

Threads

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1 Threads

A light weight library to dispatch actions to the Unity3D main-thread. Threads can be used at both Editor-time and Run-time straight out of the box. No initialization is required. **When `playmode` is toggled in the editor, the**

actions in the queue will be purged, and thus will never complete! The dispatcher synchronizes with Unity during the `Update` loop or `EditorApplication.Update` loop.

1.1 API

The dispatcher API can be accessed through the static `Dispatcher` class.

Method	Description
<code>void Dispatcher.Post</code>	Post an action on the main-thread
<code>Task Dispatcher.PostAsync</code>	Post an awaitable action on the main-thread
<code>IDispatchResult Dispatcher.PostAsync<T></code>	Post an awaitable <code>Func<T></code> on the main-thread. Results can be retrieved through the <code>IDispatchResult</code>
<code>Dispatcher.ToMainThread()</code>	An awaiter to synchronize to the main-tread

See the [Docs](Documentation~) for more information or Tests for how to use the Dispatcher and we have provides some [Samples](#).

1.1.1 Synchronize to the main-thread

A very useful utility in this Dispatcher is the fact that code is easily synchronized to the main-thread. See the example below:

```
Task.Run(async () => {
    // We are on some other thread depending on scheduling.
    await Dispatcher.ToMainThread();
    // We are back on the main-thread now
    // so we can access UnityEngine code
    // without getting an exception!
    var myGameObject = Object.Instantiate(myPrefab);
    // F*cking Awesome XD!!!

    // We can also await a background thread
    await Dispatcher.ToBackgroundThread();
    // We are on a background thread again
    // so we can do expensive processing
    // without blocking the main-thread
});
```

2 CHANGELOG

3 LICENSE

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4 Namespace Index

4.1 Namespace List

Here is a list of all documented namespaces with brief descriptions:

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HamerSoft.Threads	4
HamerSoft.Threads.Editor	4
HamerSoft.Threads.Tests	4
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5 Hierarchical Index

5.1 Class Hierarchy

This inheritance list is sorted roughly, but not completely, alphabetically:

HamerSoft.Threads.Dispatcher	4
HamerSoft.Threads.IDispatchResult< out out TResult >	6
HamerSoft.Threads.IDispatchResult< TResult >	6
HamerSoft.Threads.MainThreadAwaiter	7
HamerSoft.Threads.MainThreadSync	9

6 Class Index

6.1 Class List

Here are the classes, structs, unions and interfaces with brief descriptions:

HamerSoft.Threads.Dispatcher	
Main-thread dispatcher which can be used to post actions on the mainthread both Editor-time and Run-time	4
HamerSoft.Threads.IDispatchResult< out out TResult >	
Result object of a function executed on the main-thread	6
HamerSoft.Threads.MainThreadAwaiter	
An awaitable to synchronize to the main thread	7
HamerSoft.Threads.MainThreadSync	
Object that facilitates synchronization to the main-thread	9

7 Namespace Documentation

7.1 HamerSoft Namespace Reference

7.2 HamerSoft.Threads Namespace Reference

Classes

- class [Dispatcher](#)
Main-thread dispatcher which can be used to post actions on the mainthread both Editor-time and Run-time
- interface [IDispatchResult](#)
Result object of a function executed on the main-thread
- class [MainThreadAwaiter](#)
An awaitable to synchronize to the main thread
- class [MainThreadSync](#)
Object that facilitates synchronization to the main-thread

7.3 HamerSoft.Threads.Editor Namespace Reference

7.4 HamerSoft.Threads.Tests Namespace Reference

7.5 HamerSoft.Threads.Tests.Editor Namespace Reference

7.6 HamerSoft.Threads.Tests.Runtime Namespace Reference

8 Class Documentation

8.1 HamerSoft.Threads.Dispatcher Class Reference

Main-thread dispatcher which can be used to post actions on the mainthread both Editor-time and Run-time

Static Public Member Functions

- static void [Post](#) (Action action)
Post an action on the main-thread
- static Task [PostAsync](#) (Action action)
Post an action on the main-thread, and allow for waiting for its completion
- static Task< [IDispatchResult](#)< TResult > > [PostAsync](#)< TResult > (Func< TResult > function)
Post a function on the main-thread, and allow for waiting for its completion
- static [MainThreadSync ToMainThread](#) ()
Synchronize a thread to the main-thread
- static BackgroundThreadSync [ToBackgroundThread](#) ()
Synchronize a thread to some background-thread

8.1.1 Detailed Description

Main-thread dispatcher which can be used to post actions on the mainthread both Editor-time and Run-time

