



New Zealand Supercomputing Centre

By implementing PlateSpin® Orchestrate from Novell, the New Zealand Supercomputing Centre was able to accelerate the provisioning of grid resources to customers while reducing the internal administrative workload. The PlateSpin workload management solution also enabled the organisation to create new commercial offerings, including virtual storage and “On-Demand” application services.

Overview

The New Zealand Supercomputing Centre (NZSC) is operated by Gen-i, a division of Telecom New Zealand Ltd with some 3,200 employees and annual revenues exceeding NZD\$1.5B. With a 1,008-processor cluster in-house, and the ability to scale on-demand to 3,500 CPUs, NZSC is one of the world's largest commercial providers of supercomputing facilities to industry and academia.

Challenge

NZSC customers span a broad range of sectors, including biotechnology, education, manufacturing, oil and gas, digital media, electronic design automation and geosciences. Whether they are processing vast quantities of seismic data to find new oilfields or rendering special effects for the latest blockbuster movie, these organisations rely on NZSC to rapidly provision computing resources that offer high security, availability and performance.

Time-to-results is a crucial metric for all NZSC customers; without an automated grid provisioning and management system, the organisation was struggling to meet rising levels of demand efficiently. As the number and scope of service offerings grew, several issues emerged: delays in meeting new customer requirements,

sub-optimal usage of the available computing resources, and significant operational complexity and expense.

The NZSC management team at Gen-i realised that the existing manual provisioning and administration methodologies would not scale effectively. The team looked for a provisioning and orchestration solution that would enable NZSC to offer complete flexibility within a commercially viable operating model.

Solution

The NZSC management team reviewed a range of solutions and selected PlateSpin Orchestrate from Novell. The PlateSpin workload management solution was the only one that met the NZSC team's criteria across profile-based provisioning, security, scalability and cost of ownership.

“We wanted to become the first provider in the Asia Pacific region to offer not just processing, but also storage and application services in an ‘on-demand’ grid-based model,” said Steve Osborn, Service Line Manager for Open Source Solutions at Gen-i. “PlateSpin Orchestrate was the only solution capable of supporting all of our many different service offerings. Another major factor in our decision was the depth of support

NZSC at a glance:

One of the world's largest commercially available supercomputing clusters

■ Industry:

Computer services

■ Location:

New Zealand

■ Products and Services:

PlateSpin Orchestrate

■ Results:

- Increased speed of provisioning by a factor of four
- Enabled the introduction of new service offerings
- Reduced administrative workload and increased efficiency

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Steve Osborn

*Service Line Manager
for Open Source Solutions
Gen-i*



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Gen-i*

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available from Novell, and their commitment to building a licensing model that would work for our business.”

When a customer submits a request for new or additional capacity on the NZSC grid, the PlateSpin workload management solution checks that the appropriate resources are available, finds the appropriate virtual server image in the library (or builds a new image if required), then works with other modules to provision the new environment. In the past, these were manual processes which took significantly longer to complete and tied up skilled IT personnel in repetitive, low-level administration.

“Before PlateSpin Orchestrate, re-assigning computing resources was a relatively slow and difficult task,” said Osborn. “It was also difficult to manage security, and we were unable to achieve the granularity we wanted in providing secure, ring-fenced environments for customers. We are now able to immediately see what capacity is available on the grid and can respond very rapidly to new customer requirements.”

The Novell® solution has enabled NZSC to extend its offering beyond simple time-sharing on CPUs to encompass profile-based requirements for virtual storage and applications. The organisation uses PlateSpin Orchestrate to provide three-tier storage (online disk, nearline disk, tape) to users of the grid, and allows partners to provide their own application services to third parties.

Results

By implementing PlateSpin Orchestrate from Novell, NZSC successfully migrated from a

services model based on manual administration to a fully automated grid provisioning and management system. The Novell solution has significantly increased the speed of response to customer requirements, while simplifying resource management and cutting administrative workload.

“Our new provisioning engine, powered by PlateSpin Orchestrate, is able to create new user environments in around 15 minutes—an improvement of 300 to 400 percent,” said Osborn. “We can now deal with multiple provisioning requests in parallel, which makes us more responsive to changing customer priorities, and we can also more precisely allocate resources to each customer.”

The ability to allocate exactly the right resources to each customer environment means that the grid at NZSC is more effectively utilised, ultimately translating into lower power consumption per unit of useful computing work. This also allows NZSC to “sweat its assets” more effectively, achieving higher returns on its investment in hardware.

“PlateSpin Orchestrate has helped us to create a whole new commercial model, based on the ability to create entirely self-contained computing environments for customers rapidly and easily,” said Osborn. “What’s more, the solution frees up our IT staff from routine administration, so our operational costs are declining even as the amount of revenue we can generate is rising.”



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