

Configuration of fat LTSP clients

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Debian LTSP fat clients on public PCs, HRZ Gießen

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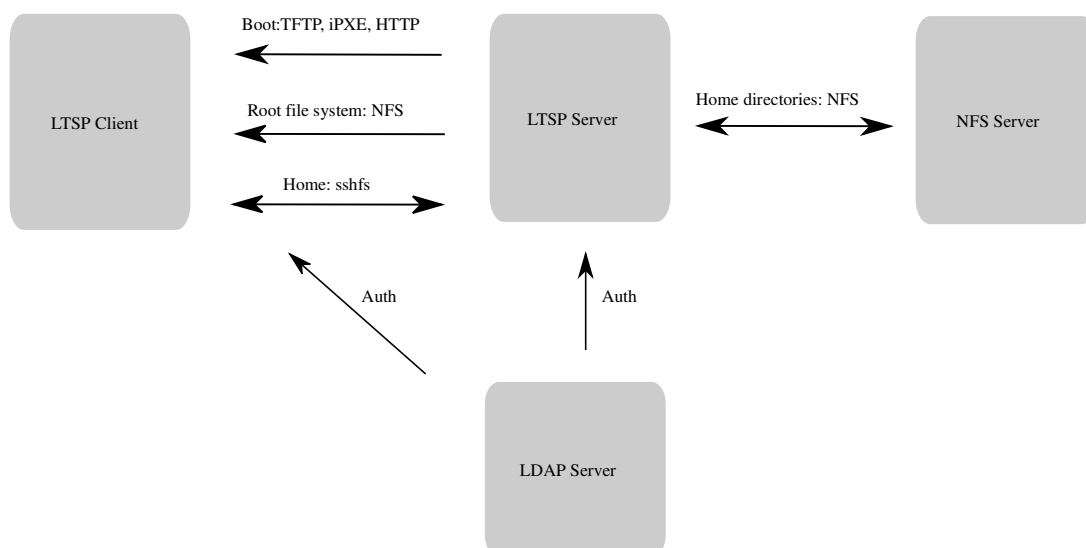
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Overview



LTSP Server configuration

NFS

Export LTSP root file system via nfs.

```
apt-get install nfs-kernel-server
```

/etc/default/nfs-kernel-server

```
RPCMOUNTDOPTS="--manage-gids --port  
4002"
```

Allow NFS through Firewall:

```
dpkg-reconfigure -plow arno-iptables-firewall
```

Enable tcp port 4002

/etc/hosts.allow

```
sshd: X.X.X.0/24 Y.Y.Y.0/24  
rpcbind: X.X.X.0/24 Y.Y.Y.0/24  
localhost  
mountd: X.X.X.0/24 Y.Y.Y.0/24
```

/etc/exports

```
/srv/ltsp  
X.X.X.0/24(ro,no_root_squash,async,no_subtree_
```

PAM LDAP

Migrate from `libpam-ldap` to `libpam-ldapd`

```
apt-get purge libnss-ldap libpam-ldap libpam-  
ldapd libnss-ldapd  
apt-get install nslcd libpam-ldapd libnss-  
ldapd  
pam-auth-update --force
```

Old configuration files:

```
/etc/pam_ldap.conf  
/etc/pam.d/common-account  
/etc/pam.d/common-auth
```

/etc/nslcd.conf

```
# /etc/nslcd.conf  
# nslcd configuration file. See nslcd.conf(5)  
# for details.  
  
# The user and group nslcd should run as.  
uid nslcd  
gid nslcd  
  
# The location at which the LDAP server(s)  
should be reachable.  
uri ldap://XXXX
```

```
# The search base that will be used for all
queries.
base o=Universitaet Giessen,c=DE

# The LDAP protocol version to use.
#ldap_version 3

# The DN to bind with for normal lookups.
binddn XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
bindpw XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX

# The DN used for password modifications by
root.
#rootpwmoddn cn=admin,dc=example,dc=com

# SSL options
ssl start_tls
tls_reqcert hard
tls_cacert /etc/ssl/certs/ca-certificates.crt

# The search scope.
#scope sub

map passwd loginShell    /bin/bash
```

/etc/nsswitch.conf

```
# /etc/nsswitch.conf
#
# Example configuration of GNU Name Service
Switch functionality.
# If you have the 'glibc-doc-reference' and
'info' packages installed, try:
# 'info libc "Name Service Switch"' for
information about this file.

passwd:                compat ldap
group:                 compat ldap
shadow:               compat ldap
gshadow:              files

hosts:                 files myhostname
mdns4_minimal [NOTFOUND=return] dns
networks:              files

protocols:             db files
services:              db files
ethers:                db files
rpc:                   db files

netgroup:              nis
```

iPXE

Make `/srv/tftp/linux-ipxe/undionly.kpxe` according to <http://ipxe.org/embed> using the file

