THE ESSENTIAL GUIDE TO
Managing Your Cloud Resources for Scalable DevOps

Quali | Infrastructure Automation at Scale™
Intro

Innovation and business revenue rely on being able to get to market the fastest. Though DevOps practices have played a hand in streamlining processes and accelerating software releases, the need for dynamic environments is becoming more of a bottleneck. With this, ITOps teams are scrambling to provide development and testing teams with the environments they need while maintaining security, compliance, and efficiency. To help achieve speed and control, many DevOps-focused companies are turning to Cloud Management Platforms.

In its simplest form, a Cloud Management Platform (CMP) helps IT teams optimize and manage cloud infrastructure for cost, security, and operations. But not all CMPs are the same—and most weren’t designed for the demands of DevOps.

This guide reveals how you can scale DevOps, increase efficiency, accelerate release cycles, and manage cloud cost using a DevOps-ready CMP.
SECTION ONE

Cloud Management Platform Options
Cloud Management
Platform Options

- Not all CMPs are the same. Some CMP solutions were designed with the sole intent of giving ITOps control with robust governance engines. While these were great at the time, the solutions didn’t evolve to address the barriers in DevOps adoption.

- When looking for a CMP, you can go with the traditional CMP or a DevOps-ready CMP. While some CMP tools position themselves as a DevOps-ready solution, they lack the critical features needed to support the culture and process shifts brought on by true DevOps adoption.
### Traditional CMP vs DevOps-Ready CMP

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<thead>
<tr>
<th>Traditional CMP</th>
<th>DevOps-Ready CMP</th>
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<tr>
<td>Governance engine</td>
<td>Governance engine</td>
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<tr>
<td>IT-centric</td>
<td>End-user-centric</td>
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<td>Relies on ITOps for fulfilment</td>
<td>Offers self-service fulfilment</td>
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<td>Infrastructure-centric</td>
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<td>Configuration management approach</td>
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<td>Lacks true automation</td>
<td>Native automation</td>
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SECTION TWO

Assessing Your CMP Needs
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Don’t know if you need a CMP?

1. Does it take more than a few minutes to provide development and testing teams with a production-like environment?
   On average how long does it take?

2. Do you rely on hand-coded automation scripts to set up the environment?
   What happens if the person who wrote the scripts leaves the company?

3. Are you trying to manage security and governance for distributed teams?

4. Are you lacking visibility into cloud cost and utilization?
   Are you able to tie this cost back to the business use?

5. Do you manage pre-production and production environments in different tools?

If you said YES to any of these questions, read on...
7 Essentials of a DevOps-Ready CMP
There are major differences between a traditional and a DevOps-ready CMP.

A DevOps-ready CMP can help you:

- Accelerate Release Cycles
- Remove Organizational Friction
- Achieve Cloud Efficiency

Here’s what you should look for in a CMP built for DevOps
A fundamental component of DevOps is bringing development and IT operations teams together in a way where they can do their respective jobs efficiently and effectively, without being a bottleneck to innovation.

Cloud infrastructure and the dynamic environments needed to support today’s applications are extremely complex and require cloud expertise. However, many bottlenecks in DevOps occur when a development team isn’t able to access the environment they need in a timely manner, so they end up creating workarounds that don’t accurately represent the production environment. That leads to an increase of cost, performance issues, security vulnerabilities, and more.

Your CMP solution should give your dev teams the ability to access the environments they need on-demand, while providing ITOps with the control and visibility they need to maintain efficiency, security, and compliance.
Not all environments are the same throughout the value stream. While your pre-production environments have lifecycle management parameters like mandatory end-time and workflows for tearing down or extending the environment, your production environment’s lifecycle is built to support smooth and secure transitions when moving between releases.

To support your dynamic environments throughout the value stream, your CMP should be built with value stream awareness that will know if your cloud infrastructure is used for planning, development, testing, or production, all while providing reusability with built-in separation between pre-production and production environments.

