<table>
<thead>
<tr>
<th>Chapter</th>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Overview</td>
<td>1</td>
</tr>
<tr>
<td>2</td>
<td>Changelog</td>
<td>7</td>
</tr>
<tr>
<td>3</td>
<td>Elements of basic JavaScript relevant to After Effects scripting</td>
<td>13</td>
</tr>
<tr>
<td>4</td>
<td>The After Effects Object Model</td>
<td>17</td>
</tr>
<tr>
<td>5</td>
<td>Global functions</td>
<td>21</td>
</tr>
<tr>
<td>6</td>
<td>Application object</td>
<td>25</td>
</tr>
<tr>
<td>7</td>
<td>Project object</td>
<td>39</td>
</tr>
<tr>
<td>8</td>
<td>System object</td>
<td>61</td>
</tr>
<tr>
<td>9</td>
<td>Item object</td>
<td>65</td>
</tr>
<tr>
<td>10</td>
<td>ItemCollection object</td>
<td>69</td>
</tr>
<tr>
<td>11</td>
<td>AVItem object</td>
<td>71</td>
</tr>
<tr>
<td>12</td>
<td>CompItem object</td>
<td>81</td>
</tr>
<tr>
<td>13</td>
<td>FolderItem object</td>
<td>93</td>
</tr>
<tr>
<td>14</td>
<td>FootageItem object</td>
<td>95</td>
</tr>
<tr>
<td>15</td>
<td>Layer object</td>
<td>99</td>
</tr>
<tr>
<td>16</td>
<td>LayerCollection object</td>
<td>109</td>
</tr>
<tr>
<td>17</td>
<td>AVLayer object</td>
<td>115</td>
</tr>
<tr>
<td>18</td>
<td>CameraLayer object</td>
<td>127</td>
</tr>
<tr>
<td>19</td>
<td>LightLayer object</td>
<td>129</td>
</tr>
<tr>
<td>20</td>
<td>ShapeLayer object</td>
<td>131</td>
</tr>
</tbody>
</table>
1.1 Introduction to scripting in After Effects

A script is a series of commands that tells an application to perform a series of operations. You can use scripts in most Adobe applications to automate repetitive tasks, perform complex calculations, and even use some functionality not directly exposed through the graphical user interface. For example, you can direct After Effects to reorder the layers in a composition, find and replace source text in text layers, or send an e-mail message when rendering is complete.

Although both the After Effects expressions language and the After Effects ExtendScript scripting language are based on JavaScript, the expressions features and scripting features of After Effects are separate and distinct. Expressions cannot access information from scripts (such as variables and functions). Whereas a script tells an application to do something, an expression says that a property is something. However, because the After Effects expression language and ExtendScript are both based on JavaScript, familiarity with either one is very helpful in understanding the other.

The heart of a scriptable application is the object model. When you use Adobe After Effects, you create projects, compositions, and render queue items along with all of the elements that they contain: footage, images, solids, layers, masks, effects, and properties. Each of these items, in scripting terms, is an object. This guide describes the ExtendScript objects that have been defined for After Effects projects.

The After Effects object model is composed of a project, items, compositions, layers, and render queue items. Each object has its own special attributes, and every object in an After Effects project has its own identity (although not all are accessible to scripting). You should be familiar with the After Effects object model in order to create scripts.

Note: JavaScript objects normally referred to as “properties” are consistently called “attributes” in this guide, to avoid confusion with After Effects’ own definition of a property (an animatable value of an effect, mask, or transform within an individual layer).

Nearly all of what scripting can accomplish replicates what can be done by means of the After Effects graphical user interface. A thorough knowledge of the application itself and its graphical user interface is essential to understanding how to use scripting in After Effects.
1.2 The ExtendScript language

After Effects scripts use the Adobe ExtendScript language, which is an extended form of JavaScript used by several Adobe applications, including Photoshop, Illustrator, and InDesign. ExtendScript implements the JavaScript language according to the ECMA-262 specification. The After Effects scripting engine supports the 3rd Edition of the ECMA-262 Standard, including its notational and lexical conventions, types, objects, expressions, and statements. ExtendScript also implements the E4X ECMA-357 specification, which defines access to data in XML format.

ExtendScript defines a global debugging object, the dollar (\$) object, and a reporting utility for ExtendScript elements, the ExtendScript Reflection interface.

File and Folder Objects: Because pathname syntax is very different in different operating systems, Adobe ExtendScript defines File and Folder objects to provide platform-independent access to the underlying file system.

ScriptUI User Interface Module: The ExtendScript ScriptUI module provides the ability to create and interact with user interface elements. ScriptUI provides an object model for windows and UI control elements that you can use to create a user interface for your scripts.

Tools and Utilities: In addition, ExtendScript provides tools and features such as a localization utility for providing user-interface string values in different languages and global functions for displaying short messages in dialog boxes (alert, confirm, and prompt).

External Communication: ExtendScript provides a Socket object that allows you to communicate with remote systems from your After Effects scripts.

Interapplication Communication: ExtendScript provides a common scripting environment for all Adobe applications, and allows interapplication communication through scripts.

1.3 The ExtendScript Toolkit (ESTK)

After Effects includes a script editor and debugger, the ExtendScript Toolkit (ESTK), which provides a convenient interface for creating and testing your own scripts.

To start the ESTK, choose File > Scripts > Open Script Editor.

If you choose to use another text editor to create, edit, and save scripts, be sure to choose an application that does not automatically add header information when saving files and that saves with Unicode (UTF-8) encoding. In many text editors, you can set preferences for saving with UTF-8 encoding. Some applications (such as Microsoft Word) by default add header information to files that can cause “line 0” errors in scripts, causing them to fail.

For detailed information on the ExtendScript Toolkit, see the JavaScript Tools Guide.

1.4 The .jsx and .jsxbin file-name extensions

ExtendScript script files are distinguished by the .jsx file-name extension, a variation on the standard .js extension used with JavaScript files. After Effects scripts must include the .jsx file extension in order to be properly recognized by the application. Any UTF-8-encoded text file with the .jsx extension is recognized as an ExtendScript file.

You can use the ExtendScript Toolkit to export a binary version of an ExtendScript file, which has the extension .jsxbin. Such a binary file may not be usable with all of the scripting integration features in After Effects.
1.5 Activating full scripting features

The default is for scripts to not be allowed to write files or send or receive communication over a network. To allow scripts to write files and communicate over a network, choose Edit > Preferences > General (Windows) or After Effects > Preferences > General (Mac OS), and select the Allow Scripts To Write Files And Access Network option.

Any After Effects script that contains an error preventing it from being completed generates an error message from the application. This error message includes information about the nature of the error and the line of the script on which it occurred. The ExtendScript Toolkit (ESTK) debugger can open automatically when the application encounters a script error. This feature is disabled by default so that casual users do not encounter it. To activate this feature, choose Preferences > General, and select Enable JavaScript Debugger.

1.6 Loading and running scripts

1.6.1 Running scripts directly from the File > Scripts menu

When After Effects starts, it searches the Scripts folder for scripts to load. Loaded scripts are available from the File > Scripts menu.

To run a loaded script, choose File > Scripts > [script name].

If you edit a script while After Effects is running, you must save your changes for the changes to be applied. If you place a script in the Scripts folder while After Effects is running, you must restart After Effects for the script to appear in the Scripts menu, though you can immediately run the new script using the Run Script File command.

1.6.2 Running scripts using File > Scripts > Run Script File

To run a script that has not been loaded, choose File > Scripts > Run Script File, locate and select a script, and click Open.

1.6.3 Running scripts from the command line, a batch file, or an AppleScript script

If you are familiar with how to run a script from the command line in Windows or via AppleScript, you can send a script directly to the open After Effects application, so that the application automatically runs the script.

To run a script from the command line, call afterfx.exe from the command line. Use the -r switch and the full path of the script to run as arguments. This command does not open a new instance of the After Effects application; it runs the script in the existing instance.

Example (for Windows):

```
afterfx -r c:\script_path\example_script.jsx
```

You can use this command-line technique—together with the software that comes with a customizable keyboard—to bind the invocation of a script to a keyboard shortcut.

Following are examples of Windows command-line entries that will send an After Effects script to the application without using the After Effects user interface to execute the script.

In the first example, you copy and paste your After Effects script directly on the command line and then run it. The script text appears in quotation marks following the afterfx.exe -s command:

```
afterfx.exe -s "alert("You just sent an alert to After Effects")"
```
Alternatively, you can specify the location of the JSX file to be executed. For example:

```
afterfx.exe -r c:\myDocuments\Scripts\yourAEScriptHere.jsx afterfx.exe -r
→"c:\myDocuments\Scripts\Script Name with Spaces.jsx"
```

### 1.6.4 How to include After Effects scripting in an AppleScript (Mac OS)

Following are three examples of AppleScript scripts that will send an existing JSX file containing an After Effects script to the application without using the After Effects user interface to execute the script.

In the first example, you copy your After Effects script directly into the Script Editor and then run it. The script text appears within quotation marks following the DoScript command, so internal quotes in the script must be escaped using the backslash escape character, as follows:

```
tell application "Adobe After Effects CS6"
   DoScript "alert("You just sent an alert to After Effects")"
end tell
```

Alternatively, you could display a dialog box asking for the location of the JSX file to be executed, as follows:

```
set theFile to choose file
tell application "Adobe After Effects CS6"
   DoScript theFile
end tell
```

**Note:** This documentation is incorrect, the correct invocation in this instance is `DoScriptFile`

Finally, this script is perhaps most useful when you are working directly on editing a JSX script and want to send it to After Effects for testing or to run. To use it effectively you must enter the application that contains the open JSX file (in this example it is TextEdit); if you do not know the proper name of the application, type in your best guess to replace “TextEdit” and AppleScript prompts you to locate it.

Simply highlight the script text that you want to run, and then activate this AppleScript:

```
(*
This script sends the current selection to After Effects as a script.
*)
tell application "TextEdit"
   set the_script to text of front document
end tell
tell application "Adobe After Effects CS6" activate
   DoScript the_script
end tell
```

### 1.6.5 Running scripts automatically during application startup or shutdown

Within the Scripts folder are two folders called Startup and Shutdown. After Effects runs scripts in these folders automatically, in alphabetical order, on starting and quitting, respectively.

In the Startup folder you can place scripts that you wish to execute at startup of the application. They are executed after the application is initialized and all plug-ins are loaded.
Scripting shares a global environment, so any script executed at startup can define variables and functions that are available to all scripts. In all cases, variables and functions, once defined by running a script that contains them, persist in subsequent scripts during a given After Effects session. Once the application is quit, all such globally defined variables and functions are cleared. Be sure to give variables in scripts unique names, so that a script does not inadvertently reassign global variables intended to persist throughout a session.

Attributes can also be added to existing objects such as the Application object to extend the application for other scripts.

The Shutdown folder scripts are executed as the application quits. This occurs after the project is closed but before any other application shutdown occurs.

### 1.6.6 Running scripts from the Window menu

Scripts in the ScriptUI Panels folder are available from the bottom of the Window menu. If a script has been written to provide a user interface in a dockable panel, the script should be put in the ScriptUI folder. ScriptUI panels work much the same as the default panels in the After Effects user interface.

Instead of creating a Window object and adding controls to it, a ScriptUI Panels script uses the this object that represents the panel. For example, the following code adds a button to a panel:

```javascript
var myPanel = this;
myPanel.add("button", [10, 10, 100, 30], "Tool #1");
```

If your script creates its user interface in a function, you cannot use this as it will refer to the function itself, not the panel. In this case, you should pass the this object as an argument to your function. For example:

```javascript
function createUI(thisObj) {
    var myPanel = thisObj;
    myPanel.add("button", [10, 10, 100, 30], "Tool #1");
    return myPanel;
}
var myToolsPanel = createUI(this);
```

You cannot use the File > Scripts > Run Script File menu command to run a script that refers to this. To make your script work with either a Window object (accessible from the File > Scripts menu) or a native panel (accessible from the Window menu), check whether this is a Panel object. For example:

```javascript
function createUI(thisObj) {
    var myPanel = (thisObj instanceof Panel) ? thisObj : new Window("palette", "My Tools", [100, 100, 300, 300]);
    myPanel.add("button", [10, 10, 100, 30], "Tool #1");
    return myPanel;
}
var myToolsPanel = createUI(this);
```

### 1.6.7 Stopping a running script

A script can be stopped by pressing Esc or Cmd+period (in Mac OS) when the After Effects or the script’s user interface has focus. However, a script that is busy processing a lot of data might not be very responsive.
2.1 After Effects 16.1

- **Scripting access to Viewer guide and ruler booleans:**
  - Added: `Viewer.guidesLocked`
  - Added: `Viewer.guidesSnap`
  - Added: `Viewer.guidesVisibility`
  - Added: `Viewer.rulers`

- **Scripting access to add, remove, and set existing guides:**
  - Added: `AVItem.addGuide()`
  - Added: `AVItem.removeGuide()`
  - Added: `AVItem.setGuide()`

- **Scripting access to additional EGP property attributes:**
  - Added: `CompItem.motionGraphicsTemplateControllerCount`
  - Added: `CompItem.getMotionGraphicsTemplateControllerName()`
  - Added: `CompItem.setMotionGraphicsControllerName()`
  - Added: `Property.addToMotionGraphicsTemplateAs()`
2.2 After Effects 16.0

- Scripting access to marker label and protectedRegion attributes:
  - Added: MarkerValue.label
  - Added: MarkerValue.protectedRegion

- Scripting access to additional project color management settings:
  - Added: Project.workingSpace
  - Added: Project.workingGamma
  - Added: Project.listColorProfiles()
  - Added: Project.Project.linearizeWorkingSpace
  - Added: Project.Project.compensateForSceneReferredProfiles

- Scripting access to the expression engine attribute:
  - Added: Project.expressionEngine

- Added project method Project.setDefaultImportFolder, which sets the folder that will be shown in the file import dialog.

- Added app property app.disableRendering, which disables rendering via the same mechanism as the Caps Lock key.

2.3 After Effects 15.1

- Project.autoFixExpressions() will now fix expression name references in single quotes (ex., ('Effect Name')), as well as double quotes.

- Fixes CompItem.exportAsMotionGraphicsTemplate() not returning a boolean as expected

2.4 After Effects 15.0

- Scripting Access to motion graphics templates
  - Added: CompItem.motionGraphicsTemplateName
  - Added: CompItem.exportAsMotionGraphicsTemplate()
  - Added: CompItem.openInEssentialGraphics()
  - Added: Property.addToMotionGraphicsTemplate()
  - Added: CompItem.canAddToMotionGraphicsTemplate
2.5 After Effects 14.2.1 (CC 2017.2)

- Buttons in ScriptUI panels have been reverted to the rectangular appearance seen in After Effects 14.1 and previous releases.
- The `AVItem.setProxyToNone()` scripting method no longer fails with an error message, “After Effects error: AEGP trying to add invalid footage”.
- The `System.callSystem()` scripting method now waits for all tasks called by the command to complete, instead of failing when the command takes a long time to complete.

2.6 After Effects 14.2 (CC 2017.1)

- **Scripting Access to text leading**
  - Added: `TextDocument.leading`
- **Scripting Access to Team Projects (Beta)**
  - Added: `Project.newTeamProject()`
  - Added: `Project.openTeamProject()`
  - Added: `Project.shareTeamProject()`
  - Added: `Project.syncTeamProject()`
  - Added: `Project.closeTeamProject()`
  - Added: `Project.convertTeamProjectToProject()`
  - Added: `Project.listTeamProjects()`
  - Added: `Project.isTeamProjectOpen()`
  - Added: `Project.isAnyTeamProjectOpen()`
  - Added: `Project.isTeamProjectEnabled()`
  - Added: `Project.isLoggedInToTeamProject()`
  - Added: `Project.isSyncCommandEnabled()`
  - Added: `Project.isShareCommandEnabled()`
  - Added: `Project.isResolveCommandEnabled()`
  - Added: `Project.resolveConflict()`

- Drop-down menus in ScriptUI panels are no longer clipped on HiDPI displays on Windows.
- The appearance of buttons, sliders, disclosure triangles ("twirly arrow"), scroll bar, progress bar, radio buttons, and checkboxes in ScriptUI embedded panels have been updated to match the appearance of After Effects native controls.
- After Effects no longer crashes when the `TextDocument.compPointToSource()` scripting method is used with a 3D text layer.
- The match name of the Fast Box Blur effect is “ADBE Box Blur2”. The older match name “ADBE Box Blur” will continue to work: when used to add the effect, “ADBE Box Blur” will apply the Fast Box Blur effect, but with the older name “Box Blur”; the Iterations parameter will be set to the new default of 3.
2.7 After Effects 14.0 (CC 2017)

- Scripting Access to Tools
  - Added: `Project.toolType`
- Scripting Access to Composition Markers
  - Added: `CompItem.markerProperty`
- Scripting Access to Queue in AME
  - Added: `RenderQueue.queueInAME()`
- Scripting Access to Available GPU Acceleration Options
  - Added: `app.availableGPUAccelTypes`

2.8 After Effects 13.8 (CC 2015.3)

- Enable GPU effect rendering via scripting
  - Added: `Project.gpuAccelType`
- New Gaussian Blur effect added w/ matchname ADBE Gaussian Blur 2

2.9 After Effects 13.6 (CC 2015)

- Scripting access to text baselines
  - Added: `baselineLocs`
- New scripting method to generate random numbers
  - Added: `generateRandomNumber()`
- Using the `copyToComp()` scripting method no longer causes After Effects to crash when the layer has a parent.
- The `valueAtTime()` scripting method now waits for time-intensive expressions, like `sampleImage`, to finish evaluating before it returns the result.
- ScriptUI panels now display and resize correctly on high-DPI displays on Windows.
- After Effects no longer crashes when you click OK or Cancel buttons in a scriptUI dialog with tabbed panels.
2.10 After Effects 13.2 (CC 2014.2)

- Scripting improvements for text layers (read-only)
  - Returns boolean value:
    * Added: `fauxBold`
    * Added: `fauxItalic`
    * Added: `allCaps`
    * Added: `smallCaps`
    * Added: `superscript`
    * Added: `subscript`
  - Returns float:
    * Added: `verticalScale`
    * Added: `horizontalScale`
    * Added: `baselineShift`
    * Added: `tsume`
  - Returns array of ([X,Y]) position coordinates (paragraph text layers only):
    * Added: `boxTextPos`
    * Added: `sourcePointToComp()`
    * Added: `compPointToSource()`

2.11 After Effects 13.1 (CC 2014.1)

- Scripting improvements for text layers (read-only)
  - Returns string:
    * Added: `fontLocation`
    * Added: `fontStyle`
    * Added: `fontFamily`
  - “Use Legacy UI” toggle implemented

2.12 After Effects 13.0 (CC 2014)

- Scripting access to render settings and output module settings
  - Added: RenderQueueItem object `getSetting, setSetting` methods
  - Added: RenderQueueItem object `getSettings, setSettings` methods
  - Added: OutputModule object `getSetting, setSetting` methods
– Added: OutputModule object `getSettings`, `setSettings` methods
  • Fetch project item by id: `Project.itemByID()`
  • CEP panels implemented

2.13 After Effects 12.0 (CC)

• Access to effect’s internal version string
  – Added: Application effects object’s version attribute, see `app.effects`

• Ability to get and set preview mode
  – Added: `Viewer.fastPreview`

• Access to layer sampling method (see `samplingQuality`)
• Changed preference and settings methods (see `Settings object`)
• ScriptUI is now based on the same controls as the main application.
Elements of basic JavaScript relevant to After Effects scripting

JavaScript variables

Scripting shares a global environment, so any script executed at startup can define variables and functions that are available to all scripts. In all cases, variables and functions, once defined by running a script that contains them, persist in subsequent scripts during a given After Effects session. Once the application is quit, all such globally defined variables and functions are cleared. Scripters should be careful about giving variables in scripts unique names, so that a script does not inadvertently reassign global variables intended to persist throughout a session.
3.1 Keywords and Statement Syntax

<table>
<thead>
<tr>
<th>Keyword/Statement</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><code>break</code></td>
<td>Standard JavaScript; exit the currently executing loop.</td>
</tr>
<tr>
<td><code>continue</code></td>
<td>JavaScript; cease execution of the current loop iteration.</td>
</tr>
<tr>
<td><code>case</code></td>
<td>Label used in a <code>switch</code> statement.</td>
</tr>
<tr>
<td><code>default</code></td>
<td>Label used in a <code>switch</code> statement when a <code>case</code> label is not found.</td>
</tr>
<tr>
<td><code>do...while</code></td>
<td>Standard JavaScript construct. Similar to the <code>while</code> loop, except loop condition evaluation occurs at the end of the loop.</td>
</tr>
<tr>
<td><code>false</code></td>
<td>Literal representing the Boolean false value.</td>
</tr>
<tr>
<td><code>for</code></td>
<td>Standard JavaScript loop construct.</td>
</tr>
<tr>
<td><code>for...in</code></td>
<td>Standard JavaScript construct. Provides a way to easily loop through the properties of an object.</td>
</tr>
<tr>
<td><code>function</code></td>
<td>Used to define a function.</td>
</tr>
<tr>
<td><code>if/if...else</code></td>
<td>Standard JavaScript conditional constructs.</td>
</tr>
<tr>
<td><code>new</code></td>
<td>Standard JavaScript constructor statement.</td>
</tr>
<tr>
<td><code>null</code></td>
<td>Assigned to a variable, array element, or object property to indicate that it does not contain a legal value.</td>
</tr>
<tr>
<td><code>return</code></td>
<td>Standard JavaScript way of returning a value from a function or exiting a function.</td>
</tr>
<tr>
<td><code>switch</code></td>
<td>Standard JavaScript way of evaluating a JavaScript expression and attempting to match the expression’s value to a <code>case</code> label.</td>
</tr>
<tr>
<td><code>this</code></td>
<td>Standard JavaScript method of indicating the current object.</td>
</tr>
<tr>
<td><code>true</code></td>
<td>Literal representing the Boolean true value.</td>
</tr>
<tr>
<td><code>undefined</code></td>
<td>Indicates that the variable, array element, or object property has not yet been assigned a value.</td>
</tr>
<tr>
<td><code>var</code></td>
<td>Standard JavaScript syntax used to declare a local variable.</td>
</tr>
<tr>
<td><code>while</code></td>
<td>Standard JavaScript construct. Similar to the <code>do...while</code> loop, except loop condition evaluation occurs at the beginning of the loop.</td>
</tr>
<tr>
<td><code>with</code></td>
<td>Standard JavaScript construct used to specify an object to use in subsequent statements.</td>
</tr>
</tbody>
</table>

JavaScript operators

The following tables list and describe all operators recognized by the After Effects scripting engine and show the precedence and associativity for all operators.

3.2 Description of Operators

<table>
<thead>
<tr>
<th>Operators</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><code>new</code></td>
<td>Allocate object.</td>
</tr>
<tr>
<td><code>delete</code></td>
<td>Deallocate object.</td>
</tr>
<tr>
<td><code>type</code></td>
<td>Returns data type.</td>
</tr>
<tr>
<td><code>void</code></td>
<td>Returns undefined value.</td>
</tr>
<tr>
<td><code>.</code></td>
<td>Structure member.</td>
</tr>
<tr>
<td><code>[]</code></td>
<td>Array element.</td>
</tr>
<tr>
<td><code>()</code></td>
<td>Function call.</td>
</tr>
<tr>
<td><code>++</code></td>
<td>Pre- or post-increment.</td>
</tr>
<tr>
<td><code>--</code></td>
<td>Pre- or post-decrement.</td>
</tr>
<tr>
<td><code>-</code></td>
<td>Unary negation or subtraction.</td>
</tr>
<tr>
<td><code>~</code></td>
<td>Bitwise NOT.</td>
</tr>
</tbody>
</table>
### 3.2. Description of Operators

<table>
<thead>
<tr>
<th>Operators</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>!</td>
<td>Logical NOT.</td>
</tr>
<tr>
<td>*</td>
<td>Multiply.</td>
</tr>
<tr>
<td>/</td>
<td>Divide.</td>
</tr>
<tr>
<td>%</td>
<td>Modulo division.</td>
</tr>
<tr>
<td>+</td>
<td>Add.</td>
</tr>
<tr>
<td>&lt;&lt;</td>
<td>Bitwise left shift.</td>
</tr>
<tr>
<td>&gt;&gt;</td>
<td>Bitwise right shift.</td>
</tr>
<tr>
<td>&gt;&gt;&gt;</td>
<td>Unsigned bitwise right shift.</td>
</tr>
<tr>
<td>&lt;</td>
<td>Less than.</td>
</tr>
<tr>
<td>&lt;=</td>
<td>Less than or equal.</td>
</tr>
<tr>
<td>&gt;</td>
<td>Greater than.</td>
</tr>
<tr>
<td>&gt;=</td>
<td>Greater than or equal.</td>
</tr>
<tr>
<td>==</td>
<td>Equal.</td>
</tr>
<tr>
<td>!=</td>
<td>Not equal.</td>
</tr>
<tr>
<td>&amp;</td>
<td>Bitwise AND.</td>
</tr>
<tr>
<td>^</td>
<td>Bitwise XOR.</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>&amp;&amp;</td>
<td>Logical AND.</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>??</td>
<td>Conditional (ternary).</td>
</tr>
<tr>
<td>=</td>
<td>Assignment.</td>
</tr>
<tr>
<td>+=</td>
<td>Assignment with add operation.</td>
</tr>
<tr>
<td>-=</td>
<td>Assignment with subtract operation.</td>
</tr>
<tr>
<td>*=</td>
<td>Assignment with multiply operation.</td>
</tr>
<tr>
<td>/=</td>
<td>Assignment with divide operation.</td>
</tr>
<tr>
<td>%=</td>
<td>Assignment with modulo division operation.</td>
</tr>
<tr>
<td>&lt;&lt;=</td>
<td>Assignment with bitwise left shift operation.</td>
</tr>
<tr>
<td>&gt;&gt;=</td>
<td>Assignment with bitwise right shift operation.</td>
</tr>
<tr>
<td>&gt;&gt;&gt;=</td>
<td>Assignment with unsigned bitwise right shift operation.</td>
</tr>
<tr>
<td>&amp;=</td>
<td>Assignment with bitwise AND operation.</td>
</tr>
<tr>
<td>^=</td>
<td>Assignment with bitwise XOR operation.</td>
</tr>
<tr>
<td></td>
<td>=</td>
</tr>
<tr>
<td>,</td>
<td>Multiple evaluation.</td>
</tr>
</tbody>
</table>
3.3 Operator Precedence

<table>
<thead>
<tr>
<th>Operators (highest precedence to lowest)</th>
<th>Associativity</th>
</tr>
</thead>
<tbody>
<tr>
<td>[], .</td>
<td>left to right</td>
</tr>
<tr>
<td>new, delete, - (unary negation), !, type of, void , ++, –</td>
<td>right to left</td>
</tr>
<tr>
<td>*, /, %</td>
<td>left to right</td>
</tr>
<tr>
<td>+, - (subtraction)</td>
<td>left to right</td>
</tr>
<tr>
<td>&lt;&lt;, &gt;&gt;, &gt;&gt;&gt;</td>
<td>left to right</td>
</tr>
<tr>
<td>&lt;, &lt;=, &gt;, &gt;=</td>
<td>left to right</td>
</tr>
<tr>
<td>==, !=</td>
<td>left to right</td>
</tr>
<tr>
<td>&amp;</td>
<td>left to right</td>
</tr>
<tr>
<td>^</td>
<td>left to right</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>&amp;&amp;</td>
<td>left to right</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>?::</td>
<td>right to left</td>
</tr>
<tr>
<td>==, /=, %=, &lt;&lt;=, &gt;&gt;=, &gt;&gt;&gt;=, &amp;=, ^=,</td>
<td>right to left</td>
</tr>
<tr>
<td></td>
<td>=</td>
</tr>
<tr>
<td>.</td>
<td>left to right</td>
</tr>
</tbody>
</table>
As you look through this reference section, which is organized alphabetically by object, you can refer to the following diagrams for an overview of where the various objects fall within the hierarchy, and their correspondence to the user interface.

Hierarchy diagram of the main After Effects scripting objects

Note that the File, Folder, and Socket objects are defined by ExtendScript, and are documented in the JavaScript Tools Guide. ExtendScript also defines the ScriptUI module, a set of window and user-interface control objects, which are available to After Effects scripts. These are also documented in the JavaScript Tools Guide. The hierarchy of objects in scripting corresponds to the hierarchy in the user interface.
The application contains a Project panel, which displays a project. The project contains compositions, which contain layers. The source for a layer can be a footage file, placeholder, or solid, also listed in the Project panel. Each layer contains settings known as properties, and these can contain markers and keyframes. The renderqueue contains render-queue items as well as render settings and output modules. All of these entities are represented by objects in scripting.

**Note:** To avoid ambiguity, this manual uses the term “attribute” to refer to JavaScript object properties, and the term “property” or “AE property” to refer to After Effects layer properties.

### Object summary

The following table lists all objects alphabetically, with links to the documentation page for each.

<table>
<thead>
<tr>
<th>Object</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Global functions</td>
<td>Globally available functions that allow you to display text for script debugging purposes, and help convert time values.</td>
</tr>
<tr>
<td>Application object</td>
<td>A single global object, available by its name (app), that provides access to objects and application settings.</td>
</tr>
<tr>
<td>AVItem object</td>
<td>Represents audio/visual files imported into After Effects.</td>
</tr>
<tr>
<td>AVLayer object</td>
<td>Represents those layers that contain AVItem objects (composition layers, footage layers, solid layers, text layers).</td>
</tr>
<tr>
<td>CameraLayer object</td>
<td>Represents a camera layer within a composition.</td>
</tr>
<tr>
<td>Collection object</td>
<td>Associates a set of objects or values as a logical group and provides access to them by index.</td>
</tr>
<tr>
<td>CompItem object</td>
<td>Represents a composition, and allows you to manipulate it and get information about it.</td>
</tr>
<tr>
<td>FileSource object</td>
<td>Describes footage that comes from a file.</td>
</tr>
<tr>
<td>FolderItem object</td>
<td>Represents a folder in the Project panel.</td>
</tr>
<tr>
<td>Object</td>
<td>Description</td>
</tr>
<tr>
<td>-------------------------------</td>
<td>-----------------------------------------------------------------------------</td>
</tr>
<tr>
<td>FootageItem object</td>
<td>Represents a footage item imported into a project, which appears in the Project panel.</td>
</tr>
<tr>
<td>FootageSource object</td>
<td>Describes the file source of some footage.</td>
</tr>
<tr>
<td>ImportOptions object</td>
<td>Encapsulates options for importing files into After Effects.</td>
</tr>
<tr>
<td>Item object</td>
<td>Represents an item in a project that appears in the Project panel.</td>
</tr>
<tr>
<td>ItemCollection object</td>
<td>Collects items in a project.</td>
</tr>
<tr>
<td>KeyframeEase object</td>
<td>Encapsulates keyframe ease values in an After Effects property.</td>
</tr>
<tr>
<td>Layer object</td>
<td>A base class for layer classes.</td>
</tr>
<tr>
<td>LayerCollection object</td>
<td>Collects layers in a project.</td>
</tr>
<tr>
<td>LightLayer object</td>
<td>Represents a light layer within a composition.</td>
</tr>
<tr>
<td>MarkerValue object</td>
<td>Encapsulates marker values in an After Effects property.</td>
</tr>
<tr>
<td>MaskPropertyGroup object</td>
<td>Encapsulates mask attributes in a layer.</td>
</tr>
<tr>
<td>OMCollection object</td>
<td>Collects output modules in a render queue.</td>
</tr>
<tr>
<td>OutputModule object</td>
<td>Represents an output module for a render queue.</td>
</tr>
<tr>
<td>PlaceholderSource object</td>
<td>Describes a placeholder for footage.</td>
</tr>
<tr>
<td>Project</td>
<td>Represents an After Effects project.</td>
</tr>
<tr>
<td>Property object</td>
<td>Represents an After Effects property.</td>
</tr>
<tr>
<td>PropertyBase object</td>
<td>A base class for After Effects property and property group classes.</td>
</tr>
<tr>
<td>PropertyGroup object</td>
<td>Represents an After Effects property group.</td>
</tr>
<tr>
<td>RenderQueue object</td>
<td>Represents the After Effects render queue.</td>
</tr>
<tr>
<td>RenderQueueItem object</td>
<td>Represents a renderable item in a render queue.</td>
</tr>
<tr>
<td>RenderQueueItemCollection</td>
<td>Collects render-queue items in a render queue.</td>
</tr>
<tr>
<td>RQItemCollection object</td>
<td>Provides access to application settings and preferences.</td>
</tr>
<tr>
<td>Shape object</td>
<td>Encapsulates the outline shape information for a mask.</td>
</tr>
<tr>
<td>ShapeLayer object</td>
<td>Represents a shape layer within a composition.</td>
</tr>
<tr>
<td>SolidSource object</td>
<td>Describes a solid color that is the source of some footage.</td>
</tr>
<tr>
<td>System object</td>
<td>Provides access to the operating system from the application.</td>
</tr>
<tr>
<td>TextDocument object</td>
<td>Encapsulates the text in a text layer.</td>
</tr>
<tr>
<td>TextLayer object</td>
<td>Represents a text layer within a composition.</td>
</tr>
<tr>
<td>Viewer object</td>
<td>Represents a Composition, Layer, or Footage panel.</td>
</tr>
</tbody>
</table>
These globally available functions that are specific to After Effects. Any JavaScript object or function can call these functions, which allow you to display text in a small (3-line) area of the Info panel, to convert numeric time values to and from string values, or to generate a random number.

<table>
<thead>
<tr>
<th>Global function</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>clearOutput()</td>
<td>Clears text from the Info panel.</td>
</tr>
<tr>
<td>currentFormatToTime()</td>
<td>Converts string time value to a numeric time value.</td>
</tr>
<tr>
<td>generateRandomNumber()</td>
<td>Generates a random number.</td>
</tr>
<tr>
<td>timeToCurrentFormat()</td>
<td>Converts a numeric time value to a string time value.</td>
</tr>
<tr>
<td>write()</td>
<td>Writes text to the Info panel, with no line break added.</td>
</tr>
<tr>
<td>writeLn()</td>
<td>Writes text to the Info panel, adding a line break at the end.</td>
</tr>
<tr>
<td>isValid()</td>
<td>When true, the specified object exists.</td>
</tr>
</tbody>
</table>

Additional global functions for standard user I/O (alert, confirm, and prompt) and static functions for file I/O, are defined by ExtendScript; for detailed reference information, see the JavaScript Tools Guide (available from the ExtendScript Toolkit’s Help menu).

### 5.1 clearOutput()

clearOutput()

**Description**
Clears the output in the Info panel.

**Parameters**
None.

**Returns**
5.2 currentFormatToTime()

currentFormatToTime(formattedTime, fps[, isDuration])

Description
Converts a formatted string for a frame time value to a number of seconds, given a specified frame rate. For example, if the formatted frame time value is 0:00:12 (the exact string format is determined by a project setting), and the frame rate is 24 fps, the time would be 0.5 seconds (12/24). If the frame rate is 30 fps, the time would be 0.4 seconds (12/30). If the time is a duration, the frames are counted from 0. Otherwise, the frames are counted from the project’s starting frame (see Project.displayStartFrame).

Parameters

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>formattedTime</td>
<td>The frame time value, a string specifying a number of frames in the project’s current time display format.</td>
</tr>
<tr>
<td>fps</td>
<td>The frames-per-second, a floating-point value.</td>
</tr>
<tr>
<td>isDuration</td>
<td>Optional. When true, the time is a duration (measured from frame 0). When false (the default), the time is measured from the project’s starting frame.</td>
</tr>
</tbody>
</table>

Returns
Floating-point value, the number of seconds.

5.3 generateRandomNumber()

generateRandomNumber()

Note: This functionality was added in After Effects 13.6 (CC 2015)

Description
Generates random numbers. This function is recommended instead of Math.random for generating random numbers that will be applied as values in a project (e.g., when using setValue).

This method avoids a problem where Math.random would not return random values in After Effects CC 2015 (13.5.x) due to a concurrency issue with multiple CPU threads.

Returns
Floating-point, pseudo-random number in the range [0, 1].

Example

```
// change the position X of all layers with random number
var myComp = app.project.activeItem;
var x = 0;
```
for (var i = 1; i <= myComp.numLayers; i++) {
    // If you use Math.random(), this does not work
    // x = 400*(Math.random()) - 200;
    // use new generateRandomNumber() instead
    x = 400*(generateRandomNumber()) - 200;
    currentPos = myComp.layer(i).property("Position").value;
    myComp.layer(i).property("Position").setValue([currentPos[0]+x,currentPos[1]]);
}

## 5.4 isValid()

isValid(obj)

**Description**
Determines if the specified After Effects object (e.g., composition, layer, mask, etc.) still exists. Some operations, such as `PropertyBase.moveTo()`, might invalidate existing variable assignments to related objects. This function allows you to test whether those assignments are still valid before attempting to access them.

**Parameters**

| obj | The After Effects object to check for validity. |

**Returns**

Boolean.

**Example**

```javascript
var layer = app.project.activeItem.layer(1); // assume layer has three masks
alert(isValid(layer)); // displays "true"
var mask1 = layer.mask(1);
var mask2 = layer.mask(2);
var mask3 = layer.mask(3);
mask3.moveTo(1); // move the third mask to the top of the mask stack
alert(isValid(mask1)); // displays "false"; mask2 and mask3 do as well
```

## 5.5 timeToCurrentFormat()

timeToCurrentFormat(time, fps[, isDuration])

**Description**
Converts a numeric time value (a number of seconds) to a frame time value; that is, a formatted string that shows which frame corresponds to that time, at the specified rate. For example, if the time is 0.5 seconds, and the frame rate is 24 fps, the frame would be 0:00:12 (when the project is set to display as timecode). If the frame rate is 30 fps, the frame would be 0:00:15. The format of the timecode string is determined by a project setting. If the time is
a duration, the frames are counted from 0. Otherwise, the frames are counted from the project’s starting frame (see Project displayStartFrame attribute).

**Parameters**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>time</td>
<td>The number of seconds, a floating-point value.</td>
</tr>
<tr>
<td>fps</td>
<td>The frames-per-second, a floating-point value.</td>
</tr>
<tr>
<td>isDuration</td>
<td>Optional. When true, the time is a duration (measured from frame 0). When false (the default), the time is measured from the project’s starting frame.</td>
</tr>
</tbody>
</table>

**Returns**

String in the project’s current time display format.

---

### 5.6 write()

**write(text)**

**Description**

Writes output to the Info panel, with no line break added.

**Parameters**

- **text**: The string to display. Truncated if too long for the Info panel.

**Returns**

Nothing.

**Example**

```plaintext
write("This text appears in Info panel ");
write("with more on same line.");
```

---

### 5.7 writeLn()

**writeLn(text)**

**Description**

Writes output to the Info panel and adds a line break at the end.

**Parameters**

- **text**: The string to display.

**Returns**

Nothing.

**Example**

```plaintext
writeln("This text appears on first line");
writeln("This text appears on second line");
```
app

**Description**

Provides access to objects and application settings within the After Effects application. The single global object is always available by its name, app.

Attributes of the Application object provide access to specific objects within After Effects. Methods of the Application object can create a project, open an existing project, control Watch Folder mode, purge memory, and quit the After Effects application. When the After Effects application quits, it closes the open project, prompting the user to save or discard changes as necessary, and creates a project file as necessary.

### 6.1 Attributes

#### 6.1.1 app.activeViewer

**app.activeViewer**

**Description**

The Viewer object for the currently focused or active-focused viewer (Composition, Layer, or Footage) panel. Returns null if no viewers are open.

**Type**

Viewer object; read-only.
6.1.2 app.availableGPUAccelTypes

app.availableGPUAccelTypes

Note: This functionality was added in After Effects 14.0 (CC 2017)

Description
The Viewer object for the currently focused or active-focused viewer (Composition, Layer, or Footage) panel.

Use this in conjunction with app.project.gpuAccelType to set the value for Project Settings > Video Rendering and Effects > Use.

Type
Array of GpuAccelType enums, or null if no viewers are open; Read-only. One of:

- CUDA
- Metal
- OPENCL
- SOFTWARE

Example The following sample code checks the current computer’s available GPU acceleration types, and sets it to Metal if available:

```Javascript
// app.availableGPUAccelTypes returns GPU acceleration types available on the current system.
// You can use this to check before setting the GPU acceleration type.
{
    var newType = GpuAccelType.METAL;

    // Before trying to set, check which GPU acceleration types are available on the current system.
    var canSet = false;
    var currentOptions = app.availableGPUAccelTypes;
    for (op in currentOptions) {
        if (currentOptions[op] == newType)
            canSet = true;
    }

    if (canSet) {
        // Set the GPU acceleration type.
        app.project.gpuAccelType = newType
    }
    else {
        alert("Metal is not available on this OS.");
    }
}
```

6.1.3 app.buildName

app.buildName

Description
The name of the build of After Effects being run, used internally by Adobe for testing and troubleshooting.

**Type**
String; read-only.

---

### 6.1.4 app.buildNumber

**app.buildNumber**

**Description**
The number of the build of After Effects being run, used internally by Adobe for testing and troubleshooting.

**Type**
Integer; read-only.

---

### 6.1.5 app.disableRendering

**app.disableRendering**

**Note:** This functionality was added in After Effects 16.0 (CC 2019)

**Description**
When false (the default), rendering proceeds as normal. Set to true to disable rendering as if Caps Lock were turned on.

**Type**
Boolean; read/write.

---

### 6.1.6 app.effects

**app.effects**

**Description**
The effects available in the application.

**Type**
Array, with each element containing the following properties; read-only:

<table>
<thead>
<tr>
<th>Property</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>displayName</td>
<td>String representing the localized display name of the effect as seen in the Effect menu.</td>
</tr>
<tr>
<td>category</td>
<td>String representing the localized category label as seen in the Effect menu. This can be &quot;&quot; for synthetic effects that aren’t normally shown to the user.</td>
</tr>
<tr>
<td>matchName</td>
<td>String representing the internal unique name for the effect. This name does not change between versions of After Effects. Use this value to apply the effect.</td>
</tr>
<tr>
<td>version</td>
<td>Effect’s internal version string. This value might be different than the version number the plug-in vendor decides to show in the effect’s about box.</td>
</tr>
</tbody>
</table>
Example

```javascript
var effectName = app.effects[12].displayName;
```

### 6.1.7 app.exitAfterLaunchAndEval

**app.exitAfterLaunchAndEval**

**Description**

This attribute is used only when executing a script from a command line on Windows. When the application is launched from the command line, the `-r` or `-s` command line flag causes the application to run a script (from a file or from a string, respectively). If this attribute is set to true, After Effects will exit after the script is run; if it is false, the application will remain open. This attribute only has an effect when After Effects is run from the Windows command line. It has no effect in Mac OS.

**Type**

Boolean; read/write.

### 6.1.8 app.exitCode

**app.exitCode**

**Description**

A numeric status code used when executing a script externally (that is, from a command line or AppleScript).

- In Windows, the value is returned on the command line when After Effects was launched on the command line (using the `afterfx` or `afterfx -m` command), and a script was specified with the `-r` or `-s` option.
- In Mac OS, the value is returned as the AppleScript DoScript result for each script.

In both Mac OS and Windows, the value is set to 0 (`EXIT_SUCCESS`) at the beginning of each script evaluation. In the event of an error while the script is running, the script can set this to a positive integer that indicates what error occurred.

**Type**

Integer; read/write.

**Example**

```javascript
app.exitCode = 2; // on quit, if value is 2, an error has occurred
```

### 6.1.9 app.isoLanguage

**app.isoLanguage**

**Description**

A string indicating the locale (language and regional designations) After Effects is running.
Note: $.locale returns the operating system language, not the language of the After Effects application.

