

User guide

Version NeXT 7.x

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1. Brief history of Black Lab Linux

Black Lab is a modern Linux distribution fully compatible with Debian 8.x and Ubuntu 14.x developed by PC Opensystems LLC. It offers a stylized and highly functional Xfce desktop enhanced with a comprehensive selection of the most useful system tools, productivity software and media players. Commercial versions with paid support contracts and a free community version with the same desktop and codebase are both available.

These features alone don't set Black Lab apart from the current Linux desktop standard. Debian and Ubuntu are known for their stability, ease-of-use and exceptionally comprehensive package base : Black Lab builds on these strengths with an updated kernel, improved hardware recognition, expanded support for various media types, an expanded application base for the developer and enterprise, and an intuitive task-oriented user interface.



2. Downloading Black Lab Linux

The base distribution is offered in an x86_64 ISO format, to support modern and legacy hardware. 64-bit Black Lab ISO files are designated with an x86_64 extension;32 bit ISO files end in x86. This is an important distinction, so make sure that you download the correct version for your hardware : a 64-bit ISO burned to disc will not work on a 32-bit system, and although a 32-bit ISO burned to disc can be run in live session and installed on 64-bit hardware, it may not be able to take full advantage of RAM above 4 GB (even a 32-bit PAE kernel is limited in the hardware resources it can address).

2.1 – Versions available

Black Lab's desktop is a fork of Xfce in development, called the Workspace Manager. The current release is available for purchase from PC/Opensystems LLC. Enterprise edition subscriptions are available with extended support contracts. Download the current version at <u>http://blacklablinux.org</u>.

2.2 – Verifying the ISO after download

An md5sum file accompanies a given download;the latest Black Lab ISO has its hash file, black-lab-linux-7-x86_64.iso.md5. Open a Terminal → cd [path to downloaded ISO] → md5sum black-lab-linux-7-x86_64.iso.



After opening the md5 file with a text editor, its hash should match the generated hash :

ile Edit Se	earch View Documen	t Help
017286c10f	9601ed31033e69f4310	d28 black-lab-linux-7-x86 64.iso

3. Burning the ISO to DVD / USB

An ISO file is an image / compressed archive which includes all the files and folders necessary to recreate a software filesystem. To be useable, it needs to be *burned* not *copied* to a DVD or USB drive. This distinction is important : simply writing an ISO file to a DVD will not result in a bootable disc suitable for a Live session or installation.

A Linux distribution's ISO file size depends on its expressed goals during the Live session / installation – some are optimized for older systems with CD drives and try to get keep the size of the ISO smaller;others, like PCOS Linux, include more software by default and require more modern hardware - a DVD drive and / or USB ports to properly run the Live session and install.

3.1 - Burning the ISO to DVD (software)

- in Windows (Windows Explorer in Win 7/8, Nero, Roxio, CDBurnerXP, ImgBurn)
- in MacOSX (Disk Utility, Burn (available at http://burnosx.sourceforge.net/Pages/English/home.html)
- in Linux (KDE K3B, GNOME Brasero, Xfce Xfburn)

3.2 - Burning the ISO to DVD (commandline)

Burning images with the command-line in Linux is also possible . This is the syntax :

cdrecord -v -dao dev=1,0,0 bll-5-x86_64.iso. Replace the numbers after *dev=* with the appropriate device number for your disc drive. To find that number, run : *cdrecord -inq*. All of these commands should be run as root.

3.5 – Burning the ISO to flash using *dd*

dd is a powerful distro-agnostic Linux tool used for block-level file copy from one device to another. The format used to copy a bootable ISO to a flash drive would be :

dd if=[path to downloaded Black Lab ISO here] *of=*[Linux mount point of flash drive]

3.4 - Burning the ISO to flash using Unetbootin

Unetbootin is a graphical tool which creates bootable flash media from an ISO file. It is available in the Ubuntu repositories, can be installed in Windows (XP, Vista, Seven or Eight) or OSX using installers available at http://sourceforge.net/projects/unetbootin/files/Unetbootin/603.

