Connect your clouds with IBM Cloud Automation Manager and IBM Cloud Private

Automate and orchestrate multiarchitecture application services in public, private and hybrid clouds

Highlights

- Enterprise-grade cloud-agnostic automation to standardize deployment of complete application stacks in all your clouds

- Graphically compose data center services and application stacks into application services that are tailored for self-service consumption

- Modern, extensible microservice architecture designed for integration with existing capabilities and architected to meet future needs

- Use prebuilt automation from a catalog of Helm charts, IBM Terraform® configurations and Chef scripts for popular IBM middleware and open source software to get started fast in the right cloud with the right application architecture

Today's IT managers must balance Central IT's need for governance and oversight against lines of business needs to respond with speed and agility to business requirements.

Business units seeking expedient solutions to pressing business needs have been the driving force behind cloud adoption. IDC's research indicates that over 90 percent of enterprise-scale organizations plan to make use of multiple clouds in the next several years. These organizations are focused on matching the needs of specific workloads to the cost, performance, and security profiles offered by a range of cloud options including public cloud services, hosted private clouds, community clouds, and on-premises private clouds. Each workload will have different dependencies and requirements.[1]

Multi-cloud strategies have improved business outcomes, but the improvements have come at a cost:

- Increased operational complexity—The overhead of maintaining one-of-a-kind "snowflake" application environments using proprietary vendor tools is expensive.
- Reduced operational efficiency—It is difficult or impossible to achieve economies of scale with standardized delivery of cloud infrastructure and application services.
- Reduced governance—It is difficult to guarantee applications are secure and compliant and a challenge to rapidly respond to security events.
- Reduced oversight and cost management—Are resources being used efficiently? Are resources being used at all? Are usage trends being accurately tracked and forecasted?

The key to achieving balance between Central IT and lines of business is to provide Central IT tools and capabilities that enable them to respond with speed and agility to the needs of the business. When Central IT can respond with speed and agility, the incentive for business units to go-their-own-way is reduced and it becomes possible to achieve operational efficiencies, improve governance and gain control over costs.

IBM® Cloud Automation Manager enables Central IT to respond quickly to the needs of the business in two ways: 1) by providing a common automation framework for provisioning cloud infrastructure and application stacks, at scale, in public, private and hybrid clouds, and 2) by providing IT architects a graphical Service Composer that enables them to compose application stacks and data center services like Configuration Management Database (CMDB), IT service management (ITSM), IP address management and service catalogs into application services that are ideal for self-service and easy to consume by business units.

IBM Cloud Private helps enable developers to get up and running quickly with a lightweight development environment optimized for building enterprise-grade containerized workloads with an integrated DevOps toolchain. IBM Cloud Automation Manager can be easily installed into IBM Cloud Private with a Helm chart.

