



USER MANUAL
TRIX RASTER SERVERTM
VERSION 6

English

Trix RasterServer™ 6

Software Manual

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File formats: File formats are not standards. Variations of individual file formats exist and formats continuously evolve. Any two files sharing a common file suffix or format may not contain identically structured data. Where the software described in this manual is used to open, display, print, create or otherwise manipulate or transfer files it is the user's sole responsibility to inspect the results in order to assure accuracy and fitness for purpose. Trix Systems cannot be held liable for any omissions, additions or changes in content. The existence of variations in any format means that different software applications and computer systems, regardless of vendor, may display or print the same file differently. We recommend that you establish and employ procedures to assure yourself that the information contained in your files is presented with the integrity and consistency necessary for your purposes.

File Deletion: It is possible to choose a Trix RasterServer conversion method that deletes the original file after it is converted. When using this method you must use a copy of the original file if you wish to preserve the original. To convert files without deleting the originals select either a single specific input file or the Synchronization method or use the PAR file method. These methods are described in detail later in the manual.

Embedded Objects: Trix RasterServer does not support the conversion of embedded OLE objects.

Macros: Shell files to be converted cannot contain macros that are activated when the file is opened.

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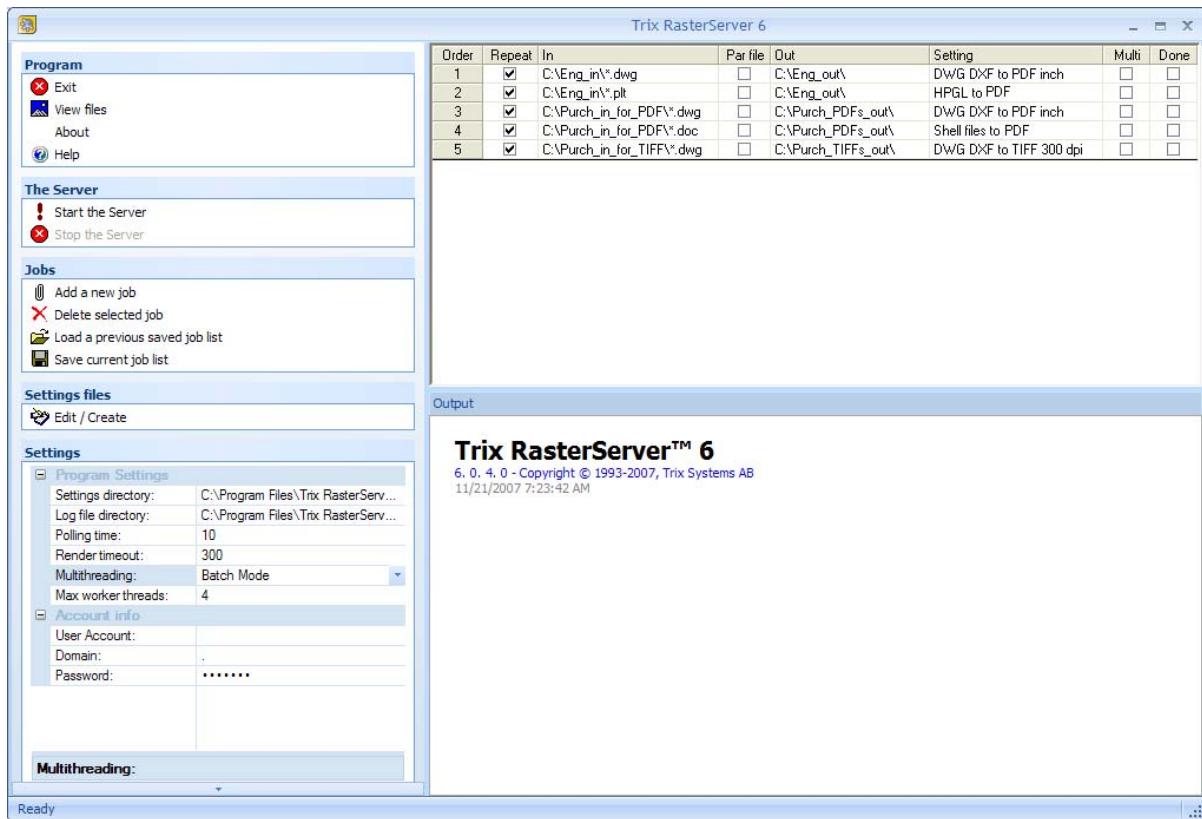
Introduction

Overview

Trix RasterServer is a flexible conversion server designed for heavy duty use. Convert just a single file. Or leave it running continuously, unattended, serving users throughout your local network. It converts commonly used engineering file formats to raster/PDF and lets you specify 'what and where' you require for output.

To integrate RasterServer functions into an automated workflow you can script your applications to produce simple PAR (parameter) files which carry instructions to RasterServer.

The RasterServer User Interface main window contains three panels. The left hand panel contains Function icons and a panel for Application Settings. The bottom panel shows the Output Log. The top right hand panel is the Inbox. The Inbox resembles a spreadsheet in appearance. Each row contains a Job.



In the example above, each row in the Job 'spreadsheet' has been set up to enable a specific group of users to convert files for their needs. Rows 1 and 2 enable users in the Engineering Department to convert DWG and HPGL files to PDF by placing the files in the folder *Eng_in*. This is called a *polled* folder.

Rows 3 and 4 convert DWG and DOC files to PDF for the Purchasing Department. Row 5 converts DWGs to TIFF.

Once jobs are set up and the Server is started RasterServer runs continuously. The User Interface can be closed and the service continues running. It cycles through the Job rows, reading the instructions and looking for any file that meets the criteria for the Job, performs the conversion and moves on to the next row.

Each job in RasterServer can be set up to continuously synchronize conversions with originals or to delete originals after conversion.

Note: Your users do not have to install any software on their own machine. They simply need access to the polled folders.

The Quick Start Section on Page 5 describes how to begin creating Jobs and Settings.

Demo mode

If you have installed a demo version your output files will be randomly annotated with overlay information about Trix Systems. This overlay is removed when a full license is purchased. The demo version also appears if a full license is deactivated.

Versions

This manual describes the functionality of the standard edition of Trix RasterServer Version 6. Trix RasterServer is also used as the rasterizing component in the Trix Organizer engineering document management system. Separate documentation is available for its use with Trix Organizer.

Support

Purchase of Trix RasterServer includes 90 days of full support. Please contact us at

| America | Europe |
|--|--|
| Tel +1 (978) 256-4445 Fax +1 (978) 256-9593 Email: support@trixsystems.com | Tel +46 (0) 10 451 0502 Fax: +46 (0) 10 451 0509 Email: support@trixsystems.se |

Annual support/maintenance agreements are available to extend your support and ensure you receive upgrades. Please contact Trix Systems for more information on these.

System Requirements and Installation

System Requirements

Trix RasterServer Version 6 runs on Windows 2000, XP, Vista and Windows Server 2000, 2003 and 2008. It will run on the basic RAM required for the operating system. However speed is enhanced by installing additional RAM, especially if large drawings or images are to be processed and/or color output is required. As RasterServer is an image processing application it frequently caches data to the hard drive. You should ensure that your hard drive always has a reasonable amount of free space available for caching.

Privileges: The default *System account* does not have privileges to access network drives. You will have to enter another account to be able to access network drives. Use the *Account Info* panel under *Settings* to enter this information.

Network paths should be identified using UNC naming, not mapped drives.

The single Trix RasterServer license running on one computer can serve users throughout a LAN. It is not necessary to have Trix RasterServer installed on every machine.

Installation

Your Trix RasterServer application is installed by following the instructions supplied with the email or letter containing the serial number.

For Terminal Services users

To install using Terminal Services the Terminal Server session must run in 'console mode'. The user must also be in the 'Administrators' group. Go to the *Start Menu* and select *Run*. Enter 'mstsc /v:<servername> /console' and press OK. Start the installation. 'mstsc.exe' is the Microsoft Terminal Server Consol.

Licensing and Activation

The activation and licensing of the Trix RasterServer software (and any other Trix applications licensed to you) is handled by the application named *Trix Systems License Manager*. You will see this listed in your Programs menu. This application need only be run when you wish to deactivate your software so you can move it to another computer.

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Quick Start

Before you start – enter your account details

The default System account does not have privileges to access network drives. You will have to select another account to be able to access network drives. Use the *Account Info* panel under *Settings* to enter this information.

| Account info | |
|---------------|-------|
| User Account: | |
| Domain: | . |
| Password: | ***** |

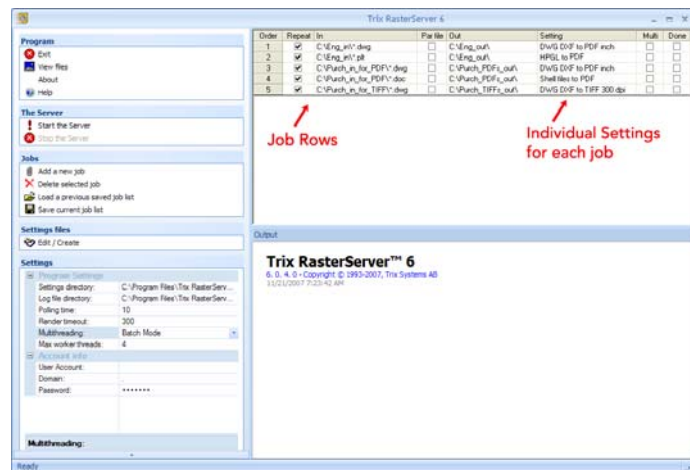
Then use *Save the Settings* to check the account's validity and store the information.

Concepts

The conversion of a file or files is called a **Job**. The characteristic of a Job is that it always converts files the same way. The source directory, output directory and Job Setting for a Job never change.

A **Job Setting** specifies the conversion required (for example, input format is DWG/DXF/DWF and output is to be a 400 dpi D-size TIFF image).

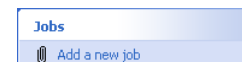
You can create as many Jobs and Settings as necessary. Settings are stored and can be reused. An example of the main RasterServer window is shown above.



Exercise 1 - A sample conversion

This example uses a file from the Examples folder that was installed with RasterServer together with a Setting we also provide. The purpose is to illustrate how to run a simple conversion. For this exercise a single file is converted from DWG to monochrome PDF (repeated batch conversion is described later in the main section of this manual).

Start RasterServer. The User Interface will appear. Click on the Paperclip icon under the *Jobs* heading in the left hand panel to *Add a new Job*.




Navigate to the folder into which you installed Trix RasterServer (usually Program Files/Trix RasterServer 6) and open the Examples folder. Select *example1.dwg*. In the *Select Setting* panel select *DWG DXF to PDF inch*. You will be prompted for an output directory into which RasterServer will place the newly converted file. Choose any convenient location. Click on OK.

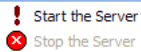


A Job row will then appear in the Inbox panel or the main RasterServer window. It will appear similar to the one below:

| Order | Repeat | In | Par file | Out | Setting | Done |
|-------|--------------------------|--|--------------------------|--------------------|---------------------|-------------------------------------|
| 1 | <input type="checkbox"/> | C:\Program Files\Trix RasterServer 6\Examples\example1.dwg | <input type="checkbox"/> | C:\RS demo output\ | DWG DXF to PDF inch | <input checked="" type="checkbox"/> |

If text extends beyond the width of a column, click on the vertical line between columns and drag the  icon to widen the column.

The Server




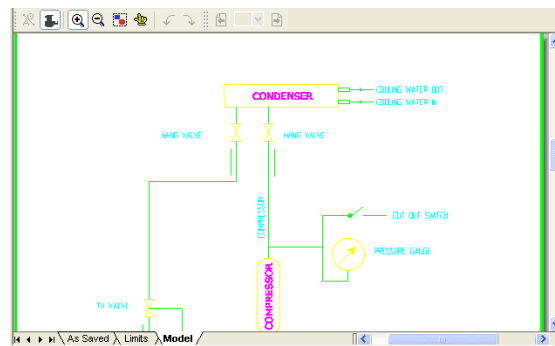
To run this Job click on *Start the Server* in the left hand panel. The log in the output panel will display progress as shown below. The speed of conversion will depend upon the speed and RAM of your computer. You will see error messages in your log. Ignore these for now. RasterServer will use substitute font and pen widths. Later we will explain how to locate and use SHX fonts and Pen width files.


```
8/4/2003 10:28:10 AM - Start polling...
8/4/2003 10:28:17 AM - Processing: C:\Program Files\Trix RasterServer 6\Examples\example1.dwg
Output file is 'C:\RS demo output\example1.PDF'
8/4/2003 10:28:31 AM - 'C:\Program Files\Trix RasterServer 6\Examples\example1.dwg' completed!
```

Example of log
in output panel.

The Job is complete when the PDF file has been created from the DWG. RasterServer stores the newly created file, example1.pdf, in the output directory and automatically stops processing. A check mark appears in the *Done* box at the right hand end of the Job row to indicate that the Job has completed.


To view Example1.dwg so you can compare it with the PDF conversion use the built-in DWG viewer. Use your mouse to click once in the Job row to select the row. The text of the Job row then appears as white against a blue background. Now click on the  **View files** icon in the left hand panel. A dialog box will prompt you to choose a file to view. Select *example1.dwg*. The File Viewer window will open and the image *Example1.dwg* will be displayed.

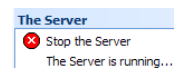


Then close the File Viewer window and this time use  **View files** to open and view the newly created *Example1.pdf*.

Now try converting other Example files. Use the Settings shown in the Job list below. It is not necessary to set up the Jobs in any particular order. Nor do you need to load them all.


| Order | Repeat | In | Par file | Out | Setting |
|-------|--------------------------|--|--------------------------|--------------------|---------------------------------|
| 1 | <input type="checkbox"/> | C:\Program Files\Trix RasterServer 6\Examples\example1.dwg | <input type="checkbox"/> | C:\RS demo output\ | DWG DXF to PDF inch |
| 2 | <input type="checkbox"/> | C:\Program Files\Trix RasterServer 6\Examples\example2.dwg | <input type="checkbox"/> | C:\RS demo output\ | DWG DXF to CALS metric |
| 3 | <input type="checkbox"/> | C:\Program Files\Trix RasterServer 6\Examples\example3.dwg | <input type="checkbox"/> | C:\RS demo output\ | DWG DXF to JEDMICS C4 'C' size |
| 4 | <input type="checkbox"/> | C:\Program Files\Trix RasterServer 6\Examples\example4.dwg | <input type="checkbox"/> | C:\RS demo output\ | DWG DXF to color 640 by 480 PNG |
| 5 | <input type="checkbox"/> | C:\Program Files\Trix RasterServer 6\Examples\example5.plt | <input type="checkbox"/> | C:\RS demo output\ | HPGL to TIFF |
| 6 | <input type="checkbox"/> | C:\Program Files\Trix RasterServer 6\Examples\example6.tif | <input type="checkbox"/> | C:\RS demo output\ | Raster to CALS |
| 7 | <input type="checkbox"/> | C:\Program Files\Trix RasterServer 6\Examples\example7.xls | <input type="checkbox"/> | C:\RS demo output\ | Shell files to CALS |

You can remove any Job by clicking once in the Job row to select it and then using  **Delete selected job**. The conversion process must be stopped to do this. You can stop the process at any time by clicking on Stop the Server. Note: Closing the Trix RasterServer 6 User Interface does not stop the Server if it is running.



