

[ EMA™ QUICK TAKE ]

# VMware Cloud Automation Services

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An Enterprise Management Associates Impact Brief

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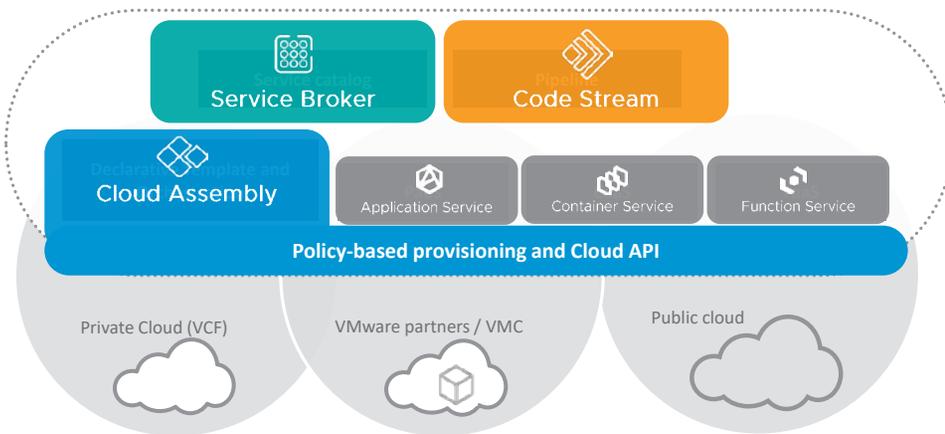
## OVERVIEW

The three new VMware Cloud Services, Cloud Assembly, Cloud Broker, and Code Stream, provide a unified operations and consumption layer across data centers and public clouds. Based on VMware's overall mission statements the ultimate purpose of Cloud Services is to make the difference between clouds disappear for developers, DevOps admins, and IT.

Cloud Assembly enables cloud administrators and developers to define infrastructure-independent application stacks that can be deployed to (initially) vSphere, VMware Cloud on AWS, native AWS, and Azure.

Service Broker centrally stores these blueprints, including their entitlements and policies, alongside native blueprints from AWS CloudFormation, Azure Resource Manager, and Helm for Kubernetes.

Code Stream is a DevOps automation and integration service that works with today's popular DevOps tools to manage the continuous build, test, staging, deployment, and release process.



## THE ANNOUNCEMENT

VMware announced the immediate availability of three Cloud Automation Services for policy-driven workload deployment and management in AWS, Azure, and vSphere environments.

## PAIN POINTS ADDRESSED



# VMware Cloud Automation Services

## VMWARE CLOUD ASSEMBLY – AUTOMATION FOR AN INVISIBLE CLOUD

Cloud Assembly enables cloud and DevOps administrators to create, deploy, revise, and refine application and infrastructure blueprints that consistently work for VMware vSphere, VMware Cloud on AWS, native AWS, and Azure. Developers can then consume these blueprints via one central API. VMware calls this concept of deployment and API consistency the “invisible cloud.”

### THE BLUEPRINT DESIGNER

The new blueprint designer provides three types of interfaces for designing, editing, and deploying application infrastructure: drag & drop GUI, YAML infrastructure code (human readable), and a RESTful API. This allows for easy version control (Git is supported) and instant rollback of blueprints in case of failure. Developers can check the pre-configured blueprint together with their latest application code into Git, which could trigger a web hook that starts a Code Stream workflow that triggers the appropriate build and test tasks in Jenkins. Receiving this level of integration and automation through a SaaS service is an exciting value proposition, but the integration with the rest of the corporate VMware environment makes the new VMware Cloud Services even more interesting. This integration enables cloud administrators to centrally attach entitlements and policies to blueprints that ensure compliance and provide cost control.



### IMPORT BLUEPRINTS FROM VSPHERE, AZURE, AND AWS OR FROM THE CLOUD MARKETPLACE

Customers can import existing applications from vSphere, Azure, and AWS, they can download blueprints from the VMware marketplace, and they can build their own blueprints in the Cloud Assembly blueprint designer.

### FLEXIBILITY UP THE STACK

In addition to simple provisioning of server, storage, and network resources, these libraries include definitions for higher-level services such as AWS Relational Database Service, AWS Lambda, and Azure Cloud Functions. Of course, AWS Lambda Code will still not run on Azure Cloud Functions, and a SQL for Azure database cannot be provisioned in AWS RDS. However, cloud admins can simply create different versions of these blueprints targeted toward the different clouds, but still subject to centralized control of entitlements and policies.

## EMA PERSPECTIVE

Based on EMA research (see EMA Research Facts), Cloud Assembly attacks today’s most critical customer pain points in DevOps and IT operations: complexity, silos, and a lack of visibility and centralized enforcement of security and compliance. Infrastructure as Code (IaC) also is the foundation for automatic service deployment, management, and collaboration between different development groups and between developers and IT operators. Finally, we need to mention the flexibility in terms of enabling operators to directly add YAML code from the AWS manual, in case a specific higher-level cloud service is not yet supported through the visual design interface. Ultimately, standardizing application environments, including their configuration, monitoring, and policies enhances reliability and frees up developer time that is often needed to support application infrastructure in a specific environment.

## EMA RESEARCH FACTS

Enterprises believe that 40–50% of applications need to stay on premises due to compliance, security, or cost requirements.

“Unified management tools” and “leveraging existing operations staff” are the top two evaluation criteria when selecting DevOps technologies.

“Cost control” and “cost transparency” of the public cloud are currently the top public cloud pain points.

35% of enterprises are leveraging 4 or more public clouds.

