LaTeX Gotchas - Common Pitfalls and Debugging

Christopher Rose

Electrical and Computer Engineering
Auburn University

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Introduction

LaTeX

- is easy
- has a steep learning curve

With enough experience, errors are recognized and easily fixed.

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TeXnicCenter Installation
TeXnicCenter Output Profiles

TeXnicCenter Installation

Compatibility Error

`GUI framework cannot be initialized`

- occurs when a missing package must be installed and the pop up message cannot be displayed
- fix: allow package installations to occur automatically

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TeXnicCenter Installation

Figure: TeXnicCenter Compatibility Fix

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TeXnicCenter Installation

Figure: Output Display Failure

Often while using pdflatex you will see the above pop up displayed. This can happen for several reasons:

- Build failed - pdf file was not created
- Output profile incorrectly setup
- need to close TeXnicCenter

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TeXnicCenter Installation

The installation asks for the path to your .pdf reader and .dvi reader. If you do not specify a path, you will have to manually go to the folder and open the created .pdf file. If you do not close the file and try building and viewing your file, you will get the following error:

Figure: Unable to write on file

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TeXnicCenter Output Profiles

The solution is defining your viewer in the output profile:

Figure: Output Profile - Viewer Tab

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TeXnicCenter Installation
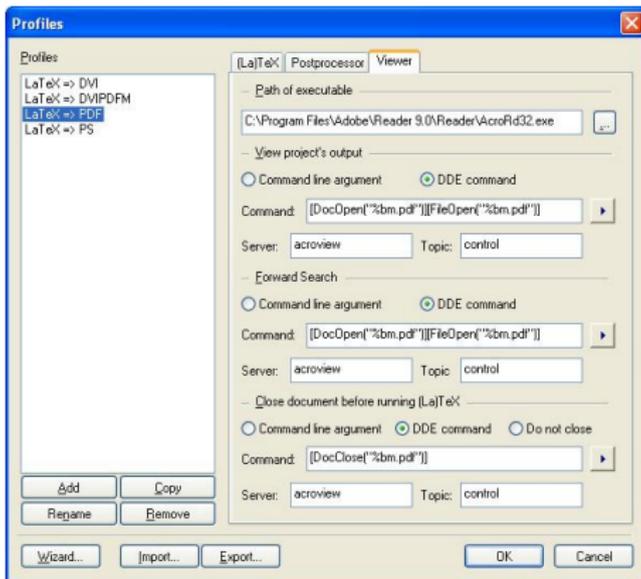**TeXnicCenter Output Profiles**

TeXnicCenter Output Profiles

The solution is defining your viewer in the output profile:

Figure: Output Profile - Viewer Tab

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TeXnicCenter Installation
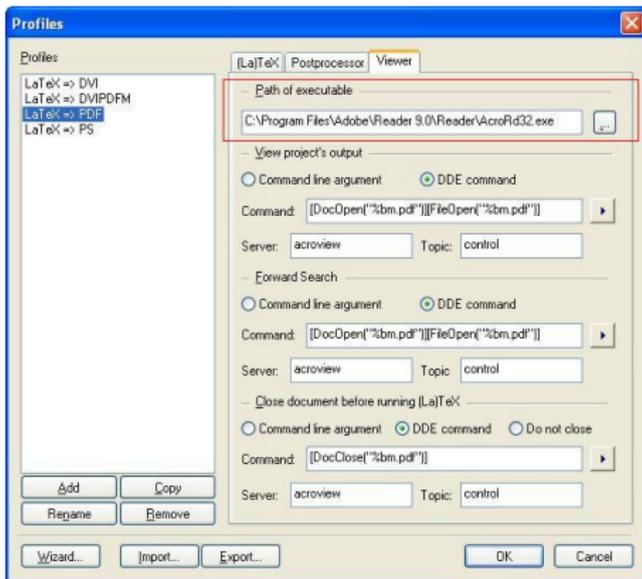**TeXnicCenter Output Profiles**

TeXnicCenter Output Profiles

The solution is defining your viewer in the output profile:

