

Cloud KPIs Every Leader Should Be Tracking

Get Started

Introduction

Apps that take advantage of cloud native services and flexible multi-cloud infrastructure not only connect people and systems but also enable new business models and generate revenue.

For cloud leaders, a multi-cloud strategy impacts every touchpoint in the IT lifecycle, spanning infrastructure, applications, operations and services. Put it all together and a multi-cloud environment is more diverse, distributed—and complex—than ever before.

Wherever you are on your multi-cloud journey—whether you're modernizing existing applications, delivering new cloud native apps to market quickly or operating cloud native apps at scale, it's important to establish consistent cloud KPIs to mitigate common challenges, from cloud sprawl and management silos to gaps in security.

Without the right measure of output, activity, cost or resources to track performance and progress across on-premises, public cloud and edge environments, cloud leaders ultimately run the risk of being unable to communicate their organization's value and impact on the business.



KPIs should be “SMART”

That is: **specific, measurable, achievable, relevant and time-based** (meaning they can be measured over a defined period of time). And while some KPIs revolve around cost, you should not overlook efficiency. In some instances, it can be worth it to spend more to accomplish more with those dollars. KPIs should also support broader business decisions, not individual teams, so it is critical that different teams understand the shared KPIs and report on the same metrics to ensure consistency and governance. By communicating cross-functionally and agreeing on standardized KPIs, your organization is much more likely to achieve its overall objectives.

Cloud visibility

More than 70 percent of enterprises use two or more public clouds.¹ And when it comes to multi-cloud, executives want their environments to operate as one. In a recent survey of 417 enterprise technology executives using multiple public clouds, 94 percent agree that their clouds “should ideally operate as one cloud, regardless of provider.”²

The reality is that multi-cloud brings with it multiple silos of infrastructure, apps and services operating independently across the organization. Without visibility across all clouds and teams, companies struggle to predict and forecast cost, identify security vulnerabilities quickly and optimize performance.

Visibility must encompass the entire cloud ecosystem—from on-premises hardware to Kubernetes deployments and native public cloud services. Look for a management solution that unifies visibility and monitoring for the entire cloud ecosystem with one cloud management control plane. Additionally, leaders must continue to break down the cultural and technological silos preventing consistent visibility—and thus operations and reporting—among teams, departments, apps and projects.



Cloud visibility KPIs your organization should be tracking

- Cost of all untagged resources
- Percent of environment with proper tagging in place
- Percent of total bill charged back
- Variance of budget versus actual by application or team
- Forecast accuracy
- Security incident per month by team
- Security vulnerabilities identified per month per team
- Mean time for vulnerability announced to all systems patched

¹ VMware FY22 H2 Benchmark: Digital Momentum. August 2021

² VMware FY23 Q1 Executive Pulse. (N=417 Enterprise technology executives using multiple public clouds.)

Cloud management

There are three main areas of cloud management to track and benchmark: optimization, governance and automation, and business integration. The following KPIs and tips address the most common challenges across these areas.

Optimization

While cost optimization is a key priority and important to all organizations, optimization is not solely about cost. Operational and security optimization also need to remain top focuses. Operational optimization involves finding opportunities to be faster and more efficient at day-to-day tasks and ensuring that infrastructure has a consistent and standard set of configurations. Security optimization includes proactive monitoring and remediation of security and compliance risks.

The key to success is motivating and incentivizing teams to take accountability and follow best practices related to cost, configuration and security.



