



More or Less
Less or More



Objectives

- add (non macro based) scripting to \TeX
- bring OpenType into the engine
- provide interfaces to internals for macro writers
- make the engine suitable for more complex scripts

Status

- triggered by experiment with SciTE and Lua
- started as a pet project of Hans and Hartmut
- Taco got interested as well
- became adopted by the pdfTeX team
- got a development grant from csu (Idris)
- beta version will be launched at TUG 2007
- production version available somewhere in 2008



Development

- mainly done by Taco and Hans (man-years)
- quite extensive exchange of code and tests (Skype)
- testing in real situations (manuals, documents)
- throw away code and redesign when needed
- still on a (very tight) schedule



Tasks

- switch to 16/32 bits where needed
- replace the io machinery
- replace the file searching
- incorporate aleph features when applicable
- add open type font readers and embedders
- provide more flexible hyphenation
- provide list manipulation



Experiments

- logging at several levels
- reading from zip and using protocols
- conversions normally done in macros
- error handling (much work to be done)
- caching data when possible (speed-up)
- (virtual) fonts finally accessible



Insights

- 8 bit output: using private area in unicode ("10FF00)
- use luaT_EX as Lua engine (--luaonly, luatexlua, *.lua/luc)
- bytecode arrays, ini files, starting up issues
- stick to Lua state 0 for main things
- looping over bytewidths and UTF-8
- rounding around zero (non E syntax)
- include a couple of libraries
- many small details (that we try to document in a history)



TEX

- tables: texio, kpse, tex, font, statistics, texconfig, call-back
- libraries and extensions: lua, lfs, zip, unicode
- access to TEX's internal variables (will be more)
- access to registers
- access to box dimensions
- hooks into logging (start/stop etc)
- defining fonts
- loading fonts



Communication

- `tex.print` : lines
- `tex.sprint` : no space and endline stuff
- `tex.write` : just text
- `texio.write` : terminal or log
- `texio.write_nl` : terminal or log on line



Kpse

- locating files
- loading files (handles or blobs)
- only pops in when used
- can be completely overloaded



Not so Lua

- catcode tables
- clear marks
- scantextokens
- (everyline)
- ...



Impact

- less files (esp fonts)
- simple tree
- zip based distributions
- different solutions for similar problems
- stable for many years due to simplicity
- stand out in font handling



Is this all?

- even I forget what is already there
- there will be more (and less)

