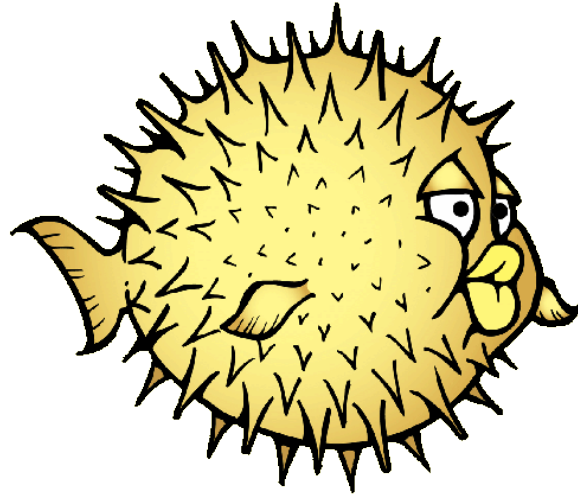


# OpenBSD Desktop



***Open*BSD**

More than a firewall, OpenBSD  
as a secure Desktop

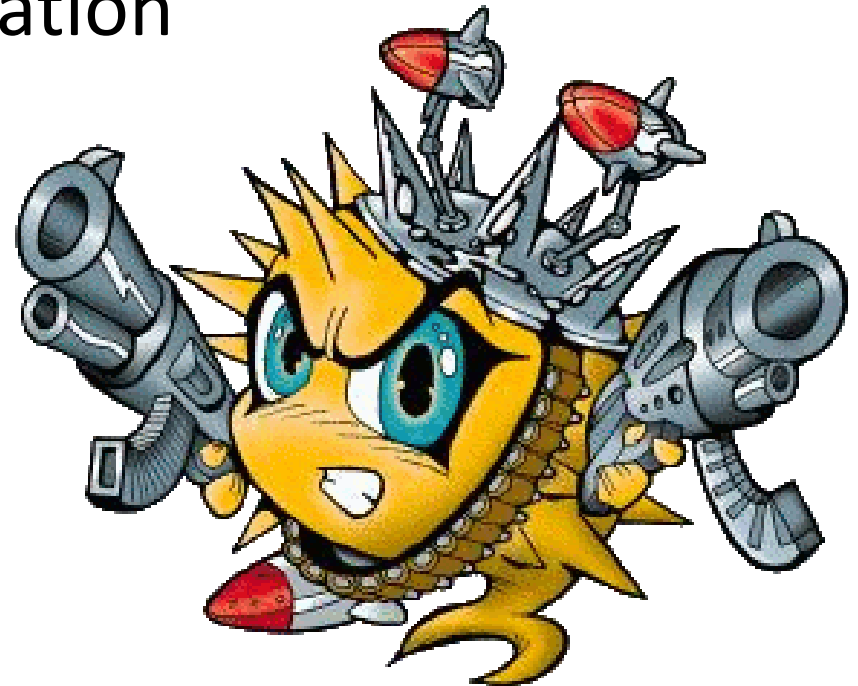
July 11<sup>th</sup>, 2013

Mark Duller – OxCERT  
[mark.duller@it.ox.ac.uk](mailto:mark.duller@it.ox.ac.uk)

# OpenBSD Desktop

## Contents

- OpenBSD Introduction
- The Not so Scary Installation
- A Secure Desktop
- Adding Apps
- Conclusion



# OpenBSD Desktop

## Introduction

Derived from 4.3BSD of the Berkeley Software Distribution

NetBSD cofounder Theo de Raadt created OpenBSD project in 1995

Core team of developers work on Kernel and system components



“Our goals place emphasis on *correctness, security, standardization, and portability*” – OpenBSD FAQ

