CAUTIONARY STATEMENT

This presentation contains forward-looking statements concerning Advanced Micro Devices, Inc. (AMD) including, but not limited to AMD’s vision, mission and focus; AMD’s market opportunity including total addressable markets in data center, PCs, and gaming; the features, functionality, availability, timing, deployment, expectations and expected benefits of AMD’s products; and AMD’s technology and architecture roadmaps for CDNA, compute, compute GPU, Infinity Architecture, data center CPU and GPU, client CPU and gaming GPU, 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 Quarterly Report on Form 10-Q for the quarter ended March 28, 2020.
OUR VISION

High performance computing is transforming our lives

OUR MISSION

Build great products that accelerate next generation computing experiences
OUR FOCUS
HIGH-PERFORMANCE COMPUTING SOLUTIONS

Supercomputing
Cloud, Hyperscale & Virtualization
AI & Analytics Everywhere
Visualization
Gaming
Smarter Client Devices
AMD IS A LEADING TECHNOLOGY COMPANY

12,000+ Employees
Working at 46 locations
In 22 countries, headquartered in
Santa Clara, California

50+ Years of Innovation
Founded in 1969
as a Silicon Valley start-up

Transforming the World
Building the best for the world’s creators, researchers, inventors
and explorers

NASDAQ: AMD
OUR CULTURE OF INNOVATION

Innovate
We build products that transform the world
From research, education and healthcare to business and entertainment

Lead
Everyone has a voice
Our leaders drive growth and innovation through a diverse mix of perspectives and backgrounds

Execute
We are laser focused on innovation and execution
We challenge the status quo and we deliver on our commitments
## MAKING THE WORLD A BETTER PLACE

<table>
<thead>
<tr>
<th>Bloomberg</th>
<th>Fortune</th>
<th>Fast Company</th>
<th>Forbes + Just Capital</th>
<th>Human Rights Campaign</th>
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<tr>
<td>Gender-Equality Index</td>
<td>Most Admired Companies</td>
<td>Best Workplaces for Innovators</td>
<td>America’s Most Just Companies</td>
<td>Corporate Equality Index</td>
</tr>
</tbody>
</table>

**COMMITTED TO CORPORATE RESPONSIBILITY**
OUR MARKET OPPORTUNITY

Data Center
$35B TAM

PCs
$32B TAM

Gaming
$12B TAM

$79B TAM
AMD TECHNOLOGIES & ARCHITECTURE ROADMAPS
AMD IS THE ONLY COMPANY IN THE WORLD WITH BOTH HIGH-PERFORMANCE COMPUTE AND HIGH-PERFORMANCE GRAPHICS AND THE EXPERTISE TO COMBINE THEM INTO CUSTOM SOLUTIONS
“ZEN” Core Architecture

Designed from the ground up to deliver optimal balance of performance and power for servers, laptops and desktops.

- Totally new high-performance x86 core design
- >52% IPC uplift over previous generation “Excavator” core
- Multi-chip design enabled by AMD Infinity Fabric™ interconnect
- Energy-efficient FinFET design tuned for enterprise applications
“ZEN 2” CORE ARCHITECTURE

FASTER, COOLER, WITH LOWER POWER CONSUMPTION FOR SERVERS, LAPTOPS AND DESKTOPS

World's first high-performance x86 7nm CPU

Revolutionary Chiplet Design delivers more cores at the same power

Average 15% IPC Uplift, higher in some server workloads

Breakthrough 2nd Gen Infinity Architecture interconnect
COMPUTE ARCHITECTURE ROADMAP
SUSTAINED HIGH-PERFORMANCE LEADERSHIP

14nm / 12nm
‘ZEN’

7nm
‘ZEN 2’

7nm
‘ZEN 3’

5nm
‘ZEN 4’

2017 - 2022

Roadmaps subject to change
**AMD RDNA™**

**GRAPHICS ARCHITECTURE**

NEW HIGH-PERFORMANCE DESIGN FOR PC, CONSOLE, CLOUD AND MOBILE

- **Performance** for diverse gaming and workstation workloads
- **Efficiency** +50% performance-per-watt improvement
- **Features** to enhance gaming experiences
- **Scalability** from mobile to cloud

See Endnotes RX-325 and RX-362. Data Based on AMD Internal Testing 6/1/2019
**AMD RDNA™ 2 PERF/WATT IMPROVEMENT**

**BUILDING ON PROVEN CPU DESIGN METHODOLOGY**

**MICRO-ARCHITECTURE INNOVATION**
Improve Perf-per-Clock (IPC)

**LOGIC ENHANCEMENT**
Reduce Complexity and Switching Power

**PHYSICAL OPTIMIZATION**
Increase Clock Speed

Performance/Watt

- GCN
- RDNA
- RDNA 2

+50%

See Endnotes RX-325; RDNA 2 Improvement Based on AMD Internal Estimate.
GAMING GPU ARCHITECTURE ROADMAP

