

ArcGIS Export to Circuitscape Instructions



This tool will export ArcGIS vector and raster data into ASCII rasters, suitable for analysis in Circuitscape (see <http://www.circuitscape.org>). Circuitscape requires data in ASCII raster format, with identical cell sizes and extents, and with all datasets in the same spatial reference. This tool will reproject and resize all rasters to match a template raster, and export all ASCII rasters to a specified directory.

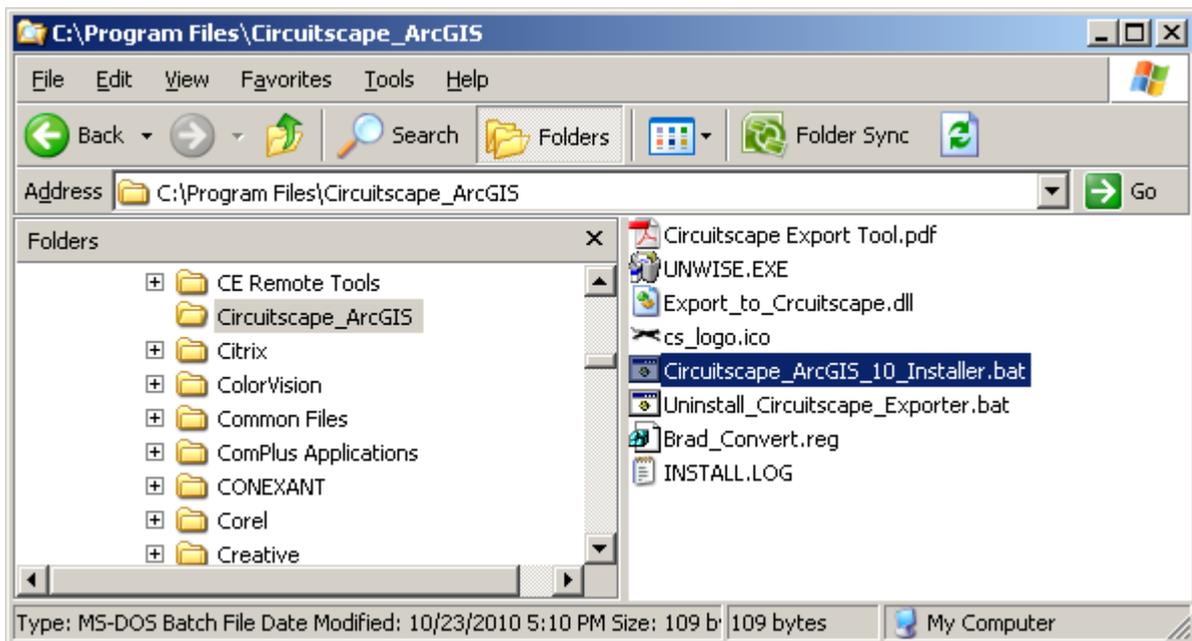
Optionally you may choose to export only those portions of a raster that lie within polygons of a polygon layer. This may be the case if you wish to analyze connectivity within a particular corridor polygon.

Installing the tool in ArcGIS 9.x:

- 1) Make sure ArcGIS is closed.
- 2) Install the tool by running the file “Export_to_Circuitscape.EXE”.
- 3) Start ArcMap.

Installing the tool in ArcGIS 10.0:

- 1) Make sure ArcGIS is closed.
- 2) Install the tool on your hard drive by running the file “Export_to_Circuitscape_10.EXE”. This installation routine will install the DLL and several ancillary files on your hard drive, but will **not** register the tool with ArcGIS.
- 3) Use Windows Explorer to open your installation folder. If you used the default values, then this folder will be located at “Program Files\Circuitscape_ArcGIS\”. This folder will also include some additional files and this manual.



- 4) **For Windows XP:** Double-click the file “Circuitscape_ArcGIS_10_Installer.bat” to register the tool with ArcGIS 10.0.

For Windows 7/Vista: Right-click the file “Circuitscape_ArcGIS_10_Installer.bat” and then click “Run as Administrator” to register the tool with ArcGIS 10.0.

If the registration is successful, then you should see a “Registration Succeeded” notice.



Note: For the concerned or curious, the batch file *Circuitscape_ArcGIS_10_Installer.bat* contains the following single line of text:

