



CASE STUDY

FILMGATE

FILMGATE ACHIEVES INTERNATIONAL VFX AMBITIONS WITH NUKE

The young, yet experienced, team at Swedish digital effects house Filmgate are not converts to Nuke. They've believed from the day they started their company that Nuke is the best tool to help them deliver the highest quality VFX to domestic and international feature film and TV productions.

"Nuke has been central to our FX pipeline since we opened in 2006. Because of its blazing speed of operation and rendering, it has been integral to our productivity too," says company co-founder and VFX supervisor Fredrik Averpil. "All-in-all, Nuke helps to make us very competitive proposition in the VFX market. Whatever the production – a blockbuster feature film, TV drama or a commercial – we have the expertise, versatility and the technology to deliver cool effects on time and on budget."

Filmgate was established by Averpil along with producer Sean Wheelan, and visual effects supervisors Håkan Blomdahl and Andreas Hylander – a quartet that had collectively amassed considerable experience working at post production houses in Europe, the US and Australasia, on a range of international movies as well as Academy Award-winning blockbusters, such as *King Kong* and the *Lord of the Rings* trilogy.

“We shaped our company around Nuke,” says Averpil. “Håkan had come back from working on *King Kong* at Weta Digital in New Zealand, and told us about this incredible software he had been using. Very few people had heard about Nuke at that time, but we realised it had amazing potential and saw no good reason for us to establish a new company with other older technology. The original TCL, and now Python, programming extensibility of Nuke, the ease with which you can transfer material between Nuke and other post production systems, plus its inherent speed, all added up to a lot good reasons to invest in Nuke.”

Along with VFX for international brands such as Pepsi, Coca Cola and Volvo, Filmgate has already delivered a large number of visual effects shots for Swedish TV series using Nuke. The company has also worked on 20 feature films (in six different countries), including the British feature films *Eden Lake*, *Hush*, *The Descent 2* and *The Cottage*. With four features in the pipeline to be completed early by 2009, business is such that Filmgate now sports 11 Nuke licenses in a VFX and DI pipeline that also features Autodesk Maya and Assimilate Scratch. The company employs 10 staff, and a visit to the website (www.filmgate.se) reveals they have an impressive number credits at IMDB.com.

“Nuke is a day-to-day system for just about everything we do in VFX, from previz through to final comps,” remarks Averpil. “The great thing is it’s quick and easy to share files between Nuke and Scratch, and Nuke and Maya. To maximise our productivity, we have customised Rush render management software to optimise all our rendering including .nk files.”

Most recently Filmgate has been occupied with the completion of more than 300 VFX shots for the medieval adventure *Arn: The Knight’s Templar* and the sequel *Arn: Kingdom at Road’s End* which, with a total budget of around US\$30million, is the most expensive production in Scandinavian film history. The films follow the adventures of fictional medieval knight and crusader Arn Magnusson, and have proven hugely popular amongst Swedish, Norwegian and Finnish audiences. In December 2007 *Arn: The Knight Templar* had the biggest opening weekend in Scandinavian movie history, and has had over one million cinema goers.

The majority of the work on *Arn* involved digital set extension, crowd replication and retouching, with Nuke operating in a smooth and interactive VFX workflow with Maya and integrating with third-party camera-tracking tools such as SynthEyes.

Due to the production schedule, a key battle scene that was scripted to take place during a bitter Swedish winter was actually shot in two parts during the spring and summer months. This meant Filmgate having to develop a winter-like treatment, and to then apply it consistently to more than 60 shots.



Multiple takes of warriors were combined into a single plate. *'Arn – The Kingdom at Road's End'*
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“To make the grass look cold and frosty, we took a couple of live action plates and got a keying and roto workflow going in Nuke that we could then apply to other shots,” explains Nuke artist Mathias Larserud. “This was fairly straightforward as the grass provided a really good green colour for keying. Using Nuke we desaturated and colour corrected these isolated areas to make them look white and bright, and then screened the result back over the original plate. We also recomposited the backgrounds and shadows with a cold, bluish hue, and finally added a subtle translucent white layer over the new plate to give an overall raw and bone-chilling feel.”



Colour grading and matte painting of snow was added to the other so summery plate. *'Arn – The Kingdom at Road's End' © 2008 AB Svensk Filmindustri. Images courtesy of Filmgate.*

Nuke was also used enhance the spectacle of the battling armies by comp'ing together multiple crowd replication takes. Showers of CG arrows, made in Maya, were composited in Nuke, along with finessing touches – such as the addition of extra fire, smoke, mist and snow to augment that which had already been shot on the day.

