

Comprehensive x86 APIC Architecture

Training

Let MindShare Bring “APICs” to Life for You

This course covers all aspects of the Local and IO APIC modules. This includes the legacy interrupt background, the history of the APIC, a complete description of the operation of the Local and IO APICs, interrupt delivery modes, MSI, and much more. This course also covers the behavior and characteristics of the xAPIC and x2APIC Architectures

After taking this course, the attendee will have a full understanding of the APIC's software and hardware operation.

Course Length: 1 Day

Who Should Attend?

This course is intended for hardware and software engineers who require a complete understanding of the Local APIC and IO APIC architecture.

Course Contents:

- Intro to Interrupts
 - 8259 Interrupt Handling
 - Original APIC Architecture
 - xAPIC Architecture
 - x2APIC Architecture
- Local APIC Basics
 - Enabling / Disabling
 - APIC IDs
- Interrupt Priorities
- Interrupt Destination Modes
 - Physical
 - Logical – Flat
 - Logical – Cluster
 - Redirectable (Lowest-Priority)
- Usage of IO APICs and 8259s
 - Virtual Wire Modes
- IO APIC Register Set
- MSI and MSI-X
- Intel QPI Interrupt Delivery Support
- Inter-Processor Interrupts
- Local Interrupt Sources

Recommended Prerequisites:

Familiarity with general computer architecture concepts.

Course Material:

MindShare will supply electronic version of the presentation slides.