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Bootloader Linker Scripts for PIC32 Devices

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Question
What are the differences between an application linker script and a bootloader linker script for PIC32 devices?

Answer
Depending on whether a program is a bootloader or an application, the linker script that is generated by Harmony will put the program into different areas of memory.

The datasheet for any PIC32 device will show a Memory Map describing the addresses of the various sections of memory in that device, such as the one below:

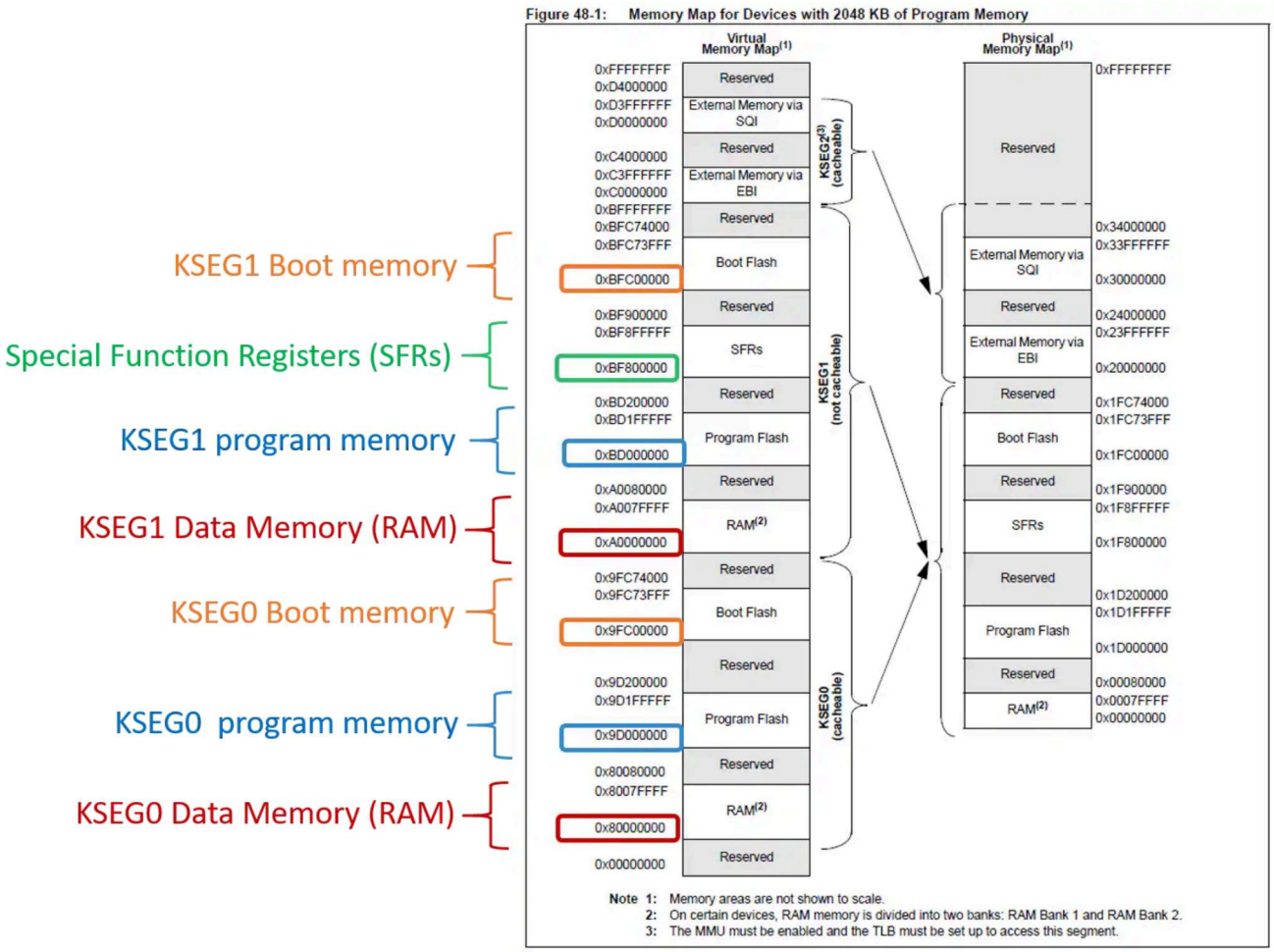
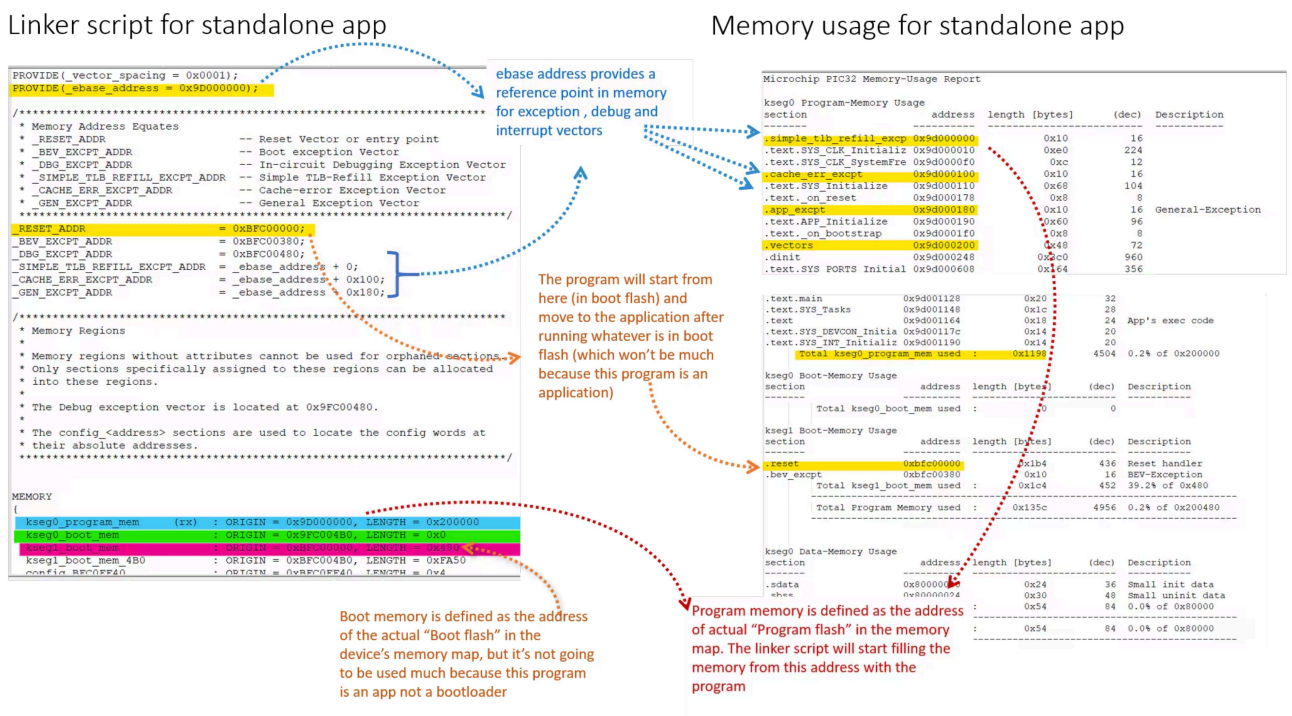