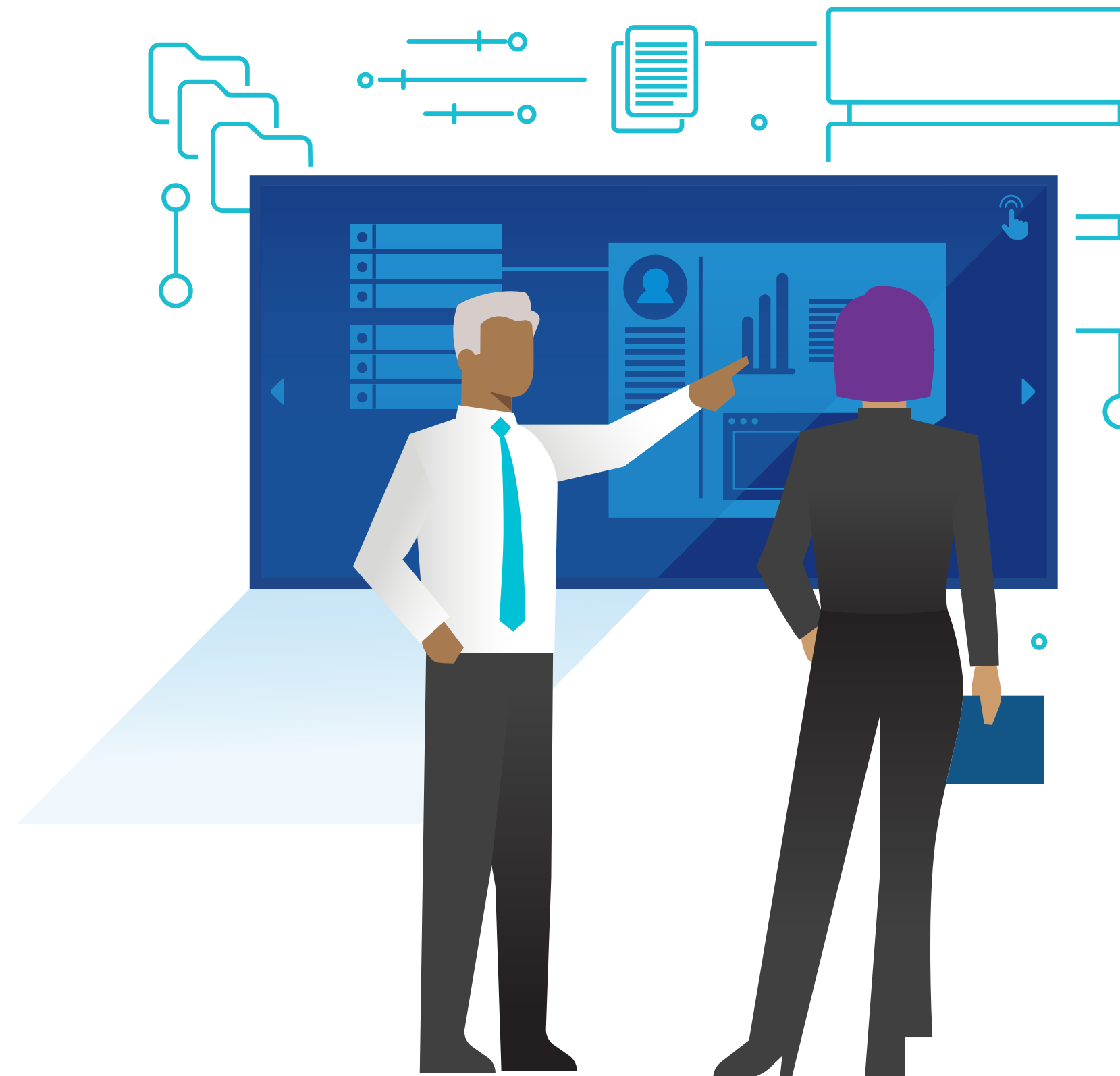
Cloud optimization KPIs your organization should be tracking

- Percentage of infrastructure running on demand (versus covered by reservation, savings plan, committed use discount, and so on)
- Mean time to repair or mean time between failures
- Rightsizing savings
- Number of security lapses (open ports, IAM failures, and so on)
- Effective cost per resource (that is, \$/compute hour)
- Number of assets that do not meet configuration standards (wrong virtual machine type, location, image, OS, tagging)
- Production incidents by application or team
- Meeting SLAs and uptime goals
- Reverted deploys

Governance and automation

For many organizations, governance and automation progress iteratively, first by defining best practices, then by implementing guideline policies and slowly adding guardrail automation to as much of the environment as possible to free up employee time for more strategic tasks.

Take advantage of policy-driven automation wherever possible, and enable automated actions to execute changes across private, hybrid and public cloud resources, including APIs and developer self-service capabilities. Build policies that monitor your environment for opportunities to reduce infrastructure waste and optimize costs, detect misconfigurations based on real-time visibility and risk scoring, and automate remediation and stakeholder alerts when anomalies are detected.



