

Cognizant Digital Systems & Technology

How an Integrated Cloud Management Platform Cuts Costs While Increasing Agility

Through a “single pane of glass” for multi-cloud management, organizations can significantly increase their productivity, lower the total cost of ownership of cloud management tools, and cut release cycle times from weeks to as little as an hour.

Executive Summary

The clarion call to the cloud has helped many organizations lower costs and attain a more flexible computing environment than traditional on-premise data centers. Enterprises are embracing the cloud to reduce capital and operational spending, create more efficient processes and introduce innovative ways to outcompete newer competitors that are unburdened by legacy IT systems. The global cloud computing market size was

valued at \$266 billion in 2019 and is expected to expand at a Compound Annual Growth Rate (CAGR) of 14.9% from 2020 to 2027.¹ But because every organization has distinct, complex requirements, it can take substantial time, money and effort to create the optimal cloud environment and implement the right tools and processes to manage it. According to market research firm Gartner, 81% of organizations are using two or more cloud providers.²

This helps them meet the needs of various application types, regulatory requirements and business units. For example, multi-national businesses may need to use local cloud providers to meet data privacy requirements in various geographies, or may prefer to use the analytics, application development or artificial intelligence (AI) services that a cloud provider offers.

Organizations are increasingly adopting multi-cloud strategy for better resiliency, to reduce costs, bring new products and services to market more quickly and better serve their customers. But the lack of a suitable cloud management platform can make it difficult or impossible to meet these goals. An inability to find, much less manage, all the cloud resources consumed by various business units can lead to ballooning and, often, hidden costs not only for cloud services, but also for troubleshooting performance or reliability issues within them. An

inability to discover, monitor and manage multiple clouds makes it harder to bring new applications and services to market more quickly with proper security and compliance with industry and government regulations.

An integrated cloud management platform (ICMP) can reduce these hurdles by providing greater visibility into and control over multiple cloud environments. An integrated “single pane of glass” provides greater optimization and security as the ever-changing mix of public, private and cloud services grows. Based on our client experiences, this unified integration and user-interface layer, along with associated workflows and best practices, can increase operational efficiency as much as 70%, cut one-third from the total cost of ownership of cloud management tools, and reduce the time required to provision technical infrastructure, from weeks to as little as an hour.

ICMP: Bringing it all together

An ICMP unites all third-party cloud management tools, including provisioning, orchestration, DevOps, spend management, security, service management, automation etc., in a seamless manner. It can use AI and machine learning to suggest “next best actions” for resolving application issues, guard against overspending and help ensure compliance, among other benefits. An ICMP helps organizations optimize their cloud environments. It’s also vendor agnostic to accommodate every cloud-related tool and service needed to implement Agile cloud operations using practices such as DevOps and DevSecOps. See Figure 1 below.

The CMPs integrated within an ICMP can include:

- I Cloud provisioning and optimization tools** that make it easier for organizations to create cloud resources and ensure that they are being used efficiently. These tools also provide consistent, proven deployment blueprints that increase the performance, stability and security of cloud applications. An ICMP provides a single interface through which an organization can coordinate

the creation and management of compute, networking and storage across multiple clouds.

- I Provisioning, configuration management and application deployment tools** and automated continuous code delivery and integration offerings. An ICMP automates provisioning of cloud resources, assuring that proper approvals are followed to post the code to production, triggering required changes and providing ongoing performance monitoring.
- I Application performance management tools** that ensure applications provide the required responsiveness and reliability.
- I Financial management tools** that help organizations understand their cloud spend, track it to budgets, and ensure the most cost-effective mix of cloud resources.
- I IT service management (ITSM) tools** that track performance and reliability issues, and the tickets those issues generate.
- I Security and compliance tools** that ensure