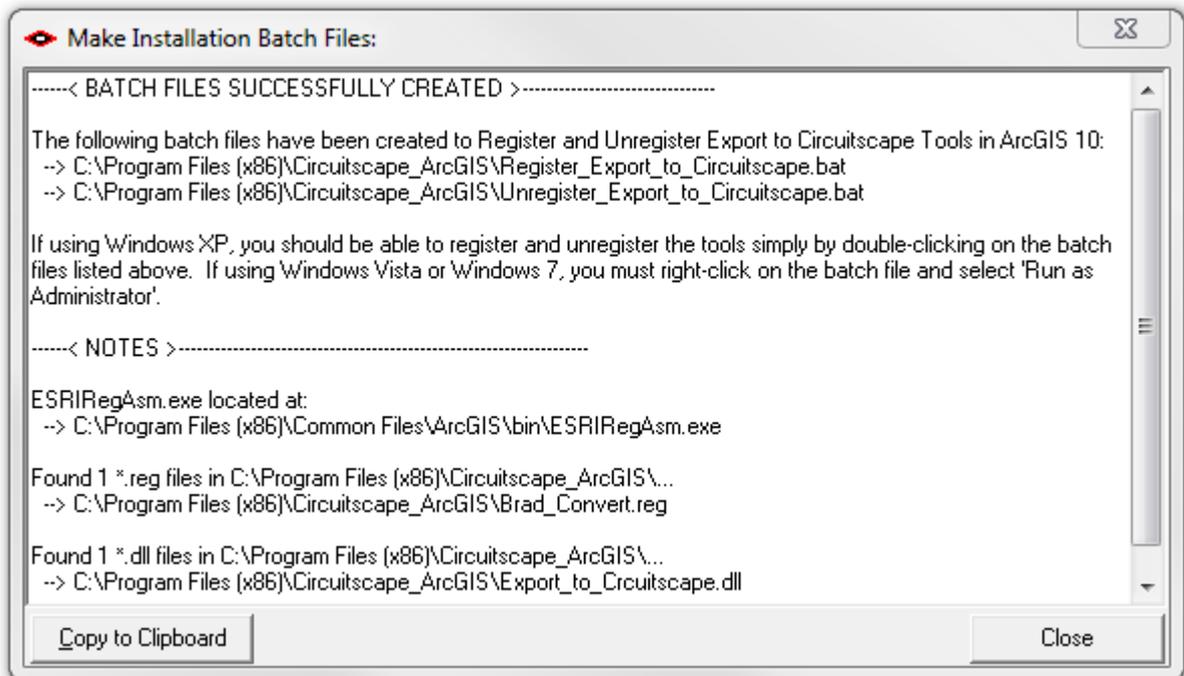
```
"%CommonProgramFiles%\ArcGIS\bin\ESRIRegAsm.exe" /p:Desktop "Export_to_Crcuitscape.dll"  
/f:"Brad_Convert.reg"
```

It directs the ESRI installer *ESRIRegAsm* to register the extension DLL *Export_to_Crcuitscape.dll* within ArcGIS, using GUID and Class ID values from the registry file *Brad_Convert.reg* (also located in your installation directory). Both *Circuitscape_ArcGIS_10_Installer.bat* and *Brad_Convert.reg* may be opened and viewed using standard text editors such as Notepad or WordPad.

- 5) **Alternative Method if you do not get the “Registration Succeeded” message:** If the method above does not work, the reason is probably due to the “%CommonProgramFiles” environmental variable pointing to the wrong location, and/or Windows Vista or Windows 7 Security settings. The fix is to use a batch file that includes the full pathnames to “ESRIRegAsm.exe” and to the extension DLL and REG files. You may edit the BAT file yourself, or you may use the tool **Make_Batch_Files.exe** (located in your installation folder) to create new registration and unregistration batch files that are properly formatted to your system.

If using Windows XP: Simply double-click on the file **Make_Batch_Files.exe** to create the new batch files.

If using Windows Vista or Windows 7: Right-click on the file **Make_Batch_Files.exe** and click “Run as Administrator” to create the new batch files.

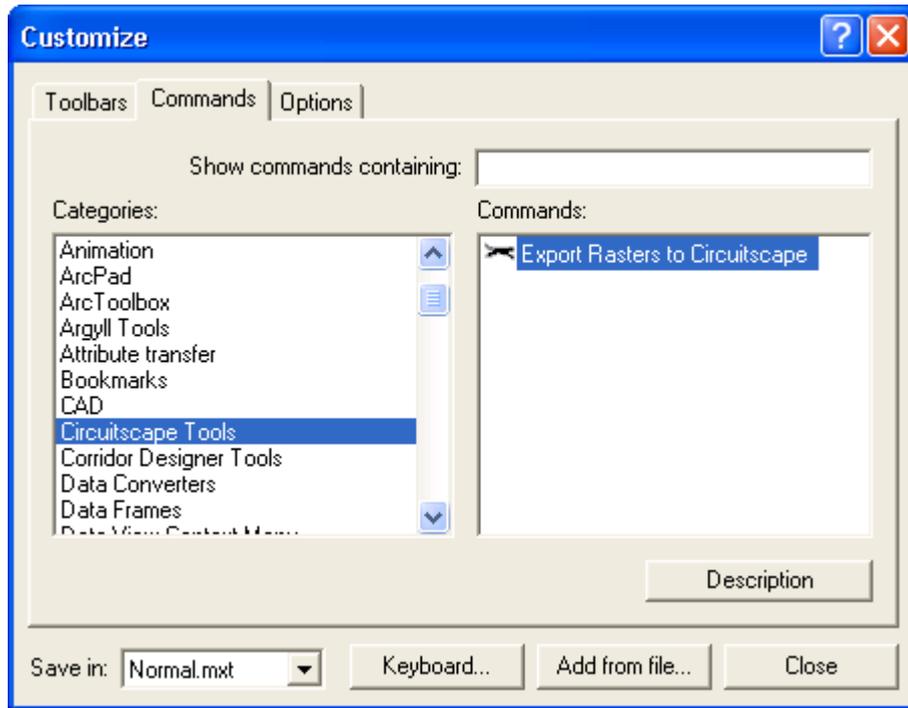


Repeat Step 4 above to register the tool in ArcGIS 10, but this time use the new BAT file *Register_Export_to_Circuitscape.bat*.