With dedicated areas to manage pre-production and your production environments, you can tailor each environment based on the dedicated features needed to efficiently get the most out of your environment.
Successful DevOps adoption promotes accelerated release cycles for faster time to market. However, exporting JSON or YAML formats to source control the blueprints takes time and doesn’t scale as you begin to release software on a more frequent basis.

For today’s rapid release cycles, your blueprints need to be natively source-controlled with automatic syncs to repositories.
Most CMP providers will proudly share a never-ending list of “integrations” to ecosystem tools. However, having the ability to integrate through an API leaves you with the work of maintaining, administering, controlling, and securing. Rest APIs and loose integrations aren’t enough for scalable DevOps. The integrations that your CMP offers to your value stream management must be seamless and native.

To manage dynamic environments while keeping up with today’s rapidly evolving technical landscape, your CMP needs to enable you to leverage Infrastructure as Code tools by offering infrastructure building blocks to give you control without additional overhead.
Delivering value to production efficiently is a cornerstone of DevOps. But generic templating and blueprinting offered by most CMPs don’t offer complete support for a controlled continuous delivery lifecycle. Most CMP solutions leave you to figure out how to deploy to production, which detaches the CI/CD pipeline from infrastructure management.

With support for deployment strategies—like blue-green—and an isolated workplace for production environments, a DevOps-ready CMP makes it easier to control traffic exposure and push blueprints to production.
When it comes to scaling DevOps, automation is key for achieving governance. Traditional CMPs mainly focus on cloud governance with limited automation features. However, their automation is based on complex scripts aimed at the infrastructure level, so maintaining the automation becomes a major challenge and time commitment.

Your CMP should have equal focus on governance as it does on reusable automation. This will provide speed and control and prevent you from needing to reinvent the wheel with the frequent changes brought on by DevOps.
If your CMP counts on static configurations for subnets, security groups, or credentials, it could inhibit secure, scalable growth. Using best practices and immutable infrastructure principles, a DevOps-ready CMP should configure these definitions—including everything from networking to security—as the environments are set up and torn down, this way you don’t need to worry about managing and maintaining the infrastructure in different places.
Cloud billing reports are complicated, and failure to quickly and accurately monitor cloud spend will result in excessive waste. Traditional CMP solutions focus mainly on IT and infrastructure cost and don’t know whether the resource is used for performance testing or development. Furthermore, they can’t tell you who’s the owner of the resource and if they can use a cheaper resource instead.

Utilizing automatic tagging of resources throughout the CMP, a DevOps-ready CMP provides deeper insight into utilization and can tie cloud costs back to the business use and proactively provides cost estimates per blueprints so you can optimize costs without slowing innovation.
SECTION FOUR

6 Questions to Ask Your CMP Vendor
1. How do Developers and QA get environments?

2. How is blue-green deployment to production supported?

3. Is there a seamless plugin for my CI/CD pipeline?

4. Are blueprints natively source controlled?

5. Can I easily spin up more environments?

6. How do you make sure environments are isolated and secure — all the way from development to production?
See How You Can Scale DevOps

Quali’s CloudShell Colony is a SaaS-based Cloud Management Platform that connects to the organization’s AWS, Azure, and Kubernetes cloud accounts to simplify and scale environment provisioning and deployment throughout the development and release pipeline—from dev & test to production—while keeping cost, security, and compliance under control.

"Managing our public cloud cost has always been a bit of a mystery. Trying to justify expenses by tying them back to lines of business would be nearly impossible, and most CMP solutions only provided insight at the infrastructure level. With Quali’s new cost dashboard feature in CloudShell Colony, we will be able to track cloud expenses at the environment level to avoid overspending, connect cost back to our business, and gain full transparency into our cloud usage so we can better allocate resources."

- Sharon Dagon, CTO of Resident
Quali is the leader in delivering cloud-agnostic Environment as a Service (EaaS) solutions for development and testing, sales demo/POC, training, and cyber range teams. Global 500 OEMs, ISVs, financial services, retailers, and innovators everywhere rely on Quali’s award-winning CloudShell platform to create self-service, on-demand environments that cut cloud costs, optimize infrastructure utilization, and increase productivity.

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