This is the dialog presented to the user after opening the utility (which needs to run with root privileges in Linux) on any one of its three supported platforms :

UNetboot	in
Distribution	== Select Distribution == 💌 == Select Version ==
Welcome to UNet	bootin, the Universal Netboot Installer. Usage:
1. Select a dis manually s 2. Select an ir	stribution and version to download from the list above, or pecify files to load below. Installation type, and press OK to begin installing.
C Disk <u>i</u> mage Space used to pres Type: USB Drive	ISO ISO ISO ISO ISO ISO ISO ISO
	Select the target drive to install to
	Black Lab Linux

The tool is distribution agnostic – in the dropdown menu, the user can choose from a variety of predefined distributions and download them – details are provided as shown for Xubuntu in the following example :

미원 UNetboot	in	and the second s	-
• Distribution	Xubuntu	▼ 14.04_Live	*
Homepage: http Description: Xub Install Notes: Th installer can option over FTP, and can would like to use HdMedia option, a of your hard drive	//www.xubuntu.org ountu is an official Uk the Live version allow anally be launched. T install Kubuntu and a pre-downloaded al and then place the al or USB drive	ountu derivative featuring the s for booting in Live mode, fro he NetInstall version allows fo other official Ubuntu derivativ ternate (not desktop) install is lternate install iso file on the re	XFCE desktop. m which the or installation res. If you to, use the oot directory

Currently, Black Lab is not one of the default options in Unetbootin available for download through the tool. Specifying a downloaded ISO file to burn to flash media is a more common scenario

Diskimage	ISO	/Downlo	oads/black-lab-NEX	T-x86_64.iso	
Space used to prese	erve files ac	ross reboots (U	buntu only): 0		÷ MB
Type: USB Drive	•	Drive:		ОК	Cancel

Once Unetbootin copies the necessary files and creates a bootable filesystem on the flash, the user will be prompted to exit, or restart and test.

4 - Live Session / Installation

Once the install media has been chosen, ISO has been burned and the PC has been booted from DVD / USB, the session begins :



If Black Lab needs to be tested with your hardware, select Boot the Live System. A Live session will allow you to become familiar with the default desktop, the selection of applications and how the distro (basically) functrions. Once you've familiarized yourself at a basic level, choose install - Start the installer directly. If the install is being performed over a wireless connection, booting the Live system and connecting to wireless is preferable so that current updates can be downloaded. Installation is straightforward and consists of 5 steps, after the first option of picking the current language : 1). *Preparing for installation* (the PC should be plugged into a power source, should have 4.4 GB of available space, should be connected to the Internet).

Applications	Places	06:59 AM	🔜 🗈 🕫 🙇
-			
	De Install		
Home	Prepa	aring to install Black Lab Linux	
Ĭ			
Trash	For best	t results, please ensure that this computer:	
	0	has at least 8.6 GB available drive space	
9	0	is connected to the Internet	
File System	Dow	nload updates while installing	
	Black La of this so	b Linux uses third-party software to play Flash, MP3 and other media, and to work with some graphics and wi-fi hard oftware is proprietary. The software is subject to license terms included with its documentation.	ware. Some
2	insta Fixer	III this third-party software do MP3 plugin includes MPEG Laver-3 audio decoding technology licensed from Fraunhofer IIS and Technicolor SA.	
Install Black Lab-Linux 14			
		Quit 🖛 Back	Continue
			_
Adel/remove Software			
		b .	
		Black Lab	Linux
2			

It is optional, but recommended, to download updates while installing and to install third party software for ease-of-use post-installation.



2). *Allocating drive space* (most typical scenario is to install alongside another operating system).

Applications	Places	06:57 AM	🔤 🗖 🕫 🖄
Home	🕞 Install		
Ũ	Welcome		
Trash	Čeština		
	Cymraeg	You may wish to read the release notes.	
	Dansk		
9	Deutsch		
File System	English		
	Español		
a.	Esperanto		
<u>12</u>	Euskara		
	Français		
Lab-Linux 14	Gaerige		
		🔀 quit 🗢	Back Continue
Add/ramova			
and write		• • • • • • • •	
		4	
		Blac	klahlinuv

For expert or IT installs, custom partitioning is also available.

Trash	Installation type		
Pile System	☐ free space 17.2 GB Device Type Mount /dev/sda free space	Create partition Size: 17180 - + MB Type for the new partition: • Primary Logical Location for the new partition: • Regimered of this space	e partition
Install Black Lab-Linux 14 Add/remove Software	+ - Change Device for boot loader insta	Cancel New Partition Table Revert	

3). *Choosing current location* (important for language detection) on a map.



Using the pointer the location can be moved. Typically, language and keyboard settings will toggle with location, which is a later step in the installation process.

4). Selecting or detecting *keyboard* type



If you're reading this guide, it's likely that you're accepting the default selection. But because it's Linux, Black Lab takes into account and supports any number of keyboard possibilities. 5). Entering *username* and *login* (your name, your computer's name, a username, a password, confirm the password, login automatically, require my password to login, encrypt my home folder).

Applications	Places	n the second	07:11 AM		🔜 🗖 📢 🙇
	😑 Install				
Home	Who are you?				
Trash Trash File System		Your name: Your computer's name: Pick a usemame: Choose a password: Confirm your password:	The name it uses when it take to other computers. Username Password Confirm password Log in automatically Require my password to log in Encrypt my home folder		
Install Black Lab-Linux 1d Add/nemove Software				¢	Back Continue
*					

After performing these 5 steps, the user or installer will be prompted to reboot. After reboot, you can begin using the installed system.



