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AdvancedTCA in the CLOUDs

A COTS platform for scalable network equipment

Thomas Kastner, Advantech

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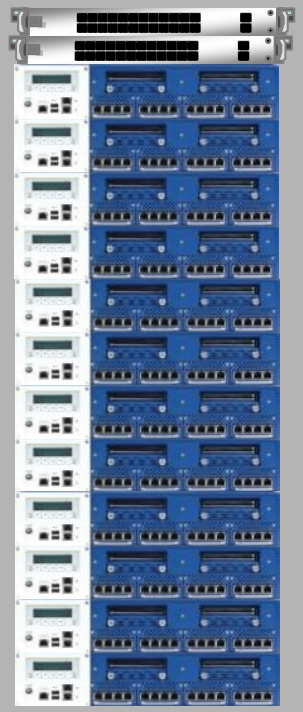
Special equipment for the Cloud ?

- The cloud itself runs on standard servers
- Data security is what users are most concerned about…
- Policy enforcement ($$$) is what service providers are most concerned about…
- Paradigm shift for equipment vendors
  - used to sell appliances to small, medium and large offices
  - with customers moving (some) IT infrastructure to the CLOUDs (cloud hosters' datacenters), so does network security equipment
  - need for scalability, throughput, virtualization

Cloud equipment: options

Appliance stacking

12 2U appliances
+ 2 1U switches



- ~~Integration~~
- ~~Density~~
- Proprietary
- Stacking
- IO bandwidth
- Architecture support
  - ~~NPU~~
  - iA

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- Integration
- Density
- Open Standard
- Scalability
- Backplane bandwidth
- Multi Architecture support
  - NPU
  - iA

Consolidated into
14U rack space

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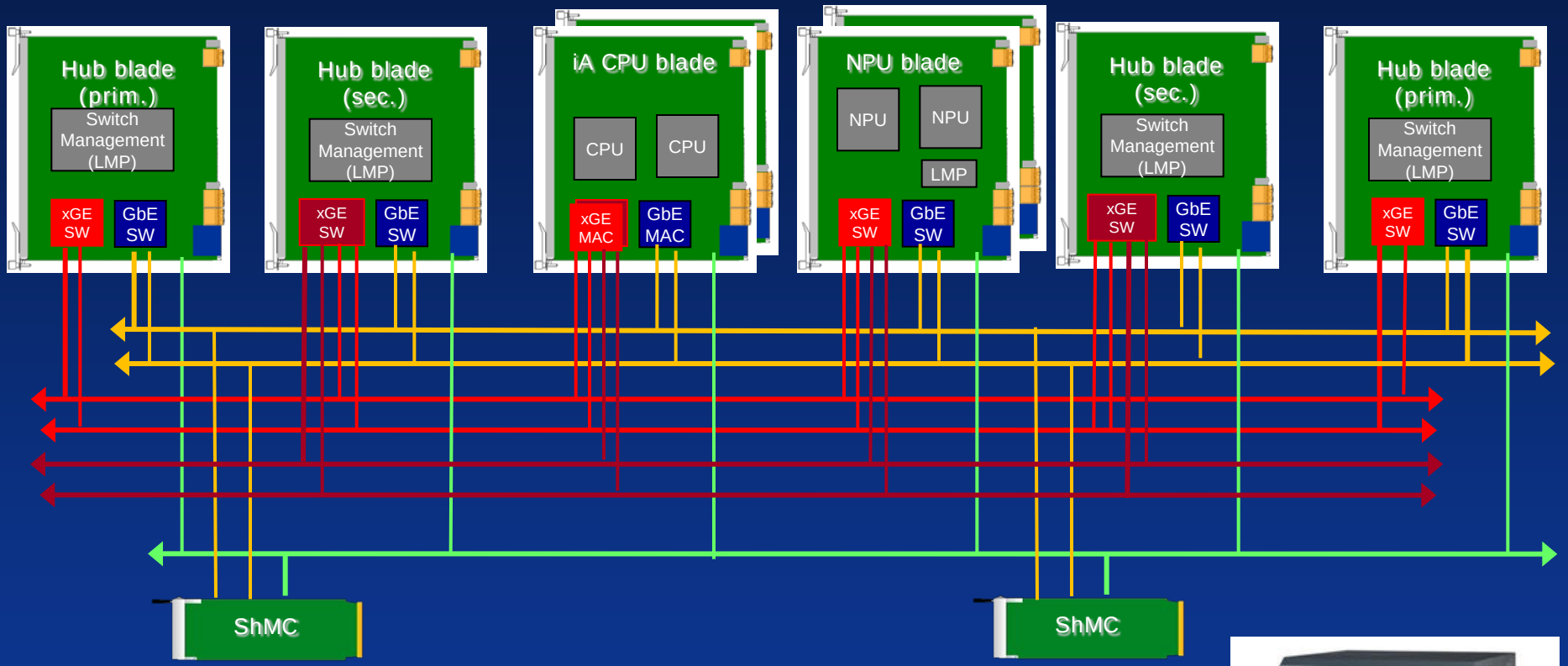
System architecture (networking centric)



