Sonic 3 A.I.R. - Angel Island Revisited
GAME MANUAL

Welcome to the Game Manual of Sonic 3 A.I.R.!

What you can find here:
- Installation instructions
- Help on common issues
- Details on the game options
- ...and more, see the table of contents below!

In case you don't want to read it all, **the important things are written in bold**.

For modders:
There is a separate document in the "docs" folder going into details on how to make mods.

CONTENTS

INSTALLATION & FIRST TIME SETUP

What you need

To play Sonic 3 A.I.R., you need two things:

1. The original combined *Sonic 3 & Knuckles* ROM file from the **Steam version of Sonic 3 & Knuckles** that is a part of the *SEGA Mega Drive & Genesis Classic Collection.* It's needed because Sonic 3 A.I.R. is loading large parts of game data from that exact ROM.

    If you own **Sonic 3 & Knuckles on Steam** (as part of the SEGA Genesis & Mega Drive Classics), then make sure to download / install it on your PC or Mac.

    Unfortunately, this game was removed from the Steam shop on May 20th, 2022.
    Since then, obtaining the right ROM in a legally safe way will get trickier, but one of the **alternatives** might work for you.

    Note that the developers of Sonic 3 A.I.R. can't give any support on getting the ROM.

2. The Sonic 3 A.I.R. game app from **sonic3air.org**.
    Choose the right download, depending on your platform. There's downloads for **Windows**, **Linux** and **Android**, and links to download pages for **Mac**, **iOS** and **Switch**.

    Find more information about installation on the various platforms below.

Windows

Install Sonic 3 A.I.R.

Prerequisites
- You need Windows 7 or higher to play, at least **Windows 10** is recommended.
- A dedicated Nvidia / AMD graphics card or a not too old Intel graphics card (HD 3000 or above) or later is recommended, with up-to-date drivers. Otherwise you might need to switch to fail-safe mode.
- And as mentioned, the Sonic 3 & Knuckles Steam ROM is a must as well.

How to install
- To install, simply **unpack the downloaded ZIP file** to a place on your hard disk, e.g. into a folder on your desktop or in your user files. Easy as that.
- Make sure you really unpacked it, and don't start the game directly from inside the ZIP file. This will only lead to an error message box like "Script execution completely stopped because call stack was emptied".
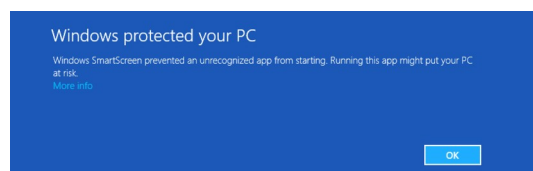
Add the Sonic 3 & Knuckles ROM
- If you have the Steam version of Sonic 3 & Knuckles installed on your hard disk, no further steps are required. Sonic 3 A.I.R. can usually find it by itself and load the ROM data from there.
- If not, Sonic 3 A.I.R. will ask you for the ROM on first startup.
  The usual location of the ROM file is this:
  C:\Program Files\Steam\steamapps\common\Sega Classics\
  uncompressed ROMs\Sonic_Knuckles_wSonic3.bin
- Or you can try to find it using Steam's own functionality to browse the local files as follows:
    1. Open your Steam Library and make sure Sonic 3 & Knuckles is installed
    2. Right-click "SEGA Mega Drive & Genesis Classics" and select "Properties…"
    3. A new menu will pop up, navigate to "Local Files" there and click the "Browse" button in the upper right
    4. This will take you to the installation folder of the SEGA Classics, where you can find the game ROMs inside the sub-folder named "uncompressed ROMs"
    5. Select the file "Sonic_Knuckles_wSonic3.bin" there - that's the Sonic 3 & Knuckles ROM.

Start Sonic 3 A.I.R.

To start the game, just double-click the **"Sonic3AIR.exe" file**. Note that the .exe file extension might be hidden on your PC.

You will likely get a **Windows Smart Screen message** like this on first start, warning that Sonic 3 A.I.R. is an unrecognized app.
This can be safely ignored and easily skipped by clicking "More Info", then "Run anyway".

Windows protected your PC

Windows SmartScreen prevented an unrecognized app from starting. Running this app might put your PC at risk.
More info

OK

Got technical issues?

If you encounter problems after game launch, like graphics issues or the game crashing, have a look at the Troubleshooting section in this manual.

Where's your saved data

Sonic 3 A.I.R. saves all your settings, saves, mods etc. in a **separate folder**. This way, it's safe to completely delete the game installation and replace with another one when an update comes out.

To get to the saved data folder:
- Open the Windows File Explorer, copy the following into the address line and press Enter:
  %appdata%\Sonic3AIR
- Alternatively, do a right-click into the running game and select the option "Open saved data folder" there.

> *Option for a portable installation:*
> *If you prefer to use a saved data folder right inside the game installation, simply create a folder "savedata" in there, i.e. right next to "Sonic3AIR.exe".*
> *If this exists, it will serve as the location where the game stores your data.*

Update Sonic 3 A.I.R.

To update from a previous Sonic 3 A.I.R. version, all you need is to **install it alongside** your existing Sonic 3 A.I.R. installation. Your saved data won't get lost this way, as it's stored elsewhere anyway – see Saved Data Folder below.
Only exception to this is if you opted for a portable installation that includes the saved data, as described in the "Option for a portable installation" box above.

