

***CycloDS iEvolution Reference Manual
(for firmware v2.1)***

<http://www.cyclopsds.com>

CycloDS iEvolution is a multi functional MicroSD adapter for DSi and NDS which allows you to play games, listen to MP3s, view images, read e-books, take pictures and enjoy the vast collection of homebrew applications for DSi and NDS systems. iEvolution is the **first and only** product in the market to support operating in DSi mode, providing access to DSi exclusive hardware features such as dual cameras, faster CPU speed, additional RAM, improved WiFi support and more. DSi enhanced games are fully supported on iEvolution, including the special features associated with these titles such as camera support. Homebrew software is also able to fully take advantage of the performance gains inherent in DSi mode which results in unparalleled performance from CPU hungry software such as emulators.

iEvolution is the world's most advanced media enhancer for DSi and NDS. Boasting superior functionality, European design and quality components, iEvolution is unparalleled in its field.

The graphical user interface boasts a number of impressive features such as bookmarks, advanced skinning support, cheat codes, multiple save states, file management and much more. The user interface was designed with user friendliness in mind and can be operated exclusively with the stylus if desired. Skinning is supported which means you'll always have a fresh view of our product at your fingertips. The user interface is multi-lingual, currently supporting the following languages: English, French, German, Italian, Korean, Japanese, Spanish, Dutch, Greek, Indonesian, Malaysian, Russian, Tagalog, Latin American Spanish and Portuguese.

The unique enhanced mode offers powerful, unique features during game play which are activated through an in-game menu. These features include RealTime Save, in-game text file reader, in-game LCD brightness adjustment, SlowMotion mode and in-game reset. The cheat code engine is directly compatible with Action Replay codes and iEvolution comes bundled with cheat codes for hundreds of games. The RealTime Save feature allows you to save your progress at **any** point in the game and then resume from that point any time, allowing you to more easily master difficult parts of the game. This is similar to the concept of "saved states" found in many emulators. The in-game text file reader allows you to view FAQs and guides at any point during game play, without needing to first exit the game - the ultimate convenience.

iEvolution can run homebrew software without the need for any patching or preparation on your part. Loading is fast and trouble free, simply browse to the software you want to play and tap to execute. Thanks to our special compatibility layer, older homebrew software which is not "DSi aware" can still be used while operating in DSi mode and therefore, also enjoy the inherent performance gains thanks to the higher CPU speed.

CycloDS iEvolution Features

- The first and only device to operate in DSi mode, unlocking various DSi specific features such as dual cameras, faster CPU speed, additional RAM, improved WiFi support and more
- Advanced DSi mode compatibility layer, allowing both standard NDS titles and older "DSi unaware" homebrew software to operate in DSi mode while enjoying the inherent performance advantages
- User friendly, skinnable, feature rich user interface supporting advanced features such as bookmarks, cheat codes and file management
- 100% game compatibility, supports clean ROM's
- RealTime Save, allowing you to save and restore the state of gameplay at any time
- Stealth Mode which enables the use of anti-tamper protected games
- In-game text reader, allowing you to view FAQ's and guides at any time during gameplay
- Full NDS download play support, including problem games such as Mario Kart DS
- Wii connectivity in games such as Pokemon Diamond/Pearl is supported
- Homebrew soft reset, allowing you to reset back to the iEvolution GUI from almost any homebrew software with a simple button combination
- Battery saving function which allows you to enjoy your handheld for longer between charges
- Action Replay compatible cheat code engine, comes bundled with cheat codes for over 330 games!
- Uses MicroSD card, both FAT16 and FAT32 supported
- Supports the MicroSDHC specification, allowing for high capacity memory cards
- Save type is automatically detected, no need for a save type database
- Save directly to MicroSD rather than onboard flash
- Multi-lingual user interface
- "Enhanced Mode" which provides powerful, unique features during game play. Enhanced features are activated through an in-game menu. Enhanced mode features include:
 - RealTime Save which allows you to save and restore the state of gameplay at any time
 - In-game text reader
 - Adjust LCD brightness during game play
 - SlowMotion mode which can be used to slow down game play to make fast paced action sequences easier to master
 - Return to iEvolution Menu (aka soft reset)
- Excellent homebrew compatibility with DLDI auto-patching
- Autoboot mode which when activated will directly boot into the last ROM or homebrew application executed
- Moonshell included to provide media playing functionality, soft-reset is supported
- Gameboy Advance software support with GBA ROM auto-patching (**NDS/DSLite only**)
- PassMe function (boot from slot 2) (**NDS/DSLite only**)
- Supports rumble and memory expansions (**NDS/DSLite only**)