GbE

GbE used as Base Interface for Management and control plane
Dual star topology

Primary xGE

10GE/40GE used as fabric interface for data and user plane
Dual star topology

Secondardy xGE

Secondary 10GE/40GE fabric used as fabric interface for data and user plane. Dual star topology

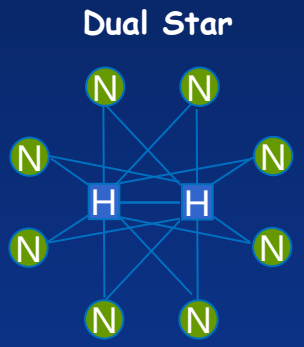
IPMB

Low level management interface based on2 redundant IPMB busses.
Bussed or radial (star) topology

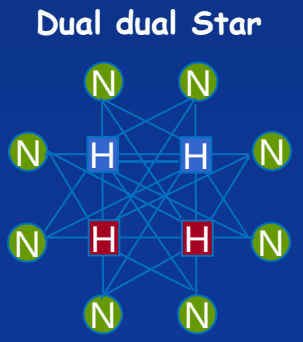
Switching and IO

- ATCA Switches
  - System IOs: up to 200Gb/s
  - Switching bandwidth: 600…700Gb/s
  - Backplane bandwidth: 13x 40GE
  - Ingress/Egress field processors, ACLs, rule tables

- Dual star fabric
  - 2 switch (hub) blades per system (+12 nodes)



- Dual dual star fabric
  - 4 switch (hub) blades per system (+10 nodes)



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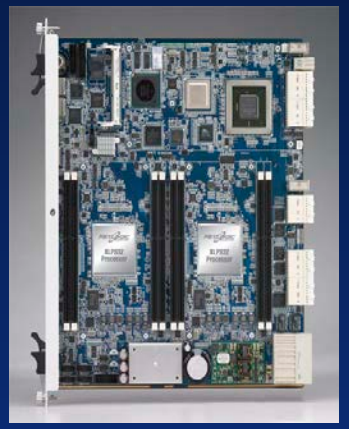
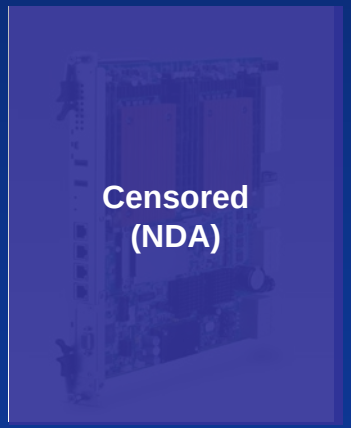
Processing

- NPU Blades
  - Dual NPUs (XLP / Octeon II)
  - Onboard 40GE switch
  - 40GE dual star and dual dual star support
  - 120GE + interlaken to RTM

