

A GUIDE TO INSTALLING

YELLOW DOG LINUX 6.2



FOR PLAYSTATION® 3

Rev 1.0 June 29, 2009

A Guide to Installing Yellow Dog Linux 6.2– For PLAYSTATION®3

Legal Notices

Trademarks

PLAYSTATION3 is a registered trademark of Sony Computer Entertainment Inc.

Linux is a registered trademark of Linus Torvalds.

YDL, Yellow Dog Linux, Y-HPC, and Y-Film are registered trademarks of Fixstars Solutions.

Additional product and company names mentioned may be trademarks and/or registered trademarks of their respective holders.

Copyright Notice

© 2009 Fixstars Solutions of Colorado, Inc., Loveland, CO, USA. All rights reserved.

No part of this document may be reproduced, published, nor distributed in any fashion without prior, written consent of Fixstars Solutions.

Fixstars Solutions

451 North Railroad Avenue, Suite 102

Loveland, CO 80537

+1 (970) 278-9243 voice

+1 (707) 988-7982 fax

• • •

Many thanks to the Fixstars staff in the U.S. and Canada for making a reality this latest release of Yellow Dog Linux, our best effort yet.

Revision History

Revision	Date	Change
1.0	June 29, 2009	Initial Publication.

INTRODUCTION

Thank you for choosing Yellow Dog Linux!

When Sony Computer Entertainment designed the PLAYSTATION®3 (PS3™), it was fully intended that you, a PS3 owner could play games, watch movies, view photos, listen to music, and run a full-featured Linux operating system that transforms your PS3 into a home computer.

Yellow Dog Linux for PS3 combines a simple to use graphical installer with leading-edge components and a foundation of must-have home, office, and server applications. Everything you need to browse the web, check and compose email, do your school homework or take your office work home is included with more than 2000 packages on the Install DVD.

This Guide to Installation

This Guide to Installation is written specifically for the Sony Computer Entertainment PLAYSTATION®3. This Guide does not offer instructions specific to other computers (ie. Apple Power Macintosh) supported by Yellow Dog Linux. Installation instructions for other computers are available from Fixstars' website.

Refer to us.fixstars.com/support/ for updates, issues specific with unique computer configurations, and engineering notes.

Where is Yellow Dog Linux Installed?

The drive installed in your PS3 ships with just one large partition, a logical division of the drive into unique sectors for the organization and protection of data.

Before you install Yellow Dog Linux, you will use the PS3 GameOS to split the drive into 2 major partitions:

- one for saving game data, music, and photos
- the other for Yellow Dog Linux

In this respect, both the GameOS and Yellow Dog Linux maintain their own unique volumes on which to store data.

Two Operating Systems on my PS3?

Following the installation of Yellow Dog Linux on your PS3, there will be 2 operating systems: the GameOS and Yellow Dog Linux (YDL).

The GameOS is the operating system that ships pre-installed on PS3. It is also referred to as a hypervisor, an operating system that provides a channel of communication between the outside world (you, your game controller, the monitor) and the built-in hardware (CPU, motherboard, RAM, hard drive, and I/O ports).

When you use the on-screen menus, play a game, watch a movie, or listen to music, you are doing so through the GameOS. Yellow Dog Linux runs on top of the GameOS which provides an important communication between Linux and the hardware.

Even if this sounds a bit technical, it is important as the GameOS provides a layer of continuity for Linux, making the development and maintenance of Linux for PS3 a more predictable process. This means you will enjoy a higher quality, higher performance Linux operating system. We hope you enjoy Yellow Dog Linux for PS3 and we look forward to receiving your feedback.

Please visit us at us.fixstars.com.

PS3 PREPARATION

Step 1 - Attach Monitor or HD TV

Attach your PS3 to a hi-definition TV or monitor using either:

- A HDMI (digital) cable
- Component (5 RCA jacks) cable

Composite (yellow RCA jack) is **not** supported as the resolution is too low.



Step 2 - Attach Game Controller, Keyboard and Mouse

Attach to the PS3:

- A Game controller
- A USB keyboard
- Mouse

The game controller will be used to conduct all GameOS functions.

The USB keyboard and mouse will be used once you enter the YDL installer.



Step 3 -Power On

1. Power on your PS3.
2. If this is the first time you have used your PS3, you will be prompted to:
 - Select a language
 - Select a time zone
 - Set the time & date
 - Set the username (more easily done with a USB keyboard)

Step 4 - Update the GameOS and Backup your Data

1. It is important to update the GameOS to the most current version, available for free from Sony. To update:
 - Select **Settings > System Update > Update via Internet** and then follow the on-screen prompts to complete.
2. If you have used your PS3, it is highly recommended that you **BACK UP ALL GAME, MUSIC, & PHOTO DATA** before formatting the drive as all data will be lost.

