
Install Ubuntu 8.04 on Lenovo 3000 N200 with encrypted LVM

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Pre install

- Download and Burn Ubuntu 8.04 (I used 8.04.01) Alternate ISO

Base Installation

I just followed [this](#) blog post ;-)

Post install

Power Savings

Enable Laptop mode

You can see if laptop mode is active with this command:

```
# cat /proc/sys/vm/laptop_mode  
5
```

If the content of that file is 0, laptop mode is disabled. In the example here, laptop mode is enabled.

To enable laptop mode, you can use this command:

```
echo 5 > /proc/sys/vm/laptop_mode
```

Putting /etc into Version Control

Installing needed software:

```
sudo aptitude install etckeeper git
```

Read the documentation (to find your way to configure it):

```
zless /usr/share/doc/etckeeper/README.gz
```

Initialize etckeeper's GIT Repository and add the files:

```
sudo etckeeper init
```

Commit the files in etc to GIT (see the list of files with git status when you're in the etc directory):

```
cd /etc
git commit -m "initial checkin"
git gc
```

For more details see the readme or git manual for commands.

My etckeeper configuration:

```
cd /etc/etckeeper/post-install.d
(echo '#!/bin/sh' ; echo 'exec git gc') > 99git-gc
chmod +x 99git-gc
git add .
git commit -m "run git gc after each apt run"
```

Creating LVM Snapshots

- <http://ds9a.nl/lvm-howto/HOWTO//cvs/lvm-howto/output/lvm-howto-7.html>
- <http://ubuntuforums.org/showthread.php?t=216117>

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- http://www.howtoforge.com/linux_lvm_snapshots
 - <http://packages.ubuntu.com/intrepid/all/system-config-lvm/download>

Sync DATA directory with Desktop PC

- <http://ubuntuforums.org/showthread.php?t=684205>
- <http://www.ubuntugeek.com/unison-file-synchronization-tool.html>
- <https://wiki.ubuntu.com/MultipleComputersSynchronization>
- <http://www.micahcarrick.com/11-07-2007/unison-synchronize-ubuntu.html>
- <http://live.gnome.org/Conduit/Documentation>

Getting included Hardware to work

Only stuff that doesn't work out of the box!

Screen flickering

Tried to get rid of my screen flickering with following code (doesn't work anymore)

```
!!! doesn't work !!!  
Insert at the end of /etc/modprobe.d/nvidia-kernel-nkc  
options nvidia_new NVreg_Mobile=1 NVreg_RegistryDwords="PerfLevelSrc=0x2222"
```

Sound

Add following line to the end of /etc/modprobe.d/alsa-base (do it with sudo)

```
options snd-hda-intel model=lenovo
```

Change all Audio settings to use ALSA (System->Preferences->Sound)

Fingerprint reader

- https://www.2030.tk/wiki/Enable_AuthenTec_Fingerprint_Reader_as_PAM_modul

(text copy from ubuntu laptop testing team)

You can install fprint libraries and binaries from the hardy-backport repository:

```
sudo aptitude install libfprint0 libpam-fprint fprint-demo
```

Fingerprints are stored on you home directory (~/.fprint). You can enroll your finger with either `fprint_demo` and `pam_fprint_enroll`.

Currently, `pam_fprint` (version 0.4) can't be configured for which finger it will read at password prompt (it will chose the first one it find... that can even be the left thumb!). Also, since the prints are stored in your home directory, you can't authenticate yourself as another user (except root).

Auth config #1

(version from ubuntu laptop testing team)

In order to authenticate via the fingerprint reader, you must configure PAM to use `pam_fprint`. Here is a simple example how to add finger authentication to `sudo` (thanks Diego). Create a file `/etc/pam.d/fprint` and put these lines:

```
auth    sufficient  pam_fprint.so
```

Change `/etc/pam.d/sudo` to include the `fprint` file:

```
##%PAM-1.0
@include common-auth
```

```
@include common-account
@include fprint
```

Now when using sudo, it will ask for your password and then you fingerprint.

