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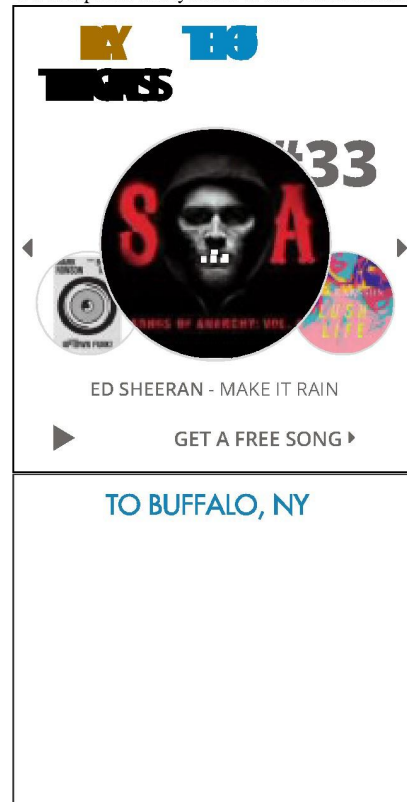
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26 Aug 2010

Xbox 360 vs. PlayStation 3: The Hardware Throwdown

Share.

We compare both systems to see which has the most power under the hood.



By Jesse Schedeen The console wars continue to rage on. Ever since the PlayStation 3 arrived on the market to challenge the Xbox 360 in 2006, gamers have argued about the merits of each system. Even as console-exclusive game titles have become less and less common, gamers remain convinced that their system of choice is the superior one.

We've decided to examine the war from a technical perspective, comparing which system sports more power under the hood and which offers a superior set of features. We've broken the console war into ten technical categories, including CPU, GPU, hard drives and so on.

In the end, only one system can emerge victorious.

This throwdown is based on the most recent versions of both consoles – the 'Slim' variations of both the Xbox 360 and the PlayStation 3, disregarding previous feature sets.

THE CPU

Xbox 360

PS3

3.2 GHz Xenon processor	3.2 GHz Cell processor
3 dual-threaded cores	7 single-threaded cores (plus 1 backup core)
Maximum 77 GFlops	Maximum 230 GFlops

Note – Gigaflop performance numbers determined by [Forbes.com](http://www.forbes.com)



The verdict: The processors for the Xbox and PS3 are unique enough in their respective architectures that it can be difficult to make direct comparisons. However, the numbers don't lie.

The two CPU chips run at the same GHz speed, but the PS3's seven individual cores beat out the Xbox's three dual-threaded cores. And in terms of performance measured in gigaflops, the PS3 tops out at nearly three times that of the Xbox.

Interestingly, the new combined CPU/GPU chip used in the new Xbox 360 is theoretically faster than the individual chips in older models. But in order to ensure proper functionality, Microsoft was forced to install a "frontside bus replacement block" that introduces latency and forces the chip to run at the same speed as the older model. This new combined chip may edge out the PS3's CPU in terms of reliability and temperature control, but no long term tests have been performed yet.

Winner: PlayStation 3

THE GPU

Xbox 360

PS3

ATI Xenos	NVIDIA RSX "Reality Synthesizer"		
Up to 512 MB GDDR3 RAM (shared w/ system RAM)	256 MB GDDR 3RAM (additional 224 MB can be shared w/ system RAM)		
10 MB eDRAM		21.6 GBps bandwidth (256 GBps via eDRAM)	22.4 GBps bandwidth



The verdict: Both the Xbox 360 and PS3 rely on custom-designed graphics cards. The Xbox's Xenos card features more video RAM, but this RAM is shared with the console's system RAM. The PS3 has 256 MB of dedicated video RAM in addition to being able to share up to an additional 224 MB from the system RAM.

In terms of bandwidth, the PS3 slightly edges out the Xbox. However, the Xbox has the advantage of 10 MB of eDRAM. When relying on the eDRAM, system bandwidth jumps up to 256 GBps.

Ultimately, while the PS3 GPU shows higher general performance numbers, we're inclined to give this category to the Xbox based on the peak performance of the eDRAM and the general versatility of this setup.

Winner: Xbox 360

RAM

Xbox 360

PS3

512 MB GDDR3 RAM (shared with GPU)	256 MB XDR RAM
700 MHz speed	3.2 GHz speed
22.4 Gbps bandwidth	25.6 Gbps bandwidth

The verdict: Once again, the Xbox's total amount of RAM is slightly misleading, as the system RAM and video RAM are shared. The PS3's XDR RAM is also far more fast and efficient than the Xbox's GDDR3 RAM, running at a speed of 3.2 GHz compared to 700 MHz.

Final bandwidth numbers prove PS3 is the victor in this category.

