

# PC-BSD: An Easy to Use BSD Desktop

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# This presentation will cover...

How PC-BSD differs from FreeBSD

How PC-BSD differs from Linux

Current features

New features in the upcoming 9.0 release

Changes to the PBI format

How you can help

# **How does PC-BSD differ from FreeBSD?**

Sometimes a picture is worth a thousand words:

Starting Network: lo0.

```
lo0: flags=8049<UP,LOOPBACK,RUNNING,MULTICAST> metric 0 mtu 16384
options=3<RXCSUM,TXCSUM>
inet6 fe80::1%lo0 prefixlen 64 scopeid 0x2
inet6 ::1 prefixlen 128
inet 127.0.0.1 netmask 0xff000000
nd6 options=3<PERFORMNUD,ACCEPT_RTADV>
```

Starting devd.

Generating host.conf.

```
ELF ldconfig path: /lib /usr/lib /usr/lib/compat /usr/local/lib /usr/local/kde4/
lib /usr/local/lib/mysql /usr/local/lib/pth /usr/local/lib/qt4
a.out ldconfig path: /usr/lib/aout /usr/lib/compat/aout
```

Creating and/or trimming log files.

Starting syslogd.

Clearing /tmp (X related).

Updating motd:.

Configuring syscons: blanktime.

Starting cron.

Starting background file system checks in 60 seconds.

Mon Feb 21 11:38:35 UTC 2011

FreeBSD/i386 (Amnesiac) (ttyv0)

login: █



PC-BSD  
Website



Ports Jail



Software  
Manager



Users  
Handbook



11:28:51 am





# How PC-BSD differs from FreeBSD

Graphical installer that supports GPT, ZFS, encryption, and a live mode for testing hardware

Desktop, video, network, sound, java, flash are pre-configured so you can immediately start using the system

Provides GUI applications to perform common tasks which are specific to BSD (i.e. not provided by desktop environment such as KDE)

# But, it is still FreeBSD "under the hood"

- Uses same version numbers e.g. current release is 8.3
- Anything you can do in FreeBSD, you can do in PC-BSD
- FreeBSD resources (e.g. Handbook, FAQs) are still an excellent source of information
- Many settings that you have to configure manually in FreeBSD "just work" in PC-BSD

# KDE for Default Desktop

- Intuitive for new users
- Provides hundreds of GUI applications
- Supports desktop effects
- Very customizable



# But what if I can't stand KDE?

Fluxbox is pre-configured and integrated into PC-BSD's utilities should you need a lighter weight desktop

PBIs are available for GNOME, XFCE, and Enlightenment

188 window managers are available as FreeBSD ports/packages

PC-BSD 9 will allow you to select desktop(s) during installation

# PC-BSD GUI Applications

PC-BSD provides graphical utilities to manage common configuration tasks (e.g. networking, firewall settings, user management, and printing)

Designed to understand BSD device names, expected paths, etc.

Graphical utilities for functions unique to FreeBSD such as jail(8) management and geli(8) disk encryption

# Tweaked for Desktop Usage

- Customized kernel
- `sysctl(8)` and `loader.conf(5)` settings
- `rc.conf(5)` settings

Can browse all customizations at  
[trac.pcbbsd.org/browser/pcbbsd/branches/8.1](http://trac.pcbbsd.org/browser/pcbbsd/branches/8.1)

# How PC-BSD differs from Linux

**Filesystems:** UFS, UFS+J, UFS+S, ZFS

**Device names:** e.g. ath0 or em0 instead of eth0

**Some commands:** e.g. kldload instead of insmod

**Switches:** BSD instead of GNU (e.g. -l instead of --list)

**System startup:** no run levels

# How PC-BSD differs from Linux

Yet, much is similar:

Many of the apps that run on Linux also run on PC-BSD (either through a port or Linux emulation)

Both support Xorg (though GEM and KMS are a work in progress)



# Current Features

# Software/Update Manager

Uses PBI (Push Button Installer) system

Recommended method for installing software on PC-BSD

Even novice users can easily and safely find, install, uninstall, and upgrade software

Provides a software browser for finding applications--simply click Download button in application's description



Software Browser

Installed Software

System Updates



**pbiDIR**  
Your PC-BSD software



Search



### Chat - IM

Chat and Instant Messaging applications to communicate with your friends online!



