



Flying Whale

xARM: Aspect and Resolution Master

for Unity®

User Guide



Aspect and Resolution Master

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Although all information were compiled with great care accuracy of information can not been guaranteed.

xARM can not simulate every aspect of a device or its display, therefore it can not fully replace a test on the physical device.

The statistics (Percent and Positioning) are related to Resolution and are based on 'Unity Hardware Statistics 2014-03' (<http://stats.unity3d.com>). Most other device information are based on <http://www.wikipedia.org>.

xARM: Aspect and Resolution Master requires one license per seat.

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xARM at a Glance



Aspect and Resolution Master

Thanks for purchasing xARM and thereby feeding an indie developer!

I'd highly appreciated if you support xARM with a Review in the Unity Asset Store®:
<https://www.assetstore.unity3d.com/#/content/10563>

Overview



With „**xARM: Aspect and Resolution Master**“ you've got the powerful and easy-to-use Unity® Editor Extension that helps you to beat display fragmentation.

It contains the tools „**xARM Preview**“ and „**xARM Gallery**“ to give you a real preview of your game. With these tools you can preview your game at physical size, pixel perfect or scaled and also compare multiple resolutions at the same time. All without building to device. It's also possible to export images of your game.

All relevant (and semi-relevant) **iOS®**, **Android™**, **Windows Phone® 8**, **Windows® Runtime (WinRT)** and **Standalone** devices are covered by the included resolutions and display diagonals („ScreenCaps“). Every ScreenCap comes with additional information (popularity, etc.) to help you to get an overview and focus on the important ones.

xARM supports all other Unity Editor Extensions (e.g. GUI, 2D, etc.).

Contact

If you have any problems, questions, feedback or feature requests please contact me.

Email:

support@flyingwhale.de

Unity® Forum:

<http://forum.unity3d.com/threads/xarm-aspect-and-resolution-master-released.196174/>

Stay up to date

Twitter (@ThavronFW):

<https://twitter.com/ThavronFW>

YouTube:

<https://www.youtube.com/channel/UC2CU8aCaWcIJ5C6dOQFzdVg>

All assets by Flying Whale:

<https://www.assetstore.unity3d.com/#/publisher/4046>

See chapter „Support & Contribution“ for a complete list of contact details and links.

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Getting Started



Learn all the basics on how to setup and use „xARM: Aspect and Resolution Master“.
You'll also get a basic overview of all xARM windows.

Import

Follow these steps to import xARM after purchasing it:

1. Open „Asset Store“ window of Unity
2. Login with your Unity Asset Store® account
3. Open „Download Manager“
4. Find the xARM entry under Packages
5. Click on „Download“ if the package wasn't downloaded yet
6. Click on „Import“ and ensure everything is selected
7. Now there is a new folder named „xARM“ in your Project

After import all xARM windows can be found in Unity's menu bar under „Window/xARM“. Reopen Unity if that's not the case.

Note: It is not recommended to move the „xARM“ folder to another location. If you want to move it nevertheless ensure it's NOT located under the folder „Editor“.

Basic Setup

To get started you only need to select the ScreenCaps (resolutions and display diagonals) you'd like to preview and to specify the DPI of your Editor to enable all features.

ScreenCap Selection

In xARM a ScreenCap is not only a screenshot, it's a combination of properties like resolution, display diagonal, etc. Each ScreenCap covers one or more device screens.

ScreenCaps

Filter
 Landscape Portrait Navigation Bar (Android)

Select the Aspect Ratios and Resolutions you are targeting. Sort order does also affect xARM Preview and Gallery.

▼ iOS

Active	OS	Name	Diagonal	DPI Group	DPI	Aspect	Resolution (px)	Resolution	Format	Stats (pos) ▲	Stats (%)	Sample devices
<input type="checkbox"/>	iOS	iPhone	4"	@2x	326	16:9~	1136x640px	WDVGA	Landscape	1.	29.5%	iPhone 5, 5C, 5S & iPod touch 5.
<input type="checkbox"/>	iOS	iPhone	3.5"	@2x	326	3:2	960x640px	DVGA	Landscape	2.	28.3%	iPhone 4, 4S & iPod touch 4.
<input type="checkbox"/>	iOS	iPad mini	7.9"	@1x	163	4:3	1024x768px	XGA	Landscape	3.	23.6%	iPad mini
<input type="checkbox"/>	iOS	iPad	9.7"	@1x	132	4:3	1024x768px	XGA	Landscape	3.	23.6%	iPad 1., 2.
<input type="checkbox"/>	iOS	iPad mini	7.9"	@2x	326	4:3	2048x1536px	QXGA	Landscape	4.	16.1%	iPad mini 2, mini 3
<input type="checkbox"/>	iOS	iPad	9.7"	@2x	264	4:3	2048x1536px	QXGA	Landscape	4.	16.1%	iPad 3., 4., Air, Air 2
<input type="checkbox"/>	iOS	iPhone	3.5"	@1x	163	3:2	480x320px	HVGA	Landscape	5.	1.3%	iPhone 1, 3G, 3GS & iPod touch 1., 2., 3.
<input type="checkbox"/>	iOS	iPhone	4.7"	@2x	326	16:9~	1334x750px	custom	Landscape	n/a	n/a	iPhone 6
<input type="checkbox"/>	iOS	iPhone	5.5"	@2.6x	401	16:9	1920x1080px	FHD	Landscape	n/a	n/a	iPhone 6 Plus (Unity uses native resolution)
<input type="checkbox"/>	iOS	iPhone	5.5"	@3x	461	16:9	2208x1242px	custom	Landscape	n/a	n/a	Probable future iPhone resolution

