



FINANCIAL ANALYST DAY 2022

together we advance_

Technology Leadership

Mark Papermaster

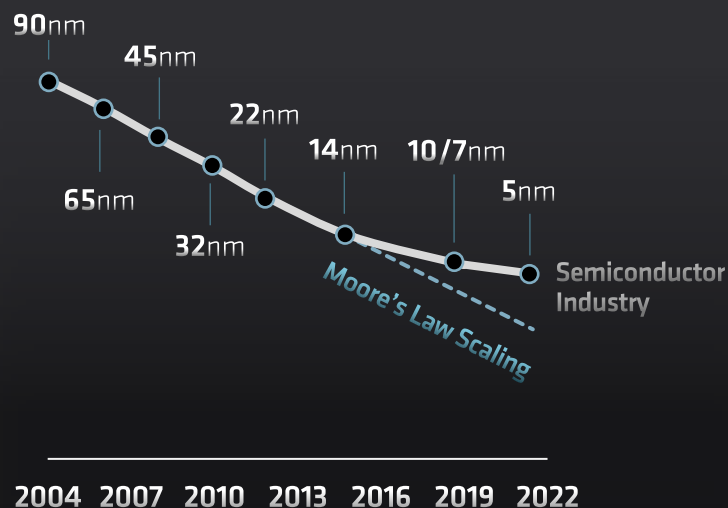
Chief Technology Officer and Executive Vice President, Technology and Engineering

CAUTIONARY STATEMENT

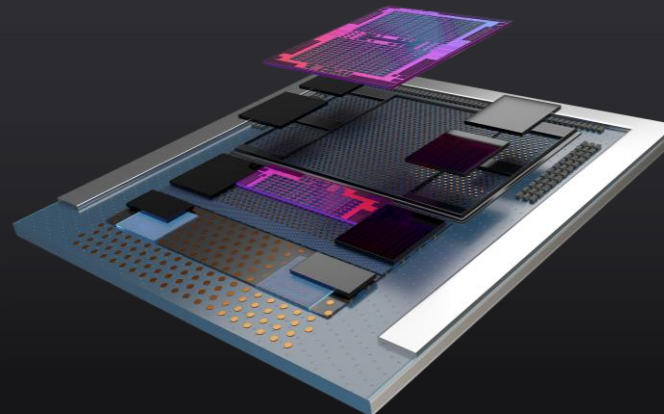
This presentation contains forward-looking statements concerning Advanced Micro Devices, Inc. (AMD) including, but not limited to, the timing, availability, features, functionality and expected benefits of AMD's products; AMD's R&D investment; and AMD's CPU core roadmap, which are made pursuant to the Safe Harbor provisions of the Private Securities Litigation Reform Act of 1995. Forward-looking statements are commonly identified by words such as "would," "may," "expects," "believes," "plans," "intends," "projects" and other terms with similar meaning. Investors are cautioned that the forward-looking statements in this presentation are based on current beliefs, assumptions and expectations, speak only as of the date of this presentation and involve risks and uncertainties that could cause actual results to differ materially from current expectations. Such statements are subject to certain known and unknown risks and uncertainties, many of which are difficult to predict and generally beyond AMD's control, that could cause actual results and other future events to differ materially from those expressed in, or implied or projected by, the forward-looking information and statements. Investors are urged to review in detail the risks and uncertainties in AMD's Securities and Exchange Commission filings, including but not limited to AMD's most recent reports on Forms 10-K and 10-Q.

AMD does not assume, and hereby disclaims, any obligation to update forward-looking statements made in this presentation, except as may be required by law.