# OpenBSD Desktop

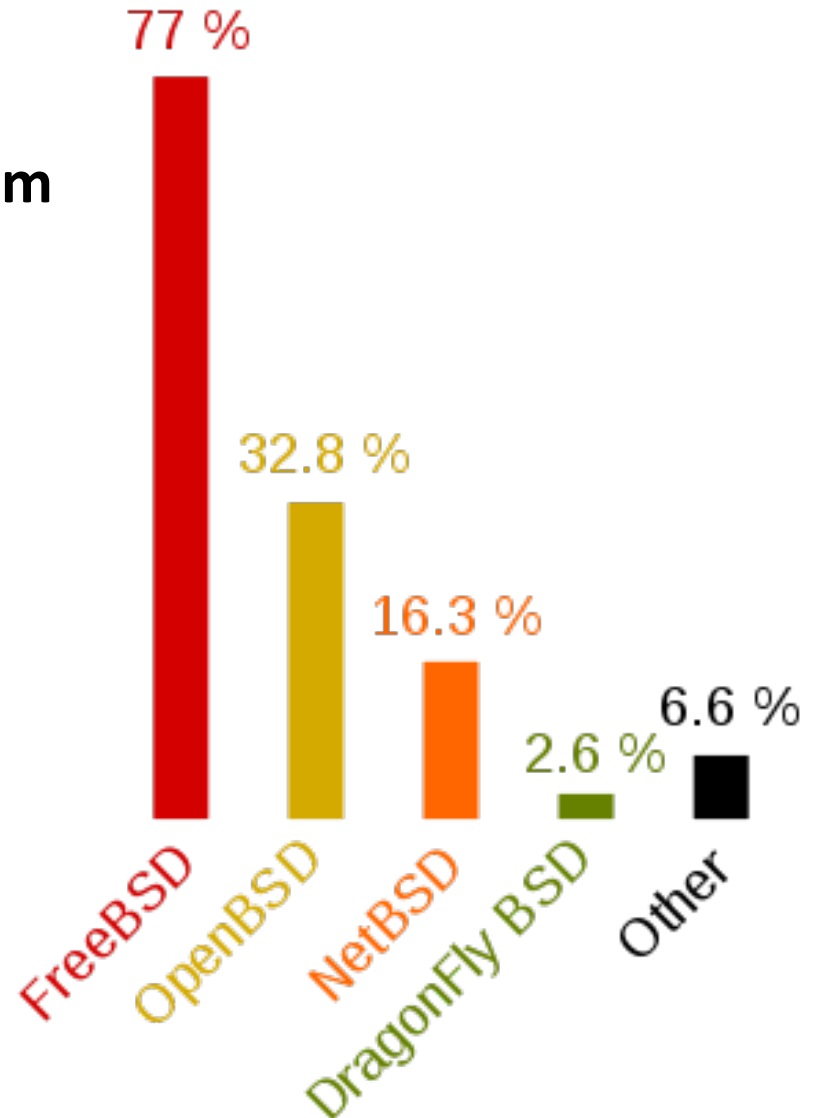
## Introduction

Developed as a whole Operating System  
- libc, korn shell, even sendmail  
and xorg in the “base”

Second most popular BSD

Project also created OpenSSH

BSD license



# OpenBSD Desktop

```
Machine View Devices Help
"InnoTek VirtualBox Guest Service" rev 0x00 at pci0 dev 4 function 0 not configured
"Intel 82801AA AC97" rev 0x01 at pci0 dev 5 function 0 not configured
ohci0 at pci0 dev 6 function 0 "Apple Intrepid USB" rev 0x00: irq 11, version 1.0
"Intel 82371AB Power" rev 0x08 at pci0 dev 7 function 0 not configured
ehci0 at pci0 dev 11 function 0 "Intel 82801FB USB" rev 0x00: irq 10
usb0 at ehci0: USB revision 2.0
uhub0 at usb0 "Intel EHCI root hub" rev 2.00/1.00 addr 1
isa0 at pcib0
isadma0 at isa0
pckbc0 at isa0 port 0x60/5
pckbd0 at pckbc0 (kbd slot)
pckbc0: using irq 1 for kbd slot
wskbd0 at pckbd0: console keyboard, using wsdisplay0
mpx0 at isa0 port 0xf0/16: reported by CPUID; using exception 16
usb1 at ohci0: USB revision 1.0
uhub1 at usb1 "Apple OHCI root hub" rev 1.00/1.00 addr 1
softraid0 at root
scsibus1 at softraid0: 256 targets
root on rd0a swap on rd0b dump on rd0b
erase ^?, werase ^W, kill ^U, intr ^C, status ^T

Welcome to the OpenBSD/i386 5.3 installation program.
(I)nstall, (U)pgrade or (S)hell?
```

# OpenBSD Desktop

Machine View Devices Help

erase ^?, werase ^W, kill ^U, intr ^C, status ^T

Welcome to the OpenBSD/i386 5.3 installation program.

(I)nstall, (U)pgrade or (S)hell? I

At any prompt except password prompts you can escape to a shell by typing '!'. Default answers are shown in []'s and are selected by pressing RETURN. You can exit this program at any time by pressing Control-C, but this can leave your system in an inconsistent state.

Choose your keyboard layout ('?' or 'L' for list) [default] uk

kbd: keyboard mapping set to uk

System hostname? (short form, e.g. 'foo') pufffy

Available network interfaces are: em0 vlan0.

Which one do you wish to configure? (or 'done') [em0]

IPv4 address for em0? (or 'dhcp' or 'none') [dhcp]

Issuing hostname-associated DHCP request for em0.

DHCPDISCOVER on em0 to 255.255.255.255 port 67 interval 1

DHCPOFFER from 10.0.2.2 (52:54:00:12:35:02)

DHCPREQUEST on em0 to 255.255.255.255 port 67

DHCPACK from 10.0.2.2 (52:54:00:12:35:02)

bound to 10.0.2.15 -- renewal in 43200 seconds.

IPv6 address for em0? (or 'rtsol' or 'none') [none]

Available network interfaces are: em0 vlan0.

Which one do you wish to configure? (or 'done') [done]





# OpenBSD Desktop

Machine View Devices Help

Issuing hostname-associated DHCP request for em0.

DHCPREQUEST on em0 to 255.255.255.255 port 67

DHCPACK from 10.0.2.2 (52:54:00:12:35:02)

bound to 10.0.2.15 -- renewal in 43200 seconds.

IPv6 address for em0? (or 'rtsol' or 'none') [none]

Available network interfaces are: em0 vlan0.

Which one do you wish to configure? (or 'done') [done]

Using DNS domainname my.domain

Using DNS nameservers at 192.168.1.1

Password for root account? (will not echo)

Password for root account? (again)

The root password must be set.

