ZeroPoint

Remove the waste.
Release the power.

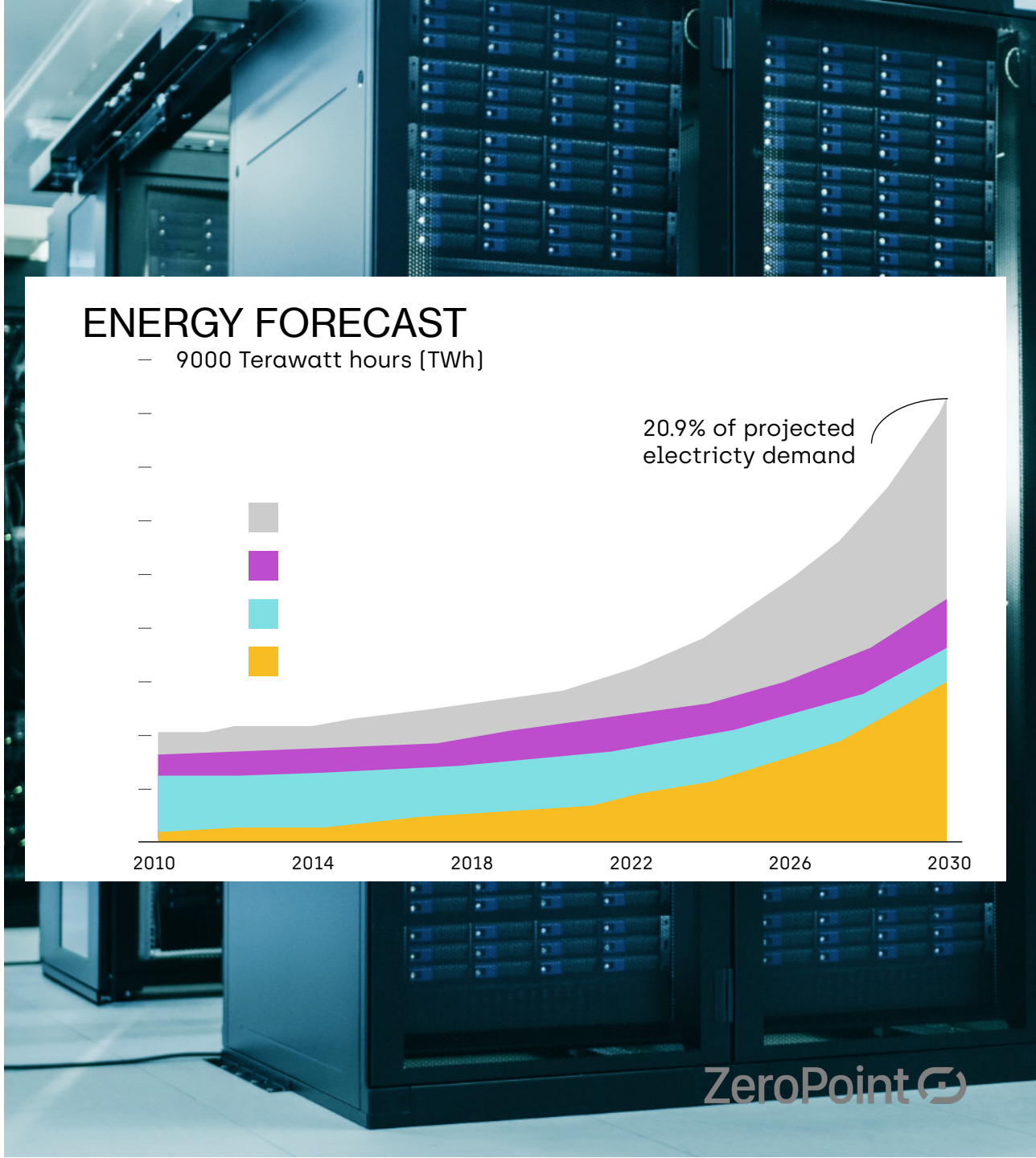
Klas Moreau
CEO
klas.moreau@zptcorp.com

The energy challenge.

Datacenters consumed 2% of the electricity produced 2021 and is expected to grow 5-fold to 2030

Smart devices, 5.3 billion subscribers globally, adds up to a significant energy footprint

ICT is the fastest growing energy consumer industry

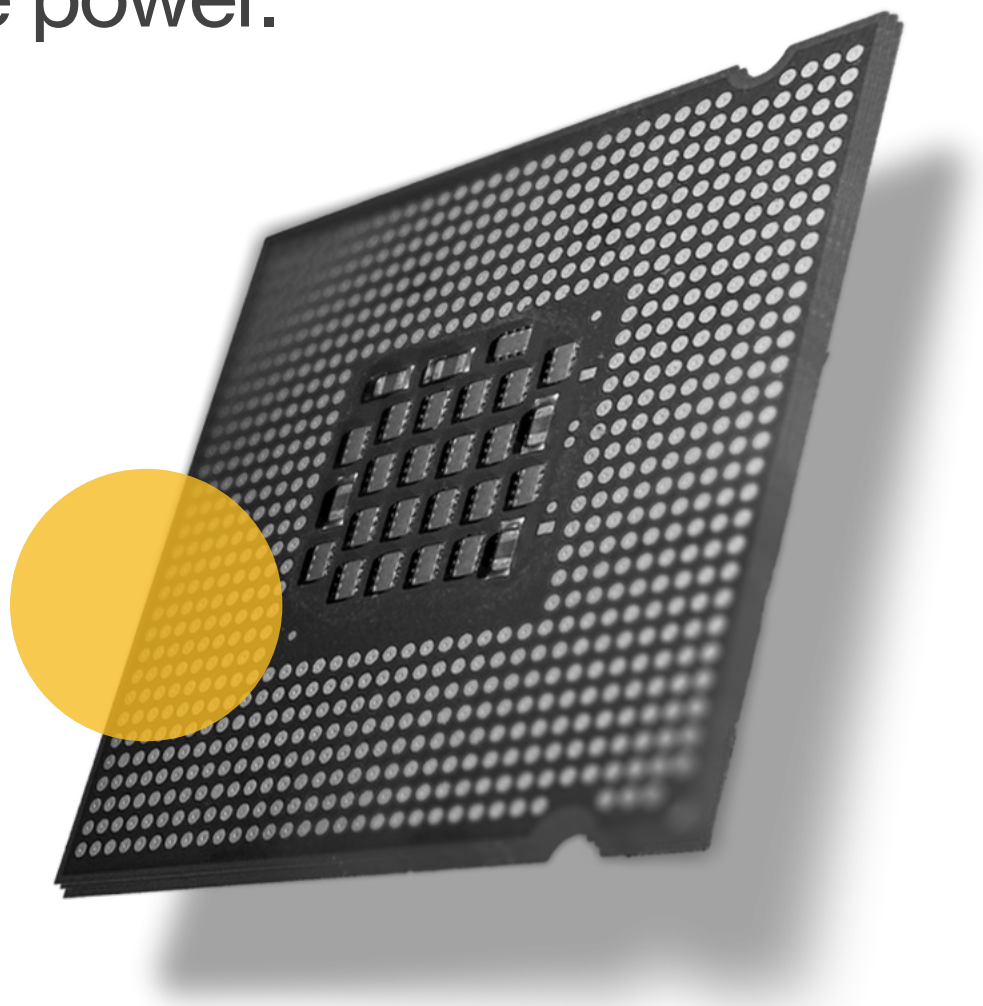


Remove the waste. Release the power.

