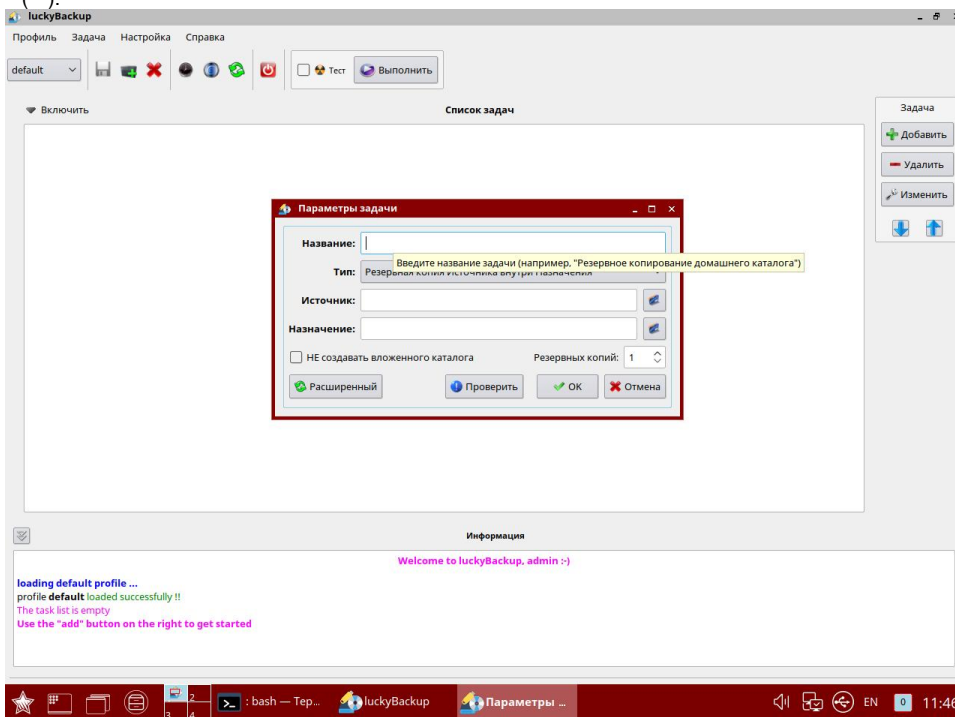


```
rsync, :  
• rsync;  
• (dry-run, "") .
```

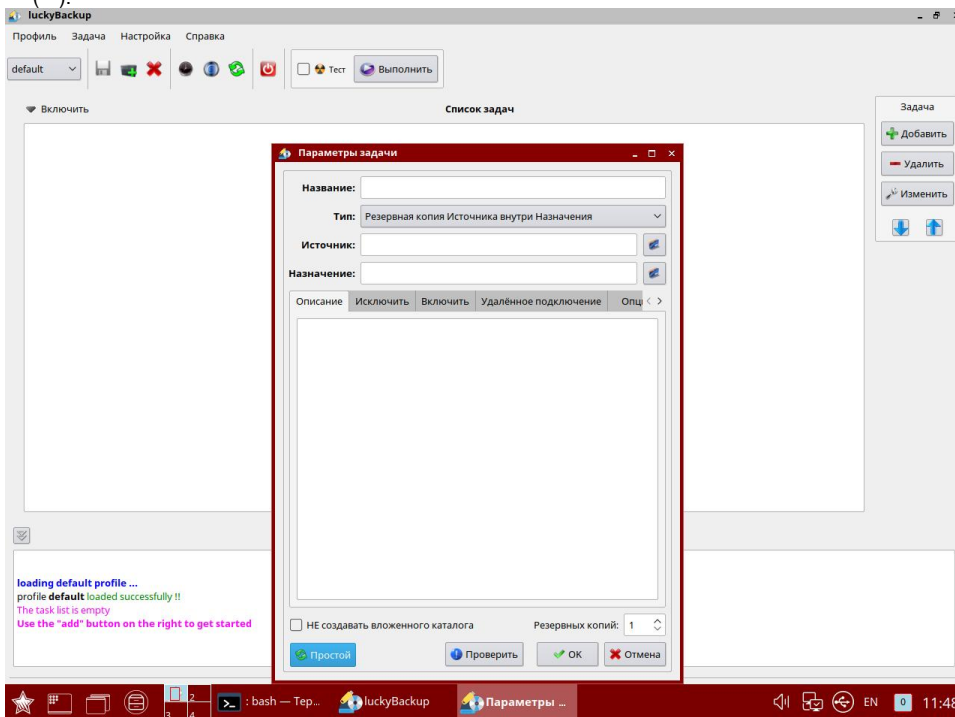
! luckyBackup PARSEC_CAP_UNSAFE_SETXATTR.