Password for root account? (will not echo)

Password for root account? (again)

Start sshd(8) by default? [yes]

Start ntpd(8) by default? [no]

Do you expect to run the X Window System? [yes]

Do you want the X Window System to be started by xdm(1)? [no] yes

Setup a user? (enter a lower-case loginname, or 'no') [no] user

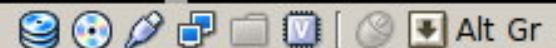
Full user name for user? [user]

Password for user account? (will not echo)

Password for user account? (again)

Since you set up a user, disable sshd(8) logins to root? [yes]

What timezone are you in? ('?' for list) [Canada/Mountain] GB

 Alt Gr

# OpenBSD Desktop

```
Machine View Devices Help
Disk: wd0 geometry: 2610/255/63 [41943040 Sectors]
Offset: 0 Signature: 0xAA55

#  id      Starting      Ending      LBA Info:
#  id      C  H  S -      C  H  S [      start:      size ]
-----
0: 00      0  0  0 -      0  0  0 [      0:      0 ] unused
1: 00      0  0  0 -      0  0  0 [      0:      0 ] unused
2: 00      0  0  0 -      0  0  0 [      0:      0 ] unused
3: 00      0  0  0 -      0  0  0 [      0:      0 ] unused

Use (W)hole disk or (E)dit the MBR? [whole]
Setting OpenBSD MBR partition to whole wd0...done.
The auto-allocated layout for wd0 is:
#      size      offset  fstype  [fsize  bsize  cppl
a:      745.3M      64     4.2BSD  2048 16384  1 # /
b:      511.0M     1526368  swap
c:     20480.0M      0     unused
d:     1184.4M     2572896  4.2BSD  2048 16384  1 # /tmp
e:     1809.7M     4998592  4.2BSD  2048 16384  1 # /var
f:     1565.3M     8704864  4.2BSD  2048 16384  1 # /usr
g:      911.2M    11910528  4.2BSD  2048 16384  1 # /usr/X11R6
h:     3378.5M    13776576  4.2BSD  2048 16384  1 # /usr/local
i:     1290.1M    20695808  4.2BSD  2048 16384  1 # /usr/src
j:     1832.2M    23337920  4.2BSD  2048 16384  1 # /usr/obj
k:     7245.7M    27090272  4.2BSD  2048 16384  1 # /home

Use (A)uto layout, (E)dit auto layout, or create (C)ustom layout? [a]
```





# OpenBSD Desktop

Machine View Devices Help

```
9 cylinder groups of 202.47MB, 12958 blocks, 25984 inodes each
/dev/wd0a on /mnt type ffs (rw, asynchronous, local)
/dev/wd0k on /mnt/home type ffs (rw, asynchronous, local, nodev, nosuid)
/dev/wd0d on /mnt/tmp type ffs (rw, asynchronous, local, nodev, nosuid)
/dev/wd0f on /mnt/usr type ffs (rw, asynchronous, local, nodev)
/dev/wd0g on /mnt/usr/X11R6 type ffs (rw, asynchronous, local, nodev)
/dev/wd0h on /mnt/usr/local type ffs (rw, asynchronous, local, nodev)
/dev/wd0j on /mnt/usr/obj type ffs (rw, asynchronous, local, nodev, nosuid)
/dev/wd0i on /mnt/usr/src type ffs (rw, asynchronous, local, nodev, nosuid)
/dev/wd0e on /mnt/var type ffs (rw, asynchronous, local, nodev, nosuid)
```

Let's install the sets!

Location of sets? (cd disk ftp http or 'done') [cd]

Available CD-ROMs are: cd0.

Which one contains the install media? (or 'done') [cd0]

Pathname to the sets? (or 'done') [5.3/i386]

Select sets by entering a set name, a file name pattern or 'all'. De-select sets by prepending a '-' to the set name, file name pattern or 'all'. Selected sets are labelled '[X]'.

<input checked="" type="checkbox"/> [X] bsd	<input checked="" type="checkbox"/> [X] etc53.tgz	<input checked="" type="checkbox"/> [X] xbase53.tgz	<input checked="" type="checkbox"/> [X] xserv53.tgz
<input checked="" type="checkbox"/> [X] bsd.rd	<input checked="" type="checkbox"/> [X] comp53.tgz	<input checked="" type="checkbox"/> [X] xetc53.tgz	
<input type="checkbox"/> [ ] bsd.mp	<input checked="" type="checkbox"/> [X] man53.tgz	<input checked="" type="checkbox"/> [X] xshare53.tgz	
<input checked="" type="checkbox"/> [X] base53.tgz	<input checked="" type="checkbox"/> [X] game53.tgz	<input checked="" type="checkbox"/> [X] xfont53.tgz	

Set name(s)? (or 'abort' or 'done') [done]

# OpenBSD Desktop

```
Machine View Devices Help
Available CD-ROMs are: cd0.
Which one contains the install media? (or 'done') [cd0]
Pathname to the sets? (or 'done') [5.3/i386]

Select sets by entering a set name, a file name pattern or 'all'. De-select
sets by prepending a '-' to the set name, file name pattern or 'all'. Selected
sets are labelled '[X]'.
  [X] bsd                [X] etc53.tgz          [X] xbase53.tgz      [X] xserv53.tgz
  [X] bsd.rd            [X] comp53.tgz       [X] xetc53.tgz
  [ ] bsd.mp           [X] man53.tgz        [X] xshare53.tgz
  [X] base53.tgz       [X] game53.tgz      [X] xfont53.tgz
Set name(s)? (or 'abort' or 'done') [done]
bsd                100% |*****| 8939 KB    00:02
bsd.rd             100% |*****| 6334 KB    00:00
base53.tgz         100% |*****| 55752 KB   00:17
etc53.tgz          100% |*****| 511 KB     00:00
comp53.tgz         100% |*****| 44757 KB   00:15
man53.tgz          100% |*****| 9510 KB    00:04
game53.tgz         100% |*****| 2567 KB    00:00
xbase53.tgz        100% |*****| 9974 KB    00:02
xetc53.tgz         100% |*****| 63695      00:00
xshare53.tgz       100% |*****| 4235 KB    00:03
xfont53.tgz        100% |*****| 38868 KB   00:09
xserv53.tgz        100% |*****| 26388 KB   00:06
Location of sets? (cd disk ftp http or 'done') [done]
```




