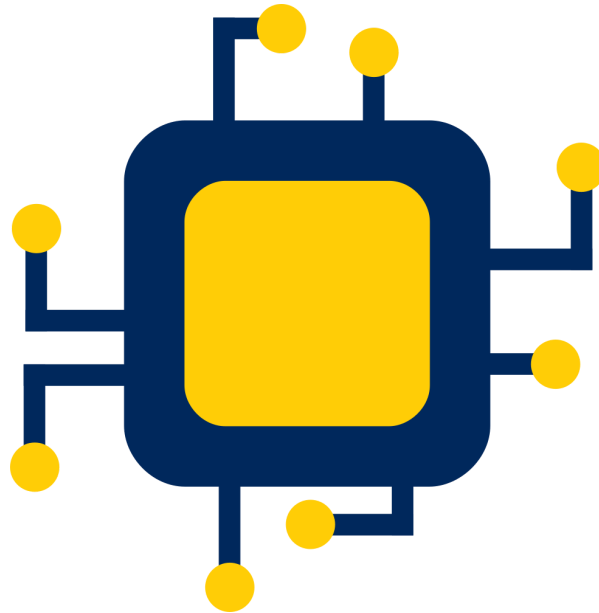


BOINCOS User Manual Beta v2.0



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Installation:

BOINCOS is packaged into a raw disk image format and it must be noted that the size of the uncompressed image is 8GB.

Requirements for installation:

- An 8GB USB or greater
- A computer with a functioning operating system
- Disk imaging software (such as [Rufus](#) or [Etcher](#))
- An archival program that can extract .zip archives
- Optional: Program that can perform file hashes

Steps:

1. Download the compressed image from the official website or [repository](#)
2. Decompress the image file **(This file will decompress to 8GB)**
3. Optional: Perform a checksum on the file and compare with the provided hashes (bundled in the [repository](#))
4. Execute the chosen imaging software and write the decompressed image to the USB medium

Getting Started:

Hardware Setup and Requirements:

The USB or hard drive flashed with BOINCOS should be connected to a computer which is configured according to these specifications:

- Is in UEFI boot mode
- Contains an Intel or AMD 64-bit CPU
- Contains an Intel, AMD or Nvidia graphics card or integrated GPU that is compatible with the drivers packaged with Arch Linux
- Has ethernet capabilities or contains a wireless network card that is compatible with drivers packaged with Arch Linux

Be sure to set your BIOS to boot via USB devices, else open the boot menu during the boot process and select to boot from the USB device which may appear as “BOINCOS” in the boot options.

Grub Boot Options:

When the OS is booted, the user will be presented with two boot options presented in a grub screen:

1. BOINCOS - Intel and AMD GPUs
2. BOINCOS - Nvidia GPUs

Option 1:

Recommended for Intel integrated graphics and AMD graphics cards. This boot line is generic (default arguments passed to the init-image) and should perform the appropriate modesetting for the video drivers in kernel space.

Option 2:

Recommended for Nvidia graphics cards. This boot line has nomodeset added so that the **nvidia-dkms** driver can be set when the display environment is started.

Note: If unsure of which option to pick, choose option 2

References:

- Drivers compatibility:
https://wiki.archlinux.org/index.php/Xorg#Driver_installation

Logging In:

If the OS booted correctly, a graphical login window should be displayed and prompt for a password for “boincuser”. The password for this account is: “boincos”.

Next, the OS will present its desktop environment consisting of a blue panel to the bottom of the screen containing a BOINC logo (to the left) and logout button (to the right) as well as icons on the desktop that lead to various directories.

- To access applications, click the BOINC logo which will present the applications menu.
- To logout of the system or shut it down, click the logout button and select the appropriate choice presented. (Note: Do not hibernate or suspend as there is no SWAP partition for the OS to save its state to and may cause errors or even a kernel panic)
- There are various directories you have access to:
 - **Home**: Where the majority of general user files should go
 - **Home > Downloads**: Where the web browser will place files downloaded from the internet
 - **Home > Backgrounds**: Where the system looks for background images to use, feel free to place additional wallpapers in here (see the customisation section for more details)
 - **BOINC Data**: The BOINC data directory to configure settings

Networking:

To access the network manager, click the BOINC logo in the bottom left, go to “Internet” and click on “Network Manager”. Else click on the BOINC logo, select “Run program...” and type “connman-gtk” when prompted, or simply open a terminal and type “connman-gtk”.