Our research shows that up to 70% of the memory of ICT equipment contain unnecessary information

ZeroPoint technology delivers up to 50% more performance per watt by removing unnecessary information

Up to 50%
More performance per watt



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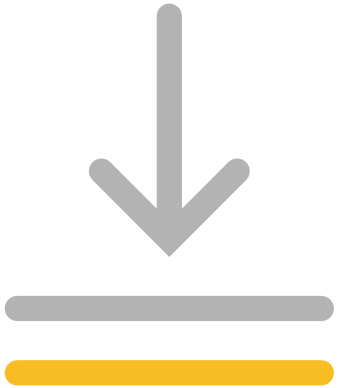
The ZeroPoint technology.



Data Compression
ZeroPoint Proprietary Algorithms

- Ultra fast, high performance and low latency
- 2-4x General purpose and Lossless compression

Data Compaction
ZeroPoint Proprietary Algorithms

- Real-time, high performance and low latency
- Cache line granularity

Memory Management
ZeroPoint Developed Driver

- Transparent to operating system and application
- Hardware accelerated

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Environmentally friendly and financially cleaver.

Efficient use of energy

- A data center could increase the energy efficiency by 20% (OPEX)
- Meta / Facebook data center – 10 M€ saving per year

Efficient use of memory

- A data center could cut 15% of the server investment cost (CAPEX)
- Memory is 30% of server cost today, estimated to become 40% in 5 years

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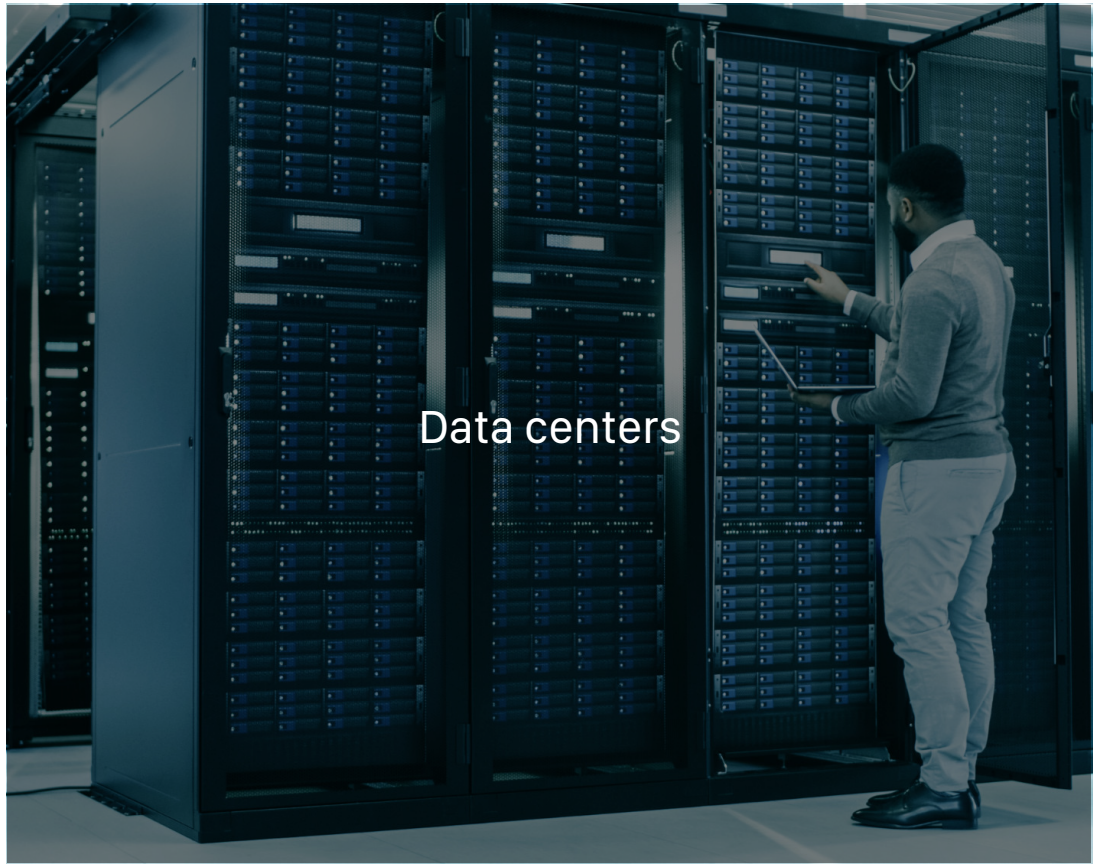
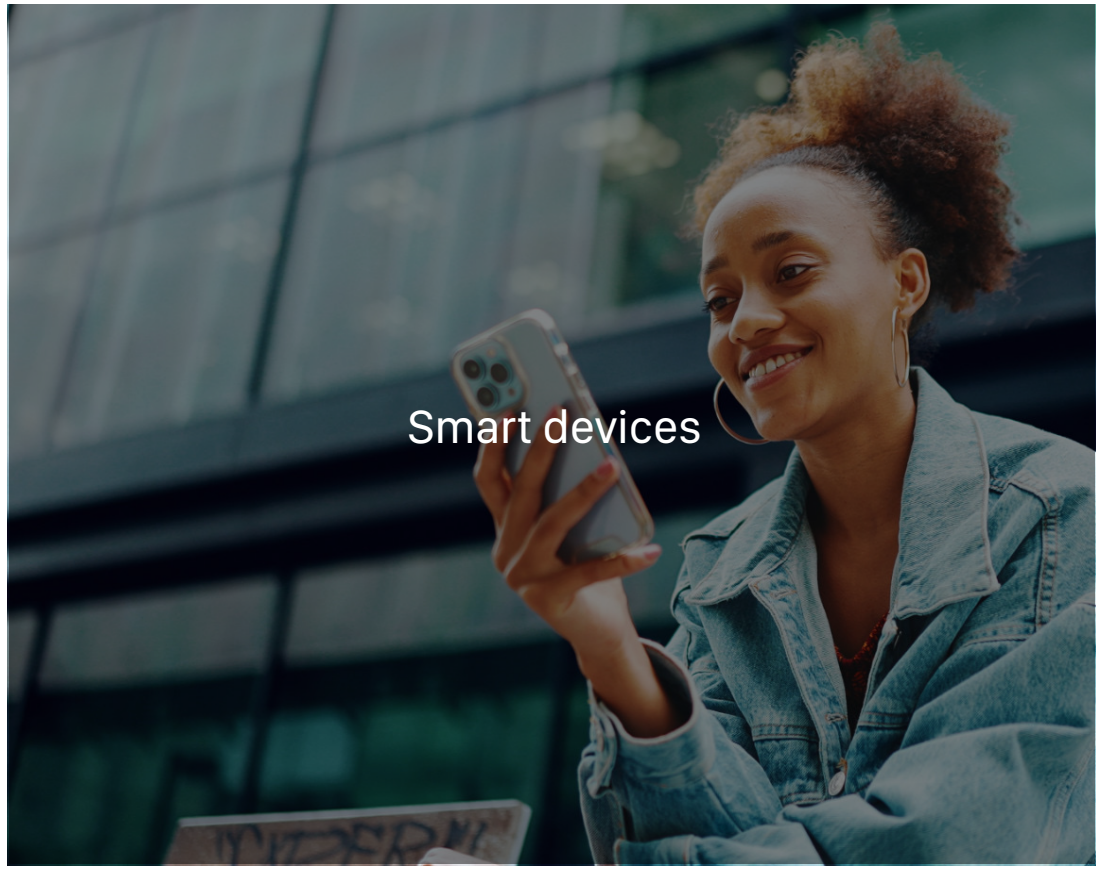
Market segments.





