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Open vRAN Infrastructure for Cloud and Edge Deployments

Raghu M. Rao
AMD Fellow
Adaptive and Embedded Computing Group

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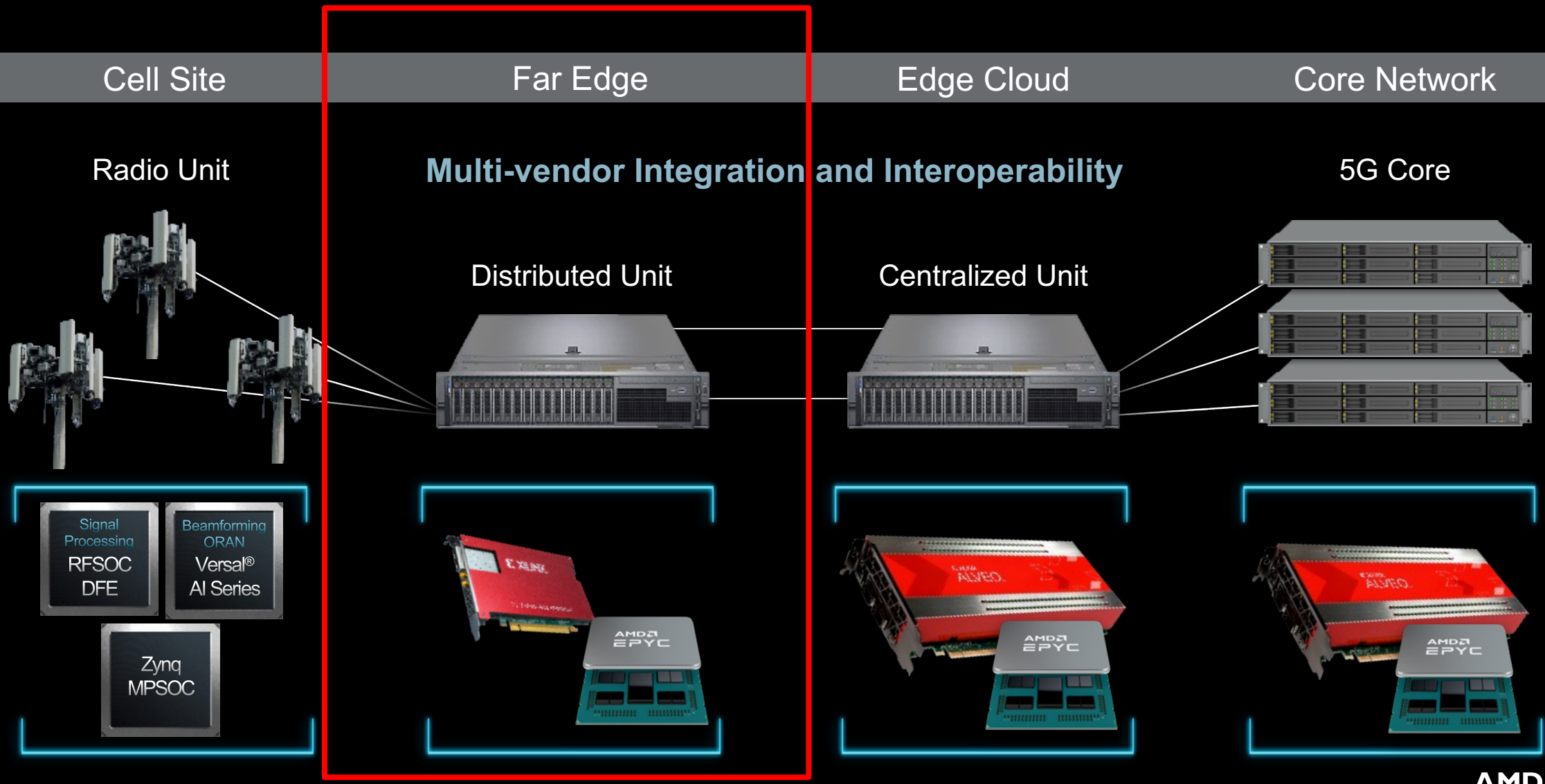
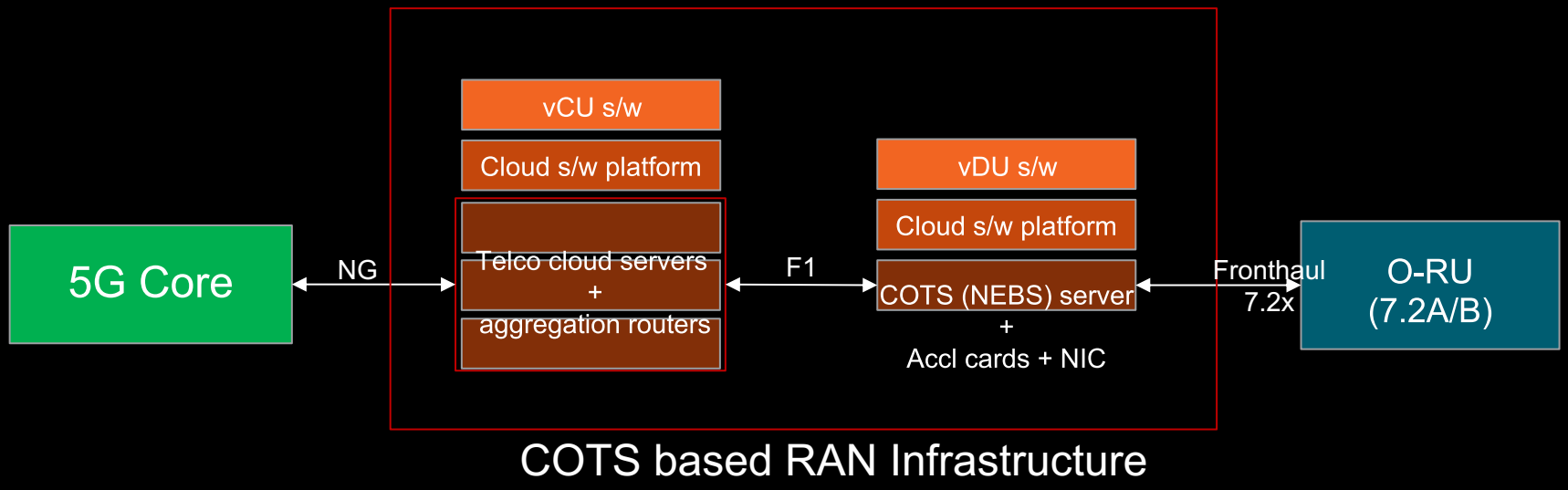
The Disaggregated RAN Network