Type
String; read-only. Some common values include:
- en_US for English (United States)
- de_DE for German (Germany)
- es_ES for Spanish (Spain)
- fr_FR for French (France)
- it_IT for Italian (Italy)
- ja_JP for Japanese (Japan)
- ko_KR for Korean (Korea)

Example

```javascript
var lang = app.isoLanguage;
if (lang == "en_US") {
    alert("After Effects is running in English.");
}
elseif (lang == "fr_FR") {
    alert("After Effects is running in French.");
}
else {
    alert("After Effects is running in English or French.");
}
```

6.1.10 app.isRenderEngine

app.isRenderEngine

Description
True if After Effects is running as a render engine.

Type
Boolean; read-only.

6.1.11 app.isWatchFolder

app.isWatchFolder

Description
True if the Watch Folder dialog box is currently displayed and the application is currently watching a folder for rendering.

Type
6.1.12 **app.memoryInUse**

**app.memoryInUse**

**Description**

The number of bytes of memory currently used by this application.

**Type**

Number; read-only.

6.1.13 **app.onError**

**app.onError**

**Description**

The name of a callback function that is called when an error occurs. By creating a function and assigning it to this attribute, you can respond to errors systematically; for example, you can close and restart the application, noting the error in a log file if it occurred during rendering. See `RenderQueue.render()`. The callback function is passed the error string and a severity string. It should not return any value.

**Type**

A function name string, or null if no function is assigned; read/write.

**Example**

```javascript
function err(errString) {
    alert(errString);
}
app.onError = err;
```

6.1.14 **app.project**

**app.project**

**Description**

The project that is currently loaded. See `Project object`.

**Type**

Project object; read-only.
6.1.15 app.saveProjectOnCrash

app.saveProjectOnCrash

Description
When true (the default), After Effects attempts to display a dialog box that allows you to save the current project if an error causes the application to quit unexpectedly. Set to false to suppress this dialog box and quit without saving.

Type
Boolean; read/write.

6.1.16 app.settings

app.settings

Description
The currently loaded settings. See Settings object.

Type
Settings object; read-only.

6.1.17 app.version

app.version

Note: This functionality was added in After Effects 12.0 (CC)

Description
An alphanumeric string indicating which version of After Effects is running.

Type
String; read-only.

Example

```javascript
var ver = app.version;
alert("This machine is running version" + ver + " of AfterEffects.");
```
6.2 Methods

6.2.1 app.activate()

app.activate()

Description

Opens the application main window if it is minimized or iconified, and brings it to the front of the desktop.

Parameters

None.

Returns

Nothing.

6.2.2 app.beginSuppressDialogs()

app.beginSuppressDialogs()

Description

Begins suppression of script error dialog boxes in the user interface. Use app.endSuppressDialogs() to resume the display of error dialogs.

Parameters

None.

Returns

Nothing.

6.2.3 app.beginUndoGroup()

app.beginUndoGroup(undoString)

Description

Marks the beginning of an undo group, which allows a script to logically group all of its actions as a single undoable action (for use with the Edit > Undo/Redo menu items). Use the app.endUndoGroup() method to mark the end of the group.

beginUndoGroup() and endUndoGroup() pairs can be nested. Groups within groups become part of the larger group, and will undo correctly. In this case, the names of inner groups are ignored.

Parameters

undoString | The text that will appear for the Undo command in the Edit menu (that is, “Undo “)

Returns

Nothing.
6.2.4 app.cancelTask()

app.cancelTask(taskID)

Description
Removes the specified task from the queue of tasks scheduled for delayed execution.

Parameters

| taskID | An integer that identifies the task, as returned by app.scheduleTask(). |

Returns
Nothing.

6.2.5 app.endSuppressDialogs()

app.endSuppressDialogs(alert)

Description
Ends the suppression of script error dialog boxes in the user interface. Error dialogs are displayed by default; call this method only if app.beginSuppressDialogs() has previously been called.

Parameters

| alert | Boolean when true, errors that have occurred following the call to beginSuppressDialogs() are displayed in a dialog box. |

Returns
Nothing.

6.2.6 app.endUndoGroup()

app.endUndoGroup()

Description
Marks the end of an undo group begun with the app.beginUndoGroup() method. You can use this method to place an end to an undo group in the middle of a script, should you wish to use more than one undo group for a single script. If you are using only a single undo group for a given script, you do not need to use this method; in its absence at the end of a script, the system will close the undo group automatically. Calling this method without having set a beginUndoGroup() method yields an error.

Parameters
None.

Returns
Nothing.
6.2.7 app.endWatchFolder()

app.endWatchFolder()

Description
Ends Watch Folder mode.

Parameters
None.

Returns
Nothing.

See also
- app.watchFolder()
- app.parseSwatchFile()
- app.isWatchFolder

6.2.8 app.newProject()

app.newProject()

Description
Creates a new project in After Effects, replicating the File > New > New Project menu command. If the current project has been edited, the user is prompted to save it. If the user cancels out of the Save dialog box, the new project is not created and the method returns null. Use app.project.close(CloseOptions.DO_NOT_SAVE_CHANGES) to close the current project before opening a new one. See Project.close()

Parameters
None.

Returns
A new Project object, or null if no new project is created.

Example

```javascript
app.project.close(CloseOptions.DO_NOT_SAVE_CHANGES);
app.newProject();
```

6.2.9 app.open()

app.open()
app.open(file)

Description
Opens a project.
Parameters

| file | Optional | An ExtendScript File object for the project file to open. If not supplied, the method prompts the user to select a project file.

Returns

A new Project object for the specified project, or null if the user cancels the Open dialog box.

Example

```javascript
var my_file = new File("../my_folder/my_test.aep");
if (my_file.exists) {
    new_project = app.open(my_file);
    if (new_project) {
        alert(new_project.file.name);
    }
}
```

### 6.2.10 app.parseSwatchFile()

**app.parseSwatchFile(file)**

**Description**

Loads color swatch data from an Adobe Swatch Exchange (ASE) file.

**Parameters**

| file | The file specification, an ExtendScript File object.

**Returns**

The swatch data, in this format:

```
data.majorVersiondata.
minorVersion
```

| data.values | An array of Swatch Value.
| SwatchValue.type | One of “RGB”, “CMYK”, “LAB”, “Gray”
| SwatchValue.r | When type = "RGB", the color values in the range [0.0..1.0]. 0, 0, 0 is Black.
| SwatchValue.g |
| SwatchValue.b |
| SwatchValue.c | When type = “CMYK”, the color values in the range [0.0..1.0]. 0, 0, 0 is White.
| SwatchValue.m |
| SwatchValue.y |
| SwatchValue.k |
| SwatchValue.L | When type = "LAB", the color values. L is in the range [0.0..1.0]. a and b are in the range [-128.0..+128.0] 0, 0, 0 is Black. When type = "Gray", the value range is [0.0..1.0]. 0.0 is Black.
| SwatchValue.a |
| SwatchValue.b |
| SwatchValue.value |

---

**6.2. Methods**
### 6.2.11 app.pauseWatchFolder()

**app.pauseWatchFolder(pause)**

**Description**
Pauses or resumes the search of the target watch folder for items to render.

**Parameters**

<table>
<thead>
<tr>
<th>pause</th>
</tr>
</thead>
<tbody>
<tr>
<td>True to pause, false to resume.</td>
</tr>
</tbody>
</table>

**Returns**
Nothing.

**See also**

- `app.isWatchFolder`
- `app.watchFolder()`
- `app.endWatchFolder()`

---

### 6.2.12 app.purge()

**app.purge(target)**

**Description**
Purges unused data of the specified types from memory. Replicates the Purge options in the Edit menu.

**Parameters**

<table>
<thead>
<tr>
<th>target</th>
</tr>
</thead>
<tbody>
<tr>
<td>The type of elements to purge from memory; a Purge-Target enumerated value, one of:</td>
</tr>
<tr>
<td>PurgeTarget.ALL_CACHES: Purges all data that After Effects has cached to physical memory.</td>
</tr>
<tr>
<td>PurgeTarget.UNDO_CACHES: Purges all data saved in the undo cache.</td>
</tr>
<tr>
<td>PurgeTarget.SNAPSHOT_CACHES: Purges all data cached as composition/layer snapshots.</td>
</tr>
<tr>
<td>PurgeTarget.IMAGE_CACHES : Purges all saved image data.</td>
</tr>
</tbody>
</table>

**Returns**
Nothing.
6.2.13 app.quit()

app.quit()

Description
Quits the After Effects application.

Parameters
None.

Returns
Nothing.

6.2.14 app.scheduleTask()

app.scheduleTask(stringToExecute, delay, repeat)

Description
Schedules the specified JavaScript for delayed execution.

Parameters

<table>
<thead>
<tr>
<th>stringToExecute</th>
<th>A string containing JavaScript to be executed.</th>
</tr>
</thead>
<tbody>
<tr>
<td>delay</td>
<td>A number of milliseconds to wait before executing the JavaScript. A floating-point value.</td>
</tr>
<tr>
<td>repeat</td>
<td>When true, execute the script repeatedly, with the specified delay between each execution. When false the script is executed only once.</td>
</tr>
</tbody>
</table>

Returns
Integer, a unique identifier for this task, which can be used to cancel it with app.cancelTask().

6.2.15 app.setMemoryUsageLimits()

app.setMemoryUsageLimits(imageCachePercentage, maximumMemoryPercentage)

Description
Sets memory usage limits as in the Memory & Cache preferences area. For both values, if installed RAM is less than a given amount (n gigabytes), the value is a percentage of the installed RAM, and is otherwise a percentage of n. The value of n is: 2 GB for 32-bit Windows, 4 GB for 64-bit Windows, 3.5 GB for Mac OS.

Parameters

<table>
<thead>
<tr>
<th>imageCachePercentage</th>
<th>Floating-point value, the percentage of memory assigned to image cache.</th>
</tr>
</thead>
<tbody>
<tr>
<td>maximumMemoryPercentage</td>
<td>Floating-point value, the maximum usable percentage of memory.</td>
</tr>
</tbody>
</table>

Returns
Nothing.
6.2.16 app.setSavePreferencesOnQuit()

app.setSavePreferencesOnQuit(doSave)

Description
Set or clears the flag that determines whether preferences are saved when the application is closed.

Parameters

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>doSave</td>
<td>When true, preferences saved on quit, when false they are not.</td>
</tr>
</tbody>
</table>

Returns
Nothing.

6.2.17 app.watchFolder()

app.watchFolder(folder_object_to_watch)

Description
Starts a Watch Folder (network rendering) process pointed at a specified folder.

Parameters

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>folder_object_to_watch</td>
<td>The ExtendScript Folder object for the folder to watch.</td>
</tr>
</tbody>
</table>

Returns
Nothing.

Example

```javascript
var theFolder = new Folder("c:/tool");
app.watchFolder(theFolder);
```

See also

- `app.endWatchFolder()`
- `app.parseSwatchFile()`
- `app.isWatchFolder`
Project object

app.project

Description
The project object represents an After Effects project. Attributes provide access to specific objects within the project, such as imported files or footage and compositions, and also to project settings such as the timecode base. Methods can import footage, create solids, compositions and folders, and save changes.

7.1 Attributes

7.1.1 Project.activeItem

app.project.activeItem

Description
The item that is currently active and is to be acted upon, or a null if no item is currently selected or if multiple items are selected.

Type
Item object or null; read-only.

7.1.2 Project.bitsPerChannel

app.project.bitsPerChannel

Description
The color depth of the current project, either 8, 16, or 32 bits.
7.1.3 Project.compensateForSceneReferredProfiles

app.project.compensateForSceneReferredProfiles

Note: This functionality was added in After Effects 16.0 (CC 2019)

Description
True if Compensate for Scene-referred Profiles should be enabled for this project; otherwise false.

Type
Boolean; read/write.

7.1.4 Project.displayStartFrame

app.project.displayStartFrame

Description
An alternate way of setting the Frame Count menu setting in the Project Settings dialog box to 0 or 1, and is equivalent to using the FramesCountType.FC_START_0 or FramesCountType.FC_START_1 enumerated values for the framesCountType.

Type
Integer (0 or 1); read/write.

7.1.5 Project.expressionEngine

app.project.expressionEngine

Note: This functionality was added in After Effects 16.0 (CC 2019)

Description
The Expressions Engine setting in the Project Settings dialog box, as a string. One of:

- extendscript
- javascript-1.0

Type
String; read/write.
7.1.6 Project.feetFramesFilmType

app.project.feetFramesFilmType

Description
The Use Feet + Frames menu setting in the Project Settings dialog box. Use this attribute instead of the old timecodeFilmType attribute.

Type
A FeetFramesFilmType enumerated value; read/write. One of:
- FeetFramesFilmType.MM16
- FeetFramesFilmType.MM35

7.1.7 Project.file

app.project.file

Description
The ExtendScript File object for the file containing the project that is currently open.

Type
File object or null if project has not been saved; read-only.

7.1.8 Project.footageTimecodeDisplayStartType

app.project.footageTimecodeDisplayStartType

Description
The Footage Start Time setting in the Project Settings dialog box, which is enabled when Timecode is selected as the time display style.

Type
A FootageTimecodeDisplayStartType enumerated value; read/write. One of:
- FootageTimecodeDisplayStartType.FTCS_START_0
- FootageTimecodeDisplayStartType.FTCS_USE_SOURCE_MEDIA

7.1.9 Project.framesCountType

app.project.framesCountType

Description
The Frame Count menu setting in the Project Settings dialog box.

Type
A FramesCountType enumerated value; read/write. One of:
Warning: Setting this attribute to FramesCountType.FC_TIMECODE_CONVERSION resets the displayStartFrame attribute to 0.

7.1.10 Project.framesUseFeetFrames

app.project.framesUseFeetFrames

Description
The Use Feet + Frames setting in the Project Settings dialog box. True if using Feet + Frames; false if using Frames.

Type
Boolean; read/write.

7.1.11 Project.gpuAccelType

app.project.gpuAccelType

Note: This functionality was added in After Effects 13.8 (CC 2015.3)

Description
Get or set the current projects GPU Acceleration option. see app.availableGPUAccelTypes

Type
A GpuAccelType enumerated value; read/write. One of:
- GpuAccelType.CUDA
- GpuAccelType.Metal
- GpuAccelType.OPENCL
- GpuAccelType.SOFTWARE

Example
The following sample code checks to see if there are queued items in the render queue, and if so queues them in AME but does not immediately start rendering:

```javascript
// access via scripting to Project Settings -> Video Rendering and Effects -> Use
var currentGPUSettings = app.project.gpuAccelType; // returns the current value
var type_str = "";
```
// check the current value and alert the user

switch (currentGPUSettings) {
    case GpuAccelType.CUDA:  type_str = "CUDA"; break;
    case GpuAccelType.METAL: type_str = "Metal"; break;
    case GpuAccelType.OPENCL: type_str = "OpenCL"; break;
    case GpuAccelType.SOFTWARE: type_str = "Software"; break;
    default:                   type_str = "UNKNOWN"; break;
}

alert("Your current setting is " + type_str);

// set the value to Metal

app.project.gpuAccelType = GpuAccelType.METAL;

7.1.12 Project.objects

app.project.objects

Description
All of the items in the project.

Type
ItemCollection object; read-only.

7.1.13 Project.linearBlending

app.project.linearBlending

Description
True if linear blending should be used for this project; otherwise false.

Type
Boolean; read/write.

7.1.14 Project.linearizeWorkingSpace

app.project.linearizeWorkingSpace

Note: This functionality was added in After Effects 16.0 (CC 2019)

Description
True if Linearize Working Space should be enabled for this project; otherwise false.
Type
Boolean; read/write.

7.1.15 Project.numItems

app.project.numItems

Description
The total number of items contained in the project, including folders and all types of footage.

Type
Integer; read-only.

Example

```javascript
n = app.project.numItems;
alert("There are " + n + " items in this project.")
```

7.1.16 Project.removeUnusedFootage()

app.project.removeUnusedFootage()

Description
Removes unused footage from the project. Same as the File > Remove Unused Footage command.

Parameters
None.

Returns
Integer; the total number of FootageItem objects removed.

7.1.17 Project.renderQueue

app.project.renderQueue

Description
The renderqueue of the project.

Type
RenderQueue object; read-only.
7.1.18 Project.rootFolder

app.project.rootFolder

Description
The root folder containing the contents of the project; this is a virtual folder that contains all items in the Project panel, but not items contained inside other folders in the Project panel.

Type
FolderItem object; read-only.

7.1.19 Project.selection

app.project.selection

Description
All items selected in the Project panel, in the sort order shown in the Project panel.

Type
Array of Item objects; read-only.

7.1.20 Project.timeDisplayType

app.project.timeDisplayType

Description
The time display style, corresponding to the Time Display Style section in the Project Settings dialog box.

Type
A TimeDisplayType enumerated value; read/write. One of:

- TimeDisplayType.FRAMES
- TimeDisplayType.TIMECODE

7.1.21 Project.toolType

app.project.toolType

Note: This functionality was added in After Effects 14.0 (CC 2017)

Description
Get and sets the active tool in the Tools panel.

Type
A ToolType enumerated value; read/write. One of:
Examples

The following sample code checks the current tool, and if it is not the Unified Camera Tool, sets the current tool to that:

```javascript
// Check the current tool, then set it to Unified Camera Tool (UCT).
{
    // Assume a composition is selected in the project.
    var comp = app.project.activeItem;
    if (comp instanceof CompItem) {
        // Add a camera to the current comp. (Requirement for UCT.)
    }
}
```
var cameraLayer = comp.layers.addCamera("Test Camera", [comp.width/2, comp.height/2]);
comp.openInViewer();

// If the currently selected tool is not one of the camera tools, set it to UCT.
if ((app.project.toolType != ToolType.Tool_CameraMaya) &&
    (app.project.toolType != ToolType.Tool_CameraOrbit) &&
    (app.project.toolType != ToolType.Tool_CameraTrackXY) &&
    (app.project.toolType != ToolType.Tool_CameraTrackZ))
    app.project.toolType = ToolType.Tool_CameraMaya;
}

The following sample code uses the new app.project.toolType attribute to create a 360-degrees composition (environment layer and camera) from a selected footage item or composition selected in the Project panel. This script a good starting point for building VR compositions from equirectangular footage:

// Create a 360 VR comp from a footage item or comp selected in the Project panel.
var item = app.project.activeItem;
if (item != null && (item.typeName == "Footage" || item.typeName == "Composition")) {
    // Create a comp with the footage.
    var comp = app.project.items.addComp(item.name, item.width, item.height, item.pixelAspect, item.duration, item.frameRate);
    var layers = comp.layers;
    var footageLayer = layers.add(item);

    // Apply the CC Environment effect and create a camera.
    var effect = footageLayer.Effects.addProperty("CC Environment");
    var camera = layers.addCamera("360 Camera", [item.width/2, item.height/2]);
    comp.openInViewer();
    app.project.toolType = ToolType.Tool_CameraMaya;
} else {
    alert("Select a single footage item or composition in the Project panel.");
}

### 7.1.22 Project.transparencyGridThumbnails

app.project.transparencyGridThumbnails

**Description**

When true, thumbnail views use the transparency checkerboard pattern.

**Type**

Boolean; read/write.

---

7.1. Attributes
7.1.23 Project.workingGamma

app.project.workingGamma

Description
The current project’s working gamma value, either 2.2 or 2.4. Setting values other than 2.2 or 2.4 will cause a scripting error. Note that when the project’s color working space is set, the working gamma value is ignored by After Effects.

Type
Number; read/write.

Examples
- To set the working gamma to 2.4 (Rec. 709): app.project.workingGamma = 2.4;
- To get the current working gamma: var currentGamma = app.project.workingGamma;

7.1.24 Project.workingSpace

app.project.workingSpace

Description
A string which is the color profile description for the project’s color working space. To set the working space to None, set workingSpace to an empty string.

Use app.project.listColorProfiles() to return an array of available color profile descriptions that can be used to set the color working space.

Type
String; read/write.

Examples
- To set the working space to Rec.709 Gamma 2.4: app.project.workingSpace = "Rec.709 Gamma 2.4";
- To set the working space to None: app.project.workingSpace = "";
- To get the current working space: var currentSpace = app.project.workingSpace;

7.1.25 Project.xmpPacket

app.project.xmpPacket

Description
The project’s XMP metadata, stored as RDF (XML-based). For more information on XMP, see the JavaScript Tools Guide.

Type
String; read/write.

Example
The following example code accesses the XMP metadata of the current project, and modifies the Label projectmetadata field.
```javascript
var proj = app.project;

// Load the XMP library as an ExtendScript ExternalObject
if (ExternalObject.AdobeXMPScript == undefined) {
    ExternalObject.AdobeXMPScript = new ExternalObject('lib:AdobeXMPScript');
}
var mdata = new XMPMeta(app.project.xmpPacket); // Get the project's XMP metadata
// Update the Label project metadata's value
var schemaNS = XMPMeta.getNamespaceURI("xmp");
var propName = "xmp:Label";
try {
    mdata.setProperty(schemaNS, propName, "finalversion...no, really!");
} catch (e) {
    alert(e);
}
app.project.xmpPacket = mdata.serialize();
```

### 7.2 Methods

#### 7.2.1 Project.autoFixExpressions()

```javascript
app.project.autoFixExpressions(oldText, newText)
```

**Description**
Automatically replaces text found in broken expressions in the project, if the new text causes the expression to evaluate without errors.

**Parameters**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>oldText</td>
<td>The text to replace.</td>
</tr>
<tr>
<td>newText</td>
<td>The new text.</td>
</tr>
</tbody>
</table>

**Returns**
Nothing.

#### 7.2.2 Project.close()

```javascript
app.project.close(closeOptions)
```

**Description**
Closes the project with the option of saving changes automatically, prompting the user to save changes or closing without saving changes.

**Parameters**
### closeOptions

**CloseOptions**

Action to be performed on close. A CloseOptions enumerated value, one of:

- `CloseOptions.DO_NOT_SAVE_CHANGES`: Close without saving.
- `CloseOptions.PROMPT_TO_SAVE_CHANGES`: Prompt for whether to save changes before close.
- `CloseOptions.SAVE_CHANGES`: Save automatically on close.

### Returns

Boolean. True on success. False if the file has not been previously saved, the user is prompted, and the user cancels the save.

### 7.2.3 Project.consolidateFootage()

`app.project.consolidateFootage()`

**Description**

Consolidates all footage in the project. Same as the File > Consolidate All Footage command.

**Parameters**

None.

**Returns**

Integer; the total number of footage items removed.

### 7.2.4 Project.importFile()

`app.project.importFile(importOptions)`

**Description**

Imports the file specified in the specified ImportOptions object, using the specified options. Same as the File > Import File command. Creates and returns a new FootageItem object from the file, and adds it to the project’s items array.

**Parameters**

| importOptions | An `ImportOptions` object specifying the file to import and the options for the operation. |

**Returns**

`FootageItem` object.

**Example**

```javascript
app.project.importFile(new ImportOptions(File("sample.psd")))
```
7.2.5 Project.setDefaultImportFolder

app.project.setDefaultImportFolder(folder)

Description
Sets the folder that will be shown in the file import dialog. This location will be used as an override until setDefaultImportFolder() is called with no parameters, or until After Effects is quit.

Parameters

folder ExtendScript Folder object.

Returns
Boolean; indicates if the operation was successful.

Examples
Any of the following will set the default import folder to C:/My Folder:

- var myFolder = new Folder("C:/My Folder"); app.project.setDefaultImportFolder(myFolder);
- app.project.setDefaultImportFolder(new Folder("C:/My Folder"));
- app.project.setDefaultImportFolder(Folder("C:/My Folder"));

Note: if the path refers to an existing file and not a folder, the Folder function returns a File object instead of a Folder object, which will cause setDefaultImportFolder() to return false.

To set the default import folder to the current user’s desktop folder: app.project.setDefaultImportFolder(Folder.desktop);

To disable the default folder, call setDefaultImportFolder() with no parameters: app.project.setDefaultImportFolder();

7.2.6 Project.importFileWithDialog()

app.project.importFileWithDialog()

Description
Shows an Import File dialog box. Same as the File > Import > File command.

Returns
Array of Item objects created during import; or null if the user cancels the dialog box.

7.2.7 Project.importPlaceholder()

app.project.importPlaceholder(name, width, height, frameRate, duration)

Description
Creates and returns a new PlaceholderItem and adds it to the project’s items array. Same as the File > Import > Placeholder command.
Parameters

| name     | A string containing the name of the placeholder. |
| width    | The width of the placeholder in pixels, an integer in the range [4..30000]. |
| height   | The height of the placeholder in pixels, an integer in the range [4..30000]. |
| frameRate| The frame rate of the placeholder, a floating-point value in the range [1.0..99.0]. |
| duration | The duration of the placeholder in seconds, a floating-point value in the range [0.0..10800.0]. |

Returns

PlaceholderItem object.

7.2.8 Project.item()

app.project.item(index)

Description

Retrieves an item at a specified index position.

Parameters

| index | The index position of the item, an integer. The first item is at index 1. |

Returns

Item object.

7.2.9 Project.itemByID()

app.project.itemByID(id)

Note: This functionality was added in After Effects 13.0 (CC 2014)

Description

Retrieves an item by its Item ID

Parameters

| id | The ID of an item, an integer. |

Returns

Item object.
7.2.10 Project.reduceProject()

app.project.reduceProject(array_of_items)

Description
Removes all items from the project except those specified. Same as the File > Reduce Project command.

Parameters

| array_of_items | An array containing the Item objects that are to be kept. |

Returns
Integer; the total number of items removed.

Example

```javascript
var theItems = new Array();
theItems[theItems.length] = app.project.item(1);
theItems[theItems.length] = app.project.item(3);
ap.project.reduceProject(theItems);
```

7.2.11 Project.save()

app.project.save([file])

Description
Saves the project. The same as the File > Save or File > Save As command. If the project has never previously been saved and no file is specified, prompts the user for a location and file name. Pass a File object to save a project to a new file without prompting.

Parameters

| file | Optional. An ExtendScript File object for the file to save. |

Returns
None.

7.2.12 Project.saveWithDialog()

app.project.saveWithDialog()

Description
Shows the Save dialog box. The user can name a file with a location and save the project, or click Cancel to exit the dialog box.

Parameters
None.

Returns
Boolean; true if the project was saved.

### 7.2.13 Project.showWindow()

```javascript
app.project.showWindow(doShow)
```

**Description**

Shows or hides the Project panel.

**Parameters**

<table>
<thead>
<tr>
<th>doShow</th>
<th>When true, show the Project panel. When false, hide the Project panel.</th>
</tr>
</thead>
</table>

**Returns**

Nothing.

### 7.2.14 Project.listColorProfiles()

```javascript
app.project.listColorProfiles()
```

**Description**

Returns an array of color profile descriptions that can be set as the project’s color working space.

**Parameters**

None.

**Returns**

Array of strings.

### 7.3 Team Projects

#### 7.3.1 Project.newTeamProject()

```javascript
app.project.newTeamProject(teamProjectName, description)
```

**Note:** This functionality was added in After Effects 14.2 (CC 2017.1)

**Description**

Creates a new team project.

**Parameters**

<table>
<thead>
<tr>
<th>teamProjectName</th>
<th>Team project name, string value.</th>
</tr>
</thead>
<tbody>
<tr>
<td>description</td>
<td>Optional. Team project description, string value.</td>
</tr>
</tbody>
</table>
Returns
Boolean. True if the team project is successfully created, false otherwise.

7.3.2 Project.openTeamProject()

app.project.openTeamProject(teamProjectName)

Note: This functionality was added in After Effects 14.2 (CC 2017.1)

Description
Opens a team project.

Parameters

| teamProjectName | Team project name, string value. |

Returns
Boolean. True if the team project is successfully opened, false otherwise.

7.3.3 Project.shareTeamProject()

app.project.shareTeamProject(comment)

Note: This functionality was added in After Effects 14.2 (CC 2017.1)

Description
Shares the currently open team project.

Parameters

| comment | Comment, string value. Optional. |

Returns
Boolean. True if the team project is successfully shared, false otherwise.
7.3.4 Project.syncTeamProject()

app.project.syncTeamProject()

Note: This functionality was added in After Effects 14.2 (CC 2017.1)

Description
Syncs the currently open team project.

Returns
Boolean. True if the team project is successfully synced, false otherwise.

7.3.5 Project.closeTeamProject()

app.project.closeTeamProject()

Note: This functionality was added in After Effects 14.2 (CC 2017.1)

Description
Closes a currently open team project.

Returns
Boolean. True if the team project is successfully closed, false otherwise.

7.3.6 Project.convertTeamProjectToProject()

app.project.convertTeamProjectToProject(project_file)

Note: This functionality was added in After Effects 14.2 (CC 2017.1)

Description
Converts a team project to an After Effects project on a local disk.

Parameters

| project_file | File object for the local After Effects project. File extension should be either .aep or .aet (.aepx is not supported). |

Returns
Boolean. True if the team project is successfully converted, false otherwise.
7.3.7 Project.listTeamProjects()

app.project.listTeamProjects()

Note: This functionality was added in After Effects 14.2 (CC 2017.1)

Description
Returns an array containing the name strings for all team projects available for the current user. Archived Team Projects are not included.

Returns
Array of strings.

7.3.8 Project.isTeamProjectOpen()

app.project.isTeamProjectOpen(teamProjectName)

Note: This functionality was added in After Effects 14.2 (CC 2017.1)

Description
Checks whether specified team project is currently open.

Parameters

| teamProjectName | Team project name, string value. |

Returns
Boolean. True if the specified team project is currently open, false otherwise.

7.3.9 Project.isAnyTeamProjectOpen()

app.project.isAnyTeamProjectOpen()

Note: This functionality was added in After Effects 14.2 (CC 2017.1)

Description
Checks whether any team project is currently open.

Returns
Boolean. True if any team project is currently open, false otherwise.
7.3.10 Project.isTeamProjectEnabled()

app.project.isTeamProjectEnabled()

Note: This functionality was added in After Effects 14.2 (CC 2017.1)

Description
Checks whether or not team projects is enabled for After Effects. (This will almost always return true.)

Returns
Boolean. True if team projects is currently enabled, false otherwise.

7.3.11 Project.isLoggedInToTeamProject()

app.project.isLoggedInToTeamProject()

Note: This functionality was added in After Effects 14.2 (CC 2017.1)

Description
Checks whether or not the client (After Effects) is currently logged into the team project server.

Returns
Boolean. True if the client (After Effects) is currently logged into the team projects server, false otherwise.

7.3.12 Project.isSyncCommandEnabled()

app.project.isSyncCommandEnabled()

Note: This functionality was added in After Effects 14.2 (CC 2017.1)

Description
Checks whether or not the Sync command is enabled.

Returns
Boolean. True if the team projects Sync command is enabled, false otherwise.
7.3.13 Project.isShareCommandEnabled()

app.project.isShareCommandEnabled()

Note: This functionality was added in After Effects 14.2 (CC 2017.1)

Description
Checks whether or not the Share command is enabled.

Returns
Boolean. True if the team projects Share command is enabled, false otherwise.

---

7.3.14 Project.isResolveCommandEnabled()

app.project.isResolveCommandEnabled()

Note: This functionality was added in After Effects 14.2 (CC 2017.1)

Description
Checks whether or not the Resolve command is enabled.

Returns
Boolean. True if the team projects Resolve command is enabled, false otherwise.

---

7.3.15 Project.resolveConflict()

app.project.resolveConflict(ResolveType)

Note: This functionality was added in After Effects 14.2 (CC 2017.1)

Description
Resolves a conflict between the open team project and the version on the team projects server, using the specified resolution method.

Parameters
ResolveType | The type of conflict resolution to use. A ResolveType enumerated value, one of:

- ResolveType.ACCEPT_THEIRS: Take the shared version. The shared version replaces your version.
- ResolveType.ACCEPT_YOURS: Keep your version of the project. The shared version is not taken.
- ResolveType.ACCEPT_THEIRS_AND_COPY: Copy and rename your version, then take the shared version. The shared version replaces your original version.

Returns

Boolean. True if the resolution of the specified type was successful, false otherwise.
System object

The System object provides access to attributes found on the user’s system, such as the user name and the name and version of the operating system. It is available through the `system` global variable.

Example

```javascript
alert("Your OS is" + system.osName + "running version" + system.osVersion);
confirm("You are:" + system.userName + "running on" + system.machineName + ".");
```

8.1 Attributes

8.1.1 System.machineName

The name of the computer on which After Effects is running.

Type

String; read-only.
8.1.2 System.osName

system.osName

Description
The name of the operating system on which After Effects is running.

**Warning:** As of Windows 7, this attribute returns a blank value. Use $.os instead.

Type
String; read-only.

8.1.3 System.osVersion

system.osVersion

Description
The version of the current local operating system.

Type
String; read-only.

8.1.4 System.userName

system.userName

Description
The name of the user currently logged on to the system.

Type
String; read-only.

8.2 Methods

8.2.1 System.callSystem()

system.callSystem(cmdLineToExecute);

Description
Executes a system command, as if you had typed it on the operating system’s command line. Returns whatever the system outputs in response to the command, if anything. In Windows, you can invoke commands using the /c switch for the cmd.exe command, passing the command to run in escaped quotes ("..."). For example, the following retrieves the current time and displays it to the user:
```javascript
var timeStr = system.callSystem("cmd.exe /c \"time /t\"");
alert("Current time is" + timeStr);
```

### Parameters

- `cmdLineToExecute`  
  A string containing the command and its parameters.

### Returns

The output from the command.
app.project.item(index)
app.project.items[index]

**Description**

The Item object represents an item that can appear in the Project panel. The first item is at index 1.

Item is the base class for AVItem object and for FolderItem object, which are in turn the base classes for various other item types, so Item attributes and methods are available when working with all of these item types.

**Example**

This example gets the second item from the project and checks that it is a folder. It then removes from the folder any top-level item that is not currently selected. It also checks to make sure that, for each item in the folder, the parent is properly set to the correct folder.

```javascript
var myFolder = app.project.item(2);
if (myFolder.typeName != "Folder") {
    alert("error: second item is not a folder");
} else {
    var numInFolder = myFolder.numItems;
    //Always run loops backwards when deleting things:
    for (i = numInFolder; i >= 1; i--) {
        var curItem = myFolder.item(i);
        if (curItem.parentFolder != myFolder) {
            alert("error within AE: the parentFolder is not set correctly");
        } else {
            if (!curItem.selected && curItem.typeName == "Footage")
                { //found an unselected solid.
                    curItem.remove();
                }
        }
    }
}
```

(continues on next page)
9.1 Attributes

9.1.1 Item.comment

app.project.item(index).comment

Description
A string that holds a comment, up to 15,999 bytes in length after any encoding conversion. The comment is for the user's purpose only; it has no effect on the item's appearance or behavior.

Type
String; read/write.

9.1.2 Item.id

app.project.item(index).id

Description
A unique and persistent identification number used internally to identify an item between sessions. The value of the ID remains the same when the project is saved to a file and later reloaded. However, when you import this project into another project, new IDs are assigned to all items in the imported project. The ID is not displayed anywhere in the user interface.

Type
Integer; read-only.

9.1.3 Item.label

app.project.item(index).label

Description
The label color for the item. Colors are represented by their number (0 for None, or 1 to 16 for one of the preset colors in the Labels preferences). Custom label colors cannot be set programmatically.

Type
Integer (0 to 16); read/write.
9.1.4 Item.name

app.project.item(index).name

Description
The name of the item as displayed in the Project panel.

Type
String; read/write.

9.1.5 Item.parentFolder

app.project.item(index).parentFolder

Description
The FolderItem object for the folder that contains this item. If this item is at the top level of the project, this is the
project's root folder (app.project.rootFolder). You can use ItemCollection.addFolder() to add a new folder,
and set this value to put items in the new folder.

Type
FolderItem object; read/write.

Example
This script creates a new FolderItem in the Project panel and moves compositions into it.

```javascript
//create a new FolderItem in project, with name "comps"
var compFolder = app.project.items.addFolder("comps");

//move all compositions into new folder by setting
//compItem's parentFolder to "comps" folder
for(var i = 1; i <= app.project.numItems; i++){
    if(app.project.item(i) instanceof CompItem)
        app.project.item(i).parentFolder = compFolder;
}
```

9.1.6 Item.selected

app.project.item(index).selected

Description
When true, this item is selected. Multiple items can be selected at the same time. Set to true to select the item
programmatically, or to false to deselect it.

Type
Boolean; read/write.
9.1.7 Item.typeName

```javascript
app.project.item(index).typeName
```

**Description**
A user-readable name for the item type; for example, “Folder”, “Footage”, or “Composition”.

**Type**
String; read-only.

9.2 Methods

9.2.1 Item.remove()

```javascript
app.project.item(index).remove()
```

**Description**
Deletes this item from the project and from the Project panel. If the item is a FolderItem, all the items contained in the folder are also removed from the project. No files or folders are removed from disk.

**Parameters**
None.

**Returns**
Nothing.
The ItemCollection object represents a collection of items. The ItemCollection belonging to a Project object contains all the Item objects for items in the project. The ItemCollection belonging to a FolderItem object contains all the Item objects for items in that folder.

ItemCollection is a subclass of Collection object. All methods and attributes of Collection, in addition to those listed below, are available when working with ItemCollection.

10.1 Methods

10.1.1 ItemCollection.addComp()

app.project.items.addComp(name, width, height, pixelAspect, duration, frameRate)

Description

Creates a new composition. Creates and returns a new CompItem object and adds it to this collection. If the ItemCollection belongs to the project or the root folder, then the new item's parentFolder is the root folder. If the ItemCollection belongs to any other folder, the new item's parentFolder is that FolderItem.

Parameters
### 10.1.2 ItemCollection.addFolder()

```javascript
app.project.items.addFolder(name)
```

**Description**

Creates a new folder. Creates and returns a new FolderItem object and adds it to this collection. If the ItemCollection belongs to the project or the root folder, then the new folder’s `parentFolder` is the root folder. If the ItemCollection belongs to any other folder, the new folder’s `parentFolder` is that FolderItem. To put items in the folder, set the `Item.parentFolder` attribute.

**Parameters**

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>name</td>
<td>A string containing the name of the folder.</td>
</tr>
</tbody>
</table>

**Returns**

FolderItem object.

**Example**

This script creates a new FolderItem in the Project panel and moves compositions into it.

```javascript
// create a new FolderItem in project, with name "comps"
var compFolder = app.project.items.addFolder("comps");
// move all compositions into new folder by setting
// comp Item's parentFolder to "comps" folder
for(var i = 1; i <= app.project.numItems; i++) {
    if(app.project.item(i) instanceof CompItem)
        app.project.item(i).parentFolder = compFolder;
}
```
AVItem object

app.project.item(index)

Description
The AVItem object provides access to attributes and methods of audio/visual files imported into After Effects.

AVItem is a subclass of Item. All methods and attributes of Item, in addition to those listed below, are available when working with AVItem. See Item object

AVItem is the base class for both CompItem and FootageItem, so AVItem attributes and methods are also available when working with CompItem and FootageItem objects. See CompItem object and FootageItem object.

11.1 Attributes

11.1.1 AVItem.duration

app.project.item(index).duration

Description
Returns the duration, in seconds, of the item. Still footage items have a duration of 0.

- In a CompItem, the value is linked to the duration of the composition, and is read/write.
- In a FootageItem, the value is linked to the duration of the mainSource object, and is read-only.

Type
Floating-point value in the range [0.0..10800.0]; read/write for a CompItem; otherwise, read-only.
11.1.2 AVItem.footageMissing

app.project.item(index).footageMissing

Description
When true, the AVItem is a placeholder, or represents footage with a source file that cannot be found. In this case, the path of the missing source file is in the missingFootagePath attribute of the footage item’s source-file object. See FootageItem.mainSource and FileSource.missingFootagePath.

Type
Boolean; read-only.

11.1.3 AVItem.frameDuration

app.project.item(index).frameDuration

Description
Returns the length of a frame for this AVItem, in seconds. This is the reciprocal of frameRate. When set, the reciprocal is automatically set as a new frameRate value. This attribute returns the reciprocal of the frameRate, which may not be identical to a value you set, if that value is not evenly divisible into 1.0 (for example, 0.3). Due to numerical limitations, (1 / (1 / 0.3)) is close to, but not exactly, 0.3. If the AVItem is a FootageItem, this value is linked to the mainSource, and is read-only. To change it, set the conformFrameRate of the mainSource object. This sets both the frameRate and frameDuration of the FootageItem.

Type
Floating-point value in the range [1/99.. 1.0]; read-only for a FootageItem, otherwise read/write.

11.1.4 AVItem.frameRate

app.project.item(index).frameRate

Description
The frame rate of the AVItem, in frames-per-second. This is the reciprocal of the frameDuration. When set, the reciprocal is automatically set as a new frameDuration value.

- In a CompItem, the value is linked to the frameRate of the composition, and is read/write.
- In a FootageItem, the value is linked to the frameRate of the mainSource object, and is read-only. To change it, set the conformFrameRate of the mainSource object. This sets both the frameRate and frameDuration of the FootageItem.

Type
Floating-point value in the range [1.0..99.0]; read-only for a FootageItem, otherwise read/write.
### 11.1.5 AVItem.hasAudio

```app.project.item(index).hasAudio```

**Description**

When true, the AVItem has an audio component.

- In a CompItem, the value is linked to the composition.
- In a FootageItem, the value is linked to the `mainSource` object.

**Type**

Boolean; read-only.

---

### 11.1.6 AVItem.hasVideo

```app.project.item(index).hasVideo```

**Description**

When true, the AVItem has a video component.

- In a CompItem, the value is linked to the composition.
- In a FootageItem, the value is linked to the `mainSource` object.

**Type**

Boolean; read-only.

---

### 11.1.7 AVItem.height

```app.project.item(index).height```

**Description**

The height of the item in pixels.

- In a CompItem, the value is linked to the composition, and is read/write.
- In a FootageItem, the value is linked to the `mainSource` object, and is read/write only if the `mainSource` object is a `SolidSource`. Otherwise, it is read-only.

**Type**

Integer in the range [1...30000]: read/write, except as noted.
11.1.8 AVItem.name

app.project.item(index).name

Description
The name of the item, as shown in the Project panel.

- In a FootageItem, the value is linked to the mainSource object. If the mainSource object is a FileSource, this value controls the display name in the Project panel, but does not affect the file name.

Type
String; read/write.

11.1.9 AVItem.pixelAspect

app.project.item(index).pixelAspect

Description
The pixel aspect ratio (PAR) of the item.

- In a CompItem, the value is linked to the composition.
- In a FootageItem, the value is linked to the mainSource object.

The value you retrieve after setting may be slightly different from the value you supplied. The following table compares the value as it appears in the UI with the more accurate value returned by this attribute.

<table>
<thead>
<tr>
<th>PAR in the After Effects UI</th>
<th>PAR returned by the pixelAspect attribute</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.91</td>
<td>0.90909090909091</td>
</tr>
<tr>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>1.5</td>
<td>1.5</td>
</tr>
<tr>
<td>1.09</td>
<td>1.09401709401709</td>
</tr>
<tr>
<td>1.21</td>
<td>1.212121212121</td>
</tr>
<tr>
<td>1.33</td>
<td>1.33333333333333</td>
</tr>
<tr>
<td>1.46</td>
<td>1.45868945868946</td>
</tr>
<tr>
<td>2</td>
<td>2</td>
</tr>
</tbody>
</table>

Type
Floating-point value, in the range [0.01..100.0]; read/write.

11.1.10 AVItem.proxySource

app.project.item(index).proxySource

Description
The FootageSource being used as a proxy. The attribute is read-only; to change it, call any of the AVItem methods that change the proxy source: setProxy(), setProxyWithSequence(), setProxyWithSolid(), or setProxyWithPlaceholder().

Type FootageSource object; read-only.
11.1.11 AVItem.time

app.project.item(index).time

**Description**
The current time of the item when it is being previewed directly from the Project panel. This value is a number of seconds. Use the global method `timeToCurrentFormat()` to convert it to a string value that expresses the time in terms of frames. It is an error to set this value for a FootageItem whose `mainSource` is still (`item.mainSource.isStill` is true).

**Type**
Floating-point value; read/write.

11.1.12 AVItem.usedIn

app.project.item(index).usedIn

**Description**
All the compositions that use this AVItem. Note that upon retrieval, the array value is copied, so it is not automatically updated. If you get this value, then add this item into another composition, you must retrieve the value again to get an array that includes the new item.

**Type**
Array of CompItem objects; read-only.

11.1.13 AVItem.useProxy

app.project.item(index).useProxy

**Description**
When true, a proxy is used for the item. It is set to true by all the `SetProxy` methods, and to false by the `SetProxyToNone()` method.

**Type**
Boolean; read/write.

11.1.14 AVItem.width

app.project.item(index).width

**Description**
The width of the item, in pixels.
- In a CompItem, the value is linked to the composition, and is read/write.
- In a FootageItem, the value is linked to the `mainSource` object, and is read/write only if the `mainSource` object is a SolidSource. Otherwise, it is read-only.
Type
Integer in the range [1...30000]; read/write, except as noted.

11.2 Methods

11.2.1 AVItem.addGuide()

app.project.item(index).addGuide(orientationType, position)

Note: This functionality was added in After Effects 16.1 (CC 2019)

Description
Creates a new guide and adds it to the guides object of the AVItem.

Parameters

<table>
<thead>
<tr>
<th>orientationType</th>
<th>An integer; 0 for a horizontal guide, 1 for a vertical guide. Any other value defaults to horizontal.</th>
</tr>
</thead>
<tbody>
<tr>
<td>position</td>
<td>An integer; the X or Y coordinate position of the guide in pixels, depending on its orientationType.</td>
</tr>
</tbody>
</table>

Returns
Integer; the index of the newly-created guide.

Example
Adds a vertical guide at 500 pixels on the X axis to the activeItem of a project.

app.project.activeItem.addGuide(1, 500);

11.2.2 AVItem.removeGuide()

app.project.item(index).removeGuide(guideIndex)

Note: This functionality was added in After Effects 16.1 (CC 2019)

Description
Removes an existing guide. Choose the guide based on its index inside the AVItem.guides object.

Parameters

| guideIndex | An integer; the index of the guide to be removed. |

Returns
Nothing.

Example

Removes the first guide in `activeItem`.