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System benefits. Data centers

"DRAM is super expensive!"

Server CPU customer

Up to 50%
More performance per watt

Typical customers addressed

NUVIA, AMPERE, Alibaba.com, intel, HUAWEI, Microsoft, facebook, NVIDIA, Google, amazon, FUJITSU, MARVELL, SIPEARL The Silicon Peal, XILINX we connect, AMD

Revenue worldwide $72bn (2019), DRAM share of cost 25-30% (40-50% in near future)

Performance	30-50% increased System Performance
Bandwidth	Up to 50% increased available Memory Bandwidth
Capacity	2-4x increased Memory Capacity

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System benefits. Smart devices

"Your solution is the world's fastest swap at ultra low power"

Smart device SoC customer

Exceptional user experience
Extended battery time
Quicker interaction

Typical customers addressed

Revenue worldwide $405bn (2019), DRAM share of cost 10-15%

Performance	10x faster virtual memory page swap
Bandwidth	50% increased available Memory Bandwidth
Capacity	2x increased Memory Capacity

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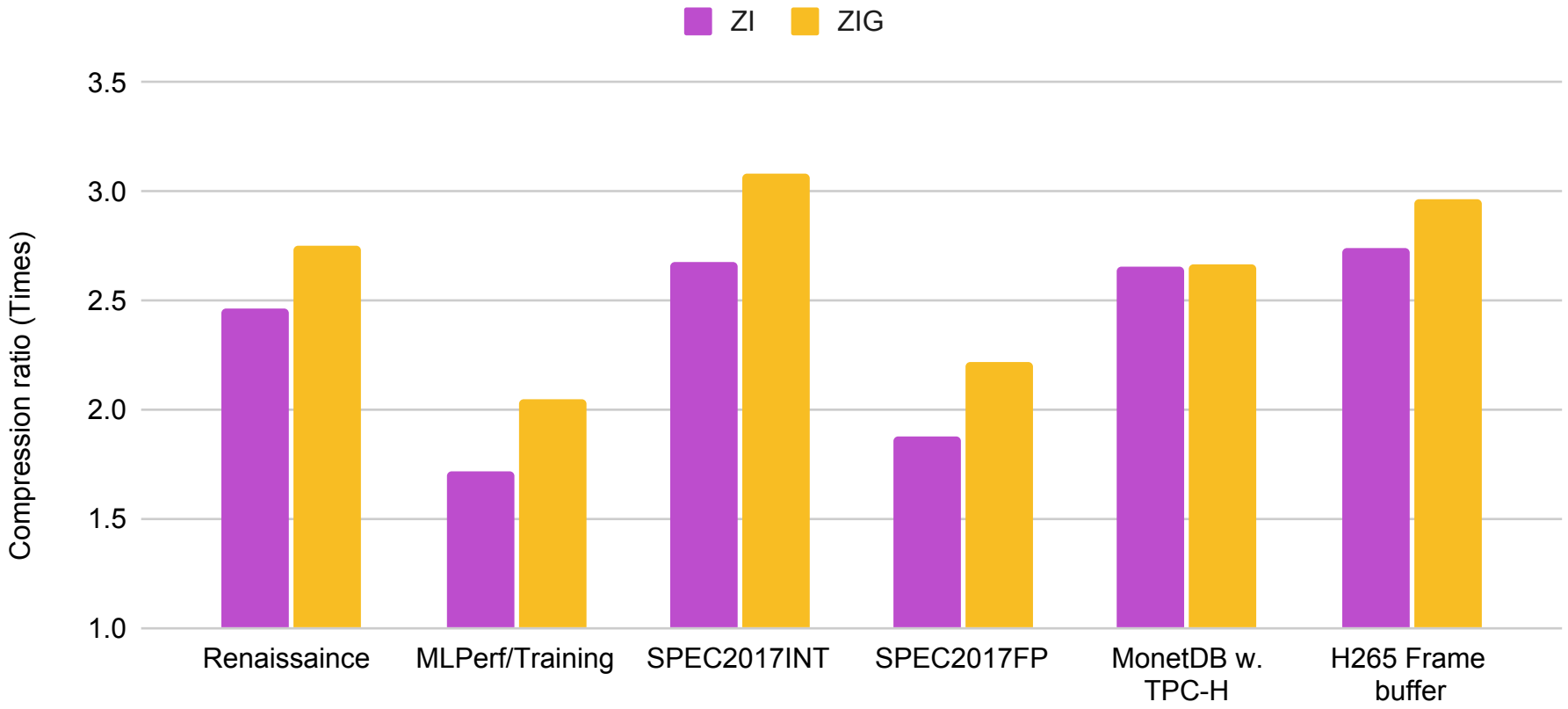
Performance.