Together, IBM Cloud Automation Manager and IBM Cloud Private provide a complete, developer friendly, enterprise-grade cloud-management platform that supports multiple clouds, multiple workload architectures and application-service orchestration. This combination gives IT managers unprecedented choice and flexibility to help quickly meet the needs of the business.
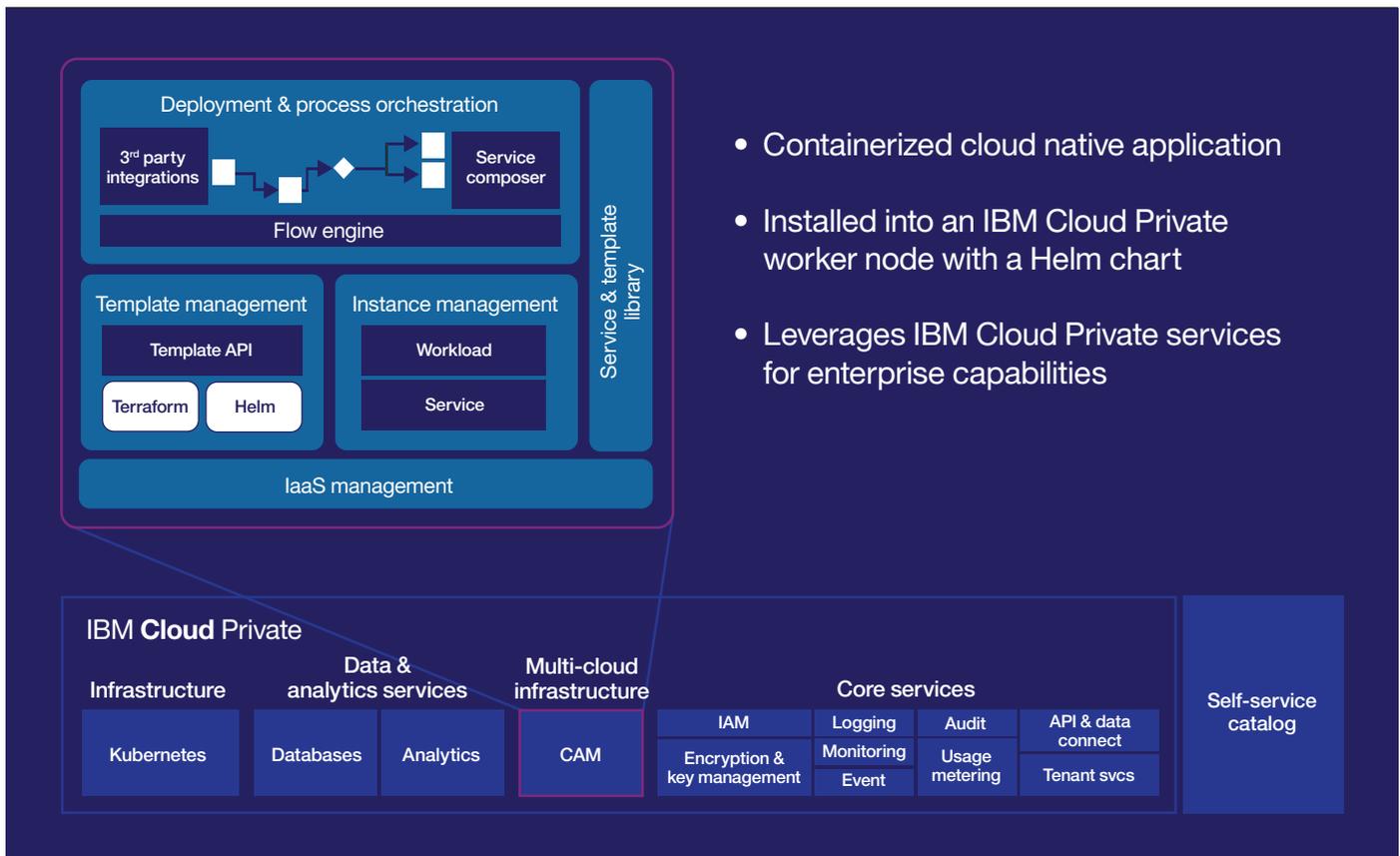
- Containerized cloud native application
- Installed into an IBM Cloud Private worker node with a Helm chart
- Leverages IBM Cloud Private services for enterprise capabilities

Figure 1: Cloud Automation Manager architecture overview

Enterprise-grade cloud-agnostic automation for public, private and hybrid workloads

IBM Cloud Automation Manager provides a cloud-agnostic solution for automating delivery of full application stacks in IBM Cloud, Amazon EC2, Microsoft Azure, Google Cloud Platform, VMware, OpenStack and PowerVC. With a common automation platform, you can achieve significant cost savings and reduction in complexity by standardizing provisioning and delivery of all your cloud infrastructure and applications.

Your cloud-management platform should not lock you into proprietary technology. IBM Cloud Automation Manager leverages open source Terraform for cloud-agnostic automation. Terraform is a rapidly growing, innovative project with thousands of contributors and a thriving development community supported by popular cloud vendors such as IBM, Microsoft, Google, and Amazon. Terraform enables cloud infrastructure to be described using declarative text files that are stored in a version control system and managed as code. IBM Cloud Automation Manager fully supports the Terraform infrastructure-as-code design style. Managing infrastructure as code provides multiple benefits for the IT manager:

- Helps enable application environments to be reliably reproduced and easily shared, improving development team agility and reducing errors introduced by configuration drift
- Simplifies movement of application environments through dev, test, staging and production while maintaining oversight and control at each step
- Enables application environments to be managed with the same DevOps tool chains you use to manage applications
- Helps improve audit readiness by providing a natural way to track all changes to application environments

IBM Cloud Automation Manager brings enterprise-grade qualities of service to Terraform with the following capabilities:

- Graphical user interface to help simplify access to cloud automation
- Role-based access control (RBAC) to IBM Cloud Automation Manager services
- Integration with Gitlab and GitHub
- Scriptable REST API interface
- High availability, security, secrets management, monitoring, tenancy and other services from the IBM Cloud Private Kubernetes-based container runtime
- Integration with the IBM Cloud Automation Manager Advanced Content Runtime, to simplify use and maintenance of Chef recipes and cookbooks with Terraform configurations

Compose application stacks and data center services into application services

The IBM Cloud Automation Manager Service Composer tool helps enable IT service managers to design and deliver application services to business users faster than ever. Service Composer is a graphical design tool that enables IT architects to use a drag-and-drop interface to combine application stack automation and data center services into easy-to-consume application services. IT architects use Service Composer to chain together multiple activities, such as automation templates, template variable pre-sets, order forms, REST API invocations, email notifications and other data center integrations into application service objects. These objects can be published into a self-service catalog or consumed via a DevOps toolchain.

IBM Cloud Automation Manager helps enable delivery of fully hybrid application services: Hybrid-cloud application services contain components that reside in different cloud providers and hybrid-architecture application services contain a mix of containers, VMs and cloud native services.

Service composition enables IT architects to hide automation complexity and simplify delivery of easy-to-use application services to the business unit consumer.

Modern extensible architecture

Your cloud management solution should be flexible and able to adapt to the evolving needs of your business. IBM Cloud Automation Manager is purposefully designed to facilitate integration with your existing investments; its modern microservices architecture is ready for the future. IBM Cloud Automation Manager is designed to leverage existing investments, integrate with adjacent capabilities and adopt incrementally, on your own schedule.

TERRAFORM

Extend workload provisioning with Cloud Automation Manager

Template-driven provisioning of private and public cloud infrastructure: Bare-metal servers, VMs, cloud native services and complex application stacks

Open source catalog [1]

MEAN stack—VMware, Azure, AWS, IBM Cloud
LAMP stack—VMware, Azure, AWS, IBM Cloud
Node.js—VMware, IBM Cloud
Strongloop—VMware, IBM Cloud
MariaDB—VMware
MongoDB—VMware, IBM Cloud
MongoDB Strongloop 3 tier—VMware, IBM Cloud
Virtual Servers with SSH key— AWS, IBM Cloud
Apache HTTP Server—VMware
Apache Tomcat—VMware

Enterprise catalog [1]

IBM DB2® EE (v10.5 & v11.1)
IBM MQ (v8 & v9)
IBM WebSphere® Application Server ND (v11.1)—VMware
IBM WebSphere Liberty (v17)—VMware
IBM HTTP Server (v8.5.5, v9)
Oracle DB Enterprise (v12c)—VMware
Oracle MySQL (v5.7)—VMware

[1] Automation content available with IBM Cloud Private purchase. Product licenses must be purchased separately or BYOL. See pricing and packaging for more information.

+ Community templates
Hashicorp Terraform Registry

+ Bring your own templates
Self written, IBM Cloud Schematics, and so on

Figure 2: Prebuilt content for IBM Cloud Automation Manager

Get started fast with prebuilt automation and your choice of application architecture

IBM Cloud Automation Manager with IBM Cloud Private includes a large and growing catalog of prebuilt Helm charts, Terraform configurations and Chef scripts for popular IBM middleware and open-source software. Select the architecture that is right for your project, or compose mixed-architecture solutions and get into production quicker with IBM Cloud Private and IBM Cloud Automation Manager.

For more information

To learn more about IBM Cloud Automation Manager, please contact your IBM representative or IBM Business Partner, or see the following website: **ibm.com**/us-en/marketplace/cognitive-automation

1 BtoB Pulse, IDC MaturityScape: Multicloud Management 1.0 overview (provided by BMC Software), May 2017

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