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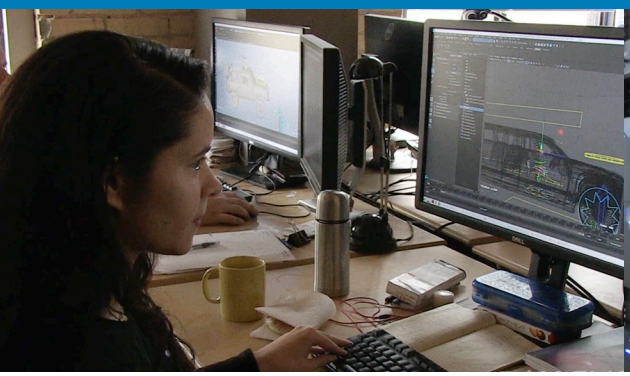
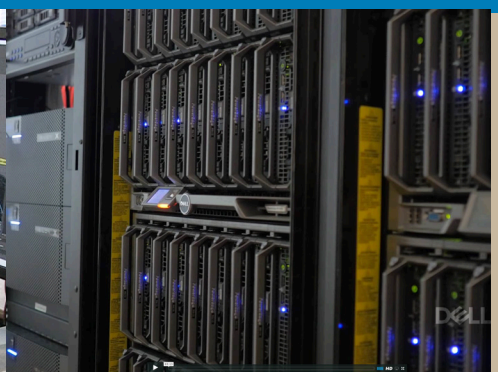
AGILE BUSINESS SERIES
SOHO VFX

ROI WORTHY OF A MAJOR MOTION PICTURE

Dell EMC Servers Boost Visual Effects Studio's Productivity by 250%





DELL EMC

Special serum and “Vita-Ray” treatment turned Steve Rogers into Super-Soldier Captain America; Peter Parker was bit by an irradiated spider, giving him his crime-stomping, web-slinging abilities; and Bruce Banner was subjected to a gamma ray bomb, morphing him into The Hulk.

For Soho VFX, their super power is rendering photorealistic visual effects. The Toronto-based studio has been creating computer-generated images for epic Hollywood films such as The Incredible Hulk, The Twilight Saga, Avengers: Age of Ultron, and The Revenant for over fifteen years. And, like the heroes they bring to life on screen, Soho VFX’s rendering power has an origin story.

“We first started as a very small company; it was just the four of us working out of a converted elevator shaft,” recalls co-founder Berj Bannayan with a smile. “At this stage, we were building all of our own computers. But this soon became impractical, and we realized we needed a partner that would help us to grow our technology and our hardware if we ever hoped to scale Soho VFX.”

Enter Dell EMC. Beginning with a Dell network switch, the team at Soho VFX quickly adopted Dell EMC storage and workstation hardware. But the most important Dell EMC hardware solution for Soho VFX is their servers, which enable photorealistic visual rendering twenty-four/seven. Allan Magled, co-founder Soho VFX, explains: “Most companies run their hardware servers at roughly 25% capacity. In order for us to produce photorealistic film sequences under studio deadlines, we require servers that allow us to work around the clock. Dell EMC servers enable us to do just that.”

From Start-Up to World-Renowned VFX House with Dell EMC

For Soho VFX, the transformation from building their own computers to contributing visual effects to major motion pictures didn't happen overnight, and neither did their partnership with Dell EMC.

In 2004, Soho VFX were looking to expand and take on larger projects while still trying to build, maintain, and manage software, drivers, and video cards completely in-house. They projected that, given their growth trajectory, this DIY approach would require a full-time team to support, representing an unacceptable cost. "We were a team of roughly sixteen when we realized we needed proper, compact servers," explains Todd Smith, Head of IT at Soho VFX. "Initially, we looked at Dell, as well as a couple other server hardware manufacturers. The first company we dealt with – who shall remain nameless – showed little interest in taking the time required to support a growing niche business. They presented us with options "A, B, and C," with no flexibility in between. Myself and the team at Soho VFX knew that, if we wanted to deliver the quality necessary to expand our client base, we would need a very specific hardware implementation."

At the End of the Day, it's About More Than Hardware

"The foundation of the Dell EMC/Soho VFX partnership is based on more than hardware: it's the relationship, and the fact that they're always open to talking to us. They make us feel important. They make us feel like we're this massive company that they care about quite a bit. And in fact, we're a smaller company, but they give us so much attention, and they care about everything. They're not just trying to sell us equipment. They're always looking for the best fit for us. I would say since 2004, when we began our relationship with them, we haven't had a single complaint. Today, there's nothing in this facility that we work on that's not Dell EMC equipment."

– Allan Magled, Co-Founder, Soho VFX

After meeting with a number of hardware manufacturers, it became clear that Dell EMC was the strategic choice. Rather than approach Soho VFX as just another enterprise, Dell understood that they had an opportunity to build a custom solution for an up-and-comer in an exciting niche.