Initial Setup

In order to meet compliance with universal copyright laws, we have taken a completely legal approach for our iEvolution product. Competing products are distributed with content which contains illegally distributed partial ROM images (required for booting on DSi). iEvolution is distributed in a completely blank state and does not contain any illegal content.

Before you use iEvolution for the first time, a suitable "**bootstrap**" must be installed. Before this is done, the device will be in a blank state and if inserted into a NDS at this point, will not be detected. We have designed our product in such a way as the user may merge the required ROM data with the iEvolution bootstrap data in order to generate the final required bootstrap file. This bootstrap file creation only has to be completed once for normal usage, or when the user must update to a new bootstrap version (for example, if an old bootstrap gets blocked by a future DSi firmware update).

The bootstrap is made up of two parts – one part for NDS mode and one part for DSi mode. Data from two separate ROM files must be merged with the bootstrap data, one for each of the two parts. As DSi games are region locked, you must download and prepare the bootstrap corresponding to the region of your DSi. To obtain the region of your DSi, select "System Settings" from the DSi home screen. On the bottom right corner of the top screen, you will see the current firmware version followed by a single character which indicates the region of your handheld as follows:

U = USA
E = Europe
J = Japan
K = Korea

Once you have ascertained the region of your handheld, download the corresponding bootstrap updater package from the CycloDS website. The accompanying documentation will list the two required ROM files and provide directions on how to proceed.

Once the bootstrap file has been processed, install the bootstrap onto the iEvolution as per the following procedure:

1. Copy "BOOTUPDT.EVO" to the root directory of a MicroSD card
2. Ensure that iEvolution **does not** have any MicroSD inserted, and then insert the cartridge into the updater dongle
3. Insert the updater dongle into a USB port on your PC and wait for the red LED to light up
4. Once the red LED is lit up, while keeping iEvolution plugged into the PC, insert the MicroSD card containing the "BOOTUPDT.EVO" file
5. The red LED should switch off after a few seconds, which indicates that the iEvolution bootstrap update is in progress. If the LED does not switch off, or if it flashes on and off, then there is a problem. This is often simply the result of contact issues with the MicroSD card, so try again from the beginning if you get such an error
6. After a few minutes, the red LED will switch back on. This indicates that the bootstrap update has completed successfully. Your iEvolution is now ready to use.

Once the bootstrap has been installed, you must then obtain the latest iEvolution firmware. The iEvolution firmware is stored as a single file on your MicroSD card, called "boot.ievo". You must download the latest firmware update from the CycloDS website and install it onto your MicroSD as per the accompanying directions.

DSLite and DSi Operation Modes

iEvolution supports two modes of operation – DSLite mode, and the **exclusive** DSi mode. In DSLite mode iEvolution acts essentially the same as its predecessor, the CycloDS Evolution, supporting all the same features, and your handheld will be running in DSLite mode.

In DSi mode, the handheld will be running in DSi mode with additional hardware features unlocked and improved performance. In DSi mode, DSi-hybrid games are fully supported, meaning the DSi specific features they provide such as camera functionality are available. In DSi mode the underlying system operates rather differently and as such, software designed to run in DSLite mode will not work as-is. We have developed a software compatibility layer to allow DSLite games to operate under DSi mode, thus allowing such software titles to enjoy the improved system performance inherent with DSi mode. With some titles where the original game drops frames and lags, this makes a real difference.