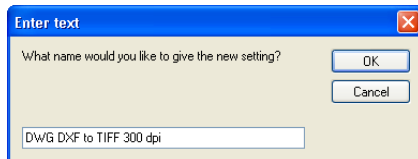
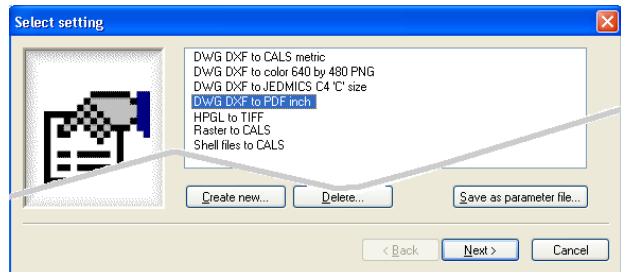
Exercise 2 – Creating a Setting

This exercise creates a new Setting to create a TIFF image from a DWG or DXF file. The purpose of the exercise is to introduce the Settings. This simple example requires only a couple of changes be made.

Start the Settings Wizard by clicking on the *Edit/create* icon under *Settings Files* in the left hand pane of the RasterServer main window.  **Edit / Create**.

Click once on the *DWG DXF to PDF inch* Setting in the *Select Setting* window.


Then click on *Create New* at the bottom of the window. This will use *DWG DXF to PDF inch* as a basis for creating a different Setting.

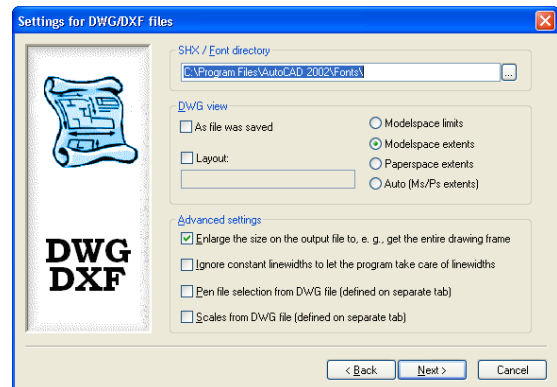


Type *DWG DXF to TIFF 300 dpi* to give a name to the new Setting and click on OK. This will open the Settings Wizard at the *Select file format to convert* window.

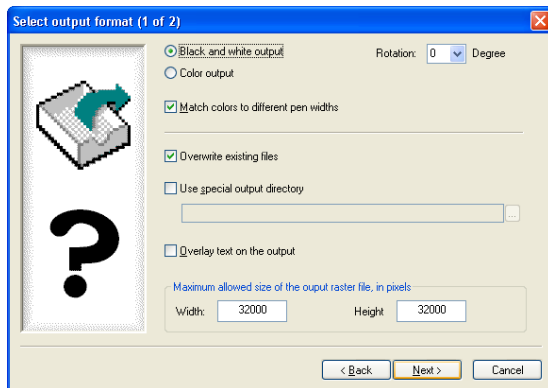
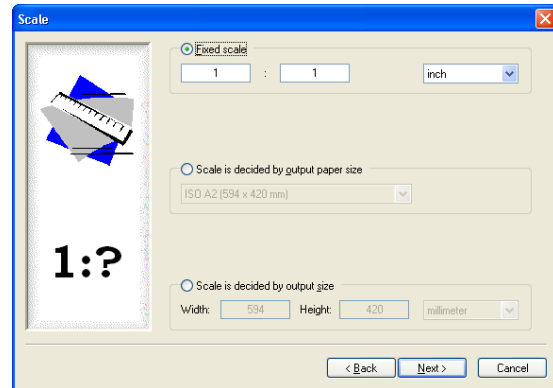
Leave as DWG/DXF/DWF  and click on

Next.

The *Settings for DWG/DXF/DWF files* window asks questions about the DWG/DXF/DWF files. You can leave this unchanged or, if you know that you have AutoCAD SHX fonts, click on  and navigate to the directory containing the SHX fonts. The new path to this directory will then appear in the window (if you don't, RasterServer simply substitutes a standard font for the missing SHX fonts). Click on *Next*.

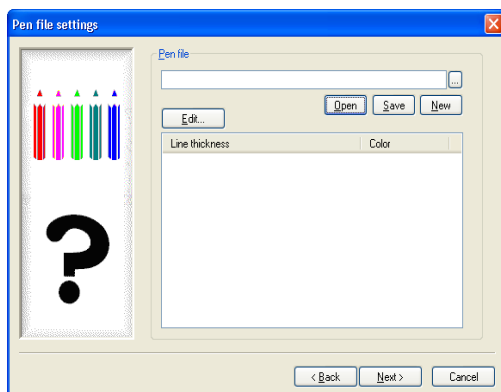
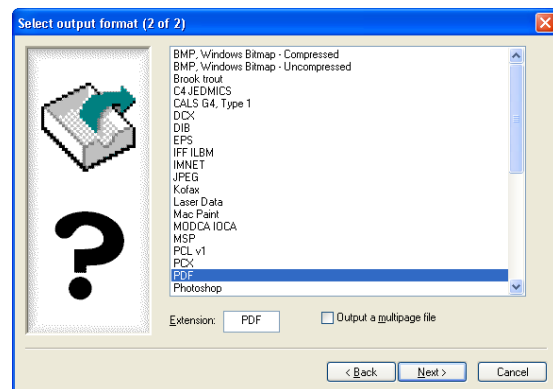


The next *Scale* window defines the size of the output image. The choices are to use the scale of the original file, to select a fixed sheet size or to set an absolute dimension. As the sample DWG we will be using for this exercise was created at a 1:1 inch scale leave the *Fixed Scale* checked and unchanged. Click on *Next*.



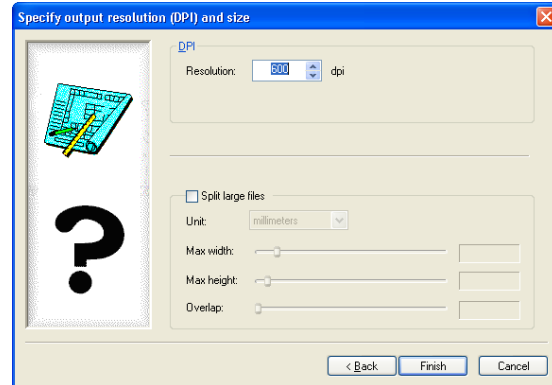
The *Select Output Format (1 of 2)* window further refines the type of output required. For this exercise leave it unchanged and click on *Next* again.

The *Select Output Format (2 of 2)* window selects the available output formats and the file extension to be used. As we used the *DWG DXF to PDF inch* Setting as the basis for this new Setting the existing selection is PDF. Use the down arrow to scroll and select **Tiff - G4 Fax** instead. The Extension box will change to show TIF instead of PDF. Click on *Next* again.

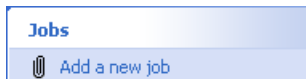


The *Pen File Settings* window is used to define the widths of lines in raster output based on color values in the original DWG. For the moment we will skip this and let RasterServer substitute default pen widths. Click on *Next* to move on without making changes.

The final *Specify Output Resolution* window sets the output resolution for the image. Type '300' in the *Resolution* box to set the resolution to 300 dpi. Then click on *Finish*. The new Setting named *DWG DXF to TIFF 300 dpi* is added to the list of available Settings. The wizard closes and returns you to the main RasterServer window.



To test the new Setting click on the Paperclip icon to *Add a new Job*. Navigate, as before, to

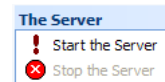


the Examples folder and again select *example1.dwg*. This time in the *Select Setting* panel select the *DWG DXF to TIFF 300 dpi* Setting and click on OK.

Choose an output location. The Job row that will then appear should differ from the one below only in the *Out* column.

| Repeat | In | Par file | Out | Setting | Done |
|--------------------------|--|--------------------------|--------------------|-------------------------|--------------------------|
| <input type="checkbox"/> | C:\Program Files\Trix RasterServer 6\Examples\example1.dwg ... | <input type="checkbox"/> | C:\RS demo output\ | DWG DXF to TIFF 300 dpi | <input type="checkbox"/> |

To use the new Job Setting to convert the DWG file to a TIFF file click on *Start the Server*.



Summary

These two exercises have introduced the concepts for:

- 1) Loading a Job that converts a single file;
- 2) Creating a new Job Setting to specify type of input/output based on an existing Setting.

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Making Conversions

Accessing network drives

There are two requirements in order to access files on network drives:

- 1) The default "System account" does not have privileges to access network drives. You will have to select another account to be able to access network drives. Use the *Account Info* panel under *Settings* to enter this information.
- 2) Network paths must be identified using UNC naming, not mapped drives.

Conversion of one single file at a time

Exercise 1 in the Quick Start described how to convert a single file. Please refer back to this. You can also *drag and drop* a file onto the Inbox window to initiate a conversion.

Continuous conversion using 'Repeat'

In Exercise 1 a single input file was converted. A more usual need is continuous conversion of files as they are placed in an input folder. This is accomplished by specifying a 'wildcard' for the file name. By entering *.dwg instead the individual file name, after you select to *Add a new job*, RasterServer will convert all DWG files it finds in the input folder. The * is called a wildcard. This process does not stop until manually halted. RasterServer continues to revisit it and convert any files that are subsequently added or changed.

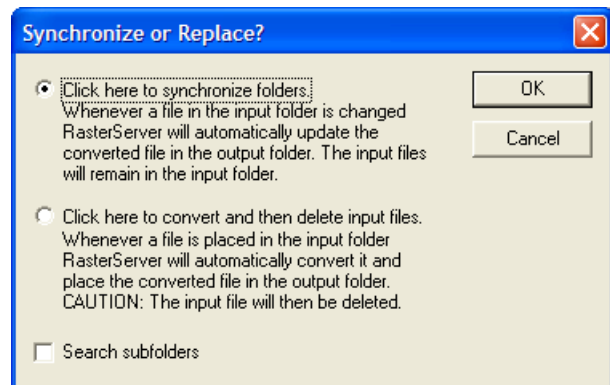
After entering *.dwg as the file name you have the choice of synchronizing the input and output folders, in which case the input files are left in the input folder, or replacing the input files, in which case the input files are deleted after the output file is created (the replacement files can be output to the input folder or to a different folder).

In the example jobs below the '*convert and then delete input files*' button was selected so each dwg is deleted after it is converted., Row 1

shows a Job that converts all dwg files placed in a folder named *Purch_in* to PDF using a Setting named *DWG to PDF*. The output is sent to a folder named *Purch_PDF_out*.

| Order | Repeat | In | Par file | Out | Setting | Done |
|-------|-------------------------------------|-------------------|--------------------------|-------------------|------------|--------------------------|
| 1 | <input checked="" type="checkbox"/> | C:\Purch_in*.dwg | <input type="checkbox"/> | C:\Purch_PDF_out\ | DWG to PDF | <input type="checkbox"/> |
| 2 | <input checked="" type="checkbox"/> | C:\Sales_in*.dwg | <input type="checkbox"/> | C:\Sales_PDF_out\ | DWG to PDF | <input type="checkbox"/> |

When you *Start the Server* the application looks continuously in the *Purch_in* folder for DWG files to convert.



The example also shows a second Job row. This Job converts DWG files placed in a folder named *Sales_in* to PDF and sends the output to a folder named *Sales_PDF_out*. Since the conversion required from the second Job is the same as that for the first, both Jobs use the same Setting.


Another example is shown below. In this case DWG and TIF files placed in a folder named *RS_in1* are continuously converted to PDF and the output placed in folder *RS_out*. Two separate Job rows are required. The first Job converts the DWG files. The second Job converts the TIF files. Two Jobs rows are required because, although input and output folders are the same, different Settings must be used. One Setting handles conversion of DWG files. The other handles conversion of TIF files.

| Order | Repeat | In | Par file | Out | Setting | Done |
|-------|-------------------------------------|-----------------|--------------------------|------------|---------------|--------------------------|
| 1 | <input checked="" type="checkbox"/> | C:\RS_in1*.dwg | <input type="checkbox"/> | C:\RS_out\ | dwg to pdf... | <input type="checkbox"/> |
| 2 | <input checked="" type="checkbox"/> | C:\RS_in1*.TIF | <input type="checkbox"/> | C:\RS_out\ | raster to pdf | <input type="checkbox"/> |

When are input files deleted?.

In the examples above, because *convert and delete* was selected, RasterServer continuously processes files placed into the input folders. In order to do this the input files have to be deleted after they are converted (if this didn't happen the same file would be repeatedly converted). This only occurs when continuously polling.

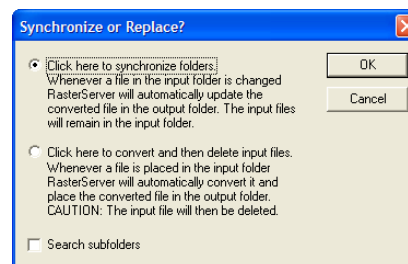
NOTE THE CAUTION ABOUT INPUT FILE DELETION.

 Click here to convert and then delete input files. Whenever a file is placed in the input folder RasterServer will automatically convert it and place the converted file in the output folder. CAUTION: The input file will then be deleted.

Continuous synchronization between folders

The synchronization option enables RasterServer to continuously monitor a folder for changes in originals. When a change is detected RasterServer makes a new conversion from the original. Using this approach your raster and pdf output files are continuously updated and synchronized with their CAD originals.

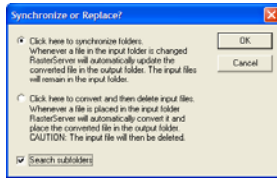
To synchronize folders use the wildcard *.extension naming convention and select the *synchronize folders* button in the next window. Then select the input folder where RasterServer will look for files to convert and synchronize. Select the Setting and finally the output folder where converted copies of the inputs are to be stored. The In column of the job row will start with [Sync] to indicate you are running in synchronization mode.