ltsp-server.ipxe

```
#!/ipxe
# to make:
# cd ipxe/src
# ipxe/src$ make bin/undionly.kpxe
EMBED=../../../../ltsp-server.ipxe
# move bin/undionly.kpxe to /srv/tftp/linux-
ipxe/undionly.kpxe
:try_again
dhcp
chain http://[SERVER-IP]/live/ipxe.php ||
echo Konnte nicht laden:
echo chain http://[SERVER-IP]/live/ipxe.php
sleep 30
goto try_again
# echo local boot
# sanboot --no-describe
```

php5 generates the parameters for iPXE.

```
apt-get install libapache2-mod-php5
cd /var/www/html/live
ln -s /srv/ltsp/amd64/boot/ ltspboot
```

iPXE Script

Provide kernel and initrd via http. Set boot parameters

/srv/www/html/live/ipxe.php

```
#!/ipxe
set serveraddr '$_SERVER['SERVER_ADDR']'
set serverurl http://${serveraddr}/live/
set aktuellp ltspboot/
kernel ${serverurl}${aktuellp}vmlinuz ro
root=/dev/nfs nfsroot=${serveraddr}:/srv
/ltsp/amd64,nolock,tcp,ro ip=dhcp boot=nfs
init=/sbin/init-ltsp quiet splash
initrd ${serverurl}${aktuellp}initrd.img
boot ||
...
```

TFTP, DHCP

Enable port 69/UDP in the Firewall

```
dpkg-reconfigure arno-iptables-firewall
```

DHCP tells the clients to load /srv/tftp/linux-ipxe/undionly.kpxe

LTSP

Installation

```
apt-get install ltsp-server
```

Configuration

We throw away the tftp stuff to /tmp . We use iPXE instead:

/etc/ltsp/ltsp-server.conf

```
BASE="/srv/ltsp"
TFTP_DIRS="/tmp"
```

/etc/ltsp/ltsp-build-client.conf

```
MIRROR="http://ftp.uni-giessen.de/debian"
COMPONENTS="main contrib non-free"
SECURITY_MIRROR="http://security.debian.org"
DISTRIBUTION="jessie"
DIST="jessie"

# Some must-have stuff
LATE_PACKAGES="
    less
    nano
    aptitude
    man
    nfs-common
    libpam-mount
"
```

Build client

Mount a partition on /srv/ltsp/

Build the ltsp-client in /srv/ltsp/amd64 with

```
$ ltsp-build-client --fat-client-
desktop=task-gnome-desktop
```

Client unattended upgrades

The following cron job runs on the ltsp server.

```
# m h dom mon dow    command
12 03 * * *          /usr/local/bin/ltsp-
unattended-upgrades
```

ltsp-server: /usr/local/bin/ltsp-unattended-upgrades

```
#!/bin/sh
# nightly unattended upgrades for public pcs.
# started by crontab
# (change with crontab -e)

export PATH=/usr/local/sbin:/usr/sbin:
/sbin:$PATH
/etc/init.d/nfs-kernel-server stop
> /dev/null
```

```

/bin/umount /srv/ltsp/amd64/dev
> /dev/null 2>&1
/bin/umount /srv/ltsp/amd64/proc
> /dev/null 2>&1
/bin/mount | grep /srv/ltsp/amd64/ && ( echo;
echo ERROR: /srv/ltsp/amd64/ is mounted;
echo unattended upgrades will fail. )
/usr/sbin/ltsp-chroot --mount-proc --mount-
dev apt-get update > /dev/null
/usr/sbin/ltsp-chroot --mount-proc --mount-
dev unattended-upgrades
/etc/init.d/nfs-kernel-server start
> /dev/null

```

LTSP Client configuration

Boot configuration

/srv/ltsp/amd64/etc/lts.conf

```

# This is the default lts.conf file for ltsp
5. For more information about
# valid options please see lts.conf(5) man
page, available in the ltsp-docs
# package.
#
# Note that things like sound and local
device support are auto-enabled if the
# corresponding packages are installed, there
is no need to manually set these
# options anymore.

[default]

    LTSP_CONFIG=True
    #SOUND=False
    #LOCALDEV=False
    #CONFIGURE_X=False

    # Uncomment to start a root shell on
tty12 for debugging
    # SCREEN_12=shell

    # Do not use ltsp's display manager -
use whatever is in /etc/X11/default-display-
manager
    DEFAULT_DISPLAY_MANAGER=""
    # KEEP_SYSTEM_SERVICES=lightdm

    # Do not disable getty on tty1-6
    DISABLE_GETTYS=False

    # Use local swap (if available) and
network swap
    USE_LOCAL_SWAP=True
    # NBD_SWAP=True

    # Disable swap file encryption to
workaround nbd swap file bug (see below the

```

```
section about NBD swap)
    # ENCRYPT_SWAP=False
```

Enter the client with one of the following

```
sudo ltsp-chroot
sudo ltsp-chroot --mount-proc --mount-dev
```

Use mount parameters with care. If the clients are running, umount might be only possible after stopping the nfs-kernel

Packages for ldap, chipcard, ...

```
apt-get install firmware-linux
plymouth apt-utils nslcd autofs ksh
ca-certificates pscd opensc cups
bash-completion emacs mc unattended-
upgrades apt-listchanges ntp ntpdate
virtualbox-guest-utils
```

PAM LDAP

/etc/nslcd.conf

```
same as in server
```

/etc/nsswitch.conf

```
same as in server
```

PAM-mount sshfs

Because of KDE programs: do not use option follow_symlinks.