### Development

Tools for programmers, be it web or desktop software development



### Drivers

Drivers for various Hardware Devices



### E-Mail

E-mail clients and utilities for you to enjoy reading and writing messages



### Educational

Educational applications and tools for your desktop.



Configuration



Quit

Software Browser

Installed Software

System Updates



**pbiDIR**  
Your PC-BSD software



Search

» [pbiDIR](#) » [Chat - IM](#) » aMSN



### Description

aMSN is a free open source MSN Messenger clone, with features such as:

- \* Offline Messaging
- \* Voice Clips
- \* Display pictures
- \* Custom emoticons
- \* Multi-language support (around 40 languages currently supported)
- \* Webcam support
- \* Sign in to more than one account at once
- \* Full-speed File transfers
- \* Group support
- \* Normal, and animated emoticons with sounds
- \* Chat logs
- \* Timestamping
- \* Event alarms
- \* Conferencing support
- \* Tabbed chat windows

<b>Vendor:</b>	aMSN team
<b>Average Rate:</b>	7.67
<b>Downloads:</b>	19,369
<b>Added:</b>	09/15/08
<b>Licence:</b>	GPL
<b>Maintainer:</b>	PC-BSD Software support@pcbsd.org
<b>Alternative for:</b>	MSN Messenger

**DOWNLOAD 0.98.3**

8.x Series : 48.52 Mb



Configuration



Quit

# Software/Update Manager

Automatically detects platform and version and installs correct PBI

Installed software is listed

User automatically notified when new versions are available, for both software and the operating system

OS updates include link to security advisory description





Software Browser

Installed Software

System Updates



Installed Software

Program Name	Status
Firefox 3.6.8	
Gimp 2.6.10	
OpenOffice 3.2.1	
Pidgin 2.7.2	2.7.3 Available
Skype 2.0.0.72	
VirtualBox 3.2.8	
Warden 1.1	1.1.1 Available

Update

Remove

Configuration

Quit



Software Browser | Installed Software | System Updates


The following system updates are available:


- KDE / QT FileWatcher Bugfix - 21MB (8-16-2010)
- Nvidia Driver Update (256.44) - 46MB (8-13-2010)

Select All | View Details |  Show ignored updates

Install selected updates

Check for Updates

 Configuration

 Quit

# Ports Jail

Allows advanced users to safely use FreeBSD ports and packages without affecting the software installed with the operating system

For more information about jails, see:  
[http://en.wikipedia.org/wiki/FreeBSD\\_jail](http://en.wikipedia.org/wiki/FreeBSD_jail)

# Warden

GUI that allows advanced users to easily create, manage, and delete FreeBSD jails

Makes it easy to clone a jail (save as .wdn file)

Makes it easy to create and install inmates (.wit files) which are pre-configured server environments e.g. an AMP stack

# The Warden

File Jails

## Available Jails

IP	Hostname	Autostart	Status
192.168.0.22	tailbird	Disabled	Stopped

Start this jail

Toggle Autostart

Install Inmate into jail

View installed packages

Export jail to .wdn file

Delete jail



# Firewall Manager

GUI for starting and stopping the firewall and adding, deleting, modifying firewall rules

Designed for pf

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

May be replaced by fwbuilder in 9.0



## Firewall



General

Exceptions

**General settings** Enable Firewall on startup**Firewall**

Start

Stop

Restart

**Configuration**

Restore default configuration

Help

Defaults

OK

Apply

Cancel

Firewall

General Exceptions

Service	Port	Policy	Interface
lockd	4045	pass	lagg0
lockd	4045	pass	lagg0
lockd	4045	pass	re0
lockd	4045	pass	re0
microsoft-ds	445	pass	lagg0
microsoft-ds	445	pass	re0
netbios-dgm	138	pass	lagg0
netbios-dgm	138	pass	re0
netbios-ns	137	pass	lagg0
netbios-ns	137	pass	lagg0
netbios-ns	137	pass	re0
netbios-ns	137	pass	re0
netbios-ssn	139	pass	lagg0
netbios-ssn	139	pass	re0
nfed	2048	pass	lagg0