8.1.2 Member Function Documentation

8.1.2.1 Post() `static void HamerSoft.Threads.Dispatcher.Post (Action action) [inline], [static]`

Post an action on the main-thread

Parameters

<i>action</i>	The function to be executed on the main-thread
---------------	--

8.1.2.2 PostAsync() `static Task HamerSoft.Threads.Dispatcher.PostAsync (Action action) [inline], [static]`

Post an action on the main-thread, and allow for waiting for its completion

Parameters

<i>action</i>	The function to be executed on the main-thread
---------------	--

Returns

An awaitable task

8.1.2.3 PostAsync<TResult>() `static Task<IDispatchResult<TResult>> HamerSoft.Threads.Dispatcher.PostAsync (TResult > (Func< TResult > function) [inline], [static]`

Post a function on the main-thread, and allow for waiting for its completion

Parameters

<i>function</i>	The function to be executed on the main-thread
-----------------	--

Template Parameters

<i>TResult</i>	Result type of the function
----------------	-----------------------------

Returns

`IDispatchResult<TResult>` that contains the result of the function, or the exception thrown when it was not successful

8.1.2.4 ToBackgroundThread() `static BackgroundThreadSync HamerSoft.Threads.Dispatcher.ToBackgroundThread () [inline], [static]`

Synchronize a thread to some background-thread

This will mostly be used to sync from the main-thread to some background thread for further processing that doesn't need UnityEngine access.

Returns

an awaiter to synchronize to some background thread

8.1.2.5 ToMainThread() `static MainThreadSync HamerSoft.Threads.Dispatcher.ToMainThread () [inline], [static]`

Synchronize a thread to the main-thread

Returns

an awaiter to synchronize to the main thread

The documentation for this class was generated from the following file:

- Runtime/Dispatcher.cs

8.2 HamerSoft.Threads.IDispatchResult< out TResult > Interface Template Reference

Result object of a function executed on the main-thread

Properties

- TResult `Result` [get]
The return value of the function
- bool `Succeeded` [get]
Completion flag of the function
- Exception `Exception` [get]
Optional exception throw, when unsuccessful

8.2.1 Detailed Description

Result object of a function executed on the main-thread

Template Parameters

<i>TResult</i>	result of the Func<T>
----------------	-----------------------

8.2.2 Property Documentation

8.2.2.1 Exception `Exception HamerSoft.Threads.IDispatchResult< out out TResult >.Exception [get]`

Optional exception throw, when unsuccessful

8.2.2.2 Result `TResult HamerSoft.Threads.IDispatchResult< out out TResult >.Result [get]`

The return value of the function

8.2.2.3 Succeeded `bool HamerSoft.Threads.IDispatchResult< out out TResult >.Succeeded [get]`

Completion flag of the function

The documentation for this interface was generated from the following file:

- Runtime/IDispatchResult.cs

8.3 HamerSoft.Threads.MainThreadAwaiter Class Reference

An awaitable to synchronize to the main thread

Inherits INotifyCompletion.

Public Member Functions

- void `GetResult` ()
Get the result of the awaitable
- void `Complete` (Exception e)
Complete the awaitable
- void `OnCompleted` (Action continuation)
Function invoked when completed

Properties

- bool `IsCompleted` [get]
Flag if the awaitable is complete

8.3.1 Detailed Description

An awaitable to synchronize to the main thread

8.3.2 Member Function Documentation

8.3.2.1 Complete() `void HamerSoft.Threads.MainThreadAwaiter.Complete (Exception e) [inline]`

Complete the awaitable

Parameters

<i>e</i>	optional exception
----------	--------------------

8.3.2.2 GetResult() `void HamerSoft.Threads.MainThreadAwaiter.GetResult () [inline]`

Get the result of the awaitable

8.3.2.3 OnCompleted() `void HamerSoft.Threads.MainThreadAwaiter.OnCompleted (Action continuation) [inline]`

Function invoked when completed

Parameters

<i>continuation</i>	continuation action
---------------------	---------------------

8.3.3 Property Documentation

8.3.3.1 IsCompleted `bool HamerSoft.Threads.MainThreadAwaiter.IsCompleted [get]`

Flag if the awaitable is complete

The documentation for this class was generated from the following file:

- Runtime/MainThreadAwaiter.cs

8.4 HamerSoft.Threads.MainThreadSync Class Reference

Object that facilitates synchronization to the main-thread

Public Member Functions

- [MainThreadAwaiter](#) [GetAwaiter](#) ()
Get the awaiter

8.4.1 Detailed Description

Object that facilitates synchronization to the main-thread

8.4.2 Member Function Documentation

8.4.2.1 [GetAwaiter\(\)](#) [MainThreadAwaiter](#) HamerSoft.Threads.MainThreadSync.GetAwaiter () [inline]

Get the awaiter

Returns

Main-thread Awaiter

The documentation for this class was generated from the following file:

- Runtime/MainThreadSync.cs

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