/etc/security/pam_mount.conf.xml

```
<?xml version="1.0" encoding="utf-8" ?>
<!DOCTYPE pam_mount SYSTEM
"pam_mount.conf.xml.dtd">
<!-- See pam_mount.conf(5) for a
description. -->
<pam_mount>
  <!-- debug should come before everything
else,
      since this file is still processed in
a single pass
      from top-to-bottom -->
  <debug enable="0" />
  <!-- Volume definitions -->
  <volume fstype="fuse" path="sshfs#%
(USER)@ltsp-server.XXX.XX:" mountpoint=~"
options="nonempty,reconnect,nosuid,nodev,ssh_c
/local
```

```

/bin/ssh_local,ServerAliveInterval=15,password
/>
<mntoptions require="nosuid,nodev" />
<logout wait="0" hup="0" term="0" kill="0"
/>
<!-- pam_mount parameters: Volume-related
-->
<mkmountpoint enable="1" remove="false" />
<fusemount>/bin/fusermount -u -z %(MNTPT)
</fusemount>
</pam_mount>

```

Disable SSH host key checking to keep ssh from looking into the home directory. Otherwise fusermount hangs.

/usr/local/bin/ssh_local

```

#!/bin/sh
/usr/bin/ssh -F /dev/null -o
UserKnownHostsFile=/dev/null -o
IdentityFile=/etc/ssh/nonexistentfile -o
StrictHostKeyChecking=no $@

```

Include mount.fuse to path

```

cd usr/local/bin/
ln -s ../../../../sbin/mount.fuse
chmod +x ssh_local

```

/etc/ntp.conf

Configure local time servers.

arno-iptables-firewall

```

apt-get install arno-iptables-firewall
dpkg-reconfigure -plow arno-iptables-firewall

```

Note: `dpkg-reconfigure -plow arno-iptables-firewall` is essential, because you are not asked all questions during the installation.

/etc/arno-iptables-firewall/conf.d/00debconf.conf

```

#####
# Feel free to edit this file. However, be
# aware that debconf writes #
# to (and reads from) this file too. In case
# of doubt, only use      #
# 'dpkg-reconfigure -plow arno-iptables-
# firewall' to edit this file. #
# If you really don't want to use debconf, or
# if you have specific      #
# needs, you're likely better off using
# placing an additional      #
# configuration snippet into/etc/arno-

```

```
iptables-firewall/conf.d/.      #
# Also see README.Debian.
#
#####
EXT_IF="eth0"
EXT_IF_DHCP_IP=1
OPEN_TCP=""
OPEN_UDP=""
INT_IF=""
NAT=0
INTERNAL_NET=""
NAT_INTERNAL_NET=""
OPEN_ICMP=1
```

Unattended upgrades

Started by a cron-job of the LTSP Server.

`/etc/apt/apt.conf.d/50unattended-upgrades`

kdm

```
apt-get install kdm kdm-gdmcompat
```

Set kdm as display manager with

```
dpkg-reconfigure kdm
```

Greeter screen

`diff in /usr/share/kde4/apps/kdm/themes/lines`

```
diff lines.xml lines.xml.orig
34,61d33
<         <fixed>
<             <item type="label"
id="welcome1">
<                 <pos anchor="nw" x="20"
y="24%"/>
<                 <normal font="Serif Bold
12" color="#FFFFFF" alpha="0.5"/>
<                 <text>Benutzerkennung:
</text>
<             </item>
<         </fixed>
<         <fixed>
<             <item type="label"
id="welcome1">
<                 <pos anchor="nw" x="20"
y="48%"/>
<                 <normal font="Serif Bold
12" color="#FFFFFF" alpha="0.5"/>
<                 <text>Netz-Passwort:</text>
<             </item>
<         </fixed>
<         <fixed>
```

```

<          <item type="label"
id="welcome2">
<          <pos anchor="nw" x="20"
y="72%"/>
<          <normal font="Serif 11"
color="#FFFFFF" alpha="0.5"/>
<          <text>mit der Eingabetaste
abschließen.</text>
<          </item>
<        </fixed>
<      <fixed>
<        <item type="label"
id="welcome3">
<        <pos anchor="c" x="0"
y="88%"/>
<        <normal font="Serif 7"
color="#FFFFFF" alpha="0.5"/>
<        <text>Desktop:</text>
<        </item>
<      </fixed>

