

## Power Architecture® Leadership at Glance

Thanks to the fast pace of technological innovations there has been an explosion of voice and video applications that allow consumers to stream content not only to their PCs, but also to smart phones, Mobile Internet Devices and gaming consoles.

In support of these applications is multimedia content that has invoked new technologies by which to store content at a personal, business, enterprise, community and governmental level.

The increase in traffic from the latest voice and video applications requires higher bandwidth and higher performance and to this end, multicore SOC architectures are being leveraged to meet the next generation requirements for high performance systems. Optimizing software for multicore devices also means that established software development best practices and tools must be updated.

Another significant technology innovation is virtualization, which presents opportunities to reduce hardware costs and power consumption while enabling new platform-level capabilities.

To overcome the challenges created by new technologies and market trends, a strong and open technology ecosystem is a must. Here is where Power Architecture® technology shines.

At the core of the Power Architecture ecosystem is Power Instruction Set Architecture (ISA), managed as a stable and durable foundation for software compatibility and customer investment protection. As a testament to Power Architecture's time tested flexibility and customization that preserves the binary compatibility of software, Power ISA is the only architecture in the market that has proven implementations from the smallest devices to the largest supercomputers while covering a diverse set of markets including consumer electronics, industrial control, telecommunications and networking, high performance computing, IT and commercial systems, aerospace and defense, high end printers and imaging solutions.

The leadership and companies comprising [Power.org](http://www.power.org) are committed to ensuring the continued breakthrough innovations of Power Architecture technology and solutions to meet the challenges of next generation embedded designs.

Capitalizing on market leadership positions in many markets, Power.org member companies have put in place a strong Silicon roadmap with major R&D investments to address the next generation requirements of high performance systems and applications.

As an example of Power Architecture leadership in High Performance Computing, President Obama recently (September 18 2009) recognized IBM and its Blue Gene family of supercomputers with the National Medal of Technology and Innovation, the country's most prestigious award given to leading innovators for technological achievement.

last year's Asia Power Architecture Conference, Power.org and member companies made significant progress. Highlights are shared in this brief and more details are available on the Power.org web site, as well as in the Power Architecture Resource Catalog and on the Power Architecture microsite ([www.eecatalog.com/powerarchitecture](http://www.eecatalog.com/powerarchitecture)).

A specific area of progress from Power.org members is a major release of ISA 2.06 that provides key capabilities including virtualization for the embedded space and server market (<http://www.power.org/home>).

Power.org has made progress in multicore technology, moving from conceptual and SoC platform design to development and customer engagements including:

- IBM recently announced its Power 7 server at Hot Chips 21 conference and PowerPC 476 FP core in collaboration with LSI introduced at Linley Tech Processor Conference. The new release of both Power7 and PPC476FP demonstrate a superior performance with greater energy efficiency than any product offering in the market today. The new release extends the scalability of IBM's Power Architecture in both the server market and embedded applications and provides a growth platform for emerging applications.
- Freescale had a series of announcements related to QorIQ program based on Power Architecture including sampling of the eight-core QorIQ P4080 processor. Freescale's P4080 design wins span all regions and multiple markets. Recently, Freescale introduced Quad-Core QorIQ P4040 for low-power networking applications and the QorIQ® P1022 dual-core processor with advanced power management capabilities to support energy-efficient designs for embedded applications and porting of Android on Power Architecture.
- AppliedMicro is collaborating with TSMC to bring Power Architecture microprocessors to TSMC technology platforms. Such joint efforts aimed to produce the world's highest performance Power Architecture processor manufactured in low-cost bulk CMOS technology. Earlier, AppliedMicro licensed its high performance SNOW 3G security engine in support of its customers implementing 3GPP LTE (Long Term Evolution) base stations.
- Denali announced PureSpec™ verification IP support for IBM's PowerPC processor local bus (PLB)-6, enabling verification of compliance with the latest PLB specification and validation of interoperability between the processor cores and integrated bus controllers.
- Virtutech defined full systems virtualized Development and Simics 4.2. was recently selected by NASA Orion to provide virtual platform.
- Virage Logic Corporation Joins Power.org Community; Provides Power Architecture® Customers Extensive Range Of Silicon-proven Semiconductor IP.
- GDA Technologies, Inc. Joins Power.org Community Strengthening the Power Architecture Roadmap and Enabling Power Architecture Solutions in Growth Market Areas.

In the early part of this year:

- IBM reached a significant milestone as the microprocessor supplier for Nintendo Co., Ltd., by completing the shipment of 50 million processors for the Wii™ game system, which has tremendous worldwide sales momentum. The chip is based on IBM's Power Architecture® and features IBM's silicon-on-insulator (SOI) technology.
- Department of Energy's National Nuclear Security Administration (NNSA) has ordered a supercomputer from IBM that will be able to deliver 20 Petaflops performance by 2012.

Throughout the year, Power.org and member companies have been active sponsor and contributors in many events supporting Academia and industry advancement of technology including DesignCon09, International Symposium of Computer Architecture (ISCA), Hot Chips 21, and the Linley Tech Processor Conference.

In addition, Power.org has developed a series of collateral materials including flyers, presentations, white papers, video training, and webcasts aimed at increasing awareness of Power Architecture and its brand system. Power.org is also promoting Power Architecture's key features/benefits and competitive differentiation as the leading and preferred architecture in tomorrow's connected world.

Finally, [Power.org](http://Power.org) is bringing back its highly successful Power Architecture® Conference series to Asia this October. The Asia PAC is focused exclusively on the versatile Power Architecture® technology platform and its rich and vibrant ecosystem. Tutorials, solutions and offerings from members and sponsors will be presented and displayed. Attendance is free to qualified participants, but registration is required. Please visit [Power.org](http://Power.org) for details.