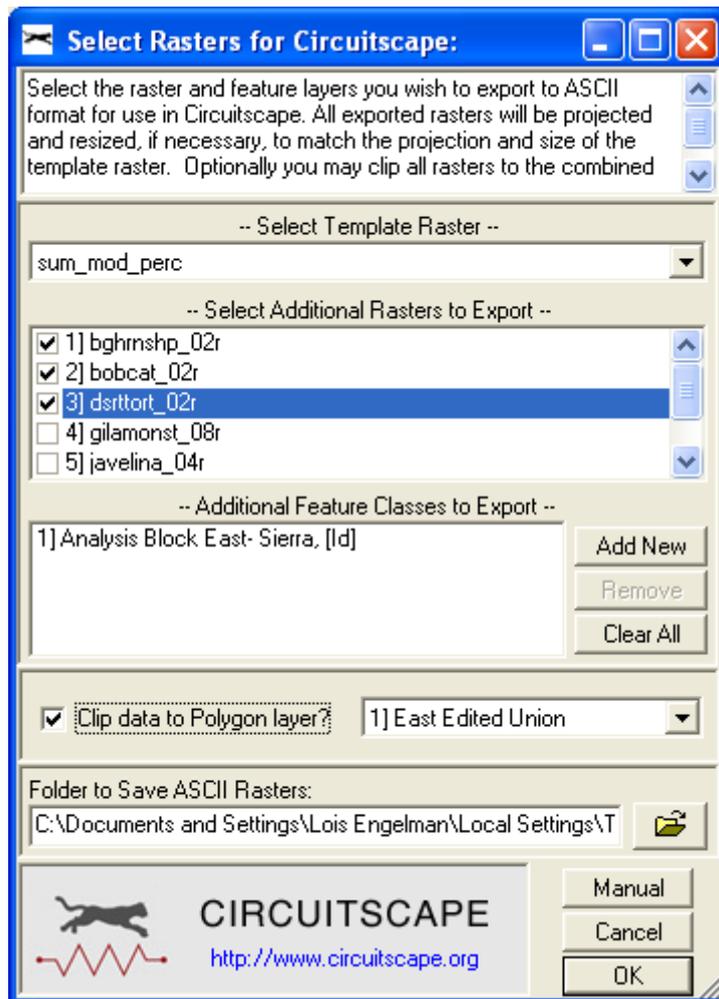
6) Start ArcMap.

Next:

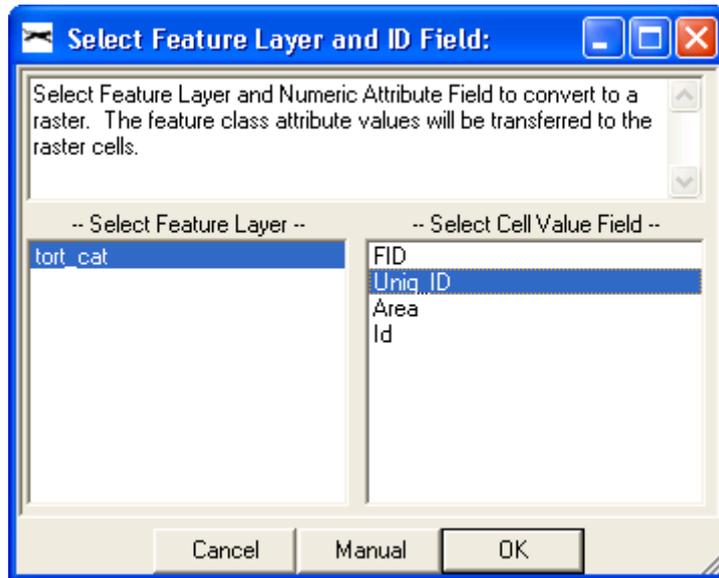
- 1) Click the “Tools” menu, then “Customize”.
- 2) In the “Customize” dialog, select the “Commands” tab and then select the category “Circuitscape Tools”.
- 3) Drag the command named “Export Rasters to Circuitscape” somewhere on an existing toolbar.
- 4) If you want this tool to always be available when you open ArcMap, then set the “Save in:” option to “Normal.mxt”. If you want this tool to only be available in this particular project, then set the “Save in:” option to be the name of your current MXD file.



