RV0 - Programming with RVDS IDE

Through this course, the attendee will become familiar with RVDS compiler, assembler, linker and simulator

Objectives

- Through this course, the attendee will become familiar with RVDS compiler, assembler and linker.
- The course explains the subtleties of the scatter file.
- A lot of tips are provided which contribute to optimize ARM code execution time and / or ARM code compacity.
- Practical exercices have been developed to highlight the theoretical aspects.

Labs are run under RVDS4.0
A more detailed course description is available on request at formation@ac6-formation.com

Prerequisites

- Knowledge of C language.

Course Environment

- Theoretical course
  - PDF course material (in English) supplemented by a printed version for face-to-face courses.
  - Online courses are dispensed using the Teams video-conferencing system.
  - The trainer answers trainees' questions during the training and provide technical and pedagogical assistance.
- At the start of each session the trainer will interact with the trainees to ensure the course fits their expectations and correct if needed

Target Audience

- Any embedded systems engineer or technician with the above prerequisites.

Course Outline

EMBEDDED SOFTWARE DEVELOPMENT WITH RVDS

- Embedded development process
- Application startup
- Placing code, data, stack and heap in the memory map, scatterloading
- Tailoring the C library to your target
- Reset and initialisation
- Placing a minimal vector table
- Further memory map considerations, 8-byte stack alignment in handlers
- Building and debugging your image
- Long branch veneers

C/C++ COMPILER HINTS AND TIPS

- ARM compiler optimisations, tail-call optimization, inlining of functions
- Mixing C/C++ and assembly
- Coding with ARM compiler
- Measuring stack usage

- Unaligned accesses
- Local and global data issues, alignment of structures
- Further optimisations, linker feedback