References:

- Troubleshooting networking:
https://wiki.archlinux.org/index.php/Network_configuration#Troubleshooting
- Troubleshooting wireless connections:
https://wiki.archlinux.org/index.php/Wireless_network_configuration#Troubleshooting_2

Bundled Utilities:

Here is a summary of useful programs that are not apart of the base installation of arch linux along with how to access them through the interface:

- boincmgr - The boinc manager software (**Applications > System**)
- htop - Terminal based system monitor (**via terminal**)
- [Min](#) - Simplistic web browser (**Applications > Internet**)
- gnome-system-monitor - A graphical and simple system monitor (**Applications > System**)
- gnome-terminal - A user-friendly terminal emulator (**Applications > Terminal**)
- connman-gtk - GUI interface for configuring network settings (**Applications > Internet**)

Customisation and Accessibility:

Localisations:

This version has no feature to handle locale and language settings. It can however be attempted manually: <https://wiki.archlinux.org/index.php/Locale>

Timezones:

This version has no feature to handle timezone setting. It can however be attempted manually: https://wiki.archlinux.org/index.php/Time#Time_zone

Changing System Themes and Fonts:

The following settings can be found in the settings manager for the display environment (**Applications > Settings > Settings Manager**).

Fonts and window themes can be found in the “Appearance” window of the settings manager.

Window decoration options can be found in the “Window Manager” window of the settings manager.

To change the desktop background, navigate to the “Desktop” window of the settings manager, select the folder drop-down in the bottom left and navigate to the appropriate folder where the desired image is. BOINCOS includes a special directory for backgrounds in:

Home > Backgrounds

Additional Settings:

There are multiple other windows in the settings manager that can contribute to accessibility:

- Mouse and touchpad: Control and manage cursor input devices and behaviours
- Keyboard: Manage keyboard settings and create or edit keyboard shortcuts
- Accessibility: Extra settings that may aid in accessibility and usage of the system

Troubleshooting, Maintenance and Performance:

Shutting Down the Graphical Environment:

In the event that additional computer resources are desired, the graphical environment can be safely stopped so that the computer has more graphical processing resources:

1. Log out of the current display environment via the logout button in the bottom right of the desktop
2. Press **ctrl+alt+f2** to get to a different virtual terminal
3. Type the username “boincuser” and press enter followed by the password (default: “boincos”)
4. Type **sudo systemctl stop lightdm** to stop the graphical environment
5. Check if BOINC is still running by typing **htop** and checking for the running task or CPU usage (press q to quit)
6. To return to the graphical environment type **sudo systemctl start lightdm** and wait momentarily, if you aren't brought to a graphical environment, try pressing **ctrl+alt+f7**

If the Graphical Environment Freezes:

If the GUI itself freezes, check if it is a system problem or just the display environment by attempting to change virtual terminal:

1. Press **ctrl+alt+f2** to get to a different virtual terminal (if possible)
2. If the system is still frozen, you may have to force reboot the computer
3. If you successfully change virtual terminal, login with the username “boincuser” and press enter followed by the password (default: “boincos”)
4. From here, either attempt to shutdown the computer gracefully by typing **sudo shutdown now** or try recovering the graphical environment by typing **sudo systemctl stop lightdm** followed by **sudo systemctl start lightdm**. Then follow step 6 of Shutting Down the Graphical Environment above.

Changing User Password:

1. Open the terminal via: **Applications > Terminal**
2. Type: **passwd** and follow all prompts

Updating the System:

This step is unnecessary in this context and may even break the system, but under any circumstance in which the user wishes to update the system, they can do so by typing **sudo pacman -Syu** in a terminal.

References:

- Pacman (PACkage MANager) wiki: <https://wiki.archlinux.org/index.php/Pacman>

Reporting Issues:

In both methods of reporting it is recommended to include as much information as possible to describe the issue including:

- The full set of specifications of the computer BOINCOS is being run on.
- Steps that were taken before the issue occurred and a description of how it can be reproduced.
- Any logs that are associated with the issue.

Email a Developer:

It is advised to contact a developer if you think that the issue is trivial, you do not have enough information to back it up and require help in accessing the required information to create an issue in the GitHub repository or if the issue is major. I.e, releasing the information to the public may affect the security of the system or reveal critical flaws in the design.

Developer emails:

- boincosdelta@gmail.com - Founder and main developer

Make a Github Issue:

It is advised to make a [GitHub issue](#) on the official BOINCOS repository if the issue has information backing it or is a request for functionality and support that is not planned within the milestones of the project.

The official BOINCOS GitHub repository can be found [here](#).