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Techno<mark>logy</mark>

Technology

Minimum requirement for PRIVATEER 3 Pentium 166 with 32 megs PCI Video (2 megs for 16 bit color) 3D Hardware Accelerator Card 16 bit digital sound card 8X CD ROM drive

Network

33.6k Modem

TCP/IP Network Protocol Low-Latency Internet Connection with Support for 32-Bit Applications

In 1996 Origin began development of a new engine with which to replace their aging RealSpace engine in an effort to remain competitive and on the cutting edge of technology. Maverick Productions (known for the long-running Wing Commander franchise) began development of the Vision Engine in an effort to take full advantage of inexpensive 3D accelerator hardware and other technological breakthroughs



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' 1998 Origin Systems, Inc.

The Vision Engine Currently, the Vision Engine (used for both Wing Commander: Prophecy and Privateer 3) is Origin s next generation 3D rendering engine. The engine is resolution independent, rendering to 8, and 16 bit buffers, and full advantage of Microsofts Direct Draw and Direct3D accelerator Our engine allows the engine to render using any 3D accelerator that supports the Direct3D programming interface. The big advan tage of this is that the engine immediately supports future 3D accels with no work on our pat. The native mode fo us to custonallow ailor for ators each piece of hardware. Although providing native support for individual cards requires additional programming time, it results in frames since most cards run significantly faster in much faster iode. 3D Engine Because Privateer 3 will be accelerator-pequired, the game will run smoothly on all target machines. The new engine accomplishes this tis blazing fast software rasterizer. This software rasterizer can render around 5.7 million perspective correct textured, correct Gouraud shaded, 16 bit color pixels per second on a 166 Pentium machine. In other words, if the game is running in a $640 \times$ 480 x

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Techno<mark>logy</mark>ology

Audio

Music playback for PRIVATEER 3 will be implemented with streamed digital

audio. The music will be digitized as 16 bit, 22050 Hz, stereo. The file system will allow the loading of data files, sound effects, as well as streamed in-flight communications video without causing a jarring skip in the music playback. All essential sound effects (missile launch,

gun firings, etc.) will be loaded at the start of the mission and will remain in memory until the mission has completed using our cacheing

techniques. All other sound effects will be loaded on demand. These on

demand sound effects will be kept in a cache in order to reduce redundant loading. Sound effects will be sampled at the lowest rate that

provides a high enough quality

Video

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Video playback will be provided by UV2, the movie player that was used

in Prophecy. UV2 provides high quality video, even in high motion situations, at a reasonable data rate. Additionally, for speed critical applications, UV2 is able to play back partially decompressed video at a

faster rate with an acceptable loss in visual quality. By using UV2, we

should be able to fit around 50 minutes of full motion video on two CDs

(in addition to all other game data and the executable) at a smooth 15

frames per second rate.

Music Streaming

W e want to have digital music streaming from the CD at all times. During music playback, we also want to be able to load files. Since a 8x speed CD-ROM drive is required for Privateer 3, it is very likely that we shouldn t have trouble loading small files while streaming



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Antificial Intelligence Wing Commander III and IV wasted a such objects AI update routine every sary to call the update routine arous can save a great deal of thready state

update. Privateer 3 will according this by independing on AI scheduler. Each AI update routine is assigned at update rate. The object is inserted into the AI scheduler which chooses an appropriate place in the schedule for it to update. Network Technology

Origin Cn-Line PRIVATEER 3 plans on setting up its network model with its main goal being ease of use by the public. This model will allow players to use a central Internet location known as OKIGIN ON LINE to locate PRIVATEER 3 servers throughout the world and quickly jump into a game, much the same way as Battle Net and Quakeworld operate. Origin On-Line world also allow us a central resource by which updates and patches can be disseminated to the public.

Central Database: The core of the model will be a central database server that will contain a list of all current active servers. When a player establishes a network game, the master server will receive a notice and add the game server to it current active list. It will continue to check to see if the server has lost connection tvia PMG) and drop it from the fist if it should lose connection. When a player wishes to find out what games are currently active, the will only have to contact the Origin On-Line central

ver to get complete and up to date listing. • PRIVATEER 3 master server model should allow us to r

e public a wide range of fun and practical network options, the making the entire process transparent and easy to use.

P R I V A I E E R

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Mission Statement

From its origins in 1994, the Loose Cannon team has been dedicated to the timely delivery of all of its projects that it has undertaken. Delivering Crusader: No Remorse in 1995, and the sequel Crusader: No Regret in 1996, (including the No Remorse version for the PSX.) Loose Cannon has remained one of the highest rate-of-return teams at Origin.

Under the leadership of Rod Nakamoto, Loose Cannon hopes

further expand its role both within Origin and within EA. Acquiring the Privateer title in 1997, Loose Cannon is fiercely dedicated to the on-time, on-budget delivery of the third







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