► Android
► Windows Phone 8
► WinRT
► Standalone
► Custom

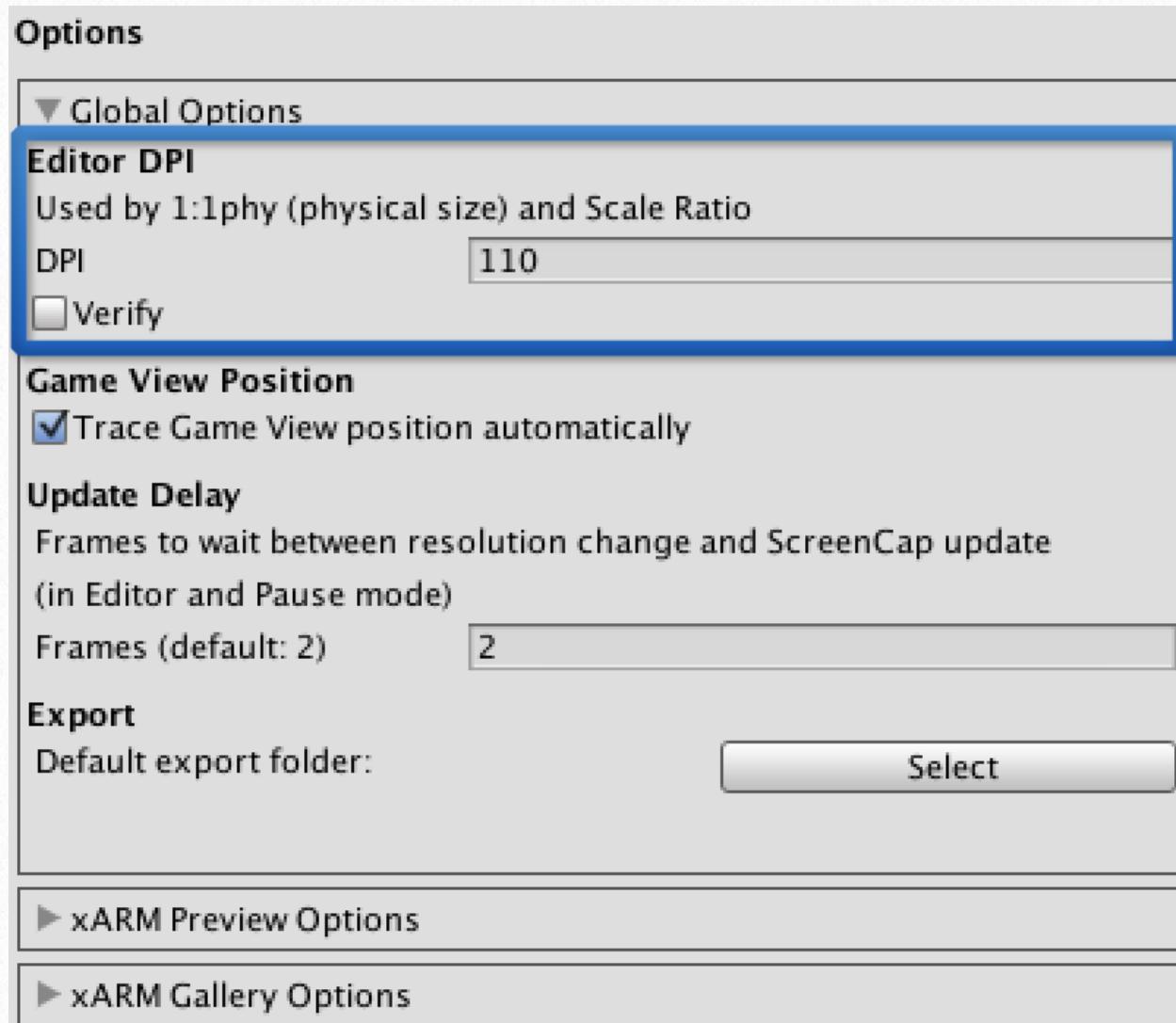
1. In xARM Options (Unity's menu bar: Window/xARM) goto to section „ScreenCaps“.
2. Use the „Filter“ checkboxes to display only ScreenCaps you'd like to preview.
3. Open the subcategories and activate the ScreenCaps of iOS, Android, Windows Phone 8, WinRT and Standalone you'd like to preview.

Tips:

- You can sort the list by clicking on the column headers. The sorting does also effect all other xARM windows.
- Start with some of the most popular ones (see column Stats) and grow from there.
- Cover both ends of the resolution and diagonal spectrum you're targeting.

Specify Editor DPI

Set Editor DPI to enable xARM Preview's 1:1phy mode.



1. In xARM Options (Unity's menu bar: Window/xARM) goto section „Options“.
2. Open subcategory „Global Options“.
3. Under „Editor DPI“ specify the DPI of the monitor you want to use to display the xARM windows. You can search the web or try different values (usually 50 up to 200).

Tip: To verify the value check „Verify“ and measure the displayed white box. It should be 1x1in or 2.5x2.5cm.

Notes:

- xARM uses the Editor DPI value to proper size the ScreenCaps in xARM Preview's 1:1phy mode.
- If you are using a Unity version that's Editor doesn't support Retina® resolutions, you need to divide the monitor's DPI by 2.

Note: A detailed description of all options can be found in chapter 5 „xARM Options“.

Basic Use

After you've imported xARM and done the basic setup you can now use it.

1. Open xARM Preview (Unity's menu bar: Window/xARM)
2. xARM informs you that it'll undock the Game View. Acknowledge by clicking „OK“.
Note: Undocking the Game View can effect your Editor layout. You may want to save it before undocking.
3. Position the xARM Preview and Game View window as you like, but keep the Game View undocked.
Tip: Dock xARM Preview at Game View's old spot and use it as a replacement. You can keep the Game View in the background or offscreen and focus it at any time with CTRL/CMD+2.
4. xARM Preview is now ready. You can manually update xARM Preview by clicking on „1x“ or activate auto update in Edit mode by toggling „Edit“ in its toolbar.
5. Opening xARM Gallery is basically the same process as described in point 1 to 4.

Notes:

- Please keep the Game View undocked while working with xARM. If the Game View is docked xARM will undock it while updating a ScreenCap.
- xARM adds a xARMPProxy GameObject to the Hierarchy (see chapter „FAQ“ for details).

Basic Overview

Here you'll get a basic overview of the xARM windows.

xARM Preview

Use xARM Preview to focus on one resolution as you've done before with the Game View.
The Game View is only needed for the interactive part (playing).

You can quickly switch between ScreenCaps, preview at 1:1px (pixel perfect), 1:1phy (physical size) or in scaled mode.

You can manually update the displayed ScreenCap or activate auto update in Edit, Pause and Play mode.

It's also possible to export the selected or all ScreenCaps as PNG files.

Note: See chapter 3 „xARM Preview“ for a detailed description.

xARM Gallery

Use xARM Gallery to display and compare several ScreenCaps at the same time.

All ScreenCaps are displayed with the Scale Ratio (white box).

You can manually update all ScreenCaps or activate auto update in Edit and Pause mode.

It's also possible to export all ScreenCaps as PNG files.

Note: See chapter 4 „xARM Gallery“ for a detailed description.

xARM Options

Use xARM Options to setup xARM and select the ScreenCaps you'd like to preview.

Note: See chapter 5 „xARM Options“ for a description of all options

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xARM Preview



Use xARM Preview to focus on one ScreenCap as you've done before with the Game View. From now on the Game View is only needed for the interactive part (playing). With xARM Preview you can preview at 1:1px (pixel perfect) to check for blur, 1:1phy (physical size) to verify button sizes or in scaled mode to preview ultra high resolutions.

xARM Preview's Toolbar

xARM Preview's toolbar consists of four sections:



1. ScreenCap List

The list contains all ScreenCaps you've activated in xARM Options.

Just pick the one you'd like to preview (CTRL/CMD+ALT+,.).

By default the Game View is automatically resized to match the selected resolution.

Tip: ScreenCap order can be changed by sorting in xARM Options.

2. Update

Here you can control when xARM Preview updates the ScreenCap.

You've four update options:

1. 1x

Use the „1x“ button to do a manual update whenever you like. Manual update does work in all modes.

2. Edit

Activate „Edit“ mode update to automatically update whenever the scene has changed. Does not update in Pause and Play mode.

3. Pause

Activate „Pause“ mode update to automatically update whenever you pause or step the game. Does not update in Edit and Play mode.

Tip: You can use Unity's hotkeys to pause (CTRL/CMD+SHIFT+P) and step (CTRL/CMD+ALT+P) the game and instantly update the ScreenCap.

4. Play

Activate „Play“ mode update to automatically update while playing the game.

It gives a Live Preview. Does not update in Edit and Pause mode.

Note: If the Game View is docked xARM will undock it while updating a ScreenCap.

3. Preview Mode

Three preview modes are available:

1. Scaled

If „1:1px“ and „1:1phy“ are not activated the ScreenCap is displayed in Scaled mode to fit in the xARM Preview window. You can even preview ultra high resolutions in this mode without messing up your Editor layout.

2. 1:1px (pixel perfect)

Activate „1:1px“ mode to get a pixel perfect preview.

Every pixel of the ScreenCap is displayed as one pixel on your screen.

Use this mode to check for scaling issues, blur, etc.

3. 1:1phy (physical size)

Activate „1:1phy“ to get a physical size (device dimensions) preview.

The ScreenCap is displayed at the same size as your game on the physical device.

Use this mode to verify e.g. button sizes, readability and usability.

Note: Editor DPI has to be set in xARM Options to use this feature.

4. Tools

The Tools list contains the following entries:

1. Export ScreenCap as PNG

Exports the selected ScreenCap as PNG file (CTRL/CMD+ALT+E).

Target folder and file name can be specified.

2. Export all ScreenCaps as PNGs

Exports all active ScreenCaps as PNG files (CTRL/CMD+SHIFT+ALT+E).