Step 5 - Format the Hard Disk

1. Format the hard disk:
 - Select: **Settings > System Settings** and press ENTER on the keyboard or the X button on the game controller.
 - Select **Format Utility > Format Hard Disk > Yes**
2. Next, select a partition setting for the hard disk:
 - Select: **Custom**
3. You are presented with option to **Use All for the PS3 System, Allot 10GB to the Other OS** or **Allot 10GB to the PS3 System**. Allocating the majority for YDL (Other OS) is recommended, independent of the size of your drive.
4. Select **Quick Format** and **Yes**. Your PS3 will now format its internal drive.
5. Press **X** on the controller to **EXIT**. This will cause your PS3 to reboot.

Step 6 - Install the Bootloader

Before you install Yellow Dog Linux, you must temporarily transfer control of your PS3 to the Yellow Dog Linux installer. This is done using a bootloader. The bootloader installer, pre-loaded by Sony with the GameOS, will install the bootloader. The bootloader "kboot" allows the GameOS to transfer authority to Yellow Dog Linux. Kboot is included on the YDL Install DVD in the directory /PS3/otheros directory and called "otheros.bld".

Do not turn off the power nor remove the recording medium during installation. Interrupting the installation process may cause damage.

1. Insert YDL Install DVD.
2. From the GameOS menu, select:

Settings > System Settings > Install Other OS

3. Your PS3 will now scan the DVD for the bootloader installer and bootloader.
4. Confirm discovery of **"/PS3/otheros/otheros.bld"**.
5. Press **X** on the controller to start the installation.
6. Once the install is finished, the screen will say "Install completed." This means that the kboot install is complete.

Note: YDL *has not been* installed yet; continue to the next step.

7. Back on the GameOS menu, select **Other OS** in order to begin the YDL install:

Settings > System Settings > Default System > Other OS

8. When prompted to quit the PS3 system and start the other system, select **Yes**.

YDL INSTALLATION

When installing YDL, you will need :

- A monitor or television with HDMI (digital) or Component (5 RCA jacks) cable input in order to perform a graphical install
- A USB Keyboard

Step1 - Begin the Installation Script

1. The PS3 will boot into the kboot bootloader. You will see white text on a black screen. The system will stop at the **kboot:** prompt.

kboot:

2. Before the installer times-out, press the **TAB** key on your keyboard to browse through the available install modes. Each time you press the **TAB** key, another install mode will be displayed. Select one of the following options to match the highest resolution capability of your monitor.

<code>install_ppc32</code>	Do not select this option. This is not for the PS3
<code>install_ppc32_text</code>	Do not select this option. This is not for the PS3
<code>install_ppc64</code>	Do not select this option. This is not for the PS3
<code>install_ppc32_text</code>	Do not select this option. This is not for the PS3
<code>install_ps3_1080i</code>	for PS3 and monitor capable of 1080i
<code>install_ps3_1080p</code>	for PS3 and monitor capable of 1080p
<code>install_ps3_480i</code>	same as <code>install_text</code>
<code>install_ps3_720p</code>	for PS3 and monitor capable of 720p

For example, if your monitor is capable of 1080p, the kboot prompt should look similar to this following:

kboot: install_ps3_1080p

If your monitor has only Composite (3 RCA jacks) the YDL installer (Anaconda) should default to “install_text”, a low-resolution text mode. This will later require command line configuration.

If you are uncertain of your hi-def (HDMI, Component) monitor's capability, the 720p option is the best default choice.

3. Once you select the appropriate install mode, hit **ENTER** on the keyboard. This will begin the installation., or Anaconda (the Yellow Dog Linux installer).

