

TOMAGO MOVES SAP HANA TO PRIVATE CLOUD

Optimizing the cloud for business-critical workloads

Once an aluminium smelting facility starts up, production cannot stop. That's because cleaning out production pots where the liquid metal has solidified brings significant costs.

At the Tomago Aluminium Company Pty. Limited plant in Australia, production has continued 24 hours a day since 1983. Everything at the plant supports the processing of alumina into metal using 840 smelting pots organized into three enormous production lines.

The Tomago IT department plays a critical role in keeping the pot lines in production. "For example, we have a large warehouse of spare parts for critical plant infrastructure, and we depend on our SAP ERP platform to locate those parts quickly if something breaks," says Dennis Moncrieff, IT Superintendent at Tomago. "We need to get production back online as soon as possible."

Several years ago, the IT team was approached by a third-party provider, which offered Tomago the opportunity to upgrade its business-essential SAP® software to the SAP HANA® platform — if Tomago also migrated to a public cloud provider.



However, not long after Tomago completed its migration, issues began to surface. "The cloud was a true black box. We had no insights into it at all," says Moncrieff. "It was challenging to make decisions because we couldn't see how much capacity was being used by the environment. All we had was upor-down monitoring."

"Tomago knew that the service was running, but they didn't know much more than that," says Talor Holloway, Chief Technical Officer of IBM Business Partner, Advent One. "How could they spin up a sandbox environment or how would they know that backups were occurring where's the proof?"



"Having SAP, IBM Power Systems and IBM flash storage solutions onsite is better for our business. It gives me confidence that we have a very stable and resilient system."

> Dennis Moncrieff IT Superintendent Tomago Aluminium

Working with the public cloud also presented obstacles when it came to development initiatives. "The provider wanted reliability and uptime for the current solution, and it became difficult for us to do anything innovative," says Moncrieff. "We couldn't do development work outside of business hours, so that stymied progress."

When the contract with the public cloud provider was scheduled to expire in October 2020, Moncrieff saw another opportunity emerge. Prior to migrating to the public cloud, Tomago operated an earlier SAP ERP version on-premises, hosted on an earlier-generation IBM® Power® Systems infrastructure. The fact that the Power Systems hardware was not SAP-certified at the time influenced the decision to migrate to an SAP-certified public cloud solution.

However, when Moncrieff learned that IBM Power Systems were now certified for SAP HANA, a better option presented itself. "The public cloud makes sense if you have many locations and many internet connections," Moncrieff says. "But I've got one cable that's susceptible to the inevitable backhoe. If we lose that cable, we lose access to the cloud."

Prior to 2015, when Tomago operated its on-premises SAP platform on Power Systems servers, Moncrieff appreciated the control and visibility he had. Now, he was ready to take advantage of the newest generation of IBM solutions available in a private cloud environment with the performance and flexibility his public cloud solution lacked.

"Once you become aware that you are restricted," Moncrieff says, "you don't want to be restricted anymore."



Performance improvement with IBM Power Systems platform:

75% compared to public cloud platform

Installation of IBM Power Systems infrastructure:

6 days instead of weeks required for typical installation

> Improved finance department efficiency with:



Rapid deployment and close teamwork

Based on Advent One's recommendations and its previous successful experience with running IBM systems onsite, Tomago decided to leave its public cloud provider and operate its suite of SAP solutions on a private cloud model, based on an integrated infrastructure of IBM systems and Red Hat solutions.

In addition to using its SAP ERP platform for warehouse management of spare parts, Tomago relies on SAP for other business-essential tasks such as payroll, procurement, HR, finance and other functions. Any loss or delay of data as the result of outages would have significant business impact, so Tomago's IT department worked closely with Advent One and IBM to manage a smooth transition to its own private cloud, designed to support SAP solutions including:

- » SAP Business Warehouse powered by SAP HANA, a data warehouse to consolidate data, harmonize master data and provide flexible reporting scenarios.
- » SAP ECC powered by SAP HANA, an ERP Central Component that operates on the SAP HANA database and simplifies business tasks such as logistics, finance, sales and warehousing.
- » SAP Fiori®, a user experience platform that equips designers and developers with agile tools and guidelines to rapidly create apps.
 SAP Fiori enabled the quick development of user interfaces for mobile devices to provide users access to SAP tools throughout the sprawling Tomago plant facility.

Working together under an extremely tight deadline to complete the transformation, IBM Lab Services and Advent One deployed the new IBM Power Systems, storage and backup infrastructure — including all operating system installation and configuration — in six days. "In less than a week after hardware delivery," says Holloway, "all systems were handed over to the SAP team."

"We knew we had to deliver and turn everything over as fast as possible," says Moncrieff. "Kudos to everyone on the Advent One and IBM team."