Target folder can be specified. File names are set automatically.

3. Options

Opens xARM Options window.

4. (Un)Hide Game View

Unhide or hide the Game View (CTRL/CMD+ALT+G).

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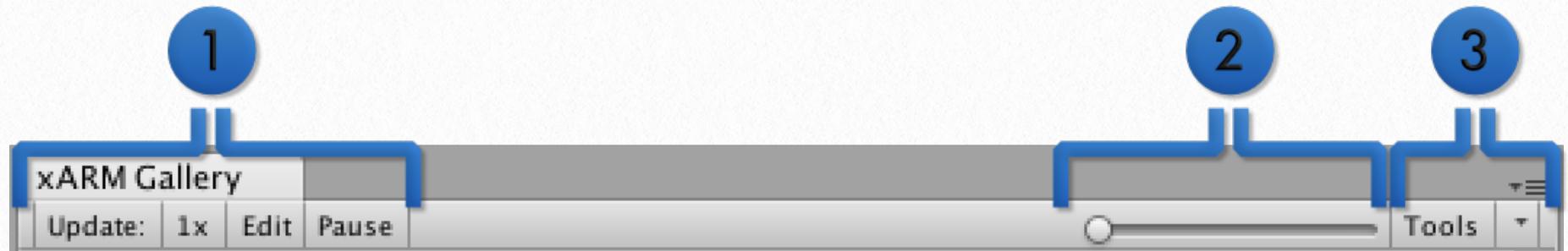
xARM Gallery



Use xARM Gallery to display and compare several ScreenCaps at the same time.
 All ScreenCaps are displayed with the Scale Ratio (white box) to give you an idea of the physical size.
 With xARM Gallery you can easily check a lot of different ScreenCaps at the same time for resolution dependent issues and instantly see results of changes.

xARM Gallery's Toolbar

xARM Gallery's toolbar consists of three sections:



1. Update

Here you can control when xARM Gallery updates all active ScreenCaps.

You've three update options:

1. 1x

Use the „1x“ button to do a manual update whenever you like. Manual update does work in all modes (including Play mode).

2. Edit

Activate „Edit“ mode update to automatically update whenever the scene has changed. Does not update in Pause and Play mode.

3. Pause

Activate „Pause“ mode update to automatically update whenever you pause or step the game. Does not update in Edit and Play mode.

Tip: You can use Unity's hotkeys to pause (CTRL/CMD+SHIFT+P) and step (CTRL/CMD+ALT+P) the game and instantly update all ScreenCaps.

Notes:

- If the Game View is docked xARM will undock it while updating a ScreenCap.
- For each ScreenCap xARM resizes the Game View for a few frames so that everything can adapt to the new resolution. Because of that the ScreenCaps in xARM Gallery do not display the same frame.
If needed you can use xARM's Delegates (see chapter „Custom Code“) to freeze your game while updating the ScreenCaps to capture the exact same state in all ScreenCaps.

2. **ScreenCaps per row slider**

Control how many ScreenCaps are displayed per row.

By default all ScreenCaps are automatically scaled to fill available space.

Note: You can specify a fixed size in xARM Options.

3. **Tools**

The Tools list contains the following entries:

1. Export all ScreenCaps as PNGs

Exports all active ScreenCaps as PNG files (CTRL/CMD+SHIFT+ALT+E).

Target folder can be specified. File names are set automatically.

2. Options

Opens xARM Options window.

3. (Un)Hide Game View

Unhide or hide the Game View (CTRL/CMD+ALT+G).

xARM Gallery's Content

xARM Gallery displays all active ScreenCaps at the same time.

If you click on one of the ScreenCaps it's automatically selected in xARM Preview.

Tip: ScreenCap order can be changed by sorting in xARM Options.

All active ScreenCaps displayed in xARM Gallery are labeled as follows:



1. ScreenCap Info

The ScreenCap info is composed as follows:

1. Name

Device name or device's platform, if device name is not definite.

2. Diagonal

Device's display diagonal.

3. DPI Group

Platform specific DPI group, if applicable.

4. Aspect

Aspect ratio.

Note: If the aspect has a trailing tilde (~) it's not exactly but close to the stated aspect.

5. Resolution (px)

Screen resolution in pixels.

6. Resolution

Screen resolution as graphics display resolution plus an icon to indicate screen orientation.

2. Scale Ratio

The Scale Ratio (white or green square) is a reference size that gives you an idea of the actual physical size of the ScreenCap.

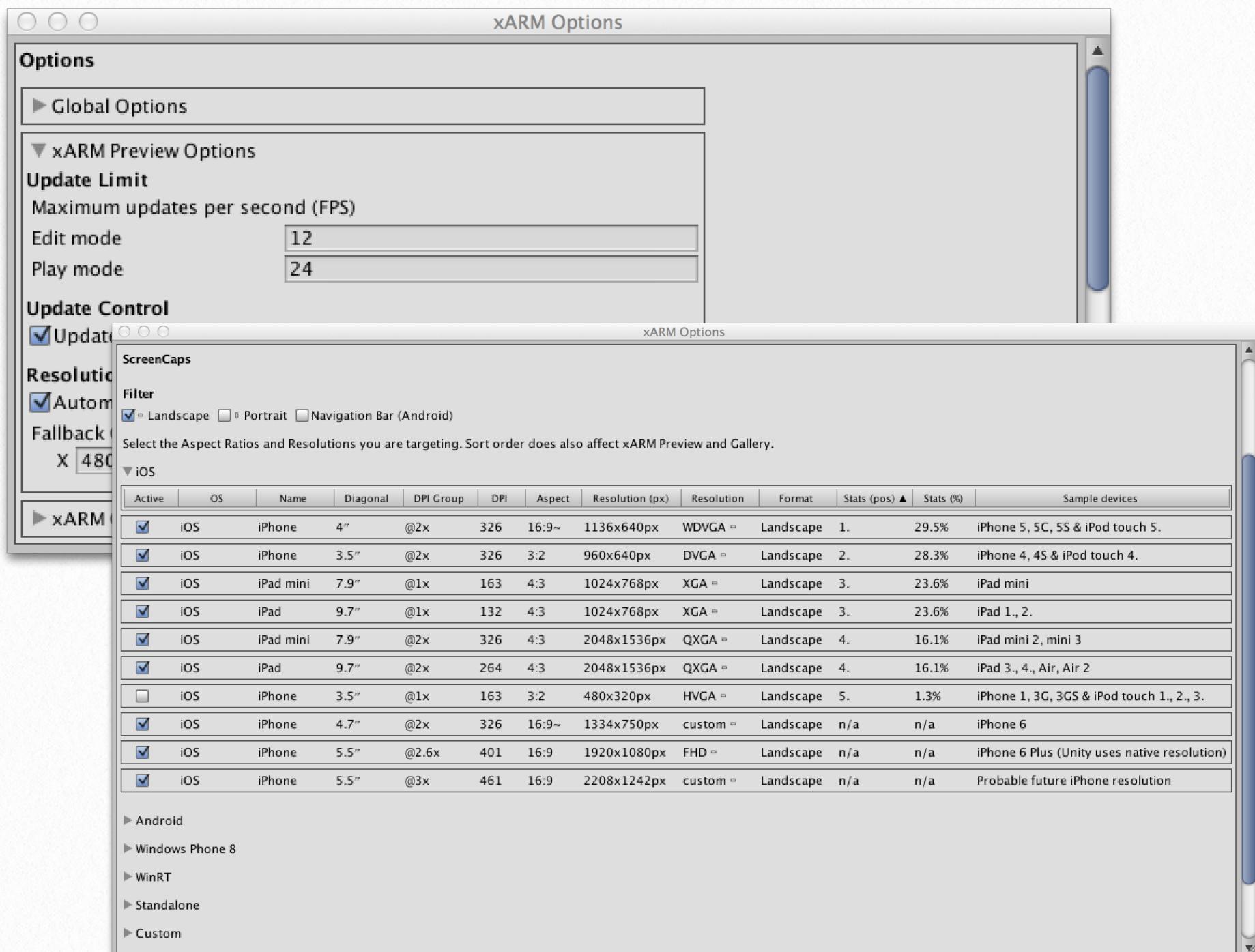
The ScreenCap that's selected in xARM Preview has a green Scale Ratio square.