“The strength of Nuke is that you can put nodes together to apply effects, and the logistics that Nuke provides are perfect for this sort of work,” says Larserud. “The producers were really pleased with the results, and audiences will never notice the battle was actually shot when there was no snow around at all.”

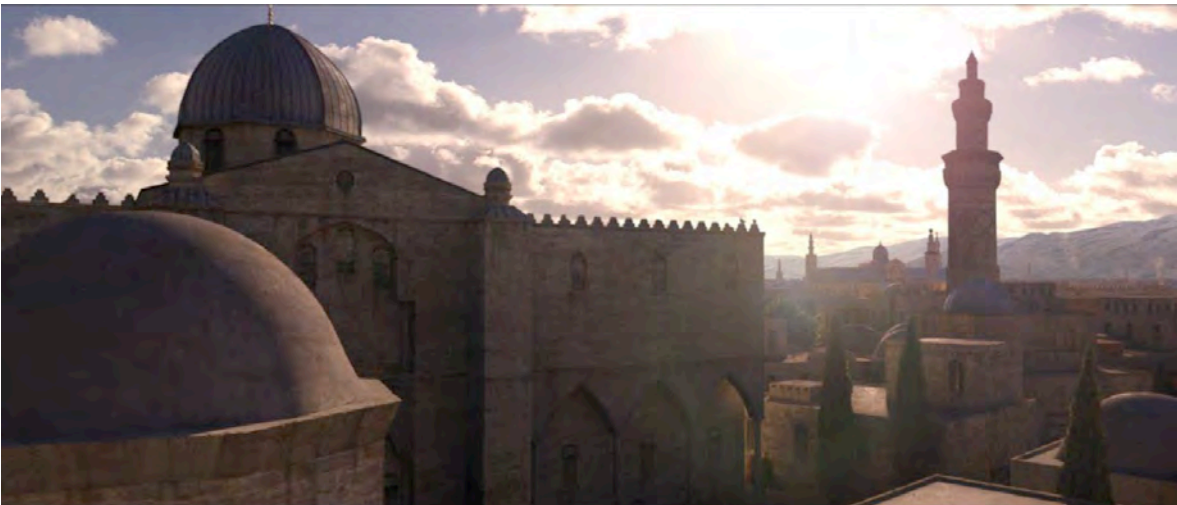
Another area in which Nuke excelled on *Arn* was in the integration of digital matte paintings and set extensions. “Nuke has a really powerful 3D workspace that supports the import of .obj files as well as projection mapping on to the geometry you import,” says Larserud. “Effectively, this means you can texture an object in Nuke's 3D environment. When you add 3D camera tracking data to this mix, you get dynamic new ways to composite digital matte paintings. Not having to enter the traditional CG 3D pipeline saves you lots of time and effort too.”

In practice, shots with real-world camera moves were tracked using Syntheyes, with the resulting 3D camera tracking data imported into Nuke. Filmgate also developed a Maya/Nuke data exchange format enabling set extension geometry, cameras and the associated metadata, to be moved between programmes.

“Our matte painter was able to import the geometry from Maya into Nuke and project his painting on to that geometry using a Nuke camera,” says Larsrud “We then mapped the realworld camera move and appropriate lens distortion characteristics on to the new scene. Because you have a 3D camera move you get correct skewing of camera, rather than having to apply a 2D warp. Ultimately, this means you can put whatever you want into a shot, and Nuke will automatically stick that element to the camera moves. Traditionally, you’d have done this sort of work in Maya, but doing it in Nuke is a much faster and more interactive experience.”

Larsrud says that as many of the shots were taken with a locked-off camera, Nuke was also used to add a new dynamic to the shot by creating crane up and a dolly in moves.





Development breakdown of 3D matte painting. 'Arn – The Kingdom at Road's End' © 2008 AB Svensk Filmindustri. Images courtesy of Filmgate.

Next up for Filmgate are a host of FX shots for Swedish live action feature *Mammoth*, and over 600 VFX shots on *Kenny Begins*, a film based on the Swedish cult sci-fi comedy TV series *Kenny Starfighter*. Around 200 shots will involve green screen comps with the rest a combination of lasers, fireballs, explosions and space vehicles.

"No digital visual effects company in Sweden ever started the way Filmgate has," says Averpil. "We've only really just begun, but we are already working on high profile projects, competing on an international level, and carving a reputation for delivering to the very highest standards. Nuke is a truly versatile application for visual effects work, a core part of our success to date and central our plans for the future."

www.filmgate.se