

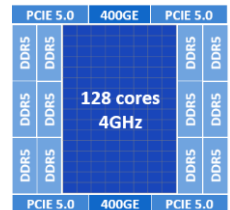


Prodigy® - The World's First Universal Processor

a Game Changer for Defense & Intelligence Applications

Tachyum's Prodigy is the world's first Universal Processor; based on a revolutionary single, proprietary architecture that delivers best-of-breed performance for General Purpose computing, High Performance Computing (HPC), and Artificial Intelligence (Machine Learning/Deep Learning, Explainable AI, Bio AI, and other AI disciplines). It allows for a simple programming model, based on a coherent multiprocessor environment. Prodigy's architecture delivers unprecedented performance and power efficiency to enable the convergence of workloads on a universal processor architecture. Performance. Power. Prodigy.

Tachyum's Prodigy Universal Processor is a 64-bit general purpose processor with industry-leading performance, that replaces CPUs, GPGPUs for HPC and AI accelerators like TPU. It is 10x lower power than the fastest Xeon (core vs. core), and priced at 3x lower cost per MIPS. Prodigy combines 128 cores, each at 4GHz, with 12 DDR5 DRAM controllers, 64 PCI Express 5.0 and 400G Ethernet ports, into a single 300 sq. mm package with 6,400 balls. Prodigy can seamlessly and dynamically switch between general purpose compute workloads and HPC and/or AI workloads. It provides hyperscale data centers a means of utilizing server resources for HPC/AI during off peak hours, CAPEX free.



Tachyum Prodigy Reference Motherboard integrates 4 Prodigy processors into a coherent memory system. The reference design will be integrated into 2U standard 19" chassis. It has built with a baseboard management chip supporting OpenBMC.

Tachyum's Reference Server is designed to fit into standard 19" rack as well as into Open Compute (OCP) rack V3.



64 x 4 sockets servers rack pair



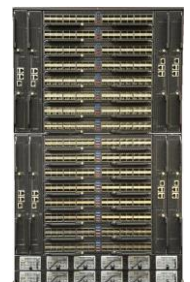
Tachyum Prodigy Rack Pair connects 64 servers, each having 4 sockets, with a 256 x 100G port switch using copper cables to a Middle Of the Rack (MOR) switch. It is the basic building block of large-scale datacenters.

256 ports x 100G

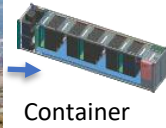


Tachyum Prodigy Hyperscale Datacenter connects 64 servers each having 4 sockets with in 2 racks using two 256 x 100G port switches connected by copper cables to Middle Of the Rack (MOR) switch. When connected to 4,096 port 100G spine switches allow users to connect up to 16,384 servers into their datacenter system. By 2023, Prodigy will scale up to a 32,768 server system.

4096 ports x 100G

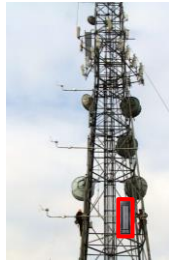


DoD/IC Use Cases: Stationary Systems



Container

- NSA, CIA, NRO, DoD, DIA, ...
- 4x lower data center TCO
- Billions in DoD/IC savings
- Data Center in Container



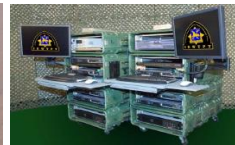
Tower Data Centers



DOE El Capitan 2023: 2 Exaflops, \$600M
Prodigy 2023: 6 Exaflops, \$600M

DoD/IC Use Cases: Tactical Systems

Data Fusion at the Sensor



Transit Cases → 1U pizza box

**Lt. Gen. (Ret.)
Richard Zahner:**



**Former Deputy
Chief of Staff,
G2, US Army**

“We have lost the unquestioned technical, organizational and material overmatch that characterized the US National Security Community’s capabilities since the mid-1980s; this loss has emboldened competitors and adversaries to seek advantage across the spectrum of competition and conflict, enabled by many of our key technologies and insights from decades of study of “The American Way of War”. To reset the strategic calculus and reassert our edge, the DoD created the doctrine of *Multi-Domain Operations*, which seeks the *convergence* of the full range of key enablers such as Intelligence, Information Operations, Cyber-EW, and C4I with precision Fires and Effects at a time and place so as to unhinge adversary preconceptions, plans and actions.

Today’s tapestry of computing architectures is exquisite, but fundamentally stove-piped; achieving the imperatives of operational convergence requires a fundamental rethink of our approach. **The Tachyum Prodigy Universal Processor’s unique attributes of converged processing workloads and exceptional power efficiency set the conditions to create a computing architecture fully aligned with the operational and strategic imperatives of our National Strategy.**”

“Recent events have accelerated the future of work, forcing organizations to experience a knowledge-intense competition era, and microprocessors are the convergence point of virtually every system deployed. Tachyum’s ultra-low power Prodigy processor, which can easily switch between normal compute, supercomputing, and AI workloads, addresses many of the modernization requirements to adapt to emerging threats. Specifically, it helps to connect the dots, convert data into insights, and enable a decision cycle that is faster than the competition. **Tachyum represents a major inflection point for US National Defense.**”

Melvin Cordova, Technology Consultant to DoD/IC

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