```

Result:



Desktops

```

apt-get install task-kde-desktop task-gnome-
desktop task-cinnamon-desktop

apt-get install task-german-desktop task-
greek-desktop task-spanish-desktop task-
french-desktop task-portuguese-desktop task-
russian-desktop task-turkish-desktop
apt-get install icedove-l10n-de kde-l10n-de
apt-get install kdeedu kdemultimedia lame
kdm-gdmcompat

```

Default x-session-manager cinnamon

```

update-alternatives --config x-session-
manager

```

Disable KDE4 sessions and "Gnome on Wayland"

KDE4 is very slow, session logout not working.

`/usr/share/xsessions/kde-plasma.desktop`

```
...  
Hidden=true  
...
```

`/usr/share/wayland-sessions/gnome-wayland.desktop`

```
...  
Hidden=true  
...
```

Gnome Shell Extensions

Show applications menu

`/etc/xdg/autostart`

`/enable_gnome_extensions.desktop`

```
[Desktop Entry]  
Type=Application  
Name=enable gnome extensions  
## Enable Extensions  
Exec=/usr/local/bin/enable_gnome_extensions  
OnlyShowIn=GNOME
```

`/usr/local/bin/enable_gnome_extensions`

```
#!/bin/sh  
  
/usr/bin/gsettings get org.gnome.shell  
enabled-extensions | grep apps-menu ||  
/usr/bin/gsettings set org.gnome.shell  
enabled-extensions "['alternate-tab@gnome-  
shell-extensions.gcampax.github.com', 'apps-  
menu@gnome-shell-  
extensions.gcampax.github.com']"
```

Show info page on login

`/etc/xdg/autostart/show_info_page.desktop`

```
[Desktop Entry]  
Type=Application  
Name=show info page  
Exec=/usr/local/bin/info-on-login
```

`/usr/local/bin/info-on-login`

```
#!/bin/sh  
  
export infohtml=https://www.uni-giessen.de  
/cms/fbz/svc/hrz/svc/raeume/raeume27_41
```

```
/r27kurz/contentpanels_body
export browser=chromium
/usr/bin/$browser $infohtml
sleep 2
/usr/bin/wmctrl -r $browser -b
add,maximized_horz,maximized_vert
```

Printer configuration

Configure in running client.

Start ltsp client root-console on SCREEN_12 (edit lts.conf). Example user *user*.

Add user *user* to group *lpadmin*

```
usermod -G lpadmin user.
```

Log in as *user*, follow instructions.

```
iceweasel localhost:631 http://www.uni-
giessen.de/cms/fbz/svc/hrz/svc/ausgabe
/follow-me-printing/fmp-druckertreiber
```

Add printers

```
lpd://druckserver.hrz.uni-giessen.de
/SHARP_SW
lpd://druckserver.hrz.uni-giessen.de
/SHARP_Farbe
```

Copy

- /etc/cups/ppd*
- /etc/cups/printers*

to server.

Chip card

watch_reader

```
apt-get install pcsc-tools libterm-readkey-
perl wmctrl
```

/usr/local/bin/watch_reader

https://www.uni-giessen.de/cms/fbz/svc/hrz/svc/ident/ckjlu/files/watch_reader

/etc/xdg/autostart

/chipcard_watch_reader.desktop

```
[Desktop Entry]
Type=Application
Name=Chipcard watch reader
Exec=/usr/local/bin/watch_reader endless
```

`opensc.conf`

Disable pinpad (necessary for old cards)

`/etc/opensc/opensc.conf`

```
# Für alte Chipkarten nötig
enable_pinpad = false;
```

Languages

```
apt-get install task-german task-greek task-
english task-spanish task-french task-
portuguese task-russian task-turkish
dpkg-reconfigure locales
de_DE.UTF-8... done
el_GR.UTF-8... done
en_GB.UTF-8... done
es_ES.UTF-8... done
fr_FR.UTF-8... done
pt_PT.UTF-8... done
ru_RU.UTF-8... done
tr_TR.UTF-8... done
```

Additional Software

```
apt-get install icedove chromium chromium-
l10n pepperflashplugin-nonfree octave r-base
eclipse cervisia lyx lvm2 vim
```

Nightly shutdown

In chroot:

```
crontab -e
```

```
# m h dom mon dow  command
00 22 * * * /sbin/poweroff
```

Further reading

[How to disable SSH host key checking](#)
[LTSP Fat Client Setup](#)
[Debian Wiki: LTSP How to](#)
[LTSP Wiki: LTSPedia](#)

Not used

gdm3 (Gnome Display Manager)

- When entering cinnamon via gdm, the

keyboard doesn't work properly.

