IAS Architecture page 17-23
versus
ARM Architecture http://armsim.cs.uvic.ca/

Multicore
- **MIC many integrated core (50 core per chip)**
  - **QPI Introduction**
  - **PCIe System Architecture**
  - **Introduction to PCIe Mindshare**
- **Specialized cores, e.g., GPU (graphics processing units) used also for <u>Vector Processing</u>**
- **General Purpose Computing on GPU's**

Amdahl's Law – multiple processors

$$\text{Speed} = \frac{1}{(1-f)+\frac{f}{N}}$$ where

- **f is the fraction of code that is infinitely parallelizable**
- **(1 – f) is inherently serial**
- **N is the number of processors**

Little's Law – steady state system with no leakage

$$L = \lambda W$$ where

- **Items arrive at an average rate of λ items per unit of time**
- **Items stay in the system an average of W units of time**
- **There is an average of L units in the system at any one time**