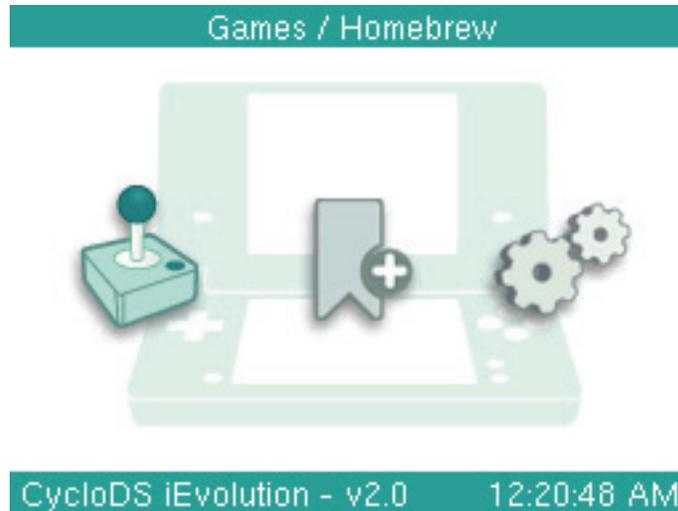
We believe that the real advantage with DSi mode comes with the potential for homebrew software, and we are excited to see what the future holds in this respect. Any homebrew software executed in DSi mode will also enjoy the inherent performance boost and additional hardware access, however once again there is the problem of the need for a compatibility layer for any software which does not explicitly support DSi mode. Recent releases of the NDS homebrew development tools already include support for DSi mode, so any recent homebrew software built with these tools will inherently support DSi mode and operate as intended on iEvolution. For older homebrew software released before the development tools were made "DSi aware", we have implemented a compatibility layer. This allows older homebrew to run as intended from DSi mode, meaning there is no need to switch back to DSLite mode to enjoy such software and thus saving a lot of time and hassle. The compatibility layer can be configured on a per file basis, however the default behavior is to auto-detect whether it is needed or not. This setting may be changed by selecting the homebrew file in question and selecting "Settings" from the context menu in the user interface.

iEvolution can only operate in one mode, DSLite or DSi, at any one time. In order to change modes, navigate to the Settings screen in the GUI and select the second option from the top. You will then be prompted to reset the handheld, at which point iEvolution will have switched modes. Please note that it is only possible to switch to DSi mode if your handheld's region matches the region of the bootstrap currently installed on your iEvolution.

Main Menu

Upon launching the iEvolution, you will be presented with three icons. On the left is the **Games / Homebrew** icon which is used to browse and load commercial and homebrew ROMS stored on the MicroSD card. In the middle is the **Bookmarks / Media** icon. If you have one or more items bookmarked and the bookmark display mode is set to "list" , then this icon will

take you to the bookmarks screen. Otherwise this icon will launch Moonshell media playing software (see below). On the right is the **Settings / Misc** icon which is used to configure various aspects of iEvolution's operation.



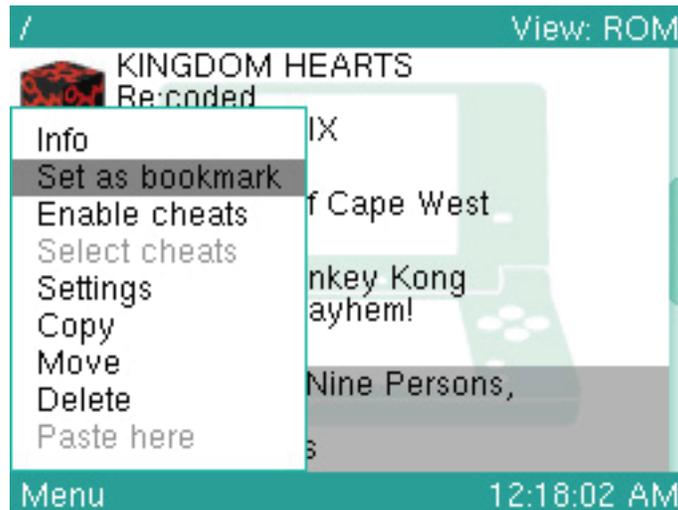
Games / Homebrew

From the main menu select **Games / Homebrew**, which will take you to the game list. Use the NDS stylus to scroll downwards or upwards to the desired storage location and double tap to launch the ROM, it's that simple. Should you not wish to use the stylus for navigation, you may also use the D-pad for scrolling and A button to enter a folder or execute a file. The B button will take you to the previous directory, or back to the main menu if you are browsing from the root directory. The L shoulder button acts as page down and R shoulder button page up, for page by page navigation. The X button toggles between the three file view modes: **ROM view** where the game name stored inside the ROM file is displayed, **file view** where the file name of the ROM is displayed and **last played** view which sorts the list according to which games have been played most recently. You can select to display icons either in large or small size, which affect the number of items shown on the screen. This can be configured with the **Icon Size** option in the Settings screen. In the screenshot below, the large sized icons are displayed.