Compression performance on various server data-sets. Higher is better



Robust compression across diverse data sets

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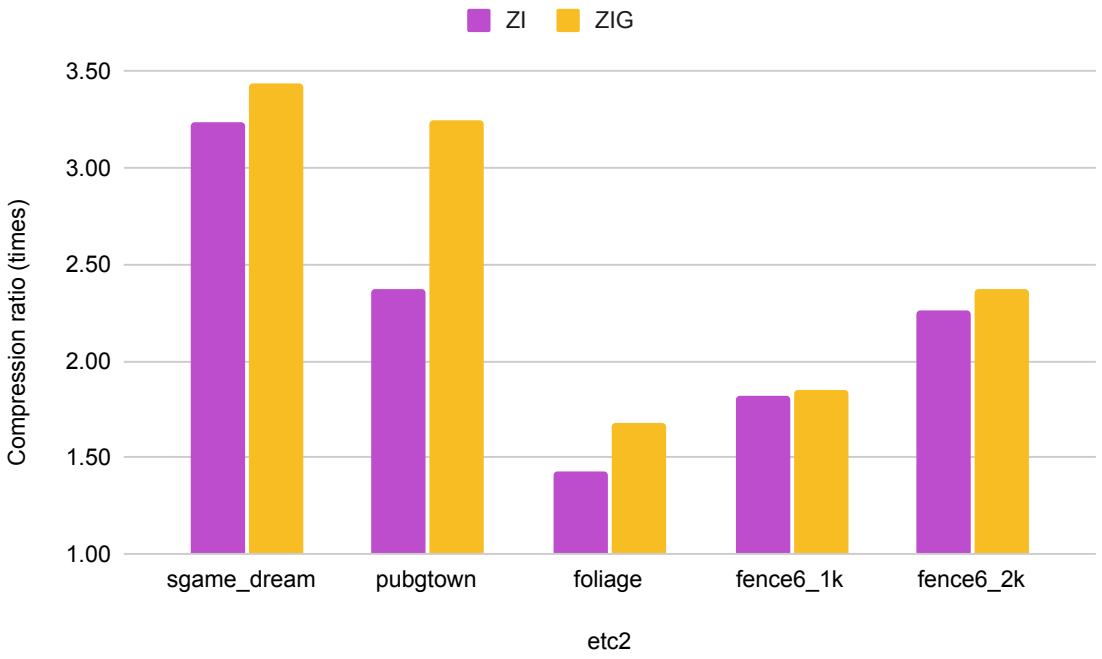
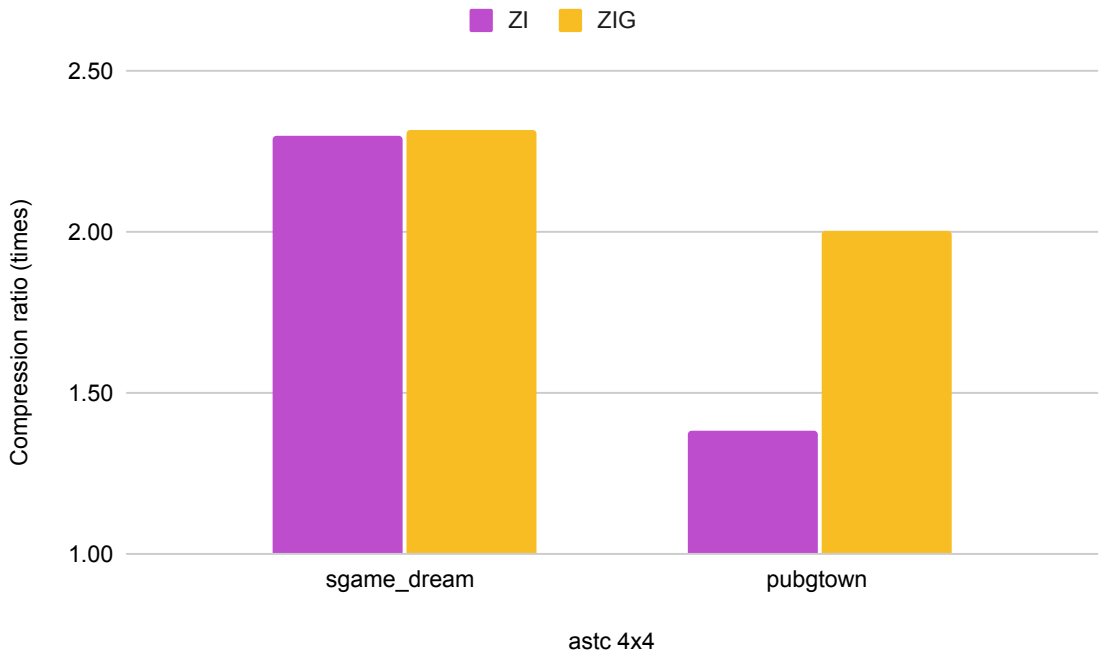
Compression performance on smart device Frame Buffer Compressed (FBC) graphics data-sets. Higher is better





Compression on already Frame Buffer Compressed (ARM FBC) data

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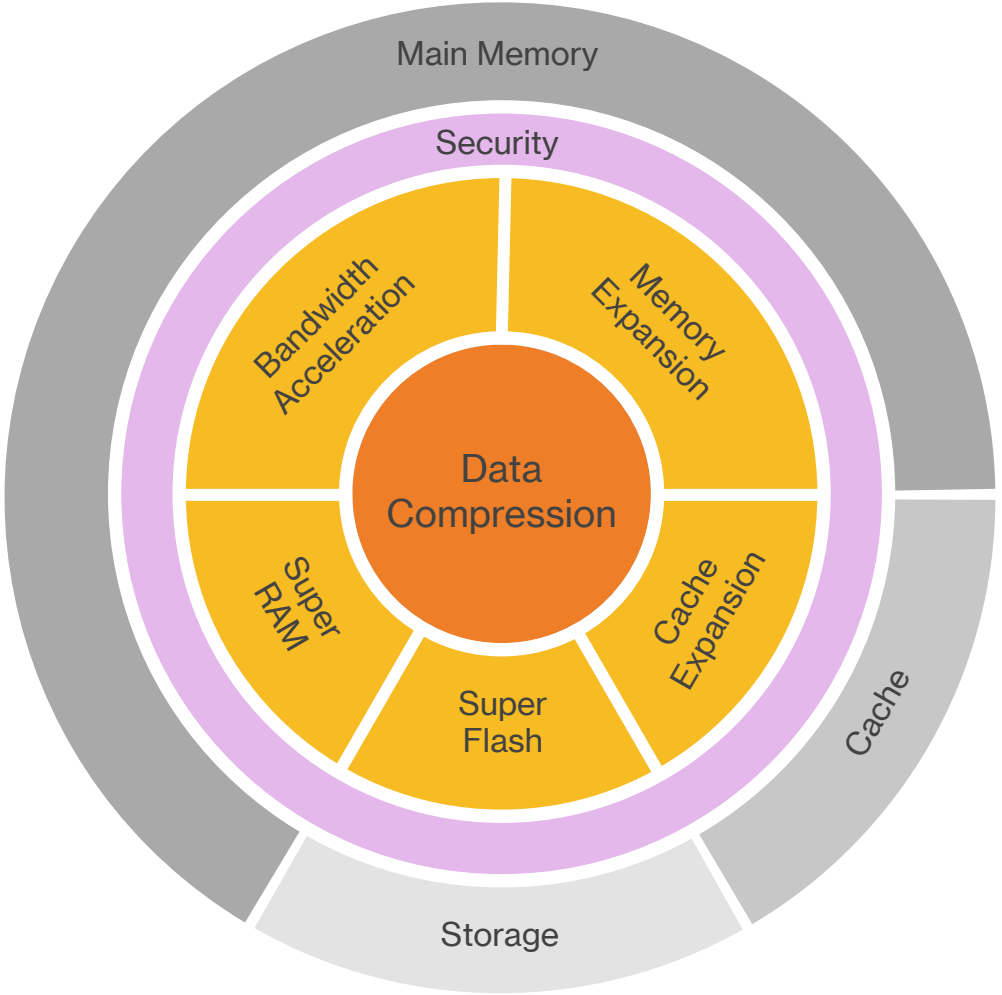
Product overview.