The private cloud infrastructure included IBM Power Systems H924 and IBM PowerVM® server virtualization, designed to consolidate multiple workloads on fewer systems, increase server utilization and provide end-to-end security.



"Management has seen considerable improvements in processing times, so they are very happy. Cost consistency is also a big improvement so we can deliver better for the business at no extra cost."

> Dennis Moncrieff IT Superintendent Tomago Aluminium

IBM flash storage solutions, IBM hybrid flash storage, IBM Storage Area Networks and IBM Spectrum® Storage software provided a complete storage solution with AI-infused capability that improves the economics of storage on-premises and for hybrid cloud. IBM FlashSystem® and all flash and hybrid flash storage solutions are built with IBM Spectrum Virtualize technology for software-defined replication or migration.

Based on its experience with implementing SAP-certified Red Hat solutions, Advent One recommended that Tomago consolidate its multiple operating systems onto Red Hat platforms. "Having multiple operating systems was not ideal and we didn't want siloed information and critical resources dependent on one person," says Moncrieff. "Red Hat gives us technical and development knowledge across the operating system and prepares us for IoT deployment when the time comes."

Consolidating operating systems with Red Hat® Enterprise Linux® provided consistency and resiliency, and it enabled Tomago to take advantage of operational synergies between SAP software and IBM Power Systems platforms.

All of Tomago's systems report to the Red Hat Insights [external link] software as a service (SaaS) solution. "With Insights, we're able to identify security vulnerabilities or configuration issues and benchmark them against security baselines," says Holloway. "They have a level of comfort in that the correct security settings are switched on."

One of the keys to standing up the infrastructure so quickly was using the Red Hat Ansible® Automation Platform [external link] to automate the entire deployment. "Once the hardware was racked up and turned on, everything else was automated," says Holloway. "We got them ready over a month early. Tomago was able to replicate the SAP HANA system from the public cloud to IBM Power Systems very quickly and painlessly, and then flip the switch. The key point here is just how easy it is to move."



Harnessing the power of essential applications

By investing in innovation, Tomago can now harness the full power of its core SAP applications and make faster and better decisions through more actionable insights. With its IBM private cloud infrastructure on-premises, Tomago experienced significant performance improvements when compared to the previous public cloud solution. "Tomago saw a 75% performance increase using the IBM Power Systems platform when compared to the previous cloud platform," says Holloway. "Tomago's CFO also said that this was one of the most successful projects they ever had."

For another improvement example, an end-of-month financial report that used to require 60 seconds to process on x86-based public cloud servers can now be completed in 20 seconds, which is 66% faster.

Tomago's new hybrid cloud system also runs more efficiently. "It's far better than what they had before," says Holloway. "They effectively used 32 CPUs on a public cloud, and now they now have eight CPUs on IBM Power Systems. Even after making that reduction, it's still 75% faster."

Compared to running on the public cloud, Tomago benefits from the superior cost control and pricing consistency of its own hybrid cloud system. The company can easily scale up capacity through the virtualization built into IBM Power Systems servers.



Hardware virtualization also provides an expanded environment for developers and designers to rapidly create, test and scale up new apps. "Whether we turn on additional modules or stand up sandboxing environments for development, we now have the agility to look at what's new," says Moncrieff. "The consistency of cost management is a big improvement, and we can deliver better for the business with no extra costs."





Visibility into system performance also promotes better service for system users, optimizes insights and displays the actual impacts of decisions in real time. "We have a dashboard where we can actually see the behavior of the system in terms of database size and memory usage," Moncrieff says. "Having these insights enables us to have conversations with colleagues about optimizing processes and transforming them."

With the cost of electricity required for smelting aluminium in flux and the unpredictability of global metal prices, Tomago competes in a complex and constantly changing industry. But in response to these challenges, Moncrieff believes that his IT department is wellpositioned to support the company in the future. "Having SAP, IBM Power Systems and IBM Storage onsite is a better solution for our business," says Moncrieff. "It gives me confidence that we have a very stable and resilient system. We're ready and prepared to deal with anything that comes up."

IBM

As the cornerstone of your enterprise architecture, IBM infrastructure combines the hardware and software that drives digital transformation. Offering modern infrastructure for application modernisation, IBM infrastructure helps customer achieve a hybrid cloud strategy model.



Advent One is a multi-disciplinary Hybrid and Multi Cloud Solution Provider. They help customers stay ahead of security threats, optimise their spend in the cloud, manage legacy systems while transitioning to cloud, manage growing data and access skilled resources. With deep expertise in automation, Advent One leverage technology to accelerate outcomes for their customers so they can maximise their investment quickly and effectively.

MELBOURNE

HWT Tower, Level 14, 40 City Road Southbank VIC 3006

S Y D N E Y Suite 3, Level 1 201 Miller Street North Sydney 2060

ADELAIDE 147 Pirie Street Adelaide SA 5000

www.adventone.com | +61 3 9626 5900