To be on the safe side, here's the recommended steps for updating:
1. Install the new version of Sonic 3 A.I.R. as described above, but use a **different target location** (e.g. a different folder name) than your existing game installation.
2. **Start the new version** once, to make sure your settings and save games are still present.
3. If everything looks good so far, it's safe to delete the old game installation now.
4. Have fun with the update!

Mac

Install Sonic 3 A.I.R.

Prerequisites
- You need **macOS 10.9 or later** to play. Any Mac made since 2009, along with a few older ones should be able to run the game.

How to install
- Installation of the game is simple: Just **mount the downloaded DMG file** and copy Sonic 3 AIR to your Applications directory. Easy as that.

Add the Sonic 3 & Knuckles ROM
- If you have the Steam version of Sonic 3 & Knuckles installed on your hard disk, no further steps are required. Just click the Steam button and Sonic 3 A.I.R. can usually find it by itself and load the ROM data from there.

- If not, Sonic 3 A.I.R. will ask you for the ROM on first startup.
  The usual location of the ROM file is this:
  ~Library/Application Support/Steam/SteamApps/common/Sega Classics/
  uncompressed ROMs/Sonic_Knuckles_wSonic3.bin
- Or you can try to find it using Steam's own functionality to browse the local files as follows:
  1. Open your Steam Library and make sure Sonic 3 & Knuckles is installed
  2. Right-click "SEGA Mega Drive & Genesis Classics" and select "Properties…"
  3. A new menu will pop up, navigate to "Local Files" there and click the "Browse" button in the upper right
  4. This will take you to the installation folder of the SEGA Classics, where you can find the game ROMs inside the sub-folder named "uncompressed ROMs"
  5. Select the file "Sonic_Knuckles_wSonic3.bin" there - that's the Sonic 3 & Knuckles ROM

Start Sonic 3 A.I.R.

To start the game, just double-click the "Sonic 3 AIR" app.

Got technical issues?

If you encounter problems after game launch, like graphics issues or the game crashing, have a look at the Troubleshooting section in this manual.

Where's your saved data

Sonic 3 A.I.R. saves all your settings, saves, mods etc. in a **separate folder**. This way, it's safe to completely delete the game installation and replace with another one when an update comes out.

To get to the saved data folder:
- Open the Finder, and hold the Option key while opening the "Go" menu.
  Then select "Library" and navigate to /Application Support/sonic3air/Sonic3AIR/
- Alternatively, do a right-click into the running game and select the option "Open mods folder…" there. Your save data is one folder up from the mods folder.

Update Sonic 3 A.I.R.

To update from a previous Sonic 3 A.I.R. version, all you need is to **replace** your existing Sonic 3 A.I.R. installation with the new app. Your saved data won't get lost this way, as it's stored elsewhere anyway – see Saved Data Folder below.

To be on the safe side, here's the recommended steps for updating:
1. Install the new version of Sonic 3 A.I.R. as described above, but use a **different target location** (e.g. a different folder name) than your existing game installation.
2. **Start the new version** once, to make sure your settings and save games are still present.
3. If everything looks good so far, it's safe to delete the old game installation now.
4. Have fun with the update!

Linux

Install Sonic 3 A.I.R.

Prerequisites
- You need a **64-bit Linux**, on a x86_64 PC (i.e. ARM CPUs are not supported).
- Sonic 3 A.I.R. has been tested on various distributions / desktops, including Ubuntu 20.04, Linux Mint 20 Cinnamon, Fedora 32 and Manjaro Xfce. However, there's no guarantee that all distributions work.
- Make sure to have all drivers installed for OpenGL support, otherwise you might need to switch to fail-safe mode.

How to install
- After download, **unpack the .tar.gz** file to a place on your hard disk where you have full user rights.
- Optional: Execute the **setup_linux.sh** bash script in the just unpacked sonic3air_game directory. To do so, open **Terminal** in the sonic3air_game directory and type: bash ./setup_linux.sh
- This will add a "Sonic 3 A.I.R." launcher link to the applications / start menu, if supported by your desktop (it should work for e.g. Gnome and Cinnamon, but does not for Xfce).

Add the Sonic 3 & Knuckles ROM
- If you have the Steam version of Sonic 3 & Knuckles installed on your hard disk, no further steps are required. Sonic 3 A.I.R. can usually find it by itself and load the ROM data from there.
- If not, Sonic 3 A.I.R. will ask you for the ROM on first startup.
  The usual location of the ROM file is this:
  ~/.local/share/Steam/SteamApps/common/Sega Classics/ uncompressed ROMs/Sonic_Knuckles_wSonic3.bin
- Or you can try to find it using Steam's own functionality to browse the local files as follows:
    1. Open your Steam Library and make sure Sonic 3 & Knuckles is installed
    2. Right-click "SEGA Mega Drive & Genesis Classics" and select "Properties…"
    3. A new menu will pop up, navigate to "Local Files" there and click the "Browse" button in the upper right
    4. This will take you to the installation folder of the SEGA Classics, where you can find the game ROMs inside the sub-folder named "uncompressed ROMs"
    5. Select the file "Sonic_Knuckles_wSonic3.bin" there - that's the Sonic 3 & Knuckles ROM

Start Sonic 3 A.I.R.

You can start the **sonic3air_linux** executable directly in Terminal. Open a Terminal window in the main installation directory (i.e. in sonic3air_game) and type:
./sonic3air_linux

If you added a Sonic 3 A.I.R. launcher link with the **setup_linux.sh** script, you can use that as well.

Got technical issues?

If you encounter problems after game launch, like graphics issues or the game crashing, have a look at the Troubleshooting section in this manual.