Context Menu

The context menu can be accessed either from the game list or bookmarks list (see below) and facilitates various operations on the currently selected item. To open the context menu, select an item and then either tap **Menu** on the bottom left of the screen or press the **Y** button.



From here you can perform various operations on the selected item, including:

- **Info** - displays information relating to the selected item
- **Set / Remove bookmark** - sets or removes the selected item as a bookmark
- **Enable / disable cheats** - toggles cheat codes on or off
- **Select cheats** - if cheat codes are enabled for the selected item, this will take you to the cheat code selection screen
- **Settings** - manage settings relating to the selected item. For commercial ROM files this allows you to configure the save slots, manage the RTS file etc. For homebrew software, this allows you to configure the DSi homebrew compatibility layer settings
- **Copy** - selects the current item as the source for a file copy operation
- **Move** - selects the current item as the source for a file move operation
- **Paste here** - copies or moves a previously selected item to the current folder
- **Delete** - displays a prompt to delete the selected item

Please note that the available operations depend on the selected item - some operations may be grayed out.

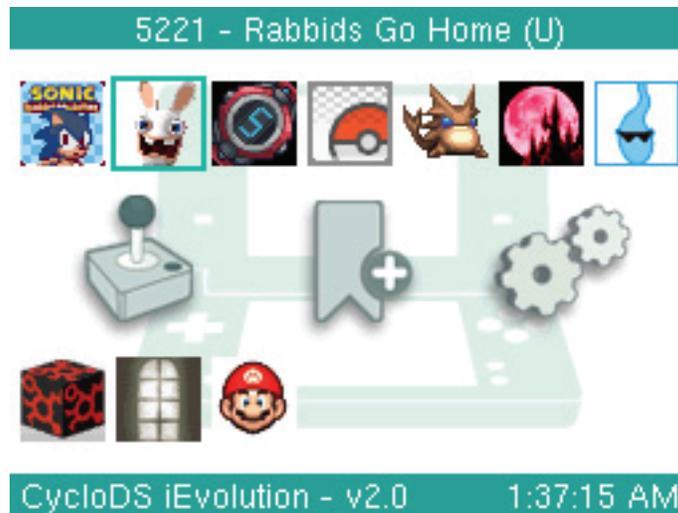
Bookmarks

Items such as ROMS, homebrew, folders and text files may be set as bookmarks for easier access. To set a bookmark, select the desired item in the game list and then select **Set as bookmark** from the context menu. Bookmarks can be displayed in one of two modes, configurable from the Settings screen.



List mode - in this mode the middle icon on the main menu becomes the bookmark icon, which when selected will take you to the bookmarks list. This functions the same way as the game list as explained above, but rather than listing the

contents of your MicroSD card, your bookmarks are listed as shown above. Please note that in the above screenshot the **Icon Size** is set to small, in order to give you an idea of how this looks.

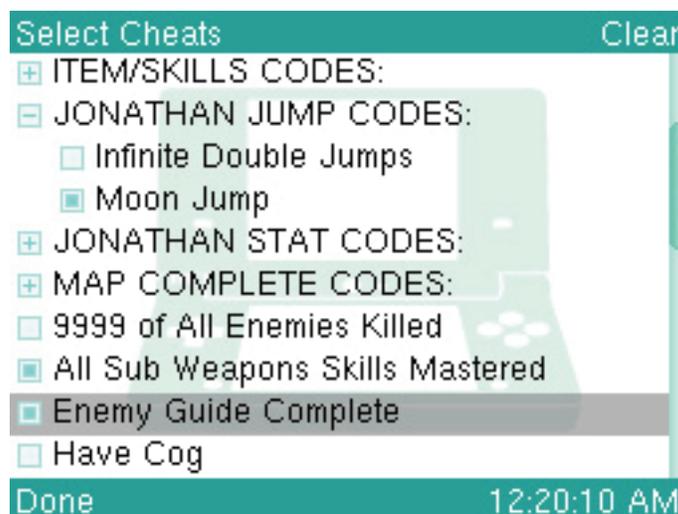


Main menu mode - in this mode each bookmark is displayed as a square icon above and below the three main icons on the main menu, as shown above.