```javascript
app.project.activeItem.removeGuide(0);
```

**Warning:** Removing a guide will cause all higher guide indexes to shift downward.

### 11.2.3 `AVItem.setGuide()`

```javascript
app.project.item(index).setGuide(position, guideIndex)
```

**Note:** This functionality was added in After Effects 16.1 (CC 2019)

**Description**

Modifies the position of an existing guide. Choose the guide based on its `guideIndex` inside the `AVItem`'s `guides` array.

A guide's `orientationType` may not be changed after it is created.

**Parameters**

<table>
<thead>
<tr>
<th>parameter</th>
<th>description</th>
</tr>
</thead>
<tbody>
<tr>
<td><code>position</code></td>
<td>An integer; the new X or Y coordinate position of the guide in pixels, depending on its existing <code>orientationType</code>.</td>
</tr>
<tr>
<td><code>guideIndex</code></td>
<td>An integer; the index of the guide to be modified.</td>
</tr>
</tbody>
</table>

**Returns**

Nothing.

**Example**

Changes the position of the first guide in `activeItem` to 1200 pixels.

```javascript
app.project.activeItem.setGuide(1200, 0);
```

### 11.2.4 `AVItem.setProxy()`

```javascript
app.project.item(index).setProxy(file)
```

**Description**

Sets a file as the proxy of this `AVItem`. Loads the specified file into a new FileSource object, sets this as the value of the `proxySource` attribute, and sets `useProxy` to true. It does not preserve the interpretation parameters, instead using the user preferences. If the file has an unlabeled alpha channel, and the user preference says to ask the user what to do, the method estimates the alpha interpretation, rather than asking the user. This differs from setting a FootageItem's `mainSource`, but both actions are performed as in the user interface.
Parameters

| file          | An ExtendScript File object for the file to be used as a proxy. |

Returns

None.

11.2.5 AVItem.setProxyToNone()

app.project.item(index).setProxyToNone()

Description

Removes the proxy from this AVItem, sets the value of proxySource to null, and sets the value of useProxy to false.

Parameters

None.

Returns

Nothing.

11.2.6 AVItem.setProxyWithPlaceholder()

app.project.item(index).setProxyWithPlaceholder(name, width, height, frameRate, duration)

Description

Creates a PlaceholderSource object with specified values, sets this as the value of the proxySource attribute, and sets useProxy to true. It does not preserve the interpretation parameters, instead using the user preferences.

Note: There is no direct way to set a placeholder as a proxy in the user interface; this behavior occurs when a proxy has been set and then moved or deleted.

Parameters

<table>
<thead>
<tr>
<th>name</th>
<th>A string containing the name of the new object.</th>
</tr>
</thead>
<tbody>
<tr>
<td>width, height</td>
<td>The pixel dimensions of the placeholder, an integer in the range [4..30000]. frameRate The frames-per-second, an integer in the range [1..99]. duration The total length in seconds, up to 3 hours. An integer in the range [0.0..10800.0].</td>
</tr>
</tbody>
</table>

Returns

Nothing.
11.2.7 AVItem.setProxyWithSequence()

app.project.item(index).setProxyWithSequence(file, forceAlphabetical)

Description

Sets a sequence of files as the proxy of this AVItem, with the option of forcing alphabetical order. Loads the specified file sequence into a new FileSource object, sets this as the value of the proxySource attribute, and sets useProxy to true.

It does not preserve the interpretation parameters, instead using the user preferences. If any file has an unlabeled alpha channel, and the user preference says to ask the user what to do, the method estimates the alpha interpretation, rather than asking the user.

parameters

<table>
<thead>
<tr>
<th>file</th>
<th>An ExtendScript File object for the first file in the sequence.</th>
</tr>
</thead>
<tbody>
<tr>
<td>forceAlphabetical</td>
<td>When true, use the “Force alphabetical order” option.</td>
</tr>
</tbody>
</table>

Returns

Nothing.

11.2.8 AVItem.setProxyWithSolid()

app.project.item(index).setProxyWithSolid(color, name, width, height, pixelAspect)

Description

Creates a SolidSource object with specified values, sets this as the value of the proxySource attribute, and sets useProxy to true. It does not preserve the interpretation parameters, instead using the user preferences.

Note: There is no way, using the user interface, to set a solid as a proxy; this feature is available only through scripting.

parameters

<table>
<thead>
<tr>
<th>color</th>
<th>The color of the solid, an array of 3 floating-point values, [R, G, B], in the range [0.0..1.0]. name A string containing the name of the new object.</th>
</tr>
</thead>
<tbody>
<tr>
<td>width, height</td>
<td>The pixel dimensions of the placeholder, an integer in the range [1..30000]. pixelAspect The pixel aspect of the solid, a floating-point value in the range [0.01… 100.0].</td>
</tr>
</tbody>
</table>

Returns

Nothing.
**CompItem object**

app.project.item(index)
app.project.items[index]

**Description**

The CompItem object represents a composition, and allows you to manipulate and get information about it. Access the objects by position index number in a project’s item collection.

CompItem is a subclass of AVItem object, which is a subclass of Item object. All methods and attributes of AVItem and Item, in addition to those listed below, are available when working with CompItem.

**Example**

Given that the first item in the project is a CompItem, the following code displays two alerts. The first shows the number of layers in the CompItem, and the second shows the name of the last layer in the CompItem.

```javascript
var firstComp = app.project.item(1);
alert("number of layers is " + firstComp.numLayers);
alert("name of last layer is " + firstComp.layer(firstComp.numLayers).name) ;
```

**12.1 Attributes**

**12.1.1 CompItem.activeCamera**

app.project.item(index).activeCamera

**Description**

The active camera, which is the front-most camera layer that is enabled. The value is null if the composition contains no enabled camera layers.
Type
CameraLayer object; read-only.

### 12.1.2 CompItem.bgColor

```javascript
app.project.item(index).bgColor
```

**Description**
The background color of the composition. The three array values specify the red, green, and blue components of the color.

**Type**
An array containing three floating-point values, \([R, G, B]\), in the range \([0.0..1.0]\); read/write.

### 12.1.3 CompItem.displayStartTime

```javascript
app.project.item(index).displayStartTime
```

**Description**
The time set as the beginning of the composition, in seconds. This is the equivalent of the Start Timecode or Start Frame setting in the Composition Settings dialog box.

**Type**
Floating-point value in the range \([0.0...86339.0]\) (1 second less than 25 hours); read/write.

### 12.1.4 CompItem.draft3d

```javascript
app.project.item(index).draft3d
```

**Description**
When true, Draft 3D mode is enabled for the Composition panel. This corresponds to the value of the Draft 3D button in the Composition panel.

**Type**
Boolean; read/write.
12.1.5 ComplItem.dropFrame

app.project.item(index).dropFrame

Description
When true, indicates that the composition uses drop-frame timecode. When false, indicates non-drop-frame timecode. This corresponds to the setting in the Composition Settings dialog box.

Type
Boolean; read/write.

12.1.6 ComplItem.frameBlending

app.project.item(index).frameBlending

Description
When true, frame blending is enabled for this Composition. Corresponds to the value of the Frame Blending button in the Composition panel.

Type
Boolean; if true, frame blending is enabled; read/write.

12.1.7 ComplItem.frameDuration

app.project.item(index).frameDuration

Description
The duration of a frame, in seconds. This is the inverse of the frameRate value (frames-per-second).

Type
Floating-point; read/write.

12.1.8 ComplItem.hideShyLayers

app.project.item(index).hideShyLayers

Description
When true, only layers with shy set to false are shown in the Timeline panel. When false, all layers are visible, including those whose shy value is true. Corresponds to the value of the Hide All Shy Layers button in the Composition panel.

Type
Boolean; read/write.
12.1.9 ComplItem.layers

app.project.item(index).layers

Description

A LayerCollection object that contains all the Layer objects for layers in this composition.

Type

LayerCollection object; read-only.

12.1.10 ComplItem.markerProperty

app.project.item(index).markerProperty

Note: This functionality was added in After Effects 14.0 (CC 2017)

Description

A PropertyGroup object that contains all a composition’s markers. Composition marker scripting has the same functionality as layer markers. See MarkerValue object.

Type

PropertyGroup object or null; read-only.

Example

The following sample code creates a project and composition, then creates two composition markers with different properties:

```javascript
// comp.markerProperty allows you add markers to a comp.
// It has the same functionality as layer.property("Marker")
{
    var currentProj = app.newProject();
    var comp = currentProj.items.addComp("mycomp", 1920, 1080, 1.0, 5, 29.97);
    var solidLayer = comp.layers.addSolid([1, 1, 1], "mylayer", 1920, 1080, 1.0);

    var compMarker = new MarkerValue("This is a comp marker!");
    compMarker.duration = 1; compMarker.url = "http://www.adobe.com/aftereffects"

    var compMarker2 = new MarkerValue("Another comp marker!");
    compMarker2.duration = 1;

    comp.markerProperty.setValueAtTime(1, compMarker)
    comp.markerProperty.setValueAtTime(3, compMarker2)
}
```
12.1.11 CompItem.motionBlur

app.project.item(index).motionBlur

Description
When true, motion blur is enabled for the composition. Corresponds to the value of the Motion Blur button in the Composition panel.

Type
Boolean; read/write.

12.1.12 CompItem.motionBlurAdaptiveSampleLimit

app.project.item(index).motionBlurAdaptiveSampleLimit

Description
The maximum number of motion blur samples of 2D layer motion. This corresponds to the Adaptive Sample Limit setting in the Advanced tab of the Composition Settings dialog box.

Type
Integer (between 16 and 256); read/write.

12.1.13 CompItem.motionBlurSamplesPerFrame

app.project.item(index).motionBlurSamplesPerFrame

Description
The minimum number of motion blur samples per frame for Classic 3D layers, shape layers, and certain effects. This corresponds to the Samples Per Frame setting in the Advanced tab of the Composition Settings dialog box.

Type
Integer (between 2 and 64); read/write.

12.1.14 CompItem.motionGraphicsTemplateControllerCount

app.project.item(index).motionGraphicsTemplateControllerCount

Note: This functionality was added in After Effects 16.1 (CC 2019)

Description
The number of properties in the Essential Graphics panel for the composition.

Type
Integer; read-only.

12.1. Attributes
### 12.1.15 CompItem.motionGraphicsTemplateName

app.project.item(index).motionGraphicsTemplateName

**Note:** This functionality was added in After Effects 15.0 (CC 2018)

**Description**

Read or write the name property in the Essential Graphics panel for the composition.

The name in the Essential Graphics panel is used for the file name of an exported Motion Graphics template (ex., “My Template.mogrt”).

The following example will set the name for the active composition and then return it as an alert:

```javascript
app.project.activeItem.motionGraphicsTemplateName = "My Template";
alert(app.project.activeItem.motionGraphicsTemplateName);
```

**Type**

String; read/write.

---

### 12.1.16 CompItem.numLayers

app.project.item(index).numLayers

**Description**

The number of layers in the composition.

**Type**

Integer; read-only.

---

### 12.1.17 CompItem.preserveNestedFrameRate

app.project.item(index).preserveNestedFrameRate

**Description**

When true, the frame rate of nested compositions is preserved in the current composition. Corresponds to the value of the “Preserve frame rate when nested or in render queue” option in the Advanced tab of the Composition Settings dialog box.

**Type**

Boolean; read/write.
12.1.18 ComplItem.preserveNestedResolution

app.project.item(index).preserveNestedResolution

Description
When true, the resolution of nested compositions is preserved in the current composition. Corresponds to the value of the “Preserve Resolution When Nested” option in the Advanced tab of the Composition Settings dialog box.

Type
Boolean; read/write.

12.1.19 ComplItem.renderer

app.project.item(index).renderer

Description
The current rendering plug-in module to be used to render this composition, as set in the Advanced tab of the Composition Settings dialog box. Allowed values are the members of ComplItem.renderers.

Type
String; read/write.

12.1.20 ComplItem.renderers

app.project.item(index).renderers

Description
The available rendering plug-in modules. Member strings reflect installed modules, as seen in the Advanced tab of the Composition Settings dialog box.

Type
Array of strings; read-only.

12.1.21 ComplItem.resolutionFactor

app.project.item(index).resolutionFactor

Description
The x and y downsample resolution factors for rendering the composition. The two values in the array specify how many pixels to skip when sampling; the first number controls horizontal sampling, the second controls vertical sampling. Full resolution is \([1, 1]\), half resolution is \([2, 2]\), and quarter resolution is \([4, 4]\). The default is \([1, 1]\).

Type
Array of two integers in the range \([1..99]\); read/write.
12.1.22 CompItem.selectedLayers

app.project.item(index).selectedLayers

Description
All of the selected layers in this composition. This is a 0-based array (the first object is at index 0).

Type
Array of Layer objects; read-only.

12.1.23 CompItem.selectedProperties

app.project.item(index).selectedProperties

Description
All of the selected properties (Property and PropertyGroup objects) in this composition. The first property is at index position 0.

Type
Array of Property and PropertyGroup objects; read-only.

12.1.24 CompItem.shutterAngle

app.project.item(index).shutterAngle

Description
The shutter angle setting for the composition. This corresponds to the Shutter Angle setting in the Advanced tab of the Composition Settings dialog box.

Type
Integer in the range [0...720]; read/write.

12.1.25 CompItem.shutterPhase

app.project.item(index).shutterPhase

Description
The shutter phase setting for the composition. This corresponds to the Shutter Phase setting in the Advanced tab of the Composition Settings dialog box.

Type
Integer in the range [-360...360]; read/write.
12.1.26 ComplItem.workAreaDuration

app.project.item(index).workAreaDuration

Description
The duration of the work area in seconds. This is the difference of the start-point and end-point times of the Composition work area.

Type
Floating-point; read/write.

12.1.27 ComplItem.workAreaStart

app.project.item(index).workAreaStart

Description
The time when the Composition work area begins, in seconds.

Type
Floating-point; read/write.

12.2 Methods

12.2.1 ComplItem.duplicate()

app.project.item(index).duplicate()

Description
Creates and returns a duplicate of this composition, which contains the same layers as the original.

Parameters
None.

Returns
ComplItem object.

12.2.2 ComplItem.exportAsMotionGraphicsTemplate()

app.project.item(index).exportAsMotionGraphicsTemplate(doOverWriteFileIfExisting, file_path)

Note: This functionality was added in After Effects 15.0 (CC 2018)

Description
Exports the composition as a Motion Graphics template. Returns true if the Motion Graphics template is successfully exported, false otherwise.

The name in the Essential Graphics panel is used for the file name of the Motion Graphics template (ex., “My Template.mogrt”). Use the `motionGraphicsTemplateName` attribute to set the name.

Optionally specify the path to the folder where the Motion Graphics template file is saved. If not specified, the file will be saved in the current user’s Essential Graphics folder:

| macOS: /Users/<name>/Library/Application Support/Adobe/Common/Essential Graphics/ | Windows: C:\Users\<name>\AppData\Roaming\Adobe\Common\Essential Graphics|

If the project has been changed since the last time it was saved, After Effects will prompt the user to save the project. To avoid this, use the project `save()` method before exporting the Motion Graphics template.

**Parameters**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><code>doOverWriteFileIfExisting</code></td>
<td>Whether to overwrite an existing file of the same name, boolean. Required.</td>
</tr>
<tr>
<td><code>file_path</code></td>
<td>Path to the folder where the file will be saved. Optional.</td>
</tr>
</tbody>
</table>

**Returns**

Boolean.

---

### 12.2.3 CompItem.getMotionGraphicsTemplateControllerName()

```javascript
class CompItem { getMotionGraphicsTemplateControllerName(index) }
```

**Note:** This functionality was added in After Effects 16.1 (CC 2019)

**Description**

Gets the name of a single property in the Essential Graphics panel.

**Parameters**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><code>index</code></td>
<td>Integer; the index of the EGP property whose name will be returned.</td>
</tr>
</tbody>
</table>

**Returns**

String; read-only.

---

### 12.2.4 CompItem.setMotionGraphicsControllerName()

```javascript
class CompItem { setMotionGraphicsControllerName(index, newName) }
```

**Note:** This functionality was added in After Effects 16.1 (CC 2019)

**Description**
Sets the name of a single property in the Essential Graphics panel.

**Note:** To rename a property as it is added to the EGP, see `Property.addToMotionGraphicsTemplateAs()`.

**Parameters**

<table>
<thead>
<tr>
<th>index</th>
<th>Integer; the index of the EGP property to be renamed.</th>
</tr>
</thead>
<tbody>
<tr>
<td>newName</td>
<td>String; the new name for the EGP property.</td>
</tr>
</tbody>
</table>

**Returns**

String; read-only.

### 12.2.5 `CompItem.layer()`

```plaintext
app.project.item(index).layer(index)
app.project.item(index).layer(otherLayer, relIndex)
app.project.item(index).layer(name)
```

**Description**

Returns a `Layer` object, which can be specified by name, an index position in this layer, or an index position relative to another layer.

**Parameters**

- **index**
  
  The index number of the desired layer in this composition. An integer in the range $[1...\text{numLayers}]$, where $\text{numLayers}$ is the number of layers in the composition.

- **otherLayer**
  
  A `Layer` object in this composition. The `relIndex` value is added to the index value of this layer to find the position of the desired layer.

- **relIndex**
  
  The position of the desired layer, relative to `otherLayer`. An integer in the range $[1 - \text{otherLayer.index}...\text{numLayers} - \text{otherLayer.index}]$, where $\text{numLayers}$ is the number of layers in the composition. This value is added to the `otherLayer` value to derive the absolute index of the layer to return.

- **name**
  
  The string containing the name of the desired layer.

**Returns**

`Layer object.`
### 12.2.6 Compltem.openInEssentialGraphics()

```javascript
app.project.item(index).openInEssentialGraphics()
```

**Note:** This functionality was added in After Effects 15.0 (CC 2018)

**Description**
Opens the composition in the Essential Graphics panel.

**Parameters**
None.

**Returns**
Nothing.

### 12.2.7 Compltem.openInViewer()

```javascript
app.project.item(index).openInViewer()
```

**Description**
Opens the composition in a Composition panel, and moves the Composition panel to front and gives it focus.

**Parameters**
None.

**Returns**
Viewer object for the Composition panel, or null if the composition could not be opened.
app.project.FolderItem

**Description**

The FolderItem object corresponds to a folder in your Project panel. It can contain various types of items (footage, compositions, solids) as well as other folders.

**Example**

Given that the second item in the project is a FolderItem, the following code puts up an alert for each top-level item in the folder, showing that item’s name.

```javascript
var secondItem = app.project.item(2);
if(!(secondItem instanceof FolderItem)) {
    alert("problem: second item is not a folder");
} else {
    for (i = 1; i <= secondItem.numItems; i++) {
        alert("item number " + i + " within the folder is named " + secondItem.item(i).name);
    }
}
```

### 13.1 Attributes

#### 13.1.1 FolderItem.items

app.project.item(index).items

**Description**

An ItemCollection object containing Item object that represent the top-level contents of this folder. Unlike the ItemCollection in the Project object, this collection contains only the top-level items in the folder. Top-level within the
folder is not the same as top-level within the project. Only those items that are top-level in the root folder are also top-level in the Project.

Type
ItemCollection object; read only.

13.1.2 FolderItem.numItems

app.project.item(index).numItems

Description
The number of items contained in the items collection (folderItem.items.length). If the folder contains another folder, only the FolderItem for that folder is counted, not any subitems contained in it.

Type
Integer; read only.

13.2 Methods

13.2.1 FolderItem.item()

app.project.item(index).item

Description
Returns the top-level item in this folder at the specified index position. Note that “top-level” here means toplevel within the folder, not necessarily within the project.

Parameters

| index | An integer, the position index of the item to retrieve. The first item is at index 1. |

Returns Item object.
The FootageItem object represents a footage item imported into a project, which appears in the Project panel. These are accessed by position index number in a project’s item collection.

FootageItem is a subclass of AVItem object, which is a subclass of Item object. All methods and attributes of AVItem and Item, in addition to those listed below, are available when working with FootageItem.

### 14.1 FootageItem.file

**app.project.item(index).file**

**Description**

The ExtendScript File object for the footage’s source file. If the FootageItem’s `mainSource` is a FileSource, this is the same as `FootageItem.mainSource.file`. Otherwise it is null.

**Type**

File object; read only.

### 14.2 FootageItem.mainSource

**app.project.item(index).mainSource**

**Description**
The footage source, an object that contains all of the settings related to that footage item, including those that are normally accessed through the Interpret Footage dialog box. The attribute is read-only. To change its value, call one of the FootageItem “replace” methods. See the **FootageSource object**, and its three types:

- **SolidSource object**
- **FileSource object**
- **PlaceholderSource object**

If this is a FileSource object, and the `footageMissing` value is true, the path to the missing footage file is in the `FileSource.missingFootagePath` attribute.

**Type**

*FootageSource object*; read-only.

### 14.3 FootageItem.openInViewer()

```typescript
app.project.item(index).openInViewer()
```

**Description**

Opens the footage in a Footage panel, and moves the Footage panel to front and gives it focus.

**Note:** Missing and placeholder footage can be opened using this method, but cannot manually (via doubleclicking it).

**Parameters**

None.

**Returns**

*Viewer object* for the Footage panel, or null if the footage could not be opened.

### 14.4 FootageItem.replace()

```typescript
app.project.item(index).replace(file)
```

**Description**

Changes the source of this FootageItem to the specified file. In addition to loading the file, the method creates a new FileSource object for the file and sets mainSource to that object. In the new source object, it sets the `name`, `width`, `height`, `frameDuration`, and `duration` attributes (see **AVItem object**) based on the contents of the file. The method preserves interpretation parameters from the previous `mainSource` object. If the specified file has an unlabeled alpha channel, the method estimates the alpha interpretation.

**Parameters**

- `file` An ExtendScript File object for the file to be used as the footage main source.
14.5 FootageItem.replaceWithPlaceholder()

```javascript
app.project.item(index).replaceWithPlaceholder(name, width, height, frameRate, duration)
```

**Description**
Changes the source of this FootageItem to the specified placeholder. Creates a new PlaceholderSource object, sets its values from the parameters, and sets mainSource to that object.

**Parameters**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>name</td>
<td>A string containing the name of the placeholder.</td>
</tr>
<tr>
<td>width</td>
<td>The width of the placeholder in pixels, an integer in the range ([4..30000]).</td>
</tr>
<tr>
<td>height</td>
<td>The height of the placeholder in pixels, an integer in the range ([4..30000]).</td>
</tr>
<tr>
<td>frameRate</td>
<td>The frame rate of the placeholder, a floating-point value in the range ([1.0..99.0]).</td>
</tr>
<tr>
<td>duration</td>
<td>The duration of the placeholder in seconds, a floating-point value in the range ([0.0..10800.0]).</td>
</tr>
</tbody>
</table>

14.6 FootageItem.replaceWithSequence()

```javascript
app.project.item(index).replaceWithSequence(file, forceAlphabetical)
```

**Description**
Changes the source of this FootageItem to the specified image sequence. In addition to loading the file, the method creates a new FileSource object for the file and sets mainSource to that object. In the new source object, it sets the name, width, height, frameDuration, and duration attributes (see AVItem object) based on the contents of the file. The method preserves interpretation parameters from the previous mainSource object. If the specified file has an unlabeled alpha channel, the method estimates the alpha interpretation.

**Parameters**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>file</td>
<td>An ExtendScript File object for the first file in the sequence to be used as the footage main source.</td>
</tr>
<tr>
<td>forceAlphabetical</td>
<td>When true, use the “Force alphabetical order” option.</td>
</tr>
</tbody>
</table>

14.7 FootageItem.replaceWithSolid()

```javascript
app.project.item(index).replaceWithSolid(color, name, width, height, pixelAspect)
```

**Description**
Changes the source of this FootageItem to the specified solid. Creates a new SolidSource object, sets its values from the parameters, and sets mainSource to that object.

**Parameters**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>color</td>
<td></td>
</tr>
<tr>
<td>name</td>
<td></td>
</tr>
<tr>
<td>width</td>
<td></td>
</tr>
<tr>
<td>height</td>
<td></td>
</tr>
<tr>
<td>pixelAspect</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Description</td>
</tr>
<tr>
<td>---</td>
<td>-------------</td>
</tr>
<tr>
<td><strong>color</strong></td>
<td>The color of the solid, an array of three floating-point values, ([R, G, B]), in the range ([0.0..1.0]).</td>
</tr>
<tr>
<td><strong>name</strong></td>
<td>A string containing the name of the solid.</td>
</tr>
<tr>
<td><strong>width</strong></td>
<td>The width of the solid in pixels, an integer in the range ([4..30000]).</td>
</tr>
<tr>
<td><strong>height</strong></td>
<td>The height of the solid in pixels, an integer in the range ([4..30000]).</td>
</tr>
<tr>
<td><strong>pixelAspect</strong></td>
<td>The pixel aspect ratio of the solid, a floating-point value in the range ([0.01..100.0]).</td>
</tr>
</tbody>
</table>
app.project.item(index).layer(index)

**Description**

The Layer object provides access to layers within compositions. It can be accessed from an item’s layer collection either by index number or by a name string.

Layer is the base class for *CameraLayer object*, *LightLayer object*, and *AVLayer object*, so Layer attributes and methods are available when working with all layer types. Layers contain AE properties, in addition to their JavaScript attributes and methods. For examples of how to access properties in layers, see *PropertyBase object*.

**Example**

If the first item in the project is a *CompItem*, this example disables the first layer in that composition and renames it.

This might, for example, turn an icon off in the composition.

```javascript
var firstLayer = app.project.item(1).layer(1);
firstLayer.enabled = false;
firstLayer.name = "DisabledLayer";
```

15.1 Attributes

15.1.1 Layer.active

app.project.item(index).layer(index).active

**Description**

When true, the layer’s video is active at the current time. For this to be true, the layer must be enabled, no other layer may be soloing unless this layer is soloed too, and the time must be between the `inPoint` and `outPoint` values.
of this layer. This value is never true in an audio layer; there is a separate `audioActive` attribute in the `AVLayer` object.

**Type**

Boolean; read-only.

---

### 15.1.2 Layer.comment

```javascript
app.project.item(index).layer(index).comment
```

**Description**

A descriptive comment for the layer.

**Type**

String; read/write.

---

### 15.1.3 Layer.containingComp

```javascript
app.project.item(index).layer(index).containingComp
```

**Description**

The composition that contains this layer.

**Type**

CompItem object; read-only.

---

### 15.1.4 Layer.enabled

```javascript
app.project.item(index).layer(index).enabled
```

**Description**

When true, the layer is enabled; otherwise false. This corresponds to the video switch state of the layer in the Timeline panel.

**Type**

Boolean; read/write.
15.1.5 Layer.hasVideo

app.project.item(index).layer(index).hasVideo

Description
When true, the layer has a video switch (the eyeball icon) in the Timeline panel; otherwise false.

Type
Boolean; read-only.

15.1.6 Layer.index

app.project.item(index).layer(index).index

Description
The index position of the layer.

Type
Integer in the range \([1..\text{numLayers}]\); read-only.

15.1.7 Layer.inPoint

app.project.item(index).layer(index).inPoint

Description
The “in” point of the layer, expressed in composition time (seconds).

Type
Floating-point value in the range \([-10800.0..10800.0]\) (minus or plus three hours); read/write.

15.1.8 Layer.isNameSet

app.project.item(index).layer(index).isNameSet

Description
True if the value of the name attribute has been set explicitly, rather than automatically from the source.

Type
Boolean; read-only.
15.1.9 Layer.locked

app.project.item(index).layer(index).locked

Description
When true, the layer is locked; otherwise false. This corresponds to the lock toggle in the Layer panel.

Type
Boolean; read/write.

15.1.10 Layer.name

app.project.item(index).layer(index).name

Description
The name of the layer. By default, this is the same as the Source name (which cannot be changed in the Layer panel), but you can set it to be different.

Type
String; read/write.

15.1.11 Layer.nullLayer

app.project.item(index).layer(index).nullLayer

Description
When true, the layer was created as a null object; otherwise false.

Type
Boolean; read-only.

15.1.12 Layer.outPoint

app.project.item(index).layer(index).outPoint

Description
The “out” point of the layer, expressed in composition time (seconds).

Type
Floating-point value in the range [-10800.0..10800.0] (minus or plus three hours); read/write.
15.1.13 Layer.parent

app.project.item(index).layer(index).parent

**Description**
The parent of this layer; can be null. Offset values are calculated to counterbalance any transforms above this layer in the hierarchy, so that when you set the parent there is no apparent jump in the layer’s transform. For example, if the new parent has a rotation of 30 degrees, the child layer is assigned a rotation of -30 degrees. To set the parent without changing the child layer’s transform values, use the `setParentWithJump` method.

**Type**
Layer object or null; read/write.

15.1.14 Layer.samplingQuality

app.project.item(index).layer(index).samplingQuality

**Note:** This functionality was added in After Effects 12.0 (CC)

**Description**
Set/get layer sampling method (bicubic or bilinear)

**Type**
A `LayerSamplingQuality` enumerated value; read/write. One of:

- `LayerSamplingQuality.BICUBIC`
- `LayerSamplingQuality.BILINEAR`

15.1.15 Layer.selectedProperties

app.project.item(index).layer(index).selectedProperties

**Description**
An array containing all of the currently selected Property and PropertyGroup objects in the layer.

**Type**
Array of `PropertyBase` objects; read-only.
15.1.16 Layer.shy

app.project.item(index).layer(index).shy

Description
When true, the layer is “shy”, meaning that it is hidden in the Layer panel if the composition’s “Hide all shy layers” option is toggled on.

Type
Boolean; read/write.

15.1.17 Layer.solo

app.project.item(index).layer(index).solo

Description
When true, the layer is soloed, otherwise false.

Type
Boolean; read/write.

15.1.18 Layer.startTime

app.project.item(index).layer(index).startTime

Description
The start time of the layer, expressed in composition time (seconds).

Type
Floating-point value in the range [-10800.0..10800.0] (minus or plus three hours); read/write.

15.1.19 Layer.stretch

app.project.item(index).layer(index).stretch

Description
The layer’s time stretch, expressed as a percentage. A value of 100 means no stretch. Values between 0 and 1 are set to 1, and values between -1 and 0 (not including 0) are set to -1.

Type
Floating-point value in the range [-9900.0..9900.0]; read/write.
15.1.20 Layer.time

app.project.item(index).layer(index).time

Description
The current time of the layer, expressed in composition time (seconds).

Type
Floating-point value; read-only.

15.2 Methods

15.2.1 Layer.activeAtTime()

app.project.item(index).layer(index).activeAtTime(time)

Description
Returns true if this layer will be active at the specified time. To return true, the layer must be enabled, no other layer may be soloing unless this layer is soloed too, and the time must be between the in Point and out Point values of this layer.

Parameters

| time | The time in seconds, a floating-point value. |

Returns
Boolean.

15.2.2 Layer.applyPreset()

app.project.item(index).layer(index).applyPreset(presetName);

Description
Applies the specified collection of animation settings (an animation preset) to the layer. Predefined animation preset files are installed in the Presets folder, and users can create new animation presets through the user interface.

Parameters

| presetName | An ExtendScript File object for the file containing the animation preset. |

Returns
Nothing.
15.2.3  Layer.copyToComp()

app.project.item(index).layer(index).copyToComp(intoComp)

Description
Copies the layer into the specified composition. The original layer remains unchanged. Creates a new Layer object with the same values as this one, and prepends the new object to the LayerCollection object in the target CompItem. Retrieve the copy using into Comp.layer(1). Copying in a layer changes the index positions of previously existing layers in the target composition. This is the same as copying and pasting a layer through the user interface.

Note:  As of After Effects 13.6, this method no longer causes After Effects to crash when the layer has a parent.

Warning:  As of After Effects 13.7 (13.6, has not been tested), if the copied layer has an effect on it and the user undoes the action, After Effects will Crash.

Tip:  The scripting guide says this method copies the layer to the top of the comp. It actually copies it to above the first selected layer, or to the top, if nothing is selected. To retrieve the copy you have to check CompItem.selectedLayers for the layer with the topmost index, and use comp.layer(topmost_index_of_selected_layers - 1 ) to retrieve the layer.

Parameters

intoComp  The target composition, and CompItem object.

Returns
Nothing.

15.2.4  Layer.duplicate()

app.project.item(index).layer(index).duplicate()

Description
Duplicates the layer. Creates a new Layer object in which all values are the same as in this one. This has the same effect as selecting a layer in the user interface and choosing Edit > Duplicate, except the selection in the user interface does not change when you call this method.

Parameters
None.

Returns
Layer object.
15.2.5 Layer.moveAfter()

```javascript
app.project.item(index).layer(index).moveAfter(layer)
```

**Description**
Moves this layer to a position immediately after (below) the specified layer.

**Parameters**

| layer | The target layer, a layer object in the same composition. |

**Returns**
Nothing.

15.2.6 Layer.moveBefore()

```javascript
app.project.item(index).layer(index).moveBefore(layer)
```

**Description**
Moves this layer to a position immediately before (above) the specified layer.

**Parameters**

| layer | The target layer, a layer object in the same composition. |

**Returns**
Nothing.

15.2.7 Layer.moveToBeginning()

```javascript
app.project.item(index).layer(index).moveToBeginning()
```

**Description**
Moves this layer to the topmost position of the layer stack (the first layer).

**Parameters**
None.

**Returns**
Nothing.
15.2.8 Layer.moveToEnd()

app.project.item(index).layer(index).moveToEnd()

Description
Moves this layer to the bottom position of the layer stack (the last layer).

Parameters
None.

Returns
Nothing.

15.2.9 Layer.remove()

app.project.item(index).layer(index).remove()

Description
Deletes the specified layer from the composition.

Parameters
None.

Returns
Nothing.

15.2.10 Layer.setParentWithJump()

app.project.item(index).layer(index).setParentWithJump([newParent])

Description
Sets the parent of this layer to the specified layer, without changing the transform values of the child layer. There may be an apparent jump in the rotation, translation, or scale of the child layer, as this layer’s transform values are combined with those of its ancestors. If you do not want the child layer to jump, set the parent attribute directly. In this case, an offset is calculated and set in the child layer’s transform fields, to prevent the jump from occurring.

Parameters

| newParent | Optional, a layer object in the same composition. If not specified, it sets the parent to None. |

Returns
Nothing.
LayerCollection object

app.project.item(index).layers

**Description**

The LayerCollection object represents a set of layers. The LayerCollection belonging to a *CompItem object* contains all the layer objects for layers in the composition. The methods of the collection object allow you to manipulate the layer list.

LayerCollection is a subclass of *Collection object*. All methods and attributes of Collection, in addition to those listed below, are available when working with LayerCollection.

**Example**

Given that the first item in the project is a ComplItem and the second item is an AVItem, this example shows the number of layers in the ComplItem’s layer collection, adds a new layer based on an AVItem in the project, then displays the new number of layers.

```javascript
var firstComp = app.project.item(1);
var layerCollection = firstComp.layers;
alert("number of layers before is" + layerCollection.length);
var anAVItem = app.project.item(2);
layerCollection.add(anAVItem);
alert("number of layers after is"+layerCollection.length);
```

**16.1 Methods**

**16.1.1 LayerCollection.add()**

app.project.item(index).layers.add(item[, duration])

**Description**
After Effects Scripting Guide, Release 0.0.1

Creates a new AVLayer object containing the specified item, and adds it to this collection. The new layer honors the “Create Layers at Composition Start Time” preference. This method generates an exception if the item cannot be added as a layer to this CompItem.

Parameters

<table>
<thead>
<tr>
<th>item</th>
<th>The AVItem object for the item to be added.</th>
</tr>
</thead>
<tbody>
<tr>
<td>duration</td>
<td>Optional, the length of a still layer in seconds, a floating-point value. Used only if the item contains a piece of still footage. Has no effect on movies, sequences or audio. If supplied, sets the duration value of the new layer. Otherwise, the duration value is set according to user preferences. By default, this is the same as the duration of the containing CompItem. To set another preferred value, choose Edit &gt; Preferences &gt; Import (Windows) or After Effects &gt; Preferences &gt; Import (Mac OS), and specify options under Still Footage.</td>
</tr>
</tbody>
</table>

Returns

AVLayer object;

16.1.2 LayerCollection.addBoxText()

app.project.item(index).layers.addBoxText([sourceText])

Description

Creates a new paragraph (box) text layer and adds the new TextLayer object to this collection. To create a point text layer, use the LayerCollection.addText() method.

Parameters

| sourceText | Optional; a string containing the source text of the new layer, or a TextDocument object containing the source text of the new layer. |

Returns

TextLayer object.

16.1.3 LayerCollection.addCamera()

app.project.item(index).layers.addCamera(name, centerPoint)

Description

Creates a new camera layer and adds the CameraLayer object to this collection. The new layer honors the “Create Layers at Composition Start Time” preference.

Parameters

<table>
<thead>
<tr>
<th>name</th>
<th>A string containing the name of the new layer.</th>
</tr>
</thead>
<tbody>
<tr>
<td>centerPoint</td>
<td>The center of the new camera, a floating-point array [x, y]. This is used to set the initial x and y values of the new camera’s Point of Interest property. The z value is set to 0.</td>
</tr>
</tbody>
</table>

Returns
16.1.4 LayerCollection.addLight()

app.project.item(index).layers.addLight(name, centerPoint)

Description
Creates a new light layer and adds the LightLayer object to this collection. The new layer honors the “Create Layers at Composition Start Time” preference.

Parameters

<table>
<thead>
<tr>
<th>name</th>
<th>A string containing the name of the new layer.</th>
</tr>
</thead>
<tbody>
<tr>
<td>centerPoint</td>
<td>The center of the new light, a floating-point array [x, y].</td>
</tr>
</tbody>
</table>

Returns
LightLayer object.

16.1.5 LayerCollection.addNull()

app.project.item(index).layers.addNull([duration])

Description
Creates a new null layer and adds the AVLayer object to this collection. This is the same as choosing Layer > New > Null Object.

Parameters

| duration | Optional, the length of a still layer in seconds, a floating-point value. If supplied, sets the duration value of the new layer. Otherwise, the duration value is set according to user preferences. By default, this is the same as the duration of the containing CompItem. To set another preferred value, choose Edit > Preferences > Import (Windows) or After Effects > Preferences > Import (Mac OS), and specify options under Still Footage. |

Returns
AVLayer object.

16.1.6 LayerCollection.addShape()

app.project.item(index).layers.addShape()

Description
Creates a new ShapeLayer object for a new, empty Shape layer. Use the ShapeLayer object to add properties, such as shape, fill, stroke, and path filters. This is the same as using a shape tool in “Tool Creates Shape” mode. Tools automatically add a vector group that includes Fill and Stroke as specified in the tool options.
16.1.7 LayerCollection.addSolid()

app.project.item(index).layers.addSolid(color, name, width, height, pixelAspect[, duration])

Description

Creates a new SolidSource object, with values set as specified; sets the new SolidSource as the mainSource value of a new FootageItem object, and adds the FootageItem to the project. Creates a new AVLayer object, sets the new Footage Item as its source, and adds the layer to this collection.

Parameters

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>color</td>
<td>The color of the solid, an array of three floating-point values, [R, G, B], in the range [0.0..1.0].</td>
</tr>
<tr>
<td>name</td>
<td>A string containing the name of the solid.</td>
</tr>
<tr>
<td>width</td>
<td>The width of the solid in pixels, an integer in the range [4..30000].</td>
</tr>
<tr>
<td>height</td>
<td>The height of the solid in pixels, an integer in the range [4..30000].</td>
</tr>
<tr>
<td>pixelAspect</td>
<td>The pixel aspect ratio of the solid, a floating-point value in the range [0.01..100.0].</td>
</tr>
<tr>
<td>duration</td>
<td>Optional, the length of a still layer in seconds, a floating-point value. If supplied, sets the duration value of the new layer. Otherwise, the duration value is set according to user preferences. By default, this is the same as the duration of the containing CompItem. To set another preferred value, choose Edit &gt; Preferences &gt; Import (Windows) or After Effects &gt; Preferences &gt; Import (MacOS), and specify options under Still Footage.</td>
</tr>
</tbody>
</table>

Returns

AVLayer object.

16.1.8 LayerCollection.addText()

app.project.item(index).layers.addText([sourceText])

Description

Creates a new point text layer and adds the new TextLayer object to this collection. To create a paragraph (box) text layer, use LayerCollection.addBoxText().

Parameters

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>sourceText</td>
<td>Optional; a string containing the source text of the new layer, or a TextDocument object containing the source text of the new layer.</td>
</tr>
</tbody>
</table>

Returns

TextLayer object.
16.1.9 `LayerCollection.byName()`

```javascript
app.project.item(index).layers.byName(name)
```

**Description**
Returns the first (topmost) layer found in this collection with the specified name, or null if no layer with the given name is found.

**Parameters**

| name | A string containing the name |

**Returns**
Layer object or null.

16.1.10 `LayerCollection.precompose()`

```javascript
app.project.item(index).layers.precompose(layerIndices, name[, moveAllAttributes])
```

**Description**
Creates a new `CompItem object` and moves the specified layers into its layer collection. It removes the individual layers from this collection, and adds the new CompItem to this collection.

**Parameters**

| layerIndices | The position indexes of the layers to be collected. An array of integers. |
| name | The name of the new CompItem object. |
| moveAllAttributes | Optional. When true (the default), retains all attributes in the new composition. This is the same as selecting the “Move all attributes into the new composition” option in the Pre-compose dialog box. You can only set this to false if there is just one index in the layerIndices array. This is the same as selecting the “Leave all attributes in” option in the Pre-compose dialog box. |

**Returns**
`CompItem object`. 
AVLayer object

app.project.item(index).layer(index)

Description

The AVLayer object provides an interface to those layers that contain AVItem objects (composition layers, footage layers, solid layers, text layers, and sound layers).

AVLayer is a subclass of Layer object. All methods and attributes of Layer, in addition to those listed below, are available when working with AVLayer.

AVLayer is a base class for TextLayer object, so AVLayer attributes and methods are available when working with TextLayer objects.

AE Properties

Different types of layers have different AE properties. AVLayer has the following properties and property groups:

- Marker
- Time Remap
- Motion Trackers
- Masks
- Effects
- Transform
  - Anchor Point
  - Position
  - Scale
  - Orientation
  - X Rotation
  - Y Rotation
  - Rotation
– Opacity

• Layer Styles

• Geometry Options // Ray-traced 3D

• Material Options
  – Casts Shadows
  – Light Transmission
  – Accepts Shadows
  – Accepts Lights
  – Appears in Reflections // Ray-traced 3D
  – Ambient
  – Diffuse
  – Specular Intensity
  – Specular Shininess
  – Metal
  – Reflection Intensity // Ray-traced 3D
  – Reflection Sharpness // Ray-traced 3D
  – Reflection Rolloff // Ray-traced 3D
  – Transparency // Ray-traced 3D
  – Transparency Rolloff // Ray-traced 3D
  – Index of Refraction // Ray-traced 3D

• Audio
  – AudioLevels

Example

If the first item in the project is a CompItem, and the first layer of that CompItem is an AVLayer, the following sets the layer quality, startTime, and inPoint.

