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## OS/2 - THE OPERATING SYSTEM OF CHOICE FOR MULTIMEDIA

With the introduction of OS/2\* 2.1, OS/2 has become the operating system of choice for delivering multimedia to the desktop and the network.

The 32-bit power of the OS/2 operating system, combined with the integrated multimedia capabilities offered through the Multimedia Presentation Manager/2\* (MMPM/2), offer end-users and application developers a uniquely powerful and full-featured multimedia platform.

In addition, a wide range of multimedia tools that enhance the power of OS/2 multimedia are either available or in development. These include traditional tools for image editing and multimedia application development, as well as more sophisticated technologies for everything from image recognition and linking of images to databases to video-on-demand servers.

The following are some key features and benefits of OS/2 multimedia.

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**32-BIT PERFORMANCE MEANS SUPERIOR MULTIMEDIA** - The combination of a 32-bit operating system and preemptive multitasking means that OS/2 offers the high performance that translates into better multimedia. Multimedia makes tremendous demands on any computer -- often more than a 16-bit operating system can handle. OS/2 offers a 32-bit operating system designed with the power to handle multimedia. OS/2's preemptive multitasking means that the computer can literally do two things at once, allowing it to simultaneously play back any mix of audio, video, animation or graphics with virtually no loss of quality.

**POWERFUL MULTIMEDIA EXTENSIONS** - Included as part of OS/2 2.1 is IBM's Multimedia Presentation Manager/2 (MMPM/2), a comprehensive set of tools for working with multimedia. These tools include: a digital audio player/recorder; media players offering a powerful but easy-to-use interface for playing MIDI digital audio, digital video, audio compact discs and laser video discs; and a data converter that converts the formats of audio and graphics files. The appropriate media player launches automatically when you click on any multimedia file within the OS/2 Workplace Shell. For developers, the capabilities of all MMPM/2 tools are all accessible through IBM's Media Control Interface (MCI) commands.

**FULL SUPPORT FOR MULTIMEDIA PERIPHERALS SUCH AS AUDIO BOARDS AND CD-ROM** - OS/2 supports a wide range of popular computer peripherals for multimedia, including: audio boards such as IBM's M-Audio\* Capture and Playback Adapter, Media Vision's Pro Audio Spectrum\*\* and Creative Labs' Soundblaster\*\*; and CD-ROM XA (Extended Architecture).

**FULL-LENGTH FILE NAMES** - OS/2 allows users to give multimedia files names that mean something...up to 256 characters. This eliminates the problem of trying to figure out what's in a file by its 8 character name.

**A USER INTERFACE THAT MAKES MULTIMEDIA EASY** - The OS/2 interface itself makes it easy to work with multimedia. Notebooks, which look like their physical counterpart, allow users easy access to device controls and settings. Users can move through a notebook one page at a time, or click on tabs to move from one section to the next.

**ADVANCED SOFTWARE MOTION VIDEO** - OS/2 supports both IBM's own Ultimotion\* and Intel's Indeo\*\* digital video standards. Ultimotion offers both the convenience of software-only compression and the video quality critical to successful multimedia applications. Standard Ultimotion resolution is 320x240 pixels at 15 frames/second, four times what is offered by similar video solutions. Ultimotion can also yield up to 30 frames/second or resolutions of up to 640x480, and excels at both 256 and 65,000 color depths. All Ultimotion video is software-scalable at playback. Support for Intel's Indeo video standard offers a cross-platform video solution with hardware-based scalability to Intel's higher-quality Digital Video Interactive (DVI) technology.

**MULTIMEDIA-ENABLING OTHER APPLICATIONS IS EASY** - OS/2 offers the integrated multimedia capabilities that make it easy to add multimedia to other applications, such as word processors, spreadsheets, and databases. For example, an audio-enabling macro built into OS/2 allows users to quickly and easily add voice annotation to any cell in an Excel\*\* for OS/2 or Lotus 1-2-3\*\* for OS/2 spreadsheet. Programmers can use five high-level macro functions to record, play and manipulate compound multimedia file elements.