By default Scale Ratio's size is set to the recommended touch target size ('fingerprint'). Everything smaller than the Scale Ratio is considered as not easily touchable. You can use the Scale Ratio to check e.g. button sizes.

Tip: You can change Scale Ratio's size in xARM Options.

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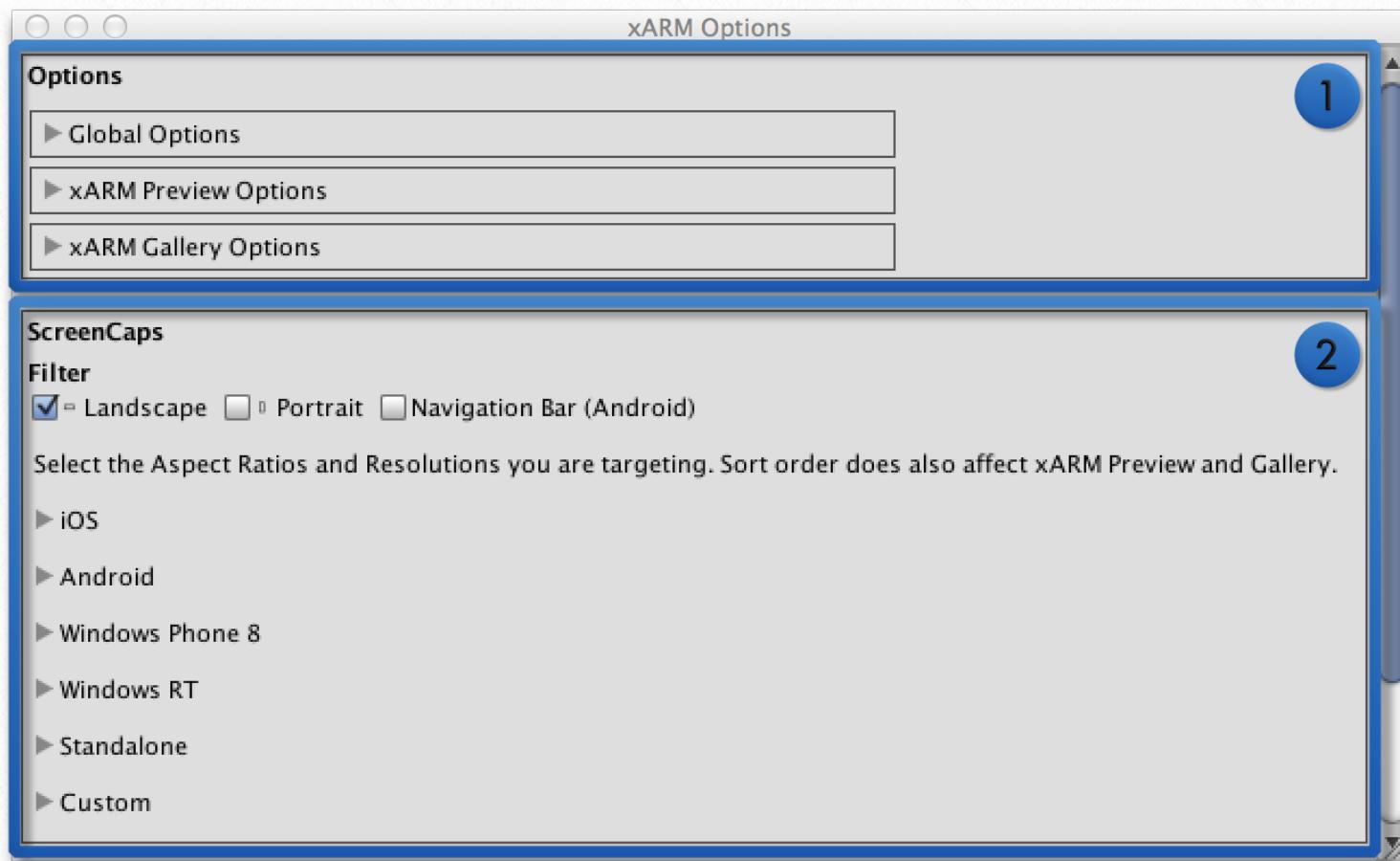
xARM Options



Use xARM Options to select the ScreenCaps you'd like to preview and to configure xARM to fit your needs.

xARM Options Overview

xARM Options consists of two main sections both with some subsections:



1. Options

In the Options section you can configure xARM.

It's subdivided into Global, xARM Preview and xARM Gallery specific sections.

2. ScreenCaps

In the ScreenCaps section you can activate the ScreenCaps you'll like to preview.

Note: All Settings are saved under „ProjectSettings/xARMSettings.xml“.

Options

The Options section is subdivided into three subsections:

„Global Options“, „xARM Preview Options“ and „xARMGallery Options“

1. Global Options

The Global Options subsection holds all xARM wide settings.