**Enterprise customers are looking for a simple and compliant path toward managing and optimizing application environments in the data center, and in multiple public clouds.**

# VMware Cloud Automation Services

## SERVICE BROKER – CENTRAL CONTROL AND ACCESS FOR NATIVE CLOUD SERVICES

VMware Service Broker provides a centralized service catalog to store, manage, and consume cloud native deployment templates and products. These templates can currently come in the form of Cloud Assembly blueprints, AWS Cloud Formation templates, Azure Resource Manager Templates, and Helm Charts.

## CONSISTENT AND INSTANT CONSUMPTION

Service Broker addresses the challenge of development and cloud groups going around central IT to get what they need faster and in a more flexible manner. Service Broker equips corporate IT with a centralized control and governance platform that can provide these native services across business units in a secure, compliant, and standardized manner. This also enables cloud administrators to centrally take advantage of special offers and price incentives that are often ignored by individual development teams.

## CENTRALIZED POLICY ENFORCEMENT

A policy can designate specific resources for development and test use only, while others are tagged for production applications; or databases that contain user data of European citizens and have to adhere to GDPR regulations could only be placed in a specifically configured database cluster located within the corporate data center. This centralized policy enforcement results in centralized usage reports that should result in a shorter preparation period for the next audit and much easier cost assignments to business units of services used.

## COLLABORATION IS CRITICAL: BROADEN THE USE OF AI

The key reason for artificial intelligence and machine learning (AI/ML) not having significantly penetrated DevOps is the inexperience of software developers with building, training, and using AI/ML models. The use of the Service Broker could dramatically accelerate AI/ML adoption by initially making simple, turn-key AI/ML models available, such as AWS Rekognition (image recognition services) or Google Visual Recognition. After each further successful AI/ML use, developers or DevOps admins can check in additional partially pre-configured models that can ultimately be managed and consumed as artifacts during the DevOps process.

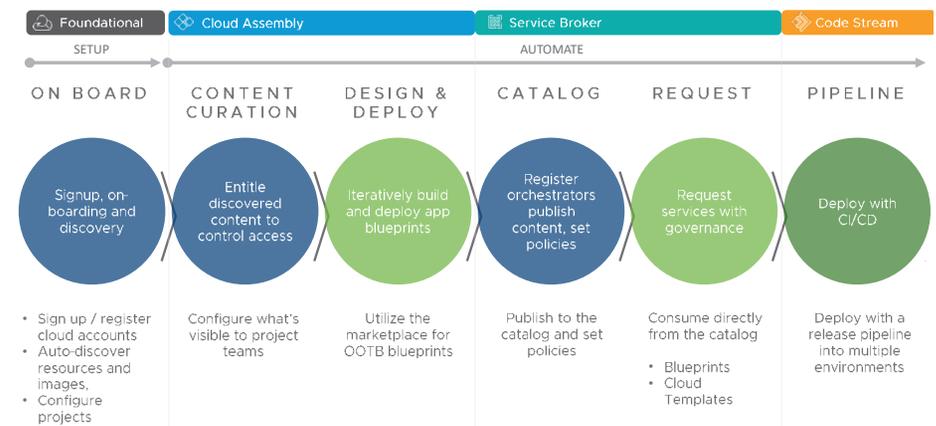
## VMWARE CODE STREAM – CONTINUOUS DELIVERY AS A SERVICE

Code Stream is a DevOps pipeline automation service that integrates teams, tools, and scripts into automated release pipeline. Note that Code Stream aims to provide this continuous delivery automation service to application developers and IT developers writing infrastructure code, for example in Helm, Cloud Assembly, AWS Cloud Formation, or Azure Resource Manager. Bringing a unified DevOps pipeline automation service to IT developers enables this group to respond faster to business requirements, increase release quality, and ensure continuity of operations.

## EXAMPLE: AUTO DEPLOYMENT

As soon as new code is committed to Github, this event triggers a web hook in Code Stream that kicks off the pipeline execution. The first steps of this process could be Jenkins building and testing the application directly from the new code. This execution can be viewed from the Code Stream dashboard and is fully recorded in an audit trail. Upon successful completion, we could add a step where user approval is required before the new application is pushed out to Kubernetes, vSphere, AWS Lambda, or similar. Once the deployment is complete, Code Stream can deliver the live link to the new environment or it could duplicate the environment for different testing procedures.

## HOW THE THREE NEW CLOUD SERVICES FIT TOGETHER



Developers can either directly consume Cloud Assembly infrastructure and application blueprints or they can access them through the new Service Broker. Upon check-in of their code, Code Stream can automate the release pipeline.

## EMA PERSPECTIVE

EMA applauds VMware for its relentless focus on consistent infrastructure operations and unified application portfolio management. With VMware Cloud Automation Services in combination with the acquisition of Cloud Health Technologies, and the announced availability of AWS RDS (relational database service) on vSphere, VMware has clearly shown that the company intends to execute on its consistent operations strategy.

VMware's infrastructure as code (IaC) strategy is so important as it enables data center developers to leverage continuous delivery for infrastructure operations. This may tempt line of business developers to add the so created YAML infrastructure to their code repositories, to ensure rapid and consistent provisioning of application environments. The fact that software developers today still spend 20–30% of their time on manual deployment and support tasks should be incentive enough for these developers to take a look at VMware's Cloud Services.

Finally, the argument that the licensing of VMware products and services is more expensive than leveraging open source software holds true only on the surface. This becomes clear when looking at the fragmented adoption of these automation solutions today, at the failure of OpenStack to conquer the wider enterprise market, and at the fact that 93% of Kubernetes users are looking toward a commercial management product for their container clusters. VMware is in the enviable situation where the company looks at a high probability of success, as long as it flawlessly executes its strategy.

**TRY VMWARE CLOUD SERVICES**

## About Enterprise Management Associates, Inc.

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