<u>5 - Xfce - the Workspace Manager</u>

After the Live session has ended, and the user has been prompted to restart, this is the a). Lightdm login screen and b). default desktop :

a).

docs -	
Log In	

Lightdm is the Black Lab login / display manager. It allows the user to choose a user and session – Xfce is the default, but like most Linux distributions, BL allows the user to install and then choose sessions from multiple desktop environments. And like most mainstream Linux distros, Black Lab will allow the user to swtich login / display managers (GNOME – GDM, KDE – KDM, LxQT - SDDM)

b).

It is a two-panel Xfce desktop, optimized for speed and productivity. PC/Opensystems LLC is currently forking this desktop into a proprietary version called the Workspace Manager, which will be available in future builds of Black Lab Linux. At this point in time, the default desktop is still based (almost) purely on Xfce, using its window manager, session manager, file manager, compositor and panels. As the Workspace Manager develops, other changes will be coming. As always, keep reading our guides and stay tuned for developments. One of the first actions a user might want to undertake once their Black Lab system is installed is change the default desktop wallpaper. The distro ships with a variety of attractive options. Right clicking on the desktop → Desktop Settings, will bring up the Desktop dialog box.

Desktop Set desktop background and menu and icon behavio	pr
Background Menus Icons	
Move this dialog to the workspace yo	u want to edit the settings for.
Wallpaper for Workspace 1	
Edder:	Style: Zoomed
Folder: Dackdrops	Style: Zoomed 7

If Black Lab is configured for multiple workspaces, the same wallpaper can be applied to all, or wallpapers can be selected for each individual virtual desktop. The default folder for Black Lab wallpapers is /usr/share/xfce4/backdrops, but this default selection can be changed, and the user can create a folder in ~/ (Home) or inside the Pictures folder in Home.

5.1 - the Applications menu

The Applications menu can be found in the leftmost corner of the top panel.

By default, the menu shows four Favorites in the right pane as shown, and application categories on the right. Right-clicking on an Application give the user the option to Add it to Favorites, Desktop, or Panel.

The user can browse for an application, or, at the top right of the menu, an inline search bar can be used to find an application without browsing, Typing chromium brings the following result :

🛞 Applications 📄 Places		
chromium	S 🔒 😫 S	
Chromium Web Browser Access the Internet		

The open source browser which is the code basis for Google Chrome. But the same principle applies - the Application menu's inline search feature is convenient and powerful. Typing Settings brings up the following options :

🛞 Applications 📄 Places	
Settings 🕄 🕄 🕒 🖸	
Graphical settings editor for Xfconf	
Graphical Settings Manager for Xfce 4	
Configure locking your session	
Onboard Settings Change Onboard settings	
Accessibility Improve keyboard and mouse accessibility	

5.2 - Bookmarks and the Places Menu

The Places menu is the second item from the left on the bottom panel. By default it shows five items, the current user's Home folder, the Trashcan, the Desktop folder, the root Filesystem and Recent Documents. By Bookmarking individual folders - in this example the Documents, Pictures and Downloads by right-clicking on them and selecting Send to -> Side Pane, these folders from ~/ (Home) are added to this menu.

esktop	Documents	Downloads	Music	
ctures	Public	Templates	Open in 7 New Tabs Vide Open in 7 New Windows	
			Send To	🕨 📃 Side Pane (Create Shortcuts)
			X Cut	Desktop (Create Links)
			Сору	VBOXADDITIONS5.0.10104061
			Move to Trash	Mail Recipient
			X Delete	
			Rename	
			Create Archive	
			Properties	

1).

2).

Folders on mounted removeable storage devices (external USB hard drives and flash drives) can also be bookmarked this way. Generally any folder that the default user has read / write permissions to can be bookmarked in this fashion. System folders (/etc, /opt, /usr) cannot and should not be added to the bookmarks sidepane, only system-defined directories and user-defined bookmarks.

Recent documents are also viewable in the Places menu :

This list can be cleared by selecting Clear. After doing which, this option will be greyed out in the Places menu.

5.3 - The Home folder and File Management

The Home folder in Black Lab corresponds to what would be called a User profile in Windows. Since Apple's OSX is based on FreeBSD, which has a UNIX filesystem, its file structure is similar to Linux and it also has a Home folder containing data and settings for the currently logged-in-user. Black Lab Linux uses the Thunar file manager, currently version 1.6.3. It is a lightweight but full-featured file browser, which supports viewing both local and remote folders.

The Home folder includes the subfolders shown above by default. During setup, the default user account has full read / write permissions to Home and does not need to run commands in ~/ as root. Folders can be added and deleted as necessary by the user.