CONTINUOUS PERFORMANCE, INNOVATION AND EFFICIENCY GAINS

7nm

RDNA
Architecture Optimized for Gaming

RDNA 2
Perf/Watt Improvement
Ray Tracing, Variable Rate Shading & More

Advanced Node

2019

2022

Roadmaps subject to change
COMING SOON

AMD CDNA ARCHITECTURE

GPU COMPUTE DNA FOR THE DATA CENTER

Performance
Accelerate ML/HPC with Compute/Tensor OPS

Efficiency
Improved Perf-per-Watt

Features
Enhance Enterprise RAS, Security and Virtualization

Scalability
Scale Performance with AMD Infinity Architecture
COMPUTE GPU ARCHITECTURE ROADMAP

COMPUTE DNA FOR THE DATA CENTER

- GCN: First 7nm Data Center GPU
- CDNA: 2nd Gen AMD Infinity Architecture Optimized for ML/HPC
- Advanced Node: 3rd Gen AMD CDNA 2

Roadmaps subject to change
AMD INFINITY ARCHITECTURE

SCALABLE INTERCONNECT TECHNOLOGY FOR AMD CPUs AND GPUs

- Leveraged across AMD product line from notebook to server
- Optimization for multi-processor performance and scalability
- Enables revolutionary chiplet design
- Delivers efficiency, performance, throughput and security features
AMD INFINITY ARCHITECTURE ROADMAP

CPU CONNECTIVITY
1st Gen
AMD Infinity Fabric™

4/8-WAY GPU CONNECTIVITY
2nd Gen
AMD Infinity Architecture

UP TO 8-WAY GPU WITH COHERENT CONNECTIVITY
3rd Gen
AMD Infinity Architecture

2017

2022

Roadmaps subject to change

PCIe® 3.0

PCIe® 4.0
AMD PRODUCTS
AMD DATA CENTER FOCUS
DELIVERING LEADERSHIP COMPUTE AND GRAPHICS DIFFERENTIATION

HPC
Enterprise/IT
Cloud
Machine Intelligence
Virtualization & Cloud Gaming
AMD EPYC™ LINEUP
A NEW ERA IN THE DATA CENTER

1st Gen EPYC™ Processors
“Zen” Architecture

2nd Gen EPYC™ Processors
“Zen 2” Architecture
AMD DATA CENTER
COMPUTE LEADERSHIP

2ND GEN AMD EPYC™

World’s 1st 7nm x86 Data Center CPU

World’s Highest Performance
X86 Server Processor*

World’s Highest Per Core Performance
x86 server CPU**

140+ WORLD RECORDS AND COUNTING

*EPYC 7702, **EPYC 7732 See endnote ROM-517, ROM-169, ROM-570
THE NEW STANDARD FOR THE MODERN DATA CENTER

2ND GEN AMD EPYC™ PROCESSOR

RECORD-SHATTERING PERFORMANCE
Highest Performance x86 Server Processor

BREAKTHROUGH ARCHITECTURE
Chiplet Design, “Zen 2” Core, Infinity Fabric™

DISRUPTIVE TCO
Higher Performance Drives Lower CapEx and OpEx

| Up to 64 Cores | Up to 128 Threads | Up to 128 PCIe 4.0 Lanes** | Up to 50% Lower TCO | Advanced Security Features |

See endnotes ROM-169, ROM-557. *EPYC 7702 - see endnote ROM-517. **A motherboard designed for 2nd Gen EPYC processors is required to enable all available functionality.
BALANCED ARCHITECTURE
FOR THE HEART OF THE ENTERPRISE

AMD EPYC™ 7FX2
PROCESSORS

HYPER-CONVERGED INFRASTRUCTURE
COMMERCIAL HPC APPLICATIONS
RELATIONAL DATABASES

- High base and boost frequencies
- Low latency access to critical data with large L3 cache
- Industry leading 8 DDR4-3200 memory channels
- Up to 128 PCIe® 4.0 lanes**

See endnotes EPYC-18, ROM-169, ROM-557. *EPYC 7702 - see endnote ROM-517. **A motherboard designed for 2nd Gen EPYC processors is required to enable all available functionality.
AMD DATA CENTER GPU LINEUP
A NEW ERA IN THE DATA CENTER

Radeon™ Instinct MI25 Accelerator
1st generation 14nm "Vega" architecture

Radeon™ Instinct MI50 Accelerator
2nd generation "Vega" architecture

Customer-Oriented Data Center Solutions
Strategic development with lead customers

ROCM™ Software
Top-to-bottom open ecosystem commitment

WORLD-CLASS GPU TECHNOLOGIES
OPEN SOFTWARE ECOSYSTEM PLATFORM
AMD CPU + GPU SOFTWARE ADVANTAGES
DRIVING HIGH-PERFORMANCE COMPUTING LEADERSHIP

Fully Integrated CPU and GPU Systems and Unified Tools

Infinity Architecture for Bandwidth and Coherency

Open Source Software Optimized for Performance

NAMD 2.13 BENCHMARK

UP TO 26%

- 2x Xeon Platinum 8280
- 2x Xeon Platinum 8280 + 8x Tesla V100
- 2x AMD EPYC™ 7742 CPU + 8x AMD Radeon Instinct™ MI50

See endnote RIV-20
DATA CENTER GROWTH
DELIVERING LEADERSHIP COMPUTE AND GRAPHICS DIFFERENTIATION

Supercomputing
Leading the Exascale Era
Consistently Winning Top Deployments

Cloud
Expanding Deployments with Top 10 Providers
Doubled in 2019
150+ Instances
Expected in 2020

