

Nintendo's new toy

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NINTENDO'S NEW TOY

The Vapor Is Now Clearing—EGM Tells All On the N64

Welcome to EGM's Nintendo 64 round-up—a one-stop players' guide to the N64. In it, you'll find never-before-seen screen shots and sketches of upcoming Nintendo 64 titles, info on some future N64 games, in-depth previews of games right around the corner and some of the most comprehensive coverage of the world's newest 64-Bit game console. So sit back, relax and enjoy the ride as we take you through a 64-Bit journey—Nintendo style!

to the N64 in Japan has been lukewarm. One reason for this may be the lack of new N64 titles. Although SM 64 and PW 64 have been lighting up the sales charts in Japan, no more N64 games are due until late September. Adding insult to injury, no strategy games or RPGs (two of the most popular game genres in



After much hype, anticipation, excitement and a few well-publicized delays, the Nintendo 64 has finally arrived. Sept. 30 is the magic date of the N64's North American debut, and you can be sure that tons of Nintendo 64 glitz and fanfare is coming our way. (Nintendo will spend roughly \$54 million to advertise the N64 this holiday season.) While thousands of hungry U.S. game players are still waiting to purchase Nintendo's new console, the Japanese gaming scene has already been exposed to this awesome system.

On June 23, the N64 was released in Japan along with three games: Super Mario 64, PilotWings 64 and Yoshiharu Habu's Japanese Chess, a Japanese chess simulation. Surprisingly, public response

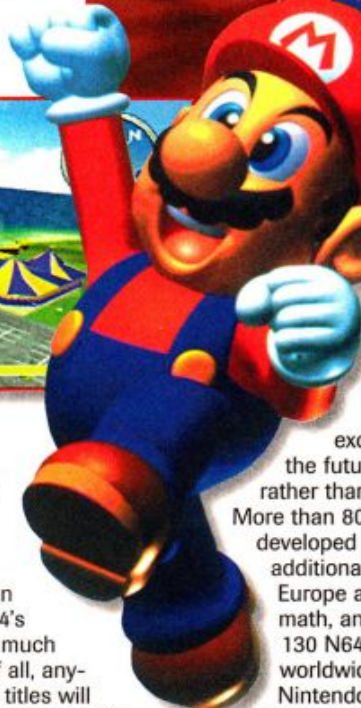
Japan) are due until the spring of 1997, at the earliest. This has forced many Japanese gamers to take a wait-and-see attitude toward the N64.

In the North American market, the Nintendo 64's prelaunch prognosis is much more optimistic. First of all, anywhere from six to eight titles will be available at launch, with an additional 10-12 games available by Christmas. Not only will the N64 have more games available in its U.S. launch, many of those games were specifically designed for the U.S. market. By



Christmas, Nintendo of America expects to have games represented in most of the key gaming genres. With this in mind, it's no wonder N64 fever is much hotter in the U.S. than it is in Japan.

Truth be told, the real excitement of the N64 lies in the future potential of the machine, rather than its current gaming status. More than 80 N64 games are now being developed in Japan alone, with an additional 50+ titles in the works in Europe and North America. (Do the math, and you'll find that more than 130 N64 games are in development worldwide, more than any other Nintendo game platform had before its launch.) Combine that with the impressive visuals seen in Super Mario 64 and PilotWings 64 (two first-generation games) and it's easy to see why Nintendo of America feels the future of this new game console is very bright. In fact, some





of the brightest names in the gaming industry are making games as we speak, including: Williams Entertainment, Electronic Arts, Acclaim, Interplay, Virgin Interactive Entertainment, Rare, Ocean, Software Creations, Capcom, Konami, Hudson, Enix, Seta, Kemco and many more.

For those of you unfamiliar with the N64, here's a quick recap: On April 23, 1993, Nintendo and Silicon Graphics Incorporated announced that they would jointly develop a 64-Bit video game system, code named: Project Reality. Using "Reality Immersion Technology," the game system was to be based on SGI's "Onyx" line of graphic workstation

computers. The name "Project Reality" was temporarily changed to "Ultra 64" then changed again to Nintendo 64—as it is now known today.

The Nintendo 64's computer architecture is cartridge-based and is run by just two microprocessors; the CPU (central processing unit) and the RCP (reality co-processor). The main CPU controls all the AI logic and in-game behaviors (artificial life, real-world physics, etc.) of the N64. Based on the MIPS R4300 series of RISC (reduced instruction set computing) CPUs, the N64's main processor runs at around 94 MHz. Unlike the R4300 (which only processes 32-Bits of information internally) the N64's CPU is fully 64-Bit. The heart

of the N64 is the RCP, a custom DSP (digital signal processor) controls the graphics and sound of the N64 and operates in two halves. The half that processes the N64's sound and assigns all the polygons is called RSP (reality signal processor). The RDP (reality display processor) draws all the pixels on screen and controls all of the N64's whiz-bang effects (line anti-aliasing, mip-mapping, opacity effects, etc.). The RCP is a true 64 processor that runs at approximately 62 MHz. Combined, both chips can calculate more math than 10 Pentium processors combined! Indeed, when the N64 is hooked up to TVs across the nation, it should be the most powerful chipset in the home! ■



NINTENDO 64

EGM Breaks through the Buzz and Looks Inside the N64

Gamers half a decade ago watched backgrounds and flat terrains spin and scale in and out on their television screens. They heard it was called the Super NES' "Mode 7" feature, and they liked it.