Figure 48-1: Memory Map for Devices with 2048 KB of Program Memory

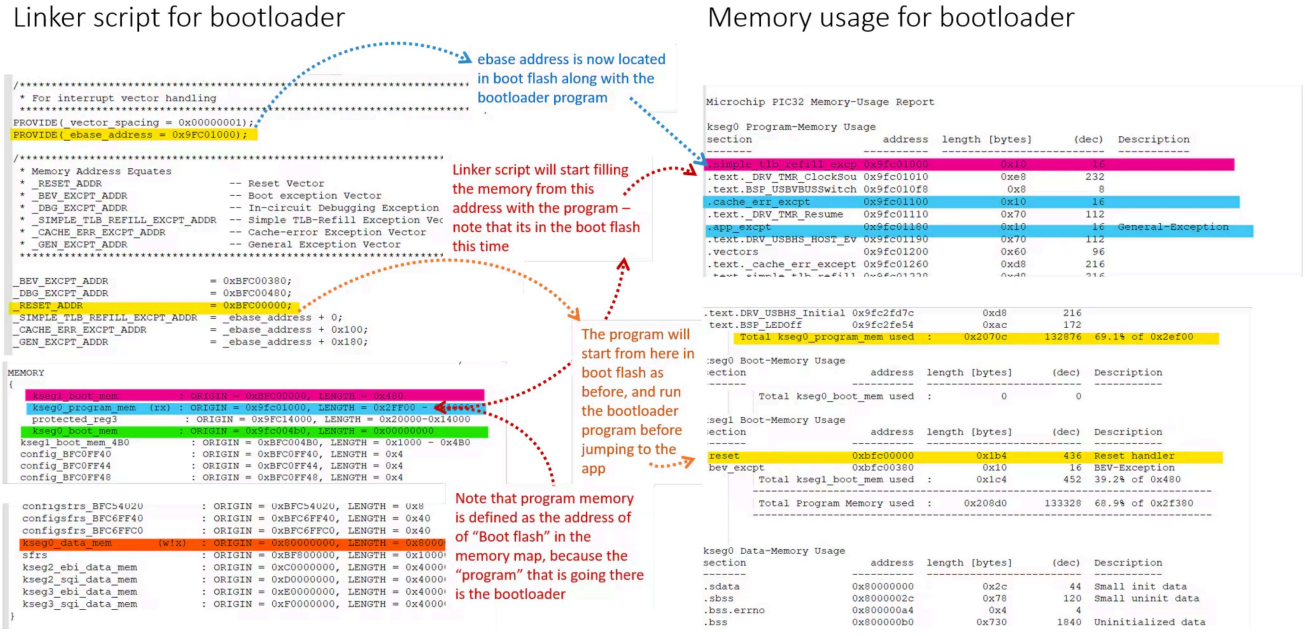
It is the job of the linker script to make sure that each part of the program is put into the correct region of memory. When a program is built, the memory usage that the linker script has implemented for that project can be seen by looking at the MAP file, which is usually located in the following directory:

```
ProjectName/firmware/<ProjectName.X>/dist/default/ProjectName.production.MAP
```