Thunar, as stated, is lightweight but full-featured and offers a variety of options, with a menu structure that will seem familiar to users of Windows Explorer and OSX's Finder File, Edit, View, Go (and Help, giving information about Thunar itself) :

Because Thunar is tabbed, bookmarked or filesystem folders can be opened in a new tab, giving a clean horizontal layout or in a different window, for use with ALT+TAB. Opening a Terminal Here is a powerful and frequently accessed feature as well as the integrated Find in this folder.

언이	docs - File Manage	er					-
ile	Edit View Go H	lelp					
•	% Cut	Ctrl-	-X				Ð
	🛛 Сору	Ctrl+	С				
DEV	Paste	Ctrl+			-		
9	Move to Trash			Œ	99		
0	X Delete		ments	Downloads	Music	Pictures	
PLA	Select all Files						
	Select by Pattern	Ctrl+	s 📐	H			
	Invert Selection		plates	Videos			
-	Duplicate						
0	Make Links						
NET	Rename	F	2				
9	Configure custom	actions					
(Preferences						
		8 itoms Free sha	Ce. 2 9 GE	2			4

Selecting all Files or Selecting by Pattern allows the user to simplify selecting multiple files. Configuring custom actions allows the (power) user the ability to tweak and modify Thunar's appearance and functionality and is beyond the scope of this guide.

This menu toggles the default view of folders in the current window. Size and arrangement, and importantly for accessing current user configuration settings, hiding and unhiding certain folders :

File Edit View	Go Help					
* * + 1	Open Parent	Alt+Up				Ð
	+ Back	Alt+Left	-			
DEVICES	Forward	Alt+Right				
😰 File System	A Home	Alt+Home	(+)	29		
	Desktop		Downloads	Music	Pictures	
DLACES	🧻 Trash		and the second s			
PLACES	File System		H			
tocs	Templates		Videoo			
Desktop	Browse Network		videos			
🗍 Trash	Open Location	Ctrlul				
NETWORK	Open Location	Cui+L]			
📷 Browse Netw	ork					
	8 items, Free	space: 2.9 G	В			⊿

The Go menu provides shortcuts within the file manager window to access locations on the filesystem which may not be bookmarked.

Opening folders in tabbed view is, as said, a useful way to viewing content and moving / copying it between folders :

File Edit View Go	Help					
+ + + #	home/custom/Do	cuments/				n
DEVICES	custom	ж	Downloads	×	Documents	×
File System	=					
+ custom	Test					

Remote folders set up as SMB shares are browseable :

File Edit View Go H	ielp		
+ + + 🛔 🔤	network:///	Ð	
DEVICES Ple System PLACES custom Desktop Trash NETWORK Erowse Network	CUSTOM TG-VOSTRO (Vindows Network)		
	"Windows Network" shortcut	Plack La	

5.4 - Adding links and shortcuts to the Desktop / Panel

Accessing folders and applications are the two most commonly performed tasks in any operating system. The most common way for a user (generally) to access an application is through a desktop shortcut.

In Xfce desktop and the Workspace Manager, application Launchers can be created either on the Desktop or the Panel. Folder links can be sent to the Desktop.

To send a Link to the desktop, right click on a folder in Home and select -> Send to Desktop. An orange arrow indicates that it's a link, not a folder.

The link on the Desktop is shown with an orange arrow to differentiate it from a folder.

To add a Launcher to the Desktop, right click and select Create Launcher :

Create Launcher		Create Launa	auncher
		Name:	Chromium Web Browser
Name:		Comment:	Access the Internet
Command:	0	Command:	chromium-browser %U
rking Directory:		Working Directory:	
Icon: No Icon		lcon:	
Options: Use startup notification			
Run in terminal		Options:	Use startup notification
2 Help Scancel Create		E Help	S Cancel Create

Typing its name populates the app Launcher's dialog. Type Chromium, and the rest of the values (Comment, Command, Icon, Options) are created .

5.5 - Adding Launchers / Items to the Panel

Launchers and other items can be added to either of the two panels. Rightclick on one of them and select Panel -> add new items. Since there are two panels, the first is labeled 0 the second is labeled 1.

