

## Arm SVE/SVE2 Programming and Optimization Training

### Summary

SVE/SVE2 (Scalable Vector Extension) is the next generation of SIMD (Single Instruction Multi Data) architecture extension for Arm AArch64 architecture. This training will cover the fundamental knowledge about SVE/SVE2 technology and the programming hints & tips.

At the end of this course, delegates will be able to

- Describe the Arm Scalable Vector Extension architecture features and the advantages
- Explain the SVE/SVE2 data processing functions and instruction set
- Use the SW tools and environment/platforms for SVE/SVE2
- Utilise the advantages of SVE/SVE2 in software programming for Arm platforms
- Optimize common mathematics routines and digital signal processing functions used in areas such as:
  - HPC
  - Machine Learning
  - Digital Signal Processing
  - Audio and Video Codec applications

### Prerequisites:

Basic C/C++/assembly programming knowledge

### Audience:

Application developers, optimization specialists for Arm platforms

### Length:

1 day classroom or 2 x ½ day virtual training sessions

### Modules:

- Arm AArch64 Architecture and ISA Overview (Optional)
- SVE/SVE2 Overview
- SVE/SVE2 Instruction Set
- Compiling and running SVE/SVE2 applications
- SVE/SVE2 Assembly and Intrinsic Optimization Examples
- Putting SVE into practice – Hand on exercises