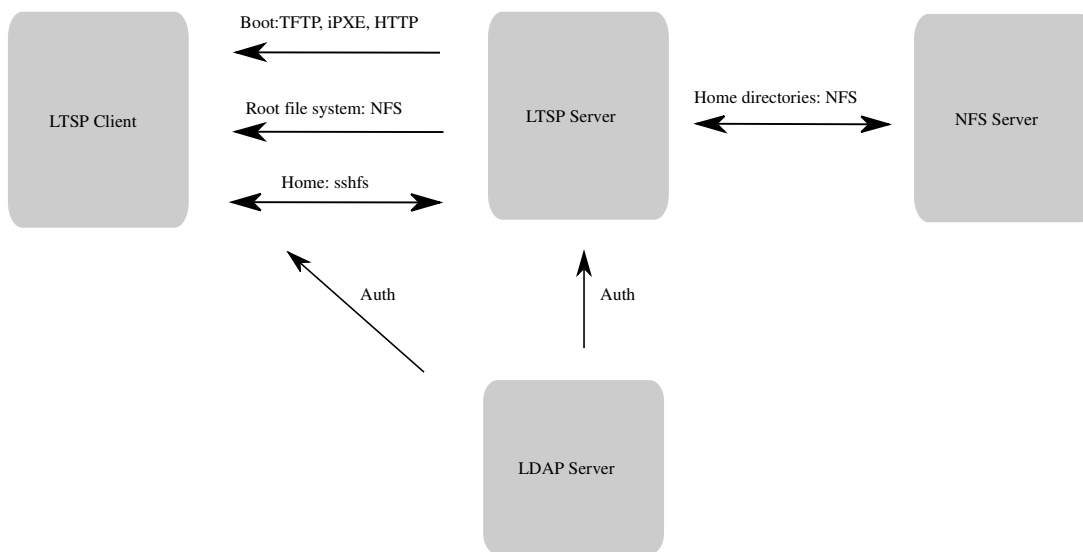
- gdm's user dialog is poor, if the userlist is not shown.

`/etc/gdm3/greeter.dconf-defaults`

```
banner-message-enable=true
banner-message-text='Klicken Sie bitte auf
"Nicht aufgeführt?"'
```

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Overview



LTSP Server configuration

NFS

Export LTSP root file system via nfs.

```
apt-get install nfs-kernel-server
```

`/etc/default/nfs-kernel-server`

```
RPCMOUNTDOPTS="--manage-gids --port 4002"
```

Allow NFS through Firewall:

```
dpkg-reconfigure -plow arno-iptables-firewall
```

Enable tcp port 4002

`/etc/hosts.allow`

```
sshd: X.X.X.0/24 Y.Y.Y.0/24
rpcbind: X.X.X.0/24 Y.Y.Y.0/24 localhost
mountd: X.X.X.0/24 Y.Y.Y.0/24
```

/etc/exports

```
/srv/ltsp X.X.X.0/24 (ro,no_root_squash,async,no_subtree_check)
```

PAM LDAP

Migrate from `libpam-ldap` to `libpam-ldapd`

```
apt-get purge libnss-ldap libpam-ldap libpam-ldapd libnss-ldapd
apt-get install nslcd libpam-ldapd libnss-ldapd
pam-auth-update --force
```

Old configuration files:

```
/etc/pam_ldap.conf
/etc/pam.d/common-account
/etc/pam.d/common-auth
```

/etc/nslcd.conf

```
# /etc/nslcd.conf
# nslcd configuration file. See nslcd.conf(5)
# for details.

# The user and group nslcd should run as.
uid nslcd
gid nslcd

# The location at which the LDAP server(s) should be reachable.
uri ldap://XXXX

# The search base that will be used for all queries.
base o=Universitaet Giessen,c=DE

# The LDAP protocol version to use.
#ldap_version 3

# The DN to bind with for normal lookups.
binddn XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
bindpw XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX

# The DN used for password modifications by root.
#rootpwmoddn cn=admin,dc=example,dc=com

# SSL options
ssl start_tls
tls_reqcert hard
tls_cacert /etc/ssl/certs/ca-certificates.crt

# The search scope.
#scope sub
```

```
map passwd loginShell /bin/bash
```

/etc/nsswitch.conf

```
# /etc/nsswitch.conf
#
# Example configuration of GNU Name Service Switch functionality.
# If you have the `glibc-doc-reference' and `info' packages installed, try:
# `info libc "Name Service Switch"' for information about this file.

passwd:         compat ldap
group:          compat ldap
shadow:         compat ldap
gshadow:        files

hosts:          files myhostname mdns4_minimal [NOTFOUND=return] dns
networks:       files

protocols:      db files
services:       db files
ethers:         db files
rpc:            db files

netgroup:       nis
```

iPXE

Make `/srv/tftp/linux-ipxe/undionly.kpxe` according to <http://ipxe.org/embed> using the file