# OpenBSD Desktop

```
Machine View Devices Help
Set name(s)? (or 'abort' or 'done') [done]
bsd          100% |*****| 8939 KB 00:02
bsd.rd       100% |*****| 6334 KB 00:00
base53.tgz   100% |*****| 55752 KB 00:17
etc53.tgz    100% |*****| 511 KB 00:00
comp53.tgz   100% |*****| 44757 KB 00:15
man53.tgz    100% |*****| 9510 KB 00:04
game53.tgz   100% |*****| 2567 KB 00:00
xbase53.tgz  100% |*****| 9974 KB 00:02
xetc53.tgz   100% |*****| 63695 00:00
xshare53.tgz 100% |*****| 4235 KB 00:03
xfont53.tgz  100% |*****| 38868 KB 00:09
xserv53.tgz  100% |*****| 26388 KB 00:06
Location of sets? (cd disk ftp http or 'done') [done]
Time appears wrong. Set to 'Sun Jul 7 12:37:33 BST 2013'? [yes]
Saving configuration files...done.
Generating initial host.random file...done.
Making all device nodes...done.

CONGRATULATIONS! Your OpenBSD install has been successfully completed!
To boot the new system, enter 'reboot' at the command prompt.
When you login to your new system the first time, please read your mail
using the 'mail' command.

#
```