Once added, the launcher has a blank icon, and the application or location which the launcher, launches, has to be added :

Once the application is added, the icon and program fields populate :

Applications	Places 🥥	01:44	PM	🔜 🗖 🕫 🗐
-		Elen Launcher	-	
Trash		Launcher		
9	6	General Advanced		
File/Syst		Chromium Web Browser Access the Internet		
Ella Starte		Name: Chromium Web Browser		
1119 5755		Comment: Access the Internet		
*		Command: chromium-browser %U		
Fismer		Working Directory:		
install El		Icon:		

The Panel provides a great deal of flexibility, and other items can be added to it in addition to application Launchers. Xfce provides many applets that provide advanced functionality (Action Buttons [shutdown, reboot, logout], CPU Graph [monitor CPU activity], Directory Menu [shows Filesystem structure, similar to Places plugin]. Adding an item like the Workspace Switcher is similar to adding a Launcher \rightarrow right click on the Panel (in this case the bottom panel 1) \rightarrow Add New Item \rightarrow typing Work brings up the following selections :

Once added to the bottom panel, it's visible and working :

The properties of the item can be viewed and edited using the Panel Preferences dialog. This, again, is going somewhat beyond the cope of this guide. PC/Opensystems will be providing a guide to advanced Xfce power useage in the near future which will detail some of this functionality.

5.6 - the Settings Manager

PCOS includes a central utility to manage system-wide settings :

Settings		
Settings Customize your deskto	q	<u>م</u>
Personal		[]
About Me	Appearance	Desktop
File Manager	Language Support	Light Locker Settings
Main Menu	Menu Editor	Notifications
Orage preferences	Panel	Preferred Applications
Theme Configuration	Window Manager	Window Manager Tweaks
Workspaces		
Help		All Settings

Divided into clearly defined categories, the Settings editor allows the user to change the default theme, font, icon set (Appearance), make changes the to the Desktop, Panel and Screensaver using the corresponding applets. And so on. The utility's functions are self-apparent and modular, which is one of Black Lab's (and Xfce's) strengths as a desktop environment.

<u>6 - Default application set</u>

Black Lab Linux includes the best available open-source programs to increase productivity.

Internet :

AVAHI SSH / VNC Server Browser - through a Citrix server Chromium - full featured web browser Create a new Fog App – useful for creating web-based applications Dropbox – online storage service integrate with Thunar for local sync Mozilla Thunderbird Pidgin Internet Messenger – integrated messaging client Smuxi – Internet Relay Chat client Steam – client for Steam gaming portal Thunderbird - full-featured email client Transmission – integrated Bittorrent client

Office :

Libreoffice (5.0.3) - Writer, Calc, Base, Impress, Draw. Dictionary – client program to query different words and phrases Document Viewer – view multipage documents ebook-Reader – FBReader eBook reader Orage Calendar / Globaltime – integrated Xfce calendar and time apps

Graphics :

Document Viewer (Evince 3.4) - PDF viewer GIMP (2.8) - full featured image and graphics editor ImageMagick – display and edit image files Inkscape – create and edit scalable vector image files Ristretto Image Viewer – integrated Xfce image viewing app Shotwell (0.14.1) - photo organizer Simple Scan (3.4.4) - tool for scanning text and images Multimedia :

Arista Transcoder -

Audacious (3.6.2) - lightweight media player Audacity – record and edit audio files Brasero – create and copy CDs and DVDs Cheese – take photos and videos with your webcam gMTP – a simple MTP client for MP3s Parole Media Player – integrated Xfce media player app PulseAudio Volume Control – adjust the volume level SimpleScreenRecorder – a feature-rich screen recorder Spotify – listen to music using Spotify VLC Media Player (2.0.8) - multiformat media player

And last, but not least :

Games :

Aisleriot Solitaire – play many different Solitaire games Mines – clear hidden mines from a minefield Steam – application for managing and playing games from Steam library Sudoku – test your logic skills

7 - Updating the new system

Updating Black Lab from the terminal requires the utility aptitude, i.e. the command *sudo apt-get update*. After this is run in the terminal and sudo password entered, repositories are updated to reflect recent changes.

Running *sudo apt-get upgrade all -y*. will upgrade the installed package set to the most recent available package versions and resolve any necessary dependencies.