Where's your saved data

Sonic 3 A.I.R. saves all your settings, saves, mods etc. in a **separate folder**. This way, it's safe to completely delete the game installation and replace with another one when an update comes out.

To get to the saved data folder:
- In Terminal or your favorite file browser, navigate to ~/.local/share/Sonic3AIR
- Alternatively, do a right-click into the running game and select the option "Open saved data folder" there.
- Note that the flatpak version uses the following path instead: /home/.var/app/org.sonic3air.Sonic3AIR/data/Sonic3AIR

> ***Option for a portable installation:***
> *If you prefer to use a saved data folder right inside the game installation, simply create a folder "savedata" in there, i.e. right next to "sonic3air_linux".*
> *If this exists, it will serve as the location where the game stores your data.*

Update Sonic 3 A.I.R.

To update from a previous Sonic 3 A.I.R. version, all you need is to **install it alongside** your existing Sonic 3 A.I.R. installation. Your saved data won't get lost this way, as it's stored elsewhere anyway – see Saved Data Folder below.
Only exception to this is if you opted for a portable installation that includes the saved data, as described in the "Option for a portable installation" box above.

To be on the safe side, here's the recommended steps for updating:
1. Install the new version of Sonic 3 A.I.R. as described above, but use a **different target location** (e.g. a different folder name) than your existing game installation.
2. **Start the new version** once, to make sure your settings and save games are still present.
3. If everything looks good so far, it's safe to delete the old game installation now.
4. Have fun with the update!

Android

Install Sonic 3 A.I.R.

Prerequisites
- You need Android 6.0 or above.
- Sonic 3 A.I.R. has been tested on various Android devices. However, there's no guarantee that it works well on all of them.

How to install
- Open the download page on your Android device.
- Download and install the Android APK.
- When the download has finished, launch the APK. (Most browsers will ask you if you want to install the APK anyway).
- It's possible you get a warning about installing from an untrusted source. If so, follow the on-screen instructions to make sure that such installations are allowed.

Add the Sonic 3 & Knuckles ROM
You need to copy over the Sonic 3 & Knuckles Steam ROM using a PC or Mac. This is only required to be done once.

- **Find the ROM**
  On your PC / Mac, first make sure you have the ROM from the Sonic 3 & Knuckles Steam version installed. Then locate the ROM file as described in the installation sections for Windows, Mac or Linux, respectively.

- **Copy the ROM to your Android device**
  Connect your Android device to your PC / Mac with a USB cable, and access its file system. Or alternatively, you can use your Google Account to transfer the file. Both is described here. It does not matter where exactly you copy the ROM file, it could be e.g. the Downloads folder.

- **Method A: Open ROM using the file selection**
  Now start Sonic 3 A.I.R. on your Android device. On first start, you will get a warning that the Steam ROM is needed and will be asked to select the game ROM. Tap "OK" and use the file selection dialog to find the ROM you previously copied to your device (or to your Google Drive, if you went for that option). After file selection, the game should load now.
  If you can't find the ROM in the file selection dialog, double-check where exactly you placed it before.
  Unfortunately, file selection does not work on all devices - e.g. Android TVs just show a brief error instead of opening the file selection. So if this does not work for you, try method B.

- **Method B: Launch the ROM file itself**
  Open a file management app, e.g. the (often pre-installed) app called "Files", or any other ("FX", "Samsung My Files", "ES File Explorer", etc.). Or in case you're using Google Drive for tranferring the ROM, use the Google Drive app.
  Navigate to where you stored the ROM, and select to open / launch the file. If the app supports it, this should pass the ROM to Sonic 3 A.I.R. or give you the option to do so.
  Note that this method works best while Sonic 3 A.I.R. itself is *not* running in the background.
  If this still does not work, there's only method C left to try.

- **Method C: Directly access the save data folder**
  In short: Use a file management app to copy the ROM file from where you previously placed it in your device's file system to Sonic 3 A.I.R.'s save data folder at
  "Android/data/org.eukaryot.sonic3air/files".
  You can find the details on how to access the save data folder further below, in the "Where's your saved data" section. This method requires that the Sonic 3 A.I.R. app was started at least once before. And after you copied the file, kill and restart Sonic 3 A.I.R.

Start Sonic 3 A.I.R.

After installation, simply tap the Sonic 3 A.I.R. app icon on your home screen or in your apps menu.

Got technical issues?

If you encounter problems after game launch, like graphics issues or the game crashing, have a look at the [Troubleshooting](#) section in this manual.

Where's your saved data

With recent versions of Android, the Sonic 3 A.I.R. save data folder (usually at "Android/data/org.eukaryot.sonic3air/files") is either not directly accessible any more, or accessing it from outside of the game risks damaging save data.

Instead, it's recommended to use the game's **integrated File Browser** to safely access save data and mods, no matter which Android version you're using.
The File Browser can be found in the Options menu's **System** tab.

When launching the File Browser, you'll see the (at first empty) "mods" folder. This is where mod zip files are supposed to be imported to, if you want to use mods.

To access the rest of the save data, use the "Up" button to get into the save data root folder, where "settings.json" and other files can be found.

Update Sonic 3 A.I.R.

Just install the new APK.
But do **not** uninstall the old Sonic 3 A.I.R. version before, as this would delete your save files!

iOS / Web

Install Sonic 3 A.I.R.

Prerequisites
- You need an iPhone or iPad device that is running iOS 13 or later.

How to run in browser
- Visit the web site for the current iOS / Web release and find the link at the bottom of the page to play in a browser. Web browsers require support for both WebGL and WebAssembly. This is available in most browsers released after 2017.