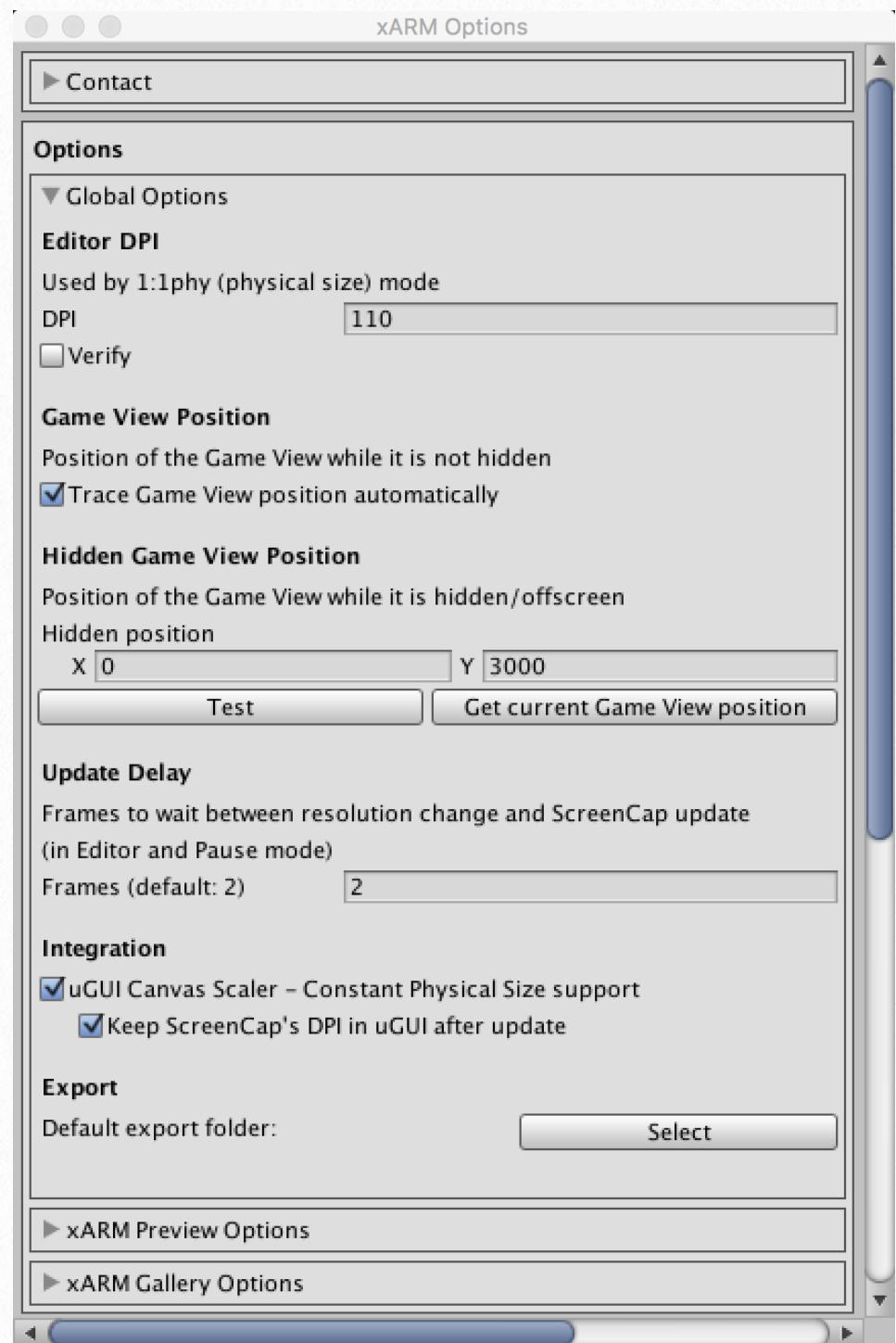
1. Editor DPI

Specify the pixel density (DPI) of the monitor you're using to display the Unity Editor.

The Editor DPI setting is used to display the ScreenCap at physical size (xARM Preview's 1:1phy mode).

Tips:

- You can check the „Verify“ checkbox and measure the white box to verify if the value is correct. It should be 1x1in or 2.5x.25cm.
- Search the web for your monitor's DPI or try some values (normally something between 50 and 200).
- If you are using a Unity version whose Editor doesn't support Retina® resolutions, you need to divide the monitor's DPI by 2.



2. Game View Position

If „Trace Game View position automatically“ is activated you can move the Game View as normal and xARM resizes it on that position.

If deactivated you can specify a fixed position and xARM will move the Game View to that position (on ScreenCap update). Use the button „Get current Game View position“ to store the current as the fixed position.

Note: The top left corner of the Game View is used to position it.

3. Hidden Game View Position

Specify an offscreen position for the Game View. The „(Un)Hide Game View“ feature (CTRL/CMD+ALT+G) switches between this and the onscreen (see above) position.

4. Update Delay

Specify how many frames xARM should wait between resolution change and ScreenCap update (in Edit and Pause mode).

In most cases two frames should be sufficient.

Note: Some image effects, other extensions, etc. need some frames to adapt to new resolutions. In Edit and Pause mode this can cause weird results. Try higher Update Delay values if that's the case.

5. Integration

Only applicable to „uGUI Canvas Scaler“ set to „Constant Physical Size“

If „uGUI Canvas Scaler - Constant Physical Size support“ is activated xARM passes the ScreenCap's DPI (overwriting the Editor/Monitor DPI) into uGUI to give correct results.

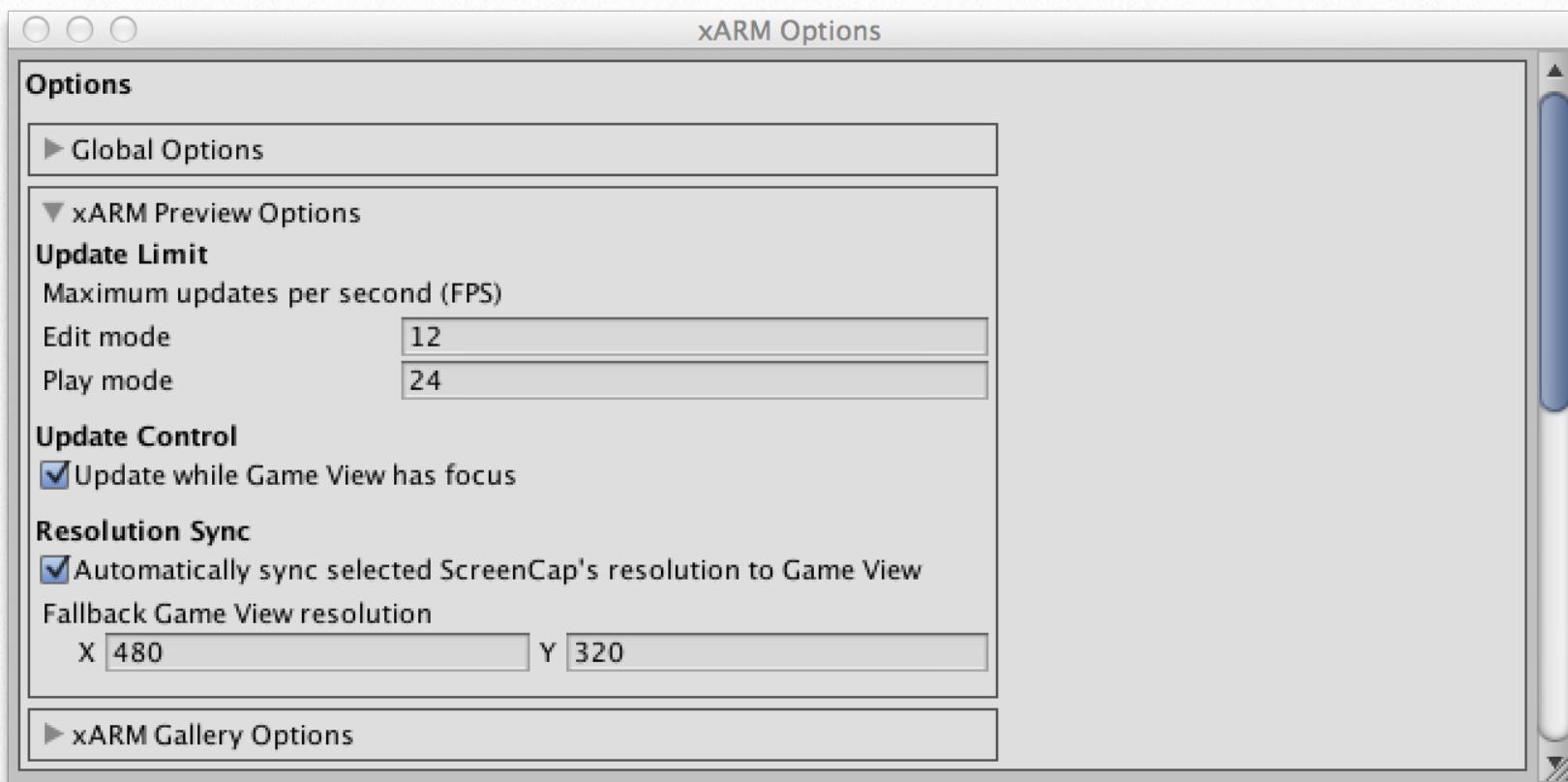
If „Keep ScreenCap's DPI in uGUI after update“ is activated uGUI will keep the ScreenCap's DPI and will not reset to the Editor/Monitor DPI.

6. Export

Select the default folder for PNG export.

2. xARM Preview Options

This section holds all xARM Preview specific settings.



1. Update Limit

Specify the maximum ScreenCap updates per second for Edit and Play mode. Default value should be sufficient, but you can use this setting to control the ScreenCap update smoothness and performance impact.

2. Update Control

Activate „Update while Game View has focus“ to update the selected ScreenCap also while Game View has focus.

3. Resolution Sync

If „Automatically sync selected ScreenCap's resolution to Game View“ is activated selecting a ScreenCap in xARM Preview will automatically resize the Game View to match the selected resolution.

xARM will also return to the selected resolution after xARM Gallery updates.