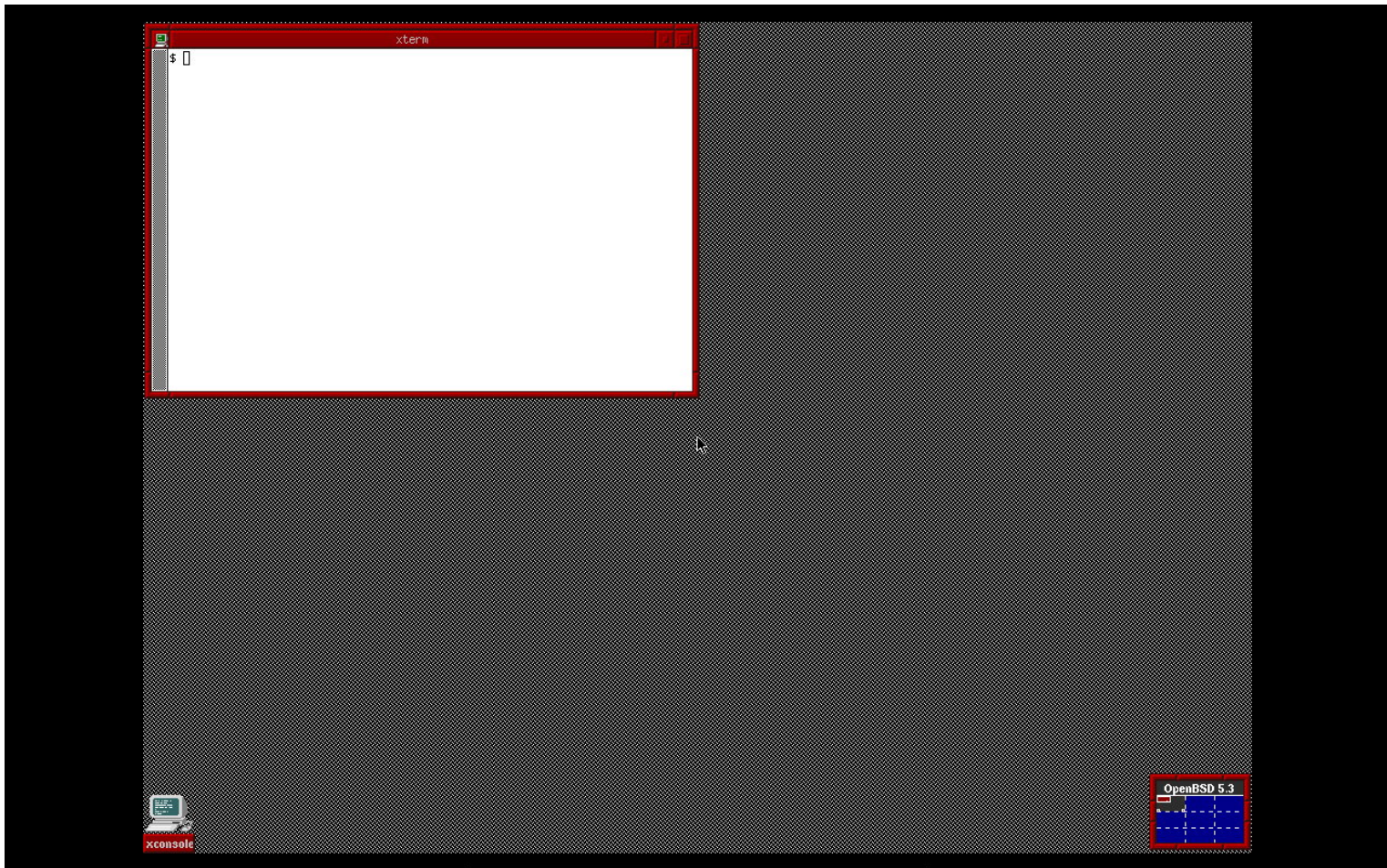




# OpenBSD Desktop



# OpenBSD Desktop



# OpenBSD Desktop

Let's install GNOME desktop environment

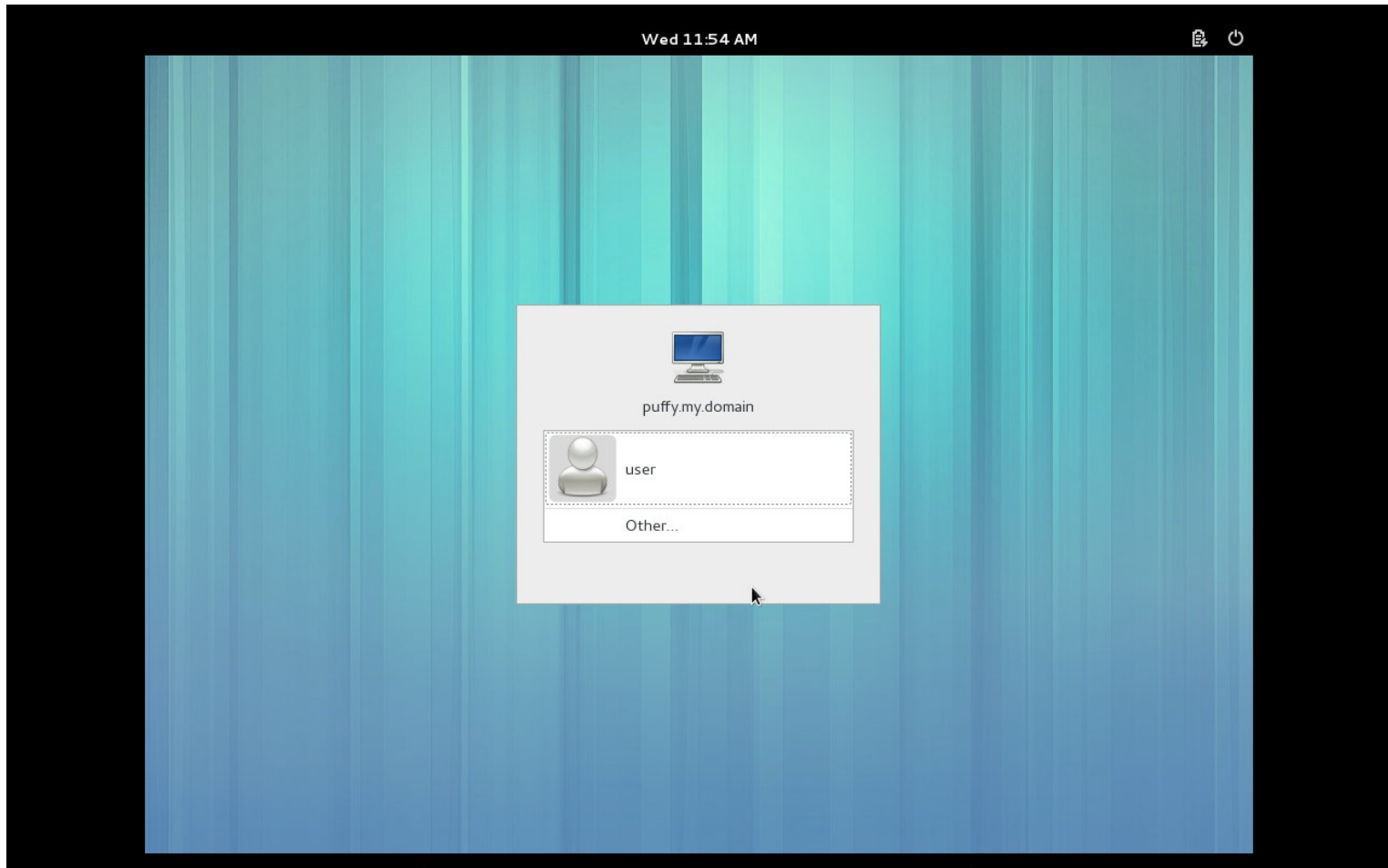
- set **pkg\_path** to `mirror.ox.ac.uk/pub/OpenBSD`
- run: **pkg\_add gnome**
- set **xdm\_flags=NO** and **pkg\_scripts="gdm"** in `/etc/rc.conf.local`