Product overview.



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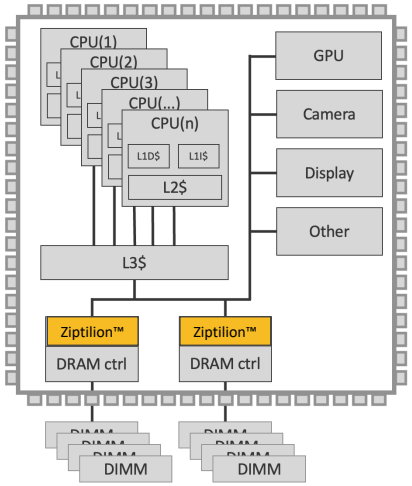
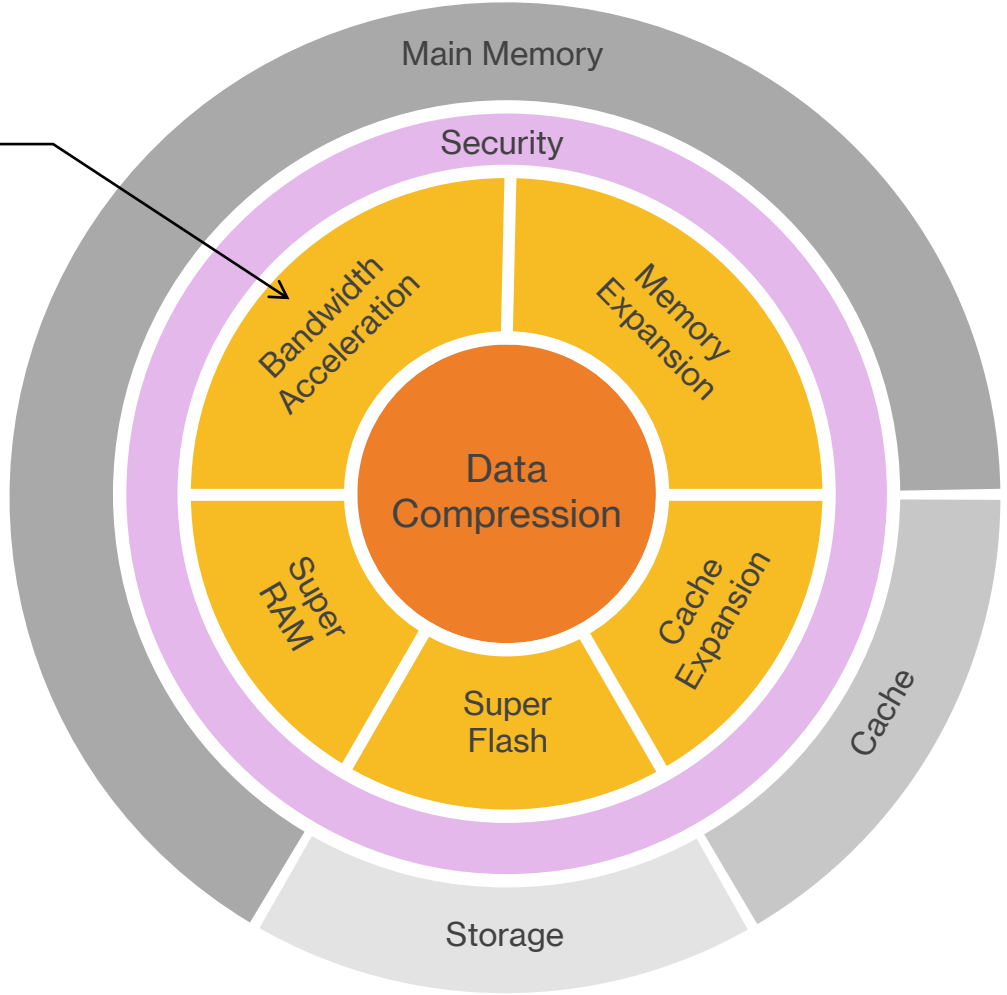
Product overview.

Ziptilion™ Bandwidth

Up to 50% main memory bandwidth acceleration

Scheduled to be released: Q4-2022





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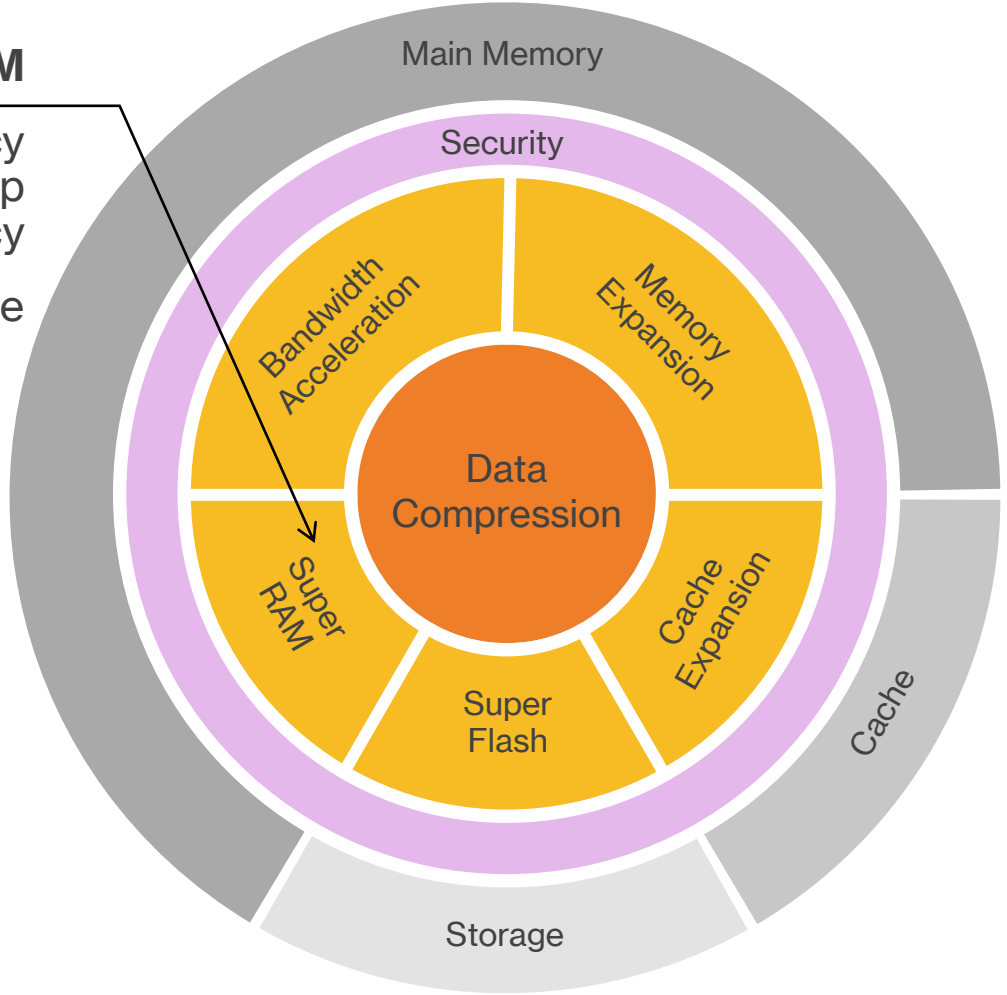
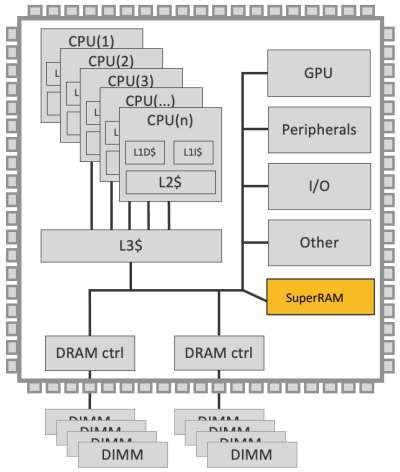
Product overview.