Enterprise
Large-scale Enterprise Deployments with Growing Pipeline
Doubled in 2019
140+ Platforms
Expected in 2020

Microsoft Azure
aws
Google
Twitter

INDIANA UNIVERSITY
**AMD DATA CENTER CPU ROADMAP**

**SUSTAINED HIGH-PERFORMANCE LEADERSHIP**

- **14nm**
  - ‘ZEN’
  - 1st GEN ‘NAPLES’

- **7nm**
  - ‘ZEN 2’
  - 2nd GEN ‘ROME’

- **7nm**
  - ‘ZEN 3’
  - 3rd GEN ‘MILAN’

- **5nm**
  - ‘ZEN 4’
  - 4th GEN ‘GENOA’

2017 - 2022
AMD DATA CENTER GPU ROADMAP

- **2019**
  - GCN: First 7nm Data Center GPU

- **2020**
  - CDNA: 2nd Gen AMD Infinity Architecture Optimized for ML/HPC

- **2022**
  - Advanced Node: CDNA 2
    - 3rd Gen AMD Infinity Architecture Extends to Exascale

Roadmaps subject to change
OUR PATH FORWARD
THE NEW DATA CENTER LEADER

Leadership Roadmap and Execution
Leadership Performance
Leadership Architecture for Accelerated Computing
AMD CLIENT COMPUTE FOCUS
BUILDING THE BEST PROCESSORS IN THE WORLD

**Desktops**
- High-end
- Consumer
- Commercial

**Notebooks**
- Consumer
- Chromebook
- Commercial
AMD CLIENT COMPUTE LEADERSHIP

TOP-TO-BOTTOM LEADERSHIP PRODUCT STACK

World's Fastest High-End Desktop Processors
3rd Gen Ryzen™ Threadripper™

World's Most Advanced Desktop Processor
3rd Gen Ryzen™ Desktop CPU

World's Most Powerful Graphics on a Desktop Processor
2nd Gen Ryzen™ Desktop APU

World's Fastest Ultrathin Laptop Processor
3rd Gen Ryzen™ Mobile APU

See endnotes CPK-01, RZ3-14, RZG-01, RM3-127
AMD RYZEN™ 3000 SERIES
DESKTOP PROCESSORS

World’s most advanced desktop processor

Based on 7nm “Zen 2” core architecture

Leadership single-thread and multi-thread performance at lower power

3rd generation of AMD Ryzen™ CPUs in three years

See endnotes RZ3-14, RZ3-15
### 3rd Gen AMD Ryzen™ Threadripper™

**The World's Fastest HEDT Processors**

<table>
<thead>
<tr>
<th>Feature</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>7nm “Zen 2” architecture</td>
<td>3rd Gen AMD Ryzen™ features</td>
</tr>
<tr>
<td>Including the World's 1st 64-core HEDT processor</td>
<td>Designed for creators, developers and PC enthusiasts</td>
</tr>
</tbody>
</table>

See endnote CPK-02
LAUNCHED Q1 2020

AMD RYZEN™
4000 SERIES

MOBILE PROCESSORS

World's highest performing ultrathin notebook processor

Based on 7nm “Zen 2” core architecture

Up to 59% more performance per graphics CU

Up to 2x performance-per-watt vs. 2nd generation

See endnotes RM3-123, RM9-127, RZ3-24, RM3-250.
LAUNCHED MAY 2020

**AMD RYZEN™ PRO 4000 PROCESSORS**

**ULTIMATE PERFORMANCE AND WORK ANYWHERE FLEXIBILITY**

- Fastest processor for ultrathin business notebooks*
- Most cores and threads in an ultrathin business notebook*
- Designed for premium battery life experience
- Dedicated security processor

*AMD Ryzen 7 PRO 4750U. See endnotes RNP-19, RNP-13
## AMD CLIENT LINEUP

**NON-STOP PRODUCT MOMENTUM**

<table>
<thead>
<tr>
<th>3rd Gen AMD Ryzen™ Mobile Processors</th>
</tr>
</thead>
<tbody>
<tr>
<td>&quot;Zen 2&quot; Architecture + Radeon™ Vega Graphics</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>A Series Processors for Chromebook</th>
</tr>
</thead>
<tbody>
<tr>
<td>&quot;Excavator&quot; Architecture + Radeon™ Vega Graphics</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>AMD Athlon™ Desktop and Mobile Processors</th>
</tr>
</thead>
<tbody>
<tr>
<td>&quot;Zen&quot; Architecture + Radeon™ Vega Graphics</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>3rd Gen AMD Ryzen™ Desktop Processors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Zen 2™ Architecture</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>2nd Gen AMD Ryzen™ Desktop Processors</th>
</tr>
</thead>
<tbody>
<tr>
<td>&quot;Zen&quot; Architecture + Radeon™ Vega Graphics</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>3rd Gen AMD Ryzen™ Threadripper™ Desktop Processors</th>
</tr>
</thead>
<tbody>
<tr>
<td>&quot;Zen 2&quot;Architecture</td>
</tr>
</tbody>
</table>