How to install as an iOS app
- Visit the web site for the current iOS / Web release in Safari and tap the share button in the browser toolbar. In the share menu that appears, you'll find an "Add to Home Screen" option. Use this to add the game icon to your home screen.

Add the Sonic 3 & Knuckles ROM
- On your PC / Mac, first make sure you have the ROM from the Sonic 3 & Knuckles Steam version installed. Then locate the ROM file as described in the installation sections for Windows, Mac or Linux, respectively.
- Copy the ROM to somewhere that you can access from the Files app on your iOS device, such as your iCloud Drive, other cloud drive storage apps, or a USB drive if you have the ability to connect it to your device.
- The first time you launch the game, you will be prompted to select the ROM after the game data is downloaded. Tap the "Select File…" button and pick the "Browse…" option from the menu that appears. Browse to the place where you saved the ROM file and select it.

Start Sonic 3 A.I.R.

After installation, simply tap the Sonic 3 A.I.R. app icon on your home screen.

Got technical issues?

If you encounter problems after game launch, like graphics issues or the game crashing, have a look at the Troubleshooting section in this manual.

Where's your saved data

The iOS / Web version of Sonic 3 A.I.R. has a built in file manager that appears when you quit the game. From the main menu, select "Exit". The file manager allows you to upload files to your savedata folder, including mods into the mods folder, as well as download existing files like your save file and settings for when you're ready to upgrade to a new version.

Update Sonic 3 A.I.R.

The iOS and Web version of the game is designed to work entirely without an internet connection. After the game has finished downloading, you currently cannot update it. New versions can be installed manually the same way you installed the previous version, you can have multiple versions installed on the same device. Use the built-in file manager to manually back up your save data by downloading it, then uploading it into the same place using the file manager in the new version that you install.

Nintendo Switch

Install Sonic 3 A.I.R.

Prerequisites
- Make sure your Switch can run homebrew.

How to install
1. Extract the contents of this ZIP to the root of your SD card.
2. Copy Sonic_Knuckles_wSonic3.bin to /switch/sonic3air on your Switch's SD card. After installing the Steam version, you should be able to find it in one of the directories listed in the section **Sonic 3 & Knuckles Steam ROM**.
   If you installed Sega Classics to a different location, you'll need to check manually.
3. Extract the contents of this ZIP to the root of your SD card.
4. Copy Sonic_Knuckles_wSonic3.bin to /switch/sonic3air on your Switch's SD card. After installing the Steam version, you should be able to find it in one of the directories listed in the section **Sonic 3 & Knuckles Steam ROM**.
   If you installed Sega Classics to a different location, you'll need to check manually.

Add the Sonic 3 & Knuckles ROM
- Use a PC (with Windows or Linux) or a Mac to install the Steam version of Sonic 3 & Knuckles, and get the ROM from there.
- Find more information on that in the installation sections for Windows, Mac or Linux, respectively.

Start Sonic 3 A.I.R.

Start Sonic 3 A.I.R. via hbmenu (or whatever method you prefer).

NOTE: It is recommended to give the game full RAM access. This means you shouldn't launch hbmenu from the album applet when running this. With the latest Atmosphere build and its default config, you can hold R while starting any game to open hbmenu with full RAM access. If you have any issues make sure the game has full RAM access before reporting them; launching as an applet will not be supported.

Got technical issues?

If you encounter problems after game launch, like graphics issues or the game crashing, have a look at the Troubleshooting section in this manual.

Where's your saved data

The Switch version of Sonic 3 A.I.R. stores its data in the "savedata" folder that is part of the installation.

Update Sonic 3 A.I.R.

Simply extract the new ZIP to the root of your SD card and overwrite all files.

CONTROLS

Keyboard

In menus:
- Up, Down, Left, Right = Selection change
- Enter = Accept selected option, or start the game

In game:
- **Up, Down, Left, Right = Movement**
  (including crouching, rolling, etc. - you probably know the classic Sonic game controls)
- **Q, A, S, D = Jump** and usage of character ability (shield power, flying, or gliding)
- **W = Super Transformation** and Super Cancel
- **W = Fast forwarding** of certain cutscenes
- **W = Restart** in Time Attack mode
- **Enter = Pause game**

General:
- F1 = Bring up an overview of hotkeys
- Escape or Alt + Enter = Toggle fullscreen
- Alt + F4 = Quit the game completely
- Numpad Plus and Minus = Change audio volume
- Alt + F and Alt + G = Change the pixel filter
- Alt + H = Change the frame sync method
- Alt + B = Change the background blur effect
- F3 = Rescan for gamepads
- F4 = Switch player controls

XBox Controller

In menus:
- Up, Down, Left, Right = Selection change
- Start/Menu = Start the game

In game:
- **Up, Down, Left, Right = Movement**
- **A, B, X = Jump** and usage of character ability
- **Y = Super Transformation** and Super Cancel
- **Y = Restart** in Time Attack mode
- **Start/Menu = Pause game**

Other Gamepads / Custom Keyboard bindings

Other gamepads should work as well, even if they are not compatible to the XBox Controller.
The default button bindings may not fit in this case, but you can use the **Controller Setup menu** in the Options under Controls to redefine the bindings to your liking.