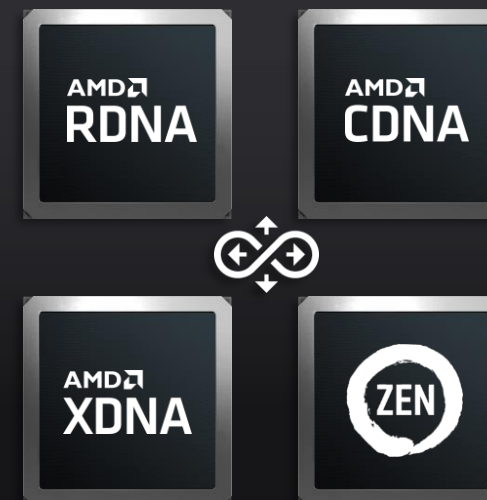
INNOVATION KEEPS AMD ON HIGH PERFORMANCE PACE



Moore's Law is Slowing



**Chiplet Integration Enables
Generational Performance Gains,
Keeps AMD on Historic Pace**



**Heterogeneous Computing
Driving Leadership Performance**



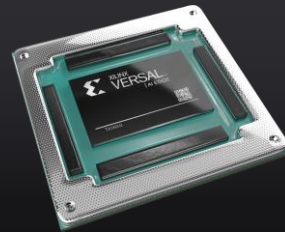
BROADEST HIGH PERFORMANCE IP PORTFOLIO



CPUs



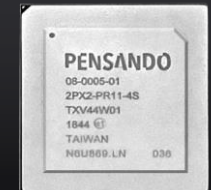
GPUs



**AMD XDNA and
AI Engines**

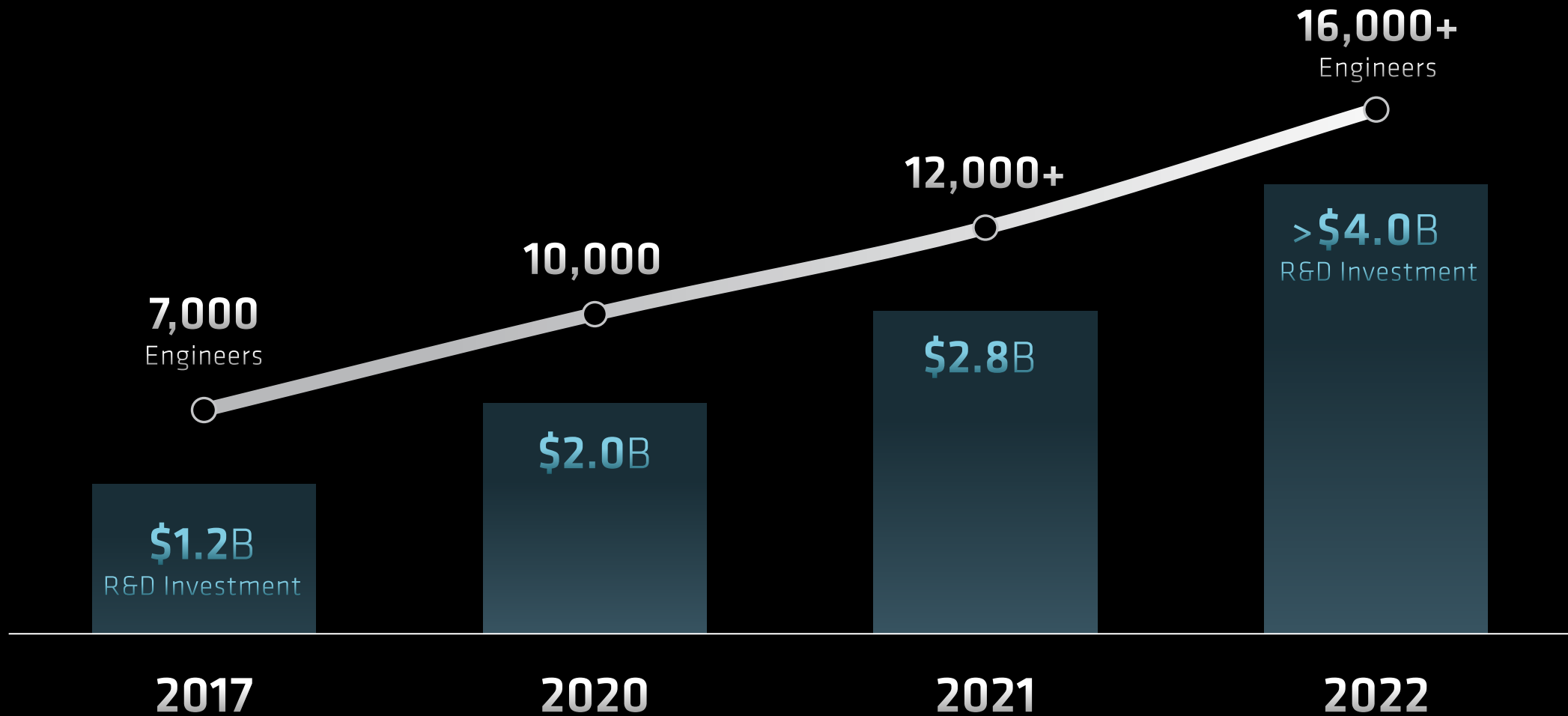


**FPGAs and
Adaptive SoCs**



**SmartNICs
and DPUs**

INVESTED FOR LEADERSHIP





HIGH PERFORMANCE CPU CORE ROADMAP



All roadmaps are subject to change.

LEADERSHIP HIGH PERFORMANCE EFFICIENCY

45%

Less Area
vs. Competitor