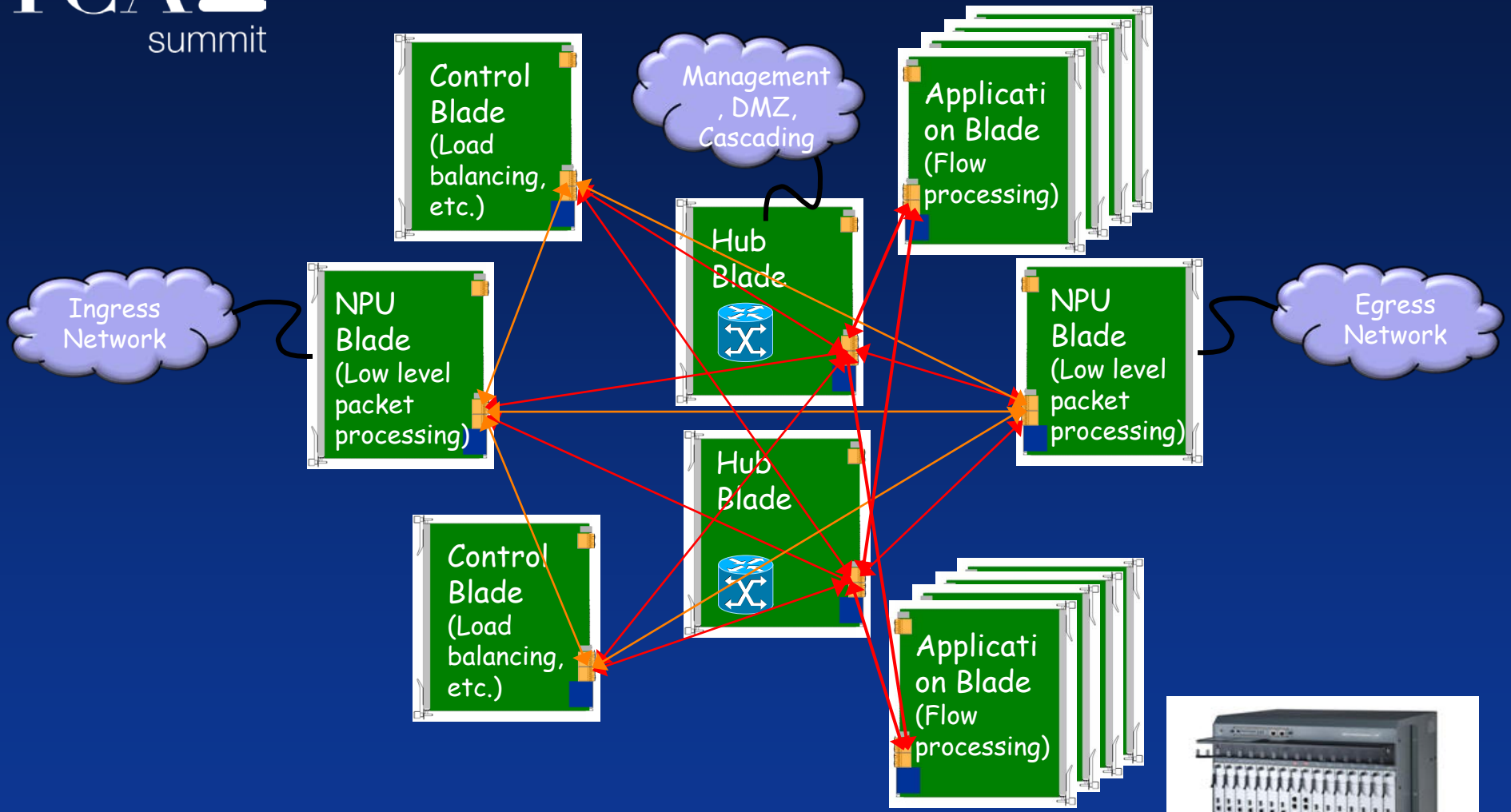


- iA Blades
  - Dual Xeons
  - Onboard 40GE MACs
  - 40GE dual star and dual dual star support
  - Support for multiple offload engines



FMM for offloading, additional fabric ports

Smart use of NPU blades



Primary 40GE dual star

40GE used as fabric interface for data and user plane
Dual star topology

Secondary 40GE dual star

Additional 40GE fabric used as fabric interface to connect IO Blades and Load Balancers for higher bandwidth

