The **ROMP** or **Research (Office Products Division) Micro Processor** was a 10 MHz [RISC microprocessor](#) designed by [IBM](#) in the early 1980s manufactured on a 2 µm process with 45,000 transistors.

ROMP also known in some circles as **032**, was first in silicon in 1981 and was originally designed to be used in office products. It was intended as a follow-on to a mid-1970's processor called the "OPD Mini Processor", which was used in text editing systems such as the IBM Office System/6 and [DisplayWriter](#). ROMP originally was shipped in the [IBM RT/PC](#) line, announced in 1986, and was later used in an IBM laser printer. For a time the [IBM RT/PC](#) was planned to be a personal computer, with ROMP replacing the Intel 8088. However, the software was targeted more towards engineering workstations.

The original ROMP had a 24-bit Reduced Instruction Set Computer ([RISC](#)) architecture developed by IBM, but the instruction set was changed to 32 bits a few years into the development. It was originally implemented in a 2 µm [NMOS](#) technology. It had sixteen 32-bit general purpose registers and used 32-bit addresses and data paths. The microprocessor was controlled by 118 simple two- and four-byte instructions. Internal processor organization enabled the CPU to execute most register-to-register instructions in a single cycle. An IBM-developed advanced memory management chip provided virtual memory address translation functions and memory control.

The architectural work started in late spring of 1977, as a spin-off of the T.J. Watson Research [801](#) processor (hence the "Research" in the acronym). Most of the architectural changes were for cost reductions, such as adding 16-bit instructions for byte-efficiency - a main concern at the time. For embedded systems, this is still a concern; [ARM](#), [MIPS](#) and [Power Architecture](#) have all added 16-bit instructions to their architectures, which were originally 32-bit only.

The first chips were ready in early 1981. Thus, ROMP was possibly the first working commercial RISC, depending on whether or not it was a true RISC and whether or not one could count it as a commercial product in 1981, since it didn't actually ship until 1986. This delay was caused by overly ambitious software plans for the RT/PC and its [operating system](#) (OS). This OS virtualized the hardware and could host multiple other operating systems, though UNIX was the only operating system to be ported to the underlying virtual OS. This technology, called [virtualization](#), while commonplace in [mainframe](#) systems, only began to gain traction in smaller systems in the 21st century. The IBM RT/PC consequently fell behind competitors such as [Sun Microsystems](#) and [Apollo Computer](#) who ported UNIX directly to their platforms.