Alternative method to manually edit the button bindings:
- *Start Sonic 3 A.I.R. once, attach the game controller, and close the game again.*

- *The "settings_input.json" file in the Saved Data now includes an entry somewhere for your controller.*
- *Feel free to make changes there. Note that the buttons here are enumerated the same way as in Windows' system panel's Gamecontroller details window, but starting with "Button0" representing button 1, etc.*

To change keyboard bindings:
- *That works the same way as for game controller button bindings, i.e. there's keyboard entries in "settings_input.json".*
- *Look for "Keyboard1" for keyboard bindings for player 1, and "Keyboard2" for player 2.*
- *This is the list of supported key bindings - note that some of these were added in the November 2020 preview, and won't work in previous versions:*

"Enter"	"0"	"A"	"Insert"
"Backspace"	"1"	"B"	"Home"
"Tab"	"2"	"C"	"PageUp"
"Space"	"3"	"D"	"Delete"
"Exclaim"	"4"	"E"	"End"
"QuoteDbl"	"5"	"F"	"PageDown"
"Hash"	"6"	"G"	"Up"
"Percent"	"7"	"H"	"Down"
"Dollar"	"8"	"I"	"Left"
"Ampersand"	"9"	"J"	"Right"
"Quote"	"Colon"	"K"	"NumpadDivide"
"LeftParen"	"Semicolon"	"L"	"NumpadMultiply"
"RightParen"	"Less"	"M"	"NumpadMinus"
"Asterisk"	"Equals"	"N"	"NumpadPlus"
"Plus"	"Greater"	"O"	"NumpadEnter"
"Comma"	"Question"	"P"	"Numpad1"
"Minus"	"At"	"Q"	"Numpad2"
"Perios"	"LeftBracket"	"R"	"Numpad3"
"Slash"	"Backslash"	"S"	"Numpad4"
"LeftShift"	"RightBracket"	"T"	"Numpad5"
"RightShift"	"Caret"	"U"	"Numpad6"
"LeftCtrl"	"Underscore"	"V"	"Numpad7"
"RightCtrl"	"BackQuote"	"W"	"Numpad8"
"LeftAlt"		"X"	"Numpad9"
"RightAlt"		"Y"	"Numpad0"
"CapsLock"		"Z"	"NumpadPeriod"

SPECIAL CHARACTER MOVES

There are some moves in Sonic 3 A.I.R. that are not part of original Sonic 3 & Knuckles.
Note that some of these can be disabled or configured in the options menu.

Tails Assist
- You need to play with Tails as an AI-controlled second character.
- Jump and when both you and Tails are in mid-air, press **Up + Jump** to make Tails fly. You can then hang on to him and let him carry you around.
- While being carried, control the flight with the **Up, Down, Left, Right** buttons.
- When pressing no button at all, Tails will try to hover in place until he gets tired.
- Tails Assist styles:
  - Sonic 3: Jump off with a **Jump** button, gain height with **Up**.
  - Sonic Mania: Jump off with **Down + Jump**, gain height with **Jump** or **Up**.

Easier Flight Controls
- When playing as Tails, just hold the **Up** button to gain height during flight. There is no need to repeatedly press the Jump button (though that still works as well).

Flight Cancel
- When playing as Tails, you can cancel his flight at any time by pressing **Down + Jump.**
- This will curl Tails into a ball again. Use this move to attack enemies from above!

GAME OPTIONS

In the game's Options menu, you can find various settings to customize the game to your liking.

Mod Options

If you have mods installed and activated that feature their own options, you can find them all in the Mods tab. It's left to the System tab, and only appears if there's actual options for at least one active mod.

System

The System tab for the most part is not about options, but more of a start page with various information, links, etc.

You can use the **Update Check** to search for new game updates. Choose whether your search should include only the well-tested stable updates, the more experimental previews as well, or maybe even the bleeding-edge test builds.

Ghost Sync enables the experimental online mode. With Ghost Sync enabled, you can see other players online at the same time as ghosts.

More Info contains links that will be opened in your web browser - namely to the game homepage, and to the online version of the game manual that you're reading right now.

Under **Debugging**, there's a few special technical settings, but these are really only meant as a last resort for certain very specific bugs. It's highly recommended to leave them at "Auto (Default)", unless you have a good reason to switch to something else.

Display

General
- **Renderer:** The OpenGL Hardware Renderer is the recommended option, as it's usually faster and allows for higher quality of certain effects like background blur. However, if you encounter large graphics errors in the game, try the OpenGL Software Renderer instead. And if OpenGL doesn't work for you at all, there's still the Fail-safe / Software Renderer.
- **Frame Sync:** Enable or disable vertical synchronization with your screen (V-Sync). This is usually recommended to have enabled, especially if you're using a monitor with 60 Hz refresh rate. In case your monitor has a higher refresh rate than 60 Hz, try the V-Sync + FPS Cap option. If you encounter input lag or an unsmooth frame rate, maybe turning V-Sync off is a good choice.
  You can change this setting at any time by pressing Alt+H.
- **Upscaling:** Use either as much as possible of your window / screen with Aspect Fit, or select Integer Scale if you prefer all pixels to be the same size (which can be nice for the Sharp filter).
- **Backdrop:** If you have a screen wider (or higher) than 16:9, you can enable a background image for the outer screen region here.
- **Screen filter:** Want your game to be crisp like the original? Or smoothed using a filter? Note that xBRZ can be pretty performance consuming, depending on your graphics card.
  You can change this setting at any time by pressing Alt+F or Alt+G.

- **Scanlines:** Adds horizontal black stripes to resemble a good old CRT TV.
- **Background Blur:** This effect blurs the game's backgrounds so the foreground stands out better. Leave it off for the original game feeling, or set it to up to 100% if you like the effect.
  You can change this setting at any time by pressing Alt+B.