**135+ RYZEN NOTEBOOKS COMING IN 2020**
ACCELERATED NOTEBOOK MOMENTUM

AMD NOTEBOOK UNIT MARKET SHARE

2017: 7%
2018: 12%
2019: 16%

AMD PLATFORM MOMENTUM

2018: 50
2019: 85
2020: 135+

Source: Mercury (Q4 Exit Data) and AMD Estimates
STRONG COMMERCIAL MOMENTUM

AMD COMMERCIAL UNIT MARKET SHARE

- 2017: 7%
- 2018: 8%
- 2019: 11%

Source: Mercury (Q4 Exit Data) and AMD Estimates

AMD PLATFORM MOMENTUM

- 2018: 35
- 2019: 51
- 2020: 70+

Source: Mercury (Q4 Exit Data) and AMD Estimates

Products from brands such as HP and Lenovo.
AMD CLIENT CPU ROADMAP

SUSTAINED HIGH-PERFORMANCE LEADERSHIP

2017

-ZEN-

AMD RYZEN
1/2ND GEN

-ZEN 2-

AMD RYZEN

-ZEN 3-

AMD RYZEN

2021

Roadmaps subject to change
OUR PATH FORWARD
DRIVING NON-STOP INNOVATION FOR PCs

Multi-Generational Product Leadership | Superior User Experience | Notebook Acceleration | Commercial Momentum
# AMD Graphics Focus

**Radeon™ Is Everywhere**

<table>
<thead>
<tr>
<th>Products</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>PCs</strong></td>
<td>Radeon™ RX 5000 series, Radeon™ VII and Radeon™ Pro W5000 series</td>
</tr>
<tr>
<td><strong>Apple Mac</strong></td>
<td>Broad line-up, including Radeon™ Pro 5000M series and W5700X GPUs</td>
</tr>
<tr>
<td><strong>Consoles</strong></td>
<td>Next generation consoles with &quot;Zen 2&quot; and RDNA</td>
</tr>
<tr>
<td><strong>Cloud</strong></td>
<td>Google Stadia, Microsoft Project xCloud, Microsoft Azure</td>
</tr>
<tr>
<td><strong>Mobile</strong></td>
<td>Samsung partnership and IP licensing</td>
</tr>
<tr>
<td><strong>HPC</strong></td>
<td>El Capitan and Frontier supercomputers</td>
</tr>
</tbody>
</table>

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[AMD Radeon] [AMD Radeon Instinct]
AMD RADEON GRAPHICS LEADERSHIP

RADEON™ IS EVERYWHERE

Next Level 1080P Gaming
Radeon™ RX 5500 Series

Ultimate 1080p Gaming
Radeon™ RX 5600 Series

The Best 1440P Gaming GPUs
Radeon™ RX 5700 Series

World’s 1st 7nm Professional PC Workstation GPU
Radeon™ Pro W5700

World’s 1st 7nm GPU for Deep Learning, HPC, Cloud and Rendering
Radeon™ Instinct MI50

HIGH-FIDELITY GAMING

POWERFUL WORKSTATION AND DATA CENTER PERFORMANCE
AMD RADEON™
RX 5000 SERIES
HIGH-PERFORMANCE GAMING

- High-fidelity gaming experiences for desktops and notebooks
- RDNA architecture for superior performance and power efficiency
- Industry-leading 7nm process technology
- Game-changing Radeon™ Software features
AMD RADEON™ PRO W5000 SERIES

POWERFUL WORKSTATION GRAPHICS

- High-performance, power-efficient RDNA™ graphics architecture
- Industry-leading 7nm process technology
- New levels of performance and advanced features enable 3D designers, architects and engineers
ANNOUNCED MAY 2020

AMD RADEON™ PRO VII

THE NEW STANDARD FOR COMPLEX DOUBLE PRECISION SIMULATIONS AND DESIGN VALIDATION

- Up to 6.5 TFLOPS double precision performance
- 16GB HBM2 memory
- AMD Infinity Fabric™ enables memory sharing between GPUs
- High-bandwidth PCIe 4.0 support
AMD RADEON LINEUP

EXPANDING THE RADEON UNIVERSE

AMD Radeon™ RX 5500 Series
RDNA™ Architecture

AMD Radeon™ RX 5600 Series
RDNA™ Architecture

AMD Radeon™ RX 5700 Series
RDNA™ Architecture

AMD Radeon™ RX 500 Series
"Polaris" GCN Architecture

AMD Radeon™ VII
"Vega" GCN Architecture

AMD Radeon™ Pro Workstation Graphics
RDNA™ Architecture
"Vega" Architecture

HIGH-FIDELITY GAMING
POWERFUL WORKSTATION PERFORMANCE
AMD GAMING GPU ROADMAP

7nm

2019

“NAVI 1X”

RDNA

"NAVI 2X"

RDNA 2

“NAVI 3X”

RDNA 3

Advanced Node

2022

Roadmaps subject to change
OUR PATH FORWARD
PUSHING THE ENVELOPE FOR GAMERS

AMD RDNA Architecture | Top-to-Bottom Leadership Product Stack | Advanced Software
AMD MARKET & FINANCIAL MOMENTUM
EXPANDING OUR CUSTOMER BASE
ACROSS PCs, GAMING AND THE DATA CENTER
AMD MARKET SHARE
UNIT MARKET SHARE

CLIENT COMPUTE (EXCLUDING IoT)

