

# Passing boot parameters to the kernel

Boot parameters are represented as a TLV list in the memory. Please see `arch/xtensa/include/asm/bootparam.h` for definition of the `bp_tag` structure and tag value constants. First entry in the list must have type `BP_TAG_FIRST`, last entry must have type `BP_TAG_LAST`. The address of the first list entry is passed to the kernel in the register `a2`. The address type depends on MMU type:

- For configurations without MMU, with region protection or with MPU the address must be the physical address.
- For configurations with region translation MMU or with MMUv3 and `CONFIG_MMU=n` the address must be a valid address in the current mapping. The kernel will not change the mapping on its own.
- For configurations with MMUv2 the address must be a virtual address in the default virtual mapping (`0xd0000000..0xffffffff`).
- For configurations with MMUv3 and `CONFIG_MMU=y` the address may be either a virtual or physical address. In either case it must be within the default virtual mapping. It is considered physical if it is within the range of physical addresses covered by the default KSEG mapping (`XCHAL_KSEG_PADDR..XCHAL_KSEG_PADDR + XCHAL_KSEG_SIZE`), otherwise it is considered virtual.