luckyBackup :

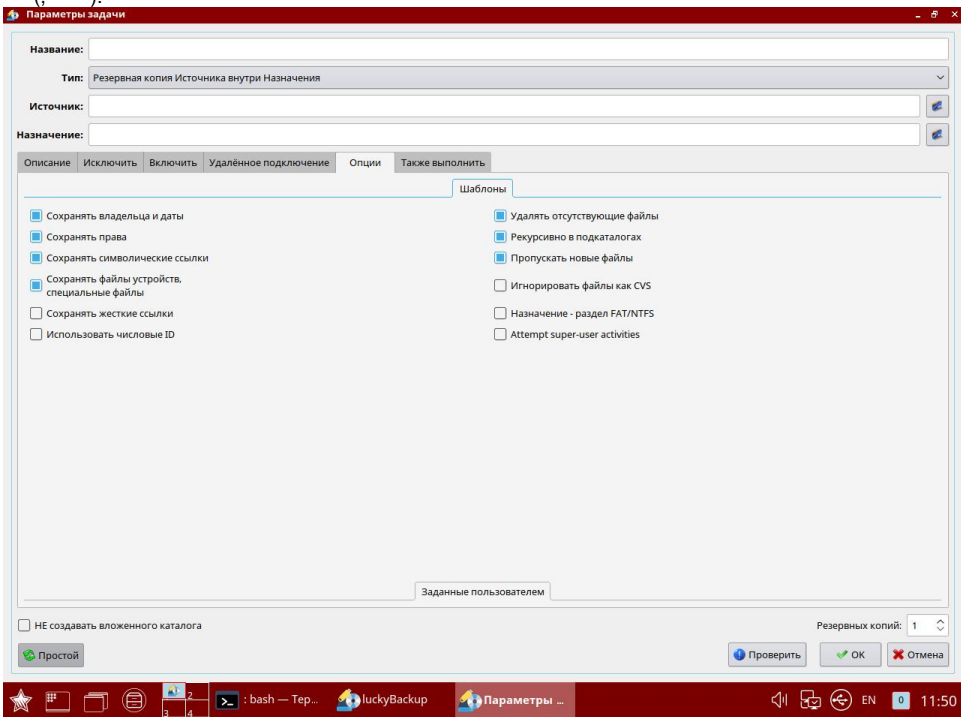
1. (""):



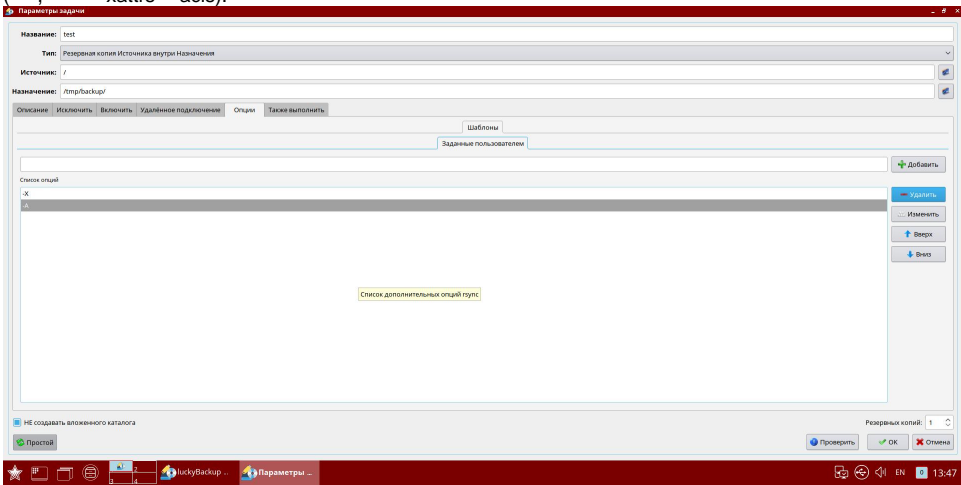
2. (""):



3. "" (,):



4. ""
(, : --xattr --acls):



5. (" - ").

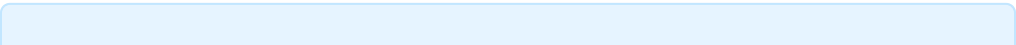
Astra Linux Special Edition

, dd. ,:

- , :
o :
■ :

grep <__> /etc/passwd

- :
 - FreeIPA - web- FreeIPA :



```
ipa user-show <__>
```

- ALD - fly-admin-ald-server
 - :
 - FreeIPA - /home;
 - ALD - /ald_home;
- , :
 - :
 - Astra Linux Special Edition Astra Linux Special Edition FreeIPA - /home/.pdp;
 - Astra Linux Special Edition ALD - /ald_export_home.