- 5) Make sure that all your rasters and feature classes are available in your map.
- 6) Click the “Export Rasters to Circuitscape” button  to open the main dialog “Select Rasters for Circuitscape:”



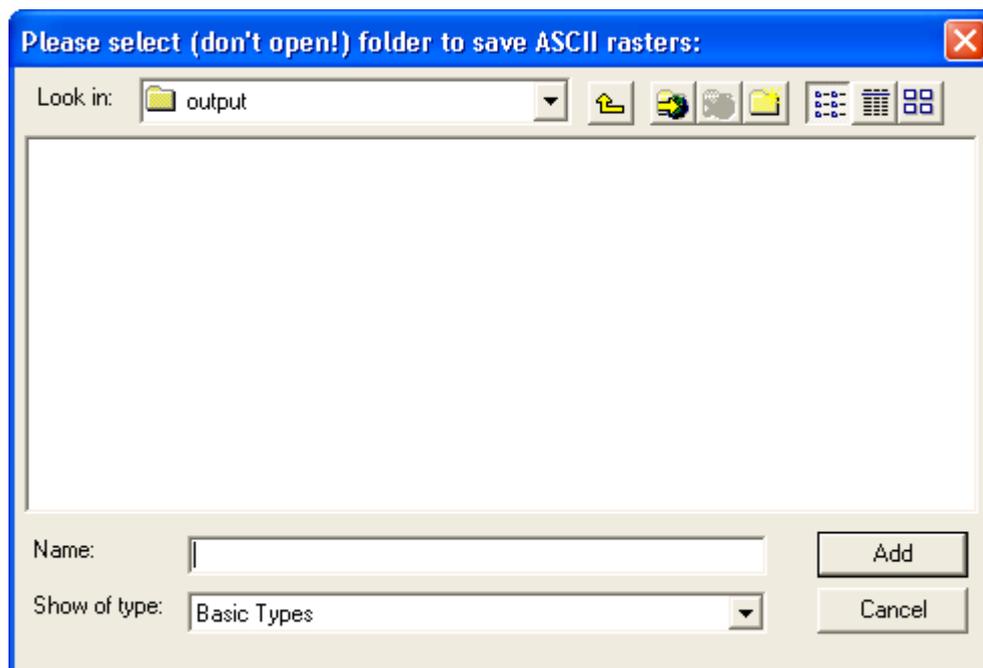
- 7) **Set Template:** Pick the raster that you want to use for a template. All new ASCII rasters will be projected to this template projection, clipped to the template extent, snapped to the template origin and assigned the template cell size.
- 8) **Select Additional Rasters (Optional):** Pick all the additional rasters you wish to convert to ASCII. You do not have to select any if you do not need to. **Note:** The “template” raster does not appear in this list. If you select a new template raster, then this list will regenerate itself without the template raster.
- 9) **Select Additional Feature Classes (Optional):** You may also convert point, polyline or polygon feature classes to ASCII rasters, in the same manner as the additional rasters described above. In this case, all raster cells representing the features will be assigned integer cell values based on some integer attribute field, and all other cells will be assigned a “NoData” value (-9999).
 - a. Click the “Add New” button to open the “Select Feature Layer and ID Field” dialog:



- b. Select the feature layer and appropriate cell value attribute field you wish to convert. Note that only numeric attribute fields are listed because the ArcGIS feature-to-raster export functions can only accept numeric values.
- c. Click “OK” to add the feature layer to the list. Note that you can also remove that feature layer from the list with the “Remove” button, or clear all feature layers from the list with the “Clear All” button.

10) **Clip Data to Polygon Layer (Optional):** If you wish to only analyze the portions of the layers that lie within polygons of a polygon layer (such as if you had a potential corridor you wished to analyze), then check the “Clip data to Polygon Layer” checkbox and select the polygon layer in the list.

11) Select the output folder you wish to save to.



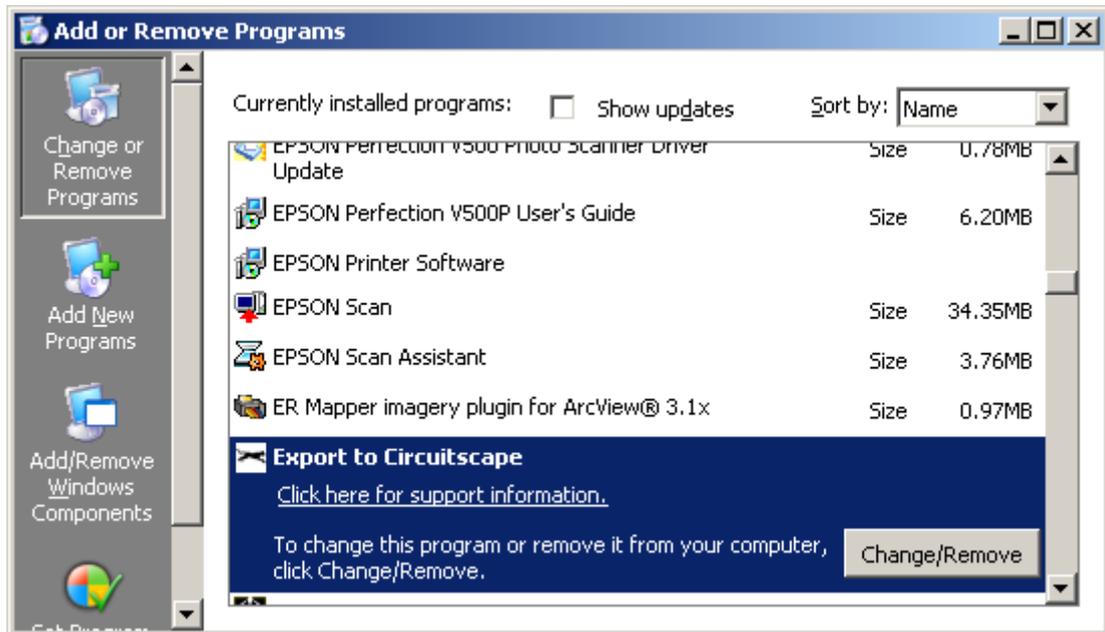
12) Click “OK” and it will go to work. Upon completion, you should have a set of new ASCII rasters in your specified folder. You can check their headers to make sure they are all the same size and extent.

