

Accelerating and Parallelizing MATLAB Code

OEM: MathWorks • Duration: 2 Days (16 hrs) • Code: MW-ACCELERATING-AND-PARALLELIZING-MATLAB

COURSE MODULES & TOPICS

Day 1 of 2

Improving Performance

- Identifying bottle necks
- Preallocating arrays
- Vectorizing operations in various ways
- Rewriting algorithms

Generating MEX-Files

- MATLAB Coder overview and workflow
- Generating and verifying MEX-files
- Calling unsupported functions
- Adjusting settings for MEX-file generation

Parallelizing Computations

- Opening additional MATLAB processes
- Running parallel for-loops
- Measuring speedup
- Processing multiple files in parallel

Day 2 of 2

Parallel for-Loops

- Requirements of parallel for-loops
- Parallelizing for-loops
- Retrieving intermediate results

Offloading Execution

- Processing in batch
- Creating batch jobs
- Retrieving results
- Using the Job Monitor

Working with Clusters

- Local and remote clusters
- Dynamic licensing
- Cluster discovery and connection
- File access considerations

GPU Computing

- Overview of GPU architecture and processing
- Applications suitable for GPU processing
- Invoking MATLAB functions on the GPU
- Generating CUDA® MEX files using GPU Coder™
- Using pre-existing CUDA code