

### HAL/GNU: Program Entry Point

The HAL/GNU H8/300 Software allows us to specify the beginning execution of our program (program entry point). The following are several methods to specify the program entry point (shown in descending order of priority: methods higher in the list override methods lower down):

1. The `-e entry` linker command line switch.

For example, we have declared a function, i.e., `foo()`, in our program. If we want our program to start at function `foo`, then we can link our program with the `-e` switch. The following command line will produce an absolute file with starting address at function `foo`:

```
LD -o Test.x -e _foo Test.o
```

where

LD name of the linker.

-o linker switch to name the output absolute file as `Test.x`. By default the output file is `a.out`.

-e linker switch to specify the program entry point at `_foo`. By convention, the linker can access C functions by prefixing the function names with underscores.

2. The `ENTRY(symbol)` command in a linker command file.

The same example as the above, we want our program to start at function `foo`. In the linker command file, we can have the following command:

```
ENTRY(foo)
```

3. The value of the symbol `start`.

If we have define a symbol `start` in our C program, we can use it as the entry point symbol. If no symbol `start` is defined within our program, we can simply define it, assigning it an appropriate value, i.e., address `H'8000`:

```
start = 0x8000;
```

4. The value of the symbol `_main`.

We can use `main` function from our C program as the entry point symbol.

5. The address of the first byte of the `.text` section.

We can specify the program entry point by using the section command in the linker command file. For example, the following linker command will specify the starting address at `H'8000`:

```
SECTIONS
{
    .text    0x8000: { *(.text) }
}
```

6. The address 8000.

By default the program entry point is at address `H'8000`.

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