

Premier co-developer of award-winning Unreal series of games again turns to Autodesk® 3ds Max® for highly anticipated first-person shooter, Pariah

By Audrey Doyle

At Digital Extremes, a key ingredient to creating a successful game is the ability to experiment with ideas, focusing only on the best ones and having the flexibility to put aside the others.

Another essential ingredient is Autodesk 3ds Max software. "We've been using it since we formed in 1993," says James Schmalz, who founded the London, Ontario-based company that today ranks as one of the world's top development studios in the interactive entertainment industry. "As game consoles and engines have improved over the years, we've been able to take advantage of their increased power by developing games featuring characters and environments that are as photorealistic as technologically possible. 3ds Max has always played a role in the development of those high-polygon-count, photorealistic elements."

Digital Extremes is best known for its creation, in collaboration with Epic Games, of the wildly popular Unreal game franchise, which includes the award-winning PC series *Unreal* and *Unreal Tournament* as well as the Xbox hit *Unreal Championship*, all of which have been lauded by avid gamers and industry pundits for their outstanding 3D graphics.

In May, the company released *Pariah*, a fast-paced, first-person action game for the Xbox, PC, and PlayStation2. As it did with its previous games, the company used 3ds Max software to create the characters, vehicles, weapons, and environments that populate this highly anticipated title.

Image courtesy of Pariah. © 2005 Digital Extremes



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Image courtesy of *Pariah*. © 2005 Digital extremes

Published by Groove Games, *Pariah* is set several years in the future. To play the game, players take on the role of Jack Mason, a military doctor who has been called to Earth to transport to an off-planet medical facility a prison inmate who has contracted a deadly virus. "It starts out as a routine transport mission, but as you're escorting the prisoner off-planet, your ship is shot out of the sky and you crash into the wastelands surrounding the prison," Schmalz says. The player's immediate goal is to get Jack and the inmate back to the safety of the prison. In the process, the story unfolds and the player finds himself in a world of intrigue and heart-pounding action.

One of the hallmarks of *Pariah* is its photorealistic cast of characters. Joining Jack are Karina, the inmate; Stubbs, the ship's pilot (who also survives the crash); and Stockton, the person the player reports to throughout the game. In addition to these main characters, the game features a wide variety of prisoners and guards, all enemies of Jack and his team.

The Digital Extremes artists modeled the characters in 3ds Max and animated them using Character Studio, the advanced character animation option built into Discreet's 3ds Max software. According to Schmalz, each main character in the game is composed of, on average, about 4,000 polygons, which he says is two to three times as many polygons as the studio was able to pack into a typical character in previous games. "Even as recently as a few years ago, characters had mitts on their hands instead of fingers. Today, characters have not only fingers, but also details like teeth, movable mouths and eyes, and eyelashes," he says.

Of course, these extra details add not only heightened realism, but also scenes composed of, at times, more than 100,000 polygons. Nonetheless, says Schmalz, it was easy to take that step up into higher-polygon-count models using 3ds Max, thanks to the software's comprehensive collection of 3D modeling tools.

Among the tools the team often turned to during the development of *Pariah* was the software's editable poly and UV mapping tools. "It can be tricky to get the forms in a character model to look good and to build a character that animates well," Schmalz says. "With the editable poly tools in 3ds Max we could edit the models to make the joints bend more realistically than ever, with less clipping, and to get all the polygons in exactly the right place. We also liked the UV mapping tools because they were a huge timesaver when we were skinning the characters. These tools helped us to get more photorealistic results with fewer distortions on the mesh."

Schmalz adds that the modeling constraints in 3ds Max were extremely useful when modeling the characters' faces. "With the constraints we could add and move vertices very accurately, and get the soft curvature of the faces to look very realistic," he recalls. "I'd say that with all the modeling tools in 3ds Max, we were able to model the characters at least 25% faster than we could before."

Another important feature in *Pariah* is the cache of photorealistic weapons—including rocket launchers, grenade launchers, and assault rifles—that the players have access to. When creating these models, the artists relied on the render-to-texture function in 3ds Max rather extensively. "We used render-to-texture to create the high-quality, low-distortion, rendered skins for the weapons," Schmalz says. "Instead of hand-drawing the textures, we could render them right on the objects, which made them look a lot more realistic. In addition, it was a lot faster to create the skins this way."

It's not just the characters and weapons that are remarkable; the environments in *Pariah* are noteworthy as well. Approximately 90% of the game takes place outdoors, which means the artists had to model thousands of objects, including trees, boulders, and battle stations. "We had a huge amount of environmental artwork that we had to create," says Schmalz. "Render-to-texture was a very handy tool for pregenerating complex lighting situations and shadows on the terrain and environment models. It was something that would have been extremely difficult to do by hand."

According to Schmalz, *Pariah* is a great example of how Digital Extremes is able to stay at the cutting edge of game development. "Gamers want to play games that show the industry is moving forward with interesting gameplay and achieving even more impressive visuals," he says. "In *Pariah* we have extremely high-polygon-count models that are the most complex we have worked on to date.

"We've been very successful in the past, and *Pariah* is definitely competitive with the best games out there," Schmalz concludes. "Thanks to help from 3ds Max we've been able to retain our position as a premier developer of cutting-edge games."