

Lecture #2

IA32 (Intel Architecture, 32-bit)

A 32-bit version of the x86 architecture, widely used in PCs, capable of handling 32-bit instructions.

IA64 (Intel Architecture, 64-bit)

A 64-bit architecture designed for Intel's Itanium processors, intended for high-performance computing, capable of running both 32-bit and 64-bit instructions.

Sun SPARC (Scalable Processor Architecture)

A RISC (Reduced Instruction Set Computing) architecture developed by Sun Microsystems, used mainly in servers and workstations.

DEC Alpha

A 64-bit RISC architecture developed by Digital Equipment Corporation, known for its early use in high-performance computing.

MIPS R2000/R3000

A family of RISC architectures designed by MIPS Technologies, used in embedded systems and early Unix workstations.

ARM (Advanced RISC Machine)

A family of RISC architectures known for their energy efficiency, widely used in mobile devices, embedded systems, and increasingly in servers.

Why isn't there just one ISA?

There are multiple ISAs because different devices need processors optimized for specific tasks, like performance or energy efficiency, and companies design their own ISAs for control and specialization.