Gamers soon afterward saw a familiar blue hedgehog bolt across the TV faster than a squirrel dodging traffic. They heard it was called "Blast Processing"—a feature unique to the Sega Genesis—and they liked it.

Soon they were looking for more advanced features in their video game systems—features with names like sprite

Specular Reflection

Technical: A rendering technique which creates a reflection of the light source on a shiny surface. This feature is built in to the N64 hardware.

Gamer's definition: This one is simple enough. Effects like the Chrome Mario in Super Mario 64 will be complete with shininess. Talk about realistic effects easily available.

High Resolution

Technical: One of the N64 Video Modes, providing 640 pixels horizontally by 480 pixels vertically.

Gamer's definition: Instead of graphics looking fuzzy, they look sharp. This is what "hi-res" really means. This takes a lot of processing power, so many systems can't handle the data all at once.



Environment Mapping

Technical: A rendering technique used to create realistic-looking reflections on a surface. The N64 hardware has this built in and will process this mapping in realtime.

Gamer's definition: This makes the game look real. There are reflections all around us, all the time, but since it takes a lot of processing power, most systems can't do it.

"rotation" and "scaling." The industry was abuzz with these and other buzz words, which were labeled in bold text across the boxes of new systems (the Sega CD among them).

Now with the looming U.S. release of the Nintendo 64, gamers are about to be bombarded with new buzz words—exotic-sounding compound nouns like "mip-mapping" and "anti-aliasing." But before these words get hyped all to heck, we at EGM figured someone ought to explain

Normal Resolution

Technical: A Video Mode of the N64 providing 320 pixels horizontally and 240 pixels vertically.

Gamer's definition: This is close to what's known as "low-res." A good example of this would be the original Doom on the PC. The graphics look blockier. It's kind of like being zoomed in. Hope this isn't used too much on the N64.



Alpha Channel

Technical: In reference to bit-mapped images and the transparency of pixels therein.

Gamer's definition: The cool effects in water, smoke and glass. Alpha means you can see through the graphics to a certain extent. A good example is the waterfall and the light shining through the windows in Super Mario 64.

Anti-Aliasing

Technical: A technique used to smooth the jagged edges of graphics by illuminating the pixels along the edges with colors that are a blend of adjacent colors. This feature is in the N64 hardware.

Gamer's definition: This makes graphics look less pixelized along the edges (the block on the left). It's in the N64 and it's used a lot.



RCP Reality Co-Processor

Technical: The heart of the N64. This custom chip performs all graphics and audio processing.

Gamer's definition: If this little guy had hands, you would definitely shake one of them. This chip is what lets Mario walk in a real 3-D environment with the startling graphics and fun music and sound effects. Thank you, Mr. RCP.

ROM Read Only Memory

Technical: The type of memory used in N64 game cartridges. Presently, N64 games use 4, 8 or 12 Megabytes of ROM.

Gamer's definition: Let's put this into perspective—some of the best games on the 32-Bit systems use well over 100 Megabytes on a CD. Mario uses how many? Only 8. You gotta love technology!

Bilinear Interpolation

Technical: Used to improve the appearance of textured surface when viewed at a given distance by blending the colors of adjacent texels. It's in the N64 hardware.

Gamer's definition: Basically this makes graphics look better so they're not so pixelized. This helps up close since it blends colors in the whole graphic. Note the circle on the left.



Trilinear Interpolation

Technical: Used to improve the appearance of textured surfaces when viewed at a given distance by blending the colors of adjacent texels from two separate texture maps. It's in the N64 hardware.

Gamer's definition: It's like the bilinear one mentioned before. This time it's with two texture maps—very real.

Mip- Mapping

Technical: A technique used for improving the appearance of a textured surface by computing new textures to be displayed based on the distance of the object from the viewer. No annoying noise or patterns on textures.

Gamer's definition: Texture-mapped graphics won't look weird or pixelized up close or far away.

Clipping

Technical: The process of excluding the portions of polygons which are outside the current view. This cuts down on the amount of data being processed during rendering.

Gamer's definition: When the turtle is partially shown coming into view, the part that's not seen won't be rendered. This way there's not as much strain on the N64.

Culling

Technical: The process of excluding polygons which are completely outside of the current view, and it can take away those which are not facing the viewer.

Gamer's definition: Kind of like Clipping but it's for the turtle before he ever comes onto the screen and the side of him we can't see while playing.



Wavetable Synthesis

Technical: A type of music synthesis which uses recorded samples of actual instruments and dynamically modifies the pitch and other attributes for enhanced realism. This is built in the N64 hardware.

Gamer's definition: Like the old Super NES' music but a whole lot better with more instruments.

them to the gamer.

What follows then is a look—in both technical and laymen's terms—at which features of the N64 set it apart from the other next-gen consoles. The technical definitions were provided by Nintendo, while the *EGM* editors boiled the techy terms down to what they really mean to game players.

The N64 is loaded with advanced features, and only the most important ones—those that will most likely become buzz words—are explained here. ■

TLMMI Trilinear, Mip- Map Interpolation

Technical: A rendering method combining trilinear interpolation with mip-mapping. This is considered the highest-quality form of texture mapping. It's built into the N64.

Gamer's definition: Now that's a mouth full. Actually, this is why N64 games look so incredible in everything we've seen. It's built-in, so we should be seeing it used a lot.