

Microsoft Windows Compute Cluster Scores Big Points with The Great Northern Way Campus

Overview

Country: Canada

Industry: Education

Customer Profile

Vancouver-based Great Northern Way Campus (GNWC) is a digital media technology centre committed to the innovation, development and commercialization of digital media products in Canada.

Business Situation

The facility, home to Canada's first Masters Degree in Digital Media, needed a high performance computing solution to help improve rendering performance and streamline server management.

Solution

Working with system integrator Seven Group, GNWC deployed Windows Compute Cluster Server 2003 to help meet the data-intensive digital needs of students, engineers and faculty.

Benefits

- Enhanced Performance
- Greater Manageability
- Reliable and Scalable

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Mark Lange, director of technology, Masters of Digital Media Program at Great Northern Way Campus

Vancouver-based Great Northern Way Campus (GNWC) is a digital media technology centre committed to development and commercialization of digital media products in Canada. The facility, home to Canada's first Masters Degree in Digital Media, needed a high performance computing (HPC) platform to help improve animation rendering performance, streamline server management and deliver tighter integration with its Windows® operating system-based desktop and workstation environment. Working with system integrator Seven Group, GNWC deployed Windows Compute Cluster Server 2003 (CCS). Leveraging the power of 64-bit parallel computing, the Windows CCS-based solution delivers scalability and performance for digital content rendering, while providing ease of deployment, management and job scheduling through tight integration with Active Directory® directory service for a more flexible and cost-effective HP.

Situation

Over the past several years British Columbia has emerged as a hotbed of video game development. To help cultivate talent in the region, the Canadian government worked with industry leaders such as Electronic Arts and Disney Interactive to create Canada's first Masters of Digital Media (MDM) Program.

The Program is housed at the Great Northern Way Campus (GNWC) in Vancouver – a consortium of four of the province's leading academic institutions: the University of British Columbia (UBC); Simon Fraser University (SFU); Emily Carr Institute of Art and Design (ECIAD); and the British Columbia Institute of Technology (BCIT). MDM students receive degrees bearing the seals of all four of these internationally acclaimed partners.

During the two-year program, students work in teams to render high-definition animations and art for three projects funded by industry. The challenge was that traditional workstations could not deliver the computing power needed to create state-of-the-art animations. GNWC required a high performance computing (HPC) solution that could handle the compute-intensive digital needs of students and faculty in the MDM program.

"During the design of the technology environment, we consulted with our industry partners because we wanted to replicate what was being used in the real world. We sat down with the teachers and directors of the facility to understand what the students would need," says Anthony Brown, Managing Director, Seven Group. "Great Northern Way faculty wanted to give students the tools and the infrastructure they needed to do their best creative work. Although some of those tools exist in Linux-based render farms, we felt that they are more unwieldy, can take longer to learn and are not easy to manage.

Windows, in our experience, is highly functional without compromising ease of use. The faculty wanted their students to get good jobs after graduation, and they wanted us to balance art with technology."

"We wanted a system we could quickly deploy, remotely administer and easily maintain," says Mark Lange, Director of Technology, Masters of Digital Media Program at Great Northern Way Campus. "The system also needed to work with the Microsoft software we use every day, and reflect the tools our students may use in this industry when they join the workforce."

Great Northern Way Campus required a solution that would help streamline server management and deliver tighter integration with its Windows® operating system-based desktop and workstation environment.

Solution

MDM faculty initially considered Red Hat Enterprise Linux and SUSE Linux Enterprise from Novell, but decided that a Windows-based solution offered the most creative possibilities.

"We needed to know the software would work right out of the box," says Lange. "We were thrilled to learn that Microsoft offered a version of Windows Server® 2003 specifically for render farm use. Seven Group knew our requirements and guided us to the right choice."

Working with Microsoft technology partner System Integrator Seven Group, a North American leader in building digital studios and HPC infrastructure, GNWC deployed Windows Compute Cluster Server 2003 (CCS) in a render farm. The Microsoft compute cluster is based on the underlying technology of Windows Server 2003 Compute Cluster Edition operating system, with the Microsoft Compute Cluster Pack - specialized services,

libraries and tools that enable comprehensive deployment, configuration and management of an HPC compute cluster.

“The compute cluster itself only took days to deploy,” says Brown. “In our experience, the Windows cluster seemed less complicated to deploy than a Linux cluster because we did not need to deal with patch and driver issues, the customization of the operating system or specific tools for deployment and management. With Windows CCS, everything was built in.”

As a render farm solution, Windows CCS combines the power of 64-bit processors, Microsoft Visual Studio® development system and Microsoft Active Directory® directory service and the Windows operating system to help deliver a cost-effective HPC solution.

“With Windows Compute Cluster Server 2003, supercomputers need no longer to cost hundreds of thousands of dollars to acquire and deploy. In fact, the cost of acquiring the hardware can be comparable with that of a new desktop environment,” says Lange.

Benefits

GNWC is leveraging the familiar Windows-based environment in its compute cluster environment to help handle even the most challenging animation and video rendering, with the ease of job scheduling and processing available to all students and faculty.

“We needed server technology that is powerful, easy-to-use and could be remotely administered. Using Windows for our HPC cluster helped shorten deployment times and provides a better integrated experience for our students and faculty,” says Lange.

Enhanced Performance

With features such as integrated job scheduling and enhanced cluster management, Windows CCS provides GNWC with the HPC capabilities to process data at the speeds it requires.

“The Microsoft-based solution helps GNWC run advanced and compute-intensive rendering tasks with substantial 3D animation components,” says Lange. “With Windows CCS, our 3D rendering and animation tasks can be completed faster.”

Greater Manageability

The new environment streamlines render farm management, compute node deployment and delivers tighter integration with the school's Windows-based server and desktop environments. Integration with Active Directory enables role-based security for administration and users, and the use of Microsoft Management Console provides a familiar administrative and scheduling interface.

“With Active Directory, IT staff can remotely manage all the resources in the network from a single console,” says Lange. “When students leave or join the school, IT staff can easily create user accounts, assign application authorizations, configure cluster access, and handle other administrative tasks.”

Reliable and Scalable

Windows CCS also helps students accelerate time to insight by providing a reliable, HPC platform that is simple to use and deploy, and integrates with existing infrastructure and tools. Designed to be scalable, the Windows-based cluster will support the future growth.

“Since the cluster has gone live, we have seen at least five projects completed and not one processor has gone down,” says Lange. “Not only does GNWC now have a reliable

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and more uniform IT infrastructure, there doesn't seem to be a limit to its scalability."

Microsoft Server Product Portfolio

For more information about the Microsoft server product portfolio, go to: www.microsoft.com/servers/default.aspx

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Software & Services

- Windows Compute Cluster Server 2003
- Windows Server 2003

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- Seven Group Inc.

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