SuperRAM

High performance and low latency hardware accelerated zram/zswap at unmatched power efficiency

Released – Product available





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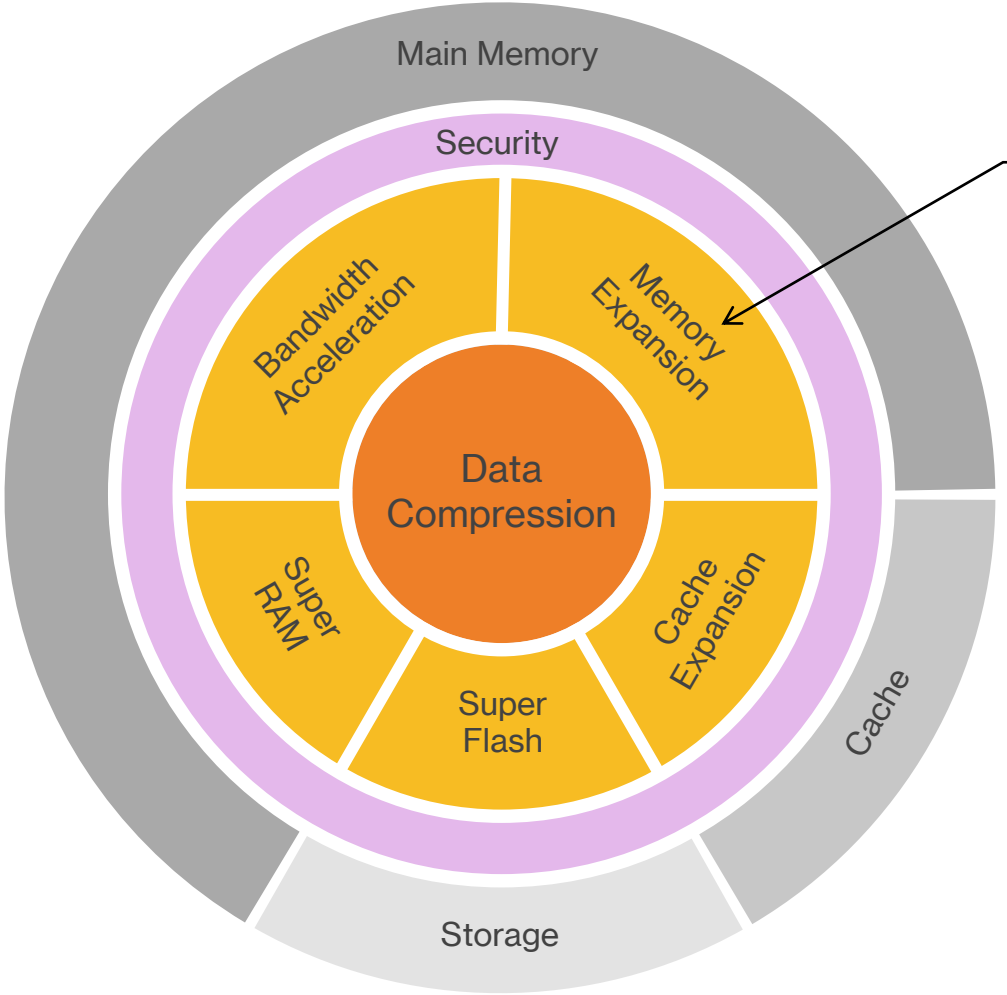
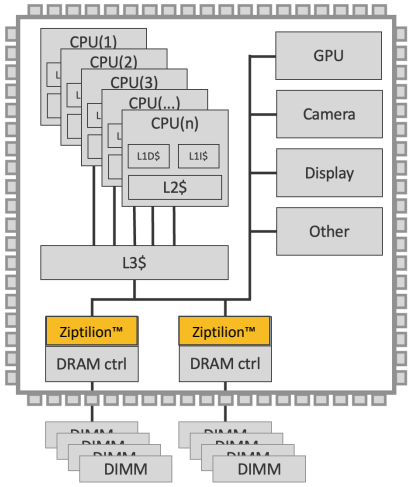
Product overview.



Ziptilion™ Memory Expansion

2-3x main memory expansion

Scheduled to be released:
(contact for details)



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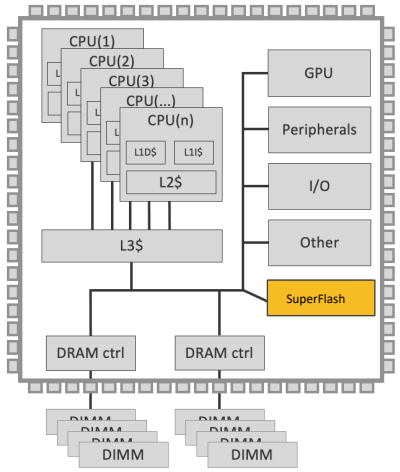
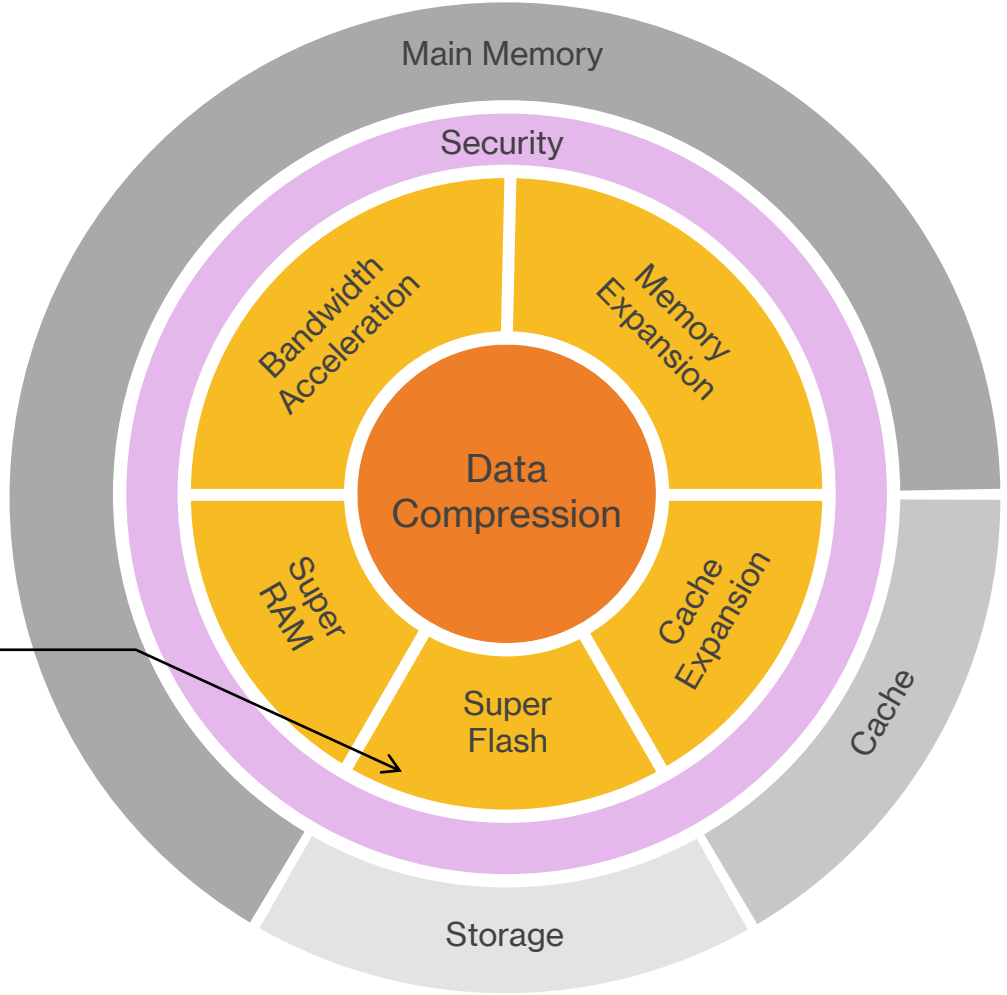
Product overview.