Q1 2019 CLIENT HIGHLIGHTS
Record quarterly notebook revenue; on track to accelerate consumer and commercial mobile growth this year

2017 2018 2019
8.7% 13.4% 16.9%

DISCRETE GRAPHICS

Q1 2019 GRAPHICS HIGHLIGHTS
Unit shipment and revenue growth driven by sales of 7nm Radeon RX 5000 series desktop and mobile GPUs

2017 2018 2019
33.1% 26.5% 26.6%

X86 SERVER (EXCLUDING IoT)

Q1 2019 SERVER HIGHLIGHTS
Server unit shipments grew by double-digit percentage Q/Q with momentum across cloud, enterprise and HPC customers

2017 2018 2019
1.0% 5.0% 8.0%

MOMENTUM
Share exiting the year. Sources: Client – Mercury Research (Jan 2020), Graphics – Jon Peddie Research (Feb 2020), Server – IDC, AMD Internal Estimates
FINANCIAL MOMENTUM AND GROWTH

FINANCIALS

REVENUE ($ Billion)

2017 2018 2019

$5.3B $6.5B $6.7B

Accelerating Revenue Growth

GROSS MARGIN (%)

2017 2018 2019

34% 39% 43%

34% 38% 43%

GAAP Non-GAAP*

Growing Profitability

EPS

2017 2018 2019

0.1 0.46 0.64

-0.03 0.32 0.3

GAAP Non-GAAP*

EARNINGS POWER OF AMD FINANCIAL MODEL

*See Appendices for GAAP to Non-GAAP reconciliation.
1. See Appendices for reconciliation to Total Debt.
2. Gross Leverage = Principal debt divided by trailing 12 months adjusted EBITDA. See Appendices for reconciliations.
3. See Appendices for reconciliation to Total Debt.
ABOUT AMD

BUILDING THE BEST

Disruptive CPU and GPU solutions
Multi-year leadership technology roadmaps
Growing customer base and momentum across target markets
Strong and consistent execution
Best-in-class growth

HIGH-PERFORMANCE COMPUTING LEADERSHIP
LEARN MORE

AMD.com
AMD Investor Relations Website
AMD 2020 Financial Analyst Day
AMD Executive Team
AMD Board of Directors
Annual Report
Corporate Responsibility at AMD
Learn More About AMD Ryzen Processors
Learn More About AMD Radeon Graphics Cards
Learn More About AMD EPYC Server Processors
AMD Innovations
Careers at AMD
ENDNOTES + APPENDICES
GD-122: The information contained herein is for informational purposes only and is subject to change without notice. Timelines, roadmaps, and/or product release dates shown in these slides are plans only and subject to change. "Zen," "Zen 2," "Zen 3," "Zen 4," "RDNA," "RDNA 2," "Excavator," "Vega," "Polaris," "GCN," "Naples," "Rome," "Milan" and "Genoa" are codenames for AMD architectures, and are not product names.

GD-142: AMD APUs and GPUs based on the Graphics Core Next and RDNA architectures contain GPU Cores comprised of compute units, which are defined as 64 shaders (or stream processors) working together.

RZN-11: >52% uplift: Testing by AMD Performance labs. PC manufacturers may vary configurations yielding different results. System configs: AMD reference motherboard(s), AMD Radeon™ R9 290X GPU, 8GB DDR4-2667 (“Zen“)/8GB DDR3-2133 (“Excavator“)/8GB DDR3-1866 (“Piledriver“), Ubuntu Linux 16.x (SPECint06) and Windows® 10 x64 RS1 (Cinebench R15). Updated Feb 28, 2017: Generational IPC uplift for the “Zen” architecture vs. “Piledriver” architecture is +52% with an estimated SPECint_base2006 score compiled with GCC 4.6 –02 at a fixed 3.4GHz. Generational IPC uplift for the “Zen” architecture vs. “Excavator” architecture is +64% as measured with Cinebench R15 1T, and also +64% with an estimated SPECint_base2006 score compiled with GCC 4.6 –02, at a fixed 3.4GHz. System configs: AMD reference motherboard(s), AMD Radeon™ R9 290X GPU, 8GB DDR4-2667 (“Zen“)/8GB DDR3-2133 (“Excavator“)/8GB DDR3-1866 (“Piledriver“), Ubuntu Linux 16.x (SPECint_base2006 estimate) and Windows® 10 x64 RS1 (Cinebench R15). SPECint_base2006 estimates: “Zen” vs. “Piledriver” (31.5 vs. 20.7 | +52%), “Zen” vs. “Excavator” (31.5 vs. 19.2 | +64%). Cinebench R15 1t scores: “Zen” vs. “Piledriver” (139 vs. 79 both at 3.4G | +76%), “Zen” vs. “Excavator” (160 vs. 97.5 both at 4.0G | +64%).

RZ3-34: ~15% IPC uplift: AMD "Zen 2" CPU-based system scored an estimated 15% higher than previous generation AMD “Zen” based system using estimated SPECint®_base2006 results. SPEC and SPECint are registered trademarks of the Standard Performance Evaluation Corporation. See www.spec.org.