13) Upon completion you will get a report detailing what it did.



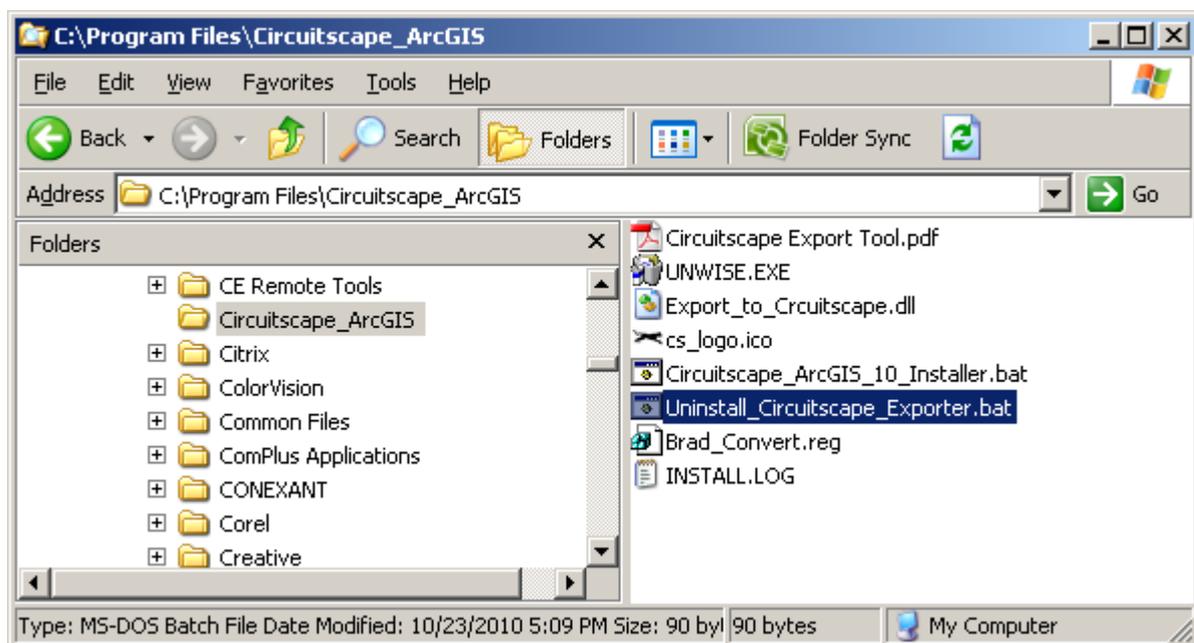
Uninstalling the tool in ArcGIS 9.x:

- 1) Close ArcMap
- 2) Click the Windows “Start” button, then “Control Panel”, then “Add or Remove Programs”. Find “Export to Circuitscape”, click the “Remove” button and follow the instructions to remove it.



Uninstalling the tool in ArcGIS 10.0:

- 1) Close ArcMap
- 2) Use Windows Explorer to open your installation folder. If you used the default values, then this folder will be located at “Program Files\Circuitscape_ArcGIS”. This folder will also include some additional files and this manual.



- 3) **For Windows XP:** Double-click the file “Uninstall_Circuitscape_Exporter.bat” to unregister the tool with ArcGIS 10.0.

For Windows 7/Vista: Double-click the file “Uninstall_Circuitscape_Exporter.bat” to unregister the tool with ArcGIS 10.0.

