

SMEDGE

Using Smedge with After Effects

Smedge 2010

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Introduction

After Effects from version 6.0 onward has included the capability to be controlled by a command line. This allows it to be controlled by automated render farm management software, like Smedge.

These instructions are designed to get you up and running with After Effects with Smedge. They are designed for the current version of Smedge. Earlier versions work similarly but have subtle differences in the GUI operations described below. These instructions have been tested with After Effects 7, CS3 and CS4, and should work with any version of After effects from 6.0 onwards.

For Smedge installation instructions, see the *Installation Guide* included in the Smedge 3 distribution.

We recommend configuring a file server to use for storing your projects and associated image and render files. Configuring a file server is beyond the scope of this manual. There are many resources on the Internet for setting up file servers, or you can consult an IT professional or hardware reseller to configure your file server and networking optimally for your needs and budget.

Configuring SmedgeEngine to render After Effects

Follow these steps to prepare your Smedge render farm for controlling After Effects renders:

1. Set up and license After Effects on each machine.
 - You can use either a Full Installation or a Render Engine installation
 - Make sure that any plug-ins and fonts that you require have also been installed and licensed on every render engine.
2. Set up Smedge on each machine. Generally you will use the “Engine” installation type.
3. Open SmedgeGui and select all of your Engines
4. Select **Engine > Configure Engine Settings...**
5. Make sure that **AfterEffects** is checked in the list of **Enabled Products**.
6. Click on the **Product Options** tab. (This is the tab that is opened by the menu command **Engine > Configure Product Options...**)
7. Select **AfterEffects** from the list of **Products**.
8. Set the **Path to the Executable**, if you have not set the aerender program file to be in the PATH as part of your After Effects installation.
9. If you want to have Smedge try to remap network drives on Windows, then you can configure that in the **Resources** field, and optionally supply a **Username** and **Password** to access the file server. Note that the account that is used to run the SmedgeEngine process must have permission to map network drives for this to work. See the Smedge *Installation Guide* for more information.
 - An alternative to using mapped network drives on Windows is to use UNC paths. UNC paths do not require any additional permission to be used on the local machine. You can browse for files with UNC paths by browsing through “My Network Places”.
10. If you want to configure Pools, click on the **Pools** tab. (This is the tab that is opened by the menu command **Engine > Configure Pools...**)
 - How Pools work:

Every Engine can belong to zero or more Pools. The Engine orders these pools. Work from Jobs assigned to a Pool that is a higher priority for this engine will get distributed to this engine before work from any Jobs assigned to Pools that are lower in the priority list.

Pool distribution is done before priority distribution. This means that a Job with a higher **Priority** may not actually get priority on this machine if that Job is assigned to a **Pool** that is a lower priority for this engine. This is useful to give different projects priority on machines, so that every project gets some workers.

11. Click **Apply and Close** to submit the changes to the system.

Preparing your After Effects Project for Rendering

Create your AE Project. Queue all of the renders you want to queue, and set up all of the queued render settings normally.

- Make sure to only render image file sequences when rendering on a network. Rendering movie files will not work correctly. Also, make sure to check the **Use Comp Frame Number** check box in the Output Module Settings.
- Make sure that the source and destination image paths in your project are capable of being accessed by the render engines. Paths relative to the local hard drive may have unexpected results.
- If you have checked the **Skip Existing Frames** check box in the Render Settings dialog, this option cannot be overridden at render time from the command line. This means that your render will not overwrite any previously rendered image files in the final render location when you start the job. See the [Alternate Manual Method](#) for how you can use this as part of your work flow.
- If you have checked the **Use Storage Overflow** in the Render Settings dialog, After Effects may report successful renders even when it fails, for example from a full disk. We generally recommend leaving this unchecked.
- Save the AE Project in a path that can be accessed by the render engines. We recommend using a file server for storing your projects and the rendered images. Make sure that every Engine can access the file server in the same manner.
- Smedge does not copy either the After Effects project or any of the source images/clips. All files must be accessible through the same path from every Engine.
- Note that using movie files as source images may slow down your rendering, depending on how large the movie file is, and what format it is. In general, we recommend using image sequences for source clips, because only the frames actually needed will be loaded, which can speed up rendering.