Terminal - custom@custom: -/Desktop The following packages will be upgraded: apport apport-gtk ca-certificates-mono chromium-browser chromium-browser-l10n chromium-codecs-ffmpeg-extra coreutils cups-browsed cups-filters cups-filters-core-drivers dpkg dpkg-dev flashplugin-installer gimp gimp-data girl.2-gnomedesktop-3.0 girl.2-gst-plugins-base-1.0 gnome-desktop3-data grub-common grub-pc grub-pc-bin grub2-common gstreamer1.0-plugins-base gstreamer1.0-x icedtea-7-plugin icedtea-netx icedtea estre grup icedtea plugin icedfie icedtea. icedtea.netx-common icedtea.plugin in-config kpartx kpartx-boot krb5-locales libass5 libcupsfilters1 libdpkg-perl libffi6 libffi6:1386 libfontembed1 libgimp2.0 libgnome-desktop-3-7 libgnutls-openssl27 libgnutls26 libgstreamer-plugins-base1.0-0 libk5crypt03 libk5crypt03:1386 libkrb5-3 Libkrb5-3:i386 Libkrb5support0 Libkrb5support0:i386 Liblightdm-gobject-1-0 Libmbim-glib0 Libmn-glib0 Libmono-cairo4.0-cil Libmono-corlib4.0-cil Libmono-corlib4.5-cil Libmono-data-tds4.0-cil Libmono-i18n-west4.0-cil libmono-i18n4.0-cil libmono-posix4.0-cil libmono-security4.0-cil libmono-sqlite4.0-cil libmono-system-componentmodel-dataannotations4.0-cil libmono-system-configuration4.0-cil libmono-system-core4.0-cil libmono-system-data-linq4.0-cil libmono-system-drawing4.0-cil libmono-system-enterpriseservices4.0-cil libmono-system-runtime-serialization-formatters-soap4.0-cil libmono-system-runtime4.0-cil libmono-system-security4.0-cil libmono-system-transactions4.0-cil libmono-system-web-applicationservices4.0-cil libmono-system-web4.0-cil libmono-system.xml.linq4.0.cil libmono-system.xml4.0.cil libmono-system4.0.cil libmonglib.vpn1 libmonglib4 libmn-util2 libpng12-0 libpng12-0:i386 libpolkit-agent-1-0 libpolkit-backend-1-0 libpolkit-gobject-1-0 libpoppler-glibB libpoppler44 libsndfile1 libsndfile1:i386 libssl1.0.0 libssl1.0.0:i386 libunity-control-center1 libwhoopsie0 libxml2 libxml2:i386 lightdm linux-firmware linux-libc-dev modemmanager mono-4.0-gac mono-gac mono-runtime mono-runtime-boehm mono-runtime-common mono-runtime-sgen network-manager nfs-common nfs-kernel-server ntpdate openjdk-7-jre openjdk-7-jre-headless openssl oxideqt-codecs-extra policykit-1 poppler-utils python-apt python-apt-common python-libxml2 python-xlib python3-apport python3-apt python3-problem-report smuxi smuxi-engine smuxi-frontend-gnome steam-launcher thunderbird unattended-upgrades whoopsie winel.7 winel.7-amd64 winel.7-i386:i386 xul-ext-calendar-timezones xul-ext-gdata-provider xul-ext-lightning 137 upgraded, θ newly installed, θ to remove and 42 not upgraded. Need to get 237 MB/253 MB of archives. After this operation, 47.2 MB of additional disk space will be used. Do you want to continue? [Y/n]

8 - Adding / removing software

The App Grid is an intuitively categorizes Ubuntu software and streamlines its installation for the novice user :

Opening App Grid from the menu, the user is greeted with a EULA :

	App Grid
	Welcome to App Grid! In order to use App Grid, you will need to agree to the following:
	THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION] HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN
L	CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.
	Please see /usr/share/appgrid/LEGAL for full details.
	Ldisagree I Agree
	⊳

Clicking Agree opens the main interface :

The Menu is separated into these categories :

Under each category, different results are displayed, as shown below :

VLC Media Player and Audacious are the first two results :

Similarly, Chromium and Thunderbird in Productivity :

The most common method is inline search, just like Black Lab's Apps Menu. Opening the Grid and searching for Calibre (QT-based eBook reader) immediately brings up the correct result :

Clicking the result gives a full view of the software, creator, and reviews :

Clicking Install, the user is prompted to enter administrative (sudo) credentials :

	To install or remove software, you need to authenticate.
	An application is attempting to perform an action that requires privileges. Authentication is required to perform this action.
	Password:

and the software installs to Apps Menu \rightarrow Office. Simple as that.

8.1 – Installing software using Synaptic Package Manager

Black Lab Linux uses relies on the graphical frontend of the utility aptitude, Synaptic, to manage software sources and install software from a GUI. Typing synaptic in the menu brings up the desired result :

Applications 📄 Places 🧐		12:41 PM	🔜 🗆 🕫 💼
naptic			
Synaptic Package Manager Install, remove and upgrade	r software packages		
🕞 🗖 – Supantic Packago Mana			
ile Edit Package Settings	Help		
0 8	Quick filter		
Reload Mark All Upgrades	Apply Properties	Search	
	S Package	Installed Version	Description
mateur Radio (universe)	Oad	0.0.15+dfsg-3	Real-time strategy game of ancient warfare
Communication	0ad-data	0.0.15-1	Real-time strategy game of ancient warfare (data f
Communication (multiverse)	0ad-data-common	0.0.15-1	Real-time strategy game of ancient warfare (comm
Communication (universe)	Oad-dbg	0.0.15+dfsg-3	Real-time strategy game of ancient warfare (debug
Cross Platform	Oxffff	0.6~git20130406-1	Open Free Fiasco Firmware Flasher
Cross Platform (multiverse)	2ping	2.0-1	Ping utility to determine directional packet loss
Cross Platform (universe)	2vcard	0.5-3	perl script to convert an addressbook to VCARD file
Databases		30	
Databases (universe)	No package is selected.		
Debug			
Debug (multiverse)			
Debug (universe)	-		
Development			
Documentation			
Sections			
Status			
Origin			
Custom Filters			
Search Results			
Architecture			

The left pane of the package manager shows available categories sorted by repository – main, multiverse and universe.