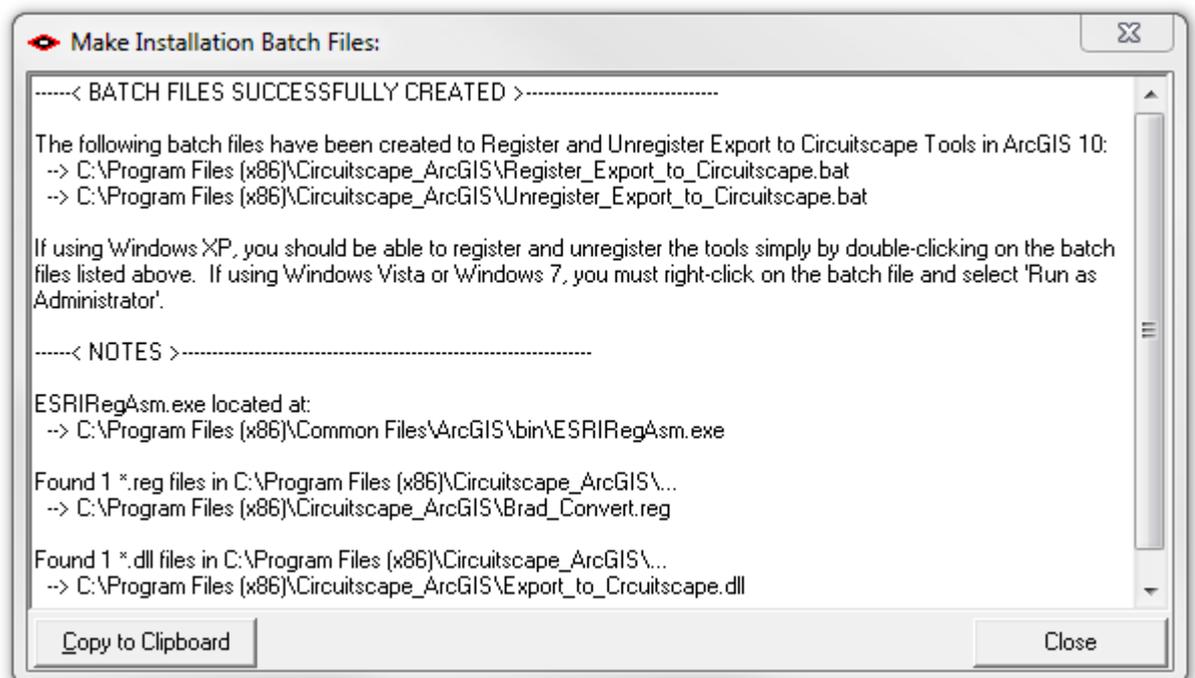
If the unregistration is successful, then you should see a “Unregistration Succeeded” notice.



- 4) **Alternative Method if you do not get the "Unregistration Succeeded" message:**
If the method above does not work, the reason is probably due to the "%CommonProgramFiles" environmental variable pointing to the wrong location, and/or Windows Vista or Windows 7 Security settings. The fix is to use a batch file that includes the full pathnames to "ESRIRegAsm.exe" and to the extension DLL and REG files. You may edit the BAT file yourself, or you may use the tool Make_Batch_Files.exe (located in your installation folder) to create new registration and unregistration batch files that are properly formatted to your system.

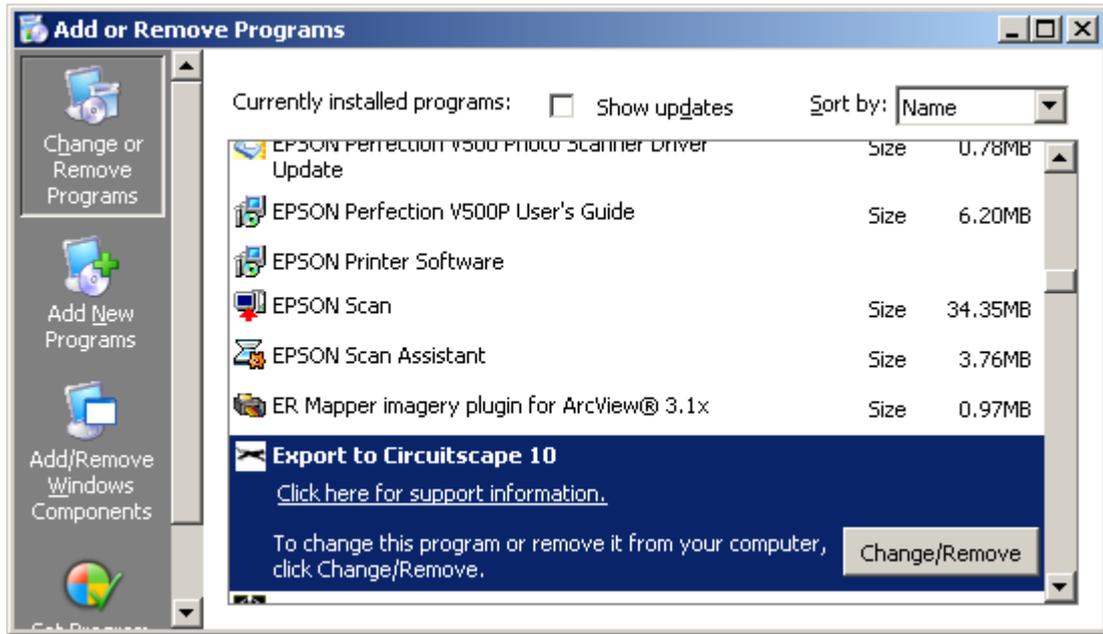
If using Windows XP: Simply double-click on the file Make_Batch_Files.exe to create the new batch files.

If using Windows Vista or Windows 7: Right-click on the file Make_Batch_Files.exe and click "Run as Administrator" to create the new batch files.



Repeat Step 3 above to unregister the tools in ArcGIS 10, but this time use the new BAT file *Unregister_Export_to_Circuitscape.bat*.

- 5) Click the Windows “Start” button, then “Control Panel”, then “Add or Remove Programs”. Find “Export to Circuitscape 10”, click the “Remove” button and follow the instructions to remove it.