Cheat Codes

iEvolution contains an Action Replay compatible cheat code engine, giving you access to game enhancements such as infinite lives, infinite health, all levels unlocked and much more - the possibilities are endless! iEvolution comes with a bundled cheat database containing codes for over 330 different games which means you can take advantage of the cheat code functionality right away. A cheat code editor is also available, which allows you to enjoy user created cheat codes. For more information regarding the cheat code editor, please refer to the documentation supplied with the **Evolution Tools** package.

Cheat codes are disabled by default and must be enabled on a per game basis from the context menu before they can be used. First select a game and then **Enable cheats** from the context menu. If cheats were found in the cheat code database for the selected game, you will then be taken to the cheat code selection screen where you may toggle individual cheat codes on or off. If cheats have already been activated for the selected game, then choose **Select cheats** from the context menu to access the cheat code selection screen.



As with the game list, the cheat code selection screen may be navigated using either the stylus or buttons. Use the D-pad for scrolling, the A button to toggle a code on/off or open/close a folder and the X button to clear all selected codes. When you are done press the **B** or **START** button to save your selected codes and return to the game list.

As mentioned above, it is possible to enter your own cheat codes to use with iEvolution. These can be either codes that you've created yourself, or codes available on the internet. This means that you can always keep your cheat database up-

to-date and do not need to rely on the cheat database bundled with each iEvolution upgrade. Further information is available in the **Evolution Tools** package, available from the official CycloDS website.

RealTime Save

RealTime Save is a feature that allows you to suspend and resume game play at any time. This can be useful if you wish to take a break from your NDS and are not anywhere near a save point in your game, or if you wish to make the game easier by loading an old state of game play when you make an error.

Before you can use the RealTime Save feature with each individual game, a RTS file must be created. These files are not created automatically due to their large size of around 4.7mb – if one was created for each game you used, your MicroSD may run out of space! To create a RTS file for a particular game, select the game and then choose **Settings** from the context menu. From here you can select **Create RTS** to create the RTS file for this game. At this time, only a single RTS file may be created per game.

If a RTS file has previously been created for the game currently being played, the menu items relating to RealTime Save in the ingame menu will be available. Usage is quite self-explanatory - select "RealTime Save" to save the current state of the game and then "RealTime Load" to load that state. Please note that by default, RTS is disabled and must be enabled from the settings menu.

Please note: At the current time, RealTime Save is not supported while iEvolution is running in DSi mode.

Savegame Function

iEvolution allows you to save your NDS game states as if it were a regular game cartridge. The save game files are stored in a special format on your Micro SD card. The save game file is the ROM filename + ".sav" extension, so for example with "Super Mario Brothers.nds" the save would be stored as "Super Mario Brothers.sav". You may navigate the save game files with your PC and back them up if you please.

The location where your save game files are stored depends on which save mode you have selected: Normal or Alternative. If **Normal** mode is selected, the saved game data for each game will be stored in the same directory as the ROM file. This means you will have .NDS, .SAV (and .RTS if RealTime Save is in use) for each game stored in the same location. If **Alternative** mode is selected, the saved game data for each game will be stored in a single directory separate from your ROM files rather than cluttered in the same location. This facilitates easier backups of your save game data, as you can simply backup a single directory rather than being required to filter out certain files. By default, the directory to hold all your saves when using Alternative mode is "SAVES" in the root of your MicroSD card, however this can be configured through the XML configuration file (\CycloDS\config.xml).

There is no recommended mode to use; it really depends on your own personal preference. You may toggle between Normal and Alternative save modes from the settings menu.