Synaptic's menus sort the actions that can be taken with packages installed and to be installed. The Edit menu allows upgrades to be marked and broken packages to be fixed – this can happen when Personal Package Archives are added and break packages. The Package menu offers the same functionality as highlighting and right-clicking on a package (Mark for installation, mark for removal, mark for complete removal, unmark). Software sources (such as a local server or CDROM) and repositories can be added and removed under the Settings menu.

Searching Xfce Desktop Environment shows packages available for Xfce (and Black Lab!) :

Utilities (universe)	S	Package Installed Version Latest Version Description		Description				
Version Control Systems		gtk3-engines-xfce		3.0.1-2	GTK+-3.0 theme engine for Xfce			
Version Control Systems (universe)		libtumbler-1-0	0.1.31-1~14.04	0.1.31-1~14.04	library for tumbler, a D-Bus thumbnailir			
Video software		libxfce4ui-common	4.12.1-1~14.04	4.12.1-1~14.04	common files for libxfce4ui			
Video software (multiverse)		libxfce4ui-utils 4.12.1-1~14.04		4.12.1-1~14.04	Utility files for libxfce4ui			
Video software (universe)		libxfce4util-bin 4.12.1-1~14.04 4.12.1-1~14.04 tools for libxfce		tools for libxfce4util				
Web servers		libxfce4util-common 4.12.1-1~14.04 4.12.1-1~14.04		common files for libxfce4util				
Web servers (universe)		libxfce4util6 4.11.0-1~14.04 4.11.0-1~14.04		Utility functions library for Xfce4				
Word Processing		parole	0.8.0-0ubuntu1~14.0	0.8.0-0ubuntu1~14.0	media player based on GStreamer fram			
Word Processing (multiverse)		parole-dev 0.8.0-Oubuntu1~14.0 development files for Parol			development files for Parole media play			
Word Processing (universe)		shiki-colors-xfwm-theme 4.6-1ubuntu2 Xfwm/Xfce4 theme			Xfwm/Xfce4 theme based on the Shiki			
World Wide Web		hunar-vcs-plugin 0.		0.1.4-2	VCS plugin for Thunar file manager			
World Wide Web (multiverse)		tumbler	0.1.31-1~14.04	0.1.31-1~14.04	D-Bus thumbnailing service			
World Wide Web (universe)		tumbler-common 0.1.31-1~14.04 0.1.31-1~14.04 D-Bus thumbre		D-Bus thumbnailing service (common f				
Xfce Desktop Environment				11				
Xfce Desktop Environment (universe) VCS plugin for Thunar file manager								
Zope/Plone Environment	one Environment Get Screenshot Get Changelog							
Zope/Plone Environment (universe)								

Screenshots are available for selected items :

	<u> </u>						
Word Processing (universe)	shiki-colors-xfw	m-theme		4.6-1ubuntu2	Xfwm/Xfce4	theme based	l on the Shiki
World Wide Web	thunar-vcs-plug			0.1.4-2	VCS plugin fo	or Thunar file	manager
World Wide Web (multiverse)	tumbler		0.1.31-1~14.04	0.1.31-1~14.04	D-Bus thumb	nailing servio	ce
World Wide Web (universe)	tumbler-comm		tic 0.1.31-1~14.04	0.1.31-1~14.04	D-Bus thumb	nailing servic	ce (common f
Xfce Desktop Environment							1
Xfce Desktop Environment (universe)	VCS plugin for Th	<u> </u>		Update		X	
Zope/Plone Environment	Get Screenshot G	Action	Path			Mime typ	
Zope/Plone Environment (universe)	Oit and a dynamian in	Restored	stored /home/cavalier/xfce/svn/testlocal2/testfile stored /home/cavalier/xfce/svn/testlocal2/testfile.txt dded /home/cavalier/xfce/svn/testlocal2/testfolder				
	Git and subversion in	Restored					
Sections	The current features	Added					
	* most of the svn ac	Addad	/home/cavalier/yfce/cy/n/testlecal2/testfolder/testfile_tyt				
Status	delete, export, imp	Added	/home/cavalier/xice	, svillestiocalz/testic	idel/testille.txt		
Origin	revert, status, swite	Updated	Opdated /home/cavalier/xfce/svn/testlocal2 Completed At revision: 20				
oligin	* subversion info in 1	Completed					