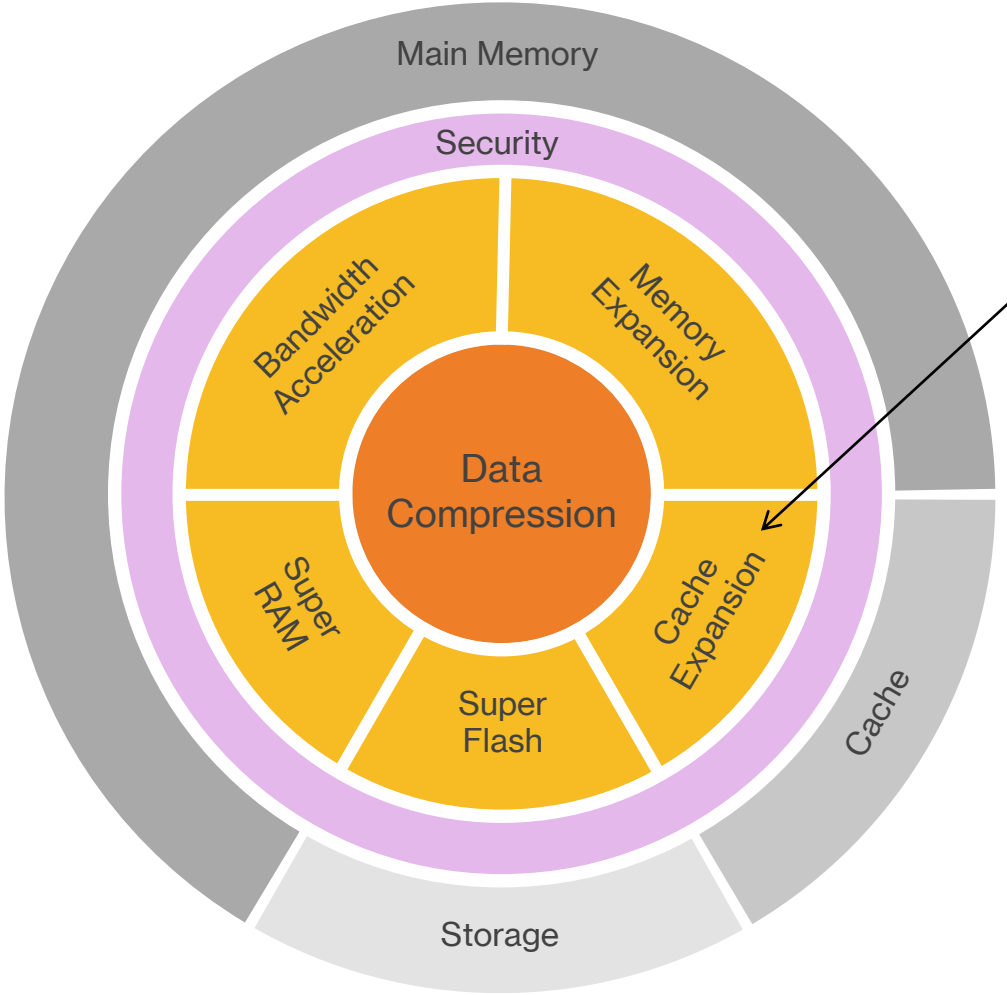
SuperFlash

High performance and low latency
2-3x hardware accelerated
flash compression at
unmatched power efficiency

Scheduled to be released:
(contact for details)

ZeroPoint

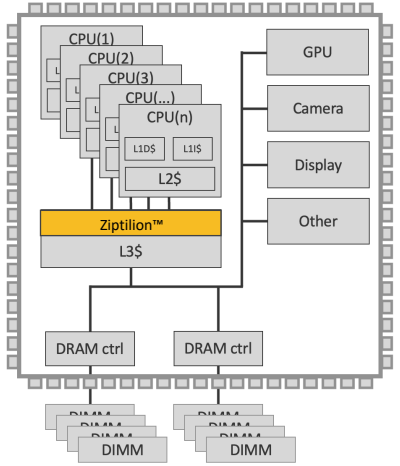
Product overview.



Ziptilion™ Cache Expansion

2-3x last-level cache capacity expansion

Research: (contact for details)



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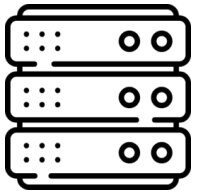
Customers.

Segment	1 week Assessment	3 months Evaluation	18-24 months Implementation
	Done	Done	Ongoing
	Done	Done	Planned – H1-2023
	Done	Planned – H1-2023	
	Ongoing		
	Done	Done	Product definition ongoing
	Done	Planned – H1-2023	
	Done	Done	Ongoing
	Done	Done	Planned – H1-2023
	Done	Ongoing	

ZeroPoint technology in EPI-SGA2

European Processor Initiative

- EPAC 2.0 (European Processor Accelerators) contain a memory compression module developed by ZeroPoint Technologies.
- The module offers an average of 2x compression ratio which translates into significant memory bandwidth acceleration at unmatched power efficiency.
- It is built on ZeroPoint's proprietary state of the art general purpose and lossless algorithm.

About us.