Automatic Submission

Be sure to have set up your After Effects project as described in [Preparing your After Effects Project for Rendering](#).

Use the **smedge_render_queue.jsx** script to automatically submit every queued render in your After Effects project as a new Job in Smedge. This script is located in the Utilities folder of the Smedge distribution. You can execute the script from the After Effects interface by selecting **File > Scripts > Run Script File....**

The script needs to have the location to the **Submit** command line shell application set in order to work. Be sure to edit the script to point to where Submit is installed on your system before you use it for the first time. You can edit the script by selecting **File > Scripts > Open Script Editor** in the After Effects interface. You can then use the Adobe Script Editor to modify the file as you need.

The script uses hard coded values or default values for Smedge Job settings. You can customize this behavior by editing the script to use different values, or you can expand the script to include a UI to set these values when it is run. See the documentation inside the script file for more information.

Each queued render will be submitted as a separate Job. This script essentially automates the process described in [Manual Submission](#) for each queued render in the project.

Manual Submission

Be sure to have set up your After Effects project as described in [Preparing your After Effects Project for Rendering](#).

1. In SmedgeGui, select **Job > New Job**
2. Select **After Effects** as the **Product**.
3. In the *Type Specific Parameters* section, set the **Project File**. You can use the browse button to find it.
 - When you select the project file, Smedge automatically generates a job name with the project filename. This will overwrite anything you may have previously typed into the **Name** field. You can disable this automatic detection in the SmedgeGui Options dialog.
 - Remember to browse to the network location, not the location on a local hard drive.
4. Enter the frame range of the comp in the **Range** field.
5. Set the number of frames that each render engine will render at one time in the **Packet Size** field.
6. Set the name of the comp you want to render in the **Comp Name** field. You must create a separate Smedge Job for every comp in a project. Smedge's Find and Replace system makes this easy. See below.
 - When you change the comp name, Smedge automatically generates a job name with the project file and the comp name together. This will overwrite anything you may have previously typed into the **Name** field. You can disable this automatic detection in the SmedgeGui Options dialog.
 - If you do not type the comp name, After Effects will ignore the frame range and packet size parameters that Smedge supplies. Instead, it will try to render every frame from every comp in the project's render queue. This may cause excessive re-rendering and slow operation. It is possible to use Smedge to render without supplying the comp name in an efficient manner. See the [Alternate Manual Method](#) below.
7. Adjust any of the settings in the *Basic Job Info* area, if you wish. You can adjust the details of how After Effects will operate with the **Extra Parameter** field, if you wish, but this is not recommended unless you know how the aerender program operates. Leave the other tabs in the Submit Job window in their default state unless you have a specific reason to adjust them, or are instructed to by Überware technical support.
 - Some *Advanced Parameters* that may come in handy:

Stagger Start is useful if your network is slow and you have large project files. This will have Smedge automatically stagger the actual render start in order to ease network traffic

Job Usage Limit will allow you to limit the job from taking up all available nodes. For instance, if you have a long render that is a low priority, set it to use only 2 machines at a time, leaving the other machines available for other more pressing work that may come up. You can accomplish more sophisticated queuing with Pools.

Overtime Kill Ratio if you have a machine that seems to hang sometimes, this will catch it and restart the work if it goes over this many times the average work time for the job. If you have a project that has frame render times that vary widely, or if you have a wide variety of speed machines in your network, you may need to increase this number.

- What *Event Commands* do

You can attach a command line that will execute at specific points during the Smedge work processing, on both the Engine and the Master. These command lines can use parameter values from the Job or Work being processed, and substitute those values into the command line when it is executed. This is useful if you want to save logs of your network usage or work operations, or can be used to perform pre- or post-processing of your jobs.

