



# **Today's Solutions**







CPUs

Fixed Function Accelerators ASICs/ASSPs/GPUs FPGAs

AMD together we advance\_

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#### [Public]

# **Compute Acceleration**



## Introducing the AMD Versal<sup>™</sup> Adaptive SoC

# Versal<sup>™</sup> Adaptive SoC Technology Tour



Scalar Processing Engines



Adaptable Hardware Engines



Intelligent Engines SW Programmable, HW Adaptable



Breakout Integration of Advanced Protocol Engines



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# Scalar Processing Engines

Arm Cortex-A72 Application Processor

Arm Cortex-R5 Real-Time Processor

**Platform Management Controller** 







# Adaptable Hardware Engines

Re-architected foundational HW fabric for greater compute density

- Enables custom memory hierarchy
- 8X Faster Dynamic Reconfiguration ("on-the-fly")







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# Intelligent Engines

### **DSP** Engines

High-precision floating point & low latency Granular control for customized datapaths

### **AI Engines**

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High throughput, low latency, and power efficient Ideal for AI inference and advanced signal processing







**AI Engines** 

#### Optimized for AI Inference and Advanced Signal Processing Workloads

1GHz VLIW/SIMD vector processor cores

Massive array of interconnected cores with tightly coupled memory

Tightly coupled to adaptable hardware engine to enable custom memory hierarchy

Software programmable, C-, and library-based with hardware adaptability







# Versal<sup>™</sup> for Multi-Market Applications



#### AI ADOPTION ACROSS MARKETS



# VERSAL

AI R Series

#### HB $\bigcirc$ Series

#### .Premium Al Core Series

Series

AI Edge Series

Prime Series

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# Versal<sup>™</sup> Premium Series

Breakthrough Integration of Networked, Power-Optimized Cores

- 3X Bandwidth for Fastest and Most Secure Networks
- 2X Compute Density for Adaptable Acceleration
- Highly Integrated HW/SW Platform for Productivity

Bandwidth & compute density comparisons based on 14nm/16nm FPGAs



# Versal<sup>™</sup> HBM Series

Hyper Integration of Fast Memory, Secure Data, and Adaptive Compute

- 8x memory bandwidth at 63% lower power alleviates network and compute bottlenecks
- 2x faster secure connectivity to adapt to emerging networks
- 2x adaptable compute engines for evolving algorithms and protocols

# Versal<sup>™</sup> Roadmap – Engineering Samples Availability

Subject to Change



## **Comprehensive Tool Chain**



#### IN SUMMARY

## Versal<sup>™</sup>

Heterogeneous Acceleration

For Any Application For Any Developer

## Delivers

Disruptive Innovation Software Programmability Hardware Adaptability Whole Application Acceleration





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