**SOPHISTICATED SOFTWARE TOOLS FOR MULTIMEDIA** - A range of software tools are available to allow users and developers to take full advantage of the multimedia power of OS/2. New IBM offerings include: Ultimedia Perfect Image/2, an image processing program that can resize, enhance, copy, paste, crop or rotate digitized images; and Ultimedia Builder/2, easy-to-use authoring software that lets users create exciting multimedia applications incorporating video, sound, images, animation and special effects. Both of these products are currently in beta, and should become generally available in Summer 1993. Builder/2 and Perfect Image/2 are just two of the products in IBM's Ultimedia Tools Series. The Ultimedia Tools Series is a comprehensive family of multimedia tools, includes more than 60 world-class software offerings from IBM and over 30 independent software vendors. The series is designed to provide multimedia users at all levels with a "one-stop-shop" for tools that can help them work with and use multimedia.

**THE ABILITY TO LINK DATABASES AND MULTIMEDIA** - OS/2 tools like Ultimedia Workplace/2 allow users to link libraries of multimedia information, such as images, with a wide range of traditional databases. This makes it possible for the first time to easily integrate multimedia into company-wide information systems, mission-critical applications and other corporate applications involving databases. Also, Workplace/2 automatically creates thumbnail images for every image file, allowing users to instantly see what they look like, without opening them up. For audio and video files, generic thumbnails are automatically created which can be customized by the user. Ultimedia Workplace/2 is currently in beta, and should become generally available in Summer of 1993.

**IMAGE RECOGNITION TECHNOLOGY IN DEVELOPMENT** - IBM is also developing breakthrough image recognition technology for OS/2. Ultimedia Manager/2, which enters beta testing in June, 1993 will offer users the capability to automatically classify, search for, identify and sort images by color, texture, shape, layout or text descriptions. Ultimedia Manager/2's sophisticated visual query capabilities offer multimedia developers, photographers, desktop publishers and many others the ability to quickly search large computer-based libraries for images and graphics that meet specific criteria.

**POWERFUL MULTIMEDIA NETWORKING TECHNOLOGY** - IBM's LAN Server\* 3.0 for OS/2 offers advanced networking capabilities for multimedia, including the ability to support up to 40 continuous streams of video, animation or graphics to OS/2, Windows and Macintosh clients. In addition, IBM is developing Ultimedia Server/6000 advanced multimedia networking software for OS/2. Ultimedia Server/6000, which enters beta testing in July, 1993, is software that allows an IBM RISC System/6000 Server to deliver more than 40 continuous streams of video, audio, animation or other digital multimedia to OS/2 clients across client/server networks. In addition to OS/2, future client support is planned for Windows\*\*, Macintosh\*\*, AIX\* and other platforms. Ultimedia Server is designed to allow organizations to create distributed multimedia applications such as video-on-demand, movies-on-demand, networked multimedia information kiosks, video mail, and interactive just-in-time training.

**SUPPORT FOR WINDOWS AND DOS MULTIMEDIA** - In addition to its own multimedia capabilities, OS/2 provides comprehensive support for both Windows and DOS multimedia applications. In fact, the power of OS/2 actually helps many Windows and DOS multimedia applications to offer improved performance.

**OS/2 HAS BEEN LAUDED AS A MULTIMEDIA PLATFORM** - Industry experts have already recognized the power of OS/2 multimedia. According to Tom Yager, multimedia consultant and author of "The Multimedia Production Handbook for the PC, Macintosh and Amiga," OS/2 offers "The most powerful PC multimedia environment available. A good choice for multimedia application developers," (Byte Magazine, April 1993). According to John Ruley, Windows Magazine Columnist and Editor-at-Large, for the creation of video-intensive CD-ROM applications, "Do not use Microsoft Video or Quicktime; use IBM's Ultimotion...(Ultimotion) gets around all the limitations of the other approaches. At CD-ROM data rates it gives...1/4 screen VGA picture at 24 frames per second with rock solid video/sound synch...Ultimotion was designed from the beginning to provide synchronization of other media with video," (Windows Magazine, May 1993).

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- \* Indicates trademark or registered trademark of International Business Machines Corporation.
- \*\* Indicates trademark or registered trademark of the following companies: Microsoft Corporation (Windows and Excel); Media Vision (Pro Audio Spectrum); Creative Labs (Soundblaster); Intel (Indeo); Lotus Development Corp. (Lotus 1,2,3); Apple Computers (Macintosh);