45%

Lower Power
vs. Competitor

78%

Better Perf/Watt
vs. Competitor

	AMD “Zen 3” Core	Intel Alder Lake Golden Cove Core
Node	TSMC 7nm	Intel 7nm Process
Core + L2 Area	4.11 mm ²	7.46 mm ²
8C 16T Power at 3.9G	43.61W	76.7W
16C 32T Perf/Watt	1.78	1.0

See endnotes Z4-006.



**For servers,
notebooks and
desktops**

WORLD'S FIRST HIGH PERFORMANCE x86 5nm CPU

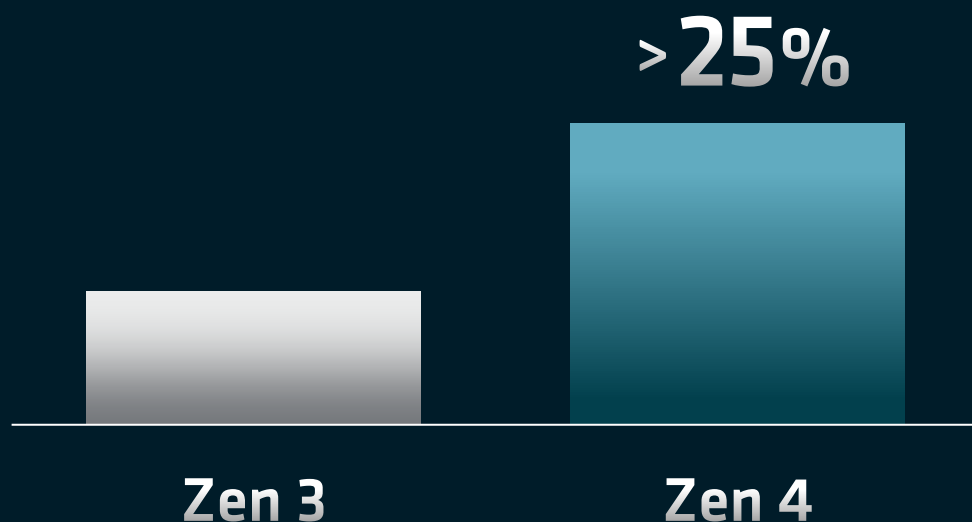
- Significant generational performance-per-watt and frequency improvement
- 8-10% instructions per clock increase
- >15% single thread performance gain
- Up to 125% memory bandwidth per core
- ISA extensions for AI and AVX-512

Performance estimates subject to change, see endnotes Z4-001, RPL-150 and Z4-002.