Note: For the concerned or curious, the batch file *Uninstall_Circuitscape_Exporter.bat* contains the following single line of text:

```
"%CommonProgramFiles%\ArcGIS\bin\ESRIRegAsm.exe" /p:Desktop /u "
Export_to_Crcuitscape.dll"
```

It directs the ESRI installer *ESRIRegAsm* to unregister the DLL within ArcGIS. *Uninstall_Circuitscape_Exporter.bat* may be opened and viewed using standard text editors such as Notepad or WordPad.

Troubleshooting

If Any of the Tools Crash

If a tool crashes, you should see a dialog that tells us what script crashed and where it crashed. I would appreciate it if you could copy the text in that dialog, or simply take screenshots of the dialog and email them to me at jeffj@jennessent.com. **Note:** Please make sure that the line numbers are visible in the screenshots! The line numbers are located on the far right side of the text. Use the scrollbar at the bottom of the dialog to make the line numbers visible.

“Object variable or With block variable not set” Error:

If you open ArcMap and immediately see the error dialog appear with one or more error messages stating that “Object variable or With block variable not set”, then 90% of the time it is because ArcGIS was running when you installed the extension. The “Object” variable being referred to is the “Extension” object, and ArcGIS only sets that variable when it is initially turned on.

The solution is usually to simply close ArcGIS and restart it. If that does not work, then:

- 1) Close ArcGIS
- 2) Reinstall the extension
- 3) Turn ArcGIS back on.

RICHTX32.OCX Error:

If you see a line in the error dialog stating:

```
Component 'RICHTX32.OCX' or one of its dependencies not correctly registered: a file is missing or invalid
```

This is almost always due to the fact that new installations of Windows 7 and Windows Vista do not include a file that the extension expects to find. This file, named “richtx32.ocx”, is actually the “Rich Text Box” control that appears on some of the extension dialogs.

The solution is to manually install the missing file (richtx32.ocx) yourself. Here is how to do it:

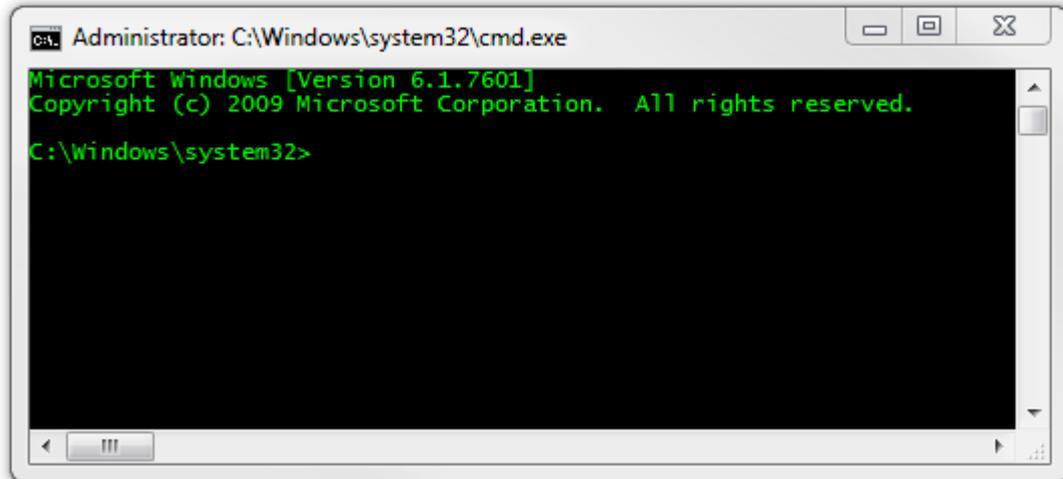
- 1) Open Windows Explorer and locate the file *richtx32.ocx* in your extension installation file.
- 2) If you are running a **32-bit version of Windows**, then copy *richtx32.ocx* to the directory

```
C:\Windows\System32\
```

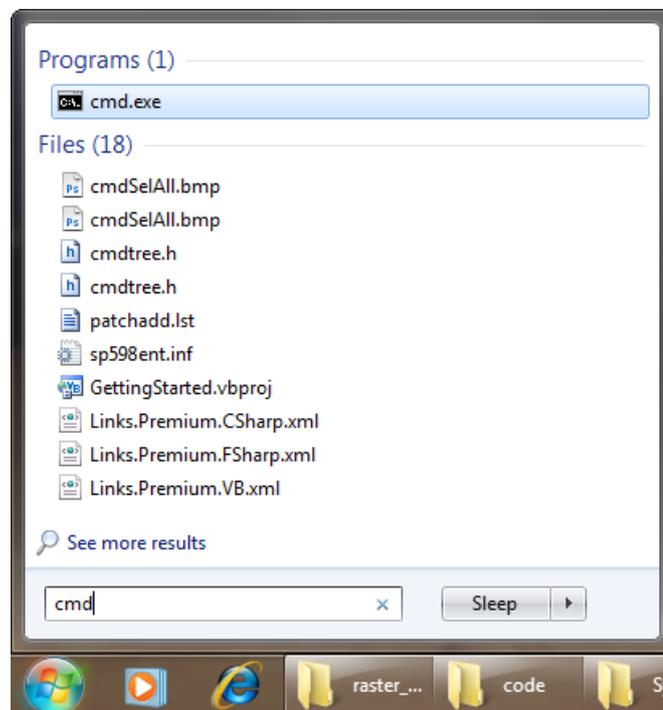
If you are running a **64-bit version of Windows**, then copy *richtx32.ocx* to the directory

```
C:\Windows\SysWOW64\
```