```javascript
var firstLayer = app.project.item(1).layer(1);
firstLayer.quality = LayerQuality.BEST;
firstLayer.startTime = 1;
firstLayer.inPoint = 2;
```

17.1 Attributes

17.1.1 AVLayer.adjustmentLayer

app.project.item(index).layer(index).adjustmentLayer

Description

True if the layer is an adjustment layer.
**17.1.2 AVLayer.audioActive**

`app.project.item(index).layer(index).audioActive`

**Description**

True if the layer’s audio is active at the current time. For this value to be true, `audioEnabled` must be true, no other layer with audio may be soloing unless this layer is soloed too, and the time must be between the `inPoint` and `outPoint` of this layer.

**Type**

Boolean; read-only.

---

**17.1.3 AVLayer.audioEnabled**

`app.project.item(index).layer(index).audioEnabled`

**Description**

When true, the layer’s audio is enabled. This value corresponds to the audio toggle switch in the Timeline panel.

**Type**

Boolean; read/write.

---

**17.1.4 AVLayer.autoOrient**

`app.project.item(index).layer(index).autoOrient`

**Description**

The type of automatic orientation to perform for the layer.

**Type**

An `AutoOrientType` enumerated value; read/write. One of:

- `AutoOrientType.ALONG_PATH`: Layer faces in the direction of the motion path.
- `AutoOrientType.CAMERA_OR_POINT_OF_INTEREST`: Layer always faces the active camera or points at its point of interest.
- `AutoOrientType.CHARACTERS_TOWARD_CAMERA`: Each character in a per-character 3D text layer automatically faces the active camera.
- `AutoOrientType.NO_AUTO_ORIENT`: Layer rotates freely, independent of any motion path, point of interest, or other layers.
17.1.5 AVLayer.blendingMode

app.project.item(index).layer(index).blendingMode

Description
The blending mode of the layer.

Type
A BlendingMode enumerated value; read/write. One of:

- BlendingMode.ADD
- BlendingMode.ALPHA_ADD
- BlendingMode.CLASSIC_COLOR_BURN
- BlendingMode.CLASSIC_COLOR_DODGE
- BlendingMode.CLASSIC_DIFFERENCE
- BlendingMode.COLOR
- BlendingMode.COLOR_BURN
- BlendingMode.COLOR_DODGE
- BlendingMode.DANCING_DISSOLVE
- BlendingMode.DARKEN
- BlendingMode.DARKER_COLOR
- BlendingMode.DIFFERENCE
- BlendingMode.DISSOLVE
- BlendingMode.EXCLUSION
- BlendingMode.HARD_LIGHT
- BlendingMode.HARD_MIX
- BlendingMode.HUE
- BlendingMode.LIGHTEN
- BlendingMode.LIGHTER_COLOR
- BlendingMode.LINEAR_BURN
- BlendingMode.LINEAR_DODGE
- BlendingMode.LINEAR_LIGHT
- BlendingMode.LUMINESCENT_PREMUL
- BlendingMode.LUMINOSITY
- BlendingMode.MULTIPLY
- BlendingMode.NORMAL
- BlendingMode.OVERLAY
- BlendingMode.PIN_LIGHT
- BlendingMode.SATURATION
- BlendingMode.SCREEN
• BlendingMode.SILHOUETE_ALPHA - note the misspelling of ‘SILHOUETTE’!
• BlendingMode.SILHOUETTE_LUMA
• BlendingMode.SOFT_LIGHT
• BlendingMode.STENCIL_ALPHA
• BlendingMode.STENCIL_LUMA
• BlendingMode.SUBTRACT
• BlendingMode.VIVID_LIGHT

17.1.6  AVLayer.canSetCollapseTransformation

app.project.item(index).layer(index).canSetCollapseTransformation

Description
True if it is legal to change the value of the collapseTransformation attribute on this layer.

Type
Boolean; read-only.

17.1.7  AVLayer.canSetTimeRemapEnabled

app.project.item(index).layer(index).canSetTimeRemapEnabled

Description
True if it is legal to change the value of the timeRemapEnabled attribute on this layer.

Type
Boolean; read-only.

17.1.8  AVLayer.collapseTransformation

app.project.item(index).layer(index).collapseTransformation

Description
True if collapse transformation is on for this layer.

Type
Boolean; read/write.
17.1.9 AVLayer.effectsActive

app.project.item(index).layer(index).effectsActive

Description
True if the layer’s effects are active, as indicated by the `<f>` icon next to it in the user interface.

Type
Boolean; read/write.

17.1.10 AVLayer.environmentLayer

app.project.item(index).layer(index).environmentLayer

Description
True if this is an environment layer in a Ray-traced 3D composition. Setting this attribute to true automatically makes the layer 3D (threeDLayer becomes true).

Type
Boolean; read/write.

17.1.11 AVLayer.frameBlending

app.project.item(index).layer(index).frameBlending

Description
True if frame blending is enabled for the layer.

Type
Boolean; read-only.

17.1.12 AVLayer.frameBlendingType

app.project.item(index).layer(index).frameBlendingType

Description
The type of frame blending to perform when frame blending is enabled for the layer.

Type
A FrameBlendingType enumerated value; read/write. One of:

- FrameBlendingType.FRAME_MIX
- FrameBlendingType.NO_FRAME_BLEND
- FrameBlendingTypePIXEL_MOTION
17.1.13 AVLayer.guideLayer

app.project.item(index).layer(index).guideLayer

Description
True if the layer is a guide layer.

Type
Boolean; read/write.

17.1.14 AVLayer.hasAudio

app.project.item(index).layer(index).hasAudio

Description
True if the layer contains an audio component, regardless of whether it is audio-enabled or soloed.

Type
Boolean; read-only.

17.1.15 AVLayer.hasTrackMatte

app.project.item(index).layer(index).hasTrackMatte

Description
True if the layer in front of this layer is being used as a track matte on this layer. When true, this layer's trackMatteType value controls how the matte is applied.

Type
Boolean; read-only.

17.1.16 AVLayer.height

app.project.item(index).layer(index).height

Description
The height of the layer in pixels.

Type
Floating-point; read-only.
17.1.17 AVLayer.isNameFromSource

app.project.item(index).layer(index).isNameFromSource

Description
True if the layer has no expressly set name, but contains a named source. In this case, layer.name has the same value as layer.source.name. False if the layer has an expressly set name, or if the layer does not have a source.

Type
Boolean; read-only.

17.1.18 AVLayer.isTrackMatte

app.project.item(index).layer(index).isTrackMatte

Description
True if this layer is being used as a track matte for the layer behind it.

Type
Boolean; read-only.

17.1.19 AVLayer.motionBlur

app.project.item(index).layer(index).motionBlur

Description
True if motion blur is enabled for the layer.

Type
Boolean; read/write.

17.1.20 AVLayer.preserveTransparency

app.project.item(index).layer(index).preserveTransparency

Description
True if preserve transparency is enabled for the layer.

Type
Boolean; read/write.
17.1.21 AVLayer.quality

app.project.item(index).layer(index).quality

Description
The quality with which this layer is displayed.

Type
A LayerQuality enumerated value; read/write. One of:
• LayerQuality.BEST
• LayerQuality.DRAFT
• LayerQuality.WIREFRAME

17.1.22 AVLayer.source

app.project.item(index).layer(index).source

Description
The source AVItem for this layer. The value is null in a Text layer. Use AVLayer.replaceSource() to change the value.

Type
AVItem object; read-only.

17.1.23 AVLayer.threeDLayer

app.project.item(index).layer(index).threeDLayer

Description
True if this is a 3D layer.

Type
Boolean; read/write.

17.1.24 AVLayer.threeDPerChar

app.project.item(index).layer(index).threeDPerChar

Description
True if this layer has the Enable Per-character 3D switch set, allowing its characters to be animated off the plane of the text layer. Applies only to text layers.

Type
Boolean; read/write.
17.1.25 AVLayer.timeRemapEnabled

app.project.item(index).layer(index).timeRemapEnabled

Description
True if time remapping is enabled for this layer.

Type
Boolean; read/write.

17.1.26 AVLayer.trackMatteType

app.project.item(index).layer(index).trackMatteType

Description
If this layer has a track matte, specifies the way the track matte is applied.

Type
A TrackMatteType enumerated value; read/write. One of:

- TrackMatteType.ALPHA
- TrackMatteType.ALPHA_INVERTED
- TrackMatteType.LUMA
- TrackMatteType.LUMA_INVERTED
- TrackMatteType.NO_TRACK_MATTE

17.1.27 AVLayer.width

app.project.item(index).layer(index).width

Description
The width of the layer in pixels.

Type
Floating-point; read-only.

17.2 Methods

17.2.1 AVLayer.audioActiveAtTime()

app.project.item(index).layer(index).audioActiveAtTime(time)

Description
Returns true if this layer’s audio will be active at the specified time. For this method to return true, audioEnabled must be true, no other layer with audio may be soloing unless this layer is soloed too, and the time must be between the inPoint and outPoint of this layer.

**Parameters**

| time | The time, in seconds. A floating-point value. |

**Returns**

Boolean.

### 17.2.2 AVLayer.calculateTransformFromPoints()

```javascript
app.project.item(index).layer(index).calculateTransformFromPoints(pointTopLeft, pointTopRight, pointBottomRight)
```

**Description**

Calculates a transformation from a set of points in this layer.

**Parameters**

| pointTopLeft | The top left point coordinates in the form of an array, [x, y, z]. |
| pointTopRight | The top right point coordinates in the form of an array, [x, y, z]. |
| pointBottomRight | The bottom right point coordinates in the form of an array, [x, y, z]. |

**Returns**

An Object with the transformation properties set.

**Example**

```javascript
var newLayer = comp.layers.add(newFootage);
newLayer.threeDLayer = true;
newLayer.blendingMode = BlendingMode.ALPHA_ADD;
var transform = newLayer.calculateTransformFromPoints(tl, tr, bl);
for(var sel in transform) {
    newLayer.transform[sel].setValue(transform[sel]);
}
```

### 17.2.3 AVLayer.openInViewer()

```javascript
app.project.item(index).layer(index).openInViewer()
```

**Description**

Opens the layer in a Layer panel, and moves the Layer panel to front and gives it focus.

**Parameters**

None.

**Returns**
Viewer object for the Layer panel, or null if the layer could not be opened (e.g., for text or shape layers, which cannot be opened in the Layer panel).

### 17.2.4 AVLayer.replaceSource()

```javascript
app.project.item(index).layer(index).replaceSource(newSource, fixExpressions)
```

**Description**
Replaces the source for this layer.

**Parameters**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>newSource</td>
<td>The new source AVItem object.</td>
</tr>
<tr>
<td>fixExpressions</td>
<td>True to adjust expressions for the new source, false otherwise. Note that this feature can be resource-intensive; if replacing a large amount of footage, do this only at the end of the operation. See also <code>Project.autoFixExpressions()</code>.</td>
</tr>
</tbody>
</table>

**Returns**
Nothing.

**Warning:** If this method is performed on a null layer, the layer `isNull` attribute is not changed from `true`. This causes the layer not to be visible in comp viewer and renders.

### 17.2.5 AVLayer.sourceRectAtTime()

```javascript
app.project.item(index).layer(index).sourceRectAtTime(timeT, extents)
```

**Description**
Retrieves the rectangle bounds of the layer at the specified time index, corrected for text or shape layer content. Use, for example, to write text that is properly aligned to the baseline.

**Parameters**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>timeT</td>
<td>The time index, in seconds. A floating-point value.</td>
</tr>
<tr>
<td>extents</td>
<td>True to include the extents, false otherwise. Extents apply to shape layers, increasing the size of the layer bounds as necessary.</td>
</tr>
</tbody>
</table>

**Returns**
A JavaScript object with four attributes, `[top, left, width, height]`. 
CameraLayer object

app.project.item(index).layer(index)

**Description**

The CameraLayer object represents a camera layer within a composition. Create it using `LayerCollection.addCamera()`. It can be accessed in an item’s layer collection either by index number or by a name string.

CameraLayer is a subclass of *Layer object*. All methods and attributes of Layer are available when working with CameraLayer.

**AE Properties**

CameraLayer defines no additional attributes, but has different AE properties than other layer types. It has the following properties and property groups:

- **Marker**
- **Transform**
  - PointofInterest
  - Position
  - Scale
  - Orientation
  - XRotation
  - YRotation
  - Rotation
  - Opacity
- **CameraOptions**
  - Zoom
  - DepthofField
  - FocusDistance
– BlurLevel
LightLayer object

app.project.item(index).layer(index)

**Description**

The LightLayer object represents a light layer within a composition. Create it using the `LayerCollection.addLight()` method. It can be accessed in an item’s layer collection either by index number or by a name string.

LightLayer is a subclass of *Layer object*. All methods and attributes of Layer are available when working with Light-Layer.

**AE Properties**

LightLayer defines no additional attributes, but has different AE properties than other layer types. It has the following properties and property groups:

- **Marker**
- **Transform**
  - PointofInterest
  - Position
  - Scale
  - Orientation
  - XRotation
  - YRotation
  - Rotation
  - Opacity
- **LightOptions**
  - Intensity
  - Color
  - ConeAngle
19.1 Attributes

19.1.1 LightLayer.lightType

app.project.item(index).layer(index).lightType

Description

For a light layer, its light type. Trying to set this attribute for a non-light layer produces an error.

Type

A `LightType` enumerated value; read/write. One of:

- `LightType.PARALLEL`
- `LightType.SPOT`
- `LightType.POINT`
- `LightType.AMBIENT`
ShapeLayer object

app.project.item(index).layer(index)

**Description**

The ShapeLayer object represents a shape layer within a composition. Create it using `LayerCollection.addShape()`. It can be accessed in an item’s layer collection either by index number or by a name string.

ShapeLayer is a subclass of `AVLayer`, which is a subclass of `Layer`. All methods and attributes of AVLayer and Layer are available when working with ShapeLayer.
TextLayer object

app.project.item(index).layer(index)

**Description**

The TextLayer object represents a text layer within a composition. Create it using the `LayerCollection` object’s `addText` method. It can be accessed in an item’s layer collection either by index number or by a name string.

TextLayer is a subclass of `AVLayer`, which is a subclass of `Layer`. All methods and attributes of `AVLayer` and `Layer` are available when working with TextLayer.

**AE Properties**

TextLayer defines no additional attributes, but has the following AE properties and property groups, in addition to those inherited from `AVLayer`:

- `Text`
- `SourceText`
- `PathOptions`
- `Path`
- `ReversePath`
- `PerpendicularToPath`
- `ForceAlignment`
- `FirstMargin`
- `LastMargin`
- `MoreOptions`
- `AnchorPointGrouping`
- `GroupingAlignment`
- `Fill&Stroke`
- `InterCharacterBlending`
• Animators

Unused Properties and Attributes

The `TimeRemap` and `MotionTrackers` properties, inherited from `AVLayer`, are not applicable to text layers, and their related `AVLayer` attributes are not used:

• `canSetTimeRemapEnabled`
• `timeRemapEnabled`
• `trackMatteType`
• `isTrackMatte`
• `hasTrackMatte`
CHAPTER 22

PropertyBase object

app.project.item(index).layer(index).propertySpec

Description

Properties are accessed by name through layers, using various kinds of expression syntax, as controlled by application preferences. For example, the following are all ways of access properties in the Effects group:

```javascript
var effect1 = app.project.item(1).layer(1).effect("Add Grain")("Viewing Mode");
var effect1again = app.project.item(1).layer(1).effect.addGrain.viewingMode;
var effect1again2 = app.project.item(1).layer(1)("Effects")("Add Grain")("Viewing Mode");
```

See also `PropertyGroup.property()`.

PropertyBase is the base class for both `Property` and `PropertyGroup`, so PropertyBase attributes and methods are available when working with properties and property groups.

Reference invalidation

When something occurs that changes an object sufficiently for the reference to become invalid, script references to that object can generate errors. In simple cases this is straightforward. For example, if you delete an object, a reference to the deleted object generates the warning “Object is Invalid”:

```javascript
var layer1 = app.project.item(1).layer(1);
layer1.remove();
alert(layer1.name); // invalid reference to deleted object
```

Similarly, if you reference an AE property in a deleted object, the warning occurs:

```javascript
var layer1 = app.project.item(1).layer(1);
var layer1position = layer1.transform.position;
layer1.remove();
alert(layer1position.value); // invalid reference to property in selected object
```
A less straightforward case is when a property is removed from a property group. In this case, After Effects generates the “Object is Invalid” error when you subsequently reference that item or other items in the group, because their index positions have changed. For example:

```javascript
var effect1 = app.project.item(1).layer(1).effect(1);
var effect2 = app.project.item(1).layer(1).effect(2);
var effect2param = app.project.item(1).layer(1).effect(2).blendWithOriginal;
effect1.remove();
alert(effect2.name); // invalid reference because group index positions have changed
```

22.1 attributes

22.1.1 PropertyBase.active

```javascript
app.project.item(index).layer(index).propertySpec.active
```

Description

When true, this property is active. For a layer, this corresponds to the setting of the eyeball icon and if the current time is between the layer’s in and out points. For an effect and all properties, it is the same as the enabled attribute, except that it’s read-only.

Type

Boolean; read-only.

22.1.2 PropertyBase.canSetEnabled

```javascript
app.project.item(index).layer(index).propertySpec.canSetEnabled
```

Description

When true, you can set the enabled attribute value. Generally, this is true if the user interface displays an eyeball icon for this property; it is true for all layers.

Type

Boolean; read-only.

22.1.3 PropertyBase.elided

```javascript
app.project.item(index).layer(index).propertySpec.elided
```

Description

When true, this property is a group used to organize other properties. The property is not displayed in the user interface and its child properties are not indented in the Timeline panel. For example, for a text layer with two animators and no properties twirled down, you might see:

- Text
• PathOptions
• MoreOptions
• Animator1
• Animator2

In this example, “ Animator 1” and “ Animator 2” are contained in a PropertyBase called “Text Animators.” This parent
group is not displayed in the user interface, and so the two child properties are not indented in the Timeline panel.

Type
Boolean; read-only.

22.1.4 PropertyBase.enabled

app.project.item(index).layer(index).propertySpec.enabled

Description
When true, this property is enabled. It corresponds to the setting of the eyeball icon, if there is one; otherwise, the
default is true.

Type
Boolean; read/write if canSetEnabled is true, read-only if canSetEnabled is false.

22.1.5 PropertyBase.isEffect

app.project.item(index).layer(index).propertySpec.isEffect

Description
When true, this property is an effect PropertyGroup.

Type
Boolean; read-only.

22.1.6 PropertyBase.isMask

app.project.item(index).layer(index).propertySpec.isMask

Description
When true, this property is a mask PropertyGroup.

Type
Boolean; read-only.
22.1.7 PropertyBase.isModified

app.project.item(index).layer(index).propertySpec.isModified

Description
When true, this property has been changed since its creation.

Type
Boolean; read-only.

22.1.8 PropertyBase.matchName

app.project.item(index).layer(index).propertySpec.matchName

Description
A special name for the property used to build unique naming paths. The match name is not displayed, but you can refer to it in scripts. Every property has a unique match-name identifier. Match names are stable from version to version regardless of the display name (the name attribute value) or any changes to the application. Unlike the display name, it is not localized. An indexed group may not have a name value, but always has a matchName value. (An indexed group has the type PropertyType.INDEXED_GROUP; see PropertyBase.propertyType.)

Type
String; read-only.

22.1.9 PropertyBase.name

app.project.item(index).layer(index).propertySpec.name

Description
The display name of the property. (Compare PropertyBase.matchName.) It is an error to set the name value if the property is not a child of an indexed group (that is, a property group that has the type PropertyType.INDEXED_GROUP; see PropertyBase.propertyType).

Type
String; read/write for a child of an indexed group; otherwise read-only.

22.1.10 PropertyBase.parentProperty

app.project.item(index).layer(index).propertySpec.parentProperty

Description
The property group that is the immediate parent of this property, or null if this PropertyBase is a layer.

Type
PropertyGroup object or null; read-only.
22.1.11 PropertyBase.propertyDepth

```javascript
app.project.item(index).layer(index).propertySpec.propertyDepth
```

**Description**
The number of levels of parent groups between this property and the containing layer. The value 0 for a layer.

**Type**
Integer; read-only.

---

22.1.12 PropertyBase.propertyIndex

```javascript
app.project.item(index).layer(index).propertySpec.propertyIndex
```

**Description**
The position index of this property within its parent group, if it is a child of an indexed group (a property group that has the type `PropertyType.INDEXED_GROUP`; see `PropertyBase.propertyType`).

**Type**
Integer; read-only.

---

22.1.13 PropertyBase.propertyType

```javascript
app.project.item(index).layer(index).propertySpec.propertyType
```

**Description**
The type of this property.

**Type**
A `PropertyType` enumerated value; read/write. One of:

- `PropertyType.PROPERTY`: A single property such as position or zoom.
- `PropertyType.INDEXED_GROUP`: A property group whose members have an editable name and an index. Effects and masks are indexed groups. For example, the masks property of a layer refers to a variable number of individual masks by index number.
- `PropertyType.NAMED_GROUP`: A property group in which the member names are not editable. Layers are named groups.

---

22.1.14 PropertyBase.selected

```javascript
app.project.item(index).layer(index).propertySpec.selected
```

**Description**
When true, this property is selected. Set to true to select the property, or to false to deselect it. Sampling this attribute repeatedly for a large number of properties can slow down system performance. To read the full set of selected properties of a composition or layer, use either `CompItem.selectedProperties` or `Layer.selectedProperties`. 
Type
Boolean; read/write.

22.2 Methods

22.2.1 PropertyBase.duplicate()

app.project.item(index).layer(index).propertySpec.duplicate()

Description
If this property is a child of an indexed group, creates and returns a new PropertyBase object with the same attribute values as this one. If this property is not a child of an indexed group, the method generates an exception and displays an error. An indexed group has the type PropertyType.INDEXED_GROUP; see PropertyBase.propertyType.

Parameters
None.

Returns
PropertyBase object.

22.2.2 PropertyBase.moveTo()

app.project.item(index).layer(index).propertySpec.moveTo(newIndex)

Description
Moves this property to a new position in its parent property group. This method is valid only for children of indexed groups; if it is not, or if the index value is not valid, the method generates an exception and displays an error. (An indexed group has the type PropertyType.INDEXED_GROUP; see PropertyBase.propertyType.)

Warning: Using this method invalidates existing references to other children in the same indexed group. For example, if you have three effects on a layer, each effect assigned to a different variable, moving one of the effectsinvalidates the references for all of these variables. You will need to reassign them.

Parameters

| newIndex | The new index position at which to place this property in its group. An integer. |

Returns
Nothing.
22.2.3 PropertyBase.propertyGroup()

app.project.item(index).layer(index).propertySpec.propertyGroup([countUp])

Description

Gets the PropertyGroup object for an ancestor group of this property at a specified level of the parent-child hierarchy.

Parameters

| countUp | Optional. The number of levels to ascend within the parent-child hierarchy. An integer in the range [1..propertyDepth]. Default is 1, which gets the immediate parent. |

Returns

PropertyGroup object, or null if the count reaches the containing layer.

22.2.4 PropertyBase.remove()

app.project.item(index).layer(index).propertySpec.remove()

Description

Removes this property from its parent group. If this is a property group, it removes the child properties as well. This method is valid only for children of indexed groups; if it is not, or if the index value is not valid, the method generates an exception and displays an error. (An indexed group has the type PropertyType.INDEXED_GROUP; see PropertyBase.propertyType.) This method can be called on a text animation property (that is, any animator that has been set to a text layer).

Parameters

None.

Returns

Nothing.
app.project.item(index).layer(index).propertySpec

**Description**

The Property object contains value, keyframe, and expression information about a particular AE property of a layer. An AE property is a value, often animatable, of an effect, mask, or transform within an individual layer. For examples of how to access properties, see *PropertyBase object* and *PropertyGroup.property()*.

Property is a subclass of *PropertyBase*. All methods and attributes of PropertyBase, in addition to those listed below, are available when working with Property.

**Note:** JavaScript objects commonly referred to as “properties” are called “attributes” in this guide, to avoid confusion with the After Effects definition of property.

**Examples**

- Get and set the value of opacity:

  ```javascript
  var myProperty = myLayer.opacity;
  // opacity has propertyValueType of OneD, and is stored as a float
  myProperty.setValue(50); // set opacity to 50%
  // Variable my Opacity is a float value
  var myOpacity = myProperty.value;
  ```

- Get and set the value of a position:

  ```javascript
  var myProperty = myLayer.position;
  // position has propertyValueType of ThreeD_SPATIAL, and is stored as an array of 3 floats
  myProperty.setValue([10.0, 30.0, 0.0]);
  // Variable my Position is an array of 3 floats
  var myPosition = myProperty.value;
  ```

- Change the value of a mask shape to be open instead of closed:
var myMask = myLayer.mask(1);
var myProperty = myMask.maskPath;
myShape = myProperty.value;
myShape.closed = false;
myProperty.setValue(myShape);

• Get the value of a color at a particular time. A color is stored as an array of four floats, \([r, g, b, opacity]\). This sets the value of the red component of a light’s color at time 4 to be half of that at time 2:

var myProperty = myLight.color;
var colorValue = myProperty.valueAtTime(2, true);
colorValue[0] = 0.5 * colorValue[0];
myProperty.setValueAtTime(4, colorValue);

• Check that a scale calculated by an expression at time 3.5 is the expected value of [10,50]:

var myProperty = myLayer.scale;
//false value of preExpression means evaluate the expression
var scaleValue = myProperty.valueAtTime(3.5, false);
if(scaleValue[0] == 10 && scaleValue[1] == 50) {
    alert("hurray");
} else{
    alert("oops");
}

• Keyframe a rotation from 0 to 90 and back again. The animation is 10 seconds, and the middle keyframe is at the 5 second mark. Rotation properties are stored as a OneD value:

myProperty = myLayer.rotation;
myProperty.setValueAtTime(0, 0);
myProperty.setValueAtTime(5, 90);
myProperty.setValueAtTime(10, 0);

• Change the key frame values for the first three keyframes of some sourceText:

myProperty = myTextLayer.sourceText;
if(myProperty.numKeys<3){
    alert("error, I thought there were 3 keyframes");
} else{
    myProperty.setValueAtKey(1, newTextDocument("keynumber1"));
    myProperty.setValueAtKey(2, newTextDocument("keynumber2"));
    myProperty.setValueAtKey(3, newTextDocument("keynumber3"));
}

• Set values using the convenience syntax for position, scale, color, or source text:

//These two are equivalent. The second fills in a default of 0.
myLayer.position.setValue([20, 30, 0]);
myLayer.position.setValue([20, 30]);
//These two are equivalent. The second fills in a default of 100.
myLayer.scale.setValue([50, 50, 100]);
myLayer.scale.setValue([50, 50]);
//These two are equivalent. The second fills in a default of 1.0
(continues on next page)
myLight.color.setValue([.8, .3, .1, 1.0]);
myLight.color.setValue([.8, .3, .1]);
//These two are equivalent. The second creates a TextDocument
myTextLayer.sourceText.setValue(newTextDocument("foo"));
myTextLayer.sourceText.setValue("foo");

23.1 Attributes

23.1.1 Property.canSetExpression

app.project.item(index).layer(index).propertySpec.canSetExpression

Description
When true, the named property is of a type whose expression can be set by a script. See also Property expression attribute.

Type
Boolean; read-only.

23.1.2 Property.canVaryOverTime

app.project.item(index).layer(index).propertySpec.canVaryOverTime

Description
When true, the named property can vary over time—that is, keyframe values or expressions can be written to this property.

Type
Boolean; read-only.

23.1.3 Property.dimensionsSeparated

app.project.item(index).layer(index).propertySpec.dimensionsSeparated

Description
When true, the property’s dimensions are represented as separate properties. For example, if the layer’s position is represented as X Position and Y Position properties in the Timeline panel, the Position property has this attribute set to true.

Note: This attribute applies only when the isSeparationLeader attribute is true.

Type
Boolean; read/write.
23.1.4 Property.expression

app.project.item(index).layer(index).propertySpec.expression

Description
The expression for the named property. Writeable only when `canSetExpression` for the named property is true. When you specify a value for this attribute, the string is evaluated.

- If the string contains a valid expression, `expressionEnabled` becomes true.
- If the string does not contain a valid expression, an error is generated, and `expressionEnabled` becomes false.
- If you set the attribute to the empty string, `expressionEnabled` becomes false, but no error is generated.

Type
String; read/write if `canSetExpression` for the named property is true.

23.1.5 Property.expressionEnabled

app.project.item(index).layer(index).propertySpec.expressionEnabled

Description
When true, the named property uses its associated expression to generate a value. When false, the keyframe information or static value of the property is used. This attribute can be set to true only if `canSetExpression` for the named property is true and `expression` contains a valid expression string.

Type
Boolean; read/write.

23.1.6 Property.expressionError

app.project.item(index).layer(index).propertySpec.expressionError

Description
Contains the error, if any, generated by evaluation of the string most recently set in `expression`. If no expression string has been specified, or if the last expression string evaluated without error, contains the empty string (""").

Type
String; read-only.

23.1.7 Property.hasMax

app.project.item(index).layer(index).propertySpec.hasMax

Description
When true, there is a maximum permitted value for the named property; otherwise false.

Type

Boolean; read-only.

## 23.1.8 Property.hasMin

app.project.item(index).layer(index).propertySpec.hasMin

**Description**

When true, there is a minimum permitted value for the named property; otherwise false.

**Type**

Boolean; read-only.

## 23.1.9 Property.isSeparationFollower

app.project.item(index).layer(index).propertySpec.isSeparationFollower

**Description**

When true, the property represents one of the separated dimensions for a multidimensional property. For example, the X Position property has this attribute set to true.

**Note:** The original, consolidated, multidimensional property is the “separation leader” and the new, separated, single-dimensional properties are its “separation followers”.

**Type**

Boolean; read-only.

## 23.1.10 Property.isSeparationLeader

app.project.item(index).layer(index).propertySpec.isSeparationLeader

**Description**

When true, the property is multidimensional and can be separated. For example, the Position property has this attribute set to true.

**Note:** The original, consolidated, multidimensional property is the “separation leader” and the new, separated, single-dimensional properties are its “separation followers”.

**Type**

Boolean; read-only.
23.1.11 Property.isSpatial

app.project.item(index).layer(index).propertySpec.isSpatial

Description
When true, the named property defines a spatial value. Examples are position and effect point controls.

Type
Boolean; read-only.

23.1.12 Property.isTimeVarying

app.project.item(index).layer(index).propertySpec.isTimeVarying

Description
When true, the named property is time varying—that is, it has keyframes or an enabled expression. When this attribute is true, the attribute canVaryOverTime must also be true.

Type
Boolean; read-only.

23.1.13 Property.maxValue

app.project.item(index).layer(index).propertySpec.maxValue

Description
The maximum permitted value of the named property. If the hasMax attribute is false, an exception occurs, and an error is generated.

Type
Floating-point value; read-only.

23.1.14 Property.minValue

app.project.item(index).layer(index).propertySpec.minValue

Description
The minimum permitted value of the named property. If the hasMin attribute is false, an exception occurs, and an error is generated.

Type
Floating-point value; read-only.
23.1.15 Property.numKeys

app.project.item(index).layer(index).propertySpec.numKeys

**Description**
The number of keyframes in the named property. If the value is 0, the property is not being keyframed.

**Type**
Integer; read-only.

23.1.16 Property.propertyIndex

app.project.item(index).layer(index).propertySpec.propertyIndex

**Description**
The position index of the named property. The first property is at index position 1.

**Type**
Integer; read-only.

23.1.17 Property.propertyValueType

app.project.item(index).layer(index).propertySpec.propertyValueType

**Description**
The type of value stored in the named property. The PropertyValueType enumeration has one value for each type of data that can be stored in or retrieved from a property. Each type of data is stored and retrieved in a different kind of structure. All property objects store data according to one of these categories. For example, a 3D spatial property (such as a layer’s position) is stored as an array of three floating point values. When setting a value for position, pass in such an array, as follows: mylayer.property("position").setValue([10, 20, 0]);

In contrast, a shape property (such as a layer’s mask shape) is stored as a Shape object. When setting a value for a shape, pass a Shape object, as follows:

```javascript
var myShape = new Shape();
myShape.vertices = [[0,0], [0,100], [100,100], [100,0]];
var myMask = mylayer.property("ADBE Mask Parade").property(1);
myMask.property("ADBE Mask Shape").setValue(myShape);
```

**Type**
A PropertyValueType enumerated value; read/write. One of:

- **PropertyValueType.NO_VALUE**: Stores no data.
- **PropertyValueType.ThreeD_SPATIAL**: Array of three floating-point positional values. For example, an Anchor Point value might be [10.0, 20.2, 0.0]
- **PropertyValueType.ThreeD**: Array of three floating-point quantitative values. For example, a Scale value might be [100.0, 20.2, 0.0]
• **PropertyValueType.TwoD_SPATIAL**: Array of 2 floating-point positional values. For example, an Anchor Point value might be [5.1, 10.0]

• **PropertyValueType.TwoD**: Array of 2 floating-point quantitative values. For example, a Scale value might be [5.1, 100.0]

• **PropertyValueType.OneD**: A floating-point value.

• **PropertyValueType.COLOR**: Array of 4 floating-point values in the range [0.0..1.0]. For example, [0.8, 0.3, 0.1, 1.0]

• **PropertyValueType.CUSTOM_VALUE**: Custom property value, such as the Histogram property for the Levels effect.

• **PropertyValueType.MARKER**: *MarkerValue object*

• **PropertyValueType.LAYER_INDEX**: Integer; a value of 0 means no layer.

• **PropertyValueType.MASK_INDEX**: Integer; a value of 0 means no mask.

• **PropertyValueType.SHAPE**: *Shape object*

• **PropertyValueType.TEXT_DOCUMENT**: *TextDocument object*

### 23.1.18 Property.selectedKeys

```javascript
app.project.item(index).layer(index).propertySpec.selectedKeys
```

**Description**

The indices of all the selected keyframes in the named property. If no keyframes are selected, or if the property has no keyframes, returns an empty array.

**Type**

Array of integers; read-only.

### 23.1.19 Property.separationDimension

```javascript
app.project.item(index).layer(index).propertySpec.separationDimension
```

**Description**

For a separated follower, the dimension number it represents in the multidimensional leader. The first dimension starts at 0. For example, the Y Position property has a `separationDimension` value of 1; X Position has a value of 0.

**Type**

Integer; read-only.
23.1.20 Property.separationLeader

app.project.item(index).layer(index).propertySpec.separationLeader

Description
The original multidimensional property for this separated follower. For example, if the current property is Y Position, this attribute’s value points to the Position property.

Note: The original, consolidated, multidimensional property is the “separation leader” and the new, separated, single-dimensional properties are its “separation followers”.

Type
Property object; read-only.

23.1.21 Property.unitsText

app.project.item(index).layer(index).propertySpec.unitsText

Description
The text description of the units in which the value is expressed.

Type
String; read-only.

23.1.22 Property.value

app.project.item(index).layer(index).propertySpec.value

Description
The value of the named property at the current time.

• If expressionEnabled is true, returns the evaluated expression value.
• If there are keyframes, returns the keyframed value at the current time.
• Otherwise, returns the static value.

The type of value returned depends on the property value type. See examples for Property object.

Type
A value appropriate for the type of the property (see Property.propertyValueType); read-only.
23.2 Methods

23.2.1 Property.addKey()

```
app.project.item(index).layer(index).propertySpec.addKey(time)
```

**Description**

Adds a new keyframe or marker to the named property at the specified time and returns the index of the new keyframe.

**Parameters**

| time    | The time, in seconds, at which to add the keyframe. A floating-point value. The beginning of the composition is 0. |

**Returns**

Integer; the index of the new keyframe or marker.

23.2.2 Property.addToMotionGraphicsTemplate()

```
app.project.item(index).layer(index).propertySpec.addToMotionGraphicsTemplate(comp)
```

**Note:** This functionality was added in After Effects 15.0 (CC 2018)

**Description**

Adds the property to the Essential Graphics panel for the specified composition.

Returns true if the property is successfully added, false otherwise.

If the property is not added, it is either because it is not one of the supported property types or the property has already been added to that composition. After Effects will present a warning dialog. Use the canAddToMotionGraphicsTemplate() method to test whether the property can be added to a Motion Graphics template.

**Parameters**

| comp    | The composition that you wish to add the property to, a CompItem. Required. |

**Returns**

Boolean.

23.2.3 Property.addToMotionGraphicsTemplateAs()

```
app.project.item(index).layer(index).propertySpec.addToMotionGraphicsTemplateAs(comp, name)
```

**Note:** This functionality was added in After Effects 16.1 (CC 2019)
Description

Adds the property to the Essential Graphics panel for the specified composition, but with an additional option to give
the EGP property a custom name.

Returns true if the property is successfully added, false otherwise.

If the property is not added, it is either because it is not one of the supported property types or the property has already
been added to that composition. After Effects will present a warning dialog. Use the canAddToMotionGraphicsTem-
plate() method to test whether the property can be added to a Motion Graphics template.

Parameters

<table>
<thead>
<tr>
<th>comp</th>
<th>The composition that you wish to add the property to, a CompItem. Required.</th>
</tr>
</thead>
<tbody>
<tr>
<td>name</td>
<td>A string for the new name. Required.</td>
</tr>
</tbody>
</table>

Returns

Boolean.

23.2.4 Property.canAddToMotionGraphicsTemplate()

app.project.item(index).layer(index).propertySpec.canAddToMotionGraphicsTemplate(comp)

Note: This functionality was added in After Effects 15.0 (CC 2018)

Description

Test whether or not the property can be added to the Essential Graphics panel for the specified composition. Returns
true if the property can be added, false otherwise.

If the property can not be added, it is either because it is not one of the supported property types or the property has
already been added to that composition. After Effects will present a warning dialog.

Supported property types are:

- Checkbox
- Color
- Numerical Slider (i.e., a single-value numerical property, such as Transform > Opacity or the Slider Control
  expression control effect)
- Source Text

Parameters

| comp | The composition that you wish to test adding the property to, a CompItem. Required. |

Returns

Boolean.
23.2.5 Property.getSeparationFollower()

app.project.item(index).layer(index).propertySpec.getSeparationFollower(dim)

Description
For a separated, multidimensional property, retrieves a specific follower property. For example, you can use this method on the Position property to access the separated X Position and Y Position properties.

Note: This attribute applies only when the isSeparationLeader attribute is true.

Parameters

| dim | The dimension number (starting at 0). |

Returns
Property object, or an error if the property is not multidimensional or does not have the specified dimension.

23.2.6 Property.isInterpolationTypeValid()

app.project.item(index).layer(index).propertySpec.isInterpolationTypeValid(type)

Description
Returns true if the named property can be interpolated using the specified keyframe interpolation type.

Parameters

<table>
<thead>
<tr>
<th>Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>A KeyframeInterpolationType enumerated value; one of:</td>
</tr>
<tr>
<td>• KeyframeInterpolationType.LINEAR</td>
</tr>
<tr>
<td>• KeyframeInterpolationType.BEZIER</td>
</tr>
<tr>
<td>• KeyframeInterpolationType.HOLD</td>
</tr>
</tbody>
</table>

Returns
Boolean.

23.2.7 Property.keyInInterpolationType()

app.project.item(index).layer(index).propertySpec.keyInInterpolationType(keyIndex)

Description
Returns the ‘in’ interpolation type for the specified keyframe.

Parameters

| keyIndex | The index for the keyframe. An integer in the range [1..numKeys], as returned by the addKey or nearestKeyIdex. |

Chapter 23. Property object
Returns

A KeyframeInterpolationType enumerated value; one of:

- KeyframeInterpolationType.LINEAR
- KeyframeInterpolationType.BEZIER
- KeyframeInterpolationType.HOLD

### 23.2.8 Property.keyInSpatialTangent()

```javascript
app.project.item(index).layer(index).propertySpec.keyInSpatialTangent(keyIndex)
```

**Description**

Returns the incoming spatial tangent for the specified keyframe, if the named property is spatial (that is, the value type is TwoD_SPATIAL or ThreeD_SPATIAL).

**Parameters**

| keyIndex | The index for the keyframe. An integer in the range [1..numKeys], as returned by the addKey or nearestKeyIndex. |

**Returns**

Array of floating-point values:

- If the property value type is PropertyValueType.TwoD_SPATIAL, the array contains 2 floating-point values.
- If the property value type is PropertyValueType.ThreeD_SPATIAL, the array contains 3 floating-point values.
- If the property value type is neither of these types, an exception is generated.

### 23.2.9 Property.keyInTemporalEase()

```javascript
app.project.item(index).layer(index).propertySpec.keyInTemporalEase(keyIndex)
```

**Description**

Returns the incoming temporal ease for the specified keyframe.

**Parameters**

| keyIndex | The index for the keyframe. An integer in the range [1..numKeys], as returned by the addKey or nearestKeyIndex. |

**Returns**

Array of KeyframeEase objects:

- If the property value type is PropertyValueType.TwoD, the array contains 2 objects.
- If the property value type is PropertyValueType.ThreeD, the array contains 3 objects.
For any other value type, the array contains 1 object.

### 23.2.10 Property.keyOutInterpolationType()

```javascript
app.project.item(index).layer(index).propertySpec.keyOutInterpolationType(keyIndex)
```

**Description**

Returns the outgoing interpolation type for the specified keyframe.

**Parameters**

- `keyIndex` (int): The index for the keyframe. An integer in the range [1..numKeys], as returned by the `addKey` or `nearestKeyIndex`.

**Returns**

A `KeyframeInterpolationType` enumerated value; one of:

- `KeyframeInterpolationType.LINEAR`
- `KeyframeInterpolationType.BEZIER`
- `KeyframeInterpolationType.HOLD`

### 23.2.11 Property.keyOutSpatialTangent()