In the example shown below RasterServer continuously watches a folder named *DWG repository*. When any DWG file in the folder is changed RasterServer reprocesses the file so that the PDF file in the output folder *PDFs of DWGs* corresponds to the latest version of the dwg file.

| Order | Rep... | In | Par file | Out | Setting | Done |
|-------|-------------------------------------|---------------------------------|--------------------------|------------------|-------------------|--------------------------|
| 1 | <input checked="" type="checkbox"/> | [Synch] C:\DWG repository*.dwg | <input type="checkbox"/> | C:\PDFs of DWGs\ | DWG DXF to PDF... | <input type="checkbox"/> |

Processing subfolders



If you check the *Search subfolders* option when creating your job row the application will convert files it finds in subfolders, as well as those at the root level of the *In* path. If the output path differs from the input the application will create new subfolders named the same as the original folders.

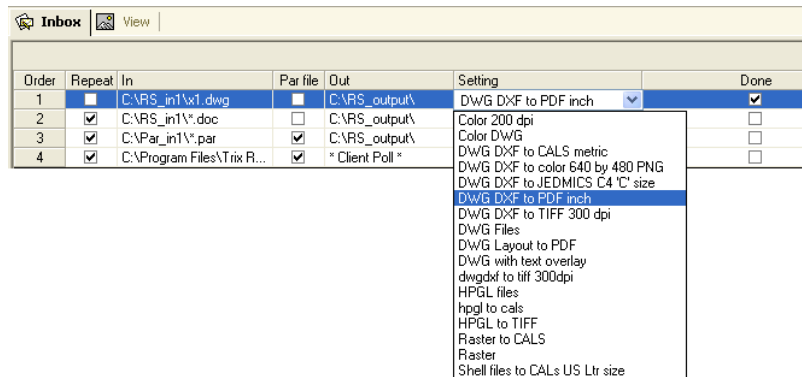
| Order | Rep... | In |
|-------|-------------------------------------|---|
| 1 | <input checked="" type="checkbox"/> | [Synch]+ \\Trix04\trix data\Conversions*.dwg |
| 2 | <input checked="" type="checkbox"/> | [Synch]+ \\Trix04\trix data\Conversions*.pdf |
| 3 | <input checked="" type="checkbox"/> | [Synch]+ \\Trix04\trix data\Conversions*.tif |

A '+' sign will appear to the left of the path in the job row to indicate that subfolders are to be processed.


Re-running a conversion with a modified setting

Individual one-at-a-time conversions can be rerun with new Settings (this is not possible with continuous wildcard conversions because the input files are deleted). RasterServer must not be processing conversions to make the change(s). To stop the conversion process click on the *Stop the Server* icon.

Click on the existing Setting name in the Job row that you wish to change. A triangular pull-down menu tab will appear in the right-hand side of the setting column. Click on this tab. The settings list appears.



Click on the new setting you wish to use. If the conversion has already been run the **Done** box in the right hand column will have a check mark in it. Click on this to uncheck it. Then restart RasterServer using *Start the server*. The conversion will run again using the new setting.


The same approach can be used to select a new input file or output directory. Clicking on the *In* or *Out* columns will produce a  button. Use this to select the new file or directory.

Creating multipage files from multiple input files

To convert individual files of the same type into one output file use the Settings Wizard to create a Setting that has *Output a multipage file* selected in the format selection window¹. Click on



¹ See Page 27 for a list of output formats that support multiple pages in a single file.

the paperclip icon  [Add a new job](#) and manually select the group of files – as shown in the example to the right. Then select the new Setting.

When RasterServer processes the group of three files illustrated in the screen shot on the previous page the log shows:

```
8/28/2003 11:33:32 AM - Processing: C:\RS_in\3.dwg+C:\RS_in\2.dwg+C:\RS_in\1.dwg
Processing Page 1 of 3
Processing Page 2 of 3
Processing Page 3 of 3
Joining the pages in a multipage file to: C:\RS_out\3.PDF
8/28/2003 11:33:48 AM - 'C:\RS_in\3.dwg+C:\RS_in\2.dwg+C:\RS_in\1.dwg' completed!
```

The first line shows each input file processed, separated by a '+' sign.

To automate this type of conversion use PAR files with the PAR file instructions shown on Page 39².

Closing the RasterServer User Interface.

When you close the RasterServer User Interface application conversions will continue to run as a Windows service if you selected to *Start the service*.

² It is also possible to convert multi-page or multi-layout dwg input files into multi-page output. See Page 30.

The Settings Wizard

If you have not already reviewed Exercise 2 on Page 7 of the Quick Start section please do so. Exercise 2 introduces the procedure for opening and editing a Setting.

Settings supplied

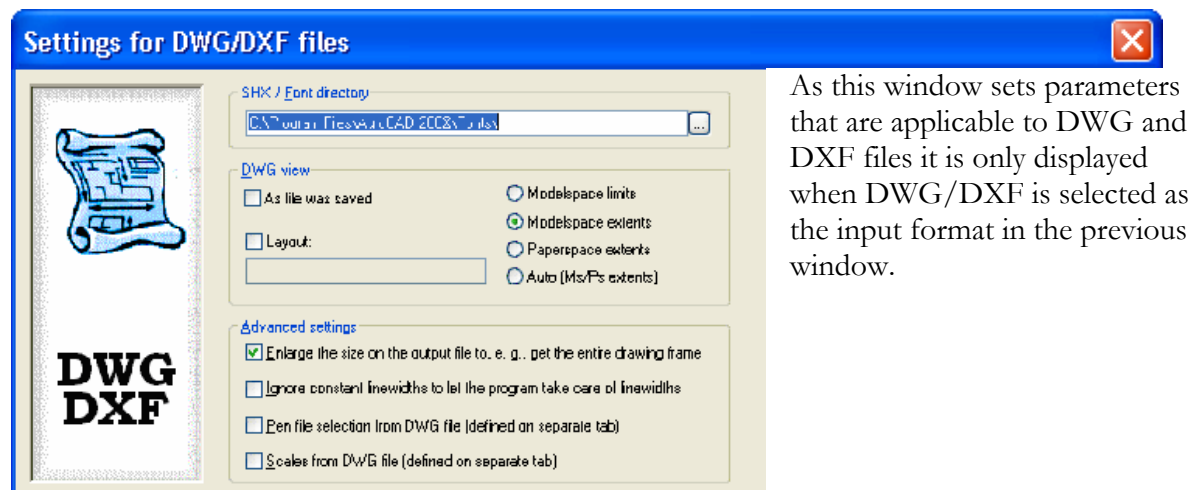
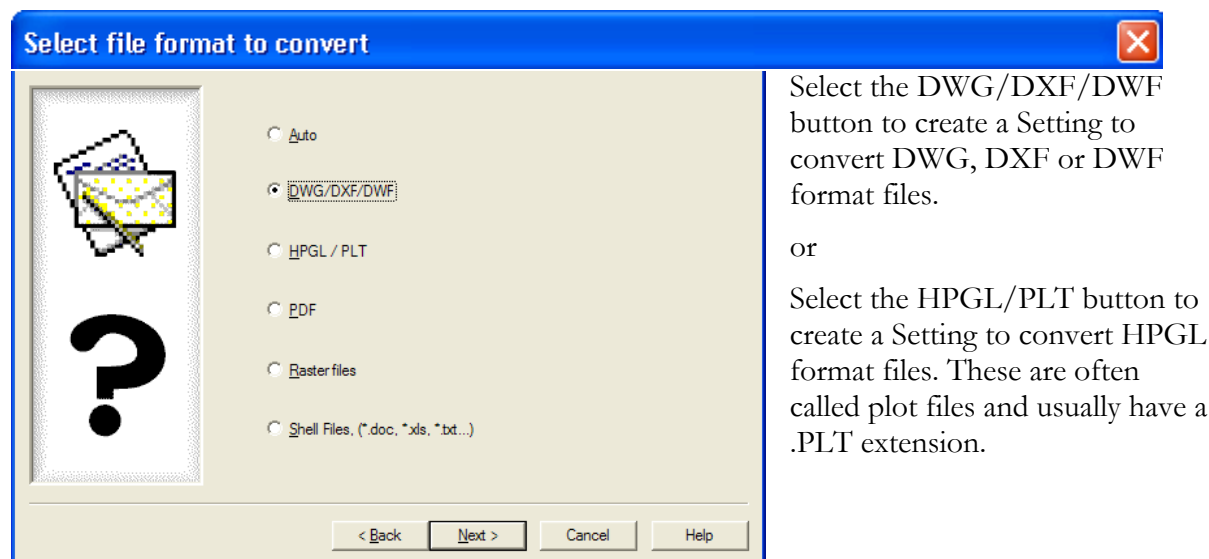
Trix RasterServer installs some Settings. These can be used as just they are, modified themselves, or renamed and then modified to create new Settings. The Settings provided are listed below:

| Name | Function |
|---------------------------------|---|
| DWG DXF to PDF inch | Converts DWG or DXF files, created at a 1:1 inch scale to PDF (test with example1.dwg) |
| DWG DXF to CALS metric | Converts DWG or DXF files, created at a 1:1 mm scale to CALS. (test with example2.dwg) |
| DWG DXF to JEDMICS C4 'C' size | Converts DWG or DXF files, created at a 1:1 inch scale to 200 dpi ANSI 'C' size JEDMICS C4. (test with example3.dwg) |
| DWG DXF to color 640 by 480 PNG | Converts DWG or DXF files to a 100 dpi 640 by 480 pixel PNG file. (test with example4.dwg) |
| HPGL to TIFF | Converts HPGL (PLT) plot files to TIFF Group 4 Fax files. (test with example5.plt) |
| Raster to CALS | Converts any raster image to a CALS format file at 200 dpi. (test with example6.tif) |
| Shell files to CALS US Ltr size | Converts 'shell files' to US Letter sized CALS format (Shell file conversion requires that a view application be present on the same CPU, for example, to convert .DOC files would require MS Word to be installed (test with example7 .doc). |

These Settings will use a default font for SHX until you point your Setting to your SHX fonts folder. See the section below for information on how to do this.

Converting DWG/DXF/DWF and HPGL files

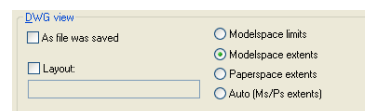
Each window in the Settings Wizard is presented below.



SHX Font Directory: Trix RasterServer can reproduce TrueType and AutoCAD SHX fonts used in DWG and DXF files provided that 1) the required TrueType files are installed on the system running RasterServer and 2) the SHX fonts are available.

Use the SHX Font Directory field to point to the location of the folder where your SHX fonts are stored. TrueType fonts are automatically located.

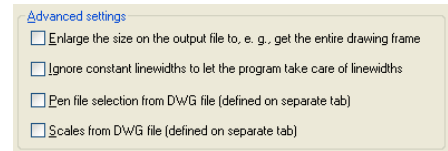
DWG View: DWG/DXF files can be viewed in a variety of ways. Use the DWG View panel to select the view from which your conversion is to be made. If you are not sure which view to use we suggest you first try the Modelspace Extents button.



To select a specific Layout, check the layout box and enter the name(s) of the Layout(s) in the field below the check box. Also see the section on Layouts on Page 41.

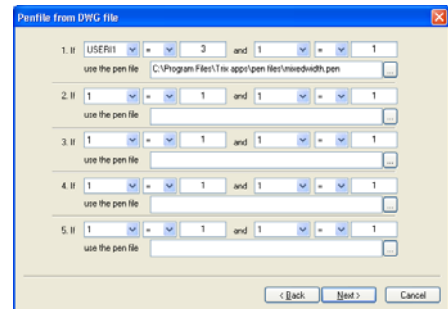
Advanced Settings:

Enlarge the size of the output: For drawings bounded by frames (lines along their perimeters) this adds a few pixels of white space to the outside edge of the output so the frame appears more clearly in the raster (recommended for Acrobat Reader viewing of PDFs).

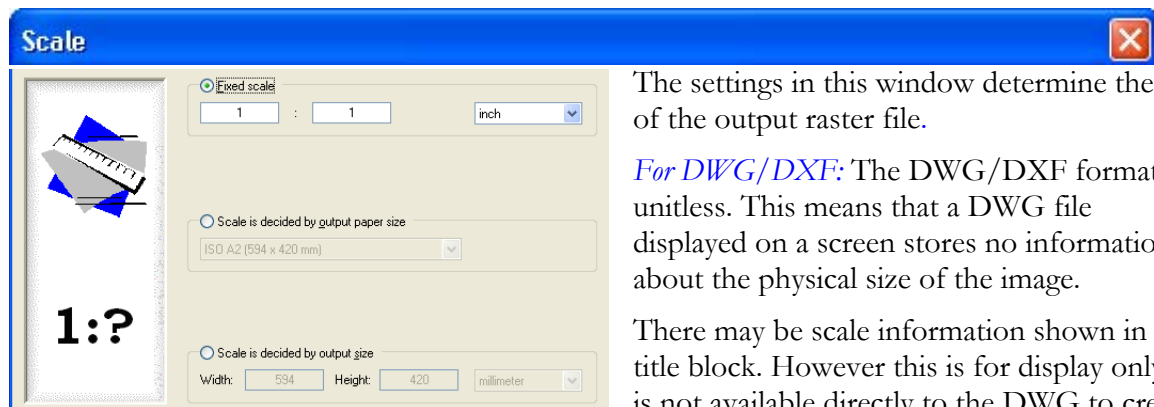


Ignore Constant Line Widths: **Normally unchecked.** In AutoCAD lines can be set to be a fixed width. Checking this box instructs RasterServer to override the fixed width and use the color value and pen file to establish the raster line width.

Pen File Selection from DWG: **Normally unchecked.** It is possible to set variables in AutoCAD files (e.g. USER1, USER2, LTSCALE, etc.). RasterServer can read these variable(s) from the DWG file and, using a condition table select a particular PEN file to be used in the conversion. If this check box is selected under Advanced Settings and *Next* is clicked, the wizard next brings up a window containing the condition table. An example is shown here. See Page 27 for more information.



Scales from DWG file: **Normally unchecked.** As with the *Pen File Selection from DWG* described above, using variables such as USER1, USER2, etc., RasterServer can be set up with a condition table that selects a specific scale to be used in the conversion of that particular DWG or DXF file. See Page 27 for more information.