Step 2 - Language Selection

1. Select your preferred Language configuration.
2. Click **Next** to proceed.

Step 3 - Keyboard Selection

1. Select your preferred Keyboard configuration.
3. Click **Next** to proceed.

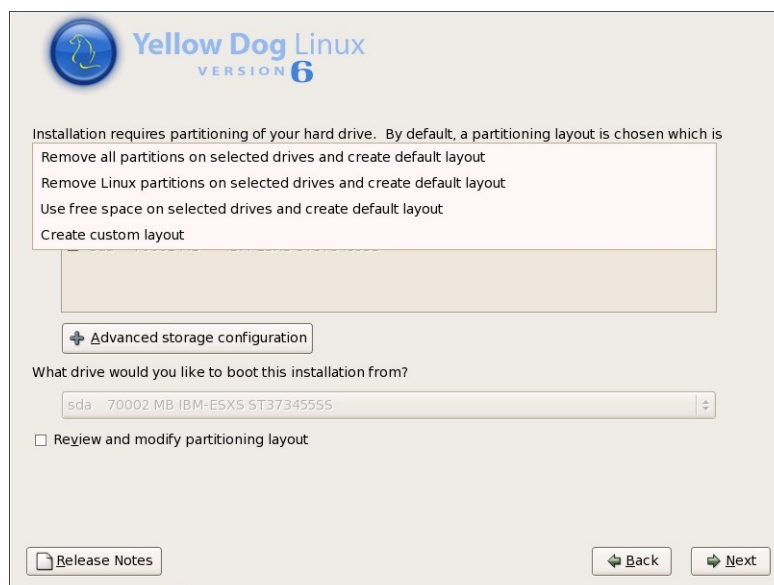
NOTE: If this is the first time installing Linux on your PS3, you will be warned, “The partition table on this device ps3da was unreadable...”. This is normal. Go ahead and select “Yes” to proceed.

Step 4 - Partition Drive

Partitioning a drive creates logical (as compared to physical) sections on your drive, each serving the purpose of organizing and protecting data. You may either allow the Installer to create the partitions for you by selecting Automatic Partitioning, or conduct this effort manually via Disk Druid.

1. You may choose from one of following schemes:

- **Remove all partitions:** on a PS3 (as compared to a Mac) this will produce the same result as "Remove all Linux partitions" (above) as the GameOS cannot be affected by the Linux installer.
- **Remove all Linux partitions:** this will delete and then replace only existing Linux partitions. Please note that if you have already installed Linux on your PS3, this procedure will DESTROY ALL EXISTING LINUX DATA. The GameOS and game data will not be harmed.
- **Keep all partitions and use existing free space:** if you have never installed Linux on your PS3, this will generate the same result as "Remove all partitions" (above).
- **Custom:** manually partition using Disk Druid. This is only recommended for advanced users.



More About Custom Partitioning

The use of Disk Druid is for advanced Linux users who desire to customize the partitioning of their drive. If you are new to Linux, we recommend you use the Automatic Partition tool discussed earlier in this section.

If you elect to build your partitions manually, you should create the following:

swap - used to temporarily store data no longer held in RAM. Swap should be no less than 512MB.

home - by creating a "/home" dir, you may re-install YDL and preserve your home directory. This may be any size you desire, but likely at least 1 GB.

/ - contains everything else (/etc, /sbin, /var) and should be at least 10GB.

Step 5 - Network Configuration

1. The default DHCP enables your PS3 to automatically obtain an IP address from your DSL or cable modem or in-office router. Only advanced users who have specific needs should manually configure this information.
2. Click **Next** to proceed.

Step 6 - Time Zone Selection

1. Select the appropriate time zone based on the location of the PS3.
2. Click **Next** to proceed.

Step 7 - Root Password

1. Choose a password that is at least 8 character, both letters and numbers and is not based on a dictionary word. Lower and upper case letters are unique.

Root Password Guidelines

Do not use your birthday, your child's name spelled backward, nor the name of your spouse followed by the year you were married. The security of your computer is only

as strong as your passwords. Do not forget this password. Only login as root if you are an experienced user, as it is possible to remove files or data which are required for the proper function of your Linux OS.

2. Click **Next** to proceed.

Step 8 - Package Selection

1. Select one of the predefined package sets:
 - Office and Productivity – For most users
 - Software Development – For software engineers
 - Web server – For system administrators

You may elect to customize the package set to be installed, which may increase or decrease the number of applications and time required. Once up and running, additional packages may be installed using yum or the **Add/Remove Software** utility.

2. Click **Next** to proceed.

Step 9 - Dependency Check

1. The Installer will now check for package dependencies. This will take 3-4 minutes.

Step 10 - Installation

1. Once the dependency check is complete, click **Next** to begin the installation.
2. The install could take up to 15 minutes, depending on the number of packages you selected to install.
3. Once the install is complete, click **Reboot** to restart your PS3.
4. Remove the DVD (or it will be pulled back into your PS3 and will attempt to install again).

BOOTING UP!