ltsp-server.ipxe

```
#!/ipxe
# to make:
# cd ipxe/src
# ipxe/src$ make bin/undionly.kpxe EMBED=../../ltsp-server.ipxe
# move bin/undionly.kpxe to /srv/tftp/linux-ipxe/undionly.kpxe
:try_again
dhcp
chain http://[SERVER-IP]/live/ipxe.php ||
echo Konnte nicht laden:
echo chain http://[SERVER-IP]/live/ipxe.php
sleep 30
goto try_again
# echo local boot
# sanboot --no-describe
```

php5 generates the parameters for iPXE.

```
apt-get install libapache2-mod-php5
cd /var/www/html/live
ln -s /srv/ltsp/amd64/boot/ ltspboot
```

iPXE Script

Provide kernel and initrd via http. Set boot parameters

`/srv/www/html/live/ipxe.php`

```
#!ipxe
set serveraddr '._$SERVER['SERVER_ADDR']. '
set serverurl http://${serveraddr}/live/
set aktuellp ltspboot/
kernel ${serverurl}${aktuellp}vmlinuz ro root=/dev/nfs nfsroot=${serveraddr}:/srv/ltsp/amd64,nolock,tcp,ro
ip=dhcp boot=nfs init=/sbin/init-ltsp quiet splash
initrd ${serverurl}${aktuellp}initrd.img
boot ||
...
```

TFTP, DHCP

Enable port 69/UDP in the Firewall

```
dpkg-reconfigure arno-iptables-firewall
```

DHCP tells the clients to load `/srv/tftp/linux-ipxe/undionly.kpxe`

LTSP

Installation

```
apt-get install ltsp-server
```

Configuration

We throw away the tftp stuff to `/tmp` . We use iPXE instead:

`/etc/ltsp/ltsp-server.conf`

```
BASE="/srv/ltsp"
TFTP_DIRS="/tmp"
```

`/etc/ltsp/ltsp-build-client.conf`

```
MIRROR="http://ftp.uni-giessen.de/debian"
COMPONENTS="main contrib non-free"
SECURITY_MIRROR="http://security.debian.org"
DISTRIBUTION="jessie"
DIST="jessie"

# Some must-have stuff
LATE_PACKAGES="
    less
    nano
    aptitude
    man
    nfs-common
    libpam-mount
"
```

Build client

Mount a partition on `/srv/ltsp/`

Build the ltsp-client in `/srv/ltsp/amd64` with

```
$ ltsp-build-client --fat-client-desktop=task-gnome-desktop
```

Client unattended upgrades

The following cron job runs on the ltsp server.

```
# m h dom mon dow  command
12 03 * * * /usr/local/bin/ltsp-unattended-upgrades
```

ltsp-server: /usr/local/bin/ltsp-unattended-upgrades

```
#!/bin/sh
# nightly unattended upgrades for public pcs.
# started by crontab
# (change with crontab -e)

export PATH=/usr/local/sbin:/usr/sbin:/sbin:$PATH
/etc/init.d/nfs-kernel-server stop > /dev/null
/bin/umount /srv/ltsp/amd64/dev > /dev/null 2>&1
/bin/umount /srv/ltsp/amd64/proc > /dev/null 2>&1
/bin/mount | grep /srv/ltsp/amd64/ && ( echo; echo ERROR: /srv/ltsp/amd64/ is mounted; echo unattended
upgrades will fail. )
/usr/sbin/ltsp-chroot --mount-proc --mount-dev apt-get update > /dev/null
/usr/sbin/ltsp-chroot --mount-proc --mount-dev unattended-upgrades
/etc/init.d/nfs-kernel-server start > /dev/null
```

LTSP Client configuration

Boot configuration

/srv/ltsp/amd64/etc/lts.conf

```
# This is the default lts.conf file for ltsp 5. For more information about
# valid options please see lts.conf(5) man page, available in the ltsp-docs
# package.
#
# Note that things like sound and local device support are auto-enabled if the
# corresponding packages are installed, there is no need to manually set these
# options anymore.

[default]
    LTSP_CONFIG=True
    #SOUND=False
    #LOCALDEV=False
    #CONFIGURE_X=False

    # Uncomment to start a root shell on tty12 for debugging
    # SCREEN_12=shell

    # Do not use ltsp's display manager - use whatever is in /etc/X11/default-display-manager
    DEFAULT_DISPLAY_MANAGER=""
    # KEEP_SYSTEM_SERVICES=lightdm

    # Do not disable getty on tty1-6
    DISABLE_GETTYS=False

    # Use local swap (if available) and network swap
    USE_LOCAL_SWAP=True
    # NBD_SWAP=True
```

```
# Disable swap file encryption to workaround nbd swap file bug (see below the section about NBD swap)
# ENCRYPT_SWAP=False
```

Enter the client with one of the following

```
sudo ltsp-chroot
sudo ltsp-chroot --mount-proc --mount-dev
```

Use mount parameters with care. If the clients are running, umount might be only possible after stopping the nfs-kernel

Packages for ldap, chipcard, ...

```
apt-get install firmware-linux plymouth apt-utils nslcd autofs ksh ca-certificates
pcscd opensc cups bash-completion emacs mc unattended-upgrades apt-listchanges ntp
ntpdate virtualbox-guest-utils
```

PAM LDAP

/etc/nslcd.conf

```
same as in server
```

/etc/nsswitch.conf

```
same as in server
```

PAM-mount sshfs

Because of KDE programs: do not use option follow_symlinks.