```javascript
app.project.item(index).layer(index).propertySpec.keyOutSpatialTangent(keyIndex)
```

**Description**

Returns the outgoing spatial tangent for the specified keyframe.

**Parameters**

- `keyIndex` (int): The index for the keyframe. An integer in the range [1..numKeys], as returned by the `addKey` or `nearestKeyIndex`.

**Returns**

Array of floating-point values:

- If the property value type is `PropertyValueType.TwoD_SPATIAL`, the array contains 2 floating-point values.
- If the property value type is `PropertyValueType.ThreeD_SPATIAL`, the array contains 3 floating-point values.
- If the property value type is neither of these types, an exception is generated.
23.2.12 Property.keyOutTemporalEase()

app.project.item(index).layer(index).propertySpec.keyOutTemporalEase(keyIndex)

Description
Returns the outgoing temporal ease for the specified keyframe.

Parameters

keyIndex The index for the keyframe. An integer in the range [1..numKeys], as returned by the addKey or nearestKeyIndex.

Returns
Array of KeyframeEase objects:
- If the property value type is PropertyValueType.TwoD, the array contains 2 objects.
- If the property value type is PropertyValueType.ThreeD, the array contains 3 objects.
- For any other value type, the array contains 1 object.

23.2.13 Property.keyRoving()

app.project.item(index).layer(index).propertySpec.keyRoving(keyIndex)

Description
Returns true if the specified keyframe is roving. The first and last keyframe in a property cannot rove; if you try to set roving for one of these, the operation is ignored, and keyRoving() continues to return false. If the property value type is neither TwoD_SPATIAL nor ThreeD_SPATIAL, an exception is generated.

Parameters

keyIndex The index for the keyframe. An integer in the range [1..numKeys], as returned by the addKey or nearestKeyIndex.

Returns
Boolean.

23.2.14 Property.keySelected()

app.project.item(index).layer(index).propertySpec.keySelected(keyIndex)

Description
Returns true if the specified keyframe is selected.

Parameters

keyIndex The index for the keyframe. An integer in the range [1..numKeys], as returned by the addKey or nearestKeyIndex.
Returns
Boolean.

23.2.15 Property.keySpatialAutoBezier()

app.project.item(index).layer(index).propertySpec.keySpatialAutoBezier(keyIndex)

Description
Returns true if the specified keyframe has spatial auto-Bezier interpolation. (This type of interpolation affects this keyframe only if keySpatialContinuous(keyIndex) is also true.) If the property value type is neither TwoD_SPATIAL nor ThreeD_SPATIAL, an exception is generated.

Parameters

| keyIndex  | The index for the keyframe. An integer in the range [1..numKeys], as returned by the addKey or nearestKeyIndex. |

Returns
Boolean.

23.2.16 Property.keySpatialContinuous()

app.project.item(index).layer(index).propertySpec.keySpatialContinuous(keyIndex)

Description
Returns true if the specified keyframe has spatial continuity. If the property value type is neither TwoD_SPATIAL nor ThreeD_SPATIAL, an exception is generated.

Parameters

| keyIndex  | The index for the keyframe. An integer in the range [1..numKeys], as returned by the addKey or nearestKeyIndex. |

Returns
Boolean.

23.2.17 Property.keyTemporalAutoBezier()

app.project.item(index).layer(index).propertySpec.keyTemporalAutoBezier(keyIndex)

Description
Returns true if the specified keyframe has temporal auto-Bezier interpolation. Temporal auto-Bezier interpolation affects this keyframe only if the keyframe interpolation type is KeyframeInterpolationType.BEZIER for both keyInInterpolationType(keyIndex) and keyOutInterpolationType(keyIndex).

Parameters
23.2.18 Property.keyTemporalContinuous()

app.project.item(index).layer(index).propertySpec.keyTemporalContinuous(keyIndex)

Description

Returns true if the specified keyframe has temporal continuity. Temporal continuity affects this keyframe only if keyframe interpolation type is KeyframeInterpolationType.BEZIER for both keyInInterpolationType(keyIndex) and keyOutInterpolationType(keyIndex).

Parameters

| keyIndex | The index for the keyframe. An integer in the range [1..numKeys], as returned by the addKey or nearestKeyIndex. |

Returns

Boolean.

23.2.19 Property.keyTime()

app.project.item(index).layer(index).propertySpec.keyTime(keyIndex)  
app.project.item(index).layer(index).propertySpec.keyTime(markerComment)

Description

Finds the specified keyframe or marker and returns the time at which it occurs. If no keyframe or marker can be found that matches the argument, this method generates an exception, and an error is displayed.

Parameters

| keyIndex | The index for the keyframe. An integer in the range [1..numKeys], as returned by the addKey or nearestKeyIndex. |
| markerComment | The comment string attached to a marker (see MarkerValue.comment attribute). |

Returns

Floating-point value.
23.2.20 Property.keyValue()

```javascript
app.project.item(index).layer(index).propertySpec.keyValue(keyIndex)
app.project.item(index).layer(index).propertySpec.keyValue(markerComment)
```

**Description**

Finds the specified keyframe or marker and returns its current value. If no keyframe or marker can be found that matches the argument, this method generates an exception, and an error is displayed.

**Parameters**

- **keyIndex**: The index for the keyframe. An integer in the range $[1..\text{numKeys}]$, as returned by the `addKey` or `nearestKeyIndex`.

- **markerComment**: The comment string attached to a marker (see `MarkerValue.comment` attribute).

**Returns**

Floating-point value for keyframes, MarkerValue object for markers.

23.2.21 Property.nearestKeyIndex()

```javascript
app.project.item(index).layer(index).propertySpec.nearestKeyIndex(time)
```

**Description**

Returns the index of the keyframe nearest to the specified time.

**Parameters**

- **time**: The time in seconds; a floating-point value. The beginning of the composition is 0.

**Returns**

Integer.

23.2.22 Property.removeKey()

```javascript
app.project.item(index).layer(index).propertySpec.removeKey(keyIndex)
```

**Description**

Removes the specified keyframe from the named property. If no keyframe with the specified index exists, generates an exception and displays an error. When a keyframe is removed, the remaining index numbers change. To remove more than one keyframe, you must start with the highest index number and work down to the lowest to ensure that the remaining indices reference the same keyframe after each removal.

**Parameters**

- **keyIndex**: The index for the keyframe. An integer in the range $[1..\text{numKeys}]$, as returned by the `addKey` or `nearestKeyIndex`.
Returns
Nothing.

### 23.2.23 Property.setInterpolationTypeAtKey()

```javascript
app.project.item(index).layer(index).propertySpec.setInterpolationTypeAtKey(keyIndex, inType[, outType])
```

**Description**

Sets the in and out interpolation types for the specified keyframe.

**Parameters**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>keyIndex</td>
<td>The index for the keyframe. An integer in the range [1..numKeys], as returned by the <code>addKey</code> or <code>nearestKeyIndex</code>.</td>
</tr>
<tr>
<td>inType</td>
<td>The incoming interpolation type. A <code>KeyframeInterpolationType</code> enumerated value; one of:</td>
</tr>
<tr>
<td></td>
<td>• KeyframeInterpolationType.LINEAR</td>
</tr>
<tr>
<td></td>
<td>• KeyframeInterpolationType.BEZIER</td>
</tr>
<tr>
<td></td>
<td>• KeyframeInterpolationType.HOLD</td>
</tr>
<tr>
<td>outType</td>
<td>(Optional) The outgoing interpolation type. If not supplied, the 'out' type is set to the inType value. A <code>KeyframeInterpolationType</code> enumerated value; one of:</td>
</tr>
<tr>
<td></td>
<td>• KeyframeInterpolationType.LINEAR</td>
</tr>
<tr>
<td></td>
<td>• KeyframeInterpolationType.BEZIER</td>
</tr>
<tr>
<td></td>
<td>• KeyframeInterpolationType.HOLD</td>
</tr>
</tbody>
</table>

**Returns**

Nothing.

### 23.2.24 Property.setRovingAtKey()

```javascript
app.project.item(index).layer(index).propertySpec.setRovingAtKey(keyIndex, newVal)
```

**Description**

Turns roving on or off for the specified keyframe. The first and last keyframe in a property cannot rove; if you try to set roving for one of these, the operation is ignored, and `keyRoving()` continues to return false. If the property value type is neither `TwoD_SPATIAL` nor `ThreeD_SPATIAL`, an exception is generated.

**Parameters**

---

**23.2. Methods**

161
The index for the keyframe. An integer in the range [1..numKeys], as returned by the `addKey` or `nearestKeyIndex`.

`newVal` True to turn roving on, false to turn roving off.

Returns
Nothing.

### 23.2.25 Property.setSelectedAtKey()

app.project.item(index).layer(index).propertySpec.setSelectedAtKey(keyIndex, onOff)

Description
Selects or deselects the specified keyframe.

Parameters

<table>
<thead>
<tr>
<th>keyIndex</th>
<th>The index for the keyframe. An integer in the range [1..numKeys], as returned by the <code>addKey</code> or <code>nearestKeyIndex</code>.</th>
</tr>
</thead>
<tbody>
<tr>
<td>onOff</td>
<td>True to select the keyframe, false to deselect it.</td>
</tr>
</tbody>
</table>

Returns
Nothing.

### 23.2.26 Property.setSpatialAutoBezierAtKey()

app.project.item(index).layer(index).propertySpec.setSpatialAutoBezierAtKey(keyIndex, newVal)

Description
Turns spatial auto-Bezier interpolation on or off for the specified keyframe. If the property value type is neither `TwoD_SPATIAL` nor `ThreeD_SPATIAL`, an exception is generated.

Parameters

<table>
<thead>
<tr>
<th>keyIndex</th>
<th>The index for the keyframe. An integer in the range [1..numKeys], as returned by the <code>addKey</code> or <code>nearestKeyIndex</code>.</th>
</tr>
</thead>
<tbody>
<tr>
<td>newVal</td>
<td>True to turn spatial auto-Bezier on, false to turn it off.</td>
</tr>
</tbody>
</table>

Returns
Nothing.
23.2.27 Property.setSpatialContinuousAtKey()

`app.project.item(index).layer(index).propertySpec.setSpatialContinuousAtKey(keyIndex, newVal)`

**Description**

Turns spatial continuity on or off for the specified keyframe. If the property value type is neither `TwoD_SPATIAL` nor `ThreeD_SPATIAL`, an exception is generated.

**Parameters**

<table>
<thead>
<tr>
<th>keyIndex</th>
<th>The index for the keyframe. An integer in the range <code>[1..numKeys]</code>, as returned by the <code>addKey</code> or <code>nearestKeyIndex</code> method.</th>
</tr>
</thead>
<tbody>
<tr>
<td>newVal</td>
<td>True to turn spatial auto-Bezier on, false to turn it off.</td>
</tr>
</tbody>
</table>

**Returns**

Nothing.

23.2.28 Property.setSpatialTangentsAtKey()

`app.project.item(index).layer(index).propertySpec.setSpatialTangentsAtKey(keyIndex, inTangent[, outTangent])`

**Description**

Sets the incoming and outgoing tangent vectors for the specified keyframe. If the property value type is neither `TwoD_SPATIAL` nor `ThreeD_SPATIAL`, an exception is generated.

**Parameters**

<table>
<thead>
<tr>
<th>keyIndex</th>
<th>The index for the keyframe. An integer in the range <code>[1..numKeys]</code>, as returned by the <code>addKey</code> or <code>nearestKeyIndex()</code> method.</th>
</tr>
</thead>
<tbody>
<tr>
<td>inTangent</td>
<td>The incoming tangent vector. An array of 2 or 3 floating-point values.</td>
</tr>
<tr>
<td>outTangent</td>
<td>(Optional) The outgoing tangent vector. If not supplied, the out tangent is set to the inTangent value. An array of 2 or 3 floating-point values.</td>
</tr>
</tbody>
</table>

- If the property value type is `PropertyValueType.TwoD_SPATIAL`, the array contains 2 values.
- If the property value type is `PropertyValueType.ThreeD_SPATIAL`, the array contains 3 values.
Returns
Nothing.

23.2.29 Property.setTemporalAutoBezierAtKey()

app.project.item(index).layer(index).propertySpec.setTemporalAutoBezierAtKey(keyIndex, newVal)

Description
Turns temporal auto-Bezier interpolation on or off for the specified keyframe. When this is turned on, it affects this keyframe only if keySpatialContinuous(keyIndex) is also true.

Parameters

<table>
<thead>
<tr>
<th>keyIndex</th>
<th>The index for the keyframe. An integer in the range [1..numKeys], as returned by the addKey or nearestKeyIndex.</th>
</tr>
</thead>
<tbody>
<tr>
<td>newVal</td>
<td>True to turn temporal auto-Bezier on, false to turn it off.</td>
</tr>
</tbody>
</table>

Returns
Nothing.

23.2.30 Property.setTemporalContinuousAtKey()

app.project.item(index).layer(index).propertySpec.setTemporalContinuousAtKey(keyIndex, newVal)

Description
Turns temporal continuity on or off for the specified keyframe. When temporal continuity is turned on, it affects this keyframe only if the keyframe interpolation type is KeyframeInterpolationType.BEZIER for both keyInInterpolationType(keyIndex) and keyOutInterpolationType(keyIndex).

Parameters

<table>
<thead>
<tr>
<th>keyIndex</th>
<th>The index for the keyframe. An integer in the range [1..numKeys], as returned by the addKey or nearestKeyIndex.</th>
</tr>
</thead>
<tbody>
<tr>
<td>newVal</td>
<td>True to turn temporal continuity on, false to turn it off.</td>
</tr>
</tbody>
</table>

Returns
Nothing.
23.2.31 Property.setTemporalEaseAtKey()

app.project.item(index).layer(index).propertySpec.setTemporalEaseAtKey(keyIndex, inTemporalEase[, outTemporalEase])

Description

Sets the incoming and outgoing temporal ease for the specified keyframe. See KeyframeEase object.

Parameters

<table>
<thead>
<tr>
<th>keyIndex</th>
<th>The index for the keyframe. An integer in the range [1..numKeys], as returned by the addKey or nearestKeyIndex.</th>
</tr>
</thead>
<tbody>
<tr>
<td>inTemporalEase</td>
<td>The incoming temporal ease. An array of 1, 2, or 3 KeyframeEase objects.</td>
</tr>
<tr>
<td></td>
<td>• If the property value type is PropertyValueType.TwoD, the array contains 2 objects.</td>
</tr>
<tr>
<td></td>
<td>• If the property value type is PropertyValueType.ThreeD, the array contains 3 objects.</td>
</tr>
<tr>
<td></td>
<td>• For all other value types, the array contains 1 object.</td>
</tr>
<tr>
<td>outTemporalEase</td>
<td>(Optional) The outgoing temporal ease. If not supplied, the outgoing ease is set to the inTemporalEase value. An array of 1, 2, or 3 KeyframeEase objects.</td>
</tr>
<tr>
<td></td>
<td>• If the property value type is PropertyValueType.TwoD, the array contains 2 objects.</td>
</tr>
<tr>
<td></td>
<td>• If the property value type is PropertyValueType.ThreeD, the array contains 3 objects.</td>
</tr>
<tr>
<td></td>
<td>• For all other value types, the array contains 1 object.</td>
</tr>
</tbody>
</table>

Returns

Nothing.

23.2.32 Property.setValue()

app.project.item(index).layer(index).propertySpec.setValue(newValue)

Description

Sets the static value of a property that has no keyframes. If the named property has keyframes, this method generates an exception and displays an error. To set the value of a property with keyframes, use Property.setValueAtTime() or Property.setValueAtKey().

Parameters
newValue | A value appropriate for the type of property being set; see Property.propertyValueType.

Returns
Nothing.

### 23.2.33 Property.setValueAtKey()

```javascript
app.project.item(index).layer(index).propertySpec.setValueAtKey(keyIndex, newValue)
```

**Description**

Finds the specified keyframe and sets its value. If the named property has no keyframes, or no keyframe with the specified index, this method generates an exception and displays an error.

**Parameters**

<table>
<thead>
<tr>
<th>keyIndex</th>
<th>The index for the keyframe. An integer in the range [1..numKeys], as returned by the addKey or nearestKeyIndex.</th>
</tr>
</thead>
<tbody>
<tr>
<td>newValue</td>
<td>A value appropriate for the type of property being set; see Property.propertyValueType.</td>
</tr>
</tbody>
</table>

**Returns**
Nothing.

### 23.2.34 Property.setValueAtTime()

```javascript
app.project.item(index).layer(index).propertySpec.setValueAtTime(time, newValue)
```

**Description**

Sets the value of a keyframe at the specified time. Creates a new keyframe for the named property, if one does not currently exist for the specified time, and sets its value.

**Parameters**

<table>
<thead>
<tr>
<th>time</th>
<th>The time in seconds, a floating-point value. The beginning of the composition is 0.</th>
</tr>
</thead>
<tbody>
<tr>
<td>newValue</td>
<td>A value appropriate for the type of property being set; see Property.propertyValueType.</td>
</tr>
</tbody>
</table>

**Returns**
Nothing.
23.2.35 Property.setValueAtTimes()

app.project.item(index).layer(index).propertySpec.setValueAtTimes(times, newValues)

Description
Sets values for a set of keyframes at specified times. Creates a new keyframe for the named property, if one does not currently exist for a specified time, and sets its value. Times and values are expressed as arrays; the arrays must be of the same length.

Parameters

<table>
<thead>
<tr>
<th>times</th>
<th>An array of times, in seconds. Each time is a floating-point value. The beginning of the composition is 0.</th>
</tr>
</thead>
<tbody>
<tr>
<td>newValues</td>
<td>A array of values appropriate for the type of property being set; see Property.propertyValueType.</td>
</tr>
</tbody>
</table>

Returns
Nothing.

23.2.36 Property.valueAtTime()

app.project.item(index).layer(index).propertySpec.valueAtTime(time, preExpression)

Description
The value of the named property as evaluated at the specified time. Note that the type of value returned is not made explicit; it will be of a different type, depending on the property evaluated.

Note: As After Effects 13.6, this method now waits for time-intensive expressions, like sampleImage, to finish evaluating before it returns the result.

Parameters

<table>
<thead>
<tr>
<th>time</th>
<th>The time in seconds; a floating-point value. The beginning of the composition is 0.</th>
</tr>
</thead>
<tbody>
<tr>
<td>preExpression</td>
<td>If the property has an expression and this is true, return the value for the specified time without applying the expression to it. When false, return the result of evaluating the expression for the specified time. Ignored if the property does not have an associated expression.</td>
</tr>
</tbody>
</table>

Returns
A value appropriate for the type of the property (see “Property propertyValueType attribute” on page 138).
CHAPTER 24

PropertyGroup object

app.project.item(index).layer(index).propertyGroupSpec

Description
The PropertyGroup object represents a group of properties. It can contain Property objects and other PropertyGroup objects. Property groups can be nested to provide a parent-child hierarchy, with a Layer object at the top (root) down to a single Property object, such as the mask feather of the third mask. To traverse the group hierarchy, use PropertyBase methods and attributes; see PropertyBase.propertyGroup(). For examples of how to access properties and property groups, see PropertyBase object.

PropertyGroup is a subclass of PropertyBase. All methods and attributes of PropertyBase, in addition to those listed below, are available when working with PropertyGroup.

PropertyGroup is a base class for MaskPropertyGroup. PropertyGroup attributes and methods are available when working with mask groups.

24.1 Attributes

24.1.1 PropertyGroup.numProperties

app.project.item(index).layer(index).propertyGroupSpec.numProperties

Description
The number of indexed properties in this group.

For layers, this method returns a value of 3, corresponding to the mask, effect, and motion tracker groups, which are the indexed groups within the layer.

However, layers also have many other properties available only by name; see PropertyGroup.property().

Type
Integer; read-only.
24.2 Methods

24.2.1 PropertyGroup.addProperty()

app.project.item(index).layer(index).propertyGroupSpec.addProperty(name)

Description

Creates and returns a PropertyBase object with the specified name, and adds it to this group.

In general, you can only add properties to an indexed group (a property group that has the type PropertyType.INDEXED_GROUP; see PropertyBase.propertyType). The only exception is a text animator property, which can be added to a named group (a property group that has the type PropertyType.NAMED_GROUP).

If this method cannot create a property with the specified name, it generates an exception.

To check that you can add a particular property to this group, call canAddProperty before calling this method. (See PropertyGroup.canAddProperty().)

Warning: When you add a new property to an indexed group, the indexed group gets recreated from scratch, invalidating all existing references to properties.

One workaround is to store the index of the added property with property.propertyIndex.

Examples

• This won’t work, as the slider object becomes invalid once we add the Color Control property:

```javascript
var effectsProperty = layer.property("ADBE Effect Parade");
var slider = effectsProperty.addProperty("ADBE Slider Control");
var color = effectsProperty.addProperty("ADBE Color Control");

var sliderProperty = slider.property("ADBE Slider Control-0001"); // Object ‘slider’ is invalid
```

• This revised method will work:

```javascript
var effectsProperty = layer.property("ADBE Effect Parade");
var slider = effectsProperty.addProperty("ADBE Slider Control");
var sliderIndex = slider.propertyIndex; // Store 'slider' effect index so it can be reused later
var color = effectsProperty.addProperty("ADBE Color Control");

var sliderProperty = effectsProperty.property(sliderIndex).property("ADBE Slider Control-0001");
```

Parameters
The display name or match name of the property to add. (See `PropertyBase.matchName`). The following names are supported:

- Any match name for a property that can be added through the user interface. For example, “ADBE Mask Atom”, “ADBE Paint Atom”, “ADBE Text Position”, “ADBE Text Anchor Point”.
- When adding to an ADBE Mask Parade: “ADBE Mask Atom”, “Mask”.
- When adding to an ADBE Effect Parade, any effect by match name, such as “ADBE Bulge”, “ADBE Glo2”, “APC Vegas”.
- Any effect by display name, such as “Bulge”, “Glow”, “Vegas”.
- For text animators, “ADBE Text Animator”.
- For selectors, Range Selector has the name “ADBE Text Selector”, Wiggly Selector has the name “ADBE Text Wiggly Selector”, and Expression Selector has the name “ADBE Text Expressible Selector”.

Returns

`PropertyBase object`.

### 24.2.2 PropertyGroup.canAddProperty()

`app.project.item(index).layer(index).propertyGroupSpec.canAddProperty(name)`

**Description**

Returns true if a property with the given name can be added to this property group.

For example, you can only add mask to a mask group. The only legal input arguments are “mask” or “ADBE Mask Atom”.

```javascript
maskGroup.canAddProperty("mask"); // returns true
maskGroup.canAddProperty("ADBE Mask Atom"); // returns true
maskGroup.canAddProperty("blend"); // returns false
```

**Parameters**

| name | The display name or match name of the property to be checked. (See `PropertyGroup.addProperty()`). |

**Returns**

Boolean.
24.2.3 PropertyGroup.property()

app.project.item(index).layer(index).propertyGroupSpec.property(index)
app.project.item(index).layer(index).propertyGroupSpec.property(name)

Description
Finds and returns a child property of this group, as specified by either its index or name. A name specification can use the same syntax that is available with expressions. The following are all allowed and are equivalent:

<table>
<thead>
<tr>
<th>Statement</th>
</tr>
</thead>
<tbody>
<tr>
<td>mylayer.position</td>
</tr>
<tr>
<td>mylayer(&quot;position&quot;)</td>
</tr>
<tr>
<td>mylayer.property(&quot;position&quot;)</td>
</tr>
<tr>
<td>mylayer(1)</td>
</tr>
<tr>
<td>mylayer.property(1)</td>
</tr>
</tbody>
</table>

Some properties of a layer, such as position and zoom, can be accessed only by name. When using the name to find a property that is multiple levels down, you must make more than one call to this method.

For example, the following call searches two levels down, and returns the first mask in the mask group: `myLayer.property("ADBE Masks").property(1)`

Parameters

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>index</td>
<td>The index for the child property, in this is an indexed group. An integer in the range [1..numProperties].</td>
</tr>
</tbody>
</table>
| name      | The name of the child property. This can be:  
  - Any match name  
  - Any name in expression “parenthesis style” syntax, meaning the display name or the compact English name  
  - Any name in expression “intercap style” syntax  
For supported property names, see the table below. |

Returns

`PropertyBase object` or null if no child property with the specified string name is found.

Properties accessible by name
| From any Layer | • “ADBE Mask Parade”, or “Masks”  
| | • “ADBE Effect Parade”, or “Effects”  
| | • “ADBE MTrackers”, or “Motion Trackers”  
| From an AVLayer | • “Anchor Point” or “anchorPoint”  
| | • “Position” or “position”  
| | • “Scale” or “scale”  
| | • “Rotation” or “rotation”  
| | • “Z Rotation” or “zRotation” or “Rotation Z” or “rotationZ”  
| | • “Opacity” or “opacity”  
| | • “Marker” or “marker”  
| From an AVLayer with a non-still source | • “Time Remap” or “timeRemapEnabled”  
| From an AVLayer with an audio component | • “Audio Levels” or “audioLevels”  
| From a camera layer | • “Zoom” or “zoom”  
| | • “Depth of Field” or “depthOfField”  
| | • “Focus Distance” or “focusDistance”  
| | • “Aperture” or “aperture”  
| | • “Blur Level” or “blurLevel”  
| From a light layer | • “Intensity” or “intensity”  
| | • “Color” or “color”  
| | • “Cone Angle” or “coneAngle”  
| | • “Cone Feather” or “coneFeather”  
| | • “Shadow Darkness” or “shadowDarkness”  
| | • “Shadow Diffusion” or “shadowDiffusion”  
| | • “Casts Shadows” or “castsShadows”  
| From a 3D layer | • “Accepts Shadows” or “acceptsShadows”  
| | • “Accepts Lights” or “acceptsLights”  
| | • “Ambient” or “ambient”  
| | • “Diffuse” or “diffuse”  
| | • “Specular” or “specular” (these are for the Specular Intensity property)  
| | • “Shininess” or “shininess” (these are for the Specular Shininess property)  
| | • “Casts Shadows” or “castsShadows”  
| | • “Light Transmission” or “lightTransmission”  
| | • “Metal” or “metal”  
| From a camera, light or 3D layer | • “X Rotation” or “xRotation” or “Rotation X” or “rotationX”  
| | • “Y Rotation” or “yRotation” or “Rotation Y” or “rotationY”  
| | • “Orientation” or “orientation”  
| From a text layer | • “Source Text” or “source Text” or “Text” or “text”  
| From a PropertyGroup “ADBE Mask Parade” | • “ADBE Mask Atom”  
| From a PropertyGroup “ADBE Mask Atom” | |
Examples

1. If a layer named “myLayer” has a Box Blur effect, you can retrieve the effect in any of the following ways:

   ```javascript
   myLayer.property("Effects").property("Box Blur");
   myLayer.property("Effects").property("boxBlur");
   myLayer.property("Effects").property("ADBE Box Blur");
   ```

2. If a layer named “myLayer” has a mask named “Mask 1” you can retrieve it as follows:

   ```javascript
   myLayer.property("Masks").property("Mask1");
   ```

3. To get a Bulge Center value from a Bulge effect, you can use either of the following:

   ```javascript
   myLayer.property("Effects").property("Bulge").property("Bulge Center");
   myLayer.property("Effects").property("Bulge").property("bulgeCenter");
   ```
MaskPropertyGroup object

app.project.item(index).layer(index).mask

**Description**

The MaskPropertyGroup object encapsulates mask attributes in a layer.

MaskPropertyGroup is a subclass of PropertyGroup object. All methods and attributes of PropertyBase object and PropertyGroup, in addition to those listed below, are available when working with MaskPropertyGroup.

### 25.1 Attributes

#### 25.1.1 MaskPropertyGroup.color

app.project.item(index).layer(index).mask(index).color

**Description**

The color used to draw the mask outline as it appears in the user interface (Composition panel, Layer panel, and Timeline panel).

**Type**

Array of three floating-point values, [R, G, B], in the range [0.0..1.0]: read/write.
25.1.2 MaskPropertyGroup.inverted

app.project.item(index).layer(index).mask(index).inverted

Description
When true, the mask is inverted; otherwise false.

Type
Boolean; read/write.

25.1.3 MaskPropertyGroup.locked

app.project.item(index).layer(index).mask(index).locked

Description
When true, the mask is locked and cannot be edited in the user interface; otherwise, false.

Type
Boolean; read/write.

25.1.4 MaskPropertyGroup.maskFeatherFalloff

app.project.item(index).layer(index).mask(index).maskFeatherFalloff

Description
The feather falloff mode for the mask. Equivalent to the Layer > Mask > Feather Falloff setting.

Type
A MaskFeatherFalloff enumerated value; read/write. One of:

• MaskFeatherFalloff.FFO_LINEAR
• MaskFeatherFalloff.FFO_SMOOTH

25.1.5 MaskPropertyGroup.maskMode

app.project.item(index).layer(index).mask(index).maskMode

Description
The masking mode for this mask.

Type
A MaskMode enumerated value; read/write. One of:

• MaskMode.NONE
• MaskMode.ADD
• MaskMode.SUBTRACT
• MaskMode.INTERSECT
• MaskMode.LIGHTEN
• MaskMode.DARKEN
• MaskMode.DIFFERENCE

25.1.6 MaskPropertyGroup.maskMotionBlur

app.project.item(index).layer(index).mask(index).maskMotionBlur

Description
How motion blur is applied to this mask.

Type
A MakMotionBlur enumerated value; read/write. One of:
• MaskMotionBlur.SAME_AS_LAYER
• MaskMotionBlur.ON
• MaskMotionBlur.OFF

25.1.7 MaskPropertyGroup.rotoBezier

app.project.item(index).layer(index).mask(index).rotoBezier

Description
When true, the mask is a RotoBezier shape; otherwise, false.

Type
Boolean; read/write.
RenderQueue object

app.project.renderQueue

Description
The RenderQueue object represents the render automation process, the data and functionality that is available through the Render Queue panel of a particular After Effects project. Attributes provide access to items in the render queue and their render status. Methods can start, pause, and stop the rendering process. The RenderQueueItem object provides access to the specific settings for an item to be rendered.

26.1 Attributes

26.1.1 RenderQueue.canQueueInAME

app.project.renderQueue.canQueueInAME

Note: This functionality was added in After Effects 14.0 (CC 2017)

Description
indicates whether or not there are queued render items in the After Effects render queue. Only queued items can be added to the AME queue.

RenderQueue.queueInAME()

Type
Boolean; read-only.
26.1.2 RenderQueue.items

app.project.renderQueue.items

Description
A collection of all items in the render queue. See RenderQueueItem object.

Type
RQItemCollection object; read-only.

26.1.3 RenderQueue.numItems

app.project.renderQueue.numItems

Description
The total number of items in the render queue.

Type
Integer; read-only.

26.1.4 RenderQueue.rendering

app.project.renderQueue.rendering

Description
When true, the rendering process is in progress or paused. When false, it is stopped.

Type
Boolean; read-only.

26.2 Methods

26.2.1 RenderQueue.item()

app.project.renderQueue.item(index)

Description
Gets a specified item from the items collection.

Parameters
index The position index of the item. An integer in the range [0..numItems].

Returns
RenderQueueItem object.
26.2.2 RenderQueue.pauseRendering()

app.project.renderQueue.pauseRendering(pause)

Description

Pauses the current rendering process, or continues a paused rendering process. This is the same as clicking Pause in the Render Queue panel during a render. You can call this method from a RenderQueueItem.onStatusChanged or app.onError callback.

Parameters

- **pause**

  True to pause a current render process, false to continue a paused render.

Returns

Nothing.

26.2.3 RenderQueue.render()

app.project.renderQueue.render()

Description

Starts the rendering process. This is the same as clicking Render in the Render Queue panel. The method does not return until the render process is complete. To pause or stop the rendering process, call RenderQueue.pauseRendering() or RenderQueue.stopRendering() from an onError or onStatusChanged callback.

- To respond to errors during the rendering process, define a callback function in app.onError.
- To respond to changes in the status of a particular item while the render is progressing, define a callback function in RenderQueueItem.onStatusChanged in the associated RenderQueueItem object.

Parameters

None.

Returns

Nothing.

26.2.4 RenderQueue.showWindow()

app.project.renderQueue.showWindow(doShow)

Description

Shows or hides the Render Queue panel.

Parameters

- **doShow**

  When true, show the Render Queue panel. When false, hide it.

Returns

Nothing.
26.2.5 RenderQueue.stopRendering()

app.project.renderQueue.stopRendering()

**Description**

Stops the rendering process. This is the same as clicking Stop in the Render Queue panel during a render. You can call this method from an `RenderQueueItem.onStatusChanged` or `app.onError` callback.

**Parameters**

None.

**Returns**

Nothing.

26.2.6 RenderQueue.queueInAME()

app.project.renderQueue.queueInAME(render_immediately_in_AME)

**Note:** This functionality was added in After Effects 14.0 (CC 2017)

**Description**

Calls the Queue In AME command. This method requires passing a boolean value, telling AME whether to only queue the render items (false) or if AME should also start processing its queue (true).

**Note:** This requires Adobe Media Encoder CC 2017 (11.0) or later.

**Note:** When AME receives the queued items, it applies the most recently used encoding preset. If `render_immediately_in_AME` is set to true, you will not have an opportunity to change the encoding settings.

**Parameters**

| render_immediately_in_AME | Telling AME whether to only queue the render items (false) or if AME should also start processing its queue (true). |

**Returns**

Nothing.

**Example**

The following sample code checks to see if there are queued items in the render queue, and if so queues them in AME but does not immediately start rendering:

```javascript
// Scripting support for Queue in AME.
// Requires Adobe Media Encoder 11.0.
{
    if (app.project.renderQueue.canQueueInAME == true)
    {
```

(continues on next page)
// Send queued items to AME, but do not start rendering.
app.project.renderQueue.queueInAME(false);

} else {
    alert("There are no queued item in the Render Queue.");
}
}
CHAPTER 27

RQItemCollection object

app.project.renderQueue.items

Description
The RQItemCollection contains all of the render-queue items in a project, as shown in the Render Queue panel of the project. The collection provides access to the RenderQueueItem objects, and allows you to create them from compositions. The first RenderQueueItem object in the collection is at index position 1.

RQItemCollection is a subclass of Collection object. All methods and attributes of Collection are available when working with RQItemCollection.

27.1 Methods

27.1.1 RQItemCollection.add()

app.project.renderQueue.items.add(comp)

Description
Adds a composition to the Render Queue, creating a RenderQueueItem.

Parameters

| comp | The CompItem object for the composition to be added. |

Returns

RenderQueueItem object.
CHAPTER 28

RenderQueueItem object

app.project.renderQueue.item(index)

Description
The RenderQueueItem object represents an individual item in the render queue. It provides access to the specific
settings for an item to be rendered. Create the object by adding a composition to the Render Queue with the RQItem-
Collection object; see RQItemCollection.add().

28.1 Attributes

28.1.1 RenderQueueItem.comp

app.project.renderQueue.item(index).comp

Description
The composition that will be rendered by this render-queue item. To change the composition, you must delete this
render-queue item and create a new one.

Type
CompItem object; read-only.

28.1.2 RenderQueueItem.elapsedSeconds

app.project.renderQueue.item(index).elapsedSeconds

Description
The number of seconds spent rendering this item.
Type
Integer, or null if item has not been rendered; read-only.

28.1.3 RenderQueueItem.logType

app.project.renderQueue.item(index).logType

Description
A log type for this item, indicating which events should be logged while this item is being rendered.

Type
A LogType enumerated value; (read/write). One of:

- LogType.ERRORS_ONLY
- LogType.ERRORS_AND_SETTINGS
- LogType.ERRORS_AND_PER_FRAME_INFO

28.1.4 RenderQueueItem.numOutputModules

app.project.renderQueue.item(index).numOutputModules

Description
The total number of Output Modules assigned to this item.

Type
Integer; read-only.

28.1.5 RenderQueueItem.onStatusChanged

app.project.renderQueue.item(index).onStatusChanged

Description
The name of a callback function that is called whenever the value of the RenderQueueItem.status attribute changes.

You cannot make changes to render queue items or to the application while rendering is in progress or paused; you can, however, use this callback to pause or stop the rendering process. See RenderQueue.pauseRendering() and RenderQueue.stopRendering(). See also app.onError.

Type
A function name string, or null if no function is assigned.

Example
function myStatusChanged() {
    alert(app.project.renderQueue.item(1).status)
}

app.project.renderQueue.item(1).onStatusChanged = myStatusChanged();
app.project.renderQueue.item(1).render = false; // changes status and shows dialog

28.1.6 RenderQueueItem.outputModules

app.project.renderQueue.item(index).outputModules

Description
The collection of Output Modules for the item.

Type
OMCollection object; read-only.

28.1.7 RenderQueueItem.render

app.project.renderQueue.item(index).render

Description
When true, the item will be rendered when the render queue is started. When set to true, the RenderQueueItem.status is set to RQItemStatus.QUEUED. When set to false, status is set to RQItemStatus.UNQUEUED.

Type
Boolean; read/write.

28.1.8 RenderQueueItem.skipFrames

app.project.renderQueue.item(index).skipFrames

Description
The number of frames to skip when rendering this item. Use this to do rendering tests that are faster than a full render. A value of 0 skip no frames, and results in regular rendering of all frames. A value of 1 skips every other frame. This is equivalent to "rendering on twos." Higher values skip a larger number of frames. The total length of time remains unchanged. For example, if skip has a value of 1, a sequence output would have half the number of frames and in movie output, each frame would be double the duration.

Type
Integer in the range [0..99]. Read/write.
28.1.9 RenderQueueItem.startTime

app.project.renderQueue.item(index).startTime

Description
The day and time that this item started rendering.

Type
Date object, or null if the item has not started rendering; read-only.

28.1.10 RenderQueueItem.status

app.project.renderQueue.item(index).status

Description
The current render status of the item.

Type
An RQItemStatus enumerated value; read-only. One of:

• RQItemStatus.WILL_CONTINUE: Rendering process has been paused.
• RQItemStatus.NEEDS_OUTPUT: Item lacks a valid output path.
• RQItemStatus.UNQUEUED: Item is listed in the Render Queue panel but composition is not ready to render.
• RQItemStatus.QUEUED: Composition is ready to render.
• RQItemStatus.RENDERING: Composition is rendering
• RQItemStatus.USER_STOPPED: Rendering process was stopped by user or script.
• RQItemStatus.ERR_STOPPED: Rendering process was stopped due to an error.
• RQItemStatus.DONE: Rendering process for the item is complete.

28.1.11 RenderQueueItem.templates

app.project.renderQueue.item(index).templates

Description
The names of all Render Settings templates available for the item. See also RenderQueueItem.saveAsTemplate().

Type
Array of strings; read-only.
28.1.12 RenderQueueItem.timeSpanDuration

app.project.renderQueue.item(index).timeSpanDuration

Description
The duration in seconds of the composition to be rendered. The duration is determined by subtracting the start time from the end time. Setting this value is the same as setting a custom end time in the Render Settings dialog box.

Type
Floating-point value; read/write.

28.1.13 RenderQueueItem.timeSpanStart

app.project.renderQueue.item(index).timeSpanStart

Description
The time in the composition, in seconds, at which rendering will begin. Setting this value is the same as setting a custom start time in the Render Settings dialog box.

Type
Floating-point value; read/write.

28.2 Methods

28.2.1 RenderQueueItem.applyTemplate()

app.project.renderQueue.item(index).applyTemplate(templateName)

Description
Applies a Render Settings template to the item. See also RenderQueueItem.saveAsTemplate() and RenderQueueItem.templates.

Parameters

| templateName | A string containing the name of the template to apply. |

Returns
Nothing.
28.2.2 RenderQueueItem.duplicate()

app.project.renderQueue.item(index).duplicate()

Description
Creates a duplicate of this item and adds it this render queue.

Note: Duplicating an item whose status is “Done” sets the new item’s status to “Queued”.

Parameters
None.

Returns
RenderQueueItem object.

28.2.3 RenderQueueItem.getSetting()

app.project.renderQueue.item(index).getSetting()

Note: This functionality was added in After Effects 13.0 (CC 2014)

Description

28.2.4 RenderQueueItem.getSettings()

app.project.renderQueue.item(index).getSettings()

Note: This functionality was added in After Effects 13.0 (CC 2014)

Description

28.2.5 RenderQueueItem.outputModule()

app.project.renderQueue.item(index).outputModule(index)

Description
Gets an output module with the specified index position.

Parameters
The position index of the output module. An integer in the range \([1..\text{numOutputModules}]\).

Returns
OutputModule object.

28.2.6 RenderQueueItem.remove()

app.project.renderQueue.item(index).remove()

Description
Removes this item from the render queue.

Parameters
None.

Returns
Nothing.

28.2.7 RenderQueueItem.saveAsTemplate()

app.project.renderQueue.item(index).saveAsTemplate(name)

Description
Saves the item’s current render settings as a new template with the specified name.

Parameters

| name | A string containing the name of the new template. |

Returns
Nothing.

28.2.8 RenderQueueItem.setSetting()

app.project.renderQueue.item(index).setSetting()

Note: This functionality was added in After Effects 13.0 (CC 2014)

Description
28.2.9 RenderQueueItem.setSettings()

app.project.renderQueue.item(index).setSettings()

Note: This functionality was added in After Effects 13.0 (CC 2014)

Description

app.project.renderQueue.items.outputModules

**Description**

The OMCollection contains all of the output modules in a render queue. The collection provides access to the Output-Module objects, but does not provide any additional functionality. The first OutputModule object in the collection is at index position 1.

OMCollection is a subclass of Collection object. All methods and attributes of Collection are available when working with OMCollection.
CHAPTER 30

OutputModule object

app.project.renderQueue.item(index).outputModule(index)

Description
An OutputModule object of a RenderQueueItem generates a single file or sequence via a render operation, and contains attributes and methods relating to the file to be rendered.

30.1 Attributes

30.1.1 OutputModule.file

app.project.renderQueue.item(index).outputModule(index).file

Description
The ExtendScript File object for the file this output module is set to render.

Type
ExtendScript File object; read/write.

30.1.2 OutputModule.includeSourceXMP

app.project.renderQueue.item(index).outputModule(index).includeSourceXMP

Description
When true, writes all source footage XMP metadata to the output file. Corresponds to the Include Source XMP Metadata option in the Output Module Settings dialog box.

Type
Boolean; read/write.

30.1.3 OutputModule.name

app.project.renderQueue.item(index).outputModule(index).name

Description
The name of the output module, as shown in the user interface.

Type
String; read-only.

30.1.4 OutputModule.postRenderAction

app.project.renderQueue.item(index).outputModule(index).postRenderAction

Description
An action to be performed when the render operation is completed.

Type
A PostRenderAction enumerated value (read/write); one of:
- PostRenderAction.NONE
- PostRenderAction.IMPORT
- PostRenderAction.IMPORT_AND_REPLACE_USAGE
- PostRenderAction.SET_PROXY

30.1.5 OutputModule.templates

app.project.renderQueue.item(index).outputModule(index).templates

Description
The names of all output-module templates available in the local installation of After Effects.

Type
Array of strings; read-only.
30.2 Methods

30.2.1 OutputModule.applyTemplate()

```javascript
app.project.renderQueue.item(index).outputModule(index).applyTemplate(templateName)
```

**Description**
Applies the specified existing output-module template.

**Parameters**
- `templateName` - A string containing the name of the template to be applied.

**Returns**
Nothing.

30.2.2 OutputModule.getSetting()

```javascript
app.project.renderQueue.item(index).outputModule(index).getSetting()
```

**Note:** This functionality was added in After Effects 13.0 (CC 2014)

**Description**

30.2.3 OutputModule.getSettings()

```javascript
app.project.renderQueue.item(index).outputModule(index).getSettings()
```

**Note:** This functionality was added in After Effects 13.0 (CC 2014)

**Description**

30.2.4 OutputModule.remove()

```javascript
app.project.renderQueue.item(index).outputModule(index).remove()
```

**Description**
Removes this OutputModule object from the collection.

**Parameters**
None.

**Returns**
Nothing.

### 30.2.5 `OutputModule.saveAsTemplate()`

```javascript
app.project.renderQueue.item(index).outputModule(index).saveAsTemplate(name)
```

**Description**
Saves this output module as a template and adds it to the templates array.

**Parameters**

| name | A string containing the name of the new template. |

**Returns**
Nothing.

### 30.2.6 `OutputModule.setSetting()`

```javascript
app.project.renderQueue.item(index).outputModule(index).setSetting()  
```

**Note:** This functionality was added in After Effects 13.0 (CC 2014)

**Description**

### 30.2.7 `OutputModule.setSettings()`