Todd describes the process: "The first time we sat down with a Dell sales rep, we knew that we were dealing with a company that wanted to act as a trusted partner and consultant, rather than just a hardware provider. They understood that we are a small company with enterprise solution requirements, without the financial capabilities of a full enterprise; think a one-thousand-person enterprise versus a twenty-person start-up. They understood that and helped us work towards goals that we could meet. Today, if we needed a custom solution, such as a specific amount of RAM or video card configuration, Dell EMC is always able to deliver. This was not the case with other companies we talked to."

Dell EMC Servers Never Quit (Literally)

The customization, personalization, and attention to detail provided by Dell EMC is what enables Soho VFX to render 24/7, often for months at a time.

For a visual effects studio, the ability to render multiple workloads as fast as possible is a – if not the – key determinant in visual quality. There are a number of reasons for this:

- Rendering involves complex computation and calculations that can take hours, and sometimes days, to complete. On big-budget projects, a single render may be reviewed by a hundred people or more and must be completed according to strict deadlines. For an effects studio, faster rendering means more iterations. More iterations create further opportunities to polish work and catch mistakes, ensuring visual effects are truly photorealistic.
- Faster rendering creates more complex, life-like effects, such as ray tracing, a compute-intense lighting effect that is responsible for photoreal visuals. Similarly, complex geometric shapes can be rendered under demanding time constraints. In the past, spheres were used instead and workarounds were required to achieve realism.

When asked to talk about running their render farm at 25%, as most IT shops do, Todd quickly confirmed that it would be impossible. "For a visual effects studio like ours, where render farm speed and up-time is critical for meeting client expectations, running at 25% would equate to a 75% reduction in productivity. If we had to operate like that, I'm not sure how we would stay in business."

Photorealism: 50% Art, 50% Dell EMC

With each passing day, the need to produce life-like, photoreal visuals in movies is increasing. More than ever, the success of studios like Soho VFX in producing photorealistic imagery is determined by computers.

As Berj explains, "there's an artistic component to photorealism and there's a technological component to it. Artists need to be able to do their tasks to paint textures, to build models, to adjust the colour of things, to integrate things into the finished frames; but there is also a technological side. If the artists don't have the computing power that they need at their disposal, they'll either not be able to produce images of the quality required or they won't be able to produce them in the time that is available to them. So basically, Dell is 50% of our equation. It's hard to overstate how heavily we rely on them."

Soho VFX Upgrades Servers for a 250% Production Increase Win

Recently, Soho VFX upgraded their servers to the latest Dell EMC hardware. The result? Double the rendering capacity in just two-thirds the physical space of their previous servers; or, a 250% increase in production.

The effect this will have on Soho VFX's ability to produce photorealistic imagery is as hard to quantify as it is to overstate. "Our latest server upgrade allows us to create more and more sophisticated visual effects," Berj explains. "It allows us to take more technology and bring it to bear on the finished product, which is what our clients are ultimately interested in: the quality of what we produce, the finished images that we produce for them, and the time and the cost effectiveness of our work."

Smaller Servers, Smaller TCO

Fewer servers that require less space also brings the added benefit of lower total cost of ownership:

- In Toronto, as in most places, real estate is at a premium. Getting more compute power without having to rent more space represents significant cost savings.
- Although the new servers run hotter when compared one-to-one with the old servers, the reduced hardware volume means less overall environmental control costs.
- The most significant cost savings come from reduced licensing fees. Every server comes saddled with software that must be licensed. Because each server only requires a single license – regardless of server power and capabilities – running fewer servers results in fewer licenses.

RENDERING AND RENDER FARMS, EXPLAINED

Rendering involves taking the files that the animators – or any of the artists or compositors – have created on their workstation, and putting them through the process of computation that is required to produce the sequence of frames that will be in the finished film. To manage the workload produced by the team of one-hundred at Soho VFX, rendering takes hundreds of computers in a server room computing in parallel to produce completed frames that are ready to be delivered to clients. This is called a render farm.

The team at Soho VFX estimate that, when utilizing 100% of their rendering farm, they save 30% when compared to their old server infrastructure.

Scaling Up with Dell EMC

Every great superhero origin story gets a sequel, and Soho VFX is no different. "We're now at a point where we're going to start to scale up again," Allan explains. "The more powerful, more compact Dell EMC servers allow us to increase the size of our render farm, further increasing our compute power. The ability to render more, faster means we are hiring more artists and taking on bigger projects. And having such a strong relationship with Dell EMC makes this transition a lot easier for us. We know that we can rely on their hardware, as well as their team, to provide the tailor-made solutions we need to continue to drive innovation within the VFX industry."