/etc/security/pam_mount.conf.xml

```
<?xml version="1.0" encoding="utf-8" ?>
<!DOCTYPE pam_mount SYSTEM "pam_mount.conf.xml.dtd">
<!-- See pam_mount.conf(5) for a description. -->
<pam_mount>
  <!-- debug should come before everything else,
       since this file is still processed in a single pass
       from top-to-bottom -->
  <debug enable="0" />
  <!-- Volume definitions -->
  <volume fstype="fuse" path="sshfs#%(USER)@ltsp-server.XXX.XX:" mountpoint=~"
options="nonempty,reconnect,nosuid,nodev,ssh_command=/usr/local
/bin/ssh_local,ServerAliveInterval=15,password_stdin" />
  <mntoptions require="nosuid,nodev" />
  <logout wait="0" hup="0" term="0" kill="0" />
  <!-- pam_mount parameters: Volume-related -->
  <mkmountpoint enable="1" remove="false" />
  <fuseumount>/bin/fusermount -u -z %(MNTPT) </fuseumount>
</pam_mount>
```

Disable SSH host key checking to keep ssh from looking into the home directory. Otherwise fusermount hangs.

/usr/local/bin/ssh_local

```
#!/bin/sh
/usr/bin/ssh -F /dev/null -o UserKnownHostsFile=/dev/null -o IdentityFile=/etc/ssh/nonexistentfile -o
StrictHostKeyChecking=no $@
```

Include mount.fuse to path

```
cd usr/local/bin/
ln -s ../../../../sbin/mount.fuse
chmod +x ssh_local
```

/etc/ntp.conf

Configure local time servers.

arno-iptables-firewall

```
apt-get install arno-iptables-firewall
dpkg-reconfigure -plow arno-iptables-firewall
```

Note: `dpkg-reconfigure -plow arno-iptables-firewall` is essential, because you are not asked all questions during the installation.

/etc/arno-iptables-firewall/conf.d/00debconf.conf

```
#####
# Feel free to edit this file.  However, be aware that debconf writes #
# to (and reads from) this file too.  In case of doubt, only use      #
# 'dpkg-reconfigure -plow arno-iptables-firewall' to edit this file.  #
# If you really don't want to use debconf, or if you have specific    #
# needs, you're likely better off using placing an additional         #
# configuration snippet into/etc/arno-iptables-firewall/conf.d/.     #
# Also see README.Debian.                                             #
#####
EXT_IF="eth0"
EXT_IF_DHCP_IP=1
OPEN_TCP=""
OPEN_UDP=""
INT_IF=""
NAT=0
INTERNAL_NET=""
NAT_INTERNAL_NET=""
OPEN_ICMP=1
```

Unattended upgrades

Started by a cron-job of the LTSP Server.

/etc/apt/apt.conf.d/50unattended-upgrades

kdm

```
apt-get install kdm kdm-gdmcompat
```

Set kdm as display manager with

```
dpkg-reconfigure kdm
```

Greeter screen

diff in /usr/share/kde4/apps/kdm/themes/lines

```
diff lines.xml lines.xml.orig
34,61d33
<
<     <fixed>
<
<         <item type="label" id="welcome1">
<
<             <pos anchor="nw" x="20" y="24%"/>
<
<             <normal font="Serif Bold 12" color="#FFFFFF" alpha="0.5"/>
<
<             <text>Benutzerkennung:</text>
<
<         </item>
<
<     </fixed>
<
<     <fixed>
<
<         <item type="label" id="welcome1">
<
<             <pos anchor="nw" x="20" y="48%"/>
<
<             <normal font="Serif Bold 12" color="#FFFFFF" alpha="0.5"/>
<
<             <text>Netz-Passwort:</text>
<
<         </item>
<
<     </fixed>
<
<     <fixed>
<
<         <item type="label" id="welcome2">
<
<             <pos anchor="nw" x="20" y="72%"/>
<
<             <normal font="Serif 11" color="#FFFFFF" alpha="0.5"/>
<
<             <text>mit der Eingabetaste abschließen.</text>
<
<         </item>
<
<     </fixed>
<
<     <fixed>
<
<         <item type="label" id="welcome3">
<
<             <pos anchor="c" x="0" y="88%"/>
<
<             <normal font="Serif 7" color="#FFFFFF" alpha="0.5"/>
<
<             <text>Desktop:</text>
<
<         </item>
<
<     </fixed>
```