Window Mode
- **Current Screen:** Choose between a resizable window, a borderless fullscreen window (recommended), or the old-fashioned exclusive fullscreen at your desktop resolution.
- **Startup Screen:** Same as above, but here you can set which window mode the game will start in.

Performance Output
- **Show Performance:** Display performance measurements on the screen, either the frames per second (FPS) or a more detailed profiling - this is mainly meant for diagnosing performance issues.
  You can change this setting at any time by pressing Alt + P.

Audio

Volume
- **Overall Volume:** Base volume for all audio output.
- **Music Volume:** Relative volume for music playback.
- **Sound Volume:** Relative volume for all sound effects.

Soundtrack
- **Soundtrack Type:** The remastered soundtrack uses higher quality samples, but is still very close to the original (here emulated) music.
- **Sound Test:** Check out the game's music!

Theme / Level / Music Selection
- Select Sonic 3 or Sonic & Knuckles version of different themes.
  In some cases, there are additional options to choose from, like the Sonic 2 Super Theme.
  Or the "Pick by Zone" option, which selects the Sonic 3 version of a music track in the Sonic 3 zones and the Sonic & Knuckles version in the S&K zones (starting in Mushroom Hill Zone).

Music Behavior
- **On Level (Re)Start:** Choose whether to continue the music when restarting a level, or restart it.

Effects
- **Underwater Sounds:** Enable a muffled playback of music and sounds while under water, or stay with normal playback with no changes.

Visuals

Visual Enhancements
- **Character Rotation:** Use a smooth 360° rotation for characters (and few other objects), or stick to the original 8-way rotation.
- **Time Display:** The extended time display shows hundredths of seconds as well (as Sonic CD and Mania), the original display is only minutes and seconds.
- **Lives Display:** You can show the lives counter either in the lower left corner as in classic Sonic games, or in the upper right corner as in the mobile remasters of Sonic 1/2/CD.

- **Speed Shoes Effect:** Enable or disable the ghost effect when speed shoes are active.
- **Sonic Fast Run Animation:** For really high speeds, enable an additional run animation resembling Sonic CD's Super Peel-Out animation. Affects only Sonic.
- **Flicker Effects:** Certain flickering palette effects get more or less reduced by this option, including Hyper Sonic sprites, emerald flickering, Carnival Night lights, Slot Machine bonus stage animations, and some others.

Camera
- **Outrun Camera:** Allows you to get ahead of the camera when you're going really fast. This effect is known from Sonic 2 and Sonic Mania, but not part of original Sonic 3 & Knuckles.
  [Always disabled in Time Attack]
- **Extended Camera:** Moves the camera a bit ahead when moving fast, similar to the camera in Sonic CD.

Objects
- **Monitor Style:** Either the Sonic 3 / Sonic & Knuckles monitors or the even more classic Sonic 1 / Sonic 2 monitors.
  [Always S3&K monitors in Time Attack]

Color Changes
- **IceCap Startup Time:** The Morning Dawn palette starts IceCap zone just at sunrise instead of during daytime. Carnival Night was at night after all. ;)

Special Stages
- **Blue Spheres Style:** Go with the smoothed modernized look of the Blue Spheres stages, or keep a more close to the original look. Both update the screen at full 60 FPS.
- **Ring Counter:** Let the ring counter display count up like in the original game, or down to always know how many rings remain for a perfect run.

Gameplay

Levels
- **Level Layout:** Choose between the original level layouts used in Sonic 3 (without Sonic & Knuckles), those from Sonic 3 & Knuckles, or the A.I.R. level layouts with some smaller changes compared to Sonic 3 & Knuckles.
  [Time Attack always uses A.I.R. layouts]

Difficulty Changes
- **Angel Island Bombing:** Want a more engaging version of the bombing sequence just before the Angel Island Zone Act 2 boss fight? Or keep the original, and hold right to win?
- **Big Arms Boss Fight:** Optionally reintroduces the final boss fight of Launch Base Zone Act 2 for Sonic & Tails as well, which was part of only Sonic 3, but not Sonic 3 & Knuckles.
- **Sandopolis Ghosts:** If those ghosts realy annoy you, switch them off to make Sandopolis Zone Act 2 easier.
- **Lava Reef Act 2 Boss:** Use the recommended setting of 8 hit points for the boss, or the original 14 hit points.
- **Keep Shield aftzer Zone:** If enabled, you carry over your shield into the next zone.

Time Attack
- **Max. Recorded Ghosts:** In Time Attack, you can race against your own best times, visualized as "ghosts". Choose the upper limit for how many of your best runs will be shown at the same time.
- **Quick Restart:** Make the Y button (W on keyboard) either instantly restart Time Attack, or require holding it for a brief period of time, to avoid unintentional restarts.

Controls

Unlocked by Secrets
- First complete some achievements, then you will get the respective options here. Note that after unlocking, these are ***still disabled by default***, so you have to enable them here.
  [These are always disabled in Time Attack, except for that secret unlockable category]

Controllers
- **Setup Keyboard & Game Controllers:** Opens a menu where you can reassign keyboard and controller bindings for game controls. In this menu, you can also choose between different sets of icons used for game controller buttons.
- **Controller Player 1:** If you have a gamepad or other controller connected, select it here for the main player.
- **Controller Player 2:** And this is the controller for player 2, in case you want to play together with a friend.
- **Other Controllers:** Choose what to do with connected controllers that are not manually assigned to player 1 or 2 with the options above. You can e.g. automatically assign any connected controller to player 1 (that's the default).

