

**20150727-
linux_on_chrom
ebooks**

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Linux on a Chromebook



Hardware

Lenovo N20

CPU	Intel Celeron N2830 2.16Ghz dual core
GPU	Intel
MEM	4GB
HD	16GB SSD soldered
Weight	1.3kg
Screen	11.6"
Connectors	1 x USB 3.0, 1 x USB 2.0, 1 full HDMI
Wireless	802.11ac (Intel 7260), Bluetooth 4.0

down

Chromebook selection

- Most models have similar specs.
- Most are 11.6" screens, Toshiba has a 13.3"
- Use a x86 Chromebook as it's easier.

x86

If you want to run any of this in your Linux install

- Steam
- Java
- Skype
- Dropbox
- Wine
- Adobe's Flash browser

Pros

- Light
- Long batt life (8hrs)
- Cheap (around \$350)
- Good for a travel notebook

Cons

- Linux runs within chroot environment
- Cannot access all hardware (such as the camera)
- full screen message gets in the way

Crouton



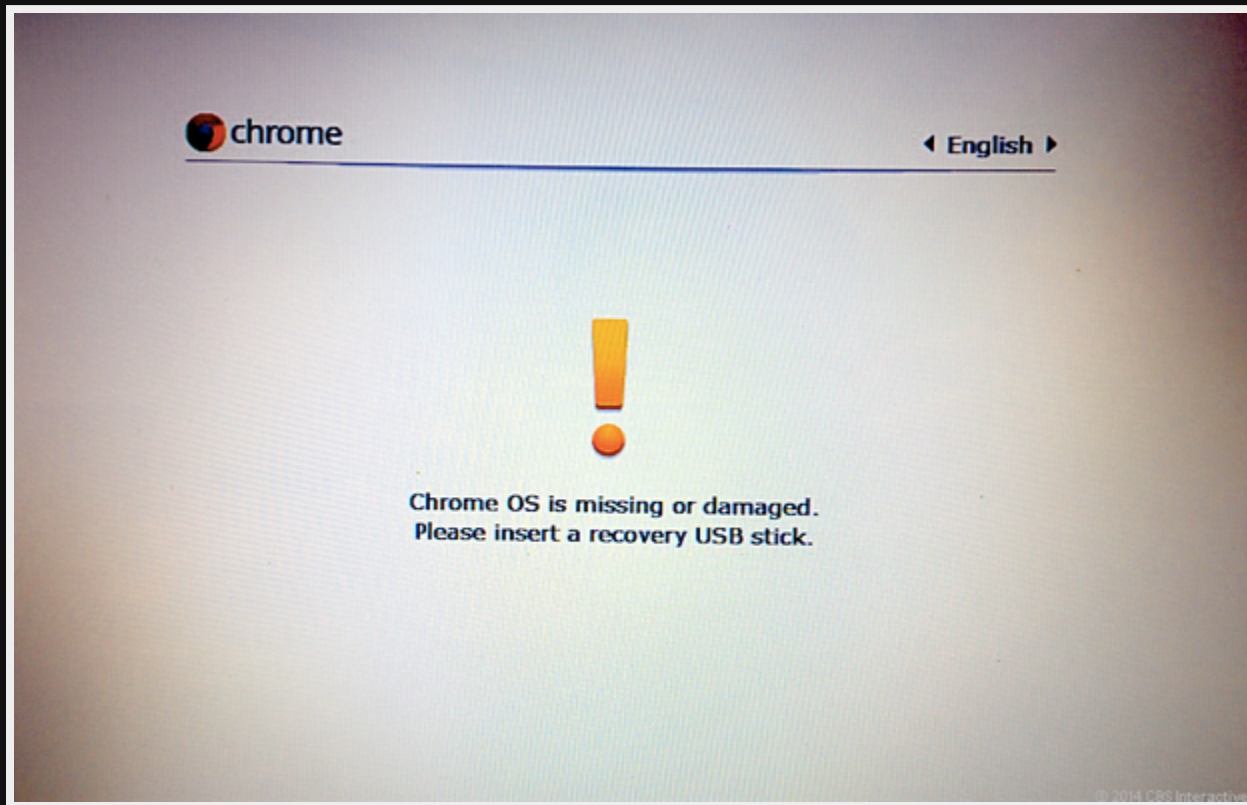
Crouton features

- Crouton is a bunch of scripts to make installation easier
- Runs Linux in a window / fullscreen
- Builds a chroot environment
- Allows a different distros (ubuntu, debian or kali)
- Windows manager selection (xfce)
- Allows encryption

Installation

1. Create backup
2. Enter dev mode
3. Install linux using Crouton
4. Make crouton chroot start automatically

Backup



How to Backup

- Use a blank 4GB or greater USB
- Use the 'Chromebook Recovery App'

Enter dev mode

- Hold down 'ESC + Refresh (circle arrow) + PWR button'
- At message "Chrome OS verification is turned off" hit ENTER (wait 5mins) This creates dev mode.
- After reboot, hit 'CTRL+ALT+t' for terminal & type shell.

Install Crouton

- Download **Crouton**
- Install **crouton integration Chrome extension**
- In shell type

```
sudo sh -e ~/Downloads/crouton -r jessie -t xfce,xiwi
```

-r jessie	Use Debian 8 Jessie release
-t xfce	Use XFCE windows manager
xiwi	Allow crouton to run in ChromeOS browser window

NOTE: This combo will only take up 1.5GB leaving you lots of space for other apps.

- Test the setup

```
sudo enter-chroot startxfce4
```

Make Linux start automatically

- Download **rw-rootfs** on another computer, unzip & scp to chromebook
- Turn off boot signed only

```
sudo crossystem dev_boot_signed_only=0
```

- Run the following twice (rebooting twice)

```
sudo ~/rw-rootfs
```


Useful packages

- Install Audio

```
sudo apt-get install pulseaudio
```

- Install SSH [Running servers in crouton](#) · [dnsschneid/crouton Wiki](#) · [GitHub](#) Within chroot section

```
sudo apt-get update  
sudo apt-get install iptables ssh
```

- Configure SSH daemon Add the following to your `/etc/rc.local` file

```
/sbin/iptables -I INPUT -p tcp --dport 22 -j ACCEPT &  
/bin/mkdir -p -m0755 /var/run/sshd  
/usr/sbin/sshd &
```

Another option

- Upgrade chromebook to the latest & enable debugger features
Note: I haven't found these USB debugger features they talk about.
- Boot any Linux distro from USB. [Google just made it easier to run Linux on your Chromebook | PCWorld](#)

Demo

- `ctrl+alt+t`, `shell`, `startxfce`

Questions

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Github	github: map7
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