Result:



Desktops

```
apt-get install task-kde-desktop task-gnome-desktop task-cinnamon-desktop
```

```
apt-get install task-german-desktop task-greek-desktop task-spanish-desktop task-french-desktop task-
```

```
portuguese-desktop task-russian-desktop task-turkish-desktop
apt-get install icedove-l10n-de kde-l10n-de
apt-get install kdeedu kdemultimedia lame kdm-gdmcompat
```

Default x-session-manager cinnamon

```
update-alternatives --config x-session-manager
```

Disable KDE4 sessions and "Gnome on Wayland"

KDE4 is very slow, session logout not working.

/usr/share/xsessions/kde-plasma.desktop

```
...
Hidden=true
...
```

/usr/share/wayland-sessions/gnome-wayland.desktop

```
...
Hidden=true
...
```

Gnome Shell Extensions

Show applications menu

/etc/xdg/autostart/enable_gnome_extensions.desktop

```
[Desktop Entry]
Type=Application
Name=enable gnome extensions
## Enable Extensions
Exec=/usr/local/bin/enable_gnome_extensions
OnlyShowIn=GNOME
```

/usr/local/bin/enable_gnome_extensions

```
#!/bin/sh

/usr/bin/gsettings get org.gnome.shell enabled-extensions | grep apps-menu || /usr/bin/gsettings set
org.gnome.shell enabled-extensions "['alternate-tab@gnome-shell-extensions.gcampax.github.com', 'apps-
menu@gnome-shell-extensions.gcampax.github.com']"
```

Show info page on login

/etc/xdg/autostart/show_info_page.desktop

```
[Desktop Entry]
Type=Application
Name=show info page
Exec=/usr/local/bin/info-on-login
```

/usr/local/bin/info-on-login

```
#!/bin/sh
export infohtml=https://www.uni-giessen.de/cms/fbz/svc/hrz/svc/raeume/raeume27_41/r27kurz/contentpanels_body
export browser=chromium
/usr/bin/$browser $infohtml
sleep 2
/usr/bin/wmctrl -r $browser -b add,maximized_horz,maximized_vert
```

Printer configuration

Configure in running client.

Start ltsp client root-console on SCREEN_12 (edit lts.conf). Example user *user*.

Add user *user* to group *lpadmin*

```
usermod -G lpadmin user.
```

Log in as *user*, follow instructions.

```
iceweasel localhost:631 http://www.uni-giessen.de/cms/fbz/svc/hrz/svc/ausgabe/follow-me-printing/fmp-
druckertreiber
```

Add printers

```
lpd://druckserver.hrz.uni-giessen.de/SHARP_SW
lpd://druckserver.hrz.uni-giessen.de/SHARP_Farbe
```

Copy

- /etc/cups/ppd*
- /etc/cups/printers*

to server.

Chip card

watch_reader

```
apt-get install pcsc-tools libterm-readkey-perl wmctrl
```

/usr/local/bin/watch_reader

https://www.uni-giessen.de/cms/fbz/svc/hrz/svc/ident/ckjlu/files/watch_reader

/etc/xdg/autostart/chipcard_watch_reader.desktop

```
[Desktop Entry]
Type=Application
Name=Chipcard watch reader
Exec=/usr/local/bin/watch_reader endless
```

opensc.conf

Disable pinpad (necessary for old cards)

/etc/opensc/opensc.conf

```
# Für alte Chipkarten nötig
```

```
enable_pinpad = false;
```

Languages

```
apt-get install task-german task-greek task-english task-spanish task-french task-portuguese task-russian
task-turkish
dpkg-reconfigure locales
  de_DE.UTF-8... done
  el_GR.UTF-8... done
  en_GB.UTF-8... done
  es_ES.UTF-8... done
  fr_FR.UTF-8... done
  pt_PT.UTF-8... done
  ru_RU.UTF-8... done
  tr_TR.UTF-8... done
```

Additional Software

```
apt-get install icedove chromium chromium-l10n pepperflashplugin-nonfree octave r-base eclipse cervisia lyx
lvm2 vim
```

Nightly shutdown

In chroot:

```
crontab -e
```

```
# m h dom mon dow    command
00 22 * * *          /sbin/poweroff
```

Further reading

[How to disable SSH host key checking](#)
[LTSP Fat Client Setup](#)
[Debian Wiki: LTSP How to](#)
[LTSP Wiki: LTSPedia](#)

Not used

gdm3 (Gnome Display Manager)

- When entering cinnamon via gdm, the keyboard doesn't work properly.
- gdm's user dialog is poor, if the userlist is not shown.

/etc/gdm3/greeter.dconf-defaults

```
banner-message-enable=true
banner-message-text='Klicken Sie bitte auf "Nicht aufgeföhrt?"'
```