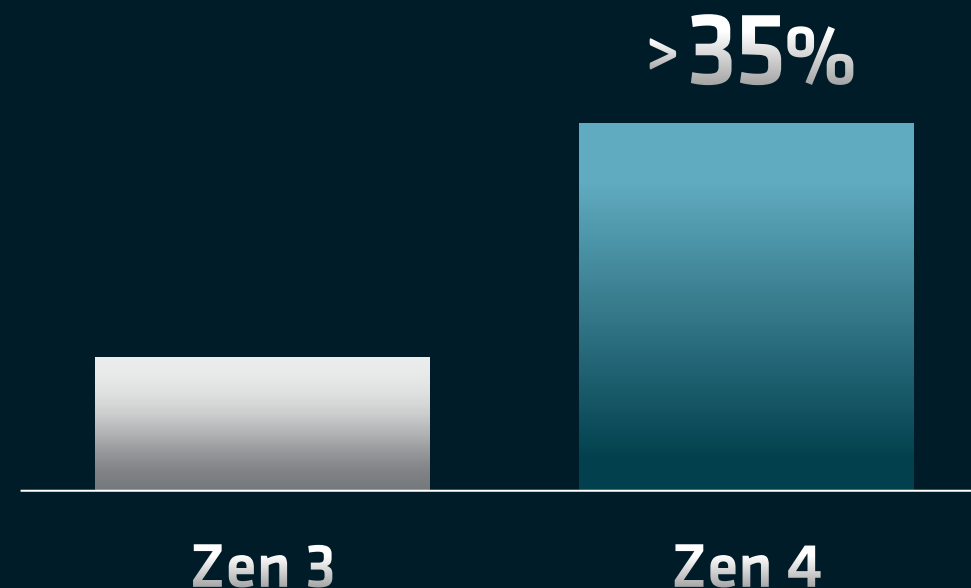


HIGHER PERFORMANCE WITH LOWER POWER CONSUMPTION

Performance-Per-Watt Gains



Overall Performance Improvement



“Zen” Desktop 16C 32T Performance, Cinebench NT

See endnotes Z4-003 and Z4-004.



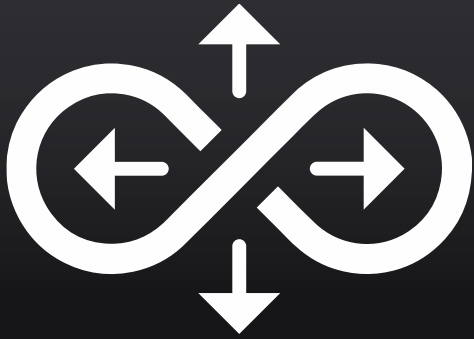
**Optimized for scale
across workloads**

COMING IN 2024

NEW GROUNDS-UP MICROARCHITECTURE

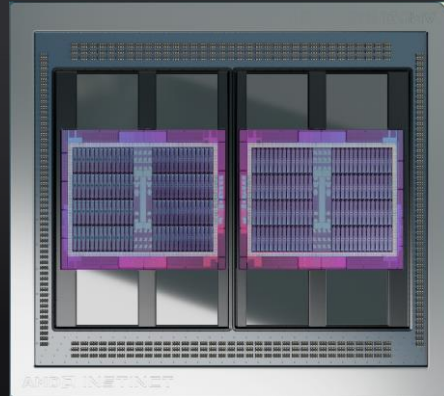
- Enhanced performance and efficiency
- Re-pipelined front end and wide issue
- Integrated AI and Machine Learning optimizations