Add entry

Edit entry

Delete entry

**Add a port**

**Add**

Service:

Port:

Policy:  Allow  Block

Direction:

Protocol:

Interface:

Help

Defaults

OK

Apply

Cancel

# Network Manager

GUI to view and configure network interfaces (Ethernet, wireless, PPP/PPPoE)

Auto-detects interfaces

Allows creation of wireless profiles

Shows interface stats and IP addressing info for active interfaces

# System Network Configuration - System Settings

Overview Help

## Configure Network Settings

Devices Network Configuration (Advanced)

### Local Network Adapters

- re0 (RealTek 8101E/8102E/8102EL/8103E)
- wlan0 (1.0)

Display system tray icon

Dev  
Addre  
MAC Addre  
Stat

Help

Defaults

Reset

## re0 configuration

General Advanced Info

### Network address configuration

Obtain IP automatically (DHCP)

### Assign static IP address

IP: . . .

Netmask: 255.255.255.0

Disable this network device

OK

Apply

Close

Apply





Overview Help

Configure Network Settings

Devices Network Configuration

Local Network Adapters

- re0 (RealTek 8101E/8102E/8102E/8102E)
- wlan0 (1.0)

Display system tray icon

Help Defaults Reset

**Wireless Configuration**

General Advanced Info

Wireless network profiles

grumbly

+ Add Edit Remove

Note: Higher connections are given priority

Obtain IP automatically (DHCP)

**Assign static IP address**

IP: . . .

Netmask: . . .

Disable this wireless device

OK Apply Close

**Select Wireless Network**

Scan

Using BSSID

**Network Security**

Disabled

WEP

WPA Personal

WPA Enterprise

Configure

Add Cancel

Apply

# System Manager

GUI to view system info and generate a diagnostic report

Kernel tab used to set boot delay

Tasks tab used to install src or ports tree

Misc tab used to customize boot splash screen



## System Manager



General Kernel Tasks Misc

# PC-BSD

PC-BSD Version: 8.1

Base Version: 8.1-RELEASE

CPU Type: Celeron(R) Dual-Core CPU T3000 @ 1.80GHz

System Memory: 2.8GB

You may also generate a diagnostic sheet, with information about your system. This sheet can be used by technicians for troubleshooting purposes.

Generate

Help

Defaults

OK

Apply

Cancel

# Printer Manager

GUI to configure and manage printers

Auto-detects connected printers as well as printers shared over a network

Auto-detects correct driver for the printer

Provides print job management





Overview



Help ▾

Configure local and remote Printers 

New Printer  
Server Settings  
▼ Local Printers

HP-Deskjet-f4200

## HP-Deskjet-f4200

Settings Policies Options Job Options

## Printer Description

Location: pcbsd

Printer Description: HP Deskjet f4200

Device URI: hp:/usb/Deskjet\_F4200\_series?serial=CN9A55Z0V505BR

 This is the default printer

## Driver Details

Printer Model: HP Deskjet f4200 Series hpijs, 3.10.4.16

Change...

Printer State: Idle - ready to print

## Printer Status

 enable  accepting  sharing

Print Test Page

Print Self Test

Clean Print Heads

Remove Printer

Help

Defaults

Reset

Apply

# User Manager

GUI to manage user accounts

Simple view shows users only, Advanced view also shows system accounts

Can be used to change root or users' passwords

Can change user's home directory or shell

Easy to add/remove users from groups





PC-BSD User Manager - Advanced Mode

Simple View

Users

Groups

- \_dhcp
- \_pflogd
- avahi
- bin
- bind
- cups
- cyrus
- daemon
- dru**
- games
- haldaemon
- kmem
- mailnull
- man
- messagebus
- mysql
- news
- nobody


User ID: 1001

Full Name:

Home Directory:

Shell:

Primary Group:



 Add

 Remove

# Life Preserver

GUI to backup entire system to a remote system using rsync and SSH

Provides scheduler to automate backups and determine how many backups to keep

Installation utility allows you to restore a system from a specified Life Preserver backup