- 3) Open an “Elevated Command Prompt” window. This is the standard Windows Command Prompt window, but with administrative privileges enabled. You need these privileges enabled in order to register the OCX with Windows. **Note:** The Elevated Command Prompt opens up in the “.\windows\system32” directory, not the “.\Users\[User Name]” directory. The window title will also begin with the word “Administrator:”



- a. **Method 1:** Click the “Start” button, then “All Programs”, then “Accessories” and then **right-click** on “Command Prompt” and select **Run as Administrator**.
- b. **Method 2:** Click the “Start” button, and then click on the “Search Programs and Files” box. Type “cmd” and then click CONTROL+SHIFT+ENTER to open the Command window with Administrator privileges.



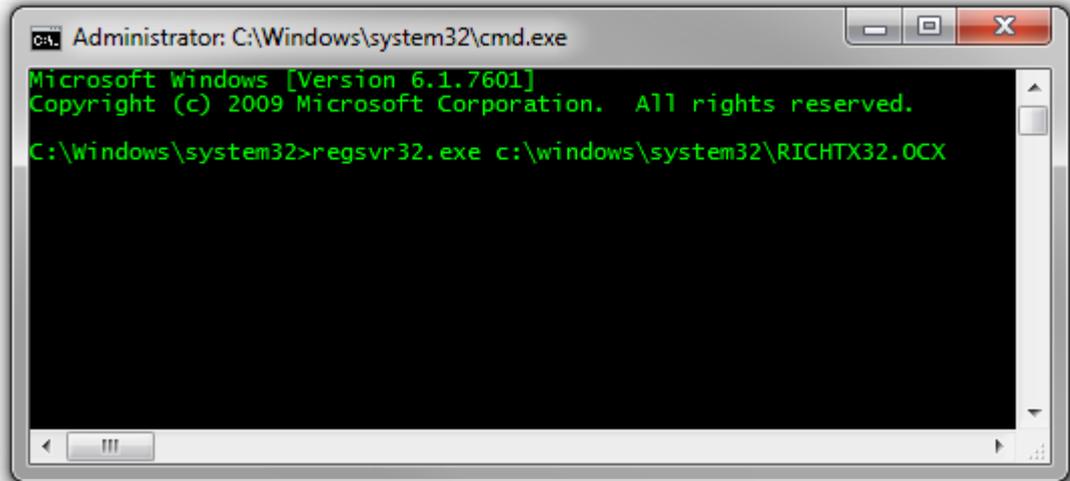
For more help on opening an Elevated Command Prompt, please refer to:
<http://www.sevenforums.com/tutorials/783-elevated-command-prompt.html>
<http://www.winhelponline.com/articles/158/1/How-to-open-an-elevated-Command-Prompt-in-Windows-Vista.html>

Or simply do a search for “Elevated Command Prompt”.

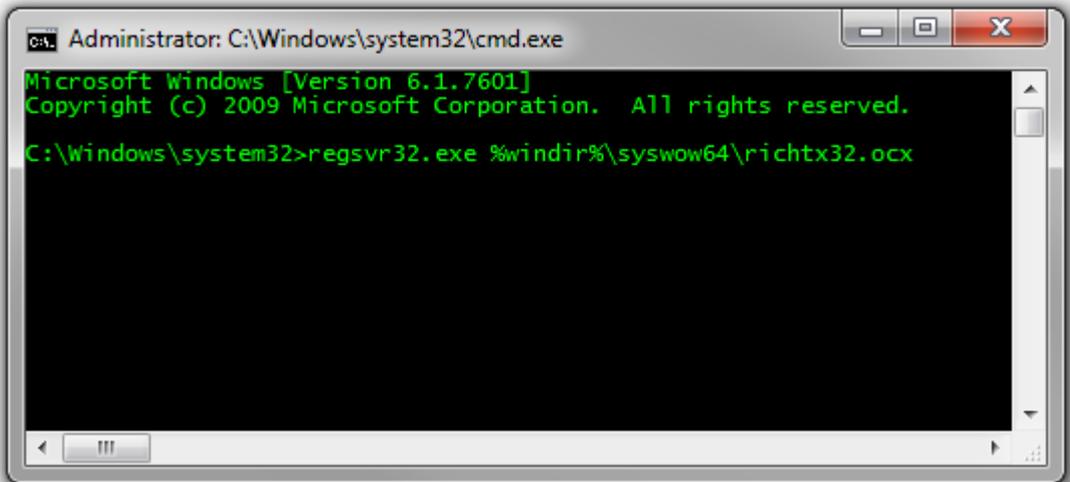
- 4) Register the file *richtx32.ocx* using the Windows RegSvr function:

- a. If using a **32-bit version of Windows**, type the line

```
regsvr32.exe c:\windows\system32\richtx32.ocx
```



- b. If using a **64-bit version of Windows**, type the line
`regsvr32.exe %windir%\syswow64\richtx32.ocx`



- c. Click [ENTER] and you should see a message that the registration succeeded.