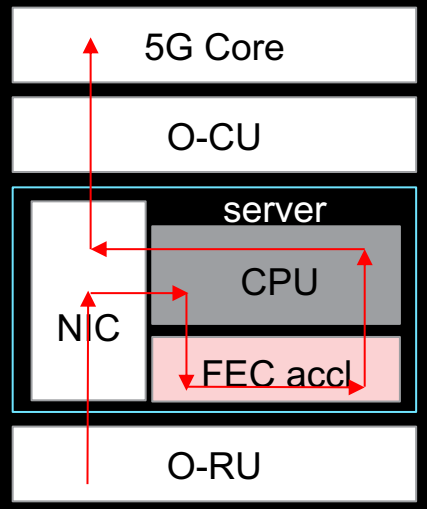


Open RAN Infrastructure

- Separation of hardware and software
- Interfaces compliant with O-RAN standards



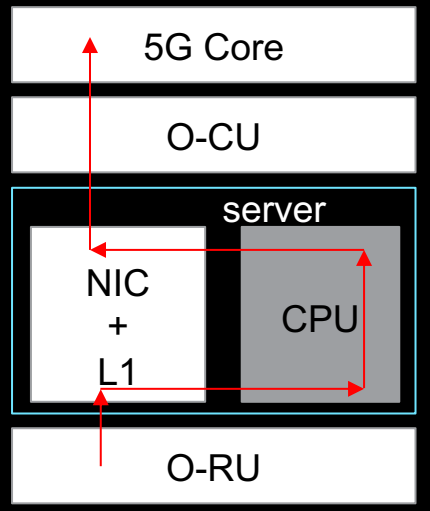
Inline v/s Look-aside



Look-aside FEC acceleration

- Layer 1 DL and UL processing on x86 cores
- LDPC enc/dec offloaded to accelerator
- Three key requirements
  - PCIE bandwidth for FEC offload
  - Compute capacity on the accelerator
  - Number of x86 cores for L1, L2, etc.