```javascript
app.project.renderQueue.item(index).outputModule(index).setSettings()  
```

**Note:** This functionality was added in After Effects 13.0 (CC 2014)

**Description**
FileSource object

app.project.item(index).mainSource
app.project.item(index).proxySource

Description
The FileSource object describes footage that comes from a file.

FileSource is a subclass of FootageSource object. All methods and attributes of FootageSource, in addition to those listed below, are available when working with FileSource.

31.1 Attributes

31.1.1 FileSource.file

app.project.item(index).mainSource.file
app.project.item(index).proxySource.file

Description
The ExtendScript File object for the file that defines this asset. To change the value:

- If this FileSource is a proxySource of an AVItem, call setProxy() or setProxyWithSequence().
- If this FileSource is a mainSource of a FootageItem, call replace() or replaceWithSequence().

Type
File object; read-only.
31.1.2 FileSource.missingFootagePath

app.project.item(index).mainSource.file.missingFootagePath
app.project.item(index).proxySource.file.missingFootagePath

Description
The path and filename of footage that is missing from this asset. See also AVItem.footageMissing.

Type
String; read-only.

31.2 Methods

31.2.1 FileSource.reload()

app.project.item(index).mainSource.file.mainSource.reload()

Description
Reloads the asset from the file. This method can be called only on a mainSource, not a proxySource.

Parameters
None.

Returns
Nothing.
FootageSource object

app.project.item(index).mainSource
app.project.item(index).proxySource

Description
The FootageSource object holds information describing the source of some footage. It is used as the mainSource of a FootageItem object, or the proxySource of a CompItem object or FootageItem.

FootageSource is the base class for SolidSource object, so FootageSource attributes and methods are available when working with SolidSource objects.

32.1 Attributes

32.1.1 FootageSource.alphaMode

app.project.item(index).mainSource.alphaMode
app.project.item(index).proxySource.alphaMode

Description
The alphaMode of footageSource defines how the alpha information in the footage is to be interpreted. If hasAlpha is false, this attribute has no relevant meaning.

Type
An Alpha Mode enumerated value; (read/write). One of:
- AlphaMode.IGNORE
- AlphaMode.STRAIGHT
32.1.2 FootageSource.conformFrameRate

app.project.item(index).mainSource.conformFrameRate
app.project.item(index).proxySource.conformFrameRate

Description
A frame rate to use instead of the nativeFrameRate value. If set to 0, the nativeFrameRate is used instead. It is an error to set this value if FootageSource.isStill is true. It is an error to set this value to 0 if removePulldown is not set to PulldownPhase.OFF. If this is 0 when you set removePulldown to a value other than PulldownPhase.OFF, then this is automatically set to the value of nativeFrameRate.

Type
Floating-point value in the range \([0.0..99.0]\); read/write.

32.1.3 FootageSource.displayFrameRate

app.project.item(index).mainSource.displayFrameRate
app.project.item(index).proxySource.displayFrameRate

Description
The effective frame rate as displayed and rendered in compositions by After Effects. If removePulldown is PulldownPhase.OFF, then this is the same as the conformFrameRate (if non-zero) or the nativeFrameRate (if conformFrameRate is 0). If removePulldown is not PulldownPhase.OFF, this is conformFrameRate × 0.8, the effective frame rate after removing 1 of every 5 frames.

Type
Floating-point value in the range \([0.0..99.0]\); read-only.

32.1.4 FootageSource.fieldSeparationType

app.project.item(index).mainSource.fieldSeparationType
app.project.item(index).proxySource.fieldSeparationType

Description
How the fields are to be separated in non-still footage. It is an error to set this attribute if isStill is true. It is an error to set this value to FieldSeparationType.OFF if removePulldown is not PulldownPhase.OFF.

Type
A FieldSeparationType enumerated value; read/write. One of:
• FieldSeparationType.OFF
• FieldSeparationType.UPPER_FIELD_FIRST
• FieldSeparationType.LOWER_FIELD_FIRST

32.1.5 FootageSource.hasAlpha

app.project.item(index).mainSource.hasAlpha
app.project.item(index).proxySource.hasAlpha

Description
When true, the footage has an alpha component. In this case, the attributes alphaMode, invertAlpha, and premulColor have valid values. When false, those attributes have no relevant meaning for the footage.

Type
Boolean; read-only.

32.1.6 FootageSource.highQualityFieldSeparation

app.project.item(index).mainSource.highQualityFieldSeparation
app.project.item(index).proxySource.highQualityFieldSeparation

Description
When true, After Effects uses special algorithms to determine how to perform high-quality field separation. It is an error to set this attribute if isStill is true, or if fieldSeparationType is FieldSeparationType.OFF.

Type
Boolean; read/write.

32.1.7 FootageSource.invertAlpha

app.project.item(index).mainSource.invertAlpha
app.project.item(index).proxySource.invertAlpha

Description
When true, an alpha channel in a footage clip or proxy should be inverted. This attribute is valid only if an alpha is present. If hasAlpha is false, or if alphaMode is AlphaMode.IGNORE, this attribute is ignored.

Type
Boolean; read/write.
32.1.8 FootageSource.isStill

app.project.item(index).mainSource.isStill
app.project.item(index).proxySource.isStill

Description
When true the footage is still; when false, it has a time-based component. Examples of still footage are JPEG files, solids, and placeholders with duration of 0. Examples of non-still footage are movie files, sound files, sequences, and placeholders of non-zero duration.

Type
Boolean; read-only.

32.1.9 FootageSource.loop

app.project.item(index).mainSource.loop
app.project.item(index).proxySource.loop

Description
The number of times that the footage is to be played consecutively when used in a composition. It is an error to set this attribute if isStill is true.

Type
Integer in the range [1..9999]; default is 1; read/write.

32.1.10 FootageSource.nativeFrameRate

app.project.item(index).mainSource.nativeFrameRate
app.project.item(index).proxySource.nativeFrameRate

Description
The native frame rate of the footage.

Type
Floating-point; read/write.
32.1.11 FootageSource.premulColor

app.project.item(index).mainSource.premulColor
app.project.item(index).proxySource.premulColor

Description
The color to be premultiplied. This attribute is valid only if the alphaMode is alphaMode.PREMULTIPLIED.

Type
Array of three floating-point values [R, G, B], in the range [0.0..1.0]; read/write.

32.1.12 FootageSource.removePulldown

app.project.item(index).mainSource.removePulldown
app.project.item(index).proxySource.removePulldown

Description
How the pulldowns are to be removed when field separation is used. It is an error to set this attribute if isStill is true. It is an error to attempt to set this to a value other than PulldownPhase.OFF in the case where fieldSeparationType is FieldSeparationType.OFF.

Type
A PulldownPhase enumerated value; read/write. One of:
- PulldownPhase.RemovePulldown.OFF
- PulldownPhase.RemovePulldown.WSSWW
- PulldownPhase.RemovePulldown.SSWWW
- PulldownPhase.RemovePulldown.SWWWS
- PulldownPhase.RemovePulldown.WWWSS
- PulldownPhase.RemovePulldown.WWSSW
- PulldownPhase.RemovePulldown.WSSWW_24P_ADVANCE
- PulldownPhase.RemovePulldown.SSWWW_24P_ADVANCE
- PulldownPhase.RemovePulldown.SWWWS_24P_ADVANCE
- PulldownPhase.RemovePulldown.WWWSS_24P_ADVANCE
- PulldownPhase.RemovePulldown.WWSSW_24P_ADVANCE
32.2 Methods

32.2.1 FootageSource.guessAlphaMode()

app.project.item(index).mainSource.guessAlphaMode()
app.project.item(index).proxySource.guessAlphaMode()

Description

Sets alphaMode, premulColor, and invertAlpha to the best estimates for this footage source. If hasAlpha is false, no change is made.

Parameters

None.

Returns

Nothing.

32.2.2 FootageSource.guessPulldown()

app.project.item(index).mainSource.guessPulldown(method)
app.project.item(index).proxySource.guessPulldown(method)

Description

Sets fieldSeparationType and removePulldown to the best estimates for this footage source. If isStill is true, no change is made.

Parameters

<table>
<thead>
<tr>
<th>method</th>
<th>The method to use for estimation. A PulldownMethod enumerated value, one of:</th>
</tr>
</thead>
</table>
| PulldownMethod | PulldownMethod.PULLDOWN_3_2
| PulldownMethod | PulldownMethod.ADVANCE_24P |

Returns

Nothing.
app.project.item(index).mainSource
app.project.item(index).proxySource

Description
The PlaceholderSource object describes the footage source of a placeholder.

    PlaceholderSource is a subclass of FootageSource object. All methods and attributes of FootageSource are available when working with PlaceholderSource. PlaceholderSource does not define any additional methods or attributes.
SolidSource object

app.project.item(index).mainSource
app.project.item(index).proxySource

Description
The SolidSource object represents a solid-color footage source.

SolidSource is a subclass of FootageSource. All methods and attributes of FootageSource, in addition to those listed below, are available when working with SolidSource.

34.1 Attributes

34.1.1 SolidSource.color

solidSource.color

Description
The color of the solid, expressed as red, green, and blue values.

Type
Array of three floating-point values, \([R, G, B]\), in the range \([0.0..1.0]\); read/write.
Like an array, a collection associates a set of objects or values as a logical group and provides access to them by index. However, most collection objects are read-only. You do not assign objects to them yourself—their contents update automatically as objects are created or deleted.

**Note:** The index numbering of a collection starts with 1, not 0.

### 35.1 Objects

- `ItemCollection object` All of the items (imported files, folders, solids, and so on) found in the Project panel.
- `LayerCollection object` All of the layers in a composition.
- `OMCollection object` All of the Output Module items in the project.
- `RQItemCollection object` All of the render-queue items in the project.

### 35.2 Attributes

| length | The number of objects in the collection. |

### 35.3 Methods

```
[ ] Retrieves an object in the collection by its index number. The first object is at index 1.
```
new ImportOptions();
new ImportOptions(file);

**Description**

The ImportOptions object encapsulates the options used to import a file with the `Project.importFile()` methods. The constructor takes an optional parameter, an ExtendScript File object for the file. If it is not supplied, you must explicitly set the value of the `file` attribute before using the object with the `importFile` method. For example:

```javascript
new ImportOptions().file = new File("myfile.psd");
```

### 36.1 Attributes

#### 36.1.1 ImportOptions.file

**importOptions.file**

**Description**

The file to be imported. If a file is set in the constructor, you can access it through this attribute.

**Type**

ExtendScript File object; read/write.
36.1.2 ImportOptions.forceAlphabetical

importOptions.forceAlphabetical

Description
When true, has the same effect as setting the “Force alphabetical order” option in the File > Import > File dialog box.

Type
Boolean; read/write.

36.1.3 ImportOptions.importAs

importOptions.importAs

Description
The type of object for which the imported file is to be the source. Before setting, use canImportAs to check that a given file can be imported as the source of the given object type.

Type
An ImportAsType enumerated value; read/write. One of:

- ImportAsType.COMP_CROPPED_LAYERS
- ImportAsType.FOOTAGE
- ImportAsType.COMP
- ImportAsType.PROJECT

36.1.4 ImportOptions.sequence

importOptions.sequence

Description
When true, a sequence is imported; otherwise, an individual file is imported.

Type
Boolean; read/write.

36.2 Methods

36.2.1 ImportOptions.canImportAs()

importOptions.canImportAs(type)

Description
Reports whether the file can be imported as the source of a particular object type. If this method returns true, you can set the given type as the value of the \textit{importAs} attribute.

**Parameters**

<table>
<thead>
<tr>
<th>type</th>
<th>The type of file that can be imported. An \texttt{ImportAsType} enumerated value; one of:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>• \texttt{ImportAsType.COMP}</td>
</tr>
<tr>
<td></td>
<td>• \texttt{ImportAsType.FOOTAGE}</td>
</tr>
<tr>
<td></td>
<td>• \texttt{ImportAsType.COMP_CROPPED_LAYERS}</td>
</tr>
<tr>
<td></td>
<td>• \texttt{ImportAsType.PROJECT}</td>
</tr>
</tbody>
</table>

**Returns**

Boolean.

**Example**

```javascript
var io = new ImportOptions(File("c:\myFile.psd"));
if (io.canImportAs(ImportAsType.COMP)) {
    io.importAs = ImportAsType.COMP;
}
```
KeyframeEase object

myKey = new KeyframeEase(speed, influence);

Description
The KeyframeEase object encapsulates the keyframe ease settings of a layer's AE property. Keyframe ease is determined by the speed and influence values that you set using the property's setTemporalEaseAtKey method. The constructor creates a KeyframeEase object. Both parameters are required.

- speed: A floating-point value. Sets the speed attribute.
- influence: A floating-point value in the range [0.1..100.0]. Sets the influence attribute.

Example
This example assumes that the Position, a spatial property, has more than two keyframes.

```javascript
var easeIn = new KeyframeEase(0.5, 50);
var easeOut = new KeyframeEase(0.75, 85);
var myPositionProperty = app.project.item(1).layer(1).property("Position");
myPositionProperty.setTemporalEaseAtKey(2, [easeIn], [easeOut]);
```

This example sets the Scale, a temporal property with either two or three dimensions. For 2D and 3D properties you must set an easeIn and easeOut value for each dimension:

```javascript
var easeIn = new KeyframeEase(0.5, 50);
var easeOut = new KeyframeEase(0.75, 85);
var myScaleProperty = app.project.item(1).layer(1).property("Scale")
myScaleProperty.setTemporalEaseAtKey(2, [easeIn, easeIn, easeIn], [easeOut, easeOut, easeOut]);
```
37.1 Attributes

37.1.1 KeyframeEase.influence

myKey.influence

Description
The influence value of the keyframe, as shown in the Keyframe Velocity dialog box.

Type
Floating-point value in the range [0.1..100.0]; read/write.

37.1.2 KeyframeEase.speed

myKey.speed

Description
The speed value of the keyframe. The units depend on the type of keyframe, and are displayed in the Keyframe Velocity dialog box.

Type
Floating-point value; read/write.
MarkerValue object

new MarkerValue(comment, chapter, url, frameTarget, cuePointName, params)

Description
The MarkerValue object represents a layer or composition marker, which associates a comment, and optionally a chapter reference point, Web-page link, or Flash Video cue point with a particular point in a layer. Create it with the constructor; all arguments except comment are optional. All arguments are strings that set in the corresponding attributes of the returned MarkerValue object, except params. This is an array containing key-value pairs, which can then be accessed with the getParameters() and setParameters() methods. A script can set any number of parameter pairs; the order does not reflect the order displayed in the application. To associate a marker with a layer, set the MarkerValue object in the Marker AE property of the layer: layerObject.property("Marker").setValueAtTime(time, markerValueObject); For information on the usage of markers see “Using markers” in After Effects Help.

Examples

- To set a marker that says “Fade Up” at the 2 second mark:

  ```javascript
  var myMarker = new MarkerValue("FadeUp");
  myLayer.property("Marker").setValueAtTime(2, myMarker);
  ```

- To get comment values from a particular marker:

  ```javascript
  var commentOfFirstMarker = app.project.item(1).layer(1).property("Marker").keyValue(1).comment;
  var commentOfMarkerAtTime4 = app.project.item(1).layer(1).property("Marker").valueAtTime(4.0, true).comment;
  var markerProperty = app.project.item(1).layer(1).property("Marker");
  var markerValueAtTimeClosestToTime4 = markerProperty.keyValue(markerProperty.nearestKeyIndex(4.0));
  var commentOfMarkerClosestToTime4 = markerValueAtTimeClosestToTime4.comment;
  ```
38.1 Attributes

38.1.1 MarkerValue.chapter

app.project.item(index).layer(index).property("Marker").keyValue(index).chapter

Description
A text chapter link for this marker. Chapter links initiate a jump to a chapter in a QuickTime movie or in other formats that support chapter marks.

Type
String; read/write.

38.1.2 MarkerValue.comment

app.project.item(index).layer(index).property("Marker").keyValue(index).comment

Description
A text comment for this marker. This comment appears in the Timeline panel next to the layer marker.

Type
String; read/write.

38.1.3 MarkerValue.cuePointName

app.project.item(index).layer(index).property("Marker").keyValue(index).cuePointName

Description
The Flash Video cue point name, as shown in the Marker dialog box.

Type
String; read/write.

38.1.4 MarkerValue.duration

app.project.item(index).layer(index).property("Marker").keyValue(index).duration

Description
The marker’s duration, in seconds. The duration appears in the Timeline panel as a short bar extending from the marker location.

Type
Floating point; read/write.

### 38.1.5 MarkerValue.eventCuePoint

```javascript
app.project.item(index).layer(index).property("Marker").keyValue(index).
.eventCuePoint
```

**Description**
When true, the FlashVideo cue point is for an event; otherwise, it is for navigation.

**Type**
Boolean; read/write.

### 38.1.6 MarkerValue.frameTarget

```javascript
app.project.item(index).layer(index).property("Marker").keyValue(index).
.frameTarget
```

**Description**
A text frame target for this marker. Together with the URL value, this targets a specific frame within a Web page.

**Type**
String; read/write.

### 38.1.7 MarkerValue.url

```javascript
app.project.item(index).layer(index).property("Marker").keyValue(index).
.url
```

**Description**
A URL for this marker. This URL is an automatic link to a Web page.

**Type**
String; read/write.

### 38.1.8 MarkerValue.label

```javascript
app.project.item(index).layer(index).property("Marker").keyValue(index).
.label
```

**Description**
The label color for a composition or layer marker. Colors are represented by their number (0 for None, or 1 to 16 for one of the preset colors in the Labels preferences). Custom label colors cannot be set programmatically.

Available in After Effects 16.0 or later.
Type
Integer (0 to 16); read/write.

## 38.1.9 MarkerValue.protectedRegion

```javascript
app.project.item(index).markerProperty.keyValue(index).protectedRegion
```

**Description**
State of the Protected Region option in the Composition Marker dialog box. When true, the composition marker behaves as a protected region. Will also return true for protected region markers on nested composition layers, but is otherwise not applicable to layer markers.

Available in After Effects 16.0 or later.

**Type**
Boolean; read/write.

## 38.2 Methods

### 38.2.1 MarkerValue.getParameters()

```javascript
app.project.item(index).layer(index).property("Marker").keyValue(index).getParameters()
```

**Description**
Returns the key-value pairs for Flash Video cue-point parameters, for a cue point associated with this marker value.

**Parameters**
None.

**Returns**
An object with an attribute matching each parameter name, containing that parameter’s value.

### 38.2.2 MarkerValue.setParameters()

```javascript
app.project.item(index).layer(index).property("Marker").keyValue(index).setParameters(keyValuePairs)
```

**Description**
Associates a set of key-value pairs for Flash Video cue-point parameters, for a cue point associated with this marker value. A cue point can have any number of parameters, but you can add only three through the user interface; use this method to add more than three parameters.

**Parameters**
None.
### keyValuePairs

An object containing the key-value pairs as attributes and values. The object’s `toString()` method is called to assign the string value of each attribute to the named key.

**Returns**

Nothing.

**Example**

```javascript
var mv = new MarkerValue("MyMarker");
var parms = new Object;
parms.timeToBlink = 1;
parms.assignMe = "A string"
mv.setParameters(parms);
myLayer.property("Marker").setValueAtTime(2, mv);
```
The Settings object provides an easy way to manage settings for scripts. The settings are saved in the After Effects preferences file and are persistent between application sessions. Settings are identified by section and key within the file, and each key name is associated with a value. In the preferences file, section names are enclosed in brackets and quotation marks, and key names are listing in quotation marks below the sectionname. All values are strings. You can create new settings with this object, as well as accessing existing settings.

Note for Version 12/CC and newer versions of AE: Preferences and settings methods now take a third argument to specify the target preferences file if Section/Key is not in “Adobe After Effects $versionNumber.x Prefs.txt”. If the third argument is not passed, default value (PREFType.PREF_Type_MACHINE_SPECIFIC) is used and After Effects tries to save/get from the “Adobe After Effects $versionNumber.x Prefs.txt” preferences file. The third argument is enum PREFType value.

You can now pass the preference type with a script with new PREFType enum:

- PREF_Type_MACHINE_SPECIFIC: Adobe After Effects $versionNumber.x Prefs.txt
- PREF_Type_MACHINE_INDEPENDENT: Adobe After Effects $versionNumber.x Prefs-indep-general.txt
- PREF_Type_MACHINE_INDEPENDENT_RENDER: Adobe After Effects $versionNumber.x Prefs-indep-render.txt
- PREF_Type_MACHINE_INDEPENDENT_OUTPUT: Adobe After Effects $versionNumber.x Prefs-indep-output.txt
- PREF_Type_MACHINE_INDEPENDENT_COMPOSITION: Adobe After Effects $versionNumber.x Prefs-indep-composition.txt
- PREF_Type_MACHINE_SPECIFIC_TEXT: Adobe After Effects $versionNumber.x Prefs-text.txt
- PREF_Type_MACHINE_SPECIFIC_PAINT: Adobe After Effects $versionNumber.x Prefs-paint.txt
39.1 Methods

39.1.1 Settings.getSetting()

app.settings.getSetting(sectionName, keyName)

Description
Retrieves a scripting preferences item value from the preferences file. **Note:** If the value is greater than 1999 bytes getSetting that item will throw an error (seen in AE 15.0.1)

Parameters

| sectionName | A string containing the name of a settings section |
| keyName     | A string containing the key name of the setting item. |

Returns
String.

Example
If you have saved a setting named with the key name “Aligned Clone” in the “Eraser - Paint Settings” section, you can retrieve the value with this script:

```
var n = app.settings.getSetting("Eraser-PaintSettings", "AlignedClone");
alert("The setting is" + n);
```

39.1.2 Settings.haveSetting()

app.settings.haveSetting(sectionName, keyName)

Description
Returns true if the specified scripting preferences item exists and has a value.

Parameters

| sectionName | A string containing the name of a settings section |
| keyName     | A string containing the key name of the setting item. |

Returns
Boolean.

39.1.3 Settings.saveSetting()

app.settings.saveSetting(sectionName, keyName, value)

Description
Saves a default value for a scripting preferences item. **Note:** If the value is greater than 1999 bytes getSetting that item will throw an error (seen in AE 15.0.1)
Parameters

<table>
<thead>
<tr>
<th>parameter</th>
<th>description</th>
</tr>
</thead>
<tbody>
<tr>
<td>sectionName</td>
<td>A string containing the name of a settings section</td>
</tr>
<tr>
<td>keyName</td>
<td>A string containing the key name of the setting item.</td>
</tr>
<tr>
<td>value</td>
<td>A string containing the new value.</td>
</tr>
</tbody>
</table>

Returns

Nothing.
Shape object

app.project.item(index).layer(index).property(index).property("maskShape").value

Description

The Shape object encapsulates information describing a shape in a shape layer, or the outline shape of a Mask. It is the value of the “Mask Path” AE properties, and of the “Path” AE property of a shape layer. Use the constructor, `new Shape()`, to create a new, empty Shape object, then set the attributes individually to define the shape.

A shape has a set of anchor points, or vertices, and a pair of direction handles, or tangent vectors, for each anchor point. A tangent vector (in a non-RotoBezier mask) determines the direction of the line that is drawn to or from an anchor point. There is one incoming tangent vector and one outgoing tangent vector associated with each vertex in the shape.

A tangent value is a pair of x,y coordinates specified relative to the associated vertex. For example, a tangent of [-1,-1] is located above and to the left of the vertex and has a 45 degree slope, regardless of the actual location of the vertex. The longer a handle is, the greater its influence; for example, an incoming shape segment stays closer to the vector for an inTangent of [-2,-2] than it does for an inTangent of [-1,-1], even though both of these come toward the vertex from the same direction.

If a shape is not closed, the inTangent for the first vertex and the outTangent for the final vertex are ignored. If the shape is closed, these two vectors specify the direction handles of the final connecting segment out of the final vertex and back into the first vertex.

RotoBezier masks calculate their tangents automatically. (See `MaskPropertyGroup.rotoBezier`) If a shape is used in a RotoBezier mask, the tangent values are ignored. This means that, for RotoBezier masks, you can construct a shape by setting only the vertices attribute and setting both inTangents and outTangents to null. When you access the new shape, its tangent values are filled with the automatically calculated tangent values.

For closed mask shapes, variable-width mask feather points can exist anywhere along the mask path. Feather points are part of the Mask Path property. Reference a specific feather point by the number of the mask path segment (portion of the path between adjacent vertices) where it appears.

Note: The feather points on a mask are listed in an array in the order that they were created.
Examples

- Create a square mask. A square is a closed shape with 4 vertices. The inTangents and outTangents for connected straight-line segments are 0, the default, and do not need to be explicitly set.

```javascript
var myShape = new Shape();
myShape.vertices = [[0,0], [0,100], [100,100], [100,0]];
myShape.closed = true;
```

- Create a “U” shaped mask. A “U” is an open shape with the same 4 vertices used in the square:

```javascript
var myShape = new Shape();
myShape.vertices = [[0,0], [0,100], [100,100], [100,0]];
myShape.closed = false;
```

- Create an oval. An oval is a closed shape with 4 vertices and with inTangent and outTangent values:

```javascript
var myShape = new Shape();
myShape.vertices = [[300,50], [200,150], [300,250], [400,150]];
myShape.inTangents = [[55.23,0], [0,-55.23], [-55.23,0], [0,55.23]];
myShape.outTangents = [[-55.23,0], [0,55.23], [55.23,0], [0,-55.23]];
myShape.closed = true;
```

- Create a square mask with two feather points. A large square mask with two feather points, one closer to the left end the second mask segment (off the bottom edge) with a radius of 30 pixels and the other one centered the third mask segment (off the right edge) with a larger radius of 100 pixels.

```javascript
var myShape = new Shape();
myShape.vertices = [[100,100], [100,400], [400,400], [400,100]]; // segments drawn counter clockwise
myShape.closed = true;
myShape.featherSegLocs = [1,2]; // segments are numbered starting at 0, so second segment is 1
myShape.featherRelSegLocs = [0.15, 0.5]; // 0.15 is closer to the lower-left corner of the square
myShape.featherRadii = [30, 100]; // second feather point (onright-sidesegment) has a larger radius
```

40.1 Attributes

40.1.1 Shape.closed

shapeObject.value.closed

Description

When true, the first and last vertices are connected to form a closed curve. When false, the closing segment is not drawn.

Type

Boolean; read/write.
40.1.2 Shape.featherInterps

shapeObject.value.featherInterps

Description
An array containing each feather point’s radius interpolation type (0 for non-Hold feather points, 1 for Hold feather points).

Note: Values are stored in the array in the order that feather points are created.

Type
Array of integers (0 or 1); read/write.

40.1.3 Shape.featherRadii

shapeObject.value.featherRadii

Description
An array containing each feather point’s radius (feather amount); inner feather points have negative values.

Note: Values are stored in the array in the order that feather points are created.

Type
Array of floating-point values; read/write.

40.1.4 Shape.featherRelCornerAngles

shapeObject.value.featherRelCornerAngles

Description
An array containing each feather point’s relative angle percentage between the two normals on either side of a curved outer feather boundary at a corner on a mask path. The angle value is 0% for feather points not at corners.

Note: Values are stored in the array in the order that feather points are created.

Type
Array of floating-point percentage values (0 to 100); read/write.
40.1.5 Shape.featherRelSegLocs

shapeObject.value.featherRelSegLocs

Description
An array containing each feather point’s relative position, from 0 to 1, on its mask path segment (section of the mask path between vertices, numbered starting at 0).

Note: Values are stored in the array in the order that feather points are created. To move a feather point to a different mask path segment, first change the featherSegLocs attribute value, then this attribute.

Type
Array of floating-point values (0 to 1); read/write.

40.1.6 Shape.featherSegLocs

shapeObject.value.featherSegLocs

Description
An array containing each feather point’s mask path segment number (section of the mask path between vertices, numbered starting at 0).

Note: Values are stored in the array in the order that feather points are created. Move a feather point to a different segment by changing both its segment number (this attribute) and, optionally, its featherRelSegLocs attribute value.

Type
Array of integers; read/write.

Example

```
// Assuming a rectangle closed mask (segments numbered 0-3) has 3 mask feather points,
// move all 3 feather points to the first mask segment.

// Get the Shape object for the mask, assumed here to be the first mask on the layer.
var my_maskShape = layer.mask(1).property("ADBE Mask Shape").value;

// Check where mask feather points are located.
// Note: They are stored in the order that they are added.
var where_are_myMaskFeatherPoints = my_maskShape.featherSegLocs;

// Move all 3 feather points to the first mask segment (numbered 0).
my_maskShape.featherSegLocs = [0, 0, 0];

// Update the mask path.
layer.mask(1).property("ADBE Mask Shape").setValue(my_maskShape);
```
40.1.7 Shape.featherTensions

shapeObject.value.featherTensions

Description
An array containing each feather point’s tension amount, from 0 (0% tension) to 1 (100% tension).

Note: Values are stored in the array in the order that feather points are created.

Type
Array of floating-point values (0 to 1); read/write.

40.1.8 Shape.featherTypes

shapeObject.value.featherTypes

Description
An array containing each feather point’s direction, either 0 (outer feather point) or 1 (inner feather point).

Note: You cannot change the direction of a feather point after it has been created.

Note: Values are stored in the array in the order that feather points are created.

Type
Array of integers (0 or 1); read/write.

40.1.9 Shape.inTangents

shapeObject.value.inTangents

Description
The incoming tangent vectors, or direction handles, associated with the vertices of the shape. Specify each vector as an array of two floating-point values, and collect the vectors into an array the same length as the vertices array. Each tangent value defaults to [0,0]. When the mask shape is not RotoBezier, this results in a straight line segment. If the shape is in a RotoBezier mask, all tangent values are ignored and the tangents are automatically calculated.

Type
Array of floating-point pair arrays; read/write.
40.1.10 Shape.outTangents

shapeObject.value.outTangents

**Description**

The outgoing tangent vectors, or direction handles, associated with the vertices of the shape. Specify each vector as an array of two floating-point values, and collect the vectors into an array the same length as the vertices array. Each tangent value defaults to [0,0]. When the mask shape is not RotoBezier, this results in a straight line segment. If the shape is in a RotoBezier mask, all tangent values are ignored and the tangents are automatically calculated.

**Type**

Array of floating-point pair arrays; read/write.

40.1.11 Shape.vertices

shapeObject.value.vertices

**Description**

The anchor points of the shape. Specify each point as an array of two floating-point values, and collect the point pairs into an array for the complete set of points. For example:

```javascript
myShape.vertices = [[0,0], [0,1], [1,1], [1,0]];
```

**Type**

Array of floating-point pair arrays; read/write.
Description

The TextDocument object stores a value for a TextLayer’s Source Text property. Create it with the constructor, passing the string to be encapsulated.

Examples

This sets a value of some source text and displays an alert showing the new value:

```javascript
var myTextDocument = newTextDocument("HappyCake");
myTextLayer.property("Source Text").setValue(myTextDocument);
alert(myTextLayer.property("Source Text").value);
```

This sets keyframe values for text that show different words over time:

```javascript
var textProp = myTextLayer.property("Source Text");
textProp.setValueAtTime(0, newTextDocument("Happy"));
textProp.setValueAtTime(.33, newTextDocument("cake"));
textProp.setValueAtTime(.66, newTextDocument("is"));
textProp.setValueAtTime(1, newTextDocument("yummy!"));
```

This sets various character and paragraph settings for some text:

```javascript
var textProp = myTextLayer.property("Source Text");
var textDocument = textProp.value;
myString = "Happy holidays!";
textDocument.resetCharStyle();
textDocument.fontSize = 60;
textDocument.fillColor = [1, 0, 0];
textDocument.strokeColor = [0, 1, 0];
textDocument.strokeWidth = 2;
```

(continues on next page)
After Effects Scripting Guide, Release 0.0.1

(continued from previous page)

textDocument.font = "Times New Roman PSMT";
textDocument.strokeOverFill = true;
textDocument.applyStroke = true;
textDocument.applyFill = true;
textDocument.text = myString;
textDocument.justification = ParagraphJustification.CENTER_JUSTIFY;
textDocument.tracking = 50;
textProp.setValue(textDocument);

41.1 Attributes

41.1.1 TextDocument.allCaps

    textDocument.allCaps

    Note: This functionality was added in After Effects 13.2 (CC 2014.2)

    Description
    True if a text layer has allcaps enabled; otherwise false.

    Warning: This value only reflects the first character in the text layer at the current time.

    Type
    Boolean; read-only.

41.1.2 TextDocument.applyFill

    textDocument.applyFill

    Description
    When true, the text layer shows a fill. Access the fillColor attribute for the actual color. When false, only a stroke is shown.

    Type
    Boolean; read/write.
41.1.3 TextDocument.applyStroke

textDocument.applyStroke

Description
When true, the text layer shows a stroke. Access the strokeColor attribute for the actual color and strokeWidth for its thickness. When false, only a fill is shown.

Type
Boolean; read/write.

41.1.4 TextDocument.baselineLocs

textDocument.baselineLocs

Note: This functionality was added in After Effects 13.6 (CC 2015)

Description
The baseline (x,y) locations for a text layer. Line wraps in a paragraph text box are treated as multiple lines.

Note: If a line has no characters, the x and y values for start and end will be the maximum float value (3.402823466e+38F).

Type
Array of floating-point values in the form of: line0.start_x, line0.start_y, line0.end_x, line0.end_y, line1.start_x, line1.start_y, line1.end_x, line1.end_y ... lineN-1.start_x, lineN-1.start_y, lineN-1.end_x, lineN-1.end_y

41.1.5 TextDocument.baselineShift

textDocument.baselineShift

Note: This functionality was added in After Effects 13.2 (CC 2014.2)

Description
This text layer’s baseline shift in pixels.

Warning: This value only reflects the first character in the text layer at the current time.

Type
Floating-point value; read-only.
41.1.6 TextDocument.boxText

textDocument.boxText

Description
True if a text layer is a layer of paragraph (bounded) text; otherwise false.

Type
Boolean; read-only.

41.1.7 TextDocument.boxTextPos

textDocument.boxTextPos

Note: This functionality was added in After Effects 13.2 (CC 2014.2) As of After Effects 14 (CC2017), it seems this is also writeable.

Description
The layer coordinates from a paragraph (box) text layer’s anchor point as a [width, height] array of pixel dimensions.

Warning: This attribute only works on paragraph text layers. This value only reflects the first character in the text layer at the current time.

Type
Array of ([X,Y]) position coordinates; read-only.

Example
For a paragraph text layer:

```javascript
// Returns [x,y] position from layer anchor point in layer coordinates.
// e.g. approximately [0, -25] with default character panel settings.
var boxTextLayerPos = myTextLayer.sourceText.value.boxTextPos;
```

41.1.8 TextDocument.boxTextSize

textDocument.boxTextSize

Description
The size of a paragraph (box) text layer as a [width, height] array of pixel dimensions.

Type
Array of two integers (minimum value of 1); read/write.
41.1.9 TextDocument.fauxBold

textDocument.fauxBold

Note: This functionality was added in After Effects 13.2 (CC 2014.2)

Description
True if a text layer has faux bold enabled; otherwise false.

Warning: This value only reflects the first character in the text layer at the current time.

Type
Boolean; read-only.

Example
For a text layer with fauxBold enabled:

```javascript
var isFauxBold = myTextLayer.sourceText.value.fauxBold; // returns true
```

41.1.10 TextDocument.fauxItalic

textDocument.fauxItalic

Note: This functionality was added in After Effects 13.2 (CC 2014.2)

Description
True if a text layer has faux italic enabled; otherwise false.

Warning: This value only reflects the first character in the text layer at the current time.

Type
Boolean; read-only.

41.1.11 TextDocument.fillColor

textDocument.fillColor

Description
The text layer’s fill color, as an array of \([r, g, b]\) floating-point values. For example, in an 8-bpc project, a red value of 255 would be 1.0, and in a 32-bpc project, an overbright blue value can be something like 3.2.
Warning: This value only reflects the first character in the text layer at the current time. If you change this value, it resets all characters in the text layer to the specified setting.

Type
Array \([r, g, b]\) of floating-point values; read/write.

### 41.1.12 TextDocument.font

textDocument.font

**Description**
The text layer’s font specified by its PostScript name.

Warning: This value only reflects the first character in the text layer at the current time. If you change this value, it resets all characters in the text layer to the specified setting.

Type
String; read/write.

### 41.1.13 TextDocument.fontFamily

textDocument.fontFamily

**Note:** This functionality was added in After Effects 13.1 (CC 2014.1)

**Description**
String with the name of the font family.

Warning: This value only reflects the first character in the text layer at the current time.

Type
String; read-only.
41.1.14 TextDocument.fontLocation

textDocument.fontLocation

Note: This functionality was added in After Effects 13.1 (CC 2014.1)

Description
Path of font file, providing its location on disk.

Warning: Not guaranteed to be returned for all font types; return value may be empty string for some kinds of fonts.

Warning: This value only reflects the first character in the text layer at the current time.

Type
String; read-only.

41.1.15 TextDocument.fontSize

textDocument.fontSize

Description
The text layer’s font size in pixels.

Warning: This value only reflects the first character in the text layer at the current time. If you change this value, it resets all characters in the text layer to the specified setting.

Type
Floating-point value (0.1 to 1296, inclusive); read/write.

41.1.16 TextDocument.fontStyle

textDocument.fontStyle

Note: This functionality was added in After Effects 13.1 (CC 2014.1)

Description
String with style information, e.g., “bold”, “italic”
Warning: This value only reflects the first character in the text layer at the current time.

Type
String; read-only.

41.1.17 TextDocument.horizontalScale
textDocument.horizontalScale

Note: This functionality was added in After Effects 13.2 (CC 2014.2)

Description
This text layer’s horizontal scale in pixels.

Warning: This value only reflects the first character in the text layer at the current time.

Type
Floating-point value; read-only.

Example
For a text layer with horizontalScale set to 50%:

```javascript
var valOfHScale = myTextLayer.sourceText.value.horizontalScale; // returns 0.5
```

41.1.18 TextDocument.justification
textDocument.justification

Description
The paragraph justification for the text layer.

Type
A ParagraphJustification enumerated value; read-only. One of:

- ParagraphJustification.LEFT_JUSTIFY
- ParagraphJustification.RIGHT_JUSTIFY
- ParagraphJustification.CENTER_JUSTIFY
- ParagraphJustification.FULL_JUSTIFY_LASTLINE_LEFT
- ParagraphJustification.FULL_JUSTIFY_LASTLINE_RIGHT
- ParagraphJustification.FULL_JUSTIFY_LASTLINE_CENTER
- ParagraphJustification.FULL_JUSTIFY_LASTLINE_FULL
41.1.19 TextDocument.leading

textDocument.leading

**Note:** This functionality was added in After Effects 14.2 (CC 2017.1)

**Description**
The text layer’s spacing between lines.

**Warning:** If the text layer has different leading settings for each line, this attribute returns the setting for the first line. Also, if you change the value, it resets all lines in the text layer to the specified setting.

**Type**
Floating-point value; read/write.

**Example**
This creates a text layer and sets the leading to 100:

```javascript
var composition = app.project.activeItem;
var myTextLayer = comp.layers.addText("Spring\nSummer\nAutumn\nWinter");
var myTextSource = myTextLayer.sourceText;
var myTextDocument = myTextSource.value;
myTextDocument.leading = 100;
myTextSource.setValue(myTextDocument);
```

---

41.1.20 TextDocument.pointText

textDocument.pointText

**Description**
True if a text layer is a layer of point (unbounded) text; otherwise false.

**Type**
Boolean; read-only.

---

41.1.21 TextDocument.smallCaps

textDocument.smallCaps

**Note:** This functionality was added in After Effects 13.2 (CC 2014.2)

**Description**
True if a text layer has small caps enabled; otherwise false.
41.1.22 TextDocument.strokeColor

textDocument.strokeColor

Description
The text layer’s stroke color, as an array of [r, g, b] floating-point values. For example, in an 8-bpc project, a red value of 255 would be 1.0, and in a 32-bpc project, an overbright blue value can be something like 3.2.

Warning: This value only reflects the first character in the text layer at the current time. If you change this value, it resets all characters in the text layer to the specified setting.

Type
Array [r, g, b] of floating-point values; read/write.

41.1.23 TextDocument.strokeOverFill

textDocument.strokeOverFill

Description
Indicates the rendering order for the fill and stroke of a text layer. When true, the stroke appears over the fill.

Warning: This value only reflects the first character in the text layer at the current time. If you change this value, it resets all characters in the text layer to the specified setting.

Type
Boolean; read/write.

41.1.24 TextDocument.strokeWidth

textDocument.strokeWidth

Description
The text layer’s stroke thickness in pixels.
Warning: This value only reflects the first character in the text layer at the current time. If you change this value, it resets all characters in the text layer to the specified setting.

Type
Floating-point value (0 to 1000, inclusive); read/write.

41.1.25 TextDocument.subscript
textDocument.subscript

Note: This functionality was added in After Effects 13.2 (CC 2014.2)

Description
True if a text layer has subscript enabled; otherwise false.

Warning: This value only reflects the first character in the text layer at the current time.

Type
Boolean; read-only.

41.1.26 TextDocument.superscript
textDocument.superscript

Note: This functionality was added in After Effects 13.2 (CC 2014.2)

Description
True if a text layer has superscript enabled; otherwise false.

Warning: This value only reflects the first character in the text layer at the current time.

Type
Boolean; read-only.
41.1.27 TextDocument.text

textDocument.text

Description
The text value for the text layer’s Source Text property.

Type
String; read/write.

41.1.28 TextDocument.tracking

textDocument.tracking

Description
The text layer’s spacing between characters.

Warning: This value only reflects the first character in the text layer at the current time. If you change this value, it resets all characters in the text layer to the specified setting.

Type
Floating-point value; read/write.

41.1.29 TextDocument.tsume

textDocument.tsume

Note: This functionality was added in After Effects 13.2 (CC 2014.2)

Description
This text layer’s tsume value.

Warning: This value only reflects the first character in the text layer at the current time.

Type
Floating-point value; read-only.
41.1.30 TextDocument.verticalScale

```
textDocument.verticalScale
```

**Note:** This functionality was added in After Effects 13.2 (CC 2014.2)

**Description**
This text layer’s vertical scale in pixels.

**Warning:** This value only reflects the first character in the text layer at the current time.

**Type**
Floating-point value; read-only.

41.2 Methods

41.2.1 TextDocument.compPointToSource()

```
textDocument.compPointToSource()
```

**Note:** This functionality was added in After Effects 13.2 (CC 2014.2)

**Description**
Converts composition coordinates, such as `sourcePointToComp`, to layer coordinates.

**Warning:** This method only works on paragraph text layers. This value only reflects the first character in the text layer at the current time.

**Parameters**

| `sourcePointToComp` | A position array of composition coordinates in ([X, Y]) format. |

**Returns**
Array of ([X,Y]) position coordinates; read-only.
41.2.2 TextDocument.resetCharStyle()

textDocument.resetCharStyle()

Description
Restores the default text character characteristics in the Character panel.

Parameters
None.

Returns
Nothing.

41.2.3 TextDocument.resetParagraphStyle()

textDocument.resetParagraphStyle()

Description
Restores the default text paragraph characteristics in the Paragraph panel.

Parameters
None.

Returns
Nothing.

41.2.4 TextDocument.sourcePointToComp()

textDocument.sourcePointToComp()

Note: This functionality was added in After Effects 13.2 (CC 2014.2)

Description
Converts layer coordinates, such as boxTextPos, to composition coordinates.

Warning: This method only works on paragraph text layers. This value only reflects the first character in the text layer at the current time.

Parameters

boxTextPos | A position array of layer coordinates in ([X, Y]) format.

Returns
Array of ([X,Y]) position coordinates; read-only.
Example

For a paragraph text layer:

```javascript
// Converts position in layer coordinates to comp coordinates.
var boxTextCompPos = myTextLayer.sourcePointToComp(boxTextLayerPos);
```
### Viewer object

**Description**
The Viewer object represents a Composition, Layer, or Footage panel.

**Example**
This maximizes the active viewer panel, and displays its type if it contains a composition:

```javascript
var activeViewer = app.activeViewer;
activeViewer.maximized = true;
if (activeViewer.type == ViewerType.VIEWER_COMPOSITION)
    alert("Compositionpanelisactive.");
```

### 42.1 Attributes

#### 42.1.1 Viewer.active

**viewer.active**

**Description**
When true, indicates if the viewer panel is focused, and thereby frontmost.

**Type**
Boolean; read-only.
### 42.1.2 `Viewer.fastPreview`

`viewer.fastPreview`

**Description**
The state of the Fast Previews menu. This is a read/write attribute using an enumerated value:

