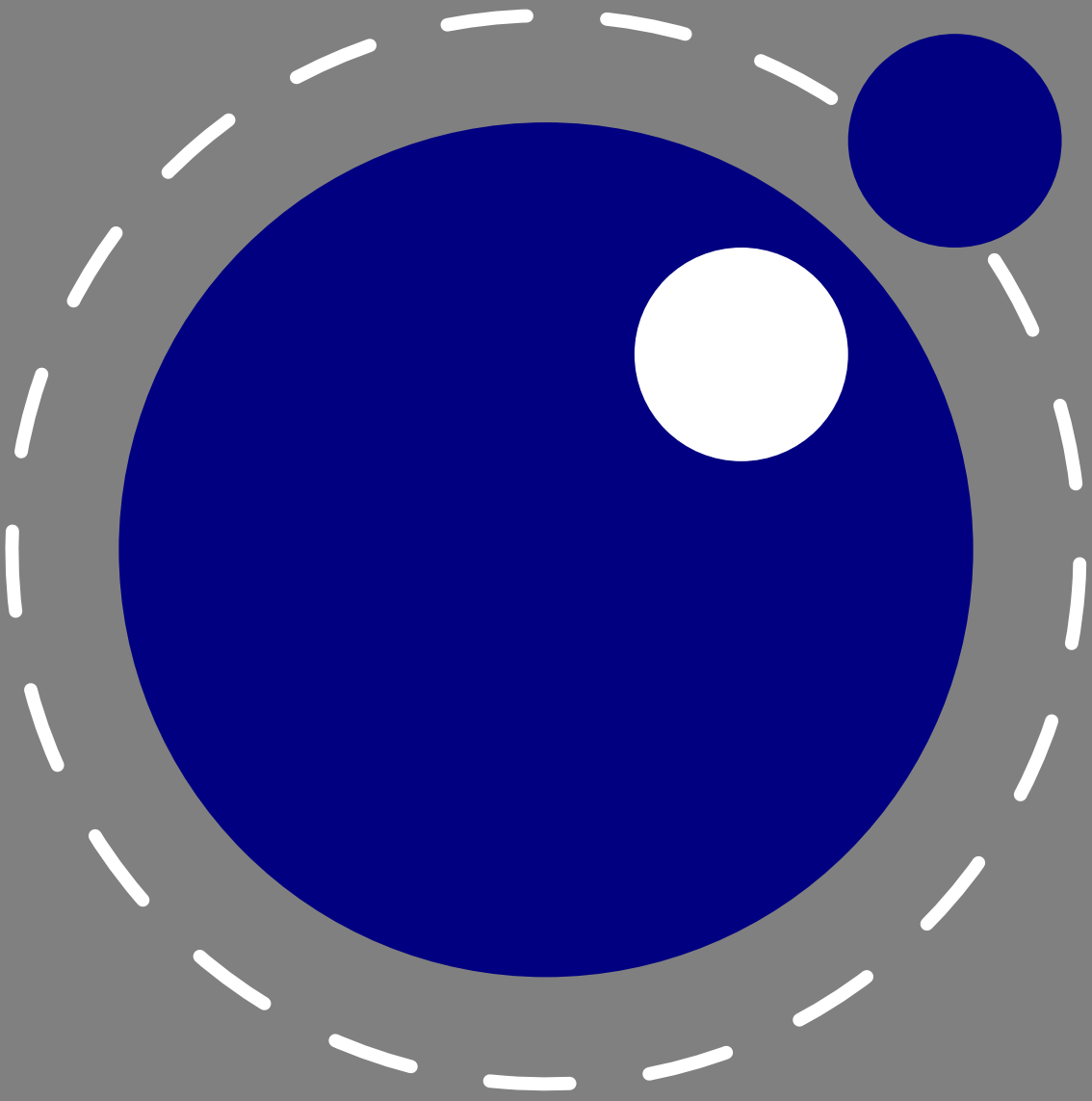
LuaMetaTEX Reference Manual



experimental
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LuaMetaTEX Reference Manual

more info : **www.luatex.org**
: **contextgarden.net**
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Introduction

Around 2005 we started the LuaTEX projects and it took about a decade to reach a state where we could consider the experiments to have reached a stable state. Already for a while one could use LuaTEX in production but some of the interfaces evolved. In 2018 the functionality was more or less frozen. Of course we might add some features in due time but nothing fundamental will change as we consider version 1.10 to be reasonable feature complete. Among the reasons is that this engine is now used outside ConTEXt too which means that we cannot simply change much without affecting other macro packages.