ICMP reference model and use cases

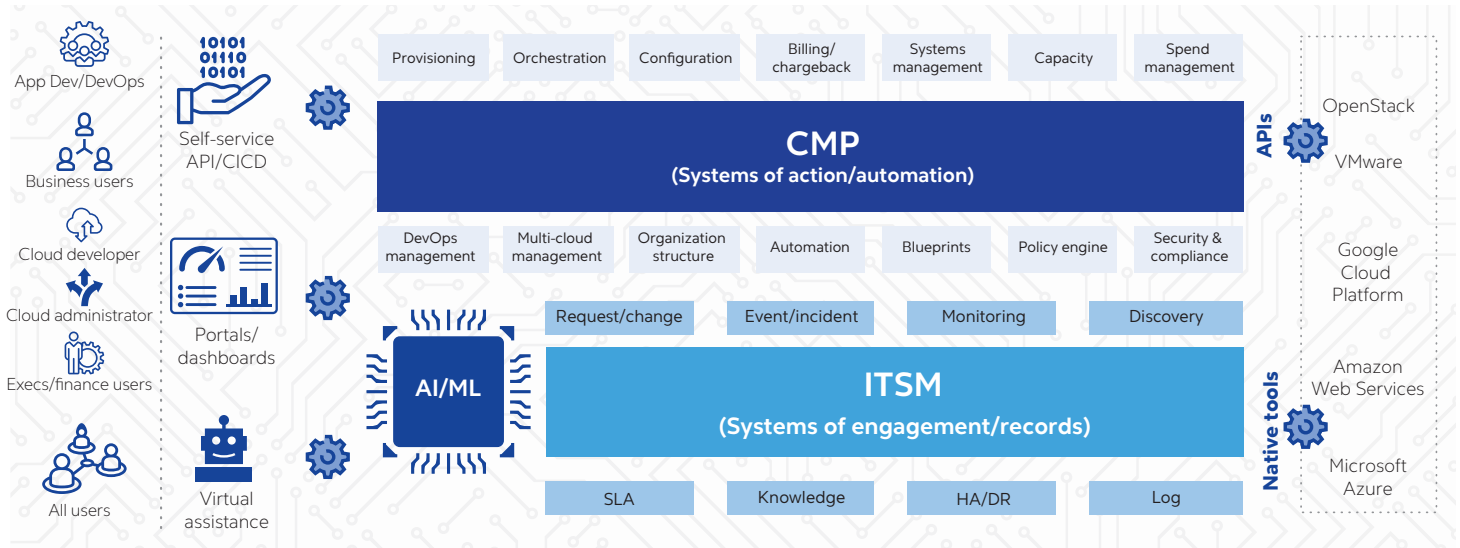


Figure 1

applications and data are safe from attack and meet governmental and industry standards,

automatically collect compliance information, and remediate issues.

ICMP benefits

An ICMP helps organizations get the most value, productivity and performance from their fast-growing cloud deployments through:

- I Reduced cloud licensing and support costs** as it gives administrators and business users actionable insights into cloud usage and maintenance issues with complete monitoring and management coverage through a single platform.
- I Faster delivery of new products and services** through fully automated workflows for provisioning of infrastructure-as-a-service (IaaS)/platform-as-a-service (PaaS) platforms, and by enabling developers to quickly release new code through continuous deployment and integration.

- I Assured compliance with security and regulatory demands** through automatic generation of compliance reports, with AI-enabled recommendations for eliminating security issues.
- I Improved productivity and return on investment (ROI)** via increased operational efficiency by reducing manual intervention through automation.
- I Increased agility and cost control** by providing a complete view of spending and usage across public and private clouds, aiding control over existing cloud usage, and enabling self-service across all clouds and virtualized infrastructures.

Quick Take

Energy Giant Lowers Costs, Speeds Time to Market and Increases Security

The larger and more complex an enterprise, the more cloud platforms it is likely to rely on, and the more challenging it is to manage them efficiently and securely.

That was the case for an international provider of electricity and natural gas and related services, such as appliance repair, energy generation and energy management, to homes and businesses in Europe and North America. It operates more than 3,000 servers, 1,000 PaaS instances and more than 100 network devices across the Azure, AWS and Hitachi Enterprise clouds.

However, the lack of a unified cloud management platform meant that the company was likely spending too much for these cloud resources and getting in return too little agility, performance, reliability and security. The company faced a range of challenges:

- | Excessive costs due to the lack of cross-platform capacity management, metering and chargeback as well as extensive manual effort required for post-provisioning activities.
- | Performance and availability issues and increasing management costs due to the inability to monitor performance and reliability metrics.
- | Lack of agility to meet new business needs due to the amount of manual intervention required to provision and operate servers.
- | Reduced security and compliance due to lack of security controls and the inability to enforce compliance with corporate configuration standards.
- | Increased time to find and fix application problems due to lack of real-time dashboard views and a need to manually create incidents.

Quick Take

A single pane of glass for multi-cloud management

We deployed our Cloud360 ICMP solution to help the utility provider unify nearly two dozen existing cloud management tools. The many tools for monitoring, analytics, compliance security, automation, and continuous integration/continuous deployment (CI/CD) that we integrated in the ICMP included Jenkins, Puppet, Zenoss, Azure Monitor, Elasticsearch, ServiceNow, SUSE Manager and QualysGuard.

