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IEEE LAUNCHES NEXT GENERATION OF HIGH-RATE ETHERNET WITH NEW IEEE 802.3ba STANDARD

First-ever ~~dual-speed~~ Ethernet standard <u>to specify two new speeds</u> addresses explosive demand for increased bandwidth, sets stage for next wave of technology innovation

PISCATAWAY, N.J., USA, June [XX], 2010 - IEEE, the world's leading professional association for the advancement of technology, today announced the ratification of IEEE 802.3ba 40Gb/s and 100Gb/s Ethernet, a new standard governing 40 Gb/s and 100 Gb/s Ethernet operations. An amendment to the IEEE 802.3 Ethernet standard, IEEE 802.3ba, the first standard ever to simultaneously specify two <u>new</u> Ethernet speeds, paves the way for the next generation of high-rate server connectivity and core switching.

The IEEE 802.3ba standard, ratified June **[XX]**, addresses critical challenges facing technology providers today, such as the growing number of applications with demonstrated bandwidth needs far exceeding existing Ethernet capabilities, by providing a larger, more durable bandwidth pipeline. Furthermore, collaboration between the IEEE P802.3ba 40Gb/s and 100Gb/s Ethernet Task Force and the International Telecommunications Union's Telecommunication Standardization Sector (ITU-T) Study Group 15 ensures these new Ethernet rates are transportable over optical transport networks.

"Ubiquitous adoption of bandwidth-intensive technologies and applications, such as converged network services, video-on-demand, and social networking, is producing rapidly increasing demand for higher-rate throughput. As mass-market access to these technologies continues accelerating, coupled with today's progressively more powerful server architectures, <u>data centers,</u> network providers and end-users alike are finding themselves confronted by pressing bandwidth bottlenecks," said John D'Ambrosia Chair, IEEE P802.3<u>ba</u> ~~40Gb/s and 100Gb/s Ethernet~~ Task Force, and Director, Ethernet-based Standards, CTO Office, Force10 Networks. "IEEE 802.3ba will eliminate these bottlenecks by providing a robust, scalable architecture for

meeting current bandwidth requirements and laying a solid foundation for future Ethernet speed increases."

The new standard will act as the catalyst needed for unlocking innovation across the greater Ethernet ecosystem. IEEE 802.3ba is expected to trigger further expansion of the 40 Gigabit and 100 Gigabit Ethernet family of technologies by driving new development efforts, as well as providing new aggregation speeds that will enable ing 10 Gb/s Ethernet network deployments. The standard's ratification also dovetails into efforts aimed at delivering greater broadband access, such as the U.S. Federal Communication Commission's "Connecting America" National Broadband Plan, which calls for 100 Mb/s access for a minimum of 100 million homes across the U.S.

"This is truly a forward-looking standard that will spur innovation at every point along the Ethernet value chain, as well as providing the essential architecture needed to facilitate greater broadband connectivity on a global scale," said David Law Chair, IEEE 802.3 Working Group, and Consultant Engineer, 3Com. "IEEE 802.3ba ensures that we can meet today's needs while preparing for the next generation of emerging technology developments."

In addition to providing an increased bandwidth pipeline, IEEE 802.3ba remains compatible with existing IEEE 802.3 installations, thereby preserving significant industry investment in the technology. The new standard is also expected to generate concrete benefits, such as lowered operating expense costs and improved energy efficiencies, by simplifying complex link aggregation schema commonly used in today's network architectures. Key stakeholders for IEEE 802.3ba include users and producers of systems and components for servers, network storage, networking systems, high-performance computing, data centers, telecommunications carriers, and multiple system operators (MSOs).

Paul Nikolich, Chairman, IEEE 802 LAN/MAN Standards Committee, stated: "I wish to extend my congratulations to the IEEE 802.3 Work Group and the IEEE P802.3ba Task Force on the success of this project. It is yet another example of the industry coming together in IEEE 802 and after long hard debate, reaching consensus that will benefit all users and providers of Ethernet network-based services and products."