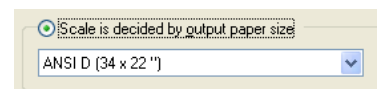
The settings in this window determine the size of the output raster file.

For DWG/DXF: The DWG/DXF format is unitless. This means that a DWG file displayed on a screen stores no information about the physical size of the image.

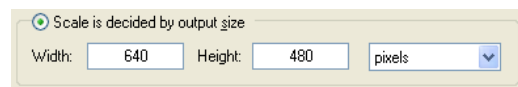
There may be scale information shown in a title block. However this is for display only. It is not available directly to the DWG to create

a physical print size. Size information is provided by the user when the DWG file is plotted or printed. In the same way sizing information must be provided to RasterServer in order to determine the size of the raster output produced by RasterServer.

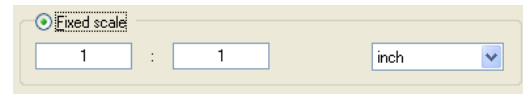
The easiest way to do this in RasterServer is to select a fixed output size, such as 'D' or 'A0' in the Settings wizard by checking the *Scale is decided by output paper size* button and selecting the required sheet size.



If you prefer to define the output image size yourself use the *Scale is decided by output size* button.



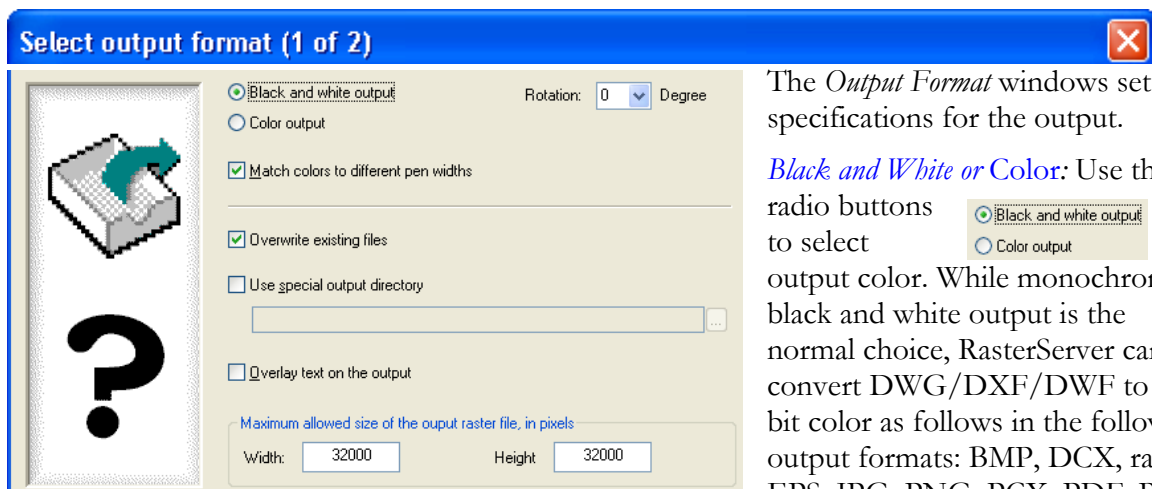
In other cases you may simply check the *Fixed Scale* box and select 1:1 and the units used in your locale. Typically these are inches in the USA and millimeters in Europe and much of the rest of the world.



However, there may be occasions when you have a non-standard scale. For example, the title block may indicate a scale of 1 inch to 1 foot. If, for this example, you chose inch units with a 1:1 scale and the result is a file that is too large or you see an 'exceeds size limit' error you should try using a 1:12 scale. This reflects the 1" to 12" (1') suggested in the drawing.

In the absence of clues in the drawing try an iterative approach: If your first attempt produces an excessively large or small raster try going to the other extreme for scale setting. Once you are successfully creating a reasonably sized image you can compare its dimensions to those sought and adjust the scale accordingly.

For HPGL: If your input file is HPGL format set the fixed scale to 1:1 millimeters. This will create a raster of the same dimensions as would be created by a plot of the input file. Otherwise use a *Scale is decided...* button to set the output size.



The *Output Format* windows set the specifications for the output.

Black and White or Color: Use the radio buttons to select output color. While monochrome black and white output is the normal choice, RasterServer can convert DWG/DXF/DWF to 8-bit color as follows in the following output formats: BMP, DCX, raster EPS, JPG, PNG, PCX, PDF, PSP,

PICT, RAST, TARGA, uncompressed TIFF, raster WMF and XWD. If you need to convert a color image with solid colors to a monochrome output format such as CALS or TIFF Group 4, see Page 27 for more information.

Rotation: To rotate the raster output use the rotation pull down menu. The choices are 0°, 90°, 180° or 270° clockwise.

Rotation: 0 Degree

Match colors to pen widths: **Normally checked.** Use this in order to have the raster line widths in the output set by reference to the original color values of the lines in the DWG/DXF/DWF.

☒ Match colors to different pen widths

Overwrite existing files: **Normally checked.** If RasterServer finds a file of the same name as that of the conversion in the output directory it will overwrite the original file. If this is not checked and a file of the same name is found the conversion is aborted and an error message is written to the log.

☒ Overwrite existing files

Use special output directory: **Normally unchecked.** Check this only if you require that all output from this Setting be sent to a specific directory. Use the button to navigate to the required directory.

☐ Use special output directory

Overlay text on output: Check this to add user defined text to the output. The content and position for the overlay is defined in a later window.

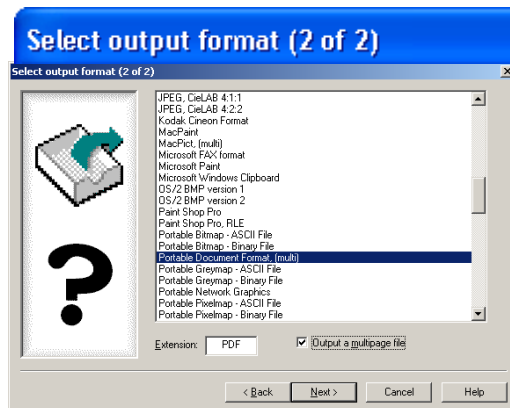
☐ Overlay text on the output

Maximum allowed size: RasterServer calculates the pixels that the output will produce based on the scale established in the Scale window and the DWG or DXF it is processing. If the calculated pixels exceed the limits set here the file is either skipped and an error message generated in the log or, if 'split large files' is checked in a later panel (See Page 21) the output is split into multiple files—each one a *tile* from the original whole. This setting is designed primarily to allow users who produce images for automatic Web publication to avoid accidentally serving up massive images. RasterServer itself sets an upper limit for all output of 65,535 pixels wide by 65,535 pixels high (the equivalent of 13' 7" by 13' 7", or 4.1m by 4.1m, at 400 dpi resolution.).

Maximum allowed size of the output raster file, in pixels

Width: 20000

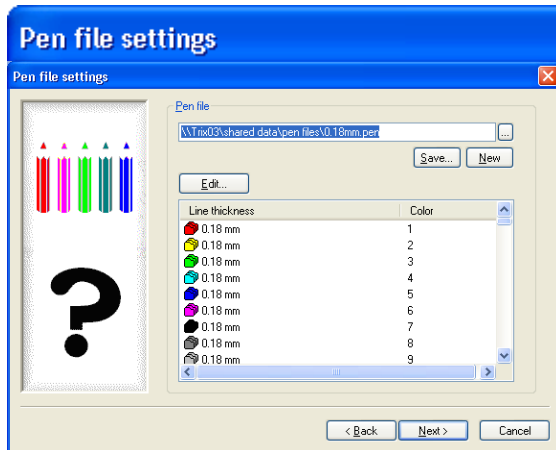
Height: 20000



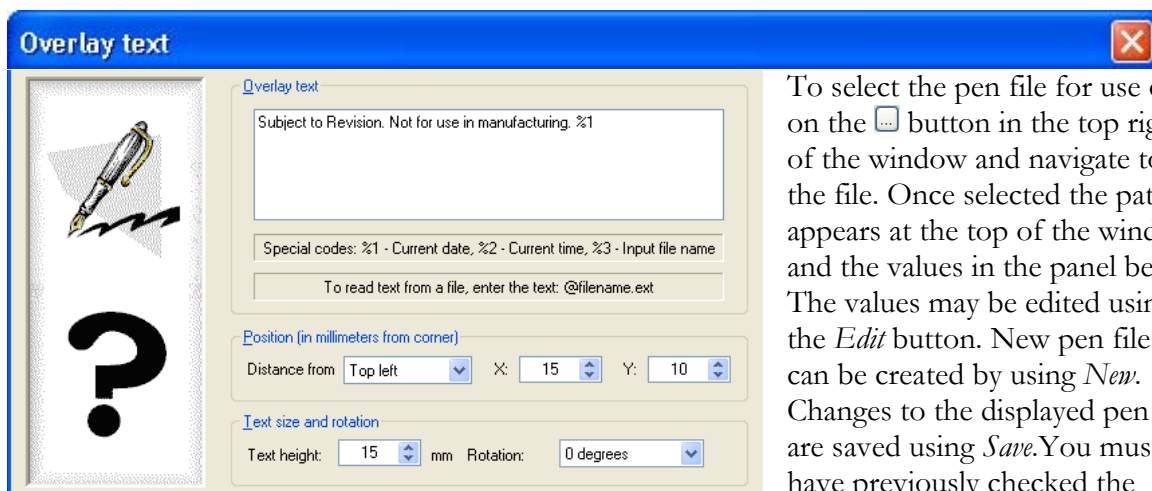
Select output format: Click once on the output format required. When the format is selected RasterServer inserts an extension in the box. This extension can be changed by manually editing the contents of the box. A maximum of three characters are permitted.


Output multi-page file: When a multi-layout DWG or a multi-page PLT file is submitted, checking this box

instructs RasterServer to create a single multi-page output file instead of multiple individual files. For this to work the selected output format must support multiple pages in a single file. Look in the formats table in the Appendix on Page 25 to determine if a format supports multiple pages.



The widths of the raster lines in the output are determined by reference to pen files. These are explained in more detail the line Widths section on Page 30.

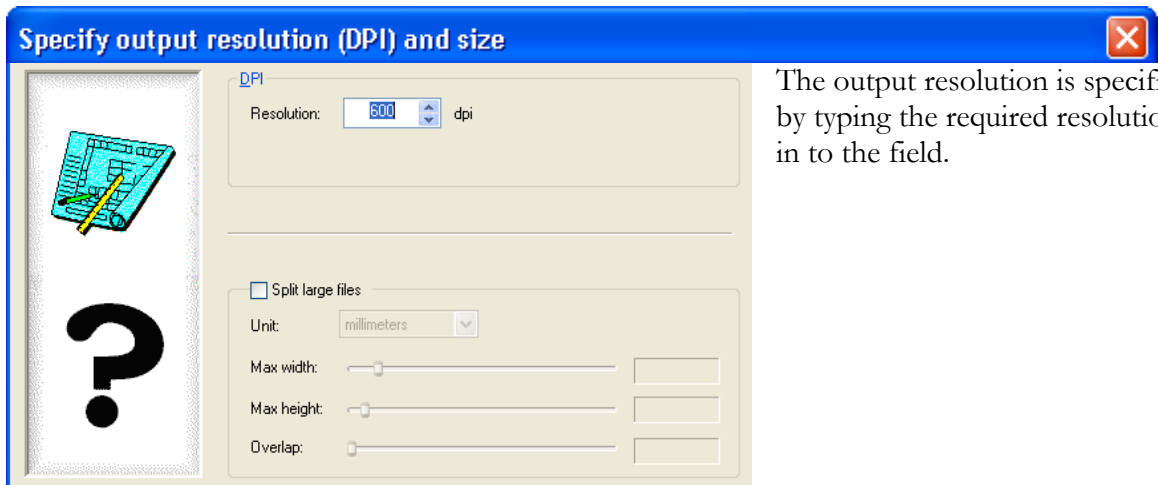


To select the pen file for use click on the  button in the top right of the window and navigate to the file. Once selected the path appears at the top of the window and the values in the panel below. The values may be edited using the *Edit* button. New pen files can be created by using *New*. Changes to the displayed pen file are saved using *Save*. You must have previously checked the

Overlay text box. Define the content of the overlay in this window. Type required text into the field at the top of the window.

To have RasterServer enter the current date type *%1*, the time *%2* and the input file name *%3*. You can also read text from an external text file by entering *@filename.ext* in the *Overlay text* box.

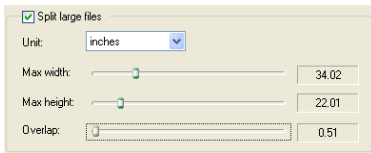
Use the lower settings to place and rotate the overlay.



The output resolution is specified by typing the required resolution in to the field.

Split large files: To have large images split into tiled smaller sheets check the *Split large files* box and use the pull down menu to select your units. Then use the sliders to set the maximum dimensions for the output sheets. The *Overlap* is the extent to which the side of the image is to

be repeated on an adjacent tile.

