

## Remote Rendering Service (Commercial Pilot)



“The BT Frontline Technologies render farm provided an additional support in terms of rendering speed and reliability, so as to meet our tight deadline. We were confident that our rendering would be continuous as safety measures, such as UPS, are part of the render infrastructure. Finally, the technical people of BT Frontline Technologies were also accommodating and could easily be reached in case we needed some more services.”

**Ryan Gallinera**  
Rendering Supervisor  
LNS

### Lights and Shadows Pte Ltd (LNS)

A Singapore-based company that plays with fresh distinctive design, lively animation, realistic visualisation and innovative presentation solutions for the broadcast, advertising and architectural development industries.

### Key Challenge Faced

LNS was engaged for an architectural visualisation project. The tight project deadlines and requirement for significant rendering presented a challenge. Having heard of its Remote Rendering Service, LNS approached MC3, now incorporated into Frontline Technologies Pte Ltd (BT Frontline Technologies), for assistance.

### Business Challenges

The key business challenge facing LNS is to minimise capital expenditure and at the same time, have a scalable rendering infrastructure to cope with periodic rendering requirements for major projects. This infrastructure must also be rugged and reliable, and have the capacity to meet LNS's peak render requirements, both in terms of the number of CPUs available, as well as the memory and storage prerequisites. Lastly, the rendering service must meet LNS's quality and performance standards.

### BT Frontline Technologies's Remote Rendering Service

Rendering is an essential part of the lifecycle in 3D computer animation development. It is the process where an artist's view of a 3D model is converted into a realistic image, which includes the application of textures to surfaces and lighting effects that simulate shadows, reflection and refraction. Rendering is a highly compute-intensive process that requires the know-how to set up and to manage the specialised software and workflows as well as the render farms.

BT Frontline Technologies's Remote Rendering Service addresses this by providing users with easy access to its rendering facility, enabling rendering to be done remotely. It eliminates the excessive costs involved in the building of a high-quality infrastructure, its maintenance, as well as the technology obsolescence issue that is inherent in owning and managing the infrastructure. This enables companies in the animation industry to focus on their core competency of content creation rather than the management of a large IT infrastructure.

BT Frontline Technologies's state-of-the-art Remote Render infrastructure enables animation artists to reduce rendering time substantially. The ability to render a scene on a larger compute resource will significantly reduce turnaround time needed for the job. Feedback can then be obtained faster, allowing more time for the improvement of animation quality within the project deadline.

# Case Study

## Lights and Shadows Pte Ltd



“We’re impressed with the renderfarm’s performance. Image quality is consistent with our in-house render and we have no problems editing them together. The capability of checking our render status online is an added advantage as we could check the results anytime and intervene if need be.”

**Chua Teng Yeow**  
Technical Director  
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### Render Infrastructure

The render infrastructure provided by BT Frontline Technologies to LNS consisted of 16 SunFire V20z servers, each with dual 64-bit AMD Opteron CPUs, 4GB of RAM and a 73GB SCSI disk. Internet connectivity consisted of a 512 Kbps leased line (burstable up to 1.5 Mbps). Services supported over this link include FTP for file transfer and VNC for remote terminal support.

More CPUs are also available if a need arises along with up to 6 TB of storage. This entire rendering infrastructure is hosted at BT Frontline Technologies’s data centre partner (iAspire), which is equipped with Uninterruptible Power Supply (UPS), Backup Generators and Precision Air-Conditioning.

### Key Results

LNS’s architectural visualisation project consisted of a total of over 40,000 frames that needed to be rendered. Of these, about 6000 frames were rendered with BT Frontline Technologies’s Remote Rendering Service, while the rest were rendered in-house at LNS.

Each file submitted for render had the following typical characteristics:

Size of Texture Map files:	475 MB
Number of Light Sources:	40 ~ 50
Number of Cameras:	20 ~ 50
Number of Polygons:	400,000 ~ 1,000,000

Of the frames submitted for rendering, the average render time per frame was 16 minutes. While the frame with the longest render took 40 minutes, the shortest render took just 6 minutes.

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The following key results were achieved in this commercial pilot project:

- The quality of the rendered images were similar to those obtained when rendered in-house
- The performance of BT Frontline Technologies’s render servers was two times faster than LNS’s in-house render nodes
- Remote checking of rendering status is possible.

### Summary

Industry

- Computer Animation/Architectural Visualisation

Key Business Challenges

- Need to minimise capital expenditure
- A rapidly scalable rendering infrastructure is required to meet peak/periodic capacity requirements

Key results

- Quality of rendered images is similar to those rendered in-house
- Performance is twice as fast as in-house render nodes
- Remote access provided good control of renders

Product and Services

- Autodesk 3ds Max 7
- Chaos Group V-Ray
- SunFire V20z