Compiling 65816 Forth with a 6502 Metacompiler

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Having a new Apple IIGS and an old Forth metacompiler gave incentive to write Forth in the 65816 native code, a true 16 bit machine. The simple A, memory, X, and Y registers are preserved from the old 6502 into the new 65816 but they can be independently set to 16 bits or 8 bits; or exact 6502 emulation. The conversion stages were:

1. Write a new Forth assembler, a converted George B Lyons 6502 into a multiple mode assembler. The programmer tells the assembler the mode with words 6502- 816^^ 816^- 816-^ 816--, the normal NEXT exit 816^- being 16 bits M&A, 8 bits X&Y.
2. Using 6502- code Forth on the IIGS write test examples of code in 816^- native code. Words were written as CODE (DO)' CLC, XCE, 20 .# REP, ... SEC, XCE, NEXT JMP, END-CODE to redefine code into 816^-, run, and put back into 6502- else crash.
3. Rewrite old meta to new meta, writing I/O references in old 6502- mode.
4. Compile new 816^- meta kernal relying on metacompiler forcing all interpretation to take place from the old dictionary. Only when the new kernal starts up alone does the machine transfer to the true 65816 native mode.