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TeXnicCenter Installation
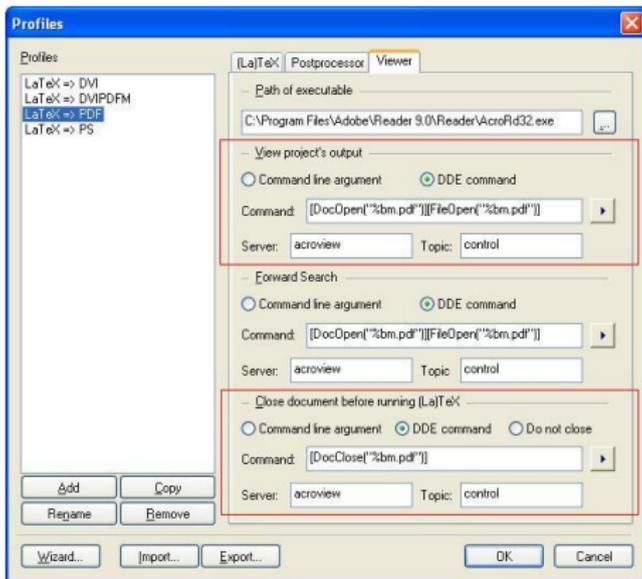TeXnicCenter Output Profiles

TeXnicCenter Output Profiles

The path of executable for your viewer, if wrong or nonexistent, results in:

- the output failing to be shown
- failure to close the currently opened document

If the path to your executable changes, such as a new version of Adobe Acrobat, the path to the executable must be updated.

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Spelling

"Check spelling while typing" can be turned on in the Tools→ Options menu in TeXnicCenter.
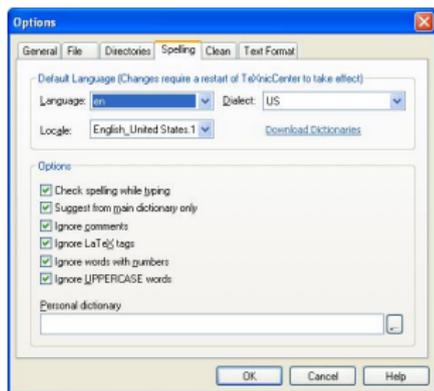
Figure: Check Spelling

Transporation

Figure: Misspelled

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Error Format

Example Error Message

```
! Undefined control sequence.
1.6 \tableofcotnetns
```

Error messages begin with an exclamation mark and a description of the error. On the second line is the line number in the document that LaTeX was processing at the time. This error is showing that

```
\tableofcontents
```

is misspelled.

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Error Messages

Example Error Messages

```
! Too many }'s.
1.6 \date December 2004}
```

Too many curly braces often means a problem in an equation.
Here the open curly brace was left out after the

\date{}

command.

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Error Messages

Example Error Message

```
! LaTeX Error: File 'aums.sty' not found.
Type X to quit or <RETURN> to proceed,
or enter new name.
```

This error arises when the LaTeX style file cannot be found.

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Error Messages

Example Error Message

```
Runaway argument?
{December 2004 \maketitle
! Paragraph ended before \date was complete.
<to be read again>
\par
l.8
```

This error arises from not closing the curly brace. LaTeX is still
expecting more text for the date while trying to format the
entire title page. The error is detected as \maketitle creates
new paragraphs, and the error is thrown.

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Warning Messages

Example Warning Message

```
Underfull \hbox (badness 1394) in paragraph
at lines 28--30
[][]\LY1/brm/b/n/10 Bull, RJ: \LY1/brm/m/n/10
En-gine--ering in-
[102]
```

This warning shows that LaTeX cannot stretch the line wide enough to fit the line without making the spacing bigger than is maximally currently permitted. The badness (0-10000) indicates its severity. The codes separated by slashes are the typeface, font style, and size used in the line. The number in brackets is the page number.

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Warning Messages

Example Warning Message

```
[101]
Overfull \hbox (9.11617pt too wide) in paragraph
at lines 670--671
[]\LY1/brm/b/n/10 Windows, \LY1/brm/m/it/10 see
\LY1/brm/m/n/10 X Win-
```

This warning shows that the line is too wide to fit on the line.
The chosen hyphenation point that minimizes the error is
shown at the end (Win-). If the overfull word includes a
forward slash, the slash should be written using \slash since it
can be broken across lines.

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Common Errors

Word documents are single files.