RX-325: Testing done by AMD performance labs 6/1/19, using the Division 2 @ 25x14 Ultra settings. Performance may vary based on use of latest drivers. RX-325

RX-362: Testing done by AMD performance labs on June 4, 2019. Systems were tested with: Intel(R) Core(TM) i7-5930K CPU @ 3.50GHz (6 core) with 16GB DDR4 @ 2133 MHz using an Asus X99-E Motherboard running Windows 10 Enterprise 64-bit (Ver. 1809, build 17763.053). Using the following graphics cards: Navi 10 (Driver 19.30_1905161434 (CL# 1784070)) with 40 compute units, versus a Vega 64 (Driver 19.4.1) with 40 compute units enabled. Breakdown based on AMD internal data June 4, 2019. Performance may vary. RX-362

ENDNOTES

Footnotes ROM-517, ROM-557, ROM-169, RIV-20, CPK-01, RZ3-14

EPYC-18: Max boost for AMD EPYC processors is the maximum frequency achievable by any single core on the processor under normal operating conditions for server systems. EPYC-18


ROM-557: Estimates based on AMD Server Virtualization TCO (total cost of ownership) Estimator tool v5.5, comparing the AMD EPYC™ and Intel® Xeon® server solutions required to deliver 320 total virtual machines (VM), requiring 1 core and 8GB of memory per VM, with a minimum total solution memory requirement of 2.56 TB of memory. The analysis includes both hardware and virtualization software components. For 320 VMs and 1 core per VM, the Intel _Gold_ 6250 processor requires 20 - 2P servers. The AMD EPYC_7702P solution requires 5 - 1P servers. Virtualization software pricing as of October 2019. Third party names are for informational purposes only and may be trademarks of their respective owners. This scenario contains many assumptions and estimates and, while based on AMD internal research and best approximations, should be considered an example for information purposes only, and not used as a basis for decision making over actual testing. All pricing is in USD. ROM-557

ROM-169: For a complete list of world records see http://amd.com/worldrecords.

RIV-20: AMD EPYC 7742 CPU + AMD Radeon Instinct MI150 GPUs Deliver ~26% Faster Performance than Best-In-Class Intel 8280 CPU + Nvidia V100 GPUs. Testing Conducted by AMD performance lab as of 11-10-2019, on systems comprising of Dual Socket Intel Xeon Platinum 8280, NVIDIA Tesla V100 PCIe with CUDA 10.1.243 and CUDNN 7.6, 376 GB DDR4, and a 500GB SCSi drive versus Dual Socket AMD EPYC 7742, AMD Radeon Instinct MI50 graphics, ROCm 2.7 driver, 500GB DDR4, and a 960GB NVMe drive. Both systems had Ubuntu 16.04.6 LTS. Benchmark application: NAMD 2.13, STMV 1M Atom benchmark, Binaries from https://www.ks.uiuc.edu/Research/namd for CPU & CUDA, ROCM from http://gitlab1.amd.com/nicurtis/NAMD.git for architecture Linux-x86_64-multicore. Best-in-class based on industry-standard pin-based (LGA) X86 processors. 2x Intel Xeon Platinum 8280=1.1 ns/day. 2x Intel Xeon Platinum 8280 + 8x NVIDIA Tesla V100 PCIe=9.1 ns/day. 2x EPYC 7742 + 8x AMD Radeon Instinct MI50 =11.5 ns/day. Performance may vary based on use of latest drivers and optimizations. (RIV-20)

CPK-01: Testing by AMD performance labs on 10/07/2019 comparing an AMD Ryzen™ Threadripper™ 3970X and Intel© Core™ i9-9980XE in the Cinebench R20 nT benchmark test. Results may vary. CPK-01

RZ3-14: “Advanced” defined as superior process technology in a smaller node and unique support for PCIe® Gen 4 in the gaming market as of 05/26/2019.
Footnotes RZG-01, RM3-127

RZG-01: Testing by AMD Performance labs as of 12/08/2017 for the Ryzen 5 2400G, and 09/04/2015 for the Core i7-5775c on the following systems. PC manufacturers may vary configurations yielding different results. Results may vary based on driver versions used. System Configs: All systems equipped with Samsung 850 PRO 512GB SSD, Windows 10 RS2 operating system. Socket AM4 System: Ryzen 52400G processor, 16B (2 x 8GB) DDR4-2667 RAM, Graphics Driver 1710181048-17.40-171018a-3197E0 23.20.768.0 :: 12/08/2017. Socket LGA1150 System: Core i7-5775c processor, 8GB (2x4GB) DDR3-1867 MHz RAM, graphics driver 10.18.15.4256:: 09/04/2015. 3DMark 11 Performance benchmark used to represent graphics power. The following processors achieved the following scores in 3DMark 11 'performance' benchmark v1.0.132.0: The Ryzen 5 2400G: 5042. Also in v1.0.132.0,. The Core i7-5775c, the Intel desktop processor with the highest Intel desktop graphics performance, achieved 3094.

RM3-127: "Ultrathin laptop processor" defined as 15W typical TDP. Testing by AMD Performance Labs as of 12/09/2019 utilizing an AMD Ryzen™ 4800U reference system, a Dell XPS 7390 system with 10th Gen Intel® Core i7-1065G7 processor, and a Dell XPS 7390 with a 10th Gen Intel® Core i7-10710U processor using Cinebench R20 1T, Cinebench R20 nT and 3DMark 11 Performance. Results may vary. 3DMark is a registered trademark of Futremark Corporation.

