

X-Gene

World's First ARMv8 64-bit Server on a Chip Solution

What if you could obtain cloud server performance as good or better than today's deployed hardware, at much higher densities, and with more than 50% reduction in power consumption and operating costs?

You can with X-Gene



Introducing X-Gene

- A unique ground-up high performance, custom core ARMv8 64-bit server operating at up to 2.4 GHz specifically designed for cloud servers.
- Enterprise class features including ECC (error-correcting code) and RAS (reliability, availability and serviceability).
- Highly integrated mixed signal I/O features including 40 gigabits per second of Ethernet, Gen 3 SATA, Gen3 PCIe, USB3 and workload accelerators, as well as a high-performance on-chip fabric with software defined networking capability.

Benefits

- Representing the high end of all ARM processors, X-Gene™ delivers CPU performance that allows for immediate deployment in today's cloud with today's expected performance levels.
- Fully integrated SoC, eliminating the need for other discreet chips including I/O controller hub, NIC, baseboard management controller.
- Enterprise class, including ECC (error-correcting code), RAS (reliability, availability and serviceability). Any server running mission-critical applications requires these ECC and RAS.
- Malleable offload engines support SDN (software-defined networking), security or other user-defined applications.
- High-density, low TCO (total cost of ownership). 4x the density and 50% less power while delivering comparable-to-better overall performance.

Applications

- Web Front End, Memory Caching, Big Data and Cloud Storage

Data Rate

- 2x10G

X-Gene Family

AppliedMicro's X-Gene™ Family consists of X-Gene, the world's first Server on a Chip Solution, and our X-Gene based X-C1™ Server Development Platform. Virtually a data center in a box, X-C1 is a full server system solution, featuring a hardware reference design and software development kit with both open source software and software from leading vendors such as Canonical and Citrix.

Features

- AppliedMicro acquired the first architectural licensee for the ARM® v8 64-bit architecture in 2010. AppliedMicro helped to complete the ARMv8 64-bit spec and wrote more than 20,000 instruction set verification tests. These tests will be used to certify and test ARMv8 64-bit cores from all manufacturers.
- X-Gene features the semiconductor industry's first Server-on-a-Chip solution, combining 10/40g mixed signal I/O with top-of-class, ARMv8 64-bit cores developed by Applied Micro cores running at up to 2.4 Ghz, with an enterprise-class memory subsystem.
- X-Gene combines full SR-IOV semantics with packet networking functionality on a single die for rack scale and sled scale networking.
- X-Gene platforms and hardware have been used over the past 2 years by leading OS and applications vendors to develop enterprise-grade Open Source software that is expected to ship with leading server OEMs.
- Hypervisors for ARMv8 64-bit devices are exclusively ported to X-Gene.