LEADERSHIP HIGH-PERFORMANCE COMPUTE PLATFORM



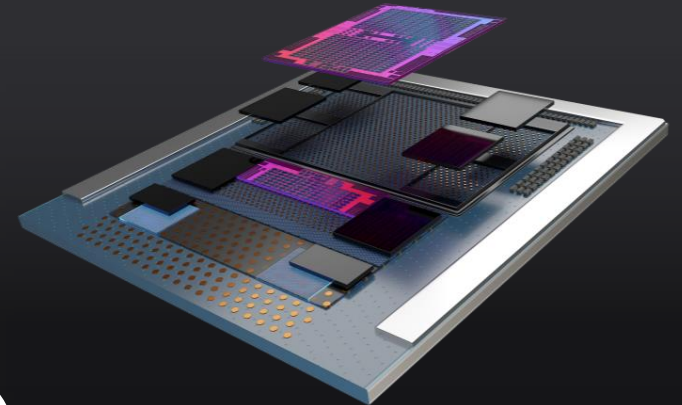
AMD Infinity Architecture

Decade long investment in computing and modular fabric architecture



Chiplet Leadership

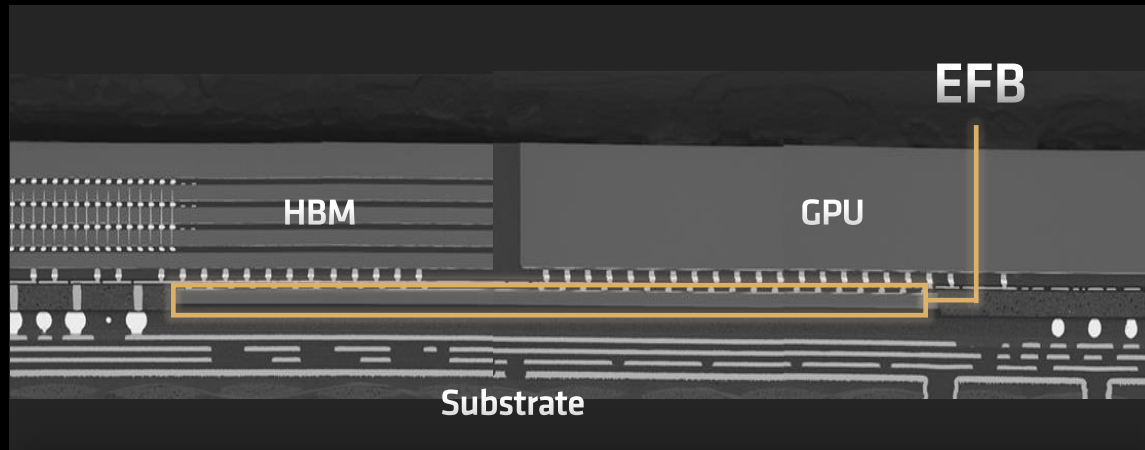
Heterogeneous compute engines and memory configurations in 2.5D and 3D chiplet packaging