Auth config #2

(system wide version)

Ends after first use in an Segmentation fault when using sudo, didn't happen with old fprint library

<http://www.mail-archive.com/ubuntu-bugs@lists.ubuntu.com/msg946814.html>

edit your /etc/pam.d/common-auth so it contains

```
auth sufficient pam_fprint.so
auth required pam_unix.so nullok_secure
```

Auth config #3

(partial version, activating just for some services)
Create a file /etc/pam.d/fprint and put these lines:

```
auth sufficient pam_fprint.so
```

GDM Login

Change /etc/pam.d/login to include the fprint file:

```
@include fprint
@include common-auth
```

Gnome screensaver

add the

```
@include fprint
```

in the file `/etc/pam.d/gnome-screensaver` before the line with `common.auth`

Scan your finger

To scan a finger with a gui, you can use the demo application by installing `fprint_demo` package

```
$ fprint_demo
```

Only the first scanned finger will be taken for authentication.

Nvidia graphics

Activate restricted Hardware driver for Nvidia

```
system > Systemverwaltung > Hardware-Treiber
```

3D Acceleration

(text copy from ubuntu laptop testing team)

If you don't use screen rotation, you can speed up the 3D rendering by setting the `INTEL_BATCH` environment variable. In your `~/.bashrc`, add the line:

```
export INTEL_BATCH=1
```

It will enable batch buffer codepath for OpenGL apps. Note that it isn't really safe with rotation. It speeds up glxgears from 900 fps to +1700 fps and Quake 3 four.dm_68 demo with timedemo from 58 to 78 average fps.

Sleep fix

(from ubuntu laptop testing team) Screen still stays blank after resume... :-/

```
sudo pico /boot/grub/menu.lst
```

Look for a line that says `# defoptions=quiet splash` and modify it to:

```
# defoptions=quiet splash i8042.reset
```

Save file and then run `update-grub` in console

If wifi doesnt resume: (didn't happen on my laptop)

```
# Reload kernel module
sudo modprobe -r ipw3945
sudo modprobe ipw3945
```

If it's still not working you may find more fixes here:
<http://wiki.ubuntuusers.de/Nvidia-Grafikkarten/Suspend>

Hibernate fix

(from ubuntu laptop testing team)

When coming back up from hibernation and suspend, NetworkManager is not responding which prevents connection a any network (wired, or wireless). A work around is to create this file (don't forget to make it executable!)

```
echo "killall NetworkManager" > /etc/acpi/resume.d/99-network-manager.sh
echo "NetworkManager" >> /etc/acpi/resume.d/99-network-manager.sh
chmod +x /etc/acpi/resume.d/99-network-manager.sh
```

A minor problem, is that the first time you connect to a wireless network, the connection will last 10 seconds and then disconnect, next connection will be stable. At least no console is used to get into this state :)

Security modifications

Deactivate unused bluetooth device

to deactivate the device

```
hciconfig hci0 down
rmmod hci_usb
```

to reactivate again just type

```
modprobe hci_usb
```

The Bluetooth LED is still activated, dont know if its still consuming power but its not scanning the world and is not in a connectable state as far as I know.

Personal firewall

Added following line to /etc/init.d/networking before the switch case

```
# add block all incoming firewall rule
iptables -I INPUT ! -i lo -m state --state NEW,INVALID -j DROP
```

TODO:

<http://www.cyberciti.biz/tips/how-do-i-run-firewall-script-as-soon-as-eth0-interface-brings-up.html>

Additional Software

Encrypt a single folder

<http://www.ubuntugeek.com/crypt-manager-an-encrypted-folder-manager-for-ubuntu-linux.html>

Related Links

- [Benchmarks](#)
- [Blog entry #1](#)
- [etckeeper](#)
- [handicapped sudo](#)
- [Keyfile on SD Card](#)
- [My Install Log for Ubuntu 7.10](#)
- [Powersaving tip's](#)
- [RAID5 Encrypted LVM](#)
- [Secure Firefox](#)
- [Ubuntu Laptop testing team](#)
- [Ubuntu wiki](#)
- [use bazaar for /etc](#)

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