```
Warning: If you try to get or set the attribute’s value in the Layer or Footage panel, you’ll get an error message.
```

**Note:** The Draft preview mode is only available in ray-traced 3D compositions. If you try to use it in a Classic 3D composition, you’ll get an error: “Cannot set Draft fast preview mode in a Classic 3D composition.”

**Type**
A `FastPreviewType` enumerated value; read/write. One of:
- `FastPreviewType.FP_OFF`: Off (Final Quality)
- `FastPreviewType.FP_ADAPTIVE_RESOLUTION`: Adaptive Resolution
- `FastPreviewType.FP_DRAFT`: Draft
- `FastPreviewType.FP_FAST_DRAFT`: Fast Draft
- `FastPreviewType.FP_WIREFRAME`: Wireframe

**Example**
```
app.activeViewer.views[0].options.fastPreview == FastPreviewType.FP_ADAPTIVE_RESOLUTION
app.activeViewer.views[0].options.fastPreview == FastPreviewType.FP_DRAFT
app.activeViewer.views[0].options.fastPreview == FastPreviewType.FP_FAST_DRAFT
app.activeViewer.views[0].options.fastPreview == FastPreviewType.FP_OFF
app.activeViewer.views[0].options.fastPreview == FastPreviewType.FP_WIREFRAME
```

### 42.1.3 `Viewer.guidesLocked`

`viewer.guidesLocked`

**Note:** This functionality was added in After Effects 16.1 (CC 2019)

**Description**
When true, indicates guides are locked in the viewer.

**Type**
Boolean; read/write.

**Example**
```
app.activeViewer.views[0].options.guidesLocked
```
42.1.4 Viewer.guidesSnap

viewer.guidesSnap

Note: This functionality was added in After Effects 16.1 (CC 2019)

Description
When true, indicates layers snap to guides when dragged in the viewer.

Type
Boolean; read/write.

Example
app.activeViewer.views[0].options.guidesSnap

42.1.5 Viewer.guidesVisibility

viewer.guidesVisibility

Note: This functionality was added in After Effects 16.1 (CC 2019)

Description
When true, indicates guides are visible in the viewer.

Type
Boolean; read/write.

Example
app.activeViewer.views[0].options.guidesVisibility

42.1.6 Viewer.maximized

viewer.maximized

Description
When true, indicates if the viewer panel is at its maximized size.

Type
Boolean; read/write.
42.1.7 Viewer.rulers

viewer.rulers

**Note:** This functionality was added in After Effects 16.1 (CC 2019)

**Description**
When true, indicates rulers are shown in the viewer.

**Type**
Boolean; read/write.

**Example**