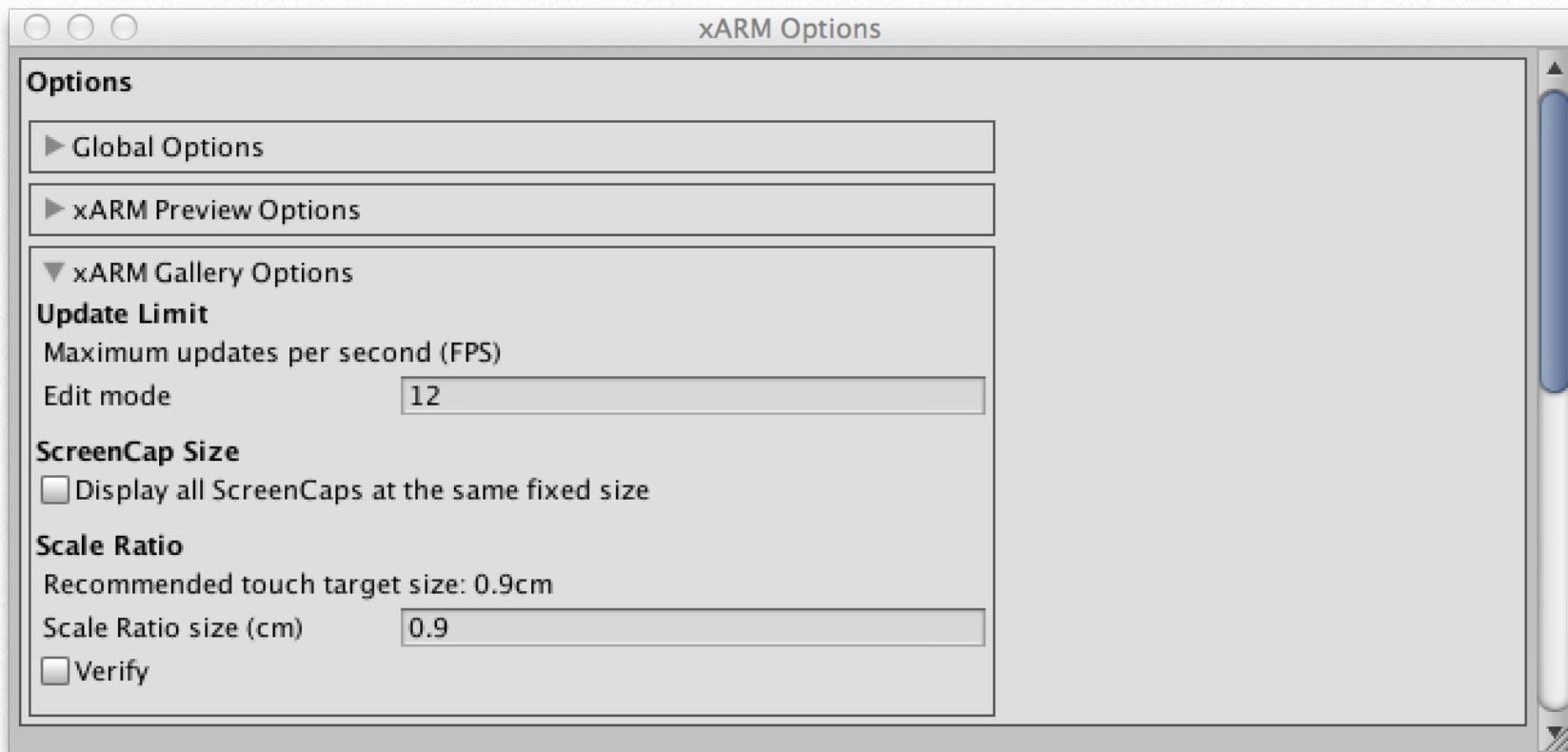
Deactivate to always use a fixed resolution as specified as „Fallback Game View resolution“.

Notes:

- Deactivation causes additional Game View resizes and flickering while xARM Preview updates
- „Fallback Game View resolution“ is also used if no ScreenCap is selected

3. xARM Gallery Options

This section holds all xARM Gallery specific settings.



1. Update Limit

Specify the maximum ScreenCap batch updates per second for Edit mode.

Default value should be sufficient, but you can use this setting to control the amount of Game View size changes, ScreenCap update smoothness and performance impact.

2. ScreenCap Size

Activate „Display all ScreenCaps at the same fixed size“ to specify the ScreenCap display size manually.

If deactivated all ScreenCaps are automatically scaled to fill available space.

3. Scale Ratio

Specify the physical size of the Scale Ratio (cm).

By default Scale Ratio's size is set to the recommended touch target size ('fingerprint') of 0.9cm.

Tip: You can activate the „Verify“ checkbox to display the Scale Ratio at physical size.

ScreenCaps

In the ScreenCap section you can activate the ScreenCaps you'd like to preview.

The screenshot shows the 'xARM Options' window with the 'ScreenCaps' tab selected. At the top, there's a 'Filter' section with three checkboxes: 'Landscape' (checked), 'Portrait' (unchecked), and 'Navigation Bar (Android)' (unchecked). Below the filter is a note: 'Select the Aspect Ratios and Resolutions you are targeting. Sort order does also affect xARM Preview and Gallery.' A dropdown menu 'iOS' is expanded, showing a table of devices with the following columns: Active, OS, Name, Diagonal, DPI Group, DPI, Aspect, Resolution (px), Resolution, Format, Stats (pos), Stats (%), and Sample devices. The table lists various iOS devices with their screen sizes, resolutions, and aspect ratios. Some rows have checkboxes in the 'Active' column. Below the table, there are collapsed sections for 'Android', 'Windows Phone 8', 'WinRT', 'Standalone', and 'Custom'.

Active	OS	Name	Diagonal	DPI Group	DPI	Aspect	Resolution (px)	Resolution	Format	Stats (pos)	Stats (%)	Sample devices
<input checked="" type="checkbox"/>	iOS	iPhone	4"	@2x	326	16:9~	1136x640px	WDVGA	Landscape	1.	29.5%	iPhone 5, 5C, 5S & iPod touch 5.
<input checked="" type="checkbox"/>	iOS	iPhone	3.5"	@2x	326	3:2	960x640px	DVGA	Landscape	2.	28.3%	iPhone 4, 4S & iPod touch 4.
<input checked="" type="checkbox"/>	iOS	iPad mini	7.9"	@1x	163	4:3	1024x768px	XGA	Landscape	3.	23.6%	iPad mini
<input checked="" type="checkbox"/>	iOS	iPad	9.7"	@1x	132	4:3	1024x768px	XGA	Landscape	3.	23.6%	iPad 1., 2.
<input checked="" type="checkbox"/>	iOS	iPad mini	7.9"	@2x	326	4:3	2048x1536px	QXGA	Landscape	4.	16.1%	iPad mini 2, mini 3
<input checked="" type="checkbox"/>	iOS	iPad	9.7"	@2x	264	4:3	2048x1536px	QXGA	Landscape	4.	16.1%	iPad 3., 4., Air, Air 2
<input type="checkbox"/>	iOS	iPhone	3.5"	@1x	163	3:2	480x320px	HVGA	Landscape	5.	1.3%	iPhone 1, 3G, 3GS & iPod touch 1., 2., 3.
<input checked="" type="checkbox"/>	iOS	iPhone	4.7"	@2x	326	16:9~	1334x750px	custom	Landscape	n/a	n/a	iPhone 6
<input checked="" type="checkbox"/>	iOS	iPhone	5.5"	@2.6x	401	16:9	1920x1080px	FHD	Landscape	n/a	n/a	iPhone 6 Plus (Unity uses native resolution)
<input checked="" type="checkbox"/>	iOS	iPhone	5.5"	@3x	461	16:9	2208x1242px	custom	Landscape	n/a	n/a	Probable future iPhone resolution

1. Filter

Use the provided filters to show or hide all Landscape, Portrait or Navigation Bar (Android) ScreenCaps.