8.1 - Installing software using the Terminal

Aptitude, the commandline utility used to update the newly installed Black Lab Linux system can (and is frequently) used to install software. Options and switches used in the Terminal offer a great deal of information. For example, even though it has already been installed, we'll search for Chromium using *apt(itude)-cache search*:

🗙 🔚 — Terminal - rg@junkstation: ~/Desktop					
<pre>rg@junkstation:~/Desktop\$ sudo apt-cache search chromium liboxideqt-qmlplugin - Web browser engine library for Qt (QML plugin) oxideqt-codecs - Web browser engine library for Qt (codecs) oxideqt-codecs-dbg - Web browser engine library for Qt (Debug symbols) oxideqt-codecs-extra - Web browser engine library for Qt (codecs) oxideqt-codecs-extra-dbg - Web browser engine library for Qt (Debug symbols) oxideqt-dbg - Web browser engine library for Qt (Debug symbols) oxideqt-dbg - Web browser engine library for Qt (Debug symbols) unity-scope-chromiumbookmarks - Chromium bookmarks scope for Unity webaccounts-extension-common - Ubuntu Online Accounts browser extension - common files flashplugin-installer - Adobe Flash Player plugin installer</pre>					
chromium-browser - Chromium web browser, open-source version of Chrome chromium-browser-ll0n - chromium-browser language packages chromium-codecs-ffmpeg - Free ffmpeg codecs for the Chromium Browser chromium-codecs-ffmpeg-extra - Extra ffmpeg codecs for the Chromium Browser rg@junkstation:~/Desktop\$					

The output of the apt-cache search command lists all items in the repositories with the string chromium contained in their name or description, and eventually lists the browser itself, the subject of the initial search.

The user would type *sudo apt-get install (-y) chromium* (the -y switch bypasses prompts requiring user consent to install the software). If instead we want to verify what version of chromium-browser is available in the repositories, we would type *sudo apt-cache policy chromium* :

Conversely, installed software can be uninstalled using *sudo apt-get autoremove* :

The full scope of aptitude and its graphical frontend Synaptic are beyond the scope of this very cursory userguide;an entire guide could (and possibly may) be written about its use.

8.2 - adding software through PPA (Personal Package Archive)

Increasingly, popular software for Black Lab Linux is being offered outside the default software / application channels. Software available through this PPA format is added at the command line using *sudo add-apt-repository <name of PPA here>*

To install Y PPA Manager, a utility to manage Personal Package Archives, the PPA for the particular version of Black Lab is necessary :


```
gpg: keyring `/tmp/tmper1rhj3i/secring.gpg' created
gpg: keyring `/tmp/tmper1rhj3i/pubring.gpg' created
gpg: requesting key EEA14886 from hkp server keyserver.ubuntu.com
gpg: /tmp/tmper1rhj3i/trustdb.gpg: trustdb created
gpg: key EEA14886: public key "Launchpad VLC" imported
gpg: Total number processed: 1
gpg: imported: 1 (RSA: 1)
OK
rg@junkstation:~/Desktop$
```

Pressing Enter, the PPA is added to /etc/sources.list. Running *sudo apt-get update && sudo apt-cache search y-ppa-manager* displays that it is available :

Reading package lists... Done y-ppa-manager - Y PPA Manager rg@junkstation:~/Desktop\$

Then sudo apt-get install installs Y PPA Manager and all of its dependencies :

and it is available in the Menu .

<u>9 - FAQ</u>

1). Isn't Black Lab Linux just Ubuntu with some extra software added?

- No. Black Lab includes many specialized optimizations and upgrades for out-of-the-box efficiency and cutting-edge performance. It generally uses a higher-level kernel than the current version of Ubuntu and a more comprehensive application set.

2). Does Black Lab require antivirus software? Is it immune to malware?

- Because BL uses the Linux / UNIX modular security model, it is much more resistant to viruses and malware than Windows. That being said, the possibility exists that it or any other Linux distro could be compromised at some point. It's incumbent on the user to have good basic Internet browsing and safety habits and use good common sense.

3). Why pay for Black Lab instead of getting another distro for free?

PC/Opensystems LLC releases the free community version of its desktop software for download six weeks after it has been released to enterprise and subscription customers. The paid version offers telephone and email support; it is also available on a variety of preinstalled media which can be ordered from PC/Opensystems LLC.

5). When I open Chromium, I keep getting prompted to enter a password.

- The default password for the GNOME keyring is desktop.

4). Do you (the Documentation guy) use Black Lab Linux?

- Yes I do. This entire document has been composed on a fully stock and barely modified BLNext system. It works great!

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