- What the *Custom Pool* does

You can single out machines here that will be included or excluded from the Job. Note that if you are using the “Whole System” feature (which is on by default) and have selected “Whole System” as the Pool for the job all machines will automatically be included for work, so anything selected in the *Include Engines* list will be ignored. You may find this tab useful if you have a machine that is crashing with a specific Project. Pools provide more sophisticated control over distribution.

If your AE Project has only 1 comp to render, you are done. Click **Submit and Close** to submit the Job to Smedge.

If you want to submit other comps from the same project file, click the **Submit Copy** button to enter the Job as it is shown. Now you can adjust any settings you need for the next comp to render from this project.

If you have more than one setting that is changing in the same manner, you can use the Find and Replace feature by clicking the **Replace** button. You can then put in the text you want find, and what you want to replace it with. Smedge will then perform the replacement in every field on every tab. Click **Submit Copy** again to submit the second job, and repeat for every comp.

Alternatively, you can click the **Copy** button to open up a second Submit Job window with all the same settings. Adjust this dialog, and press **Copy** as many times as needed, then click **Submit and Close** on each one.

New Job: sc15_EntTag_v02: FINAL COMP

Basic Info | Render Overrides | Advanced Info | Event Commands | Custom Pool

Type: AfterEffects

Basic Job Info

Name: sc15_EntTag_v02: FINAL COMP

Priority: 50

Paused: ☐

Processes: ☒ One Per Engine ☐ One Per CPU ☐ Custom CPUs

Pool: Whole System

Wait for: None

Note:

Type Specific Parameters

Project File: j:\Projects\Lincoln\sc15_EndTag_v02.afx

Range To Process: 1-360

Packet Size: 25

Comp Name: FINAL COMP

The number of items to send to each Engine at a time

Submit and Close
Submit
Submit Copy
Cancel
Repeat...
Load...
Save...
Copy
Replace...
Reset to Default
Save as Default

A sample Submit Job window for submitting a comp from an After Effects project to Smedge. This will render a 360 frame comp named "FINAL COMP" in packets of 25 frames at a time on each Engine.

Alternate Manual Method

As noted in Step 6 of the [Manual Submission](#) instructions, leaving the comp name field blank will cause After Effects to render every frame from every render in the project's render queue. If you are trying to use packet style rendering like the way that most 3D renderers work, you must set the comp name. However, it is possible to efficiently utilize a render farm without supplying the comp name. This can make submitting AE projects to Smedge much simpler, because you can just submit a single job for the whole project.

This method works well if your Engines will be used only for rendering After Effects. If you are also rendering other products, this method may not work as efficiently, but it will not massively over-render your project. Instead, it may be possible for a job to be fully rendered before Smedge is able to determine that it is complete.

1. Be sure to have set up your After Effects project as described in [Preparing your After Effects Project for Rendering](#).
 - Make sure to check the **Skip Existing Frames** check box in the Render Settings dialog box for each queued render.
2. Follow Steps 1 through 3 of the [Manual Submission](#) instructions.
3. For the **Range**, enter a range from 1 through the number of machines you want to work on this render at one time.
 - For example, if you have a farm of 8 machines, you may want to use the range “1-8” so that all 8 machines will work on every job at the same time.
4. For the **Packet Size** enter 1.
5. Leave the **Comp Name** blank.
6. Make any other adjustments to the Job that you want. See the Step 7 of the [Manual Submission](#) instructions for more details.

You only need to submit a single Smedge Job for every After Effects project. As soon as a machine starts working on the project, it will just start rendering from the beginning. It will skip over any existing frame files. Because it creates a placeholder file when it starts rendering, the next machine will think the frame is finished, and skip to the next frame while the first machine works on that first frame.