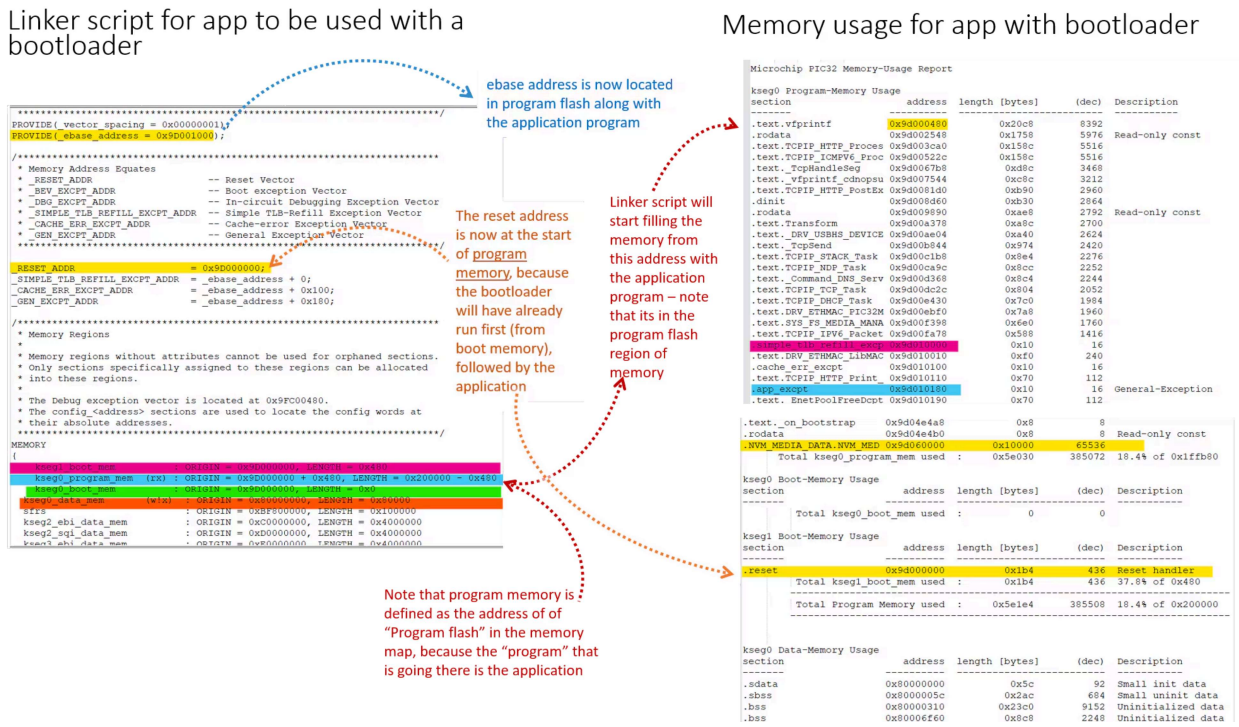
For a standalone application, the linker script and the memory usage is explained as follows:



For a bootloader, the difference is that the bootloader program is usually put into a different location in memory to a standalone application:



When an application is to be used along with a bootloader, usually a custom linker script should be used (Harmony can generate this) and it must be carefully examined to make sure that the program and reset address are set up correctly, as shown in the example below:



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