Virtual Gamepad *(only on Android and iOS)*
- **Configure Touch Gamepad:** Enter this option using the on-screen touch controls to bring up a screen where you can move around the touch controls to where you like them most.
- **D-Pad Size:** Change the size of the touch controls D-Pad here.
- **Buttons Size:** Change the size of the four buttons in the touch controls.
- **Visibility:** Use this option to change the transparency of the touch controls.

Controller Rumble
- **Rumble Player 1:** Enable controller rumble effect for player 1, and change its intensity here. Note that the rumble feature only works with certain types of gamepads.
- **Rumble Player 2:** The same for player 2.

Abilities
- **Sonic Insta-Shield:** Optionally disable Sonic's Insta-Shield attack.
  [Always enabled in Time Attack]
- **Tails Assist:** When playing with Tails as second character, you can make him carry you around. With Sonic 3 Style, pressing a Jump button will let you jump off; use the Up button to go higher. With Sonic Mania Style, you need to press Down + Jump to jump off instead.
- **Tails Flight Cancel:** Press Down + Jump to roll into a ball again while flying around.
  [Always enabled in Time Attack]
- **Roll Jump Control Lock:** Allows you to control your movement after jumping out of rolling on the ground. Enable it for more control, like in Sonic Mania, or disable it for the original game behavior.
  [Always enabled in Time Attack]
- **Bubble Shield Bounce:** Stay with Sonic 3's original bubble shield behavior or select the more bouncy version from Sonic Mania.
  [Always Sonic 3 style in Time Attack]

Super & Hyper Forms
- **Tails Super Forms:** Use a Super & Hyper form for Tails like with the other characters, or stick with the original Super Tails that requires all 14 emeralds.
- **Super Cancel:** Allows for the W key / Y button to cancel a Super or Hyper form again and go back to normal.
- **Super Sonic Jump Ability:** Optionally enable a Super Dash as a somewhat weaker version of the Hyper Dash. Or a directional dash depending on which shield you currently have.

- **Sonic Hyper Dash:** With Hyper Sonic, perform the Hyper Dash ability in mid-air either only when also pressing Up / Down / Left / Right, or no matter whether a direction key is pressed.

Tweaks

Unlocked by Secrets
- First complete some achievements, then you will get the respective options here. Note that after unlocking, these are still disabled by default, so you have to enable them here.

Accessibility
- **Infinite Lives:** In case you are new to Sonic 3 or Sonic games in general, try enabling so you don't have to care about lives any more.
- **Infinite Time:** No need to hurry, this game is not about speed. Or is it?

Game Variety
- **Shields:** If you like the classic shield, enable it here. It's either classic shield only, elemental shields only (as in Sonic 3 originally), or a mix of all like in Sonic Mania. And then there's the additional option of upgradable shields: At first, all shield monitors will give you the basic classic shield, afterwards monitors turn into elemental shields.
- **Randomized Monitors:** If you're bored of the monitor / item box contents in the usual game, you can mix them up here. Choose between randomization of only the shield monitors or all monitors.
  [Time Attack always uses normal monitors]
- **Monitor Behavior:** Do you prefer the monitor to bounce and fall down if hit from below, like in Sonic 1 and 2? There's an option for that!

Special Stages
- **Special Stage Layouts:** Use the original layouts or a random pick of the Blue Sphere mini-game's generated stages (you know, the game when you lock-on Sonic 1 to the Sonic & Knuckles cartridge). But be warned, the generated ones can be *hard*.
- **On Fail:** When you miss a Chaos Emerald in a Special Stage, do want to get another chance at the next Giant Ring? Or rather advance to the next special stage like in original Sonic 3 & Knuckles?

Region
- **Region Code:** Switch between the Western and Japanese versions of the game. Most notable difference is the in-game name of Miles "Tails" Prower.

Speedrunning
- **Glitch Fixes:** By default, Sonic 3 A.I.R. introduces fixes for certain glitches, some of which can be quite useful for speedrunning. You can choose how many of these fixes you want to enable for your game.

TROUBLESHOOTING

Graphics

On some computers, the main menu looks fine, but the in-game graphics are messed up with black bars and missing sprites, like in the screenshot on the right.
In that case, try out the **OpenGL *Software* Renderer**. You can find the respective setting in the Options menu under Display.

Note that the Software Renderer lacks a few features and should only be used if the default Hardware Renderer does not work correctly.

Crash on Startup

If the game crashes immediately after start, before even showing the disclaimer screen:

Windows
Try switching to the "fail-safe" mode. This will disable certain graphics features and automatically switch to a very basic software renderer that does not have any OpenGL dependency.
- Open Windows Explorer and copy this into the address line:
  %appdata%\Sonic3AIR
- After pressing Enter, this takes you to the folder where the game stores settings and other data
- Open the file "settings.json" or just "settings" with a text editor (use Notepad if there's nothing better installed)
- Search for the following part:
  "FailSafeMode" : false,
- Change the word false to true, then save the file and start the game

macOS
Please check the log file in ~/Library/Application Support/sonic3air/Sonic3AIR/. Failsafe mode should not be needed on the macOS version as all Macs should support hardware rendering.

iOS
Restart your device by shutting it down and turning it back on again. The current iOS port has to load all game data into memory at once, so the more mods you have installed the more likely you will run into problems.

Other platforms
Try switching to the "fail-safe" mode, as described for Windows above.
This requires manual access to the game's save data folder. Check out the respective section "Where's your saved data" for your platform under Installation & First Time Setup.