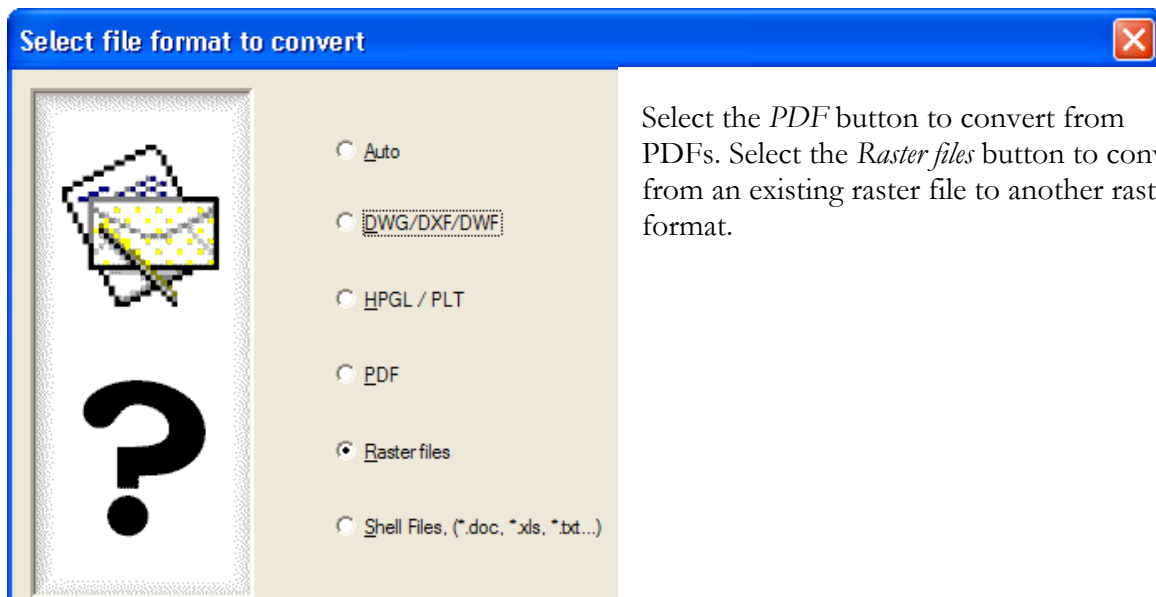


This setting differs from the *Maximum Allowed Size* set in the *Output Format Window*. *Maximum Allowed Size* refers to the pixels in the output. *Split Large files* establishes the maximum physical

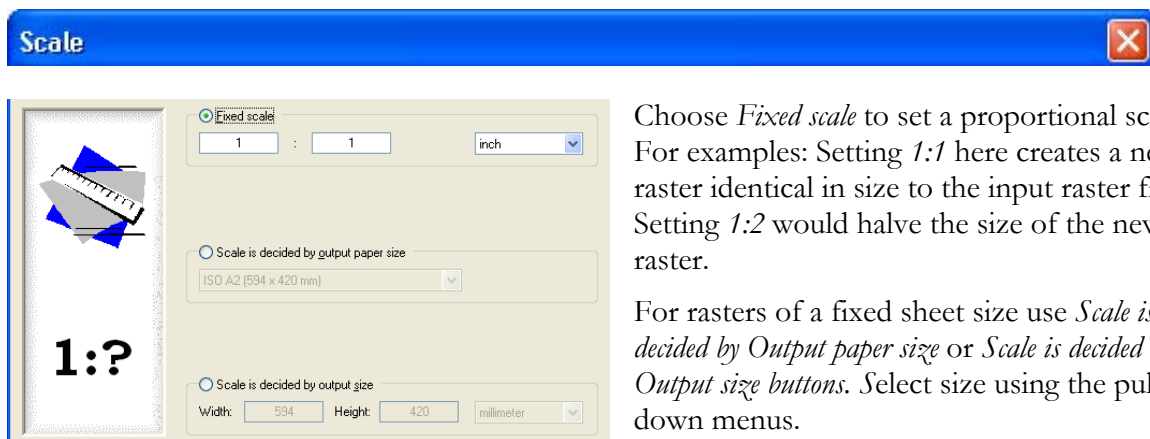
dimensions above which the output is to be split into multiple tiles.

Converting from raster files or PDFs

RasterServer converts raster files to alternative raster formats. It also converts PDF files to raster formats. Because of fundamental differences in content some source raster formats cannot be converted into certain output formats. The Settings wizard will warn you if this is the case.³



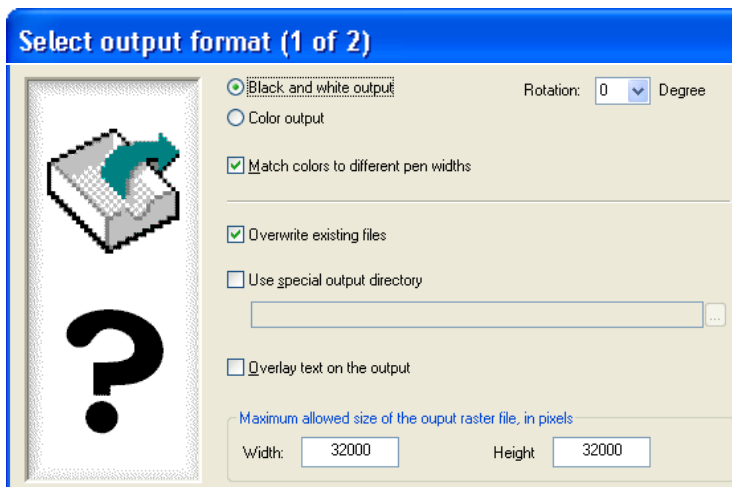
Select the *PDF* button to convert from PDFs. Select the *Raster files* button to convert from an existing raster file to another raster format.



Choose *Fixed scale* to set a proportional scale. For examples: Setting *1:1* here creates a new raster identical in size to the input raster file. Setting *1:2* would halve the size of the new raster.

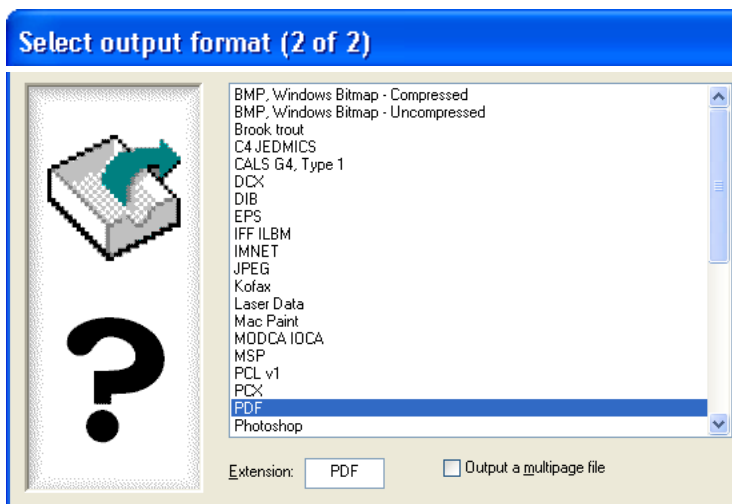
For rasters of a fixed sheet size use *Scale is decided by Output paper size* or *Scale is decided by Output size buttons*. Select size using the pull down menus.

³ *Note:* It is possible to request quite complex raster conversion operations such as interpolation which reduces the number of pixels in an image. These can be processor and disk-intensive and so take quite a long time to complete.



This window functions for raster input/output as described for DWG, DXF, DWF and HPGL inputs. See Page 18.

If your input is a non-color raster and you select color output larger files will be created but they will still be non-color.



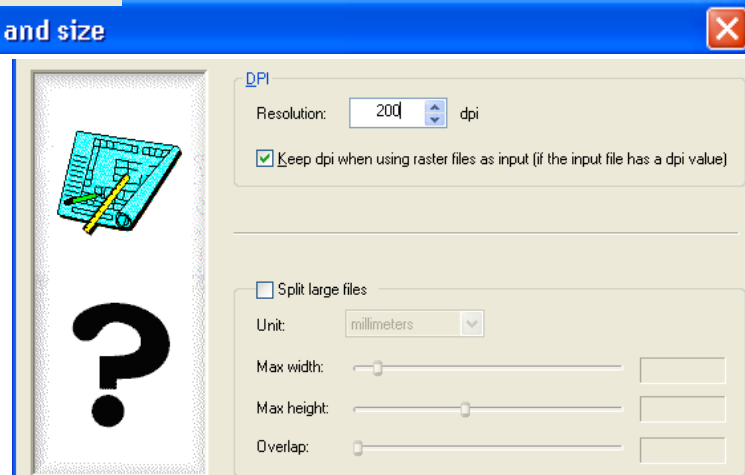
The raster output format you select should be compatible with the content of the input raster format. For example, a color photograph can be converted to a monochrome (1-bit) CALS format file. The result, however, may not have much practical value as CALS was not designed to display photographic images.

Specify output resolution (DPI) and size

The output resolution is specified by typing in the dpi. To retain the resolution of the input raster image (if this can be determined) check the *Keep dpi* box. Raster files can be split into multiple smaller tiles. The method is as described for DWG/DXF input on Page 21.

Finally click on *Finish* to save the Setting.

Shell File Conversion (from MS Office, Visio and DDE accessible files)



DWG, DXF, DWF, HPGL, PDF and raster files are directly converted by RasterServer. No other application is required. RasterServer can also batch convert other formats provided a

DDE-capable application that can open the format and display the image on screen is installed on the same CPU as RasterServer.

Typically Shell File conversion is used to convert from Microsoft Office and Visio files. The approach can work with other applications if they accept Windows DDE (Dynamic Data Exchange) commands (and, specifically, the DDE PrintTo command). For example AutoSketch 9 drawings can be converted if AutoSketch 9 is installed on the same computer as RasterServer.

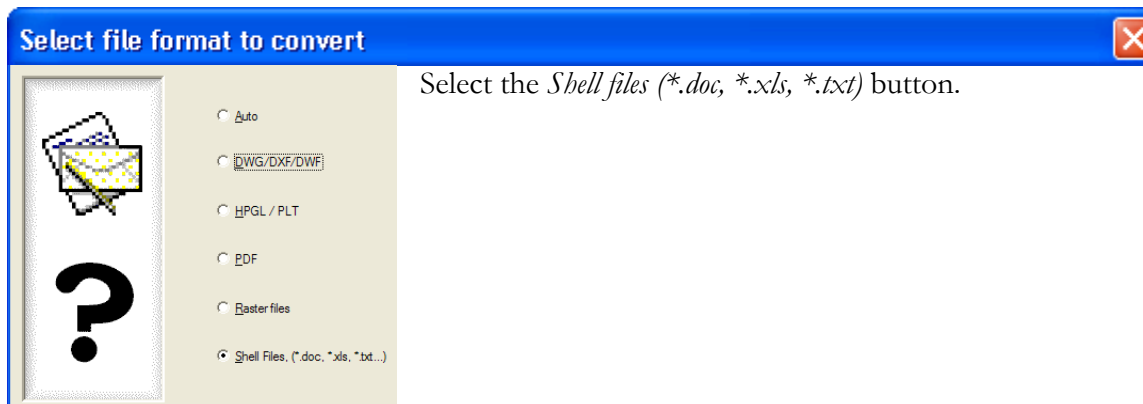
In a *Shell file* conversion, as it is known, RasterServer locates the application associated with the format and instructs it to open the file using DDE commands. It then 'prints' the image to the RasterServer Client Printer Driver. This delivers the image to RasterServer for conversion to the desired raster output format. RasterServer then closes the cooperating DDE application.

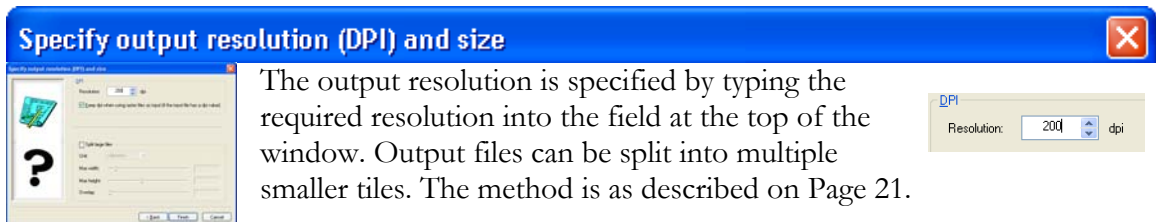
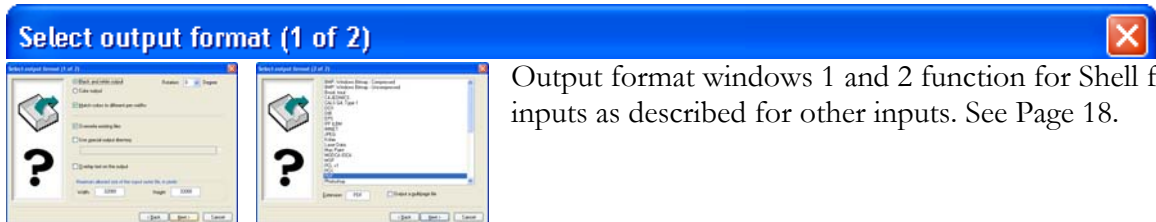
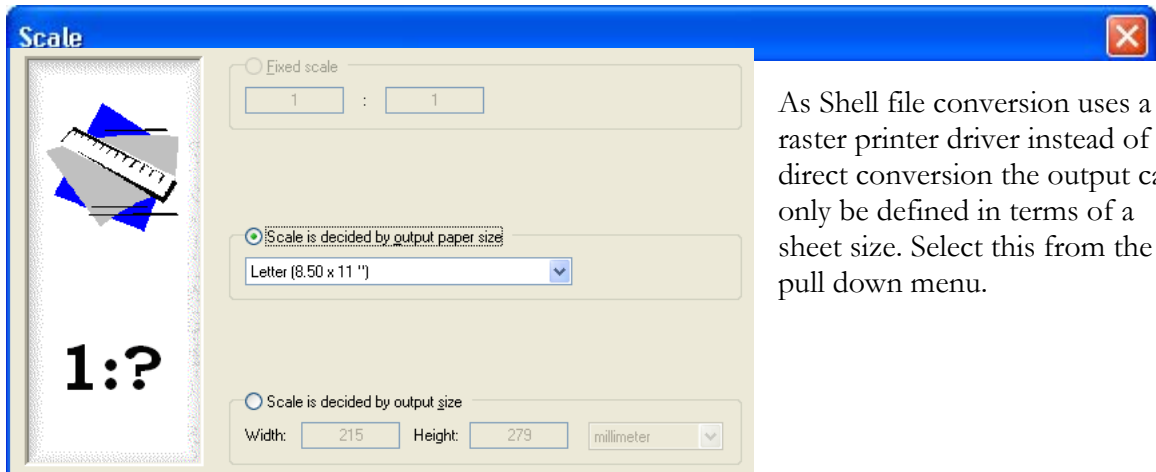
For example: If you have MS Word .doc files to continuously convert you would install the Microsoft Word application on the same CPU as RasterServer and use a Shell file Setting and a Job row similar to the one below.

| Repeat | In | Par file | Out | Setting | Done |
|-------------------------------------|-----------------|--------------------------|---------------|---------------------------------|--------------------------|
| <input checked="" type="checkbox"/> | C:\RS_in1*.doc | <input type="checkbox"/> | C:\RS_output\ | Shell files to CALs US Ltr size | <input type="checkbox"/> |

NOTE: Shell files to be converted must not contain macros that are activated when the file is opened.