Note: The Navigation Bar Filter is only related to Android devices without physical/soft buttons. While not in immersive full-screen mode (introduced with API Level 19) these devices will display software buttons instead which reduce the usable resolution.

Navigation Bar size is computed automatically based on the specifications, but may not be correct for some devices.

2. Platforms

All ScreenCaps are grouped by platform.

1. iOS

All iOS devices are covered.

The exact device names are listed in column „Sample Devices“.

2. Android

All relevant devices are covered.

Note: If a resolution is used with different diagonals only the min and max display diagonals are listed.

3. Windows Phone 8

All relevant devices are covered.

4. WinRT

All relevant devices are covered.

5. Standalone

All popular resolutions are covered.

Note: Only one common display diagonal is listed per resolution.

6. Custom

Here you'll find the ScreenCaps you've added.

Note: See chapter „Custom Code“ for more details.

3. ScreenCap List per Platform

If you open a platform group all ScreenCaps are listed with additional information (like popularity) to help you to get an overview and focus on the relevant ones.

ScreenCaps

Filter
 Landscape Portrait Navigation Bar (Android)

Select the Aspect Ratios and Resolutions you are targeting. Sort order does also affect xARM Preview and Gallery.

▼ iOS

Active	OS	Name	Diagonal	DPI Group	DPI	Aspect	Resolution (px)	Resolution	Format	Stats (pos) ▲	Stats (%)	Sample devices
<input type="checkbox"/>	iOS	iPhone	4"	@2x	326	16:9~	1136x640px	WDVGA	Landscape	1.	29.5%	iPhone 5, 5C, 5S & iPod touch 5.
<input type="checkbox"/>	iOS	iPhone	3.5"	@2x	326	3:2	960x640px	DVGA	Landscape	2.	28.3%	iPhone 4, 4S & iPod touch 4.
<input type="checkbox"/>	iOS	iPad mini	7.9"	@1x	163	4:3	1024x768px	XGA	Landscape	3.	23.6%	iPad mini
<input type="checkbox"/>	iOS	iPad	9.7"	@1x	132	4:3	1024x768px	XGA	Landscape	3.	23.6%	iPad 1., 2.
<input type="checkbox"/>	iOS	iPad mini	7.9"	@2x	326	4:3	2048x1536px	QXGA	Landscape	4.	16.1%	iPad mini 2, mini 3
<input type="checkbox"/>	iOS	iPad	9.7"	@2x	264	4:3	2048x1536px	QXGA	Landscape	4.	16.1%	iPad 3., 4., Air, Air 2
<input type="checkbox"/>	iOS	iPhone	3.5"	@1x	163	3:2	480x320px	HVGA	Landscape	5.	1.3%	iPhone 1, 3G, 3GS & iPod touch 1., 2., 3.
<input type="checkbox"/>	iOS	iPhone	4.7"	@2x	326	16:9~	1334x750px	custom	Landscape	n/a	n/a	iPhone 6
<input type="checkbox"/>	iOS	iPhone	5.5"	@2.6x	401	16:9	1920x1080px	FHD	Landscape	n/a	n/a	iPhone 6 Plus (Unity uses native resolution)
<input type="checkbox"/>	iOS	iPhone	5.5"	@3x	461	16:9	2208x1242px	custom	Landscape	n/a	n/a	Probable future iPhone resolution

► Android
 ► Windows Phone 8
 ► WinRT
 ► Standalone
 ► Custom

All ScreenCap list entries contain the following information:

1. Active

Activate the ScreenCap if you like to display it in xARM Preview or xARM Gallery.

2. OS

OS/Platform of the covered devices.

3. Name

Device name or device's platform, if device name is not definite.

4. Diagonal

Device's display diagonal (inch).

5. DPI Group

Platform specific DPI group, if applicable.

6. DPI

Device's display DPI.

Note: Some DPI values are computed automatically and may differ slightly from the device manufacturer's specifications.

7. Aspect

Aspect ratio.

Note: If the aspect has a trailing tilde (~) it's not exactly but close to the stated aspect.

8. Resolution (px)

Screen resolution in pixels (width x height).

9. Resolution

Screen resolution as graphics display resolution plus an icon to indicate screen orientation.

10. Format

Landscape or Portrait orientation.

11. Stats (pos)

Position based on market share of the resolution vs. other with the same OS
(source: Unity Hardware Statistics).

12. Stats (%)

Market share (%) of the resolution vs. other with the same OS
(source: Unity Hardware Statistics).

13. Sample Device

A list of some sample devices that are covered by the ScreenCap.

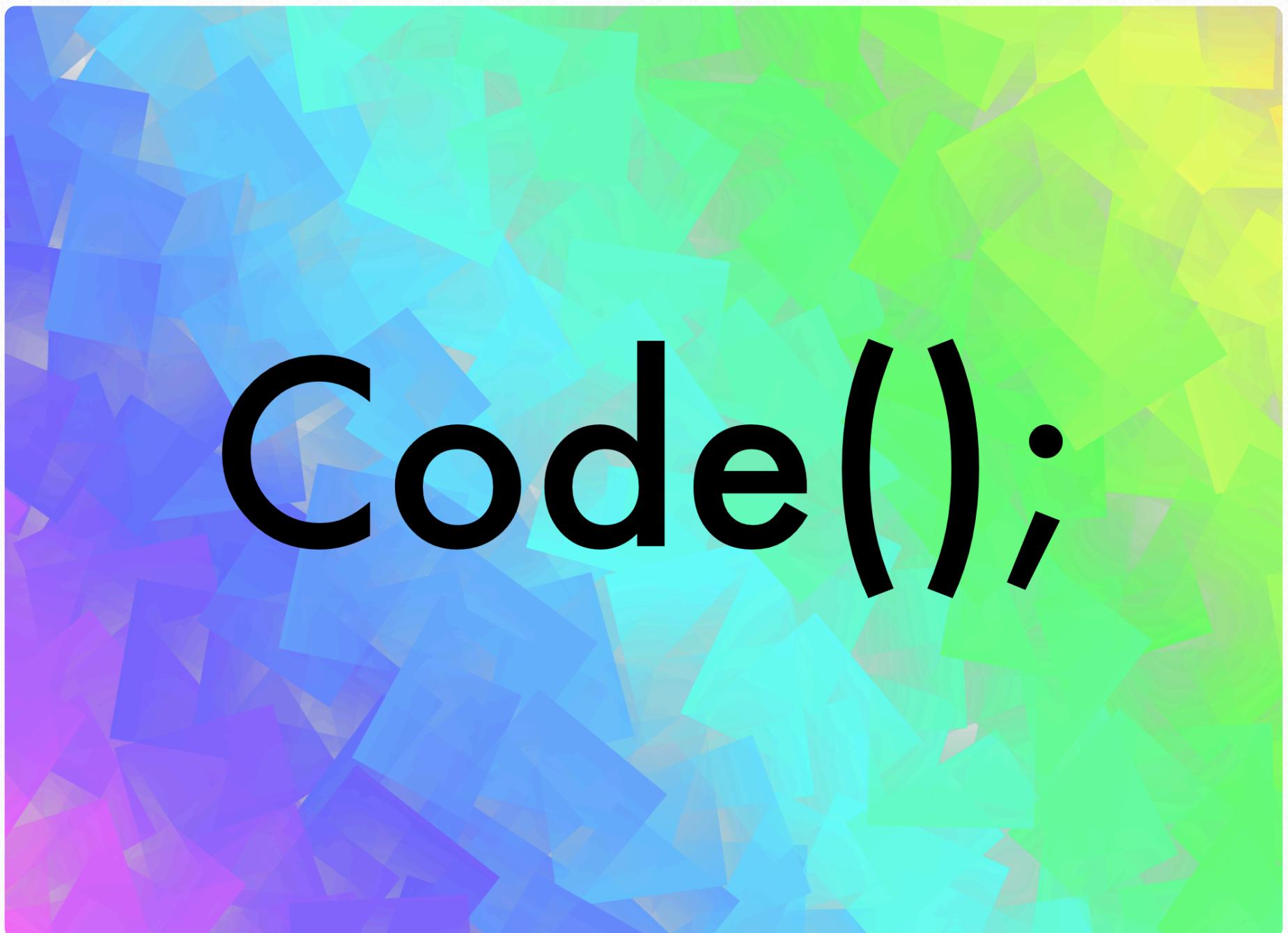
Differing display diagonals are also listed.

