

Apple Silicon ARM64/AArch64 Registers

For passing and returning values from subroutines



For returning the address to larger values

Temporary registers that may be clobbered by subroutines



You can use these for whatever, just they might get messed with

Used by compiler for procedure calls, don't use them



Used by operating system, don't use it!



Temporary registers that subroutines must preserve



You can use these for whatever, trusting that subroutines will put them back — but you have to too!

All at least 64bit

00000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000

Can hold 0 to $(2^{64})-1$ unsigned

You can address the lower 32 bits of e.g. X6 with W6

Special Registers

- PC Program Counter (like IP)
- XZR Zero Register (always zero)
- SP Stack pointer
- NZCV Flags register
Negative, Zero, Carry, overflow
- X30 / LR Link Register
- X29 / FP Frame Pointer

Floating point stuff