The Shell file Setting windows are:



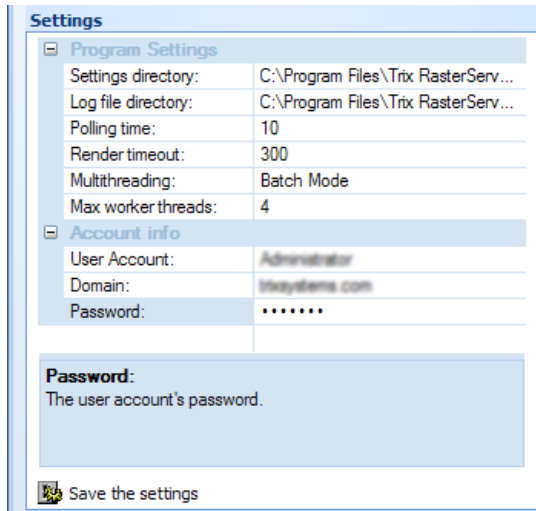


'Auto' determines input file type automatically. If the file type is unknown the application tries a Shell file conversion.

'Auto' should only be used when file types are unknown as it offers less control over output.

Application Settings

This panel stores settings that are used by the application to find and store Job Setting and log files, to control timings and multithreading and to set up the user account for the service.



Settings directory: The path to the directory which stores the Job Setting (.PA_) and pen (.PEN) files.

Log file directory: The path to the directory into which the RasterServer log is to be written. To view a log file open it in a text editor or drag it onto the RasterServer main window.

Polling time: The polling time interval establishes, in seconds, how frequently RasterServer checks for the presence of new files to convert. You might increase this if you are experiencing problems converting files over networks with read/write time delays or to reduce RasterServer's work load on the CPU.

Render timeout: Sets the maximum time that RasterServer will use to render a conversion. If this time is exceeded the job will be killed.

Multithreading: Three modes are available.

- Classic Mode: Single threaded - job rows are executed sequentially (as in previous versions of RasterServer).

- Batch Mode: One thread is used for each of the jobs in the job list. The batch starts and ends at the same time (because the single batch is dependent on the same input).

- Multithread Mode: All the jobs in the list run at the same time, independent of one another. In addition, if you wish, you can have multiple threads devoted to a single job. To do this have Multithread Mode selected and check the 'Multi' Check box in the job row.

Max worker threads: This enables you to set the maximum number of allowed simultaneous threads.

User Account: Enter your User account name. **Note:** The "System account" that is the default does not have privileges to access network drives. You will have to select another account to be able to read from and write to network drives.

Domain: Enter the Domain name here or enter a period '.' if it is a local account.

Password: Enter the User Account password.

After making changes you must use *Save the settings*.

Reference

Autostarting

When the RasterServer User Interface is started it automatically displays the list of jobs it was processing when the interface was closed. If the server is running when you close the RasterServer User Interface it will continue processing jobs. It will automatically restart after a system restart.

Condition tables

Settings for conversion from DWG or DXF files can use condition tables to select pen files or scales based on User Variables set inside the DWG or DXF file. By setting these inside AutoCAD the user can establish how the file will eventually be processed by RasterServer.

A simple example might be to set up rules:

| For RasterServer to use scale of | Set USER11 in AutoCAD to be |
|----------------------------------|-----------------------------|
| 1:1 | 1 |
| 1:10 | 2 |
| 1:100 | 3 |

To establish this rule in a Setting you would first check the *Scales from DWG* check box. In the subsequently presented Setting window you will see the condition table shown to the right.

When converting a DWG with this Setting RasterServer will read the USER11 variable from the DWG and check Condition 1. If this is not met (true) it will check Condition 2. If this is not met it will check Condition 3. If none are met it will revert to using the default Scale established elsewhere in the Setting.

Scale from DWG file

1. If USER11 = 1 and 1 = 1 then set the scale to 1: 1 + 0

2. If USER11 = 2 and 1 = 1 then set the scale to 1: 1 + 9

3. If USER11 = 3 and 1 = 1 then set the scale to 1: 1 + 99

4. If 1 = 1 and 1 = 1 then set the scale to 1: 1 + 0

5. If 1 = 1 and 1 = 1 then set the scale to 1: 1 + 0

< Back Next > Cancel

The condition table is designed so that complex combinations of conditions can be created if so required. The alternative pen file selection table is constructed in a similar fashion.

Converting color images

Converting to color images produces much larger files than converting to monochrome, takes longer and requires substantially more memory. Color output is 8-bit while monochrome output is 1-bit and hence color takes longer to create. It is recommended that you install additional

memory if a substantial part of your work creates color output. We suggest experimenting with both monochrome and color output before committing to color output.

We also recommend using PNG or GIF output format instead of JPEG when creating color output. PNG and GIF files are cleaner, smaller and more reliably produced than JPEG. They can be used in Web pages in an identical fashion to JPEG images using the tag in HTML.

You can select to output to a monochrome (black and white) file format even if the input image is in color. However, in this case, solid blocks of colors in the original image will appear as solid black in the conversion. To avoid this select *Color output* in the Select output format (1 of 2) panel. In the subsequent panel select a monochrome output format such as TIFF Group 4 or CALS. The blocks in the output will then appear as dithered black and white, giving the appearance of gray. Linework and text underneath the block will then show through.

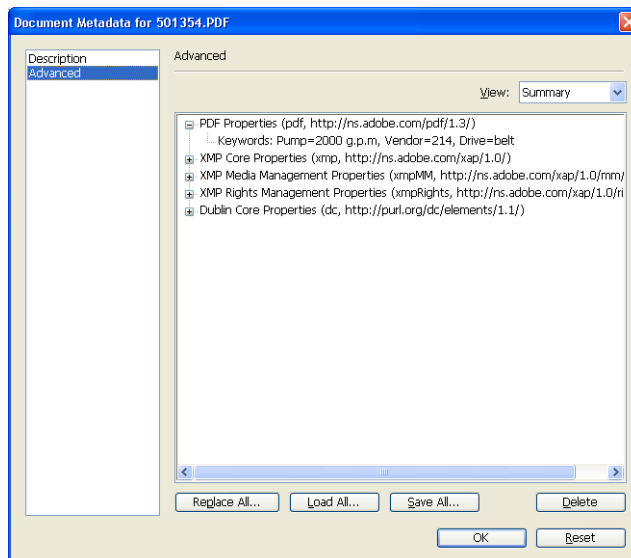
Extracting Attributes from DWGs to PDF keywords

Overview

RasterServer includes a feature that enables attributes stored in blocks in DWG files to be extracted during batch processing and placed in the keyword section of the PDF file that RasterServer outputs. An example from a PDF file is shown to the right.

You should be familiar with AutoCAD DWG blocks in order to use this feature.

The name of the block to be found in the DWG file is provided to RasterServer inside a Setting. When RasterServer is run using this Setting, the tag name and attributes from the block are extracted and inserted into the Keyword field of the resulting PDF file.



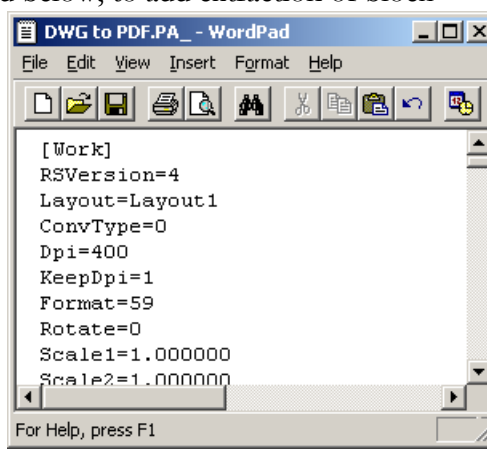
The keyword field in the PDF is formatted as *tagname1=value1,tagname2=value2,tagname3=value3 etc.*

Suggested Procedure

To add attribute extraction you should first construct a Setting that converts your DWG files to the output format that you require. Test this until it meets your requirements. Then close RasterServer and reconfigure the Setting, as described below, to add extraction of block attributes.

Configuring the Setting

RasterServer Job Settings are stored in files with the extension .PA_. These can be found in the Settings folder. The default location for this is in



the Trix RasterServer folder. This can be changed in the Application Settings.

Once you have created and tested a Job Setting navigate to the Settings folder. The Setting file containing the Settings information will have the same name as the Setting as seen when viewed from within RasterServer.

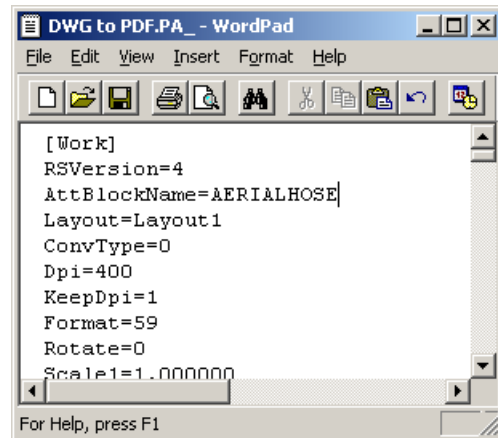
For example, a Setting named *DWG to PDF* is stored in the file named *DWG to PDF.PA_*. Double click on this file and open it in a text editor. It will appear similar to the illustration above.

Create a new line just below the *RSVersion=* and enter

AttBlockName=

followed by the name of the block. In the illustration to the right the block named *AERIALHOSE* has been entered.

Save the changes to the *.PA_* file (making sure that the extension *.PA_* is preserved). Now restart RasterServer. Run a conversion using the Setting. The resulting PDF will contain the keyword attributes.



For PAR file users

The same *AttBlockName=* Statement can be used in a PAR file if you are creating PAR files to control conversions.

External references in DWG/DXF files

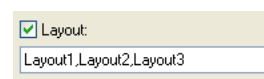
RasterServer will use external references embedded in DWG files. When looking for x-ref files, RasterServer will:

- 1) Look for the file using the absolute path specified in the source DWG file;
- 2) If not found, look for the file using the specified path applied relative to the directory now containing the source DWG (for x-ref's with filenames like `../..\\x-ref.dwg`)
- 3) If still not found look for the x-referenced file in the directory now containing the source DWG file.

NOTE: Embedded OLE objects cannot be processed.

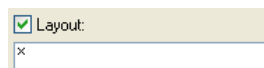
Layouts in DWG files

To produce images based on DWG Layouts enter the names of the Layouts in the DWG View Setting. Separate each name by a comma. Layout names are case sensitive.



Layout: Layout1,Layout2,Layout3

If all the Layouts in the DWG are to be converted type `*` in the box. For conversion of all layouts and model space enter `"*+"`.



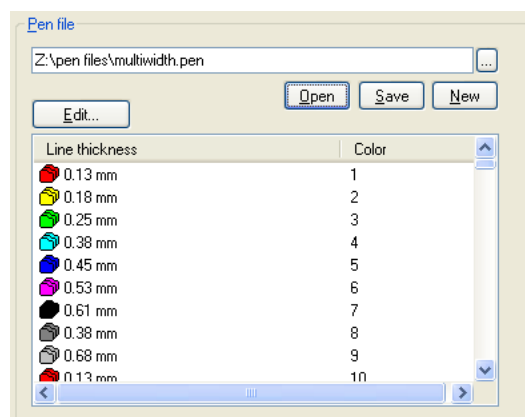
Layout: *

It's possible to mix the *wildcard* `*` character with full layout names. For example `L*,Tender` would convert all layouts beginning with *L* and also the layout named *Tender*.

To create a single output file containing each Layout as a page check the *Output a multipage file* box in the Wizard when selecting an output format.

Line widths

The color values stored in a DWG, DXF or HPGL file can be used to set the line widths in the output from RasterServer. Each color value in the original file is mapped to a raster line width using a *.Pen file*. These are very simple text files which have the extension *.pen*. The required Pen file is called from each RasterServer Setting. They can be created using the Setting Wizard or manually using a text editor.



Pen file

Z:\pen files\multiwidth.pen

Edit... Open Save New

| Line thickness | Color |
|----------------|-------|
| 0.13 mm | 1 |
| 0.18 mm | 2 |
| 0.25 mm | 3 |
| 0.38 mm | 4 |
| 0.45 mm | 5 |
| 0.53 mm | 6 |
| 0.61 mm | 7 |
| 0.38 mm | 8 |
| 0.68 mm | 9 |
| 0.13 mm | 10 |

If you were to open the Pen file shown opposite in a text editor the first lines would appear as:

| |
|----|
| 13 |
| 18 |
| 25 |
| 38 |
| 45 |

Color 1 in the original will be converted to 0.13 mm wide in the output, Color 2 will be 0.18 mm wide, etc.

To create a new Pen file from within the Settings Wizard click on New, enter a new name in the Pen file field and then click on Save. Double click on the line width digits of the color you wish to change and edit the value. When you have finished making changes click again on *Save*.

Automated Workflow - Using PAR files

Introduction

A Setting provides a fixed set of instructions. This is perfect if you have standardized needs: once a few instruction rows are set up all your RasterServer then needs are copies of input files dropped into the polled folders. The Command Line Interface, described in the previous section, provides a simple means of controlling a limited number of parameters. If, however, you need to treat each file conversion individually, and/or you need to control RasterServer from another application, you will need to create PAR files. These are text files containing parameters – hence the name PAR file.

Settings are saved in the Settings folder as files with the extension .PA_. You can view the contents of a .PA_ Setting file using a text editor.

PAR files are submitted to RasterServer in place of the image files to be converted. The PAR file contains information read in by RasterServer and used to perform a conversion. By using PAR files you provide RasterServer with a unique set of instructions for each file to be converted. An example of the content of a simple PAR file is shown below. The file can be given any name provided the extension used is .par.

```
[Work]
InFile=E:\DRAWINGS\TEST.DWG
OutFile=E:\QUOTATIONS\RS_OUT
Rotate=90
```

PAR files are submitted to RasterServer via a polled folder and a wildcard file name *.par.

| Repeat | In | Par file | Out | Setting | Done |
|-------------------------------------|------------------|-------------------------------------|---------------|---------------------|--------------------------|
| <input checked="" type="checkbox"/> | C:\Par_in1*.par | <input checked="" type="checkbox"/> | C:\RS_output\ | DWG DXF to PDF inch | <input type="checkbox"/> |

When a PAR file is placed in the polled folder *Par_in1*, as shown in the illustration above:

- 1) RasterServer reads the PAR file from directory *Par_in1*.
- 2) From the InFile= line RasterServer determines that it must convert TEST.DWG
- 3) From the OutFile= line it determines that the output must be placed in directory E:\QUOTATIONS\RS_OUT, overriding the C:\RS_output in the Job row.
- 4) From the Rotate= line it determines that the image is to be rotated 90 degrees.
- 5) Then it uses the Setting *DWG DXF to PDF inch* in the Job row to determine other requirements, such as that the output format is to be PDF.
- 6) The Job is run and the Par file is deleted. RasterServer then looks for the next PAR file.