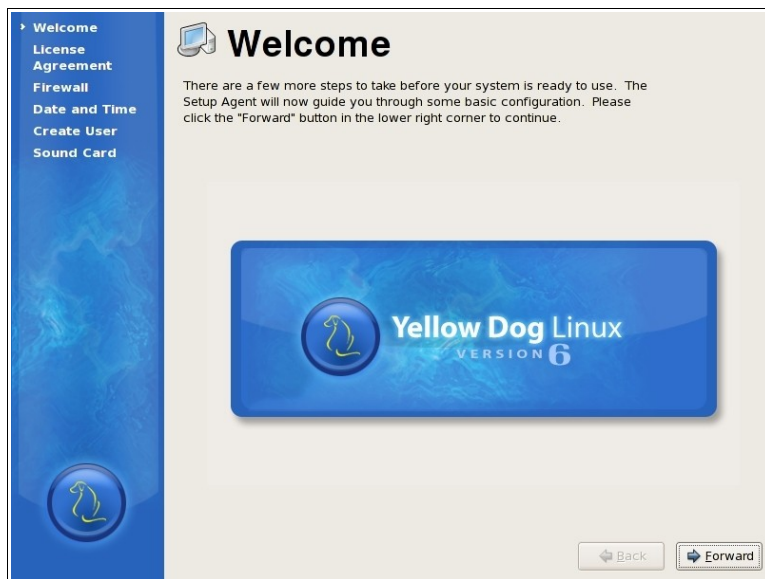
If you have a low-res TV, your PS3 will require some command line modification to gain a low res (difficult to read) graphical interface. Instructions at us.fixstars.com/support/solutions/.

During the first-ever boot following installation, you will be welcomed by firstboot in order that you may conduct additional system tests and configuration. See the next section for details.

FIRSTBOOT

Firstboot walks you through Acceptance of the License Agreement, Date and Time settings, YDL.net Account, System User, and Sound Setup.

- **License Agreement** - Please read and accept this document.
- **Date and Time** - If your PS3 will always be connected to the internet, selecting NTP will make certain your clock is accurate. If not, manually set the Date and Time.
- **YDL.net Username and Password** - If you have purchased a YDL.net enhanced account, you have the option to enable the system to download yum updates from the YDL.net repositories instead of from the public mirrors. To enable this feature, select the YDL.net checkbox and enter your YDL.net username and password.
- **System User** - Create one user account for your initial login and immediate access to the system. Additional users may be added later. Choose a password that is at least 8 characters, both letters and numbers and is not based on a dictionary word. Do not use your birthday, your child's name spelled backward, nor the name of your spouse followed by the year you were married. The security of your computer is only as strong as your passwords.
- **Sound Setup** - You must have audio cables attached to your monitor/TV in order to hear the output. Press the play button and confirm that music was heard.



RUNNING YELLOW DOG LINUX

Logging In

At the graphical prompt, enter the username and password created during firstboot's System User query. You will then enter the graphical user interface to Yellow Dog Linux, featuring the Enlightenment "E17" desktop environment.

With Linux, no one desktop environment is locked to the operating system, granting end users room for creativity, choice, and a variety of features.

Other desktop environments such as KDE and Gnome are available with the YDL Install DVD or from on-line repositories. KDE offers a tightly integrated productive environment for office and education. Gnome generally caters to those who desire greater room for customization. Gnome is installed by default and may be selected at log in.

Yellow Dog Linux defaults to the Enlightenment "E17" desktop environment.

Enlightenment

Enlightenment "E17" is an alternative desktop manager to KDE and Gnome, offering a completely customizable interface, integrated functionality, access to all the traditional applications, and a lightweight, intuitive, yet robust graphical interface.

While unique in many respects, E17 offers familiar operating system features such as a start (YDL logo) menu, productivity applications, and the ability to customize the desktop environment to your liking.

To learn more about Yellow Dog Linux and the E17 desktop environment, review the included Quick Start Tutorial, presented as the home page of your FireFox web browser:

YDL Menu > Applications > Internet > Firefox

The same tutorial is also available on-line:

us.fixstars.com/support/configuration/

Returning to the GameOS

Your PS3 will now boot to YDL each time it powers on unless you command kboot (the bootloader) to again boot the GameOS (see BOOTING GAMEOS later in this guide). To return to the GameOS, at the kboot prompt, enter:

```
ps3-boot-game-os [ENTER]
```

The PS3 may also be forced to return to the GameOS by holding the power button for about 5 seconds at power on. Doing this resets your PS3 to factory default.

Returning to YDL

To return to Yellow Dog Linux:

1. Select: **Settings > System Settings > Default System > Other OS**
2. When prompted to boot Other OS, select **Yes**.

SUPPORT

Installation Support

Installation Support is provided through YDL.net Enhanced accounts. To purchase a YDL.net Enhanced account, visit:

us.fixstars.com/store/

... and select the "Yellow Dog Linux" icon. Once purchased, you may proceed to www.ydl.net create your new YDL.net Enhanced account. Once logged in, follow the Help links to Support on the left side bar.

HOWTOs, Lists, and Forums

A guide to free, on-line support is available at Fixstars' website:

us.fixstars.com/support/

Technical Support

To learn more about Fixstars' technical support offerings, visit:

us.fixstars.com/support/