Tachyum Prodigy®
Series of Universal Processors

Tachyum's Prodigy Series of Universal Processors is the first processor architecture that combines General Purpose Computing, High Performance Computing (HPC), Artificial Intelligence (AI), Deep Machine Learning, Explainable AI, Bio AI, and other AI disciplines within a single chip. It allows for a simple programming model and environment based on a coherent multiprocessor architecture.

The Prodigy Series includes multiple SKUs with the top-end SKU integrating 256 high-performance, 64-bit cores, 16 DDR5 memory controllers running up to DDR5-7200, and 128 lanes of PCIe 5.0. The Prodigy Series SKUs are designed to address a wide range of applications that include exascale supercomputing, HPC, big AI, cloud/hyperscale, data analytics, big data, databases, and storage. Prodigy's top-end SKU features are highlighted below, and a table summarizing all the SKUs follows.

KEY FEATURES - Prodigy Top-End

High Performance Cores

- 256 64-bit cores in a single socket up to 5+ GHz
- 2 x 1024-bit vector processor
- Matrix operations accelerate deep learning
- Out-of-Order, 8 instructions per clock
- Virtualization and Advanced RAS

Fully Coherent Caches

- 64 KB I-Cache, 64 KB D-Cache, both with ECC
- 256 MB L2+L3 cache with DECTED ECC

Multiprocessor Scalability for 2-socket and 4-socket Systems

Memory Controllers

- 16 x DDR5 up to DDR5-7200
- Maximum 32 TB per socket
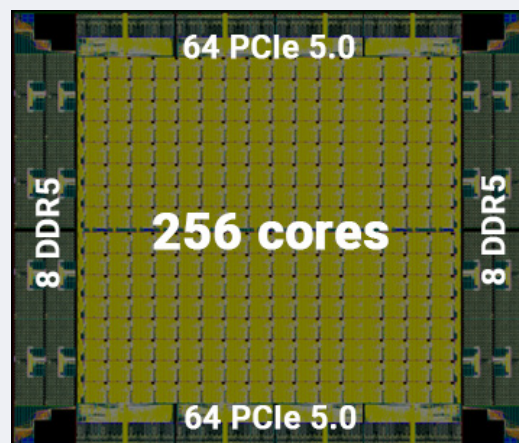
Integrated High Speed I/O

