Remote Access to Vicon Motion Capture Training via Cloud Virtual Machines

Carlos Vilchis, Vicon Motion Systems

Eric Pinkel, CenterGrid

Amy August, Vicon Motion Systems

ABSTRACT

This paper presents a case study exploring remote motion capture (mocap) training using Vicon technology hosted via cloud-based virtual machines. Designed to overcome barriers to mocap education in Latin America, this system was implemented through a partnership with CenterGrid and Vicon Motion Systems. The approach enabled students to access Vicon's tools remotely without relying on trial licenses. Results showed higher engagement, flexibility, and satisfaction among participants, offering a scalable model for global VFX education.

CCS CONCEPTS

• Applied computing → Interactive learning environments;

• Human-centered computing → Ubiquitous and mobile computing systems and tools.

KEYWORDS

virtual production, motion capture, cloud computing, remote education, Vicon

1 INTRODUCTION

Motion capture training typically requires access to high-end hardware and licensed software. For many students—particularly in Latin America—this limits participation due to lack of local facilities or restricted access to commercial licenses. Vicon Motion Systems provides world-leading mocap solutions, but discourages the use of trial licenses, as these can be misused in production contexts. This paper explores an alternative approach using virtual machines in the cloud, enabling full access to Vicon's Shogun tools remotely.

2 SYSTEM DESIGN

The project was implemented through a collaboration with CenterGrid, a provider of cloud-based educational infrastructure. Vicon Shogun POST and license management systems were hosted in the cloud, eliminating the need for local installations. Students accessed these systems from Latin America using Parsec to control high-performance virtual desktops.

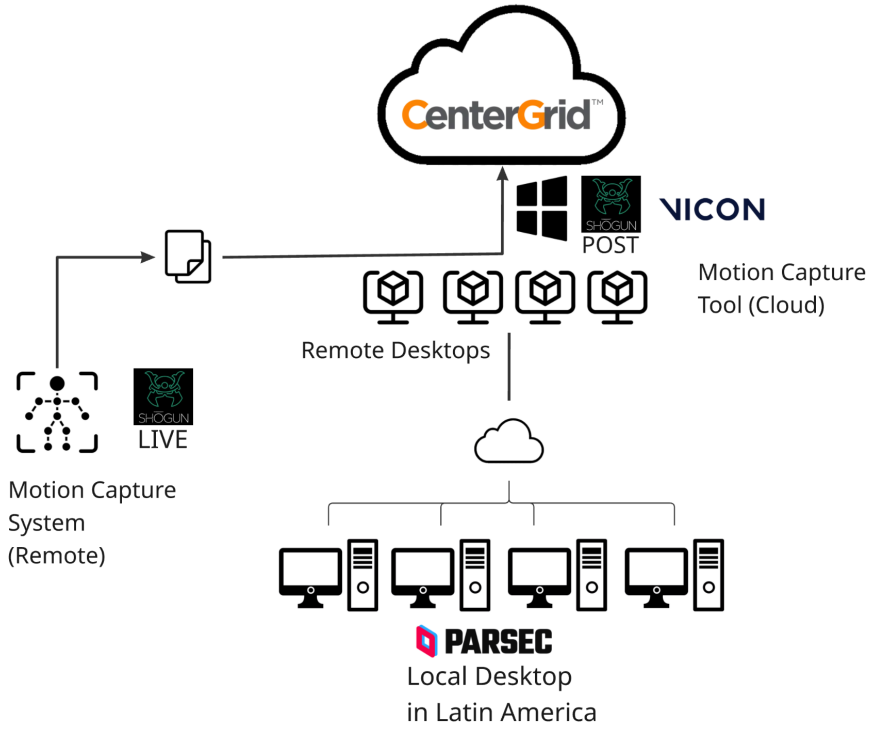

Figure 1: Cloud infrastructure diagram, remote desktop access

2. METHODOLOGY AND EXPERIMENTAL DESIGN

To ensure this initiative addressed real regional needs, we began by designing a **targeted outreach strategy** aimed at industry professionals and educators in Latin America. Using online surveys distributed through professional networks, virtual production forums, and social media platforms, we collected quantitative and qualitative data on the interest and demand for Vicon motion capture training. Over 150 responses were gathered through Google Forms, revealing a **significant appetite for professional upskilling**, especially in regions lacking physical access to Vicon technology.

Candidates were screened based on two primary criteria: either prior exposure to Vicon systems or a clearly articulated professional interest in learning motion capture workflows to enhance their careers in fields such as animation, VFX, biomechanics, or game development. From this applicant pool, we selected **two cohorts of 15 professionals** for a structured remote training program.

To provide the required computing resources, **CenterGrid** provisioned a series of **cloud-based virtual machines (VMs)** running **Windows 11**, tailored specifically for Vicon's technical requirements. Each VM was equipped with high-performance **AMD EPYC Processors** and **NVIDIA RTX A6000 GPUs**, ensuring compatibility with Vicon Shogun's real-time processing demands. An internal benchmarking phase tested four different machine configurations, evaluating system responsiveness, GPU performance, and software stability. The AMD/RTX configuration consistently outperformed alternatives, delivering a seamless experience under typical training loads.

Latency testing was conducted using **Parsec Enterprise**, a low-latency remote desktop tool, to assess the real-world viability of cloud access from Latin American countries. Users connected to remote workstations located in North America and reported minimal delay, with performance metrics comparable to local systems. These results confirmed that the infrastructure was adequate for real-time motion capture workflows, even from geographically distant locations.

Participants underwent a **20-hour instructor-led training module** covering the fundamentals of Vicon Shogun, focusing on tools relevant to **entertainment and animation professionals**. The training included exercises in skeleton calibration, capture workflows, data cleaning, labeling, and exporting animation curves. All data sets were captured in advance using **Vicon systems based in the United States and Mexico**, enabling students to engage with real motion capture content without requiring on-premise installations or trial licenses.

A key advantage of this methodology was the ability to **access fully licensed Vicon software remotely**, eliminating common barriers such as trial limitations, local license server restrictions, and the high cost of hardware deployment. This approach democratized access to industry-grade tools and provided an opportunity for **smaller and underserved communities across Latin America** to develop competitive skills without significant infrastructure investment.

The methodology demonstrated that remote motion capture education, when powered by well-configured cloud systems and structured pedagogy, can be not only viable but highly effective in expanding access, inclusion, and workforce development in global markets.

4 RESULTS

Two cohorts, totaling eight students, completed the training. Satisfaction and engagement were evaluated through surveys, revealing greater flexibility, reduced commute time, and reliable system performance. Compared to traditional in-person training, students expressed a preference for remote access due to increased accessibility and independence.

5 CONCLUSION

This pilot program demonstrates a scalable and inclusive model for motion capture training. Cloud-hosted access to Vicon tools removes geographical and licensing barriers, expanding educational opportunities to regions previously excluded from high-end production technology.

REFERENCES

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[2] CenterGrid. https://www.centergrid.com