Benchmark performance scores for all systems:
Cinebench R20 1T
Ryzen™ 4800U: 479
Core i7-1065G7: 462 (4% slower)
Core i7-10710U: 473 (1% slower)

Cinebench R20 nT
Ryzen™ 4800U: 3306
Core i7-1065G7: 1744 (90% slower)
Core i7-10710U: 2411 (37% slower)

3DMark 11 Performance:
Ryzen™ 4800U: 5794
Core i7-1065G7: 4910 (18% slower)
Core i7-10710U: 2253 (157% slower)
**ENDNOTES**

Footnotes RZ3-15, CPK-02, RM3-123, RM3-127, RZ3-24, RM3-250, RNP-1, RNP-13, RX-325, RX-326

RZ3-15: Testing by AMD Performance Labs as of 05/26/2019 utilizing the Ryzen 7 3700X vs. Core i7-9700K in Cinebench R20 1T and nT. Results may vary.

CPK-02: Testing by AMD performance labs on 10/07/2019 comparing an AMD Ryzen™ Threadripper™ 3970X and AMD Ryzen™ Threadripper™ 3960X vs. Intel® Core™ i9-9980XE in the Cinebench R20 nT benchmark test. Results may vary.

RM3-123: Testing by AMD Performance Labs as of 11/22/2019 utilizing the Ryzen 7 4800U vs. 2nd Gen Ryzen 7 3700U in Cinebench R20 Benchmark. Results may vary.

RM3-127 - “Ultrathin laptop processor” defined as 15W typical TDP. Testing by AMD Performance Labs as of 12/09/2019 utilizing an AMD Ryzen™ 4800U reference system, a Dell XPS 7390 system with 10th Gen Intel® Core i7-1065G7 processor, and a Dell XPS 7390 with a 10th Gen Intel® Core i7-10710U processor using Cinebench R20 1T, Cinebench R20 nT and 3DMark 11 Performance. Results may vary. 3DMark is a registered trademark of Futremark Corporation.

RZ3-24: AMD "Zen 2" CPU-based system scored an estimated 15% higher than previous generation AMD "Zen" based system using estimated SPECint®_base2006 results. SPEC and SPECint are registered trademarks of the Standard Performance Evaluation Corporation. See www.spec.org.

RM3-250: Testing by AMD performance labs in February 2020, utilizing a Ryzen™ 7 4800 in an AMD reference system and a previous generation Ryzen™ 7 3700U in an AMD reference system and tested in 3DMark Time Spy. Results may vary. 3DMark is a registered trademark of Futuremark.

RNP-1: Source: IDC PC Device Tracker data, 2019Q3, AMD has gained the most share among PC processor vendors for x86 processors for consumer and commercial desktops and notebooks from Q2 2017 through Q3 2019.

RNP-13: “Processor for business ultrathin notebooks” defined as 15W typical TDP. Testing as of 1/24/2020 by AMD Performance Labson a Ryzen 7 PRO 4750U Reference Platform vs. i7-10710U (Dell XPS 13) vs. i7-1065G7 (Dell XPS 7390 2in1) vs. i7-8665U (Lenovo ThinkPad T490s). Results may vary. RNP-13

RX-325: Testing done by AMD performance labs 6/1/19, using the Division 2 @ 25x14 Ultra settings. Performance may vary based on use of latest drivers.

**ENDNOTES**

Footnotes GD-127, GD-147, GD-151

GD-127: Radeon FreeSync technology requires a monitor and AMD Radeon™ graphics, both with FreeSync support. See www.amd.com/freesync for complete details. Confirm capability with your system manufacturer before purchase. GD-127

GD-147: Game clock is the expected GPU clock when running typical gaming applications, set to typical TGP (Total Graphics Power). Actual individual game clock results may vary. GD-147

GD-151: Boost Clock Frequency is the maximum frequency achievable on the GPU running a bursty workload. Boost clock achievability, frequency, and sustainability will vary based on several factors, including but not limited to: thermal conditions and variation in applications and workloads. GD-151
## Reconciliation of GAAP to Non-GAAP Gross Margin

<table>
<thead>
<tr>
<th>(Millions)</th>
<th>2017</th>
<th>2018</th>
<th>2019</th>
</tr>
</thead>
<tbody>
<tr>
<td>GAAP gross margin</td>
<td>$1,787</td>
<td>$2,447</td>
<td>$2,868</td>
</tr>
<tr>
<td>GAAP gross margin %</td>
<td>34%</td>
<td>38%</td>
<td>43%</td>
</tr>
<tr>
<td>Impairment of technology licenses</td>
<td>—</td>
<td>45</td>
<td>—</td>
</tr>
<tr>
<td>Stock-based compensation</td>
<td>2</td>
<td>4</td>
<td>6</td>
</tr>
<tr>
<td>Non-GAAP gross margin</td>
<td>$1,789</td>
<td>$2,496</td>
<td>$2,874</td>
</tr>
<tr>
<td>Non-GAAP gross margin %</td>
<td>34%</td>
<td>39%</td>
<td>43%</td>
</tr>
</tbody>
</table>
## Reconciliation of GAAP to Non-GAAP Net Income (Loss) / Earnings (Loss) Per Share

