



Advanced PCI Express

Duration: 1 Day

Course Overview:

This course introduces and details PCIe new features as introduced in PCIe versions 2.1 and 3.0. Each new topic is presented from four different perspectives:

- Motivation
- Implementation
- Configuration
- Example.

This is an in-depth course and is both hardware and software oriented. It describes the different options and discusses performance. It is also useful when determining system architecture.

The course is based on well-known PCIe basics (as covered in the basic PCIe course at Logtel)

Who should attend?

Anyone, software or hardware oriented, wanting to learn more advanced PCIe features. Also system architects dealing with PCIe.

Prerequisites:

Participants will be able to specify performance, define the architecture, design the hardware platform and configure the system

Course Content:

Part 1 – PCIe Gen 3.0

1. PCIe Gen 3.0 – Higher speed

- Goals
- Training sequence
- Throughput
- Physical layer overview
- New encoding model (throughput)
- Equalization and packet transmission
- Receiver equalization
- Establishing equalization values
- Equalization values – examples
- Software initialization

2. Other features

- OBFF
- ASPM

Part 2 – PCIe Gen 2.1 – New features

3. New features

- Multicast
- DPA (Dynamic Power Allocation)
- Atomic operation
- Resizable BARs
- TPH (TLP processing hints)
- Alternative routing-ID interpretation
- LTR (Latency Tolerance Reporting)
- Internal error reporting
- Simplified ordering table