And install some applications

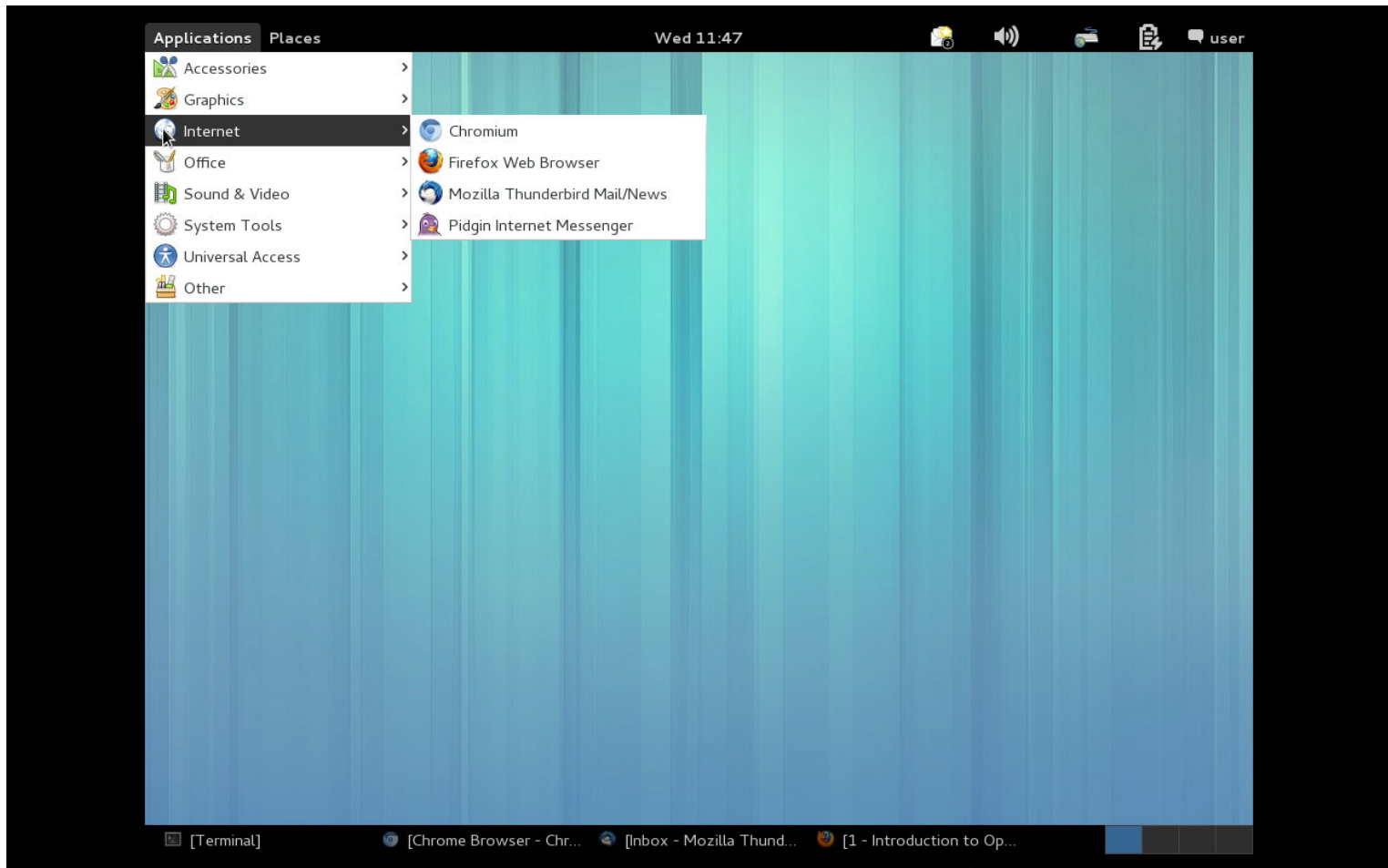
- **pkg\_add firefox thunderbird chromium libreoffice**



# OpenBSD Desktop



# OpenBSD Desktop



# OpenBSD Desktop

The screenshot shows a Linux desktop environment. At the top, there is a panel with 'Applications' and 'Places' on the left, the date and time 'Wed 08:58' in the center, and system icons (network, volume, power) on the right. The user is logged in as 'user'. The main window is Mozilla Firefox, titled '1 - Introduction to OpenBSD - Mozilla Firefox'. The browser's address bar shows the URL 'www.openbsd.org/faq/faq1.html'. The page content includes the OpenBSD logo, navigation links for '[FAQ Index]' and '[To Section 2 - Other OpenBSD Information Resources]', a main heading '1 - Introduction to OpenBSD', a 'Table of Contents' section with a list of links (1.1 to 1.11), and the start of section '1.1 - What is OpenBSD?' which describes the project as a freely available, multi-platform 4.4BSD-based UNIX-like operating system. The desktop taskbar at the bottom shows icons for Terminal, Chrome Browser, Inbox - Mozilla Thund..., and the current Firefox window.

Applications Places Wed 08:58

1 - Introduction to OpenBSD - Mozilla Firefox

File Edit View History Bookmarks Tools Help

1 - Introduction to OpenBSD OpenBSD release song lyrics

www.openbsd.org/faq/faq1.html Google

**OpenBSD**

[\[FAQ Index\]](#) [\[To Section 2 - Other OpenBSD Information Resources\]](#)

## 1 - Introduction to OpenBSD

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### Table of Contents

- [1.1 - What is OpenBSD?](#)
- [1.2 - On what systems does OpenBSD run?](#)
- [1.3 - Why might I want to use OpenBSD?](#)
- [1.4 - Is OpenBSD really free?](#)
- [1.5 - How can I help support OpenBSD?](#)
- [1.6 - Who maintains OpenBSD?](#)
- [1.7 - When is the next release of OpenBSD?](#)
- [1.8 - What is included with OpenBSD?](#)
- [1.9 - What is new in OpenBSD 5.3?](#)
- [1.10 - Can I use OpenBSD as a desktop system?](#)
- [1.11 - Why isn't ProductX included?](#)