- 128 lanes PCI Express 5.0
- 64 PCIe Controllers

High Performance Matrix and Vector Processing for AI/ML and HPC

- 90 TAI PetaFLOPS - AI
- 90 DP TeraFLOPS - HPC

Runs Binaries for x86, Arm, and RISC-V in Addition to Native ISA

5nm Process Technology

TARGET APPLICATIONS

- HPC, Big AI
- Exascale Supercomputers
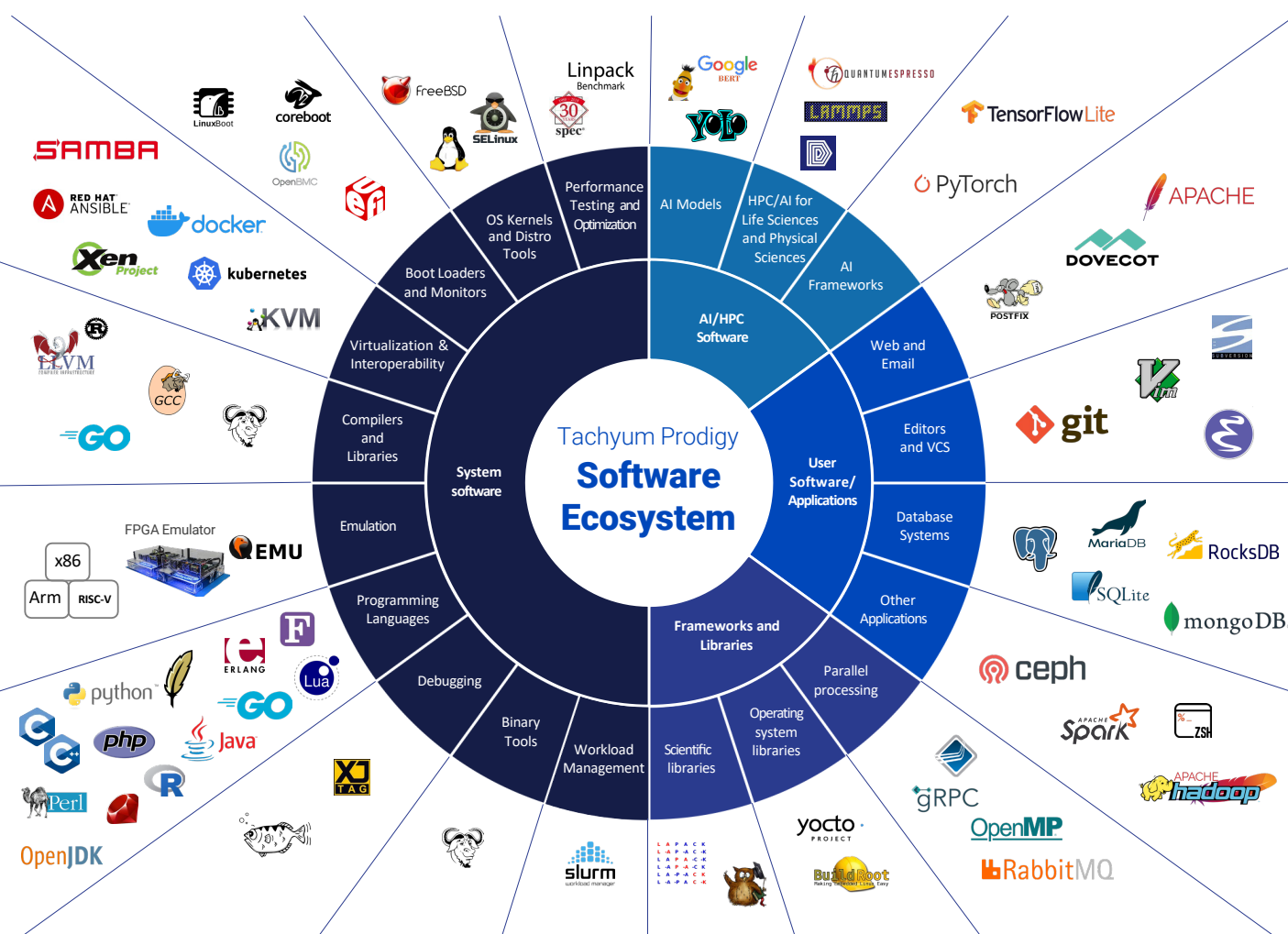- Cloud / Hyperscale
- Edge / Telco
- Big Data, Analytics, Databases, Storage
- Crypto / Digital Currency

Prodigy SKUs

SKU	Cores	Frequency (GHz)	Scalability	Memory Controllers	PCIe Lanes	TDP (W)	Applications
T16256-AIX	256	5.7	4S	16	128	1030	Top-End, HPC, Big AI
T16240-AIM	240	5.7	4S	16	128	965	Top/Mid HPC, Big AI
T16240-AIE	240	4.5	4S	16	128	760	Entry HPC, Big AI, Crypto/Digital Currency
T16192-HT	192	4.5	4S	16	128	605	Analytics, Big Data, In-Memory Databases
T16120-HS	120	5.7	2S	16	128	480	Cloud, Databases, Edge/Telco
T8120-EN	120	4.5	1S	8	64	380	Entry Cloud, Databases, Storage
T864-LP	64	3.2	1S	8	64	140	Low Power, Hosting, Storage

Prodigy Software Ecosystem

Prodigy has a rich ecosystem of development tools, operating systems, application software, and software libraries to enable fast, easy development and quick time to market.

Complete Software Ecosystem at www.tachyum.com/sw

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