MODS

This game supports different kinds of mods, including replacement of the music tracks, character sprites, and even most of game functionality.
Mods are in general compatible with Sonic 3 A.I.R. for **all platforms**.

Find all the information about making your own mods in the modding PDF inside the "doc" folder.

Where to get Mods?

There's no official place where to get Sonic 3 A.I.R. mods.
Instead, a quick search using your favorite internet search engine should find something interesting. Try searching for "sonic 3 air mods download" or similar.

Installation of Mods

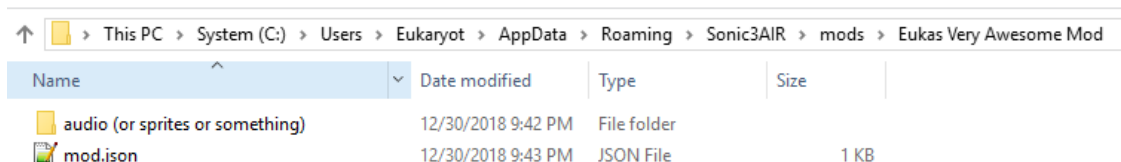If you're only interested in **installing a mod**, here's how.
Let's say you already downloaded a mod. If it follows the recommended mod structure, it is a ZIP file containing a folder with the mod's name and all of the mod's content inside that folder.
The following instructions tell you where to extract that ZIP file to.

After installation of a mod, you can quickly test if it was installed correctly and found by the game. Go to the "Mods" menu to see whether the mod appears there. Close the menu and re-open it to update the mods in there. If that does not work, restart Sonic 3 A.I.R.

Windows / Linux
- Open the "mods" folder. While Sonic 3 A.I.R. is running, right-click inside the game window to bring up a little menu. Select "Open mods folder" there.
- Alternatively (if the above does not work for some reason), access the game's save data folder as described in the section "Where's your saved data" for Windows or Linux. Inside there, open the "mods" folder.
- If the mod follows the recommended mod structure, you simply place the ZIP file right in the "mods" folder and you're good to go.
- But note that this only works for ZIP files - not for RAR, 7z, TAR.GZ, etc.
  So if you got a different file format… well, extract the file and make sure that you see a structure like this:

| Name	Date modified	Type	Size
📁 audio (or sprites or something)	12/30/2018 9:42 PM	File folder	
🖼 mod.json	12/30/2018 9:43 PM	JSON File	1 KB

There might be more subfolders and files in there, but the "mod.json" is the central file.
It tells the game that this is indeed a valid mod.

macOS
- From the "Sonic 3 A.I.R." menu, select "Open mods folder…".
- The mods folder should open automatically.
- If the mod follows the recommended mod structure, it's a ZIP file that you only need to place in the "mods" folder.
- And if it doesn't… see the Windows section above for how a mod should look like.

Android / Web / iOS
- Go to the Options menu's "System" tab, and open the File Browser there.
- It will launch inside the "mods" folder, which is empty at first. This is exactly where mods are supposed to be placed.
- Use the "Import file..." button at the top to import a mod in ZIP file form.
- In case the mod file is not a ZIP - but a RAR or 7z or other archive file -, you need to first repackage it as a ZIP, which is best done on a PC or Mac and possibly requires additional software (like 7zip) that can open the mod file.
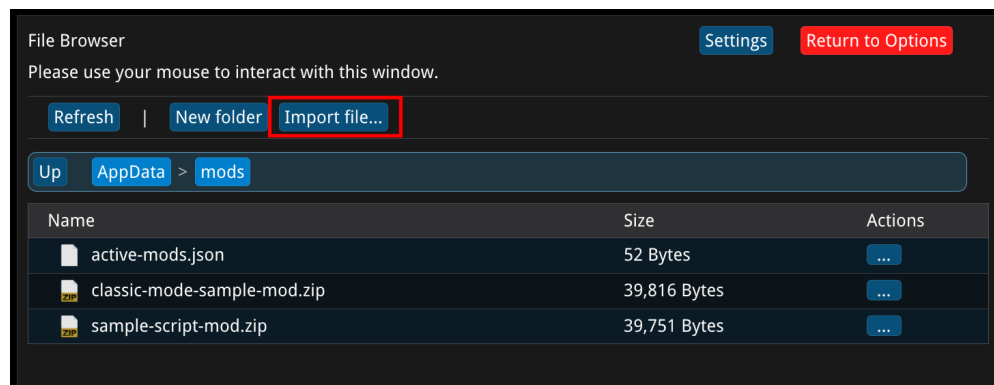
Mod Options

Many mods feature their own set of settings. You can find them in the "Mods" tab of the Options menu - it's left of the "System" tab.
Note that this tab will only appear if there's any mod options at all, and show only the options of mods that are activated in the Mods menu.

ABOUT THIS FAN GAME

As the in-game disclaimer will tell you as well:

Sonic 3 A.I.R. is not affiliated with SEGA® or Sonic Team®. They are the original developers of the Sonic 3 and Sonic & Knuckles games, which Sonic 3 A.I.R. is heavily building upon, and are holding all copyrights to these games. This includes most of the content in Sonic 3 A.I.R.

Sonic 3 A.I.R. is developed as a fan game that regards itself as a modification of the original game. There is no intent to infringe SEGA®s copyrights and trademarks.
Also no financial interests are involved in making this game. It is freeware and may not be sold.

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Sonic 3 A.I.R. was developed by **Eukaryot**.
Remastered music created by **G Spindash**.
Ported to macOS and iOS / Web by **Sappharad**.
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