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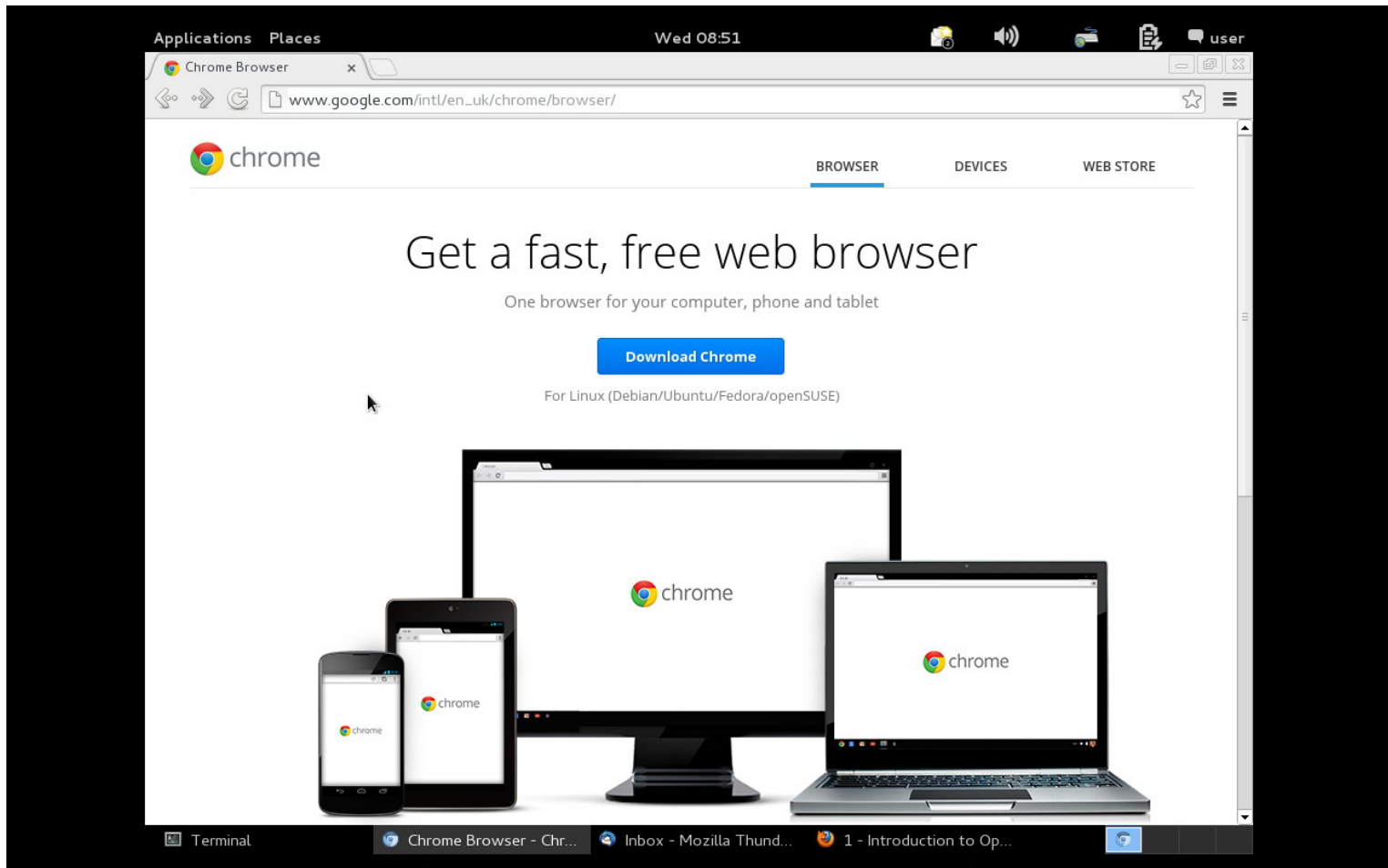
### 1.1 - What is OpenBSD?

The [OpenBSD](#) project produces a freely available, multi-platform 4.4BSD-based UNIX-like operating system. Our [goals](#) place emphasis on correctness, [security](#), standardization, and [portability](#).

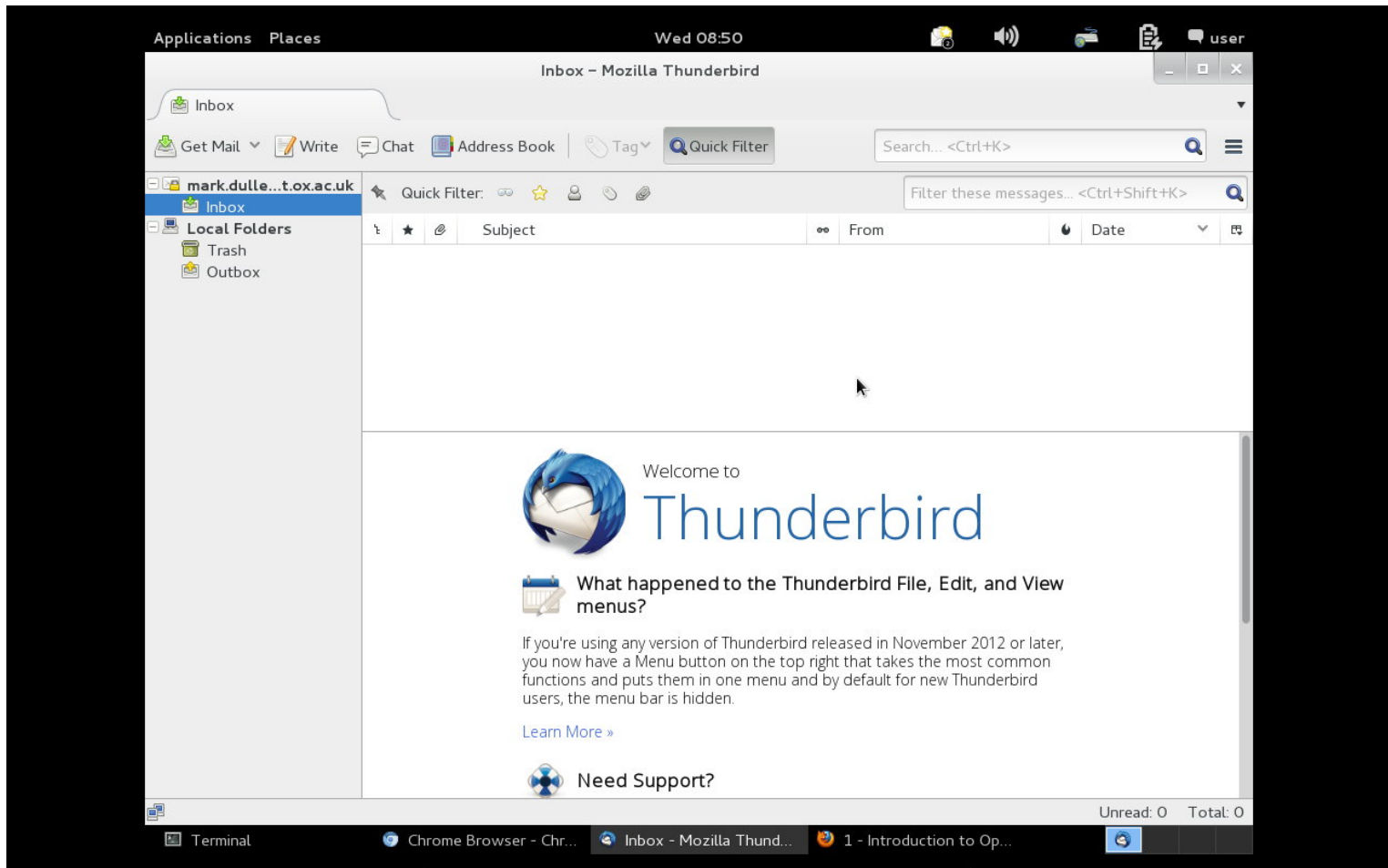
This FAQ specifically covers only the most recent release of OpenBSD, version 5.3.

