Automatic creation of efficient Type 1 fonts from METAFONT fonts

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Abstract   In this article we discuss the process of conversion of METAFONT fonts to Type 1 format, used in the CM-Super and VNR font packages. We discuss various tools which can used to create such fonts: TeXtrace, METAFOG, font manipulation package (FMP), FontLab (or pfaedit), T1utils, etc, and also describe the additional scripts which are used to combine the work of these programs to achieve the final goal of obtaining high-quality Type 1 fonts, and also AFM metric files for using the fonts with other applications not necessarily related to TeX. We pay attention to the techniques used to make the fonts compact, efficient, closely matching the original METAFONT prototypes, and having as good as possible quality while performing mostly automatic conversion, not requiring manual art-work (or with as little art-work as possible).