Leadership Compute Platform

Enabled by AMD Infinity Architecture modularity and leading chiplet portfolio

SCALING HORIZONTALLY AND VERTICALLY



2.5D Elevated Fanout Bridge

**Scalable
Solution**

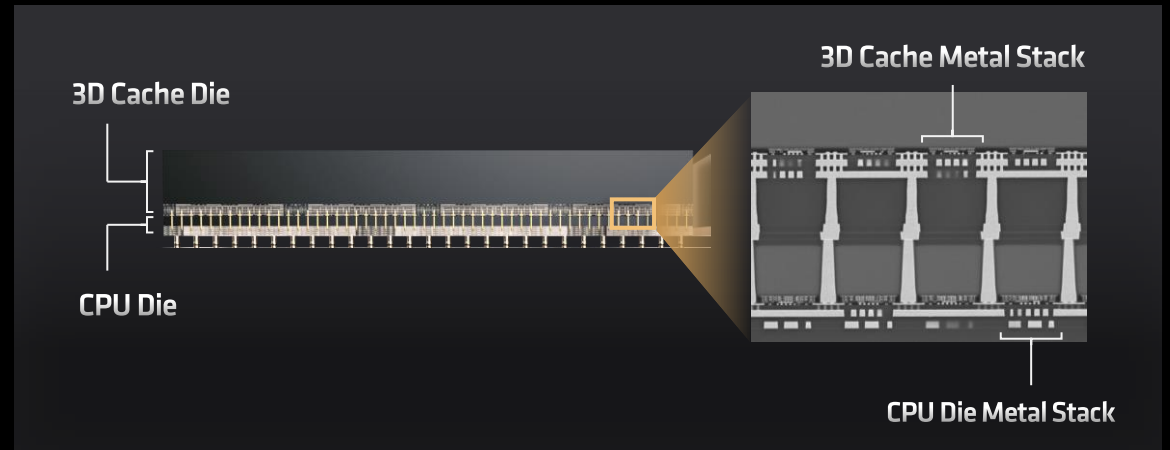
Lithographically
Defined

**Standard Flip
Chip Process**

Lower Complexity Bumping,
Assembly Process

**Standard
Substrates**

Lower Cost



3D Hybrid Bonding

> 3X

Interconnect Energy Efficiency
Compared to Micro Bump 3D

> 15X

Interconnect Density
Compared to Micro Bump 3D

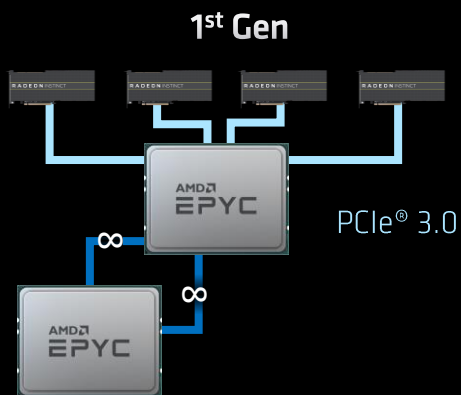


CHIPLET AND PACKAGING LEADERSHIP

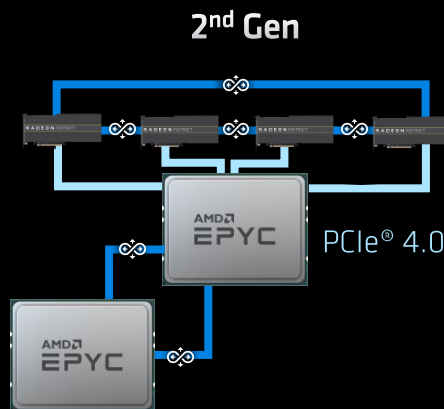


AMD INFINITY ARCHITECTURE

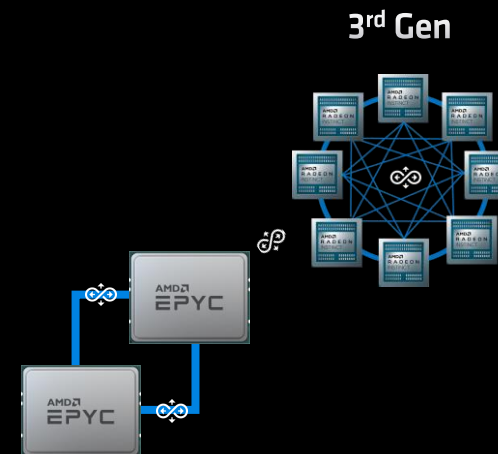
AMD MODULAR STRATEGY FOUNDATION



- CPU connectivity
- Common fabric and methodology
- Scalable data and control



- 4/8-way GPU connectivity
- CPU multi-node chiplet
- Advanced chiplet design enablement

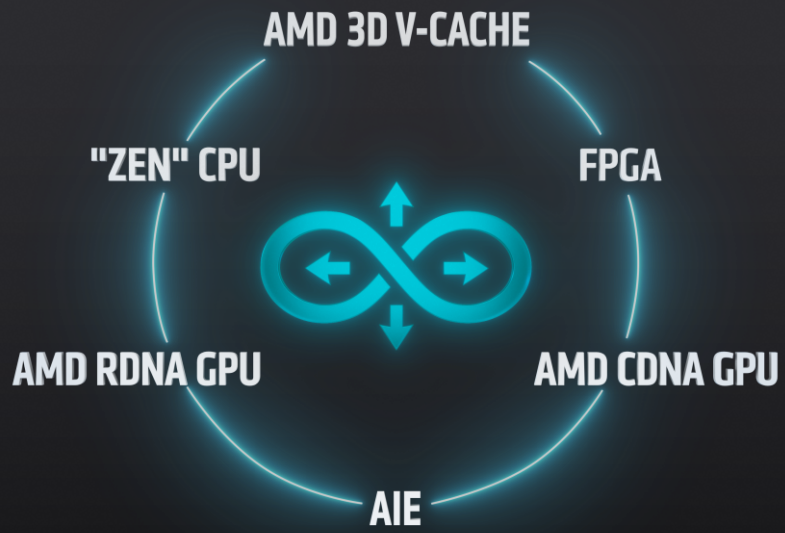


- Up to 8-way GPU connectivity
- Coherent memory between EPYC™ CPUs and Instinct™ GPUs
- Exascale CPU and GPU compute