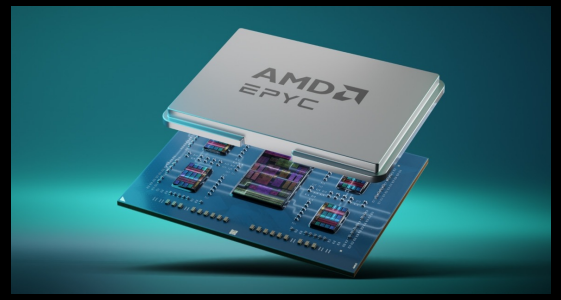
Core scaling helps cost and energy efficiency



Inline acceleration

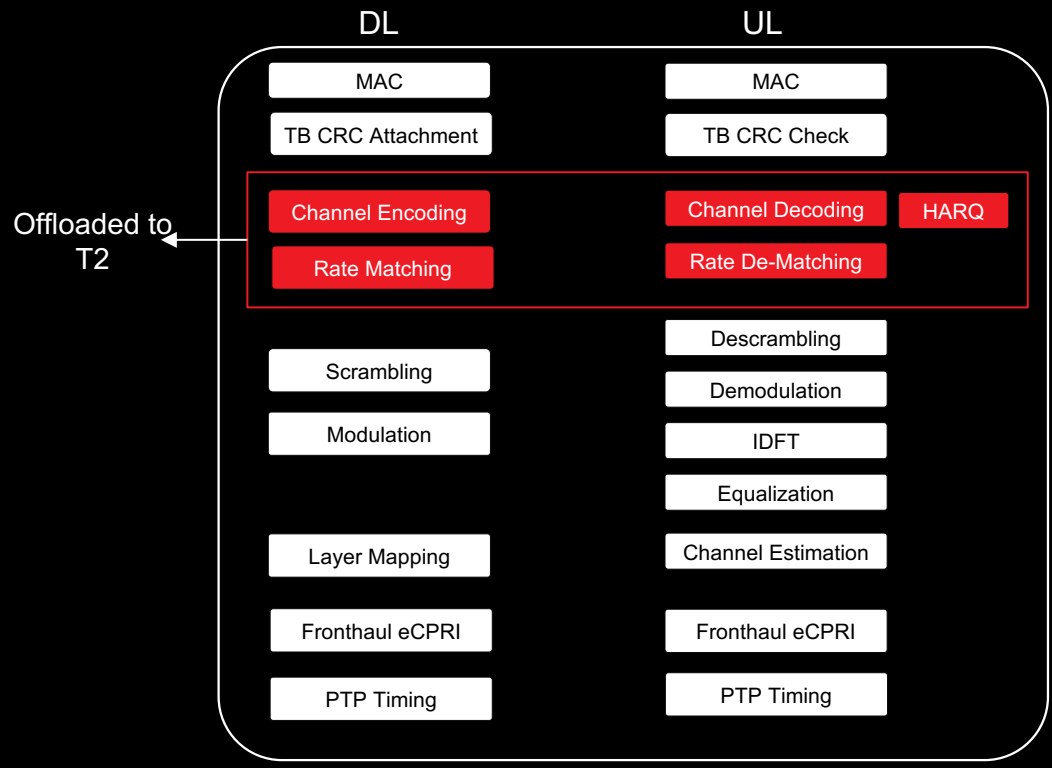
- Layer 1 offloaded to accel card, usually integrated w/ NIC
- Key requirements
  - Fronthaul capacity (port count and data rates)
  - Compute capacity of accelerator
  - Number of X86 cores for L2