However, in reaching that state some decisions were delayed because they didn't go well with a current stable version. This is why at the 2018 ConTEXt meeting those present agreed that we could move on with a follow up tagged MetaTEX, a name we already had in mind for a while, but as Lua is an important component, it got expanded to LuaMetaTEX. This follow up is a lightweight companion to LuaTEX that will be maintained alongside. More about the reasons for this follow up as well as the philosophy behind it can be found on the document(s) describing the development. During LuaTEX development I kept track of what happened in a series of documents, parts of which were published as articles in user group journals, but all are in the ConTEXt distribution. I did the same with the development of LuaMetaTEX.

The LuaMetaTEX engine is, as said, a lightweight version of LuaTEX, that for now targets ConTEXt. We will use it for possibly drastic experiments but without affecting LuaTEX. As we can easily adapt ConTEXt to support both, no other macro package will be harmed when (for instance) interfaces change as part of an experiment. Of course, when we consider something to be useful, it can be ported back to LuaTEX, but only when there are good reasons for doing so and when no compatibility issues are involved. When considering this follow up one consideration was that a lean and mean version with an extension mechanism is a bit closer to original TEX. Of course, because we also have new primitives, this is not entirely true. The move to Lua already meant that some aspects, especially system dependent ones, no longer made sense and therefore had consequences for the interface at the system level.

This manual currently has quite a bit of overlap with the LuaTEX manual but some chapters are removed, others added and the rest has been (and will be further) adapted. We also discusses the (main) differences. Some of the new primitives or functions that show up in LuaMetaTEX might show up in LuaTEX at some point, others might not, so don't take this manual as reference for LuaTEX! For now it is an experimental engine in which we can change things at will but with ConTEXt in tandem so that this macro package will keep working.

For ConTEXt users the LuaMetaTEX engine will become the default. Because we can keep both LuaMetaTEX and ConTEXt in sync. The ConTEXt variant is tagged lmtx. The pair can be used in production, just as with LuaTEX and MkIV. In fact, most users will probably not really notice the difference. In some cases there will be a drop in performance, due to more work being delegated to Lua, but on the average performance will be better, also due to some changes below the hood of the engine.

As this follow up is closely related to ConTEXt development, and because we expect stock LuaTEX to be used outside the ConTEXt proper, there will be no special mailing list nor coverage (or pollution) on the LuaTEX related mailing lists. We have the ConTEXt mailing lists for that. In due time the source code will be part of the regular ConTEXt distribution.

This manual sometimes refers to LuaTEX, especially when we talk of features common to both engine, as well as to LuaMetaTEX, when it is more specific to the follow up. A substantial amount of time went into the transition and more will go in, so if you want to complain about LuaMetaTEX, don't bother me. Of course, if you really need professional support with these engines (or TEX in general), you can always consider contacting the developers.

Hans Hagen

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LuaMetaTEX	:	luametatex 2.0 / 20190729
ConTEXt	:	MkIV 2019.08.14 11:44
LuaTEX Team	:	Hans Hagen, Hartmut Henkel, Taco Hoekwater, Luigi Scarso

LuaMetaTEX development is mostly done by Hans Hagen and Alan Braslau, who love playing with the three languages involved. Testing is done by ConTEXt developers and users.

This is a placeholder for the LuaMetaTEX manual. On my system I already have most of it wrapped up, but it will probably take till late 2019 or sometime 2020 before I will decide to add the whole manual to the ConTEXt distribution.