For additional information on IEEE 803.3ba, please visit **[URL goes here].** The standard is immediately available for purchase in draft format at **[URL goes here].**

About IEEE
IEEE, the world's largest technical professional association, is dedicated to advancing technology for the benefit of humanity. Through its highly cited publications, conferences, technology standards, and professional and educational activities, IEEE is the trusted voice on a wide variety of areas ranging from aerospace systems, computers and telecommunications to biomedical engineering, electric power and consumer electronics. Learn more at http://www.ieee.org.

ADDITIONAL QUOTES:

Henk Steenman, CTO, AMS-IX - Amsterdam Internet Exchange
"The finalization of the 802.3ba standard, specifically the 100GE part is a major step forward for AMS-IX. The products that will become available based on this standard will allow us, as one of the largest IP interconnection points in the world, to support the growth in traffic that we and our customers are experiencing.**"**

Keith Cambron, President and CEO, AT&T Labs
"With traffic on our IP backbone network continuing to grow at a rapid pace, we are pleased to see the IEEE ratify the 802.3ba standard. We've seen traffic on AT&T's IP backbone network double over the last three years, and it now carries nearly 19 petabytes of traffic on an average business day. The ratification of the 802.3ba standard is an important milestone as we work to stay ahead of this continuing growth."

Bikash Koley, Senior Network Architect, Google
 "As computation and storage continues to move from desktops to large Internet services, computing platforms running such services are transforming into warehouse-scale computers. Standardization of 40 Gigabit and 100 Gigabit Ethernet will be instrumental in scaling the interconnection within and between these ubiquitous warehouse-scale computing infrastructures."

Steve Cotter, Department Head, ESnet at Lawrence Berkeley National Laboratory
"As the science community looks at collaboratively solving hard research problems to positively impact the lives of billions of people, for example research on global climate change, alternative energy and energy efficiency, as well as projects including the Large Hadron Collider that probe the fundamental nature of our universe - leveraging petascale data and information exchange is essential. To accomplish this, high-bandwidth networking is necessary for distributed exascale computing. Lawrence Berkeley National Laboratory is excited to leverage this standard to build a 100G nationwide prototype network as part of ESnet's participation in the DOE Office of Science Advanced Networking Initiative."

Sterling Perrin, Senior Analyst, Heavy Reading
"Heavy Reading network operator surveys have consistently shown strong and immediate operator demand for 100 Gigabit Ethernet, driven by the rapid increase in global IP traffic and exhaustion of existing 10 Gigabit networks. The collaboration by these two standards bodies, and the resulting standard, is exactly what the telecom industry needs to bring the next-

generation of Ethernet transmission to market. Heavy Reading fully expects this announcement to drive rapid market adoption."

Malcolm Johnson, Director, ITU Telecommunication Standardization Bureau
"Ethernet has evolved from the local area network of choice to become a real carrier grade solution. Co-hosted meetings and workshops, and a recognition that close collaboration was mutually beneficial, has led IEEE and ITU to agree a common mapping between the IEEE P802.3ba 40Gb/s and 100Gb/s standard and the ITU-T G.709 optical network standard. I have no doubt that the scalability provided by this excellent example of standards collaboration will see an acceleration in end-to-end Ethernet deployment."

Andrew Bach, Senior Vice President, Communications and Network Infrastructure, NYSE Euronext
"I would like to take this opportunity to congratulate the task force on their work in so quickly developing this set of standards. At NYSE Euronext, as is true of much of the financial industry, we are consistently early adopters of advanced telecommunications networks and look forward to the rapid availability of standards-based products this year. We look forward to seeing the team starting it's work on the next generation of Ethernet beyond the new 100 Gigabit standard announced today."

Mark Wegleitner, Senior Vice President of Technology, Verizon
"The new IEEE standard governing 40G and 100G will help accelerate the acceptance of these two Ethernet speeds by all stakeholders -- from the component manufacturers to the carriers to the end users – and will allow more utility, better interoperability and overall improved quality. This new standard also provides us even greater impetus to proceed with our 100G deployment, beyond our currently deployed 100G production system."

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