Tips:

- You can sort the list by clicking on the column headers. The sorting does also effect all other xARM windows.
- Start with some of the most popular ones (see column Stats) and grow from there.
- Cover both ends of the resolution and diagonal spectrum you're targeting.
- If you're using resolution specific settings (texture atlases, etc.) or code ensure to cover them.

6

Custom Code



Feel free to change xARM's source code to fit your needs, however support is limited to the official versions.

Please contact me if you add something that may also be useful for other xARM users and I will check if it can be included in a future release (see chapter „Support & Contribution“ for contact details).

Custom ScreenCaps

If you like to preview a resolution or display diagonal that's not included in the ScreenCap list you can add your own.

To add a custom ScreenCap just follow these steps:

1. Open „xARMManger.cs“.

2. Search for „#region Init“.

All ScreenCaps are listed here. One (landscape) ScreenCap per line.

3. Scroll down to „//Custom“ at the end of the list.

4. Copy the example line of the custom section

(The example is a 1920x1080 Full-HD 42“ display)

Note: Don't change existing lines!

5. Insert the copied line right below the example line

6. Change the inserted line as follows:

1. Uncomment the line (remove the „//“ at the line beginning to activate the line).

2. Change resolution (example: „1920, 1080“) as needed.

Note: Use landscape values (width x height), first value should be greater than second. Portrait ScreenCaps are created automatically.

3. Change diagonal (example: „42“) as needed.

Note: All other properties are optional or are computed automatically if not specified.

7. Save and close „xARMManger.cs“.

8. Open „Custom“ ScreenCaps section in xARM Options

After Unity has recompiled the custom ScreenCap should be listed.

Note: Ensure to make a backup of your custom ScreenCap lines so that you can reinsert them after xARM update or use them also in other projects.

Delegates

If needed you can use xARM's Delegates to run your custom code while xARM updates the ScreenCaps. See „xARMDellegatesExample.cs“ for an example.

You can use the Delegates e.g. to:

- Freeze your game while ScreenCap update, so that all display the exact same state
You need to implement an in-game pause mode to freeze all animations, etc. and hook it to xARM's Delegates.
- Recreate/update your GUI, so that it adapts to a new resolution
Note: This is only needed in the *very rare* case that the GUI doesn't update automatically.
- ...

You can use the following Delegates to hook your code:

1. **xARMManger.OnStartScreenCapUpdate**

This Delegate is called once before any ScreenCap is updated and the Game View is resized.

Tip: Store values to restore them later.

2. **xARMManger.OnPreScreenCapUpdate**

This Delegate is called for each updating ScreenCap right after the Game View is resized to match the ScreenCap's resolution.

It's called before the Update Delay (see chapter „xARM Options“) is started and the ScreenCap is updated with a new rendering result.

Tip: Hook your freeze/update/etc. code here.

3. **xARMManger.OnPostScreenCapUpdate**

This Delegate is called for each updating ScreenCap right after the ScreenCap is updated with a new rendering result, while the ScreenCap's resolution is still active.

Tip: Reset ScreenCap specific changes here.

4. **xARMManger.OnFinalizeScreenCapUpdate**

This Delegate is called once after all ScreenCaps are updated and Game View is resized to default resolution.

Tip: Reset all changes here.

Notes:

- Enclose your custom code with the „#if UNITY_EDITOR“ and „#endif“ preprocessor directive to prevent the code becomes a part of your built game.
- Ensure your code is outside of the xARM folder. Otherwise your changes are lost on xARM update.

7

FAQ



FAQ

Still have questions?

Let's see if you can get the answer here.

FAQ

Q: What is a „ScreenCap“?

A: A ScreenCap consists of a screenshot of your game at a specific resolution (if the ScreenCap was updated) and properties like resolution, display diagonal, stats, etc. Each ScreenCap covers one or mode device displays. In xARM Options you can activate the ScreenCaps you'd like to display in xARM Preview and xARM Gallery.

Q: What is the xARMPProxy GameObject in the Hierarchy?

A: xARM Preview and xARM Gallery need a xARMPProxy GameObject in the Hierarchy to operate. You can move it, but don't change it otherwise. If the xARMPProxy is deleted it is instantly recreated as long as one of the xARM windows is visible. Closing all xARM windows does also remove the xARMPProxy.

Q: How do I update xARM?

A: Follow these steps:

1. If applicable ensure to backup all changes made to the xARM folder, e.g.:
 - Move (and keep) your custom code files (Delegates) outside of the xARM folder
 - Backup custom ScreenCap lines (added in „xARMManger.cs“)
2. Remove the xARM Folder from your Project
3. Import the new xARM version from the Asset Store
4. Close and reopen Unity, if xARM's windows are not updated correctly

Q: How to fix Editor Layouts with an un-resizeable Game View?

(Layouts saved with xARM older than 1.04.287)

A: Follow these steps:

1. Deactivate all xARM updates (Edit, Pause, Play) of xARM Preview and xARM Gallery
2. Activate the Editor Layout to fix
3. Close and reopen the Game View, it should now be resizable
4. Under „Layout“ select „Save Layout...“ and overwrite it

Q: Why do I get the warning „Could not update all ScreenCaps. Switch 'GameView' to 'Free Aspect'.“, although it's already set to 'Free Aspect'?

A: This is a Unity version specific issue, that's caused by maximizing e.g. the Game View.

Workaround: Maximize and de-maximize the Scene View by focusing it and pressing Shift +Space (just Space for older Unity versions). After that the Warning should disappear.

Q: Why do I get „Cleaning up leaked objects in scene since no game object, component or manager is referencing them ...“ in the Console?

A: Unity sends this message to inform you that some optimizations have been made. You can ignore this message.

No answer found?

Feel free to contact me (see chapter „Support & Contribution“ for contact details).

8

Support & Contribution



Feel free to contact me if you need help or have questions.

I'd highly appreciate if you spend a moment to help to improve xARM by your feedback, feature requests, a Review in the Unity Asset Store, etc.

Contribute to improve xARM!

I'd highly appreciate if you'd spend a moment to help to improve xARM.

A lot of xARM's current features were suggested by users.

Here are some things you could do:

- Give a Review in the [Unity Asset Store](#).
- Send [feedback](#) and [feature requests](#).
- Spread the word via your favorite social medium.
- ...

Thanks a lot!

Support & Feedback:

Email:

support@flyingwhale.de

Unity Forum:

<http://forum.unity3d.com/threads/xarm-aspect-and-resolution-master-released.196174/>

Info & Updates:

Twitter (@ThavronFW):

<https://twitter.com/ThavronFW>

YouTube:

<https://www.youtube.com/channel/UC2CU8aCaWcIJ5C6dOQFzdVg>

Flying Whale Homepage:

<http://www.flyingwhale.de>

All assets by Flying Whale:

<https://www.assetstore.unity3d.com/#/publisher/4046>

