



Every medal-winning stroke
followed by millions of

eyeballs.

CCTV International Networks Co., Ltd. (CCTV.com)
streams thousands of hours of the 2008 Beijing Games to hundreds
of millions of viewers using HP ProLiant servers powered by
AMD Opteron™ processors and Microsoft® software.

Challenge:

- In December 2007, CCTV.com was named the official Internet and mobile phone broadcaster for mainland China and Macau of the 2008 Beijing Games.
- That enormous opportunity also posed an enormous challenge: Developing a powerful “new media” delivery system in time for the 2008 Beijing Games opening ceremonies on August 8th, 2008.

Solution:

- CCTV.com successfully built a cutting-edge new media solution containing network television, mobile phone, public transportation, and IPTV components.
- The system runs on over 1,000 HP ProLiant servers equipped with Quad-Core AMD Opteron™ processors. It also makes extensive use of Microsoft server software and Microsoft services such as MSN® Groups and Windows Live™ Spaces.

Impact:

- CCTV.com reported that:
- Over the course of the 2008 Beijing Games, CCTV.com smoothly streamed more than 3,800 hours of live video coverage and over 20,000 hours of news, replays, and on-demand video to more than 100 million unique viewers.
 - Daily audiences averaged some six million unique viewers, reaching a high of 8.5 million on opening day.
 - During one peak hour alone on August 18th, when Chinese track star Liu Xiang was scheduled to race, CCTV.com's system successfully handled a staggering 900,000 visits.



ORGANIZATIONAL PROFILE

CCTV International Networks Co. Ltd. (CCTV.com) is the online and digital media broadcasting arm of Asian media powerhouse China Central Television (CCTV). Its broadcasts, which air over 10 channels, reach tens of millions of viewers in more than 100 countries around the globe. CCTV.com is one of the first Chinese-language information portals in China. Launched in 1996, it currently serves over 10 million pages a day to up to 10 million registered users, of whom approximately 35 percent visit the site daily.

Challenge

On December 18, 2007, CCTV.com was named as China's official Internet and mobile phone broadcaster for the 2008 Beijing Games. The agreement authorized CCTV.com to stream thousands of hours of live, repeat, and on-demand video of the 2008 Beijing Games' events to hundreds of millions of people in mainland China and Macau.

With the 2008 Beijing Games sure to be one of the biggest media events in Chinese history, winning those exclusive broadcast rights offered CCTV.com an exciting opportunity. But it also posed a significant challenge for CCTV.com's managers. Opening day of the 2008 Beijing Games was set for August 8th, 2008, leaving them less than eight months to build a "new media" delivery system capable of streaming enormous volumes of video content to an equally enormous number of viewers.

What's more, the system would need to perform flawlessly. As an official digital media provider for the 2008 Beijing Games, CCTV.com would be representing both its parent company and the entire Chinese media industry before the eyes of the world. Achieving non-stop uptime was therefore both a matter of national pride and

critical to securing CCTV.com's future reputation as a global digital media leader. Adding to the challenge, the new system would also need to meet steep performance requirements, as CCTV.com expected online viewership during the 2008 Beijing Games to hit peaks of as many as 8 million concurrent users.

All of those considerations pointed to an urgent need for underlying technologies capable of reliably providing lightning-quick processing speeds at gold medal price/performance ratios. Moreover, since CCTV.com planned to power future online ventures with its new media delivery system long after the 2008 Beijing Games ended, flexibility, durability, and scalability were all important as well.

Solution

After thoroughly evaluating its options, CCTV.com chose to base its new media delivery system on Microsoft software and HP ProLiant servers equipped with Quad-Core AMD Opteron processors. Reasons for choosing AMD technology included AMD's long history of innovation and deep commitment to excellence in digital media, as well as AMD's reputation as the only semiconductor





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maker in the industry that offers a comprehensive range of solutions, from processors to graphics chips to chipsets.

AMD Opteron processors were a good fit for CCTV.com's needs in other ways too. For starters, they include a variety of built-in features that ensure rock-solid performance and outstanding value. For example, Quad-Core AMD Opteron processors utilize Direct Connect Architecture, which leverages an integrated memory controller on each CPU and high-speed HyperTransport™ links to connect directly with a server's I/O. As a result, systems equipped with AMD Opteron processors scale up smoothly to support even 2008 Beijing Games-sized business requirements.

Additionally, AMD Opteron processors feature AMD PowerNow!™ technology, which dynamically manages power utilization across processor cores, and AMD CoolCore™ technology, which reduces power consumption within individual cores. Together, those technologies and others can help enable cutting-edge energy efficiency.

Best of all, AMD Opteron processors make a great combination

with Microsoft and HP technologies, since all three companies collaborate closely with one another. For instance, Microsoft makes extensive use of AMD technology-based platforms when developing and testing new versions of its Windows Server operating system. The upshot is that AMD, Microsoft, and HP products work together seamlessly to provide scalable, dependable solutions.

That's certainly consistent with CCTV.com's experience. Using AMD, Microsoft, and HP technologies, it sprinted to the finish line in record time, completing a cutting-edge new media delivery system by July. The solution includes four distinct platforms:

- The core network television platform provides live, repeat, and on-demand video broadcast services over the Internet, drawing on datacenters in more than 10 Chinese cities, including Beijing, Shanghai, Guangzhou, and Chengdu.
- The mobile phone television platform provides video programming to millions of mobile phone users via leading Chinese telecom operators such as China Mobile and CNC.

→ The bus television platform and IPTV platform display video programming on thousands of screens and public buses. Currently live in 30 cities around China, the bus television and IPTV platforms reach up to 40 million viewers a day.

All told, the four components of CCTV.com's new media delivery system utilize more than 1,000 HP ProLiant servers. Using Microsoft software, CCTV.com also equipped its solution with features that enable viewers to click through from video broadcasts to detailed background and news coverage on the Web. And by tapping into online services from Microsoft such as MSN Groups and Windows Live Spaces, CCTV.com also created functionality that helped viewers share their 2008 Beijing Games experiences through blogs, photo albums, and other interactive forums.

Impact

Just as the 2008 Beijing Games themselves were a huge success, so too was CCTV.com's new media delivery system.

Over the course of the 2008 Beijing Games, CCTV.com reported that it smoothly streamed thousands of hours of live video coverage and news, replays, and on-demand

video to more than 100 million unique visitors. Daily viewership averaged some six million unique visitors, reaching a high of 8.5 million on the 2008 Beijing Games' opening day. During one peak hour alone—11 a.m. to noon local time on August 18th, when Chinese athlete Liu Xiang was scheduled to race in the 110 meter hurdles—CCTV.com received a staggering 900,000 visits. By comparison, NBC, which was the official 2008 Beijing Games broadcaster in the United States, drew about 4.3 million visitors a day to its 2008 Beijing Games Web site, while Yahoo! attracted about 4.7 million.

Moreover, CCTV.com's 2008 Beijing Games content was "sticky": CCTV.com reports that visitors spent an average of 11.5 minutes on the site per day. That's 2.5 minutes longer than the typical visit to CCTV.com before the 2008 Beijing Games.

With such accomplishments behind it, CCTV.com now looks forward to gaining a crucial edge in the fiercely competitive—and highly lucrative—online marketplace with the help of its sophisticated new media solution. Together, both CCTV.com and AMD look forward to setting world records in digital media innovation for many years to come.

About AMD

Advanced Micro Devices (NYSE: AMD) is an innovative technology company dedicated to collaborating with customers and partners to ignite the next generation of computing and graphics solutions at work, home and play.

For more information, visit www.amd.com

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