Any conversion criteria that can be set in a Setting can be set in the PAR file. When a parameter is present in both the PAR file and the Setting, the conversion criteria in the PAR file overrides that in the Setting. For any parameters not present in the PAR file RasterServer uses the Setting instead.

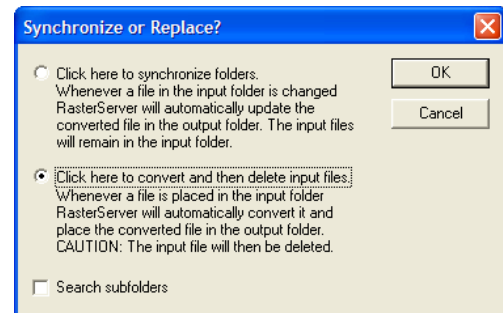
To create PAR files you customize your own applications or systems to write them out and place them in directory polled by RasterServer. One parameter file is required for each input file to be converted.

Typically users use Visual Basic, C or Macros. It's also possible to script AutoCAD to create PAR files.

You must develop and test the application's creation of the PAR file first. Suggestions for how to approach this and specifications for the contents of parameter file follow in the subsequent sections.

We recommend you become familiar with using the regular RasterServer features for automatic processing before moving on to the PAR files section.

Note: When setting up a job row for processing PAR files, select to delete the PAR files after each is processed by checking the *Click here to convert and then delete* button in the *Synchronize or Replace* dialog box. If you do not do this the same PAR file will be processed repeatedly.



The PAR file format in detail

The PAR file is constructed very much like a standard Windows INI file. Here's an example of a more detailed parameter file than that shown in the introduction:

```
[Work]
InFile=C:\DRAWINGS\TEST.DWG
OutFile=C:\TEMP
Dpi=300
Format=18
Rotate=90
Scale1=1.0
Scale2=1.0
OverWrite=1
ShxDir=C:\ACAD\FONTS
Ext=CAL
PenFile=C:\RS\DEFAULT.PEN
; This is a comment line
```

The Par file need contain only those variables that you want to control using the PAR file. All others are picked up from the Setting used in the same Job row as the PAR file selection. So the rule is:

RasterServer looks first at the PAR file. Then, for any Settings that it still requires, it looks to the Setting file.

At its simplest it's possible to have a par file containing nothing more than INFILE and OUTFILE statements, with all the remaining criteria extracted from the Setting in the job row used for processing the PAR file.

Basing your PAR file on an existing Setting

RasterServer enables you to convert an existing Settings file to a PAR file. Click on the Settings icon and select a setting. Then click on the 'Save as parameter file' button. Save the parameter file to a convenient location. Then use WordPad or any word processing application to open and inspect the parameter file.

At first glance the long list of parameters is intimidating. However in most cases only a few alterations are required in order to use the saved par file as a template. The only items that must be added to one of these PAR files in order to use it are INFILE and OUTFILE parameters directing RasterServer to the source file and the location directory for the output file.

Parameter List

Detailed Definitions for each section of the parameter file: This table describes the parameters that may be set in the parameter file.

| Field | Default | Description |
|------------------|---------|---|
| [Work] | | The [Work] section must exist in every PAR file. |
| RSVersion | 5 | RSVersion=6 is a required entry. |
| ConvType | 0 | Describes source file type 0 = DXF/DWG 1 = HPGL 3 = Raster 4 = Shell file 6 = PDF 7 = Auto (Automatically identify – see page 25) |
| Dpi | 300 | Output file resolution in dpi (dots per inch). |
| Format | 18 | Output format, where, in this example, 18 = CALS (see Appendix 1 for a complete list and reference numbers). |
| Rotate | 0 | Degrees to rotate the raster output (can be 0, 90, 180 or 270). |
| Scale1 | 1.0 | Used to define the original scale of the vector drawing scale is: 1 vector unit is Scale1 / Scale2 mm. |
| Scale2 | 1.0 | As above. |
| ScaleType | 0 | 0 = manually set scale – use ScaleUnit below. 1 = fixed output size – use ScaleSize below 2 = manually set dimensions of output raster – Width and Height parameters below. |

| | | |
|------------------------|-----|--|
| ScaleUnit | 0 | Use if you wish to manually set the scale: 0 = millimeter, 1 = centimeter, 2 = decimeter, 3 = meter, 4 = kilometer, 5 = 10 kilometers, 6 = inch, 7 = feet, 8 = yard, 9 = mile. |
| ScaleSize | | Use if you wish to set a fixed output paper size. Open the file RSFormat.ini in the RasterServer folder to see the table of ScaleSize codes to paper sizes. For example ScaleSize=30 sets output size to ANSI D. |
| Width | 0 | Desired width of the raster file (0 use scale to calculate width). |
| Height | 0 | Desired height of the raster file (0 use scale to calculate height). |
| SizeUnit | 0 | Units for manually set output size: 0 = pixels. 1= millimeters, 2 = centimeter, 3 = decimeter, 4 = meter, 5 = kilometer, 6 = 1- kilometers, 7 = inch, 8 = feet, 9 = yards, 10 = miles. |
| Overwrite | 1 | Should files be allowed to be overwritten, 0 = No, 1 = Yes. |
| MultiPageOutput | 0 | Create multipage output file if output file supports this. 0 = No, 1 = Yes. |
| Pen | 1 | Keep default. |
| OutFile | | Output file path with output file name (if the path is provided but no output file name is specified the application will create one based on the input file name). |
| OutputType | | Set to 0 for black and white, set to 1 for color output. |
| OutDir | | Path to directory into which output is to be stored (if no OutFile path is defined). |
| ShxDir | | Path to directory with AutoCAD® fonts (.SHX files), if not specified or found a default font is used. |
| Ext | OUT | Default extension, if no OutFile is set a default directory is used and the file extension used is set by Ext. |
| Overlay | 0 | If a text overlay is to be used set this to 1 and enter value in the [Overlay] section. |
| PenFile | | Complete path to pen file. |
| InFile | | Complete path to the input file to be rasterized. |
| InFile1 | | If InFile is empty then InFile1 is the complete path of the first page in the file to be rasterized (in this case the output format must be one that accepts multiple pages.) |
| InFile2,... | | Additional pages to be rasterized. |

| | | |
|------------------|-------|---|
| MaxWidth | 20000 | Maximum allowed width (in pixels) of the output raster file (used to see that correct scales have been used). |
| MaxHeight | 20000 | Maximum allowed height (in pixels) of output raster file. |
| DWGView | 0 | 0 = Model space extents, 1 = Model space limits, 2 = Paper space extents., 3 = Automatic PS/MS extents, 4 = Layout (and use Layout parameter), 5 = As saved. |
| Layout | | Name of Layout to use in AutoCAD 2000 and up DWG files. For multiple layouts separate names with a “,”. Use an * to convert all Layouts, as in Layout=*. |
| X1 | 0 | If any of these coordinates are not equal to zero they will limit the area to be rasterized. This can be used for instance to not rasterize anything outside the drawing frame. Example: X1=100, Y1=100, X2=200, Y2=200 will only rasterize the 100 by 100 square that starts 100 from the bottom of the drawing and 100 from the left of the drawing. Units are mm for raster conversions and drawing units for DWG conversions. |
| Y1 | 0 | |
| X2 | 0 | |
| Y2 | 0 | |

| | | |
|----------------------------|---|---|
| UseUserI1 | 0 | If set to 1, use the values of the AutoCAD USERI1 variable to set output size. 1=A1, 2=A2, 3=A3, 4=A4. |
| DWGScale | 0 | Set to 1 to get the scale from the DWG file. |
| DWGENlarge | | Set to 1 to enlarge the output file to capture the entire drawing frame. |
| DWGPen | 0 | Set to 1 to select the pen file to use from the DWG file. |
| IsHPGL | 0 | Set to 1 if the input file is a HPGL file. |
| Keepdpi | 1 | In raster to raster conversion, setting this value to = 1 keeps output dpi the same as the resolution of the input raster file. |
| AppendFile | | Use only with PDF output. If a path to a PDF file is specified here output PDF file(s) will be appended to this original file. |
| EraseFile | | The file specified here will be deleted after a successful conversion. This can be any file - it does not have to be the input file. |
| IgnoreConstantWidth | | Set to 1 to have the program ignore constant line widths in DWG files and create the raster line widths solely based on color values in the pen file. |

| | | |
|------------------------------|---------|---|
| [Overlay] | | Optional section. |
| Text | | Text for insertion overlaying output. Use %1 to insert current date, %2 current time, %3 input file name. |
| XPos | | Horizontal distance of overlay text from corner (in mm). |
| YPos | | Vertical distance of overlay text from corner (in mm). |
| Rotation | | Rotation of overlay text, 90, 180 or 270 degrees. |
| TextHeight | | Overlay text height in mm. |
| Corner | 0 | Position of overlay text: 0 = top left, 1 = top right, 2 = bottom left, 3 = bottom right. |
| [Split] | | Optional section. Settings to split output rasters into multiple files if they exceed height and width set below. |
| Active | 0 | Set to 1 if large outputs are to split into smaller panels. |
| LongFilenames | 0 | Set to 1 to append numeral to existing filename for each successive output panel. |
| Height | | Height in mm of panels for split files. |
| Width | | Width in mm of panels for split files. |
| Overlap | | Overlap between panels in mm. |
| [LayerList] | | Optional Section. |
| Layer0 | Nothing | +/- Layername; + = Layer ON, - = Layer OFF. |
| Layer1 | " | DEFPOINT (Leave layer DEFPOINT unchanged). |
| MultiPageFormat First | | Naming convention for the first output file from a multi page file. Default "MultiPageFormatFirst = _Page%03d" produces a file named Name_Page001.ext. Alternatively "MultiPageFormatFirst = _Sheet%02d" would produce a file named Name_Sheet01.ext. |
| MultiPageFormat Rest | | Naming convention for the rest of the output files from a multi page file. Default " MultiPageFormatRest = _Page%03d" would produces a second file named "Name_Page002.ext", etc. |
| RunAfterJob | | Use to have an application run after job completes. Format is RunAfterJob=path\applicationname.exe |
| ; | | Comments can be inserted by prefixing lines with a ';'. |

Creating headers in CALS files

The three following sections can be used when creating CALS files. Using these sections, it is possible to insert text into the CALS header. Srcdoc, Dstdoc and Notes can be used. As many text1, text2, etc. as are needed can be used. The format is index:text, where index is the position where to start for each section (1 is 1 step to the right of the colon in Srcdoc:, Dstdoc: or notes:) and text is the text to be written there. It is only possible to write text within the specified section, indexes that are too large and/or strings that are too long are either trimmed or ignored.

These three tables describe how to write information to a CALS header.

[SrcDoc] section (optional):

| Field | Default | Comment |
|-------|---------|--|
| Text1 | Nothing | pos:text, pos is the position where the text should start. |
| Text2 | " | |
| ... | | |

[DstDoc] section (optional):

| Field | Default | Comment |
|-------|---------|--|
| Text1 | Nothing | pos:text, pos is the position where the text should start. |
| Text2 | " | |
| ... | | |

[Notes] section (optional):

| Field | Default | Comment |
|-------|---------|--|
| Text1 | Nothing | pos:text, pos is the position where the text should start. |
| Text2 | " | |
| ... | | |

TIFF Tag 270 – Image Description

The following section can be used when you want to add information to the TIFF tag 270 – Image Description when creating TIFF files. As many text1, text2, etc. as are needed can be used and the format is **index:text**, where index is the position to start each section (1 is first position) and text is the text to be written there. It is only possible to write text within the specified section, too large an index and/or too long a string are either trimmed or ignored.

[Tiff270] section (optional):

| Default | Comment |
|---------|---------|
|---------|---------|

| | |
|--------------|--|
| Text1 | Nothing pos:text, pos is the position where the text should start |
| Text2 | " |
| ... | |

Creating a multipage PDF file from multiple input files

The example below is for the creation of a PDF file. The same approach can be used for the other output formats that support multiple page files.

PAR file content for creating a new multi-page PDF file

| | |
|----------------------------------|--|
| [Work] | |
| RasterInput=1 | Tells RasterServer that this batch of input files are all rasters. |
| Format=59 | Sets the output format to be PDF. |
| Infile=C:\PROJECTS\diagram1.cal | The path to the first file to be converted. |
| Infile1=C:\SCANS\scan.tif | The path to the second file to be converted. |
| Infile2=C:\PROJECTS\diagram2.tif | The path to the third file to be converted. |
| Outfile=C:\OUT\output.pdf | This defines the output file. |

PAR file content for adding new (non PDF) images to an existing PDF file

| | |
|------------------------------------|--|
| [Work] | |
| RasterInput=1 | Tells RasterServer that this batch of input files are all rasters. |
| Format=59 | Sets the output format to be PDF. |
| Infile=C:\PROJECTS\diagram1.cal | The path to the first file to be converted. |
| Infile1=C:\SCANS\scan.tif | The path to the second file to be converted. |
| Infile2=C:\PROJECTS\diagram2.tif | The path to the third file to be converted. |
| AppendFile=C:\PROJECTS\initial.pdf | This is the path to the existing PDF file. The new pages will be appended to this. |
| Outfile=C:\TEMP\temporary.pdf | This defines a temporary file that is used to store pages during the process. After the pages are appended to the pre-existing PDF file the temporary file is deleted. |

To create a multipage file from a mix of formats , say DWG, CALS and HPGL, you would script two separate stages. In stage 1 each group would be separately processed by format to a

single multipage format. In stage 2 each of the newly created files is input to create a single output file.

Creating a multipage TIF file from multiple input files

PAR file content for creating a new multipage TIFF file from DWG files

| | |
|----------------------------------|---|
| [Work] | |
| Format=0 | Sets the output format to be uncompressed TIFF. |
| Infile=C:\PROJECTS\drawing1.dwg | The path to the first file to be converted. |
| Infile1=C:\PROJECTS\drawing2.dwg | The path to the second file to be converted. |
| Infile2=C:\PROJECTS\drawing3.dwg | The path to the third file to be converted. |
| Outfile=C:\OUT\output.tif | This defines the output file. |

Appendices

Raster Formats and Codes

The following raster export formats are currently supported by RasterServer. The reference code is used in Parameter file *Format=* to define the output format. If READ ONLY, the file can be used as a raster input but not output.