The Telco Hardware Platform



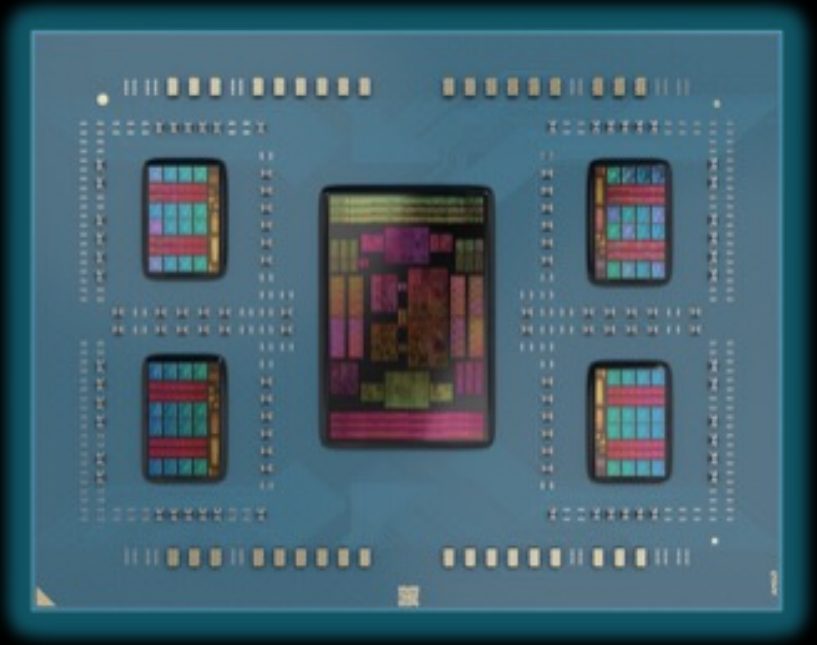
EPYC Zen 4c – 64 cores + T2 Accl

Optimal configuration-
- Number of cores
- Look-aside acceleration capacity
- PCIE bandwidth



Look-aside FEC acceleration

EPYC 8534 At A Glance



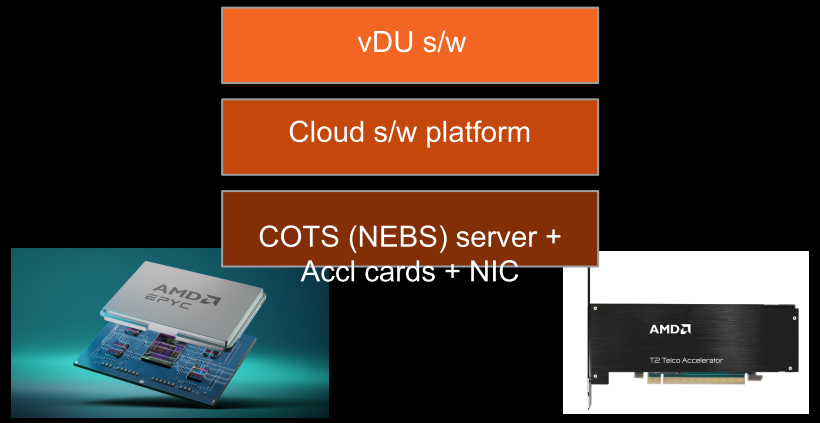
EPYC Zen4c - 8534PN	
Core process technology	5nm
Siena socket core count range	8 – 64 (16 – 128 threads)
Max # of Core Complex Dies (CCDs)	4
Max L3 cache size (per CCD)	128 MB (32 MB)
Max # of memory channels	6 channel DDR5 @ 4800 MT/s
Max memory per socket	3TB
Max lanes Peripheral Component Interconnect	96 lanes PCIe® Gen 5
Max Processor Frequency	3.15 GHz
Default TDP (64 cores)	175W

T2 At A Glance

- High bandwidth look-aside (selected function) 5G NR LDPC accelerator
- O-RAN standards complaint DPDK / BBDev API
- Supports virtualization and orchestration

PCIe	2x Gen 4x8
Offload bandwidth	200 Gbps
Profile	HHHL
LDPC FEC Throughput	33G Enc / 14G Dec
Power	<55W

