

Multitasking & DTResurrectionKit

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WWDC Multitasking Sessions

105 - Adopting Multitasking on iPhone OS, Part 1

109 - Adopting Multitasking on iPhone OS, Part 2

Types of Multitasking

- * Task completion
- * Background Audio
- * VoIP
- * Navigation
- * Location Tracking

Task Completion

- * Apps get around 6 minutes of extra time
- * Can only ask for more time once
- * May get cut off part-way through the task, so use the expiration handler

Task Completion

- * Finish tasks on suspension
 - * Finishing a download in news reader
 - * Posting a tweet
- * Don't abuse this privilege by doing the wrong tasks

Application States

Foreground

Active

Inactive

Not Running

* Normal running state
of apps

Suspended

Background

Running

Application States

Foreground

Active

Inactive

Not Running

Suspended

Background

Running

- * App is in foreground but interrupted
- * An SMS alert
- * A push notification
- * User initiating fast app switcher

Application States

Foreground

Active

Inactive

Not Running

* Terminated app

Suspended

Background

Running

Application States

Foreground

Active

Inactive

Not Running

Suspended

Background

Running

* Application is saved in memory, but not running

Application States

Foreground

Active

Inactive

Not Running

Suspended

Background

Running

- * Just after `application:didEnterBackground:`
- * After requesting task completion time
- * Background VoIP, audio or navigation

Multitasking Tips

Suspended → Not Running

- * Suspended apps don't get notified of termination
- * The app delegate won't get `applicationWillTerminate:`
- * Use `application:DidEnterBackground:` in iOS4 for Core Data saving etc

Multitasking Tips

Suspended → Active

- * A suspended app will not get the call to `application:didFinishLaunchingWithOptions:` when becoming active
- * Make sure to refresh your app, update feeds etc
- * Check ability to connect to Internet

Multitasking Tips

Suspended → Not Running

- * App may be terminated while suspended in background
- * No notification of this happening
- * When the app launches next time the OS won't bring us back to the same place
- * So we need to save the app state so it *always* comes back to the last position

DTResurrectionKit

DTResurrectionKit

- * Framework for saving state of objects
- * Implemented with 2 methods for each class
- * Compatible with iOS2+ and updated for iOS4
- * Handles multiple versions of the application
- * Gracefully dies if any exception occurs

<http://hg.danieltull.co.uk/dtresurrectionkit>

Saving State

```
- (void)encodeToResurrector:(DTResurrector *)resurrector  
{  
    [super encodeToResurrector:resurrector];  
    [resurrector setObject:count forKey:@"count"];  
}
```

<http://hg.danieltull.co.uk/dtresurrectionkit>

Loading State

```
- (id)initWithResurrector:(DTResurrector *)resurrector {  
    if (self = [super initWithResurrector:resurrector]) {  
        count = [resurrector objectForKey:@"count"];  
    }  
  
    return self;  
}
```

<http://hg.danieltull.co.uk/dtresurrectionkit>

Resurrection Save File

```
{  
  "DTResurrectionObject:003D5xxx24262" = {};  
  ...  
  "DTResurrectionObject:63F30xxx6549D" = {};  
  DTResurrectionRootObject = "DTResurrectionObject:  
  942FExxx4AD62";  
}
```

<http://hg.danieltull.co.uk/dtresurrectionkit>

Resurrection Save File

```
"DTResurrectionObject:942FExxx4AD62" = {  
    class = UITabBarController;  
    selectedIndex = 2;  
    viewControllers = "DTResurrectionObject:055C9xxx38B25";  
};
```

<http://hg.danieltull.co.uk/dtresurrectionkit>

Resurrection Save File

```
"DTResurrectionObject:055C9xxx38B25" = {  
    0 = "DTResurrectionObject:7F56Dxxx85C78";  
    1 = "DTResurrectionObject:B5F67xxxF54A1";  
    2 = "DTResurrectionObject:8A478xxxE2DB5";  
  
    amount = 3;  
  
    class = NSArray;  
  
};
```

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<http://github.com/danielctull/DTResurrectionKit>