Winner: PlayStation 3

THE HARD DRIVE

Xbox 360

PS3

250 GB HDD or 4 GB SSD	160 or 320 GB HDD
5400 rpm	5400 rpm
User replaceable w/ proprietary HDD	User replaceable w/ standard HDD



The verdict: One of the changes made to the Xbox 360 'Slim' is that arcade models now include a 4 GB SSD drive for data storage rather than requiring gamers to rely on memory units. With the PS3, a hard drive is included in both models. The HDD units in both consoles are largely similar, both running at 400 rpm and now offering several hundred GB of storage. The high-end PS3 models offers a 320 GB HDD compared to the Xbox's 250 GB version.

However, the PS3's true advantage is its support of standard 2.5" SATA notebook hard drives. Users can upgrade the PS3's hard drive with drives that have higher capacities and faster rpm speeds, while the Xbox only supports Microsoft's proprietary HDD model.

Winner: PlayStation 3 [Continues](#)

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THE DISC DRIVE

Xbox 360

PS3

12x read speed (DVD)	8x read speed (DVD), 2x read speed (Blu-ray)
7 GB disc space	25 GB disc space

The verdict: The Xbox and PS3 have their own advantages when it comes to disc drives. The Xbox has a significantly higher DVD read speed than the PS3. Comparing the Xbox's DVD read speed to the PS3's Blu-ray read speed, the Xbox maxes out at 15.85 MBps on a single-layer disc while the PS3's maximum is 9 MBps. However, the difference in speed is reduced when the Xbox reads dual-layer discs.

While the PS3's disc drive runs somewhat slower than the Xbox's, it does offer the significantly higher storage capacity that comes with Blu-ray. Current PS3 discs have 25 GB to offer, and a new dual layer format is in the works that may increase this number to 33.4 GB. For most gamers, this storage boost will be far more important than read speed.

Winner: PlayStation 3

VIDEO SUPPORT

Xbox 360

PS3

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Native 720p resolution, OS supports up to 1080p resolution	Native 720p resolution, OS supports up to 1080p resolution
Composite, component, VGA, & HDMI connections	Composite, component, & HDMI connections



The verdict With both the current models of both consoles now including standard HDMI ports, Xbox and PS3 are largely comparable when it comes to video connections. The PS3 outclasses Xbox in terms of maximum resolution.

While the Xbox's menu screens support 1080p display, Microsoft only requires its games to run at 720p. The PS3 features a significant number of games that support 1080p. That's to say nothing of PS3's support for Blu-ray movies and the growing focus on 3D gaming.

Winner: PlayStation 3

AUDIO SUPPORT

Xbox 360

PS3

Analog – Dolby Pro-Logic II	Analog – Stereo
Digital – 5.1 Dolby Digital	Digital – 5.1 Dolby Digital & 7.1 LPCM

The verdict For gamers relying on analog sound connections, the Xbox has the advantage (offering Dolby Pro-Logic II in addition to standard stereo). But for those with digital connections, the PS3 wins the day by offering both 5.1 Dolby Digital surround and 7.1 LPCM surround.

Winner: PlayStation 3

CONNECTIVITY

Xbox 360

PS3

5 USB ports, Kinect port	2 USB ports, Bluetooth 2.0
7 max controllers (3 wired and 4 wireless)	7 max controllers



The verdict The current PS3 Slim has two USB ports compared to the Xbox's three. Additionally, Sony has removed the Compact Flash and SD card support seen in older models while the Xbox offers support for memory units that can transfer game data and saves.

Despite these advantages on the Xbox, the PS3 still emerges victorious in this category for Bluetooth 2.0.

Winner: PlayStation 3

NETWORKING

Xbox 360

PS3

100Mbps ethernet	1Gbps ethernet
Built-in wifi connector – up to 802.11g	Built-in wifi connector – up to 802.11g



The verdict When it comes to network capabilities, gamers need to ask themselves whether they intend to rely on a wired ethernet connection or wireless. The PS3's ethernet port is standard at a capacity of 1Gbps. Both consoles now include built-in wifi support. However, the Xbox 'Slim' supports 802.11n technology, while the PS3's adapter only supports up to 802.11g.

Given the increasing prevalence of wireless Internet, the Xbox has the larger advantage.

Winner: Xbox 360

BACKWARDS COMPATIBILITY

Xbox 360

PS3

Support for many original Xbox games via software emulation	Support for PS2 games via hardware emulation
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The verdict Gamers hoping to rely on current consoles for backward compatibility will find neither the Xbox 360 nor the PS3 offer full support for past systems. The 360 supports a portion of the original Xbox catalog. However, because the 360 relies on software emulation, performance can be spotty and unreliable at times. The PS3 supports original PlayStation hardware emulation, resulting in far fewer technical problems.

Unfortunately, while early PS3 models offered software emulation for PS2 games, newer models do not. The Xbox carries this category thanks to its support for a larger percentage of the Xbox's back catalog.

Winner: Xbox 360

The final winner of the tech throwdown is the PlayStation 3, capturing seven of the overall categories. Once again, both systems have their own unique strengths. But from a technical standpoint, the PS3 has more horsepower and support for a wider range of high resolution video and audio. But despite being a year older, the Xbox remains surprisingly competitive in some areas.



[Which system is your champion?](#)

In the end, what matters is how developers and publishers choose to take advantage of each console.

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