In-game Text Reader

The in-game text reader allows you to read text files such as game FAQ's and guides at any time during gameplay, through the in-game menu. For each game you wish to use this feature with, you must setup a text file as follows:

1. Rename the text file so that it corresponds to the ROM you wish to use it with, for example Mario.nds would require the text file to be named Mario.txt
2. Place the text file either in the same directory as the ROM file, or in a directory called "TEXT" in the root of your MicroSD card

Once the text file is in place, load the game as you normally would. To start viewing the text file, enter the in-game menu and select "Text Reader". Use the D-PAD to scroll one line/character at a time and the L/R shoulder buttons to scroll a page at a time. Press B to return to the game.

It is also possible to view text files from the iEvolution GUI screen while not playing a game.

Enhanced Mode Operation

Enhanced mode offers additional features during game play, which are not available with standard game cards. If Enhanced mode has been enabled, during game play press A + B + X + Y + L + R simultaneously to bring up the in-game

menu (this button combination can be customized from the Settings screen). From here you can access the enhanced features:

- **Return to Game:** Selecting this will simply exit the in-game menu and return to the game.
- **Text Reader:** If you have setup a text file corresponding to the game being played, this will enter the in-game text reader.
- **SlowMotion:** When SlowMotion is enabled the same runs at a fraction of the normal speed. This makes it easier to master fast paced action sequences. There are 3 selectable speed levels for SlowMotion which are selected from within the in-game menu.
- **LCD Brightness:** If you are using a NDS Lite this allows you to adjust the brightness of the LCD during game play. This is currently not supported on DSi handhelds.
- **Cheat Codes:** If you are playing a game with cheat codes enabled, you can temporarily disable the cheat codes in-game.
- **RealTime Save:** If an RTS file has been created for the game being played, this option will save the current state of game play.
- **RealTime Load:** Loads a game play state saved previously.
- **Return to Main Menu:** Selecting this will exit the game currently being played and return to the iEvolution menu (this feature is otherwise known as "in-game reset"). Please be careful not to do this while the game is saving!
- **Current Time:** The current time is displayed in the bottom left hand corner of the enhanced mode screen

Homebrew Software

iEvolution is capable of running homebrew applications without any preparation on the users' part. Our dynamic auto-patch feature will enable homebrew software to access the MicroSD card without any fuss whatsoever. The conventional method of manually patching DLDI drivers into homebrew software is not required for our device.

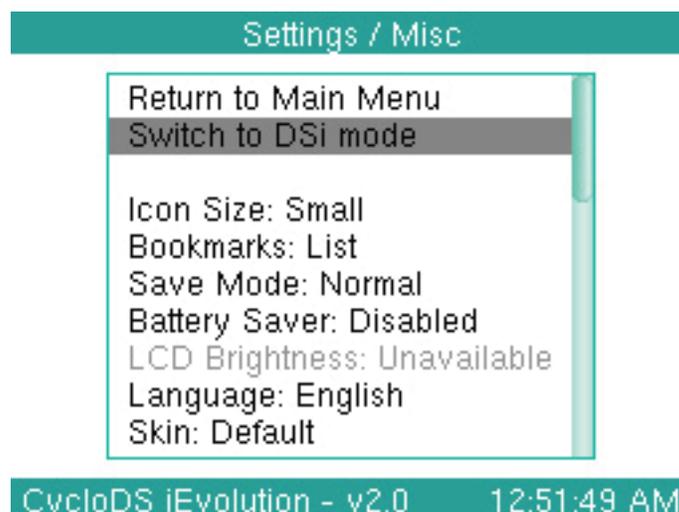
As explained above, older "DSi unaware" homebrew software will not run as-is when operating in DSi mode. To remedy this, we have implemented a compatibility layer. The compatibility layer can be configured on a per-game basis through the context menu. The default behavior is to auto-detect whether it is needed or not, however if in the unlikely event this auto-detection fails then you may need to force the compatibility layer enabled or disabled. Of course, none of this is a consideration if iEvolution is operating in DSLite mode, in which case all homebrew will function as intended without the need to worry about compatibility layers etc.

If you wish to access a slot 2 device from homebrew software, then it is necessary to disable DLDI auto-patching. To disable DLDI auto-patching, hold SELECT while executing homebrew software.