Terminal Chrome Browser - Chr... Inbox - Mozilla Thund... 1 - Introduction to Op...

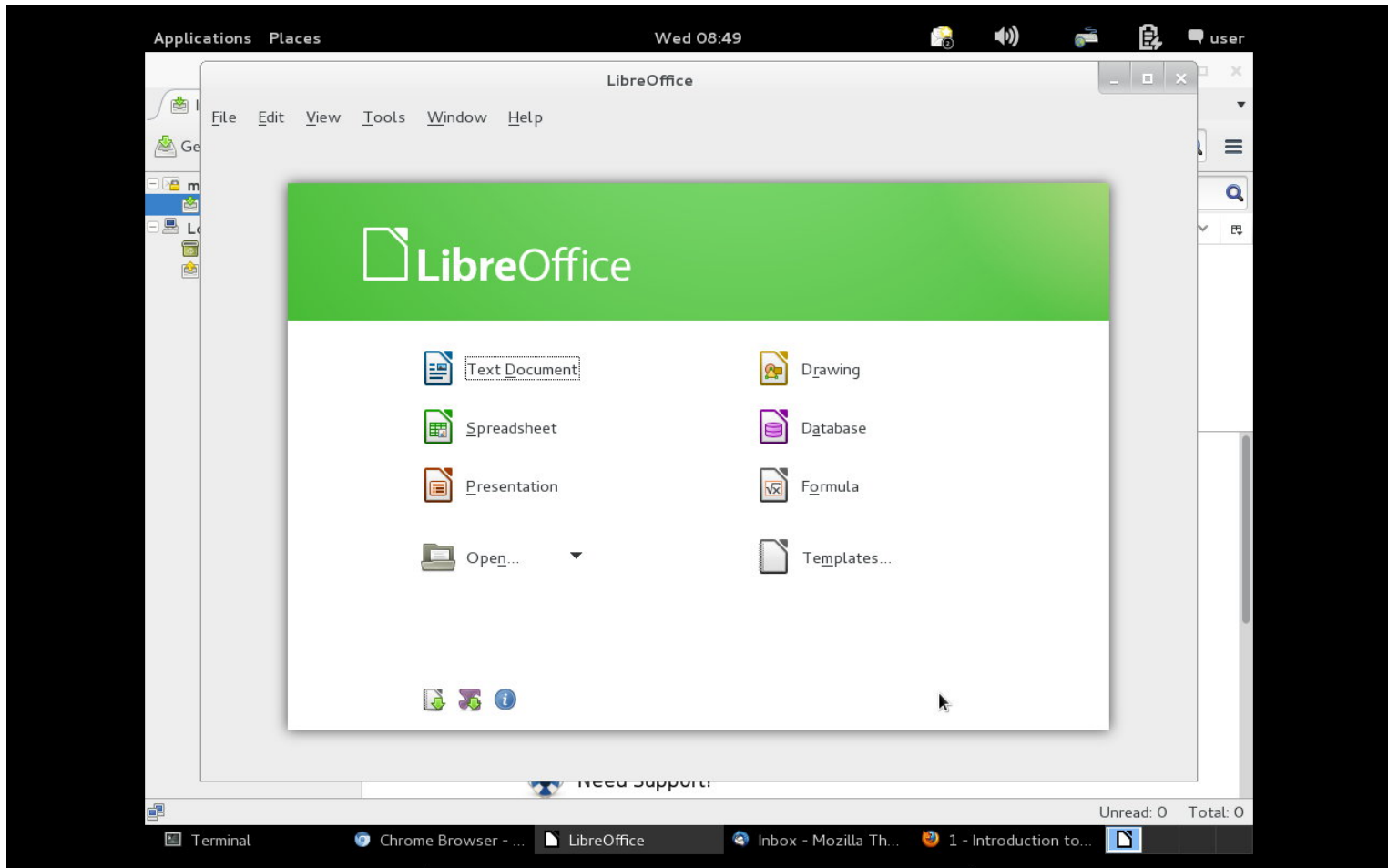
# OpenBSD Desktop



# OpenBSD Desktop



# OpenBSD Desktop





# OpenBSD Desktop

- <http://www.openbsd.org>
- <http://www.openbsd.org/faq/>

*Thanks!*