Additional formats can be added to special order.

| Raster Description | Usual Extension | Code | Supports Multipage? | Supports color? |
|--|-----------------|------|---------------------|-----------------|
| C4 JEDMICS | C4 | 56 | No | No |
| CALS Type 1 | CAL | 18 | No | No |
| CALS Type 2 | C2 | 1130 | No | No |
| CALS Type 3 | NIF | 1131 | Yes | No |
| DjVu (READ ONLY) | DJV | n/a | No | Yes |
| Dr. Halo | CUT | 1108 | No | Yes |
| Enhanced Compressed Wavelet | ECW | 1277 | No | Yes |
| EPS (Encapsulated PostScript) | EPS | 14 | No | Yes |
| EPS (Encapsulated PostScript – embedded TIFF File) (READ ONLY) | EPS | n/a | No | Yes |
| EPS (Encapsulated PostScript – embedded WMF file) (READ ONLY) | EPS | n/a | No | Yes |
| Exif JPEG | JPG | 1422 | No | Yes |
| Exif JPEG 4:1:1 | JPG | 1098 | No | Yes |
| Exif TIFF – no compression | TIF | 1096 | No | Yes |
| Exif TIFF – no compression, YCC | TIF | 1097 | No | Yes |
| FlashPix | FPX | 1081 | Yes | Yes |
| FlashPix, JPEG | FPX | 1082 | Yes | Yes |
| FlashPix – no compression | FPX | 1080 | Yes | Yes |
| GEM Image | IMG | 1052 | No | Yes |
| GeoTIFF | TIF | 1174 | Yes | Yes |
| GIF (Compuserve) | GIF | 4 | Yes | Yes |
| FAX, raw, CCITT Group 3 1D | FAX | 1066 | No | No |
| FAX, CCITT Group 3 1D, no eol | FAX | 1162 | No | No |
| FAX, CCITT Group 3 2D | FAX | 1067 | No | No |
| FAX, CCITT Group 4 1D | FAX | 1068 | No | No |
| IBM Presentation PTOCA (AFP) (READ ONLY) | AFP | n/a | No | Yes |
| IBM Presentation PTOCA (READ ONLY) | PTK | n/a | No | Yes |

| Raster Description | Usual Extension | Code | Supports Multipage? | Supports color? |
|---------------------------------|------------------------|-------------|----------------------------|------------------------|
| Interchange File | IFF | 1304 | Yes | Yes |
| Interchange File – RLE | IFF | 1111 | No | Yes |
| Interchange File - uncompressed | IFF | 1303 | No | Yes |
| Intergraph CCITT G4 | CIT | 1301 | No | No |
| Intergraph RLE | ITG | 1122 | No | No |
| IOCA – CCITT Group 3, 1d, -MO | ICA | 1077 | Yes | No |
| IOCA – CCITT Group 3, 2d, -MO | ICA | 1078 | Yes | No |
| IOCA – CCITT Group 3, 1d | ICA | 1071 | Yes | No |
| IOCA – CCITT Group 3, 2d | ICA | 1072 | Yes | No |
| IOCA – CCITT Group 4, 1d | ICA | 1073 | Yes | No |
| IOCA – CCITT Group 4, 1d, -MO | ICA | 1079 | Yes | No |
| IOCA – IBM MMR, +MO | ICA | 1117 | Yes | No |
| IOCA – IBM MMR, -MO | ICA | 49 | Yes | No |
| IOCA – uncompressed, +MO | ICA | 1253 | Yes | No |
| IOCA – uncompressed, -MO | ICA | 1254 | Yes | No |
| JPEG | JPG | 13 | No | Yes |
| JPEG 4:1:1 | JPG | 1021 | No | Yes |
| JPEG 4:2:2 | JPG | 1023 | No | Yes |
| JPEG CieLAB | JPG | 1171 | No | Yes |
| JPEG CieLAB 4:1:1 | JPG | 1172 | No | Yes |
| JPEG CieLAB 4:2:2 | JPG | 1173 | No | Yes |
| Kodak Cineon | CIN | 1298 | No | Yes |
| Kodak DC (READ ONLY) | KDC | n/a | No | Yes |
| Kodak PDC (READ ONLY) | DCR | n/a | No | Yes |
| Kodak PDS (READ ONLY) | DCS | n/a | No | Yes |
| Kodak PhotoCD (READ ONLY) | PCD | n/a | No | Yes |
| Laser Data (READ ONLY) | LSD | n/a | No | No |
| Mac Paint | MAC | 21 | No | Yes |
| MacPict | PCT | 15 | Yes | Yes |
| Microsoft Fax | AWD | 1099 | No | No |
| Microsoft Paint | MSP | 30 | No | Yes |
| Microsoft Windows Clipboard | CLP | 1114 | No | Yes |
| Mr. Sid (READ ONLY) | SID | n/a | No | Yes |
| OS/2 Bitmap – Version 1 | BMP | 1014 | No | Yes |
| OS/2 Bitmap – Version 2 | BMP | 1074 | No | Yes |
| Paint Shop Pro | PSP | 1267 | No | Yes |

| Raster Description | Usual Extension | Code | Supports Multipage? | Supports color? |
|--|------------------------|-------------|----------------------------|------------------------|
| Paint Shop Pro – RLE | PSP | 1268 | No | Yes |
| PDF (image-only) | PDF | 59 | Yes | Yes |
| Photoshop (Adobe) | PSP | 41 | No | Yes |
| Portable Greymap ASCII File | PGM | 1104 | No | Yes |
| Portable Greymap Binary File | PGM | 1105 | No | Yes |
| Portable Pixelmap – ASCII | PPM | 1106 | No | Yes |
| Portable Pixelmap – Binary | PPM | 1107 | No | Yes |
| Portable Network Graphics | PNG | 43 | No | Yes |
| Raw BitField (READ ONLY) | RAW | n/a | No | No |
| Raw Packbits (READ ONLY) | RAW | n/a | No | Yes |
| Raw RLE4 (READ ONLY) | RAW | n/a | No | Yes |
| Raw RLE8 (READ ONLY) | RAW | n/a | No | Yes |
| Raw uncompressed data | RAW | 1153 | No | Yes |
| RTF Format (READ ONLY) | RTF | n/a | No | Yes |
| Scitex continuous tone | SCT | 1250 | No | Yes |
| Silicon Graphics Image | SGI | 1142 | No | Yes |
| Silicon Graphics Image - RLE | SGI | 1143 | No | Yes |
| Structured Fax File Format | SFF | 1302 | Yes | No |
| Sun Raster | RAS | 37 | No | Yes |
| Targa | TGA | 3 | No | Yes |
| Targe RLE | TGA | 32 | No | Yes |
| Tiff - CCITT Group 3 1D | TIF | 8 | Yes | No |
| Tiff – CCITT Group 3 2D | TIF | 1028 | Yes | No |
| Tiff – CCITT Group 4 | TIF | 10 | Yes | No |
| Tiff – CCITT Huffman | TIF | 7 | Yes | No |
| Tiff -FX CCITT Group 3 1D | TFX | 1274 | No | No |
| Tiff -FX CCITT Group 3 2D | TFX | 17 | No | No |
| Tiff -FX CCITT Group 4 | TFX | 1273 | No | No |
| Tiff -FX JBIG b/w (READ ONLY) | TFX | n/a | No | No |
| Tiff -FX JBIG color/gray (READ ONLY) | TFX | n/a | No | Yes |
| Tiff -FX JBIG color/gray 2 (READ ONLY) | TFX | n/a | No | Yes |
| Tiff -FX JPEG (READ ONLY) | TFX | n/a | No | Yes |
| Tiff – JBIG | TIF | 1139 | Yes | Yes |
| Tiff – JPEG | TIF | 1166 | Yes | Yes |
| Tiff – JPEG 2000 | TIF | 40 | Yes | Yes |
| Tiff – JPEG 4:2:2 | TIF | 40 | Yes | Yes |

| Raster Description | Usual Extension | Code | Supports Multipage? | Supports color? |
|----------------------------|------------------------|-------------|----------------------------|------------------------|
| Tiff – LZW compression | TIF | 9 | Yes | Yes |
| Tiff – no compression CMYK | TIF | 1085 | Yes | Yes |
| Tiff – no compression YCC | TIF | 1093 | Yes | Yes |
| Tiff – no compression | TIF | 9 | Yes | Yes |
| Tiff – Packbits CMYK | TIF | 1088 | Yes | Yes |
| Tiff – Packbits YCC | TIF | 1095 | Yes | Yes |
| Tiff – Packbits | TIF | 16 | Yes | Yes |
| Tiff – Uncompressed | TIF | 0 | Yes | Yes |
| Tiff – Wavelet CMP | TIF | 1167 | Yes | Yes |
| Windows Animated Cursor | ANI | 1119 | Yes | Yes |
| Windows AVI (READ ONLY) | AVI | n/a | No | Yes |
| Windows BMP no compression | BMP | 1 | Yes | Yes |
| Windows BMP RLE | BMP | 12 | No | Yes |
| Windows cursor | CUR | 1092 | Yes | Yes |
| Windows icon | ICO | 1091 | Yes | Yes |
| Winfax, CCITT Group 3 2D | WFX | 1069 | No | No |
| Winfax, CCITT Group 4 | WFX | 1070 | No | No |
| Wireless Bitmap file | WBM | 1170 | No | Yes |
| Word Perfect Graphics | WPG | 5 | No | Yes |
| XBitMap | XBM | 20 | No | Yes |
| Xionics | SMP | 1256 | No | Yes |
| Xionics CCITT Group 3 1D | SMP | 1257 | No | No |
| Xionics CCITT Group 3 2D | SMP | 1258 | No | No |
| Xionics CCITT Group 4 | SMP | 1259 | No | No |
| XPicMap | XPM | 35 | No | Yes |
| X Window Dump Version 10 | XWD | 1132 | No | Yes |
| X Window Dump Version 11 | XWD | 36 | No | Yes |
| ZSoft PCX | PCX | 2 | No | Yes |

DWG input versions supported

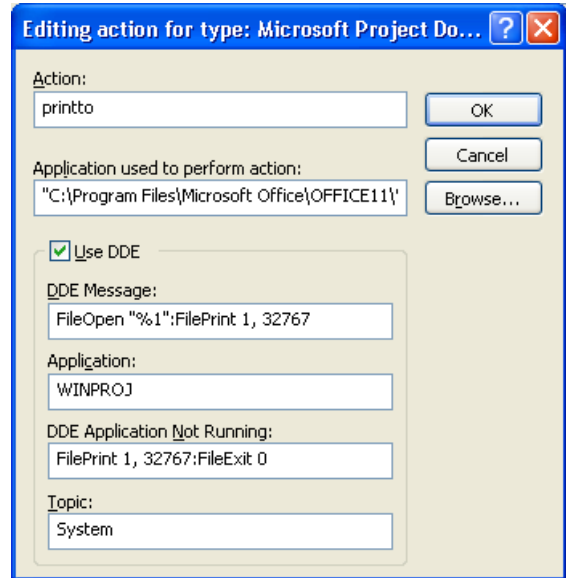
Trix RasterServer supports DWG formats created by AutoCAD versions 12 through 2008. We have reports that users are successfully converting AutoCAD versions prior to 12. However, conversion from versions prior to AutoCAD 12 has not been tested by Trix Systems.

Shell file conversion of Microsoft Project files

From the Desktop or Explorer, open any folder. From the Tools heading select *Folder Options*, then *File types*. Scroll down and locate the mpp extension. Click on *Advanced*. Then click on *New*. In the *New Action* window enter the information as shown opposite to create a 'printto' action.

Click on OK to save the Action. Now RasterServer will convert .mpp Project files when you select and use a Shell file setting.

In the event that RasterServer prints MS Project files to a physical printer instead of converting them try making the Trix ImageMaker printer driver the default printer on the computer.



Troubleshooting RasterServer problems

Scales in DWG files

The DWG format is unitless. This means that a DWG file displayed on a screen stores no information about the physical size of the image. There may be scale information shown in a title block. This is for display only. It is not available directly to create a physical print size. This information is provided by the user only when the DWG file is plotted or printed. In the same way information must be provided to RasterServer in order to determine the size of the raster output from RasterServer.

The easiest way to do this in RasterServer is to select a fixed output size, such as 'D' or 'A0' in the Settings wizard (check the *Scale is decided by output paper* size box). In other cases you may simply check the *Fixed Scale* box and select 1:1 and the units used in your locale. Typically these are inches in the USA and millimeters in Europe and much of the rest of the world. However there may be occasions when you have a non-standard scale. For example the title block may show a scale of 1" to 1'. If, for this example, you chose inch units with a 1:1 scale and the result is a file that is too large or you see an 'exceeds size limit' error you should try using a 1:12 scale. This reflects the 1" to 12" (1') suggested in the drawing.

In the absence of clues in the drawing (you can use the built-in viewer to examine the DWG for clues) try an iterative approach: If your first attempt produces an excessively large or small raster

try going to the other extreme for scale setting. Once you are successfully creating a reasonably sized image you can compare its dimensions to those sought and adjust the scale accordingly.

HPGL conversions

The HPGL format is not a fixed standard. It was originally created by Hewlett Packard as a means to send instructions to pen plotters. Some software vendors now include proprietary objects in the HPGL produced by their software. These objects are illegal in the original specification for HPGL. These HPGL files may plot to a printer correctly but not convert correctly or at all in Trix RasterServer. If you experience problems with HPGL files please notify us.

Solid blocks of colors in HPGL will appear as solid black if RasterServer is set to convert to black and white images. To avoid this change the Setting to select a color output. In monochrome output formats such as TIFF Group 4 or CALS the blocks will then appear as dithered black and white, giving the appearance of gray. Linework and text underneath the block will then show through.

Raster to raster conversions

Some raster formats cannot be converted to a different raster format without loss of data. Manipulations within the same format can also change the appearance of the data. The sequence with which the raster operations are undertaken can alter the result as well.

If you are having problems we suggest you try breaking down the conversions into sequential single-operation conversions, making one change at a time so you can track the effect of each manipulation.

Files from CD ROMs

Files copied or read from CD-ROMs will fail to convert: if RasterServer is to delete the input file it must be able to write to the device on which it is stored. In addition, the file attribute must be set to 'Read only'. Change this in the Properties of the enclosing folder.

Troubleshooting Shell file conversions

Many applications store print settings inside their data files. The RasterServer print to raster function employed for shell file conversion will use these settings and normally override any that are inappropriate for conversion to a raster space (as opposed to a sheet of paper). However, in some cases it may be impossible for RasterServer to override these settings. Visio and Excel files sometimes manifest this issue.

The solution is to split the conversion into two separate sequential Jobs. In the first stage convert the shell file to TIFF in the raster size that the original file insists upon preserving. In the second stage pass the newly created raster file through RasterServer, this time using a raster conversion Setting to create the final required image size and specification.

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