Smedge will assign 1 unit of the 8 total units from the **Range** parameter to each Engine. If nothing is currently running on the farm, all Engines will start at more or less the same time, and will evenly divide the frames between them automatically, so they should also all finish at more or less the same time.

Note that Smedge will not consider the Job as finished until all 8 workers have successfully finished from it. If one of your machines is offline, then the 7 remaining machines will have finished rendering every frame before the 8th packet could be sent to work. One of the

Engines would then pick up this 8th worker, open the project, and check every frame from every queued render. This may not be a long process, but during this period, this machine will be unable to do any other more useful work, and the Job will not be reported as finished until it has finished checking the frames, even though every frame is already rendered.

That is why it is important **not** to use the actual frame range you want to render when you are using this technique. Using the frame range could lead to a whole lot of wasted time as each machine checked the rendered frames over and over. Think of the “range” as the “range of machines to utilize” instead.

Besides the obvious advantage of not having to submit a Job for every comp you have queued to render, another advantage of this method is that each queued render can be a different frame count. Because each worker will try to render every frame of every queued render, the individual render settings are irrelevant to Smedge.

Note that because this method uses the **Skip Existing Frames** functionality of After Effects, you cannot simply re-submit the Job in Smedge if you want to render again. You need to either move or delete the files created by the last render of the project, or update either the project or the Job parameters to save the files into a new location.

New Job: sc15_EntTag_v02

Basic Info | Render Overrides | Advanced Info | Event Commands | Custom Pool

Type: AfterEffects

Basic Job Info

Name: sc15_EntTag_v02

Priority: 50

Paused: ☐

Processes: ☒ One Per Engine ☐ One Per CPU ☐ Custom CPUs

Pool: Whole System

Wait for: None

Note:

Type Specific Parameters

Project File: j:\Projects\Lincoln\sc15_EndTag_v02.afx

Range To Process: 1-8

Packet Size: 1

Comp Name:

The range of items to process. Can use both '-' and ',' in combination to create a list of numbers.

Buttons: Submit and Close, Submit, Submit Copy, Cancel, Repeat..., Load..., Save..., Copy, Replace..., Reset to Default, Save as Default

A sample Submit Job window for using 8 Engines to render every frame of every comp queued to render in an After Effects project. Note that the **Range to Process** is unrelated to the frame range of the comp, and is instead related to the number of Engines to use for render. Each comp queued to render in the project could even have a different length.

Optional SmedgeGui Configuration

Smedge can automatically detect the filenames of the image files rendered from After Effects. If you have an image sequence viewing program installed on your workstation, you can configure SmedgeGui to use it to view the images and image sequences rendered by After Effects Jobs.

- Select **System > SmedgeGui Options...**
- In the *Product Options* area, select “AfterEffects” in the **Product** selector.
- You can configure the command line to start the image viewer for both single frames and for sequences. Smedge uses a variable substitution system to access the Job parameters. See the Parameters chapter in the Administrator Manual for more information on Parameters.

If you use Autodesk Maya, and want to use fcheck, the settings can be copied from the Maya Product, which is configured to use fcheck for both single frames and sequences. If you use another viewer program, you can customize how Smedge will access it by looking at that program’s command line interface.

For single frame viewing, you use the parameter string `$(Note.Enquote)`.

For sequence viewing, you can use the parameter name `$(SequenceName.Enquote)` if you need Smedge to generate a sequence formatting string for the image viewer. The **Sequence Format Specifier** is the string that is substituted for the frame numbers, and the you can specify if the format specifier must be repeated for zero padding by using the **Repeat Format Specifier** option.

To get the frame range of the sequence, use the `$(Range)` parameter to get the range formatted as *start-end*, or you can access the start and end values individually by using the appropriate command version: `$(Range.Start)` or `$(Range.End)`

- Press **OK**.

When your Jobs render, Smedge can automatically detect the image filenames as they are created. It uses this information to test that the frames are rendering completely, but you can also now use the commands to view the frame or the frame sequence available in the Job and Work menus.