```javascript
app.activeViewer.views[0].options.rulers
```

42.1.8 Viewer.type

viewer.type

**Description**
The content in the viewer panel.

**Type**
A `ViewerType` enumerated value; read-only. One of:

- `ViewerType.VIEWER_COMPOSITION`
- `ViewerType.VIEWER_LAYER`
- `ViewerType.VIEWER_FOOTAGE`

42.2 Methods

42.2.1 Viewer.setActive()

viewer.setActive()

**Description**
Moves the viewer panel to the front and places focus on it, making it active. Calling this method will set the viewer’s active attribute to true.

**Parameters**
None.

**Returns**
Boolean indicating if the viewer panel was made active.
AVLayer Match Names

<table>
<thead>
<tr>
<th>Category</th>
<th>Match Name</th>
<th>Display Name (EN)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Layer</td>
<td>ADBE AV Layer</td>
<td></td>
</tr>
<tr>
<td>Top-Level</td>
<td>ADBE Marker</td>
<td>Marker</td>
</tr>
<tr>
<td></td>
<td>ADBE Time Remapping</td>
<td>Time Remap</td>
</tr>
<tr>
<td></td>
<td>ADBE MTrackers</td>
<td>Motion Trackers</td>
</tr>
<tr>
<td></td>
<td>ADBE Mask Parade</td>
<td>Masks</td>
</tr>
<tr>
<td></td>
<td>ADBE Effect Parade</td>
<td>Effects</td>
</tr>
<tr>
<td>Transform</td>
<td>ADBE Transform Group</td>
<td>Transform</td>
</tr>
<tr>
<td></td>
<td>ADBE Anchor Point</td>
<td>Anchor Point</td>
</tr>
<tr>
<td></td>
<td>ADBE Position</td>
<td>Position</td>
</tr>
<tr>
<td></td>
<td>ADBE Position_0</td>
<td>X Position</td>
</tr>
<tr>
<td></td>
<td>ADBE Position_1</td>
<td>Y Position</td>
</tr>
<tr>
<td></td>
<td>ADBE Position_2</td>
<td>Z Position</td>
</tr>
<tr>
<td></td>
<td>ADBE Scale</td>
<td>Scale</td>
</tr>
<tr>
<td></td>
<td>ADBE Orientation</td>
<td>Orientation</td>
</tr>
<tr>
<td></td>
<td>ADBE Rotate X</td>
<td>X Rotation</td>
</tr>
<tr>
<td></td>
<td>ADBE Rotate Y</td>
<td>Y Rotation</td>
</tr>
<tr>
<td></td>
<td>ADBE Rotate Z</td>
<td>Z Rotation</td>
</tr>
<tr>
<td></td>
<td>ADBE Opacity</td>
<td>Opacity</td>
</tr>
<tr>
<td>Audio</td>
<td>ADBE Audio Group</td>
<td>Audio</td>
</tr>
<tr>
<td></td>
<td>ADBE Audio Levels</td>
<td>Audio Levels</td>
</tr>
</tbody>
</table>
## 3d Layer Match Names

<table>
<thead>
<tr>
<th>Category</th>
<th>Match Name</th>
<th>Display Name (EN)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Plane</strong></td>
<td>ADBE Plane Options Group</td>
<td>Geometry Options</td>
</tr>
<tr>
<td></td>
<td>ADBE Plane Curvature</td>
<td>Curvature</td>
</tr>
<tr>
<td></td>
<td>ADBE Plane Subdivision</td>
<td>Segments</td>
</tr>
<tr>
<td></td>
<td>ADBE Extrsn Options Group</td>
<td>Geometry Options</td>
</tr>
<tr>
<td></td>
<td>ADBE Bevel Depth</td>
<td>Bevel Depth</td>
</tr>
<tr>
<td></td>
<td>ADBE Hole Bevel Depth</td>
<td>Hole Bevel Depth</td>
</tr>
<tr>
<td></td>
<td>ADBE Extrsn Depth</td>
<td>Extrusion Depth</td>
</tr>
<tr>
<td><strong>Materials</strong></td>
<td>ADBE Material Options Group</td>
<td>Material Options</td>
</tr>
<tr>
<td></td>
<td>ADBE Light Transmission</td>
<td>Light Transmission</td>
</tr>
<tr>
<td></td>
<td>ADBE Ambient Coefficient</td>
<td>Ambient</td>
</tr>
<tr>
<td></td>
<td>ADBE Diffuse Coefficient</td>
<td>Diffuse</td>
</tr>
<tr>
<td></td>
<td>ADBE Specular Coefficient</td>
<td>Specular Intensity</td>
</tr>
<tr>
<td></td>
<td>ADBE Shininess Coefficient</td>
<td>Specular Shininess</td>
</tr>
<tr>
<td></td>
<td>ADBE Metal Coefficient</td>
<td>Metal</td>
</tr>
<tr>
<td></td>
<td>ADBE Reflection Coefficient</td>
<td>Reflection Intensity</td>
</tr>
<tr>
<td></td>
<td>ADBE Glossiness Coefficient</td>
<td>Reflection Sharpness</td>
</tr>
<tr>
<td></td>
<td>ADBE Fresnel Coefficient</td>
<td>Reflection Rolloff</td>
</tr>
<tr>
<td></td>
<td>ADBE Transparency Coefficient</td>
<td>Transparency</td>
</tr>
<tr>
<td></td>
<td>ADBE Transp Rolloff</td>
<td>Transparency Rolloff</td>
</tr>
<tr>
<td></td>
<td>ADBE Index of Refraction</td>
<td>Index of Refraction</td>
</tr>
</tbody>
</table>
## Camera Layer Match Names

<table>
<thead>
<tr>
<th>Category</th>
<th>Match Name</th>
<th>Display Name (EN)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Layer</td>
<td>ADBE Camera Layer</td>
<td></td>
</tr>
<tr>
<td>Camera</td>
<td>ADBE Camera Options Group</td>
<td>Camera Options</td>
</tr>
<tr>
<td></td>
<td>ADBE Camera Zoom</td>
<td>Zoom</td>
</tr>
<tr>
<td></td>
<td>ADBE Camera Depth of Field</td>
<td>Depth of Field</td>
</tr>
<tr>
<td></td>
<td>ADBE Camera Focus Distance</td>
<td>Focus Distance</td>
</tr>
<tr>
<td></td>
<td>ADBE Camera Aperture</td>
<td>Aperture</td>
</tr>
<tr>
<td></td>
<td>ADBE Camera Blur Level</td>
<td>Blur Level</td>
</tr>
<tr>
<td>Iris</td>
<td>ADBE Iris Shape</td>
<td>Iris Shape</td>
</tr>
<tr>
<td></td>
<td>ADBE Iris Rotation</td>
<td>Iris Rotation</td>
</tr>
<tr>
<td></td>
<td>ADBE Iris Roundness</td>
<td>Iris Roundness</td>
</tr>
<tr>
<td></td>
<td>ADBE Iris Aspect Ratio</td>
<td>Iris Aspect Ratio</td>
</tr>
<tr>
<td></td>
<td>ADBE Iris Diffraction Fringe</td>
<td>Iris Diffraction Fringe</td>
</tr>
<tr>
<td></td>
<td>ADBE Iris Highlight Gain</td>
<td>Highlight Gain</td>
</tr>
<tr>
<td></td>
<td>ADBE Iris Highlight Threshold</td>
<td>Highlight Threshold</td>
</tr>
<tr>
<td></td>
<td>ADBE Iris Highlight Saturation</td>
<td>Highlight Saturation</td>
</tr>
</tbody>
</table>
## Light Layer Match Names

<table>
<thead>
<tr>
<th>Category</th>
<th>Match Name</th>
<th>Display Name (EN)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Layer</strong></td>
<td>ADBE Light Layer</td>
<td></td>
</tr>
<tr>
<td><strong>Light</strong></td>
<td>ADBE Light Options Group</td>
<td>Light Options</td>
</tr>
<tr>
<td></td>
<td>ADBE Light Intensity</td>
<td>Intensity</td>
</tr>
<tr>
<td></td>
<td>ADBE Light Color</td>
<td>Color</td>
</tr>
<tr>
<td></td>
<td>ADBE Light Cone Angle</td>
<td>Cone Angle</td>
</tr>
<tr>
<td></td>
<td>ADBE Light Cone Feather 2</td>
<td>Cone Feather</td>
</tr>
<tr>
<td><strong>Falloff</strong></td>
<td>ADBE Light Falloff Type</td>
<td>Falloff</td>
</tr>
<tr>
<td></td>
<td>ADBE Light Falloff Start</td>
<td>Radius</td>
</tr>
<tr>
<td></td>
<td>ADBE Light Falloff Distance</td>
<td>Falloff Distance</td>
</tr>
<tr>
<td><strong>Shadow</strong></td>
<td>ADBE Light Shadow Darkness</td>
<td>Shadow Darkness</td>
</tr>
<tr>
<td></td>
<td>ADBE Light Shadow Diffusion</td>
<td>Shadow Diffusion</td>
</tr>
</tbody>
</table>
## Text Layer Match Names

<table>
<thead>
<tr>
<th>Category</th>
<th>Match Name</th>
<th>Display Name (EN)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Layer</strong></td>
<td>ADBE Text Layer</td>
<td></td>
</tr>
<tr>
<td><strong>Text</strong></td>
<td>ADBE Text Properties</td>
<td>Text</td>
</tr>
<tr>
<td></td>
<td>ADBE Text Document</td>
<td>Source Text</td>
</tr>
<tr>
<td></td>
<td>ADBE Text Path Options</td>
<td>Path Options</td>
</tr>
<tr>
<td></td>
<td>ADBE Text Reverse Path</td>
<td>Reverse Path</td>
</tr>
<tr>
<td></td>
<td>ADBE Text Perpendicular To Path</td>
<td>Perpendicular To Path</td>
</tr>
<tr>
<td></td>
<td>ADBE Text Force Align Path</td>
<td>Force Alignment</td>
</tr>
<tr>
<td></td>
<td>ADBE Text First Margin</td>
<td>First Margin</td>
</tr>
<tr>
<td></td>
<td>ADBE Text Last Margin</td>
<td>Last Margin</td>
</tr>
<tr>
<td></td>
<td>ADBE Text More Options</td>
<td>More Options</td>
</tr>
<tr>
<td></td>
<td>ADBE Text Anchor Point Align</td>
<td>Grouping Alignment</td>
</tr>
<tr>
<td></td>
<td>ADBE Text Animators</td>
<td>Animators</td>
</tr>
<tr>
<td><strong>Animators</strong></td>
<td>ADBE Text Animator</td>
<td>Animator</td>
</tr>
<tr>
<td></td>
<td>ADBE Text Selectors</td>
<td>Selectors</td>
</tr>
<tr>
<td></td>
<td>ADBE Text Selector</td>
<td>Range Selector</td>
</tr>
<tr>
<td></td>
<td>ADBE Text Percent Start</td>
<td>Start</td>
</tr>
<tr>
<td></td>
<td>ADBE Text Percent End</td>
<td>End</td>
</tr>
<tr>
<td></td>
<td>ADBE Text Percent Offset</td>
<td>Offset</td>
</tr>
<tr>
<td></td>
<td>ADBE Text Index Start</td>
<td>Start</td>
</tr>
<tr>
<td></td>
<td>ADBE Text Index End</td>
<td>End</td>
</tr>
<tr>
<td></td>
<td>ADBE Text Index Offset</td>
<td>Offset</td>
</tr>
<tr>
<td></td>
<td>ADBE Text Range Advanced</td>
<td>Advanced</td>
</tr>
<tr>
<td></td>
<td>ADBE Text Selector Mode</td>
<td>Mode</td>
</tr>
<tr>
<td></td>
<td>ADBE Text Selector Max Amount</td>
<td>Amount</td>
</tr>
<tr>
<td></td>
<td>ADBE Text Selector Smoothness</td>
<td>Smoothness</td>
</tr>
<tr>
<td></td>
<td>ADBE Text Levels Max Ease</td>
<td>Ease High</td>
</tr>
<tr>
<td></td>
<td>ADBE Text Levels Min Ease</td>
<td>Ease Low</td>
</tr>
</tbody>
</table>

Continued on next page
Table 1 – continued from previous page

<table>
<thead>
<tr>
<th>Property</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ADBE Text Random Seed</td>
<td>Random Seed</td>
</tr>
<tr>
<td>ADBE Text Animator Properties</td>
<td>Properties</td>
</tr>
<tr>
<td>ADBE Text Anchor Point 3D</td>
<td>Anchor Point</td>
</tr>
<tr>
<td>ADBE Text Position 3D</td>
<td>Position</td>
</tr>
<tr>
<td>ADBE Text Scale 3D</td>
<td>Scale</td>
</tr>
<tr>
<td>ADBE Text Skew</td>
<td>Skew</td>
</tr>
<tr>
<td>ADBE Text Skew Axis</td>
<td>Skew Axis</td>
</tr>
<tr>
<td>ADBE Text Rotation X</td>
<td>X Rotation</td>
</tr>
<tr>
<td>ADBE Text Rotation Y</td>
<td>Y Rotation</td>
</tr>
<tr>
<td>ADBE Text Rotation</td>
<td>Z Rotation</td>
</tr>
<tr>
<td>ADBE Text Opacity</td>
<td>Opacity</td>
</tr>
<tr>
<td>ADBE Text Fill Opacity</td>
<td>Fill Opacity</td>
</tr>
<tr>
<td>ADBE Text Stroke Opacity</td>
<td>Stroke Opacity</td>
</tr>
<tr>
<td>ADBE Text Fill Color</td>
<td>Fill Color</td>
</tr>
<tr>
<td>ADBE Text Stroke Color</td>
<td>Stroke Color</td>
</tr>
<tr>
<td>ADBE Text Fill Hue</td>
<td>Fill Hue</td>
</tr>
<tr>
<td>ADBE Text Stroke Hue</td>
<td>Stroke Hue</td>
</tr>
<tr>
<td>ADBE Text Fill Saturation</td>
<td>Fill Saturation</td>
</tr>
<tr>
<td>ADBE Text Stroke Saturation</td>
<td>Stroke Saturation</td>
</tr>
<tr>
<td>ADBE Text Fill Brightness</td>
<td>Fill Brightness</td>
</tr>
<tr>
<td>ADBE Text Stroke Brightness</td>
<td>Stroke Brightness</td>
</tr>
<tr>
<td>ADBE Text Stroke Width</td>
<td>Stroke Width</td>
</tr>
<tr>
<td>ADBE Text Line Anchor</td>
<td>Line Anchor</td>
</tr>
<tr>
<td>ADBE Text Track Type</td>
<td>Tracking Type</td>
</tr>
<tr>
<td>ADBE Text Tracking Amount</td>
<td>Tracking Amount</td>
</tr>
<tr>
<td>ADBE Text Character Replace</td>
<td>Character Value</td>
</tr>
<tr>
<td>ADBE Text Character Offset</td>
<td>Character Offset</td>
</tr>
<tr>
<td>ADBE Text Line Spacing</td>
<td>Line Spacing</td>
</tr>
<tr>
<td>ADBE Text Blur</td>
<td>Blur</td>
</tr>
</tbody>
</table>

3d Text

<table>
<thead>
<tr>
<th>Property</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ADBE 3DText Front RGB</td>
<td>Front Color</td>
</tr>
<tr>
<td>ADBE 3DText Front Hue</td>
<td>Front Hue</td>
</tr>
<tr>
<td>ADBE 3DText Front Sat</td>
<td>Front Saturation</td>
</tr>
<tr>
<td>ADBE 3DText Front Bright</td>
<td>Front Brightness</td>
</tr>
<tr>
<td>ADBE 3DText Front Opacity</td>
<td>Front Opacity</td>
</tr>
<tr>
<td>ADBE 3DText Front Ambient</td>
<td>Front Ambient</td>
</tr>
<tr>
<td>ADBE 3DText Front Diffuse</td>
<td>Front Diffuse</td>
</tr>
<tr>
<td>ADBE 3DText Front Specular</td>
<td>Front Specular Intensity</td>
</tr>
<tr>
<td>ADBE 3DText Front Shininess</td>
<td>Front Specular Shininess</td>
</tr>
<tr>
<td>ADBE 3DText Front Metal</td>
<td>Front Metal</td>
</tr>
<tr>
<td>ADBE 3DText Front Reflection</td>
<td>Front Reflection Intensity</td>
</tr>
<tr>
<td>ADBE 3DText Front Gloss</td>
<td>Front Reflection Sharpness</td>
</tr>
<tr>
<td>ADBE 3DText Front Fresnel</td>
<td>Front Reflection Rolloff</td>
</tr>
<tr>
<td>ADBE 3DText Front Xpparency</td>
<td>Front Transparency</td>
</tr>
<tr>
<td>ADBE 3DText Front XparRoll</td>
<td>Front Transparency Rolloff</td>
</tr>
<tr>
<td>ADBE 3DText Front IOR</td>
<td>Front Index of Refraction</td>
</tr>
<tr>
<td>ADBE 3DText Bevel RGB</td>
<td>Bevel Color</td>
</tr>
<tr>
<td>ADBE 3DText Bevel Hue</td>
<td>Bevel Hue</td>
</tr>
<tr>
<td>ADBE 3DText Bevel Sat</td>
<td>Bevel Saturation</td>
</tr>
<tr>
<td>ADBE 3DText Bevel Bright</td>
<td>Bevel Brightness</td>
</tr>
<tr>
<td>ADBE 3DText Bevel Opacity</td>
<td>Bevel Opacity</td>
</tr>
<tr>
<td>ADBE 3DText Bevel Ambient</td>
<td>Bevel Ambient</td>
</tr>
</tbody>
</table>

Continued on next page
Table 1 – continued from previous page

<table>
<thead>
<tr>
<th>ADBE 3DText Bevel Diffuse</th>
<th>Bevel Diffuse</th>
</tr>
</thead>
<tbody>
<tr>
<td>ADBE 3DText Bevel Specular</td>
<td>Bevel Specular Intensity</td>
</tr>
<tr>
<td>ADBE 3DText Bevel Shininess</td>
<td>Bevel Specular Shininess</td>
</tr>
<tr>
<td>ADBE 3DText Bevel Metal</td>
<td>Bevel Metal</td>
</tr>
<tr>
<td>ADBE 3DText Bevel Reflection</td>
<td>Bevel Reflection Intensity</td>
</tr>
<tr>
<td>ADBE 3DText Bevel Gloss</td>
<td>Bevel Reflection Sharpness</td>
</tr>
<tr>
<td>ADBE 3DText Bevel Fresnel</td>
<td>Bevel Reflection Rolloff</td>
</tr>
<tr>
<td>ADBE 3DText Bevel XparRoll</td>
<td>Bevel Transparency</td>
</tr>
<tr>
<td>ADBE 3DText Bevel IOR</td>
<td>Bevel Index of Refraction</td>
</tr>
<tr>
<td>ADBE 3DText Side RGB</td>
<td>Side Color</td>
</tr>
<tr>
<td>ADBE 3DText Side Hue</td>
<td>Side Hue</td>
</tr>
<tr>
<td>ADBE 3DText Side Sat</td>
<td>Side Saturation</td>
</tr>
<tr>
<td>ADBE 3DText Side Bright</td>
<td>Side Brightness</td>
</tr>
<tr>
<td>ADBE 3DText Side Opacity</td>
<td>Side Opacity</td>
</tr>
<tr>
<td>ADBE 3DText Side Ambient</td>
<td>Side Ambient</td>
</tr>
<tr>
<td>ADBE 3DText Side Diffuse</td>
<td>Side Diffuse</td>
</tr>
<tr>
<td>ADBE 3DText Side Specular</td>
<td>Side Specular Intensity</td>
</tr>
<tr>
<td>ADBE 3DText Side Shininess</td>
<td>Side Specular Shininess</td>
</tr>
<tr>
<td>ADBE 3DText Side Metal</td>
<td>Side Metal</td>
</tr>
<tr>
<td>ADBE 3DText Side Reflection</td>
<td>Side Reflection Intensity</td>
</tr>
<tr>
<td>ADBE 3DText Side Gloss</td>
<td>Side Reflection Sharpness</td>
</tr>
<tr>
<td>ADBE 3DText Side Fresnel</td>
<td>Side Reflection Rolloff</td>
</tr>
<tr>
<td>ADBE 3DText Side XparRoll</td>
<td>Side Transparency</td>
</tr>
<tr>
<td>ADBE 3DText Side IOR</td>
<td>Side Index of Refraction</td>
</tr>
<tr>
<td>ADBE 3DText Back RGB</td>
<td>Back Color</td>
</tr>
<tr>
<td>ADBE 3DText Back Hue</td>
<td>Back Hue</td>
</tr>
<tr>
<td>ADBE 3DText Back Sat</td>
<td>Back Saturation</td>
</tr>
<tr>
<td>ADBE 3DText Back Bright</td>
<td>Back Brightness</td>
</tr>
<tr>
<td>ADBE 3DText Back Opacity</td>
<td>Back Opacity</td>
</tr>
<tr>
<td>ADBE 3DText Back Ambient</td>
<td>Back Ambient</td>
</tr>
<tr>
<td>ADBE 3DText Back Diffuse</td>
<td>Back Diffuse</td>
</tr>
<tr>
<td>ADBE 3DText Back Specular</td>
<td>Back Specular Intensity</td>
</tr>
<tr>
<td>ADBE 3DText Back Shininess</td>
<td>Back Specular Shininess</td>
</tr>
<tr>
<td>ADBE 3DText Back Metal</td>
<td>Back Metal</td>
</tr>
<tr>
<td>ADBE 3DText Back Reflection</td>
<td>Back Reflection Intensity</td>
</tr>
<tr>
<td>ADBE 3DText Back Gloss</td>
<td>Back Reflection Sharpness</td>
</tr>
<tr>
<td>ADBE 3DText Back Fresnel</td>
<td>Back Reflection Rolloff</td>
</tr>
<tr>
<td>ADBE 3DText Back XparRoll</td>
<td>Back Transparency</td>
</tr>
<tr>
<td>ADBE 3DText Back IOR</td>
<td>Back Index of Refraction</td>
</tr>
<tr>
<td>ADBE 3DText Bevel Depth</td>
<td>Bevel Depth</td>
</tr>
<tr>
<td>ADBE 3DText Extrude Depth</td>
<td>Extrusion Depth</td>
</tr>
</tbody>
</table>
## Shape Layer Match Names

<table>
<thead>
<tr>
<th>Category</th>
<th>Match Name</th>
<th>Display Name (EN)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Layer</td>
<td>ADBE Vector Layer</td>
<td>Shape Layer</td>
</tr>
<tr>
<td></td>
<td>ADBE Vector Group</td>
<td>Group</td>
</tr>
<tr>
<td></td>
<td>ADBE Vector Blend Mode</td>
<td>Blend Mode</td>
</tr>
<tr>
<td>Group</td>
<td>ADBE Vectors Group</td>
<td>Contents</td>
</tr>
<tr>
<td></td>
<td>ADBE Vector Transform Group</td>
<td>Transform</td>
</tr>
<tr>
<td></td>
<td>ADBE Vector Materials Group</td>
<td>Material Options</td>
</tr>
<tr>
<td>Rectangle</td>
<td>ADBE Vector Shape - Rect</td>
<td>Rectangle</td>
</tr>
<tr>
<td></td>
<td>ADBE Vector Shape Direction</td>
<td>Shape Direction</td>
</tr>
<tr>
<td></td>
<td>ADBE Vector Rect Size</td>
<td>Size</td>
</tr>
<tr>
<td></td>
<td>ADBE Vector Rect Position</td>
<td>Position</td>
</tr>
<tr>
<td></td>
<td>ADBE Vector Rect Roundness</td>
<td>Roundness</td>
</tr>
<tr>
<td>Ellipse</td>
<td>ADBE Vector Shape - Ellipse</td>
<td>Ellipse</td>
</tr>
<tr>
<td></td>
<td>ADBE Vector Shape Direction</td>
<td>Shape Direction</td>
</tr>
<tr>
<td></td>
<td>ADBE Vector Ellipse Size</td>
<td>Size</td>
</tr>
<tr>
<td></td>
<td>ADBE Vector Ellipse Position</td>
<td>Position</td>
</tr>
<tr>
<td>Polystar</td>
<td>ADBE Vector Shape - Star</td>
<td>Polystar</td>
</tr>
<tr>
<td></td>
<td>ADBE Vector Shape Direction</td>
<td>Shape Direction</td>
</tr>
<tr>
<td></td>
<td>ADBE Vector Star Type</td>
<td>Type</td>
</tr>
<tr>
<td></td>
<td>ADBE Vector Star Points</td>
<td>Points</td>
</tr>
<tr>
<td></td>
<td>ADBE Vector Star Position</td>
<td>Position</td>
</tr>
<tr>
<td></td>
<td>ADBE Vector Star Rotation</td>
<td>Rotation</td>
</tr>
<tr>
<td></td>
<td>ADBE Vector Star Inner Radius</td>
<td>Inner Radius</td>
</tr>
<tr>
<td></td>
<td>ADBE Vector Star Outer Radius</td>
<td>Outer Radius</td>
</tr>
<tr>
<td></td>
<td>ADBE Vector Star Inner Roundness</td>
<td>Inner Roundness</td>
</tr>
<tr>
<td></td>
<td>ADBE Vector Star Outer Roundness</td>
<td>Outer Roundness</td>
</tr>
</tbody>
</table>
Table 1 – continued from previous page

<table>
<thead>
<tr>
<th>Category</th>
<th>Match Name</th>
<th>Display Name (EN)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Path</strong></td>
<td>ADBE Vector Shape - Group</td>
<td>Path</td>
</tr>
<tr>
<td></td>
<td>ADBE Vector Shape Direction</td>
<td>Shape Direction</td>
</tr>
<tr>
<td></td>
<td>ADBE Vector Shape</td>
<td>Path</td>
</tr>
<tr>
<td><strong>Fill</strong></td>
<td>ADBE Vector Graphic - Fill</td>
<td>Fill</td>
</tr>
<tr>
<td></td>
<td>ADBE Vector Blend Mode</td>
<td>Blend Mode</td>
</tr>
<tr>
<td></td>
<td>ADBE Vector Composite Order</td>
<td>Composite</td>
</tr>
<tr>
<td></td>
<td>ADBE Vector Fill Rule</td>
<td>Fill Rule</td>
</tr>
<tr>
<td></td>
<td>ADBE Vector Fill Color</td>
<td>Color</td>
</tr>
<tr>
<td></td>
<td>ADBE Vector Fill Opacity</td>
<td>Opacity</td>
</tr>
<tr>
<td><strong>Stroke</strong></td>
<td>ADBE Vector Graphic - Stroke</td>
<td>Stroke</td>
</tr>
<tr>
<td></td>
<td>ADBE Vector Blend Mode</td>
<td>Blend Mode</td>
</tr>
<tr>
<td></td>
<td>ADBE Vector Composite Order</td>
<td>Composite</td>
</tr>
<tr>
<td></td>
<td>ADBE Vector Stroke Color</td>
<td>Color</td>
</tr>
<tr>
<td></td>
<td>ADBE Vector Stroke Opacity</td>
<td>Opacity</td>
</tr>
<tr>
<td></td>
<td>ADBE Vector Stroke Width</td>
<td>Stroke Width</td>
</tr>
<tr>
<td></td>
<td>ADBE Vector Stroke Line Cap</td>
<td>Line Cap</td>
</tr>
<tr>
<td></td>
<td>ADBE Vector Stroke Line Join</td>
<td>Line Join</td>
</tr>
<tr>
<td></td>
<td>ADBE Vector Stroke Miter Limit</td>
<td>Miter Limit</td>
</tr>
<tr>
<td></td>
<td>ADBE Vector Stroke Dashes</td>
<td>Dashes</td>
</tr>
<tr>
<td><strong>Gradient Fill</strong></td>
<td>ADBE Vector Graphic - G-Fill</td>
<td>Gradient Fill</td>
</tr>
<tr>
<td></td>
<td>ADBE Vector Blend Mode</td>
<td>Blend Mode</td>
</tr>
<tr>
<td></td>
<td>ADBE Vector Composite Order</td>
<td>Composite</td>
</tr>
<tr>
<td></td>
<td>ADBE Vector Fill Rule</td>
<td>Fill Rule</td>
</tr>
<tr>
<td></td>
<td>ADBE Vector Grad Type</td>
<td>Type</td>
</tr>
<tr>
<td></td>
<td>ADBE Vector Grad Start Pt</td>
<td>Start Point</td>
</tr>
<tr>
<td></td>
<td>ADBE Vector Grad End Pt</td>
<td>End Point</td>
</tr>
<tr>
<td></td>
<td>ADBE Vector Grad HiLite Length</td>
<td>Highlight Length</td>
</tr>
<tr>
<td></td>
<td>ADBE Vector Grad HiLite Angle</td>
<td>Highlight Angle</td>
</tr>
<tr>
<td></td>
<td>ADBE Vector Grad Colors</td>
<td>Colors</td>
</tr>
<tr>
<td></td>
<td>ADBE Vector Fill Opacity</td>
<td>Opacity</td>
</tr>
<tr>
<td><strong>Gradient Stroke</strong></td>
<td>ADBE Vector Graphic - G-Stroke</td>
<td>Gradient Stroke</td>
</tr>
<tr>
<td></td>
<td>ADBE Vector Blend Mode</td>
<td>Blend Mode</td>
</tr>
<tr>
<td></td>
<td>ADBE Vector Composite Order</td>
<td>Composite</td>
</tr>
<tr>
<td></td>
<td>ADBE Vector Grad Type</td>
<td>Type</td>
</tr>
<tr>
<td></td>
<td>ADBE Vector Grad Start Pt</td>
<td>Start Point</td>
</tr>
<tr>
<td></td>
<td>ADBE Vector Grad End Pt</td>
<td>End Point</td>
</tr>
<tr>
<td></td>
<td>ADBE Vector Grad HiLite Length</td>
<td>Highlight Length</td>
</tr>
<tr>
<td></td>
<td>ADBE Vector Grad HiLite Angle</td>
<td>Highlight Angle</td>
</tr>
<tr>
<td></td>
<td>ADBE Vector Grad Colors</td>
<td>Colors</td>
</tr>
<tr>
<td></td>
<td>ADBE Vector Stroke Opacity</td>
<td>Opacity</td>
</tr>
<tr>
<td></td>
<td>ADBE Vector Stroke Width</td>
<td>Stroke Width</td>
</tr>
<tr>
<td></td>
<td>ADBE Vector Stroke Line Cap</td>
<td>Line Cap</td>
</tr>
<tr>
<td></td>
<td>ADBE Vector Stroke Line Join</td>
<td>Line Join</td>
</tr>
<tr>
<td></td>
<td>ADBE Vector Stroke Miter Limit</td>
<td>Miter Limit</td>
</tr>
<tr>
<td></td>
<td>ADBE Vector Stroke Dashes</td>
<td>Dashes</td>
</tr>
</tbody>
</table>

Continued on next page
<table>
<thead>
<tr>
<th>Category</th>
<th>Match Name</th>
<th>Display Name (EN)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Merge Paths</strong></td>
<td>ADBE Vector Filter - Merge</td>
<td>Merge Paths</td>
</tr>
<tr>
<td></td>
<td>ADBE Vector Merge Type</td>
<td>Mode</td>
</tr>
<tr>
<td><strong>Offset Paths</strong></td>
<td>ADBE Vector Filter - Offset</td>
<td>Offset Paths</td>
</tr>
<tr>
<td></td>
<td>ADBE Vector Offset Amount</td>
<td>Amount</td>
</tr>
<tr>
<td></td>
<td>ADBE Vector Offset Line Join</td>
<td>Line Join</td>
</tr>
<tr>
<td></td>
<td>ADBE Vector Offset Miter Limit</td>
<td>Miter Limit</td>
</tr>
<tr>
<td><strong>Pucker &amp; Bloat</strong></td>
<td>ADBE Vector Filter - PB</td>
<td>Pucker &amp; Bloat</td>
</tr>
<tr>
<td></td>
<td>ADBE Vector Pucker&amp;Bloat Amount</td>
<td>Amount</td>
</tr>
<tr>
<td><strong>Repeater</strong></td>
<td>ADBE Vector Filter - Repeater</td>
<td>Repeater</td>
</tr>
<tr>
<td></td>
<td>ADBE Vector Repeater Copies</td>
<td>Copies</td>
</tr>
<tr>
<td></td>
<td>ADBE Vector Repeater Offset</td>
<td>Offset</td>
</tr>
<tr>
<td></td>
<td>ADBE Vector Repeater Order</td>
<td>Composite</td>
</tr>
<tr>
<td></td>
<td>ADBE Vector Repeater Transform</td>
<td>Transform</td>
</tr>
<tr>
<td><strong>Round Corners</strong></td>
<td>ADBE Vector Filter - RC</td>
<td>Round Corners</td>
</tr>
<tr>
<td></td>
<td>ADBE Vector RoundCorner Radius</td>
<td>Radius</td>
</tr>
<tr>
<td><strong>Trim Paths</strong></td>
<td>ADBE Vector Filter - Trim</td>
<td>Trim Paths</td>
</tr>
<tr>
<td></td>
<td>ADBE Vector Trim Start</td>
<td>Start</td>
</tr>
<tr>
<td></td>
<td>ADBE Vector Trim End</td>
<td>End</td>
</tr>
<tr>
<td></td>
<td>ADBE Vector Trim Offset</td>
<td>Offset</td>
</tr>
<tr>
<td></td>
<td>ADBE Vector Trim Type</td>
<td>Trim Multiple Shapes</td>
</tr>
<tr>
<td><strong>Twist</strong></td>
<td>ADBE Vector Filter - Twist</td>
<td>Twist</td>
</tr>
<tr>
<td></td>
<td>ADBE Vector Twist Angle</td>
<td>Angle</td>
</tr>
<tr>
<td></td>
<td>ADBE Vector Twist Center</td>
<td>Center</td>
</tr>
<tr>
<td><strong>Wiggle Paths</strong></td>
<td>ADBE Vector Filter - Roughen</td>
<td>Wiggle Paths</td>
</tr>
<tr>
<td></td>
<td>ADBE Vector Roughen Size</td>
<td>Size</td>
</tr>
<tr>
<td></td>
<td>ADBE Vector Roughen Detail</td>
<td>Detail</td>
</tr>
<tr>
<td></td>
<td>ADBE Vector Roughen Points</td>
<td>Points</td>
</tr>
<tr>
<td></td>
<td>ADBE Vector Temporal Freq</td>
<td>Wiggles/Second</td>
</tr>
<tr>
<td></td>
<td>ADBE Vector Correlation</td>
<td>Correlation</td>
</tr>
<tr>
<td></td>
<td>ADBE Vector Temporal Phase</td>
<td>Temporal Phase</td>
</tr>
<tr>
<td></td>
<td>ADBE Vector Spatial Phase</td>
<td>Spatial Phase</td>
</tr>
<tr>
<td></td>
<td>ADBE Vector Random Seed</td>
<td>Random Seed</td>
</tr>
<tr>
<td><strong>Wiggle Transform</strong></td>
<td>ADBE Vector Filter - Wiggler</td>
<td>Wiggle Transform</td>
</tr>
<tr>
<td></td>
<td>ADBE Vector Xform Temporal Freq</td>
<td>Wiggles/Second</td>
</tr>
<tr>
<td></td>
<td>ADBE Vector Correlation</td>
<td>Correlation</td>
</tr>
<tr>
<td></td>
<td>ADBE Vector Temporal Phase</td>
<td>Temporal Phase</td>
</tr>
<tr>
<td></td>
<td>ADBE Vector Spatial Phase</td>
<td>Spatial Phase</td>
</tr>
<tr>
<td></td>
<td>ADBE Vector Random Seed</td>
<td>Random Seed</td>
</tr>
<tr>
<td></td>
<td>ADBE Vector Wiggler Transform</td>
<td>Transform</td>
</tr>
<tr>
<td><strong>Zig Zag</strong></td>
<td>ADBE Vector Filter - Zigzag</td>
<td>Zig Zag</td>
</tr>
<tr>
<td></td>
<td>ADBE Vector Zigzag Size</td>
<td>Size</td>
</tr>
<tr>
<td></td>
<td>ADBE Vector Zigzag Detail</td>
<td>Ridges per segment</td>
</tr>
</tbody>
</table>
Table 1 – continued from previous page

<table>
<thead>
<tr>
<th>Category</th>
<th>Match Name</th>
<th>Display Name (EN)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>ADBE Vector Zigzag Points</td>
<td>Points</td>
</tr>
</tbody>
</table>
### Layer Styles Match Names

<table>
<thead>
<tr>
<th>Category</th>
<th>Match Name</th>
<th>Display Name (EN)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Styles</strong></td>
<td>ADBE Blend Options Group</td>
<td>Blending Options</td>
</tr>
<tr>
<td></td>
<td>ADBE Global Angle2</td>
<td>Global Light Angle</td>
</tr>
<tr>
<td></td>
<td>ADBE Global Altitude2</td>
<td>Global Light Altitude</td>
</tr>
<tr>
<td></td>
<td>ADBE Adv Blend Group</td>
<td>Advanced Blending</td>
</tr>
<tr>
<td></td>
<td>ADBE Layer Fill Opacity2</td>
<td>Fill Opacity</td>
</tr>
<tr>
<td></td>
<td>ADBE R Channel Blend</td>
<td>Red</td>
</tr>
<tr>
<td></td>
<td>ADBE G Channel Blend</td>
<td>Green</td>
</tr>
<tr>
<td></td>
<td>ADBE B Channel Blend</td>
<td>Blue</td>
</tr>
<tr>
<td></td>
<td>ADBE Blend Interior</td>
<td>Blend Interior Styles as Group</td>
</tr>
<tr>
<td></td>
<td>ADBE Blend Ranges</td>
<td>Use Blend Ranges from Source</td>
</tr>
<tr>
<td><strong>Drop Shadow</strong></td>
<td>dropShadow/enabled</td>
<td>Drop Shadow</td>
</tr>
<tr>
<td></td>
<td>dropShadow/mode2</td>
<td>Blend Mode</td>
</tr>
<tr>
<td></td>
<td>dropShadow/color</td>
<td>Color</td>
</tr>
<tr>
<td></td>
<td>dropShadow/opacity</td>
<td>Opacity</td>
</tr>
<tr>
<td></td>
<td>dropShadow/useGlobalAngle</td>
<td>Use Global Light</td>
</tr>
<tr>
<td></td>
<td>dropShadow/localLightingAngle</td>
<td>Angle</td>
</tr>
<tr>
<td></td>
<td>dropShadow/distance</td>
<td>Distance</td>
</tr>
<tr>
<td></td>
<td>dropShadow/chokeMatte</td>
<td>Spread</td>
</tr>
<tr>
<td></td>
<td>dropShadow/blur</td>
<td>Size</td>
</tr>
<tr>
<td></td>
<td>dropShadow/noise</td>
<td>Noise</td>
</tr>
<tr>
<td></td>
<td>dropShadow/layersConceals</td>
<td>Layer Knocks Out Drop Shadow</td>
</tr>
<tr>
<td><strong>Inner Shadow</strong></td>
<td>innerShadow/enabled</td>
<td>Inner Shadow</td>
</tr>
<tr>
<td></td>
<td>innerShadow/mode2</td>
<td>Blend Mode</td>
</tr>
<tr>
<td></td>
<td>innerShadow/color</td>
<td>Color</td>
</tr>
<tr>
<td></td>
<td>innerShadow/opacity</td>
<td>Opacity</td>
</tr>
<tr>
<td></td>
<td>innerShadow/useGlobalAngle</td>
<td>Use Global Light</td>
</tr>
<tr>
<td></td>
<td>innerShadow/localLightingAngle</td>
<td>Angle</td>
</tr>
</tbody>
</table>

Continued on next page
<table>
<thead>
<tr>
<th>Inner Shadow</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>innerShadow/distance</td>
<td>Distance</td>
</tr>
<tr>
<td>innerShadow/chokeMatte</td>
<td>Choke</td>
</tr>
<tr>
<td>innerShadow/blur</td>
<td>Size</td>
</tr>
<tr>
<td>innerShadow/noise</td>
<td>Noise</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Outer Glow</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>outerGlow/enabled</td>
<td>Outer Glow</td>
</tr>
<tr>
<td>outerGlow/mode2</td>
<td>Blend Mode</td>
</tr>
<tr>
<td>outerGlow/opacity</td>
<td>Opacity</td>
</tr>
<tr>
<td>outerGlow/noise</td>
<td>Noise</td>
</tr>
<tr>
<td>outerGlow/AEColorChoice</td>
<td>Color Type</td>
</tr>
<tr>
<td>outerGlow/color</td>
<td>Color</td>
</tr>
<tr>
<td>outerGlow/gradient</td>
<td>Colors</td>
</tr>
<tr>
<td>outerGlow/gradientSmoothness</td>
<td>Gradient Smoothness</td>
</tr>
<tr>
<td>outerGlow/glowTechnique</td>
<td>Technique</td>
</tr>
<tr>
<td>outerGlow/chokeMatte</td>
<td>Spread</td>
</tr>
<tr>
<td>outerGlow/blur</td>
<td>Size</td>
</tr>
<tr>
<td>outerGlow/inputRange</td>
<td>Range</td>
</tr>
<tr>
<td>outerGlow/shadingNoise</td>
<td>Jitter</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Inner Glow</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>innerGlow/enabled</td>
<td>Inner Glow</td>
</tr>
<tr>
<td>innerGlow/mode2</td>
<td>Blend Mode</td>
</tr>
<tr>
<td>innerGlow/opacity</td>
<td>Opacity</td>
</tr>
<tr>
<td>innerGlow/noise</td>
<td>Noise</td>
</tr>
<tr>
<td>innerGlow/AEColorChoice</td>
<td>Color Type</td>
</tr>
<tr>
<td>innerGlow/color</td>
<td>Color</td>
</tr>
<tr>
<td>innerGlow/gradient</td>
<td>Colors</td>
</tr>
<tr>
<td>innerGlow/gradientSmoothness</td>
<td>Gradient Smoothness</td>
</tr>
<tr>
<td>innerGlow/glowTechnique</td>
<td>Technique</td>
</tr>
<tr>
<td>innerGlow/innerGlowSource</td>
<td>Source</td>
</tr>
<tr>
<td>innerGlow/chokeMatte</td>
<td>Choke</td>
</tr>
<tr>
<td>innerGlow/blur</td>
<td>Size</td>
</tr>
<tr>
<td>innerGlow/inputRange</td>
<td>Range</td>
</tr>
<tr>
<td>innerGlow/shadingNoise</td>
<td>Jitter</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Bevel/Emboss</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>bevelEmboss/enabled</td>
<td>Bevel and Emboss</td>
</tr>
<tr>
<td>bevelEmboss/bevelStyle</td>
<td>Style</td>
</tr>
<tr>
<td>bevelEmboss/bevelTechnique</td>
<td>Technique</td>
</tr>
<tr>
<td>bevelEmboss/strengthRatio</td>
<td>Depth</td>
</tr>
<tr>
<td>bevelEmboss/bevelDirection</td>
<td>Direction</td>
</tr>
<tr>
<td>bevelEmboss/blur</td>
<td>Size</td>
</tr>
<tr>
<td>bevelEmboss/softness</td>
<td>Soften</td>
</tr>
<tr>
<td>bevelEmboss/useGlobalAngle</td>
<td>Use Global Light</td>
</tr>
<tr>
<td>bevelEmboss/localLightingAngle</td>
<td>Angle</td>
</tr>
<tr>
<td>bevelEmboss/localLightingAltitude</td>
<td>Altitude</td>
</tr>
<tr>
<td>bevelEmboss/highlightMode</td>
<td>Highlight Mode</td>
</tr>
<tr>
<td>bevelEmboss/highlightColor</td>
<td>Highlight Color</td>
</tr>
<tr>
<td>bevelEmboss/highlightOpacity</td>
<td>Highlight Opacity</td>
</tr>
<tr>
<td>bevelEmboss/shadowMode</td>
<td>Shadow Mode</td>
</tr>
<tr>
<td>bevelEmboss/shadowColor</td>
<td>Shadow Color</td>
</tr>
<tr>
<td>bevelEmboss/shadowOpacity</td>
<td>Shadow Opacity</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Satin</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>chromeFX/enabled</td>
<td>Satin</td>
</tr>
</tbody>
</table>

Continued on next page
<table>
<thead>
<tr>
<th>Property</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>chromeFX/mode2</td>
<td>Blend Mode</td>
</tr>
<tr>
<td>chromeFX/color</td>
<td>Color</td>
</tr>
<tr>
<td>chromeFX/opacity</td>
<td>Opacity</td>
</tr>
<tr>
<td>chromeFX/localLightingAngle</td>
<td>Angle</td>
</tr>
<tr>
<td>chromeFX/distance</td>
<td>Distance</td>
</tr>
<tr>
<td>chromeFX/blur</td>
<td>Size</td>
</tr>
<tr>
<td>chromeFX/invert</td>
<td>Invert</td>
</tr>
</tbody>
</table>

**Table 1 – continued from previous page**

<table>
<thead>
<tr>
<th>Property</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>solidFill/enabled</td>
<td>Color Overlay</td>
</tr>
<tr>
<td>solidFill/mode2</td>
<td>Blend Mode</td>
</tr>
<tr>
<td>solidFill/color</td>
<td>Color</td>
</tr>
<tr>
<td>solidFill/opacity</td>
<td>Opacity</td>
</tr>
</tbody>
</table>

**Grad Fill**

<table>
<thead>
<tr>
<th>Property</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>gradientFill/enabled</td>
<td>Gradient Overlay</td>
</tr>
<tr>
<td>gradientFill/mode2</td>
<td>Blend Mode</td>
</tr>
<tr>
<td>gradientFill/opacity</td>
<td>Opacity</td>
</tr>
<tr>
<td>gradientFill/gradient</td>
<td>Colors</td>
</tr>
<tr>
<td>gradientFill/gradientSmoothness</td>
<td>Gradient Smoothness</td>
</tr>
<tr>
<td>gradientFill/angle</td>
<td>Angle</td>
</tr>
<tr>
<td>gradientFill/type</td>
<td>Style</td>
</tr>
<tr>
<td>gradientFill/reverse</td>
<td>Reverse</td>
</tr>
<tr>
<td>gradientFill/align</td>
<td>Align with Layer</td>
</tr>
<tr>
<td>gradientFill/scale</td>
<td>Scale</td>
</tr>
<tr>
<td>gradientFill/offset</td>
<td>Offset</td>
</tr>
</tbody>
</table>

**Pattern**

<table>
<thead>
<tr>
<th>Property</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>patternFill/enabled</td>
<td>Pattern Overlay</td>
</tr>
<tr>
<td>patternFill/mode2</td>
<td>Blend Mode</td>
</tr>
<tr>
<td>patternFill/opacity</td>
<td>Opacity</td>
</tr>
<tr>
<td>patternFill/align</td>
<td>Link with Layer</td>
</tr>
<tr>
<td>patternFill/scale</td>
<td>Scale</td>
</tr>
<tr>
<td>patternFill/phase</td>
<td>Offset</td>
</tr>
</tbody>
</table>

**Stroke**

<table>
<thead>
<tr>
<th>Property</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>frameFX/enabled</td>
<td>Stroke</td>
</tr>
<tr>
<td>frameFX/mode2</td>
<td>Blend Mode</td>
</tr>
<tr>
<td>frameFX/color</td>
<td>Color</td>
</tr>
<tr>
<td>frameFX/size</td>
<td>Size</td>
</tr>
<tr>
<td>frameFX/opacity</td>
<td>Opacity</td>
</tr>
<tr>
<td>frameFX/style</td>
<td>Position</td>
</tr>
</tbody>
</table>
### First-Party Effect Match Names

This list also details effect Bits Per Channel (BPC) and the AE version GPU-acceleration was introduced, if applicable.

<table>
<thead>
<tr>
<th>Category</th>
<th>Match Name</th>
<th>Display Name (EN)</th>
<th>BPC</th>
<th>GPU</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>3D Channel</strong></td>
<td>ADBE AUX CHANNEL EXTRACT</td>
<td>3D Channel Extract</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td></td>
<td>ADBE DEPTH MATTE</td>
<td>Depth Matte</td>
<td>32</td>
<td></td>
</tr>
<tr>
<td></td>
<td>ADBE DEPTH FIELD</td>
<td>Depth of Field</td>
<td>32</td>
<td></td>
</tr>
<tr>
<td></td>
<td>EXtractoR</td>
<td>EXtractoR</td>
<td>32</td>
<td></td>
</tr>
<tr>
<td></td>
<td>ADBE FOG_3D</td>
<td>Fog 3D</td>
<td>32</td>
<td></td>
</tr>
<tr>
<td></td>
<td>ADBE ID MATTE</td>
<td>ID Matte</td>
<td>32</td>
<td></td>
</tr>
<tr>
<td></td>
<td>IDentifier</td>
<td>IDentifier</td>
<td>32</td>
<td></td>
</tr>
<tr>
<td><strong>Audio</strong></td>
<td>ADBE Aud Reverse</td>
<td>Backwards</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>ADBE Aud BT</td>
<td>Bass &amp; Treble</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>ADBE Aud Delay</td>
<td>Delay</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>ADBE Aud_Flange</td>
<td>Flange &amp; Chorus</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>ADBE Aud HiLo</td>
<td>High-Low Pass</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>ADBE Aud Modulator</td>
<td>Modulator</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>ADBE Param EQ</td>
<td>Parametric EQ</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>ADBE Aud Reverb</td>
<td>Reverb</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>ADBE Aud Stereo Mixer</td>
<td>Stereo Mixer</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>ADBE Aud Tone</td>
<td>Tone</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Blur &amp; Sharpen</strong></td>
<td>ADBE Bilateral</td>
<td>Bilateral Blur</td>
<td>32</td>
<td></td>
</tr>
<tr>
<td></td>
<td>ADBE Camera Lens Blur</td>
<td>Camera Lens Blur</td>
<td>32</td>
<td></td>
</tr>
<tr>
<td></td>
<td>ADBE CameraShakeDeblur</td>
<td>Camera-Shake Deblur</td>
<td>32</td>
<td></td>
</tr>
<tr>
<td></td>
<td>CS CrossBlur</td>
<td>CC Cross Blur</td>
<td>32</td>
<td></td>
</tr>
<tr>
<td></td>
<td>CC Radial Blur</td>
<td>CC Radial Blur</td>
<td>32</td>
<td></td>
</tr>
<tr>
<td></td>
<td>CC Radial Fast Blur</td>
<td>CC Radial Fast Blur</td>
<td>16</td>
<td></td>
</tr>
<tr>
<td></td>
<td>CC Vector Blur</td>
<td>CC Vector Blur</td>
<td>16</td>
<td></td>
</tr>
<tr>
<td></td>
<td>ADBE Channel Blur</td>
<td>Channel Blur</td>
<td>32</td>
<td></td>
</tr>
<tr>
<td></td>
<td>ADBE Compound Blur</td>
<td>Compound Blur</td>
<td>32</td>
<td></td>
</tr>
</tbody>
</table>

Continued on next page
Table 1 – continued from previous page

<table>
<thead>
<tr>
<th>Effect Type</th>
<th>Effect Name</th>
<th>Version</th>
<th>Speed</th>
</tr>
</thead>
<tbody>
<tr>
<td>ADBE Motion Blur</td>
<td>Directional Blur</td>
<td>32</td>
<td>15.0</td>
</tr>
<tr>
<td>ADBE Box Blur2</td>
<td>Fast Box Blur</td>
<td>32</td>
<td>14.2</td>
</tr>
<tr>
<td>ADBE Gaussian Blur 2</td>
<td>Gaussian Blur</td>
<td>32</td>
<td>13.8</td>
</tr>
<tr>
<td>ADBE Radial Blur</td>
<td>Radial Blur</td>
<td>32</td>
<td></td>
</tr>
<tr>
<td>ADBE Sharpen</td>
<td>Sharpen</td>
<td>32</td>
<td>13.8</td>
</tr>
<tr>
<td>ADBE Smart Blur</td>
<td>Smart Blur</td>
<td>16</td>
<td></td>
</tr>
<tr>
<td>ADBE Unsharp Mask2</td>
<td>Unsharp Mask</td>
<td>32</td>
<td></td>
</tr>
<tr>
<td>ADBE Gaussian Blur 2</td>
<td>Gaussian Blur</td>
<td>32</td>
<td>13.8</td>
</tr>
<tr>
<td>ADBE Radial Blur</td>
<td>Radial Blur</td>
<td>32</td>
<td></td>
</tr>
<tr>
<td>ADBE Sharpen</td>
<td>Sharpen</td>
<td>32</td>
<td>13.8</td>
</tr>
<tr>
<td>ADBE Smart Blur</td>
<td>Smart Blur</td>
<td>16</td>
<td></td>
</tr>
<tr>
<td>ADBE Unsharp Mask2</td>
<td>Unsharp Mask</td>
<td>32</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Channel</th>
<th>ADBE Arithmetic</th>
<th>Arithmetic</th>
<th>8</th>
</tr>
</thead>
<tbody>
<tr>
<td>ADBE Blend</td>
<td>Blend</td>
<td>16</td>
<td></td>
</tr>
<tr>
<td>ADBE Calculations</td>
<td>Calculations</td>
<td>16</td>
<td></td>
</tr>
<tr>
<td>CC Composite</td>
<td>CC Composite</td>
<td>16</td>
<td></td>
</tr>
<tr>
<td>ADBE Channel Combiner</td>
<td>Channel Combiner</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td>ADBE Compound Arithmetic</td>
<td>Compound Arithmetic</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td>ADBE Invert</td>
<td>Invert</td>
<td>32</td>
<td>14.1</td>
</tr>
<tr>
<td>ADBE Minimax</td>
<td>Minimax</td>
<td>16</td>
<td></td>
</tr>
<tr>
<td>ADBE Remove Color Matting</td>
<td>Remove Color Matting</td>
<td>32</td>
<td></td>
</tr>
<tr>
<td>ADBE Set Channels</td>
<td>Set Channels</td>
<td>16</td>
<td></td>
</tr>
<tr>
<td>ADBE Set Matte3</td>
<td>Set Matte</td>
<td>32</td>
<td></td>
</tr>
<tr>
<td>ADBE Shift Channels</td>
<td>Shift Channels</td>
<td>32</td>
<td></td>
</tr>
<tr>
<td>ADBE Solid Composite</td>
<td>Solid Composite</td>
<td>32</td>
<td></td>
</tr>
</tbody>
</table>

| CINEMA 4D                    | CINEMA 4D Effect                 | CINEWARE   | 32    |

<table>
<thead>
<tr>
<th>Color Correction</th>
<th>ADBE AutoColor</th>
<th>Auto Color</th>
<th>16</th>
</tr>
</thead>
<tbody>
<tr>
<td>ADBE AutoContrast</td>
<td>Auto Contrast</td>
<td>16</td>
<td></td>
</tr>
<tr>
<td>ADBE AutoLevels</td>
<td>Auto Levels</td>
<td>16</td>
<td></td>
</tr>
<tr>
<td>ADBE Black&amp;White</td>
<td>Black &amp; White</td>
<td>16</td>
<td></td>
</tr>
<tr>
<td>ADBE Brightness &amp; Contrast 2</td>
<td>Brightness &amp; Contrast</td>
<td>32</td>
<td>14.1</td>
</tr>
<tr>
<td>ADBE Broadcast Colors</td>
<td>Broadcast Colors</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td>CS Color Neutralizer</td>
<td>CC Color Neutralizer</td>
<td>32</td>
<td></td>
</tr>
<tr>
<td>CC Color Offset</td>
<td>CC Color Offset</td>
<td>16</td>
<td></td>
</tr>
<tr>
<td>CS Kernel</td>
<td>CC Kernel</td>
<td>32</td>
<td></td>
</tr>
<tr>
<td>CC Toner</td>
<td>CC Toner</td>
<td>32</td>
<td></td>
</tr>
<tr>
<td>ADBE Change Color</td>
<td>Change Color</td>
<td>16</td>
<td></td>
</tr>
<tr>
<td>ADBE Change To Color</td>
<td>Change to Color</td>
<td>16</td>
<td></td>
</tr>
<tr>
<td>ADBE CHANNEL MIXER</td>
<td>Channel Mixer</td>
<td>32</td>
<td></td>
</tr>
<tr>
<td>ADBE Color Balance 2</td>
<td>Color Balance</td>
<td>16</td>
<td></td>
</tr>
<tr>
<td>ADBE Color Balance (HLS)</td>
<td>Color Balance (HLS)</td>
<td>16</td>
<td></td>
</tr>
<tr>
<td>ADBE Color Link</td>
<td>Color Link</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td>ADBE Deflicker</td>
<td>Color Stabilizer</td>
<td>16</td>
<td></td>
</tr>
<tr>
<td>APC Colorama</td>
<td>Colorama</td>
<td>16</td>
<td></td>
</tr>
<tr>
<td>ADBE CurvesCustom</td>
<td>Curves</td>
<td>32</td>
<td></td>
</tr>
<tr>
<td>ADBE Equalize</td>
<td>Equalize</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td>ADBE Exposure2</td>
<td>Exposure</td>
<td>32</td>
<td></td>
</tr>
<tr>
<td>ADBE Gamma/Pedestal/Gain2</td>
<td>Gamma/Pedestal/Gain</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td>ADBE HUE SATURATION</td>
<td>Hue/Saturation</td>
<td>32</td>
<td>14.1</td>
</tr>
<tr>
<td>ADBE Leave Color</td>
<td>Leave Color</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td>ADBE Easy Levels2</td>
<td>Levels</td>
<td>32</td>
<td>14.2</td>
</tr>
<tr>
<td>ADBE Pro Levels2</td>
<td>Levels (Individual Controls)</td>
<td>32</td>
<td>14.2</td>
</tr>
<tr>
<td>ADBE Lumetri</td>
<td>Lumetri Color</td>
<td>32</td>
<td>13.8</td>
</tr>
<tr>
<td>ADBE PhotoFilterFS</td>
<td>Photo Filter</td>
<td>32</td>
<td></td>
</tr>
</tbody>
</table>

Continued on next page
<table>
<thead>
<tr>
<th>ADBE PS Arbitrary Map</th>
<th>PS Arbitrary Map</th>
<th>8</th>
</tr>
</thead>
<tbody>
<tr>
<td>ADBE SelectiveColor</td>
<td>Selective Color</td>
<td>16</td>
</tr>
<tr>
<td>ADBE ShadowHighlight</td>
<td>Shadow/Highlight</td>
<td>16</td>
</tr>
<tr>
<td>ADBE Tint</td>
<td>Tint</td>
<td>32 14.1</td>
</tr>
<tr>
<td>ADBE Tritone</td>
<td>Tritone</td>
<td>32</td>
</tr>
<tr>
<td>ADBE Vibrance</td>
<td>Vibrance</td>
<td>16</td>
</tr>
</tbody>
</table>

**Distort**

<table>
<thead>
<tr>
<th>ADBE BEZMESH</th>
<th>Bezier Warp</th>
<th>16</th>
</tr>
</thead>
<tbody>
<tr>
<td>ADBE Bulge</td>
<td>Bulge</td>
<td>16</td>
</tr>
<tr>
<td>CC Bend It</td>
<td>CC Bend It</td>
<td>16</td>
</tr>
<tr>
<td>CC Bender</td>
<td>CC Bender</td>
<td>16</td>
</tr>
<tr>
<td>CC Blobblylize</td>
<td>CC Blobblylize</td>
<td>16</td>
</tr>
<tr>
<td>CC Flo Motion</td>
<td>CC Flo Motion</td>
<td>32</td>
</tr>
<tr>
<td>CC Griddler</td>
<td>CC Griddler</td>
<td>32</td>
</tr>
<tr>
<td>CC Lens</td>
<td>CC Lens</td>
<td>32</td>
</tr>
<tr>
<td>CC Page Turn</td>
<td>CC Page Turn</td>
<td>16</td>
</tr>
<tr>
<td>CC Power Pin</td>
<td>CC Power Pin</td>
<td>32</td>
</tr>
<tr>
<td>CC Ripple Pulse</td>
<td>CC Ripple Pulse</td>
<td>32</td>
</tr>
<tr>
<td>CC Slant</td>
<td>CC Slant</td>
<td>16</td>
</tr>
<tr>
<td>CC Smear</td>
<td>CC Smear</td>
<td>32</td>
</tr>
<tr>
<td>CC Split</td>
<td>CC Split</td>
<td>16</td>
</tr>
<tr>
<td>CC Split 2</td>
<td>CC Split 2</td>
<td>16</td>
</tr>
<tr>
<td>CC Tiler</td>
<td>CC Tiler</td>
<td>32</td>
</tr>
<tr>
<td>ADBE Corner Pin</td>
<td>Corner Pin</td>
<td>32</td>
</tr>
<tr>
<td>ADBE Upscale</td>
<td>Detail-preserving Upscale</td>
<td>32</td>
</tr>
<tr>
<td>ADBE Displacement Map</td>
<td>Displacement Map</td>
<td>32</td>
</tr>
<tr>
<td>ADBE LIQUIFY</td>
<td>Liquify</td>
<td>16</td>
</tr>
<tr>
<td>ADBE Magnify</td>
<td>Magnify</td>
<td>8</td>
</tr>
<tr>
<td>ADBE MESH WARP</td>
<td>Mesh Warp</td>
<td>16</td>
</tr>
<tr>
<td>ADBE Mirror</td>
<td>Mirror</td>
<td>16</td>
</tr>
<tr>
<td>ADBE Offset</td>
<td>Offset</td>
<td>16 14.2</td>
</tr>
<tr>
<td>ADBE Optics Compensation</td>
<td>Optics Compensation</td>
<td>32</td>
</tr>
<tr>
<td>ADBE Polar Coordinates</td>
<td>Polar Coordinates</td>
<td>32</td>
</tr>
<tr>
<td>ADBE RESHAPE</td>
<td>Reshape</td>
<td>16</td>
</tr>
<tr>
<td>ADBE Ripple</td>
<td>Ripple</td>
<td>16</td>
</tr>
<tr>
<td>ADBE Rolling Shutter</td>
<td>Rolling Shutter Repair</td>
<td>32</td>
</tr>
<tr>
<td>ADBE SCHMEAR</td>
<td>Smear</td>
<td>16</td>
</tr>
<tr>
<td>ADBE Spherize</td>
<td>Spherize</td>
<td>16</td>
</tr>
<tr>
<td>ADBE Geometry2</td>
<td>Transform</td>
<td>32 15.0</td>
</tr>
<tr>
<td>ADBE Turbulent Displace</td>
<td>Turbulent Displace</td>
<td>32</td>
</tr>
<tr>
<td>ADBE Twirl</td>
<td>Twirl</td>
<td>32</td>
</tr>
<tr>
<td>ADBE WRFMESH</td>
<td>Warp</td>
<td>16</td>
</tr>
<tr>
<td>ADBE SubspaceStabilizer</td>
<td>Warp Stabilizer VFX</td>
<td>32</td>
</tr>
<tr>
<td>ADBE Wave Warp</td>
<td>Wave Warp</td>
<td>16</td>
</tr>
</tbody>
</table>

**Expression Controls**

<table>
<thead>
<tr>
<th>ADBE Point3D Control</th>
<th>3D Point Control</th>
<th>32</th>
</tr>
</thead>
<tbody>
<tr>
<td>ADBE Angle Control</td>
<td>Angle Control</td>
<td>32</td>
</tr>
<tr>
<td>ADBE Checkbox Control</td>
<td>Checkbox Control</td>
<td>32</td>
</tr>
<tr>
<td>ADBE Color Control</td>
<td>Color Control</td>
<td>32</td>
</tr>
<tr>
<td>ADBE Layer Control</td>
<td>Layer Control</td>
<td>32</td>
</tr>
<tr>
<td>ADBE Point Control</td>
<td>Point Control</td>
<td>32</td>
</tr>
<tr>
<td>ADBE Slider Control</td>
<td>Slider Control</td>
<td>32</td>
</tr>
</tbody>
</table>

Continued on next page
<table>
<thead>
<tr>
<th>Generate</th>
<th>ADBE 4ColorGradient</th>
<th>4-Color Gradient</th>
<th>16</th>
</tr>
</thead>
<tbody>
<tr>
<td>ADBE Lightning 2</td>
<td>Advanced Lightning</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td>ADBE AudSpect</td>
<td>Audio Spectrum</td>
<td>32</td>
<td></td>
</tr>
<tr>
<td>ADBE AudWave</td>
<td>Audio Waveform</td>
<td>32</td>
<td></td>
</tr>
<tr>
<td>ADBE Laser</td>
<td>Beam</td>
<td>32</td>
<td></td>
</tr>
<tr>
<td>CC Glue Gun</td>
<td>CC Glue Gun</td>
<td>32</td>
<td></td>
</tr>
<tr>
<td>CC Light Burst 2.5</td>
<td>CC Light Burst 2.5</td>
<td>32</td>
<td></td>
</tr>
<tr>
<td>CC Light Rays</td>
<td>CC Light Rays</td>
<td>32</td>
<td></td>
</tr>
<tr>
<td>CC Light Sweep</td>
<td>CC Light Sweep</td>
<td>32</td>
<td></td>
</tr>
<tr>
<td>CS Threads</td>
<td>CS Threads</td>
<td>32</td>
<td></td>
</tr>
<tr>
<td>ADBE Cell Pattern</td>
<td>Cell Pattern</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td>ADBE Checkerboard</td>
<td>Checkerboard</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td>ADBE Circle</td>
<td>Circle</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td>ADBE ELLIPSE</td>
<td>Ellipse</td>
<td>32</td>
<td></td>
</tr>
<tr>
<td>ADBE Eyedropper Fill</td>
<td>Eyedropper Fill</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td>ADBE Fill</td>
<td>Fill</td>
<td>32</td>
<td></td>
</tr>
<tr>
<td>ADBE Fractal</td>
<td>Fractal</td>
<td>16</td>
<td></td>
</tr>
<tr>
<td>ADBE Ramp</td>
<td>Gradient Ramp</td>
<td>32</td>
<td>14.2</td>
</tr>
<tr>
<td>ADBE Grid</td>
<td>Grid</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td>ADBE Lens Flare</td>
<td>Lens Flare</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td>ADBE Paint Bucket</td>
<td>Paint Bucket</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td>APC Radio Waves</td>
<td>Radio Waves</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td>ADBE Scribble Fill</td>
<td>Scribble</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td>ADBE Stroke</td>
<td>Stroke</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td>APC Vegas</td>
<td>Vegas</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td>ADBE Write-on</td>
<td>Write-on</td>
<td>8</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Keying</th>
<th>ADBE Spill2</th>
<th>Advanced Spill Suppressor</th>
<th>32</th>
</tr>
</thead>
<tbody>
<tr>
<td>CC Simple Wire Removal</td>
<td>CC Simple Wire Removal</td>
<td>32</td>
<td></td>
</tr>
<tr>
<td>ADBE Color Difference Key</td>
<td>Color Difference Key</td>
<td>16</td>
<td></td>
</tr>
<tr>
<td>ADBE Color Range</td>
<td>Color Range</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td>ADBE Difference Matte2</td>
<td>Difference Matte</td>
<td>16</td>
<td></td>
</tr>
<tr>
<td>ADBE Extract</td>
<td>Extract</td>
<td>16</td>
<td></td>
</tr>
<tr>
<td>ADBE ATG Extract</td>
<td>Inner/Outer Key</td>
<td>16</td>
<td></td>
</tr>
<tr>
<td>ADBE KeyCleaner</td>
<td>Key Cleaner</td>
<td>32</td>
<td></td>
</tr>
<tr>
<td>Keylight 906</td>
<td>Keylight (1.2)</td>
<td>32</td>
<td></td>
</tr>
<tr>
<td>ADBE Linear Color Key2</td>
<td>Linear Color Key</td>
<td>32</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Matte</th>
<th>ADBE Matte Choker</th>
<th>Matte Choker</th>
<th>16</th>
</tr>
</thead>
<tbody>
<tr>
<td>ISL MochaShapeImporter</td>
<td>mocha shape</td>
<td>32</td>
<td></td>
</tr>
<tr>
<td>ADBE RefineRBMatte</td>
<td>Refine Hard Matte</td>
<td>32</td>
<td></td>
</tr>
<tr>
<td>ADBE RefineMatte2</td>
<td>Refine Soft Matte</td>
<td>32</td>
<td></td>
</tr>
<tr>
<td>ADBE Simple Choker</td>
<td>Simple Choker</td>
<td>32</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Noise &amp; Grain</th>
<th>VISINF Grain Implant</th>
<th>Add Grain</th>
<th>16</th>
</tr>
</thead>
<tbody>
<tr>
<td>ADBE Dust &amp; Scratches</td>
<td>Dust &amp; Scratches</td>
<td>16</td>
<td></td>
</tr>
<tr>
<td>ADBE Fractal Noise</td>
<td>Fractal Noise</td>
<td>32</td>
<td>14.2</td>
</tr>
<tr>
<td>VISINF Grain Duplication</td>
<td>Match Grain</td>
<td>16</td>
<td></td>
</tr>
<tr>
<td>ADBE Median</td>
<td>Median</td>
<td>16</td>
<td></td>
</tr>
<tr>
<td>ADBE Noise</td>
<td>Noise</td>
<td>32</td>
<td></td>
</tr>
<tr>
<td>ADBE Noise Alpha2</td>
<td>Noise Alpha</td>
<td>8</td>
<td></td>
</tr>
</tbody>
</table>

Continued on next page
Table 1 – continued from previous page

<table>
<thead>
<tr>
<th>Category</th>
<th>Effect Name</th>
<th>Description</th>
<th>Version</th>
</tr>
</thead>
<tbody>
<tr>
<td>Obsolete</td>
<td>ADBE Basic 3D</td>
<td>Basic 3D</td>
<td>8</td>
</tr>
<tr>
<td></td>
<td>ADBE Basic Text2</td>
<td>Basic Text</td>
<td>8</td>
</tr>
<tr>
<td></td>
<td>ADBE Color Key</td>
<td>Color Key</td>
<td>16</td>
</tr>
<tr>
<td></td>
<td>ADBE Fast Blur</td>
<td>Fast Blur (Legacy)</td>
<td>32</td>
</tr>
<tr>
<td></td>
<td>ADBE Gaussian Blur</td>
<td>Gaussian Blur (Legacy)</td>
<td>32</td>
</tr>
<tr>
<td></td>
<td>ADBE Lightning</td>
<td>Lightning</td>
<td>8</td>
</tr>
<tr>
<td></td>
<td>ADBE Luma Key</td>
<td>Luma Key</td>
<td>16</td>
</tr>
<tr>
<td></td>
<td>ADBE Path Text</td>
<td>Path Text</td>
<td>8</td>
</tr>
<tr>
<td></td>
<td>ADBE Reduce Interlace Flicker</td>
<td>Reduce Interlace Flicker</td>
<td>32</td>
</tr>
<tr>
<td></td>
<td>ADBE Spill Suppressor</td>
<td>Spill Suppressor</td>
<td>32</td>
</tr>
<tr>
<td>Perspective</td>
<td>ADBE 3D Tracker</td>
<td>3D Camera Tracker</td>
<td>32</td>
</tr>
<tr>
<td></td>
<td>ADBE 3D Glasses2</td>
<td>3D Glasses</td>
<td>32</td>
</tr>
<tr>
<td></td>
<td>ADBE Bevel Alpha</td>
<td>Bevel Alpha</td>
<td>16</td>
</tr>
<tr>
<td></td>
<td>ADBE Bevel Edges</td>
<td>Bevel Edges</td>
<td>8</td>
</tr>
<tr>
<td></td>
<td>CC Cylinder</td>
<td>CC Cylinder</td>
<td>16</td>
</tr>
<tr>
<td></td>
<td>CC Environment</td>
<td>CC Environment</td>
<td>32</td>
</tr>
<tr>
<td></td>
<td>CC Sphere</td>
<td>CC Sphere</td>
<td>32</td>
</tr>
<tr>
<td></td>
<td>CC Spotlight</td>
<td>CC Spotlight</td>
<td>16</td>
</tr>
<tr>
<td></td>
<td>ADBE Drop Shadow</td>
<td>Drop Shadow</td>
<td>32</td>
</tr>
<tr>
<td></td>
<td>ADBE Radial Shadow</td>
<td>Radial Shadow</td>
<td>8</td>
</tr>
<tr>
<td>Simulation</td>
<td>APC CardDanceCam</td>
<td>Card Dance</td>
<td>8</td>
</tr>
<tr>
<td></td>
<td>APC Caustics</td>
<td>Caustics</td>
<td>8</td>
</tr>
<tr>
<td></td>
<td>CC Ball Action</td>
<td>CC Ball Action</td>
<td>16</td>
</tr>
<tr>
<td></td>
<td>CC Bubbles</td>
<td>CC Bubbles</td>
<td>32</td>
</tr>
<tr>
<td></td>
<td>CC Drizzle</td>
<td>CC Drizzle</td>
<td>32</td>
</tr>
<tr>
<td></td>
<td>CC Hair</td>
<td>CC Hair</td>
<td>16</td>
</tr>
<tr>
<td></td>
<td>CC Mr. Mercury</td>
<td>CC Mr. Mercury</td>
<td>32</td>
</tr>
<tr>
<td></td>
<td>CC Particle Systems II</td>
<td>CC Particle Systems II</td>
<td>32</td>
</tr>
<tr>
<td></td>
<td>CC Particle World</td>
<td>CC Particle World</td>
<td>16</td>
</tr>
<tr>
<td></td>
<td>CC Pixel Polly</td>
<td>CC Pixel Polly</td>
<td>16</td>
</tr>
<tr>
<td></td>
<td>CS Rainfall</td>
<td>CS Rainfall</td>
<td>32</td>
</tr>
<tr>
<td></td>
<td>CC Scatterize</td>
<td>CC Scatterize</td>
<td>16</td>
</tr>
<tr>
<td></td>
<td>CSSnowfall</td>
<td>CC Snowfall</td>
<td>32</td>
</tr>
<tr>
<td></td>
<td>CC Star Burst</td>
<td>CC Star Burst</td>
<td>16</td>
</tr>
<tr>
<td></td>
<td>APC Foam</td>
<td>Foam</td>
<td>8</td>
</tr>
<tr>
<td></td>
<td>ADBE Playgnd</td>
<td>Particle Playground</td>
<td>8</td>
</tr>
<tr>
<td></td>
<td>APC Shatter</td>
<td>Shatter</td>
<td>8</td>
</tr>
<tr>
<td></td>
<td>APC Wave World</td>
<td>Wave World</td>
<td>8</td>
</tr>
<tr>
<td>Stylize</td>
<td>ADBE Brush Strokes</td>
<td>Brush Strokes</td>
<td>8</td>
</tr>
<tr>
<td></td>
<td>ADBE Cartoonify</td>
<td>Cartoon</td>
<td>32</td>
</tr>
<tr>
<td></td>
<td>CS BlockLoad</td>
<td>CC Block Load</td>
<td>32</td>
</tr>
<tr>
<td></td>
<td>CC Burn Film</td>
<td>CC Burn Film</td>
<td>32</td>
</tr>
<tr>
<td></td>
<td>CC Glass</td>
<td>CC Glass</td>
<td>16</td>
</tr>
<tr>
<td></td>
<td>CS HexTile</td>
<td>CC HexTile</td>
<td>32</td>
</tr>
</tbody>
</table>

Continued on next page
<table>
<thead>
<tr>
<th>Effect Name</th>
<th>Type</th>
<th>Duration</th>
</tr>
</thead>
<tbody>
<tr>
<td>CC Kaleida</td>
<td>CC Kaleida</td>
<td>32</td>
</tr>
<tr>
<td>CC Mr. Smoothie</td>
<td>CC Mr. Smoothie</td>
<td>16</td>
</tr>
<tr>
<td>CC Plastic</td>
<td>CC Plastic</td>
<td>16</td>
</tr>
<tr>
<td>CC RepeTile</td>
<td>CC RepeTile</td>
<td>32</td>
</tr>
<tr>
<td>CC Threshold</td>
<td>CC Threshold</td>
<td>32</td>
</tr>
<tr>
<td>CC Threshold RGB</td>
<td>CC Threshold RGB</td>
<td>32</td>
</tr>
<tr>
<td>CS Vignette</td>
<td>CC Vignette</td>
<td>32</td>
</tr>
<tr>
<td>ADBE Color Emboss</td>
<td>Color Emboss</td>
<td>16</td>
</tr>
<tr>
<td>ADBE Emboss</td>
<td>Emboss</td>
<td>16</td>
</tr>
<tr>
<td>ADBE Find Edges</td>
<td>Find Edges</td>
<td>8</td>
</tr>
<tr>
<td>ADBE Glo2</td>
<td>Glow</td>
<td>32</td>
</tr>
<tr>
<td>ADBE Mosaic</td>
<td>Mosaic</td>
<td>16</td>
</tr>
<tr>
<td>ADBE Tile</td>
<td>Motion Tile</td>
<td>8</td>
</tr>
<tr>
<td>ADBE Posterize</td>
<td>Posterize</td>
<td>32</td>
</tr>
<tr>
<td>ADBE Roughen Edges</td>
<td>Roughen Edges</td>
<td>8</td>
</tr>
<tr>
<td>ADBE Scatter</td>
<td>Scatter</td>
<td>16</td>
</tr>
<tr>
<td>ADBE Strobe</td>
<td>Strobe Light</td>
<td>8</td>
</tr>
<tr>
<td>ADBE Texturize</td>
<td>Texturize</td>
<td>8</td>
</tr>
<tr>
<td>ADBE Threshold2</td>
<td>Threshold</td>
<td>32</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Synthetic Aperture</th>
<th>SYNTAP CF Color Finesse 2</th>
<th>SA Color Finesse 3</th>
<th>32</th>
</tr>
</thead>
<tbody>
<tr>
<td>Text</td>
<td>ADBE Numbers2</td>
<td>Numbers</td>
<td>8</td>
</tr>
<tr>
<td></td>
<td>ADBE Timecode</td>
<td>Timecode</td>
<td>8</td>
</tr>
<tr>
<td>Time</td>
<td>CC Force Motion Blur</td>
<td>CC Force Motion Blur</td>
<td>32</td>
</tr>
<tr>
<td></td>
<td>CC Wide Time</td>
<td>CC Wide Time</td>
<td>32</td>
</tr>
<tr>
<td></td>
<td>ADBE Echo</td>
<td>Echo</td>
<td>32</td>
</tr>
<tr>
<td></td>
<td>ADBE OFMotionBlur</td>
<td>Pixel Motion Blur</td>
<td>32</td>
</tr>
<tr>
<td></td>
<td>ADBE Posterize Time</td>
<td>Posterize Time</td>
<td>32</td>
</tr>
<tr>
<td></td>
<td>ADBE Difference</td>
<td>Time Difference</td>
<td>8</td>
</tr>
<tr>
<td></td>
<td>ADBE Time Displacement</td>
<td>Time Displacement</td>
<td>16</td>
</tr>
<tr>
<td></td>
<td>ADBE Timewarp</td>
<td>Timewarp</td>
<td>32</td>
</tr>
</tbody>
</table>

| Transition               | Block Dissolve            | Block Dissolve    | 16       |
|                          | APC CardWipeCam           | Card Wipe         | 8        |
|                          | CC Glass Wipe            | CC Glass Wipe    | 16       |
|                          | CC Grid Wipe             | CC Grid Wipe     | 32       |
|                          | CC Image Wipe            | CC Image Wipe    | 16       |
|                          | CC Jaws                  | CC Jaws          | 32       |
|                          | CC Light Wipe            | CC Light Wipe    | 16       |
|                          | CS LineSweep             | CC Line Sweep    | 32       |
|                          | CC Radial ScaleWipe      | CC Radial ScaleWipe | 16       |
|                          | CC Scale Wipe            | CC Scale Wipe    | 32       |
|                          | CC Twister               | CC Twister       | 16       |
|                          | CC WarpoMatic            | CC WarpoMatic    | 16       |
|                          | ADBE Gradient Wipe       | Gradient Wipe    | 16       |
|                          | ADBE IRIS_WIPE           | Iris Wipe        | 32       |
|                          | ADBE Linear Wipe         | Linear Wipe      | 32       |
|                          | ADBE Radial Wipe         | Radial Wipe      | 32       |
|                          | ADBE Venetian Blinds     | Venetian Blinds  | 32       |

Continued on next page
<table>
<thead>
<tr>
<th>Utility</th>
<th>Description</th>
<th>32</th>
</tr>
</thead>
<tbody>
<tr>
<td>ADBE Apply Color LUT2</td>
<td>Apply Color LUT</td>
<td>32</td>
</tr>
<tr>
<td>CC Overbrights</td>
<td>CC Overbrights</td>
<td>32</td>
</tr>
<tr>
<td>ADBE Cineon Converter2</td>
<td>Cineon Converter</td>
<td>32</td>
</tr>
<tr>
<td>ADBE ProfileToProfile</td>
<td>Color Profile Converter</td>
<td>32</td>
</tr>
<tr>
<td>ADBE GROW BOUNDS</td>
<td>Grow Bounds</td>
<td>32</td>
</tr>
<tr>
<td>ADBE Compander</td>
<td>HDR Compander</td>
<td>32</td>
</tr>
<tr>
<td>ADBE HDR ToneMap</td>
<td>HDR Highlight Compression</td>
<td>32</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><em>Obsolete</em></th>
<th>Description</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>ADBE Paint</td>
<td>Paint</td>
<td></td>
</tr>
<tr>
<td>ADBE Samurai1</td>
<td>Roto Brush &amp; Refine Edge</td>
<td></td>
</tr>
<tr>
<td>ADBE FreePin3</td>
<td>Puppet</td>
<td></td>
</tr>
<tr>
<td>ADBE RefineMatte</td>
<td>Refine Matte</td>
<td></td>
</tr>
<tr>
<td>ADBE 3D Glasses</td>
<td>3D Glasses (Obsolete)</td>
<td></td>
</tr>
<tr>
<td>ADBE Alpha Levels2</td>
<td>Alpha Levels</td>
<td></td>
</tr>
<tr>
<td>ADBE Alpha Levels3</td>
<td>Alpha Levels</td>
<td></td>
</tr>
<tr>
<td>ADBE Apply Color LUT</td>
<td>Apply Color LUT</td>
<td></td>
</tr>
<tr>
<td>ADBE Brightness &amp; Contrast</td>
<td>Brightness &amp; Contrast</td>
<td></td>
</tr>
<tr>
<td>ADBE Box Blur</td>
<td>Box Blur</td>
<td></td>
</tr>
<tr>
<td>ADBE Cineon Converter</td>
<td>Cineon Converter</td>
<td></td>
</tr>
<tr>
<td>ADBE Color Balance</td>
<td>Color Balance</td>
<td></td>
</tr>
<tr>
<td>CC PS Classic</td>
<td>CC PS Classic (obsolete)</td>
<td></td>
</tr>
<tr>
<td>CC PS LE Classic</td>
<td>CC PS LE Classic (obsolete)</td>
<td></td>
</tr>
<tr>
<td>CC Rain</td>
<td>CC Rain</td>
<td></td>
</tr>
<tr>
<td>CC Snow</td>
<td>CC Snow</td>
<td></td>
</tr>
<tr>
<td>CC Time Blend</td>
<td>CC Time Blend</td>
<td></td>
</tr>
<tr>
<td>CC Time Blend FX</td>
<td>CC Time Blend FX</td>
<td></td>
</tr>
<tr>
<td>ADBE Exposure</td>
<td>Exposure</td>
<td></td>
</tr>
<tr>
<td>ADBE Easy Levels</td>
<td>Levels</td>
<td></td>
</tr>
<tr>
<td>ADBE Pro Levels</td>
<td>Levels (Individual Controls)</td>
<td></td>
</tr>
<tr>
<td>ADBE Noise Alpha</td>
<td>Noise Alpha</td>
<td></td>
</tr>
<tr>
<td>ADBE Noise HLS</td>
<td>Noise HLS</td>
<td></td>
</tr>
<tr>
<td>ADBE Noise HLS Auto</td>
<td>Noise HLS Auto</td>
<td></td>
</tr>
<tr>
<td>ADBE PSL Bevel Emboss</td>
<td>Photoshop Bevel And Emboss</td>
<td></td>
</tr>
<tr>
<td>ADBE PSL Drop Shadow</td>
<td>Photoshop Drop Shadow</td>
<td></td>
</tr>
<tr>
<td>ADBE PSL Inner Glow</td>
<td>Photoshop Inner Glow</td>
<td></td>
</tr>
<tr>
<td>ADBE PSL Inner Shadow</td>
<td>Photoshop Inner Shadow</td>
<td></td>
</tr>
<tr>
<td>ADBE PSL Outer Glow</td>
<td>Photoshop Outer Glow</td>
<td></td>
</tr>
<tr>
<td>ADBE PSL Solid Fill</td>
<td>Photoshop Solid Fill</td>
<td></td>
</tr>
<tr>
<td>ADBE Photo Filter</td>
<td>Photo Filter</td>
<td></td>
</tr>
<tr>
<td>ADBE Set Matte2</td>
<td>Set Matte</td>
<td></td>
</tr>
<tr>
<td>ADBE Three-Way Color Corrector</td>
<td>Three-Way Color Corrector</td>
<td></td>
</tr>
<tr>
<td>ADBE Threshold</td>
<td>Threshold</td>
<td></td>
</tr>
<tr>
<td>ADBE Geometry</td>
<td>Transform</td>
<td></td>
</tr>
<tr>
<td>ADBE Unsharp Mask</td>
<td>Unsharp Mask</td>
<td></td>
</tr>
<tr>
<td>ADBE Vector Paint</td>
<td>Vector Paint</td>
<td></td>
</tr>
</tbody>
</table>