(Millions, except per share data)

<table>
<thead>
<tr>
<th></th>
<th>2017</th>
<th>2018</th>
<th>2019</th>
</tr>
</thead>
<tbody>
<tr>
<td>GAAP net income (loss) / earnings (loss) per share</td>
<td>$(33)</td>
<td>$(0.03)</td>
<td>$337</td>
</tr>
<tr>
<td>Loss on debt redemption/conversion</td>
<td>12</td>
<td>0.01</td>
<td>12</td>
</tr>
<tr>
<td>Non-cash interest expense related to convertible debt</td>
<td>22</td>
<td>0.02</td>
<td>24</td>
</tr>
<tr>
<td>Stock-based compensation</td>
<td>97</td>
<td>0.09</td>
<td>137</td>
</tr>
<tr>
<td>Gain on sale of 85% of ATMP</td>
<td>(3)</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Tax provision related to sale of 85% of ATMP JV</td>
<td>1</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Impairment of technology licenses</td>
<td>—</td>
<td>—</td>
<td>45</td>
</tr>
<tr>
<td>Equity loss in investee</td>
<td>7</td>
<td>0.01</td>
<td>2</td>
</tr>
<tr>
<td>Loss contingency on legal matter</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Provision for (benefit from) income taxes</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Withholding tax refund including interest</td>
<td>—</td>
<td>—</td>
<td>(43)</td>
</tr>
<tr>
<td>Non-GAAP net income / earnings per share</td>
<td>$103</td>
<td>$0.10</td>
<td>$514</td>
</tr>
</tbody>
</table>

### Notes

(1) 2017 GAAP net loss per share is calculated using basic shares. 2017 non-GAAP earnings per share and 2018 and 2019 GAAP earnings per share do not include the shares related to the conversion of the Company’s 2026 Convertible Notes and the associated interest expense add-back to net income because their inclusion would have been anti-dilutive under the “if converted” method. 2018 and 2019 non-GAAP earnings per share include the shares related to the conversion of the Company’s 2026 Convertible Notes and the associated interest expense add-back to net income under the “if converted” method.
## APPENDICES

### Reconciliation of GAAP Net Income (Loss) to Adjusted EBITDA

<table>
<thead>
<tr>
<th>(Millions)</th>
<th>2017</th>
<th>2018</th>
<th>2019</th>
</tr>
</thead>
<tbody>
<tr>
<td>GAAP net income (loss)</td>
<td>$(33)</td>
<td>$337</td>
<td>$341</td>
</tr>
<tr>
<td>Interest expense</td>
<td>126</td>
<td>121</td>
<td>94</td>
</tr>
<tr>
<td>Other expense, net</td>
<td>9</td>
<td>—</td>
<td>165</td>
</tr>
<tr>
<td>Provision for (benefit from) income taxes</td>
<td>18</td>
<td>(9)</td>
<td>31</td>
</tr>
<tr>
<td>Equity loss in investee</td>
<td>7</td>
<td>2</td>
<td>—</td>
</tr>
<tr>
<td>Stock-based compensation</td>
<td>97</td>
<td>137</td>
<td>197</td>
</tr>
<tr>
<td>Depreciation and amortization</td>
<td>144</td>
<td>170</td>
<td>222</td>
</tr>
<tr>
<td>Impairment of technology licenses</td>
<td>—</td>
<td>45</td>
<td>—</td>
</tr>
<tr>
<td>Loss contingency on legal matter</td>
<td>—</td>
<td>—</td>
<td>12</td>
</tr>
<tr>
<td>Adjusted EBITDA</td>
<td>$368</td>
<td>$803</td>
<td>$1,062</td>
</tr>
</tbody>
</table>
# Total Debt (Net)

<table>
<thead>
<tr>
<th>(Millions)</th>
<th>2017</th>
<th>2018</th>
<th>2019</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.75% Senior Notes due 2019</td>
<td>$166</td>
<td>$66</td>
<td>—</td>
</tr>
<tr>
<td>7.50% Senior Notes due 2022</td>
<td>347</td>
<td>337</td>
<td>312</td>
</tr>
<tr>
<td>7.00% Senior Notes due 2024</td>
<td>311</td>
<td>250</td>
<td>—</td>
</tr>
<tr>
<td>2.125% Convertible Senior Notes due 2026</td>
<td>805</td>
<td>805</td>
<td>251</td>
</tr>
<tr>
<td>Borrowings from secured revolving line of credit, net</td>
<td>70</td>
<td>70</td>
<td>—</td>
</tr>
<tr>
<td>Total Debt (principal amount)</td>
<td>$1,699</td>
<td>$1,528</td>
<td>$563</td>
</tr>
<tr>
<td>Unamortized debt discount associated with 2.125% Convertible Senior Notes due 2026</td>
<td>(286)</td>
<td>(262)</td>
<td>(73)</td>
</tr>
<tr>
<td>Unamortized debt issuance costs</td>
<td>(19)</td>
<td>(16)</td>
<td>(4)</td>
</tr>
<tr>
<td>Other</td>
<td>1</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Total Debt (net)</td>
<td>$1,395</td>
<td>$1,250</td>
<td>$486</td>
</tr>
</tbody>
</table>
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