Prof. Per Stenström – CSO
Co-founder/inventor

- Professor at Chalmers University of Technology
- Invented main memory compression technique in 1990's
- Internationally renowned memory expert
- Senior industry experience at Sun Microsystems
- Wide industry network

Dr. Angelos Arelakis – CTO
Co-founder/inventor

- Memory architecture and ultra-fast data compression expert
- Recipient of King Carl XVI Gustaf's award for science, technology and environment

Company founded 2016, over 75 man-years invested in R&D

20 people in R&D team

- Compression Algorithm Research & Development
- Memory Architecture
- High Volume ASIC/FPGA Development and Manufacturing

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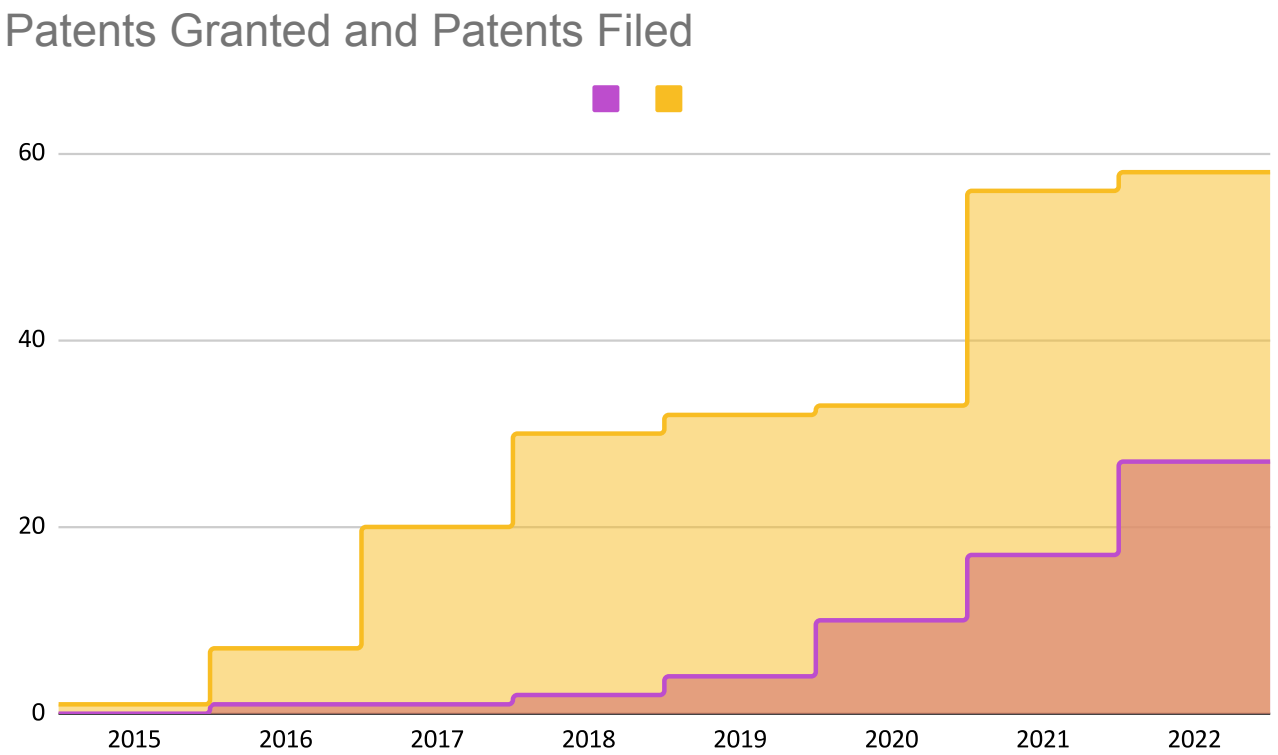
Patent portfolio.

12 Patent families

27 Patents granted

58 Patents filed



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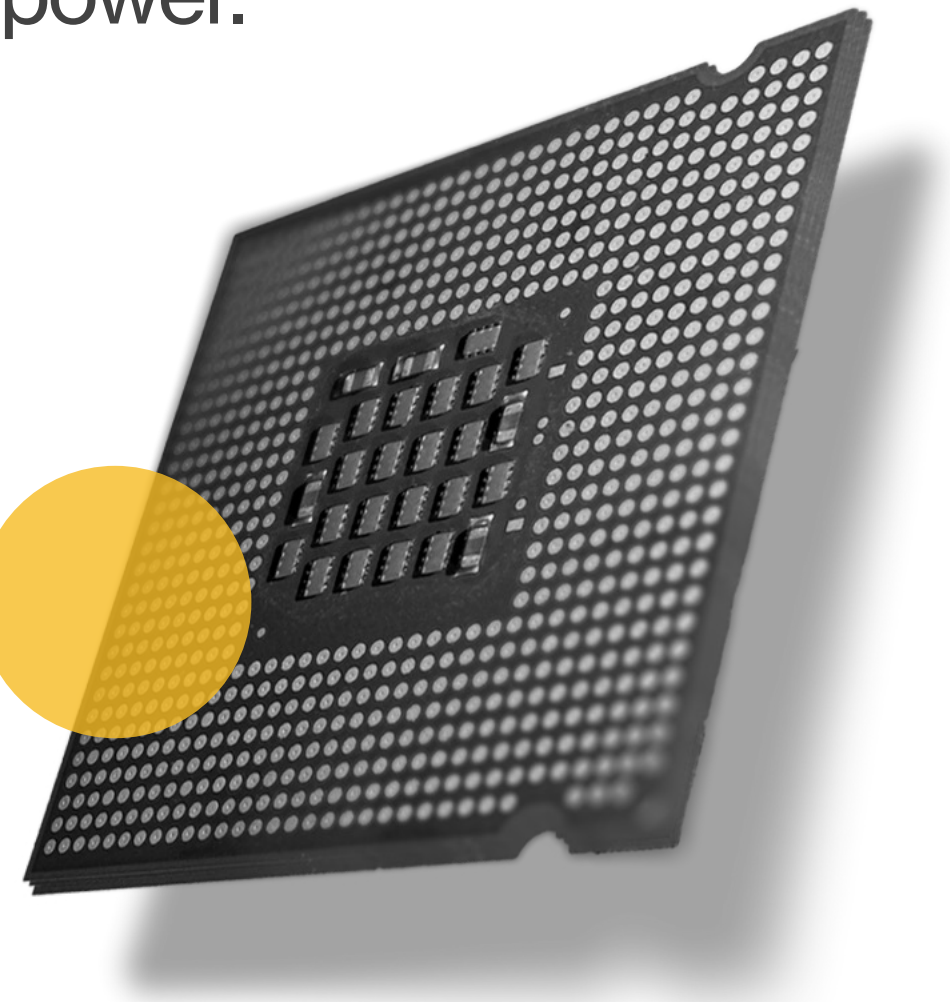
ZeroPoint technology for microchips delivers up to 50% more performance per watt by removing unnecessary information

Up to 50%
More performance per watt



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Let’s talk in the Swedish pavilion.

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CEO
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