Homebrew soft reset is supported, allowing you to reset back to the iEvolution GUI from almost any homebrew software by simply pressing A + B + X + Y + L + R simultaneously. Please note that at the current time, homebrew soft reset is not supported while iEvolution is running in DSi mode.

Settings / Miscellaneous

The settings menu allows you to configure various aspects of iEvolution, the most important of which is toggling the boot mode between DSLite and DSi modes.



Other configuration options include game list icon size, bookmark display mode, LCD brightness adjustment (this only works on DSLite or **DSi while in DSi mode**), skin selection, language selection and much more.

Firmware Update

Should you wish to upgrade your iEvolution's firmware, simply download the latest build from the official website, decompress it and then transfer the "boot.ievo" file to the root directory of your MicroSD card. Make sure you overwrite any previous file.

Game Sharing

Original NDS cartridges may offer a game sharing function, where only one physical game cartridge is required for two system owners to play the same game. iEvolution offers exactly the same functionality and game sharing is enabled in exactly the same manner as a regular game cart.

Some games offer a feature where they can connect with a Nintendo Wii console (currently Pokemon Diamond/Pearl support this feature). Naturally, iEvolution allows this feature to function in exactly the same manner as a regular game cart.

Skinning

The iEvolution GUI is fully skinnable, and skins are easy enough to make so that anyone can do it! To use one or more skins, simply transfer the required skinning files to the folder **\CycloDS\skins** on your MicroSD card and then select the desired skin from the settings menu. Please note that each skin should have its own folder within the \CycloDS\skins folder – so for example if your want to use a skin called "Mario", create a directory called "\CycloDS\skins\Mario" on your MicroSD card and then copy the skinning files into this directory. Skinning files consist of several .BMP files and a single .XML file – this means that you need to extract these files first, do not just copy the .ZIP/.RAR file onto the MicroSD card! So for example, for the Mario skin you might have a file structure similar to this:

```
\CycloDS\skins\Mario\skin.xml  
\CycloDS\skins\Mario\top.bmp  
\CycloDS\skins\Mario\bottom.bmp  
\CycloDS\skins\Mario\scrollbar.bmp  
\CycloDS\skins\Mario\cheat-icons.bmp  
\CycloDS\skins\Mario\menu-icons.bmp
```

If you would like to create your own skins, please see the official Team Cyclops forum for further information.

There is a random skin selection feature, where each time you boot iEvolution a different skin will be selected from your MicroSD card. To use this feature, set "Skin" to "Random" in the settings menu.

Supplementary Features

Battery Saver Mode makes iEvolution operate in such a way that power consumption is reduced, allowing you to enjoy your NDS for longer between charges. Please note however, that this may cause compatibility issues with a few games and so is disabled by default. You can toggle battery saver mode from the settings menu.

The **autoboot** feature will load the last executed ROM or homebrew application by holding the L and R shoulder buttons while launching the iEvolution application.

The **auto-execute** feature allows you to have a NDS file (game or homebrew) of your choice loaded by default each time you boot iEvolution. This is achieved by placing an executable named "autoload.nds" in the root directory of your MicroSD. If you wish to cancel loading this file, hold down the X button as iEvolution is booting and you will instead be taken to the main menu.

To keep the main menu file listing tidy, it's possible to hide folders which you do not want to appear in the list. To do this, simply set the folder attributes to hidden with your operating system (to do this with Windows, right click on the folder you wish to hide, click "Properties" and make sure "Hidden" is checked).

Media

Moonshell is used as the default media player for iEvolution. Before it can be utilized, you must download the Moonshell application from the official CycloDS website and install it onto your MicroSD card as per the accompanying directions. How Moonshell is launched depends on how you have configured your bookmarks. If you have selected Main menu bookmark display mode, or if you have no bookmarks set, then the middle icon in the main menu will act as the Media icon and will launch Moonshell. If on the other hand you have selected the List bookmark display mode then you will find Moonshell listed as the first entry in your bookmark list.

Additional Information

For more information regarding **CycloDS iEvolution** please see the official website or discussion forums:

Website: <http://www.cyclopsds.com>

Forums: <http://www.teamcyclops.com/forum>