LATEX documents have many files associated with them.
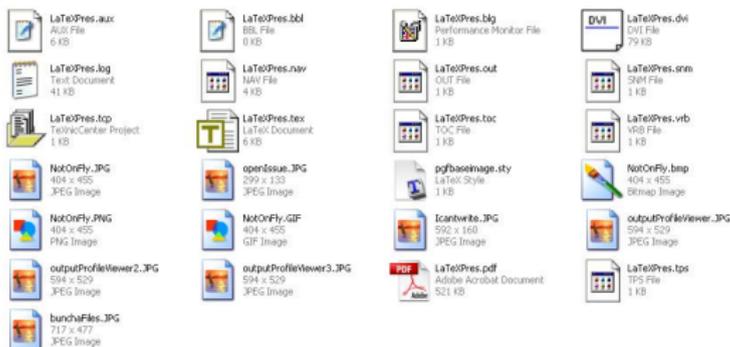
Figure: Files in Working Directory

Each LATEX document should have its own folder.

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Common Errors

- Special Characters
  - %
  - $
  - { }
  - /
  - \ : spaces after special characters
- hyperref package must be listed last
- Math Mode
- Preamble errors

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Copy & Paste

Much of working with LaTeX involves copy and pasting previous LATEX code, such as for figures, arrays, and tables. Copy and pasting incorrect sections of code can cause errors.

Example

```
\begin{figure}[htbp]
\centering
\includegraphics[width=5cm]{NotOnFly.jpg}
\caption{TeXnicCenter Compatibility Fix}
\label{fig::compatFix}
\end{figure}
\end{figure}
```

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Figures - Graphic Options

Two options are available for graphics

- include PostScript(.eps,.ps) images
- include PDF, PNG, and JPEG images

Mixing the incompatible image formats will result in errors.
An option is available for converting .dvi to .pdf called dvipdfm
which converts a .dvi file directly into .pdf. Alternatively, you
can convert the .dvi file to a .ps file which can then be
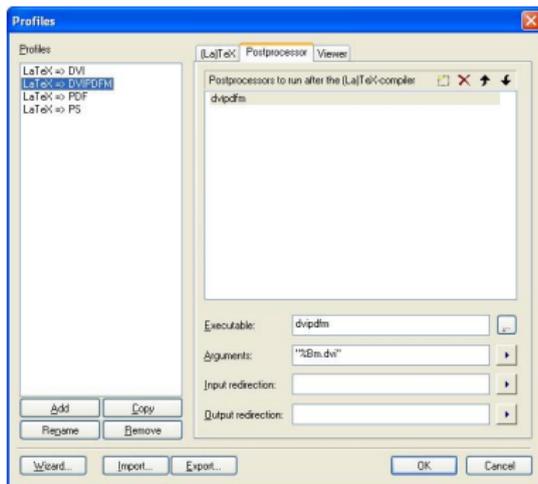converted to a .pdf.

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Figures - Graphic Options

Figure: Setup for dvipdfm in Profiles of TeXnicCenter

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Figures - Bad Boxes

Bad box warning in the LaTeX result is normally due to
graphics extending past the limits of the page. It may also be
due to failure of LaTeX to justify text, and the text edges out
over the margin.

LaTeX-Result: 0 Error(s), 2 Warning(s), 1 Bad Box(es), 27 Page(s)

Figure: Bad Box warning

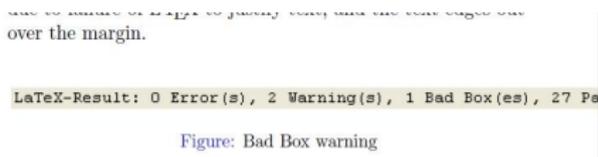due to failure of LaTeX to justify text, and the text edges out
over the margin.

LaTeX-Result: 0 Error(s), 2 Warning(s), 1 Bad Box(es), 27 Pa

Figure: Bad Box warning

Figure: Example of Figure going outside of the frame

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Figures - Placement

LaTeX places floats automatically in order to make it look as nice as possible. If not enough room is present, then the figure will be moved to the next page, and the text following the figure in your .tex document will take its place.

This can be a problem if your professor wants the document a specific way and is used to Word.

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Figures - Placement

Another problem that may come up is if the figure does not fit the body well and is pushed to the end of the section. Since the figures must appear in order, all following figures will go with it.

Result: Text $\rightarrow$ figures

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Links

http://en.wikibooks.org/wiki/LaTeX/
http://www.tug.org/TUGboat/Articles/tb26-1/schwartz.pdf

Conclusions

Google it!
or use the search engine of your choice

Questions?