2017

2019

2021



Unmatched High Performance
Configurability

INTRODUCING 4TH GEN AMD INFINITY ARCHITECTURE

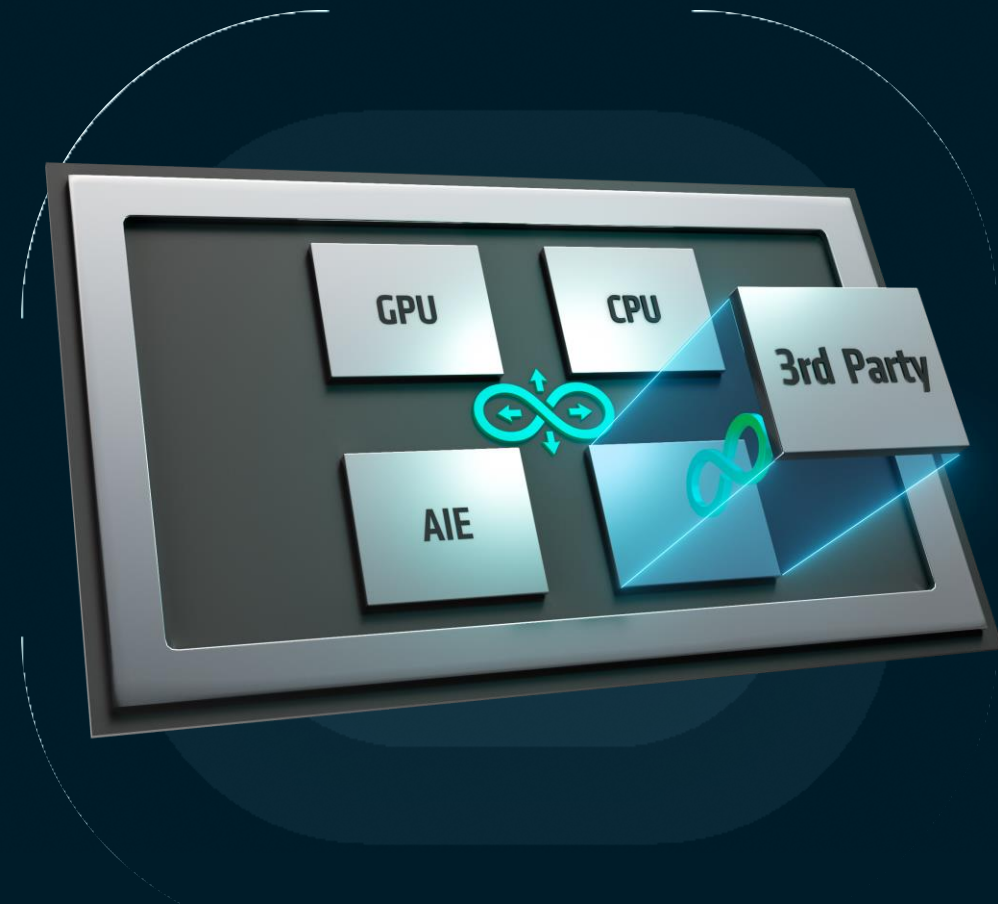
- Enables 2.5D and 3D chiplet integration with unified system level coherency
- Extensions for Xilinx and 3rd party IP
- CXL[™] 2.0-based memory for disaggregation
- Extensible architecture for CXL 3.0 and UCIe standards



CHIPLET PLATFORM LEADERSHIP

AMD is the industry leader in chiplet product deployment with >40 chiplet standard products in manufacturing