# Life Preserver



File Preservers

New Preserver

Last Backup

Frequency

Status

Quit

 Start

# Life-Preserver Settings

## Backup Options

Number of backups to keep

Remove incomplete or failed backups

## Scheduled Backups

Disable automatic backups

Backup daily at

Backup weekly on  at

## Remote Directory

# PBI Builder

Command line tool for converting an existing FreeBSD package into a PBI

Can be as simple as modifying a few variables to indicate the program's name and location in KDE menu

Provides variables for advanced configuration

Creates clean build sandbox for each PBI

# pc-sysinstall

- Scriptable backend to GUI installer
- Allows for the creation of custom and automated installations

Examples of custom configurations can be found in `/PCBSD/pc-sysinstall/examples`



# Plans for 9.0

# Plans for 9.0

Uncouple PC-BSD utilities from KDE so they can integrate into any window manager

Allow the selection of more window managers during installation

Early days yet, we're open to features users find useful (due out in summer 2011)

[http://wiki.pcbbsd.org/index.php/PC-BSD\\_9.0\\_TODO](http://wiki.pcbbsd.org/index.php/PC-BSD_9.0_TODO)

# Plans for 9.0

Overhaul the PBI structure to include incremental PBIs (download just the change instead of the whole PBI)

[http://wiki.pcbsd.org/index.php/PBI9\\_Format](http://wiki.pcbsd.org/index.php/PBI9_Format)

Overhaul the PC-BSD Users Handbook and include an off-line version with the release

Provide translations of documentation resources

# Changes to PBI Format

# New PBI Format

Provide command line tools with names and features familiar to FreeBSD users (e.g. `pbi_add`, `pbi_info`, `pbi_delete`)

Added digital signature verification and intelligent library sharing (i.e. PBIs are no longer entirely self-contained)

Can be used with any (or no) window manager and on FreeBSD systems as well



# New PBI Format

`pbi_makerepo`, `pbi_addrepo`, and `pbi_deleterepo` allow user to create custom software repositories

`pbi_listrepo` allows user to prioritize repos or specify a repo to use with `pbi_add`

`convertoldmod.sh` utility can be used to convert existing PBIs to 9.x format

New format will be documented at [http://wiki.pcbsd.org/index.php/PC-BSD\\_9\\_Handbook](http://wiki.pcbsd.org/index.php/PC-BSD_9_Handbook)

**How you can  
Help**

# Community

PC-BSD is designed for users and takes user feedback seriously

Many opportunities for user involvement:

- Localization and translations
- PBI requestors, creators and testers
- Assisting others on forums, IRC

# Community

- Write or proof read documentation
- 
- Become a beta tester

Details can be found at:

[http://wiki.pcbsd.org/index.php/Supporting\\_PC-BSD](http://wiki.pcbsd.org/index.php/Supporting_PC-BSD)

and

[http://wiki.pcbsd.org/index.php/Tasks\\_Looking\\_for\\_People](http://wiki.pcbsd.org/index.php/Tasks_Looking_for_People)

# Additional Resources



# Additional Resources

PC-BSD Website: <http://www.pcbbsd.org>

PC-BSD Users Handbook:

<http://wiki.pcbbsd.org/index.php/>

[PC-BSD\\_Users\\_Handbook](http://wiki.pcbbsd.org/index.php/PC-BSD_Users_Handbook)

PC-BSD FAQs:

<http://wiki.pcbbsd.org/index.php/>

[PC-BSD\\_FAQS](http://wiki.pcbbsd.org/index.php/PC-BSD_FAQS)

# Additional Resources

Official Blog: <http://blog.pcbsd.org>

PC-BSD on Freenode IRC: [#pcbsd](#)

PC-BSD Forums: <http://forums.pcbsd.org>

PC-BSD Mailing Lists:  
<http://lists.pcbsd.org/mailman/listinfo>

# Additional Resources

Facebook Group:

<http://www.facebook.com/home.php?#!/group.php?gid=4210443834>

LinkedIn Group:

<http://www.linkedin.com/groups?mostPopular=&gid=1942544>

Definitive Guide to PC-BSD (Apress)

# Questions?

[dru@freebsd.org](mailto:dru@freebsd.org)

URL to slides:

[http://www.slideshare.net/  
dlavigne/scale9x\\_sun](http://www.slideshare.net/dlavigne/scale9x_sun)