This ICMP increased agility, reduced costs and improved performance and reliability while ensuring security and compliance. The platform offered the company the following capabilities:

- Complete high availability and disaster recovery.
- Fully automated and compliant builds across public and private clouds, offering users a choice of more than 35 standard design patterns from a service catalog.
- Automated deployment of monitoring, configuration and security controls.
- Real-time views of advanced analytics on all chargeback metrics.
- Complete monitoring and management coverage.
- Real-time dashboard views into all performance and uptime metrics.
- Automated incident creation and faster problem resolution.
- Consistent, standard and secure builds.
- Proactive detection and management of availability and performance issues.
- Automatic cloud bursting and auto scaling.
- Adherence of 99% to patching through automation.
- Policy-based right-sizing and predictive demand management.

Benefits

The company's new cloud services are now operational within a week of general availability, which has sped the market delivery of new products and services. Developer-ready infrastructure can now be provisioned in 15 minutes. The improved visibility into, and management of, the total cloud environment through a single interface is projected to reduce overall cloud spending by more than 10%, while assuring complete adherence to regulatory and compliance requirements.

How an ICMP helps technical and business managers cut costs and boost agility by delivering needed insights

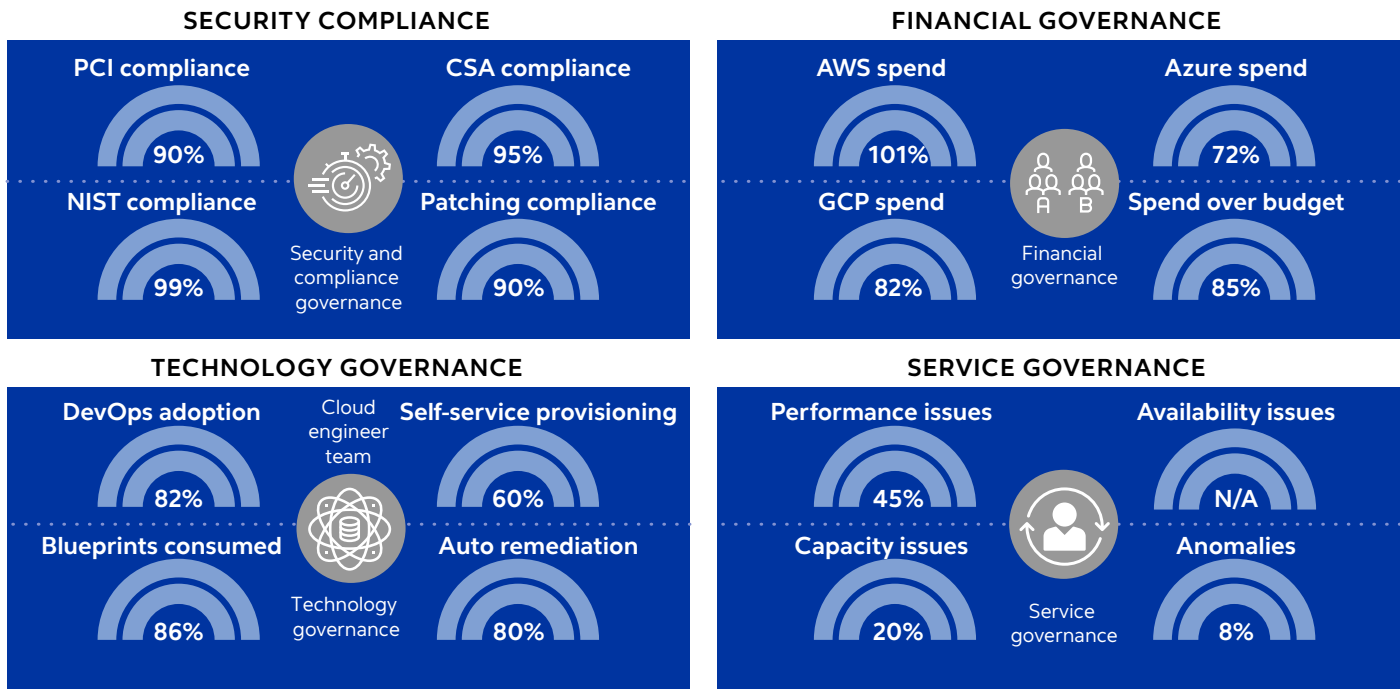


Figure 2

What to look for in an ICMP

With many niche cloud management tools and platforms available, and with new technologies to manage such as containers and microservices, it can be challenging to build an integrated ecosystem to deliver the maximum cloud management benefit.

