



Optimizing the cloud for business-critical workloads

Tomago moves SAP HANA to private cloud

by Michael Tucker
10-minute read

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 up-or-down monitoring.”

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

66%

faster end-of-month report processing

“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?”

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.”

“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 Company Pty. Limited

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.”

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.

“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 Company Pty. Limited

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.



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. The storage units included [IBM FlashSystem® 5100](#) and IBM

[FlashSystem 5010](#) solutions. Both units 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®](#) (external link) 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 well-positioned 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."



About Tomago Aluminium Company Pty. Limited

Located in New South Wales, Australia, [Tomago](#) (external link) has operated 24 hours a day since starting production in 1983. Staffed by 1,100 employees and contractors, the smelter produces 580,000 tons of aluminium annually and contributes AUD 1.5 billion to the Australian economy every year. Tomago is an independently managed joint venture owned by Rio Tinto Alcan, CSR and Hydro Aluminium.



About Advent One

Based in Melbourne, Australia, IBM Business Partner [Advent One](#) (external link) has provided IT consulting and managed services for 20 years. The firm specializes in cloud, cybersecurity, data center and anti-fraud and anti-money laundering technologies. Advent One also offers deep capabilities in enterprise storage, virtualization, UNIX, IBM-i, Linux and Microsoft Windows to enable cloud migration and IT transformation.

Solution components

- IBM® flash storage solutions
- IBM FlashSystem® 5010
- IBM FlashSystem 5100
- IBM hybrid flash storage
- IBM Lab Services Power® Systems
- IBM Power Systems
- IBM Power Systems H924
- IBM PowerVM®
- IBM Services® for SAP Solutions
- IBM Spectrum® Storage
- IBM Spectrum Virtualize
- IBM Storage Area Networks
- Red Hat® Ansible® Automation Platform (external link)
- Red Hat Enterprise Linux® (external link)
- Red Hat Insights (external link)
- SAP® Business Warehouse powered by SAP HANA®
- SAP ECC powered by SAP HANA®
- SAP Fiori®



© Copyright IBM Corporation 2021. IBM Corporation, IBM Services, New Orchard Road, Armonk, NY 10504

Produced in the United States of America, January 2021.

IBM, the IBM logo, ibm.com, IBM FlashSystem, IBM Spectrum, IBM Systems, Power, and PowerVM are trademarks of International Business Machines Corp., registered in many jurisdictions worldwide. Other product and service names might be trademarks of IBM or other companies. A current list of IBM trademarks is available on the web at "Copyright and trademark information" at www.ibm.com/legal/copytrade.shtml.

The registered trademark Linux is used pursuant to a sublicense from the Linux Foundation, the exclusive licensee of Linus Torvalds, owner of the mark on a world-wide basis.

Microsoft is a trademark of Microsoft Corporation in the United States, other countries, or both.

Red Hat, Inc. Red Hat, the Red Hat logo, and Ansible are trademarks or registered trademarks of Red Hat, Inc. or its subsidiaries in the United States and other countries.

SAP, SAP HANA, and other SAP products and services mentioned herein as well as their respective logos are trademarks or registered trademarks of SAP SE in Germany and other countries.

This document is current as of the initial date of publication and may be changed by IBM at any time. Not all offerings are available in every country in which IBM operates.

The performance data and client examples cited are presented for illustrative purposes only. Actual performance results may vary depending on specific configurations and operating conditions. THE INFORMATION IN THIS DOCUMENT IS PROVIDED "AS IS" WITHOUT ANY WARRANTY, EXPRESS OR IMPLIED, INCLUDING WITHOUT ANY WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND ANY WARRANTY OR CONDITION OF NON-INFRINGEMENT. IBM products are warranted according to the terms and conditions of the agreements under which they are provided.

Statement of Good Security Practices: IT system security involves protecting systems and information through prevention, detection and response to improper access from within and outside your enterprise. Improper access can result in information being altered, destroyed, misappropriated or misused or can result in damage to or misuse of your systems, including for use in attacks on others. No IT system or product should be considered completely secure and no single product, service or security measure can be completely effective in preventing improper use or access. IBM systems, products and services are designed to be part of a lawful, comprehensive security approach, which will necessarily involve additional operational procedures, and may require other systems, products or services to be most effective. IBM DOES NOT WARRANT THAT ANY SYSTEMS, PRODUCTS OR SERVICES ARE IMMUNE FROM, OR WILL MAKE YOUR ENTERPRISE IMMUNE FROM, THE MALICIOUS OR ILLEGAL CONDUCT OF ANY PARTY.

© 2021 SAP SE. All rights reserved. SAP, R/3, SAP NetWeaver, Duet, PartnerEdge, ByDesign, SAP BusinessObjects Explorer, StreamWork, SAP HANA, and other SAP products and services mentioned herein as well as their respective logos are trademarks or registered trademarks of SAP SE in Germany and other countries. These materials are provided by SAP SE or an SAP affiliate company for informational purposes only, without representation or warranty of any kind, and SAP SE or its affiliated companies shall not be liable for errors or omissions with respect to the materials. This document, or any related presentation, and SAP SE's or its affiliated companies' strategy and possible future developments, products, and/or platform directions and functionality are all subject to change and may be changed by SAP SE or its affiliated companies at any time for any reason without notice.