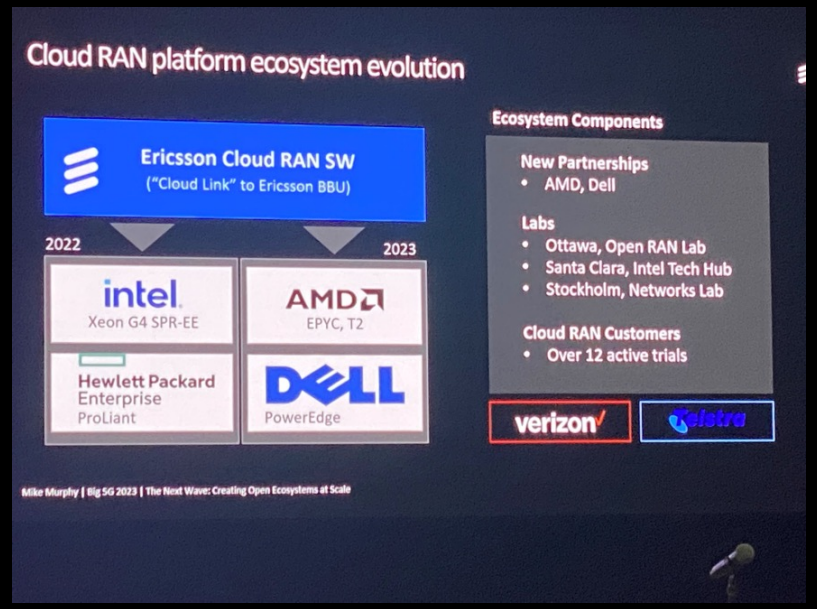
The Telco Platform



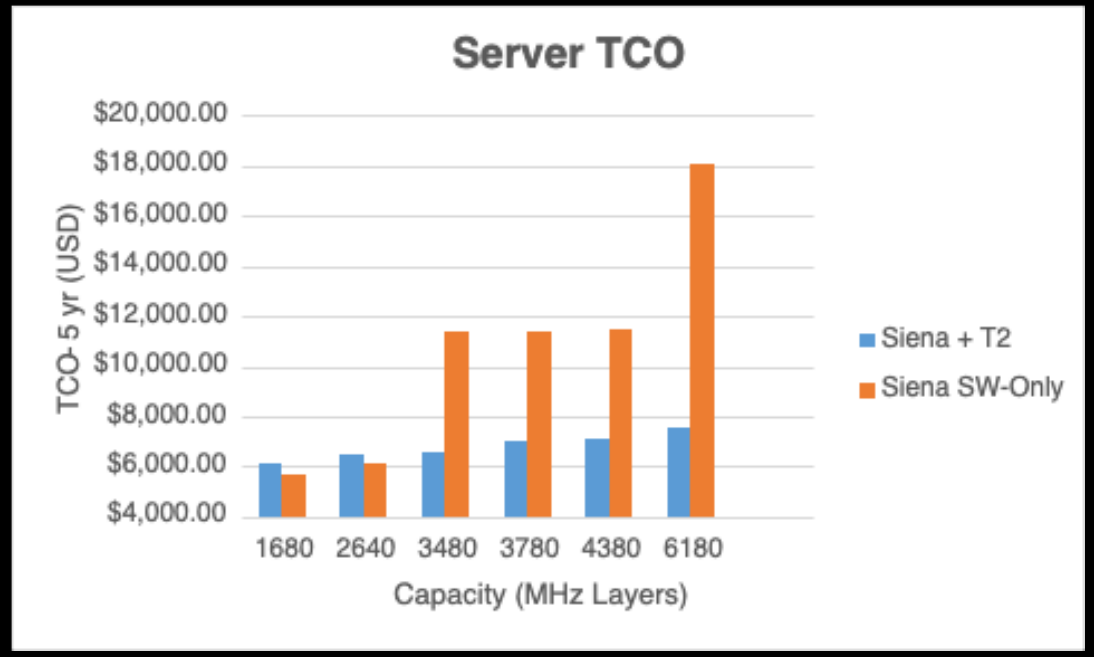
EPYC Zen 4c – 64 cores + T2 Accl

Optimal configuration-
- Number of cores
- Look-aside acceleration capacity
- PCIE bandwidth

- Servers based on EPYC Zen4c processors are available from multiple vendors
- Cloud s/w support include Red Hat Openshift, and Ubuntu / Kubernetes.
  - VMWare, WindRiver on the roadmap
- Multiple vRAN s/w vendors support AMD Telco platforms and others are evaluating the platform



Power Efficiency And TCO Benefits of Acceleration



Core scaling helps cost and energy efficiency

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