Here are a few essential capabilities to include in an ICMP design:

- Easy integration with a wide variety of leading cloud service providers (CSPs).
- A single user-interface dashboard that captures data from all clouds and cloud management tools, customized to the needs of business users versus technical users through role-based access control.
- Pre-integration and pre-configuration with ready blueprints to reduce deployment time.
- Automatic cloud-resource discovery, naming and (importantly) tagging of cloud resources, regardless of which or how many cloud providers are used. When paired with analytics, this provides richer and more detailed tracking and billing report data to reduce costs and maximize efficiency. It also simplifies required customization to meet business needs, using open standards and APIs to integrate with CMPs, thus reducing costs and improving performance, functionality and scalability.
- AI and machine learning to help remediate problems and optimize operations, as well as conversational AI to ease troubleshooting and bot-based FAQ response and ticket creation to speed up problem triaging and resolution for user queries and ticket closure.

ICMP use cases for increased efficiency and enhanced agility




ICMP use case	Users	What each user can accomplish
Secure self-service provisioning for greater agility 	Business users, developers and QA staff	<ul style="list-style-type: none"> View their role-based access to service offerings in a marketplace Provision applications and services Track the resources consumed and their costs
Resource optimization to reduce costs and maximize ROI 	Business users and IT administrators	<ul style="list-style-type: none"> Track the resources used and cost of current operations Receive AI-generated recommendations to reduce their costs
Security and compliance 	Security and compliance officers	<ul style="list-style-type: none"> Receive detailed and automated compliance reports across multiple clouds Act on and track the results of compliance remediation across multiple clouds

Figure 3

ICMP governance levers

In the target state of highly automated cloud operations, governance becomes highly critical. The governance can be broadly categorized into four types and Cognizant ICMP is designed to deliver them as detailed below.

- Financial governance:** As part of this governance, a Cognizant ICMP will bring in financial transparency in budgeting, metering and chargeback, approvals and spend optimization for the client.
- Service governance:** A Cognizant ICMP will provide service transparency in service level agreement (SLA) adherence, partnership and systems of record/engagement (ITIL processes) for the client. A Cognizant ICMP

will provide a dashboard view to manage all system engagements and partners through SLA adherence and managing records automatically.

- Technology governance:** A Cognizant ICMP will manage the complex technology stack, provide users with a seamless workflow and enable them to achieve their business objectives without being concerned about the underlying complex technology stack in a controlled manner.
- Security & compliance governance:** A Cognizant ICMP will ensure the right security measures and metrics through regulatory compliance, threat and vulnerability management, data security & privacy, IAM and security incident response for the client's environment.

Next steps

With elastic scalability, better cost management, geographic coverage, continuous innovation and a vast selection of rapid development tools, the cloud is the de facto choice to handle increasingly complex enterprise workloads. But as clouds multiply within an organization and technical and financial management tools proliferate, organizations must work toward getting the highest value from their cloud investments.

An ICMP offers a single pane of provisioning, orchestration, configuration management,

automation, developer interfaces, security and compliance, performance management, observability, etc., into a complex cloud ecosystem with a multitude of capabilities such as monitoring, management, as well as financial tracking and application development tools. By doing so, it provides cost control, flexibility, and agility benefits that maximize the value of running the business on the cloud.

To learn more about ICMPs and our Cloud360 offering, visit [our website](#) or contact us.

Endnotes

- ¹ “Cloud Computing Market Size, Share & Trends Analysis Report By Service (SaaS, PaaS, IaaS), By Workload, By Deployment, By Enterprise Size, By End Use, By Region, And Segment Forecasts, 2020 – 2027,” Grand View Research, April 2020, <https://www.grandviewresearch.com/industry-analysis/cloud-computing-industry>.
- ² Laurence Goasduff, “Why Organizations Choose a Multicloud Strategy,” Gartner, May 7, 2019, <https://www.gartner.com/smarterwithgartner/why-organizations-choose-a-multicloud-strategy/>.

About the authors

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Sridhar Bhaskarla heads cloud offerings in Cognizant. He has 25-plus years of experience in several facets of information technology, including six years of entrepreneurship in the Internet of Things (IoT). He is responsible for overall innovation, incubation and industrialization of cloud offerings in Cognizant. Sridhar can be reached at sridhar.bhaskarla@cognizant.com | www.linkedin.com/in/sridhar-bhaskarla-cloud/.

About Cognizant

Cognizant (Nasdaq-100: CTSH) is one of the world's leading professional services companies, transforming clients' business, operating and technology models for the digital era. Our unique industry-based, consultative approach helps clients envision, build and run more innovative and efficient businesses. Headquartered in the U.S., Cognizant is ranked 194 on the Fortune 500 and is consistently listed among the most admired companies in the world. Learn how Cognizant helps clients lead with digital at www.cognizant.com or follow us @Cognizant.



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