

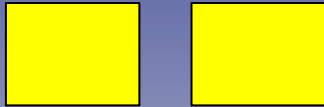
Ten Things You Need to Know About AdvancedTCA & MicroTCA Today

(Here's Five From Me)
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More and Wider Boards, Higher Power

- More transistors = more power needed
- More cooling = more power available
- 400 W cooling per slot available today, more coming
- Wider (thicker) board = taller components
- More memory and more mezzanine cards
- Blades approaching size of proprietary blades
- And double the blade count - 28 blades/12U!!

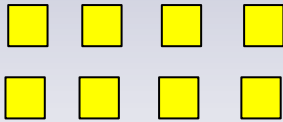
Heterogeneous Processors



High-performance CPUs

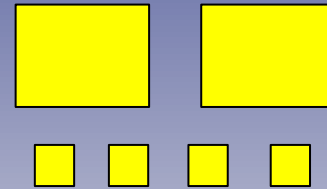
- Very fast
- Very hot
- Relatively few threads

Or



High-capacity CPUs

- Relatively slow
- Much cooler
- Lots of shared threads



Variable-performance CPUs

- Both fast and slow cores
- Already some can be set to use 1 or n threads per core
- Creates “interesting” software and management problems
- Some cores may not have same ISA!!! (eg. mix x64 and GPU)

More “Esoteric” Board Types

- Already have High-DSP count boards (like 30 DSPs) like Emerson, Advantech, Radisys, Cisco
- Network processor blades (massively multi-core) like Advantech, Emerson, Continuous Computing using Cavium and NetLogic
- Special physics data collection/timing cards
- Likely to see GPU compute blades
- Some very interesting things are coming

Introduction Into Commercial Data Centers

- Challenges for proprietary blade systems
- Mix and match wide variety of components per shelf and per slot: Competition in the chassis!!!
 - Find what works best for you
- Upgrade by replacing boards, not chassis
- AC ATCA products more widely available
- Expect some customer hesitation to do systems integration work

ATCA/ μ TCA-Based Appliances

- As more capabilities are available in boards and AMC's, it becomes much easier to do
- Chassis sizes from 2-16 (ATCA) and 4-48 (AMC) slots allows lots of variety
- Networking uses are well known
- Can build an appliance for about anything
- Very short MTTR (and simple repair) is big
- Customer can build their own (if they want to)
- “Phone company in a box”