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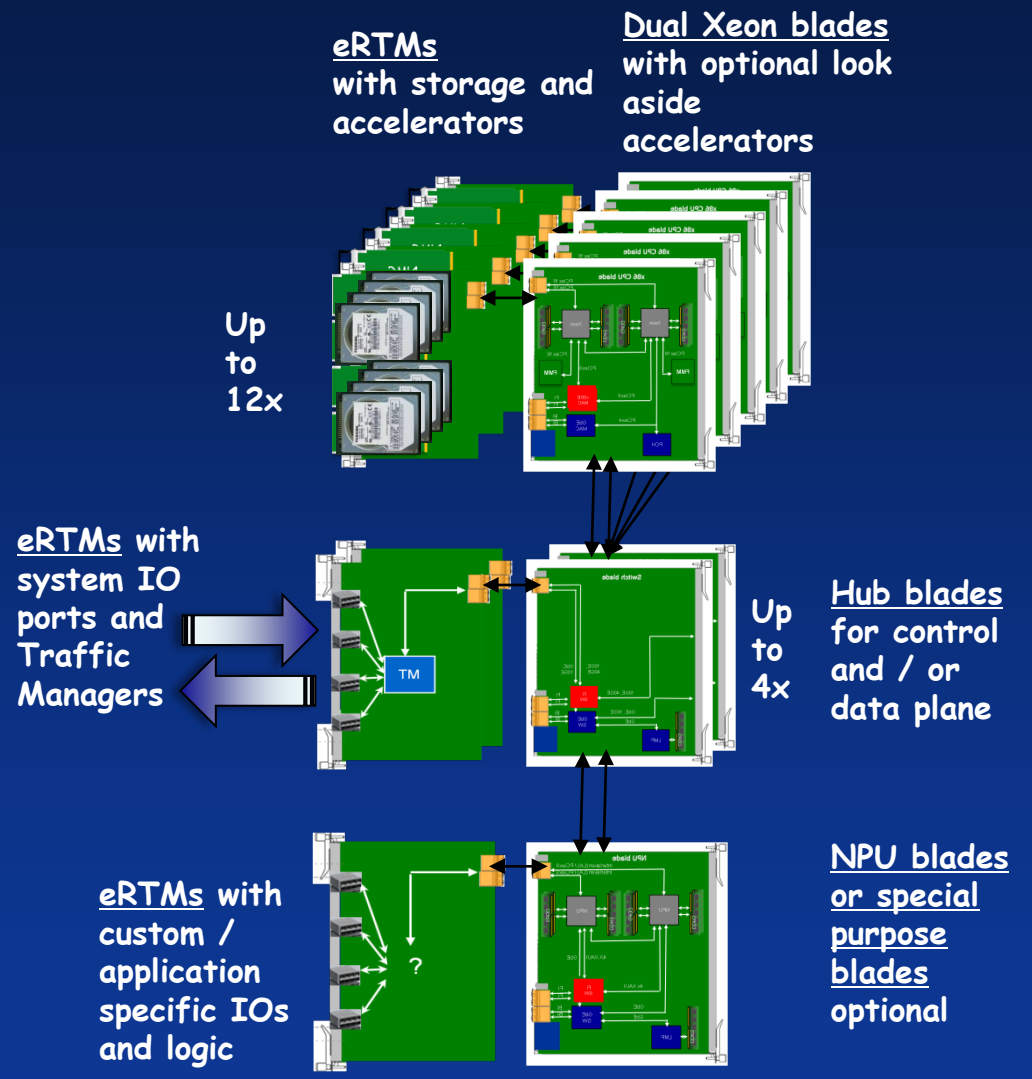
What's next ?

- Up to 4 hub blades + eRTMs
  - > 2 Tbit backplane switching capacity
  - eRTMs with system IO plus fan out switches /
  - Traffic managers /
  - Load balancing /
  - Secret sauce
- Up to 12 node blades
  - Dual Xeon x86 with optional storage, accelerators or IO
  - Dual NPUs or special purpose blades with
  - Custom / specific IOs on eRTMs
- Highest performance COTS platform
  - Blades are Commercial Off The Shelf
  - eRTMs are Customized Off The Shelf
    - Application/customer specific IOs & logic
    - Keep the secret sauce secret



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Thank you for listening

Any questions or want more details ?

See you at our booth in the exhibit hall or contact thomas.kastner@advantech.eu….