

The ELF Header

The ELF Header is the only section that has a fixed position in the object file. It is always the first section of the file. The other sections are not guaranteed to be in any order or to even be present. The ELF Header describes the type of the object file (relocatable, executable, shared, core), its target architecture, and the version of ELF it is using. The location of the Program Header table, Section Header table, and String table along with associated number and size of entries for each table are also given. Lastly, the ELF Header contains the location of the first executable instruction. The specific fields along with their size requirements that are present in the ELF header are shown in Figure [2.6](#).

Figure: The Program Header

```
typedef struct {
    Elf32_Word    p'type;        // type of the segment
    Elf32_Off     p'offset;      // file offset to segment
    Elf32_Addr    p'vaddr;       // virtual address of first byte
    Elf32_Addr    p'paddr;       // segments' physical address, if
    Elf32_Word    p'filesz;      // size of file image of segment
    Elf32_Word    p'memsz;       // size of memory image of segment
    Elf32_Word    p'flags;       // segment-specific flags
    Elf32_Word    p'align;       // alignment requirements
} Elf32_Phdr;
```