- Multi-node solutions with wide range of IP combinations
- Low latency, coherent and power efficient memory and cache
- Xilinx adaptable compute chiplets
- Custom-ready heterogeneous platform for 3rd party and customer IP chiplets



OUR PATH FORWARD

RELENTLESS INNOVATION

- Consistent delivery of leadership CPU
- Industry's broadest high performance IP portfolio with leadership chiplet flexibility
- No let up in innovation to power the future



ENDNOTES

Z4-006: Testing by AMD Performance Labs as of May 22, 2022. Performance per watt evaluated by dividing Cinebench R23 nT score by wall power of otherwise identical systems. Alder Lake system: Core i9-12900KS, ROG Maximus Z690 Hero (BIOS 0702), 2x16GB DDR5-5200 at 392W.

Zen 3 system: Ryzen 9 5950X, ROG Crosshair VIII Hero, 2x8GB DDR4-3600. All systems configured with Radeon RX 6950XT (driver 22.10 Prime), Windows 11 build 22000.593, Samsung 980 Pro 1TB SSD, Asetek 280MM liquid cooler at 203W. Results may vary based on system configuration and other variables.

Z4-001: IPC uplift based on the average of estimated/published 2017 SPECint® and 2017 SPECfp® scores and internal estimates/testing on Cinebench R23 1T and Geekbench 5 1T for “Zen4” and “Zen 3” processors.

RPL-001: Testing as of May 5, 2022, by AMD Performance Labs. Single-thread performance evaluated with Cinebench R23 1T. AMD Ryzen 9 5950X System: ASUS ROG Crosshair VIII Hero X570, 2x8 DDR4-3600C16. AMD Ryzen 7000 Series: AMD Reference X670 Motherboard, 16-core pre-production processor sample, 2x16GB DDR5-6000CL30. All systems configured with Radeon™ RX 6950XT GPU (driver: 22.10 Prime), Windows 11 Build 22000.593, Samsung 980 Pro 1TB SSD, Asetek 280MM liquid cooler. Results may vary.

Z4-002: Preliminary specification for 96-core Zen 4 are 12 channels of DDR5 memory compared to 64-core EPYC™ 7763 processor with 64-cores and 8 channels of DDR4 memory. Calculation is per core using 64-cores per processor.

Z4-003: Testing as of May 31, 2022, by AMD Performance Labs. Power measured at CPU socket only (Watts), CPU performance (“points”) measured with Cinebench R23 nT. AMD Ryzen 9 5950X System: AMD Reference X570 Motherboard, 2x8 DDR4-3200. AMD Ryzen 7000 Series: AMD Reference X670 Motherboard, Ryzen 7000 Series 16-core pre-production processor sample, 2x16GB DDR5-5200. All systems configured with Radeon™ RX 6950XT GPU (driver: 22.10 Prime), Windows 11 Build 22000.593, Samsung 980 Pro 1TB SSD, Asetek 280MM liquid cooler. Results may vary when final products are released in market.

Z4-004: Testing as of May 5, 2022, by AMD Performance Labs. Single-thread performance evaluated with Cinebench R23 1T. AMD Ryzen 9 5950X System: ASUS ROG Crosshair VIII Hero X570, 2x8 DDR4-3600C16. AMD Ryzen 7000 Series: AMD Reference X670 Motherboard, Ryzen 7000 Series 16-core pre-production processor sample, 2x16GB DDR5-6000CL30. All systems configured with Radeon™ RX 6950XT GPU (driver: 22.10 Prime), Windows 11 Build 22000.593, Samsung 980 Pro 1TB SSD, Asetek 280MM liquid cooler. Results may vary when final products are released in market.

EPYC-026: Based on calculated areal density and based on bump pitch between AMD hybrid bond AMD 3D V-Cache stacked technology compared to AMD 2D chiplet technology and Intel 3D stacked micro-bump technology.

EPYC-027: Based on AMD internal simulations and published Intel data on “Foveros” technology specifications.