Governance KPIs your organization should be tracking

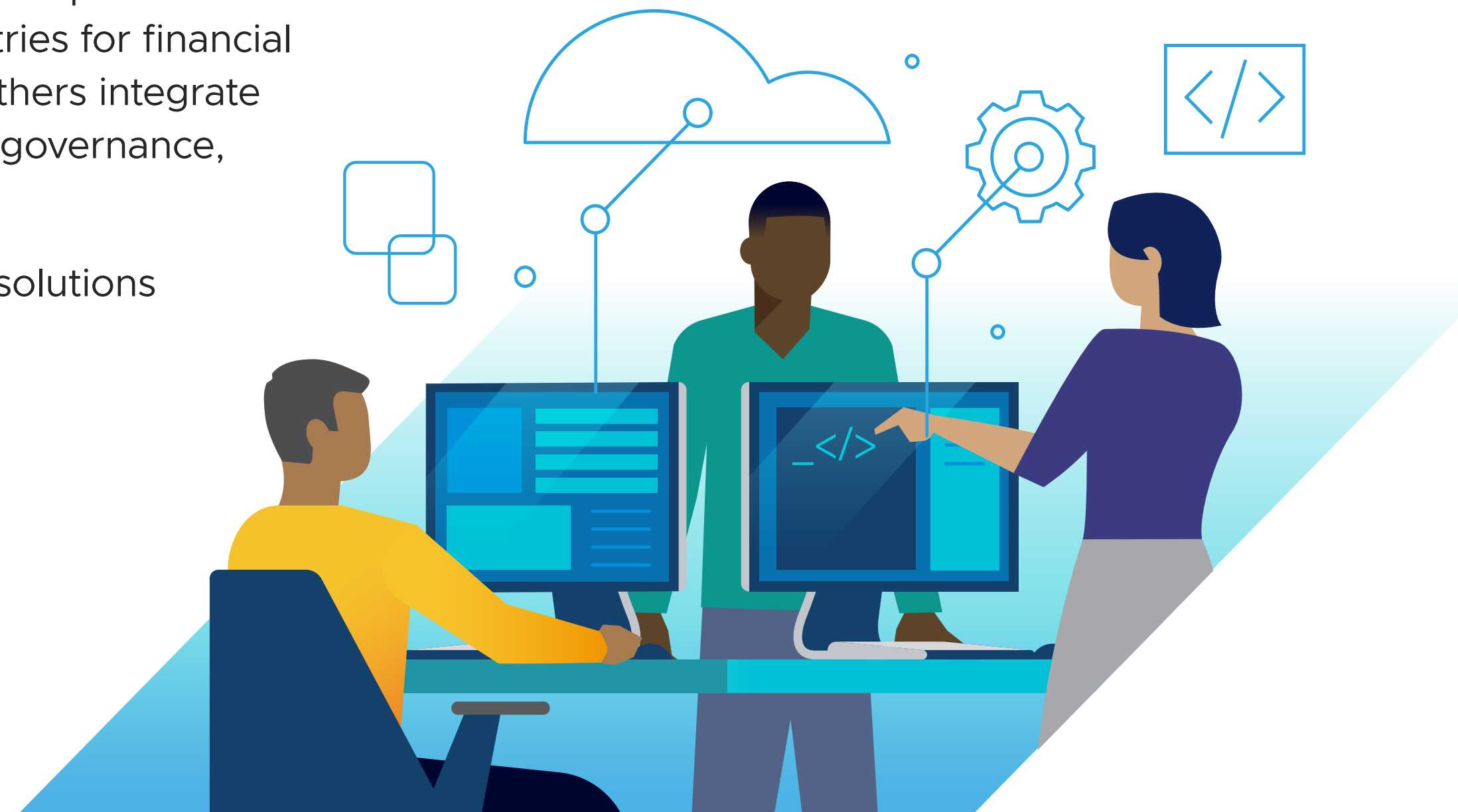
- Percent of policies in compliant state
- Cost optimized over time
- Cost optimized per policy over time
- Time saved as a result of policies
- Number of reservations automated
- Time to remediate security violations
- Service availability (as a percentage of time to deployment)

Business integration

Cloud creates an opportunity to shift the role of IT and the skills that the team can bring to the business, including a focus on higher-value projects, such as developer experience and application modernization. Framing cloud management metrics in the context of the business has the dual benefit of providing business context to IT and engineering teams and allowing business users to understand the impact of IT on the business.

Some organizations integrate their cloud management platform into their budgeting and accounting software so that entries for financial chargebacks and accruals can flow automatically. Others integrate cloud security, compliance alerts and reports into a governance, risk and compliance (GRC) solution.

Another example is integrating cloud management solutions into communication tools, such as Slack, Jira and Confluence. Doing so enables employees across different functions to collaborate to achieve a common set of goals.



Business integration KPIs your organization should be tracking

- Cost per customer
- Cloud spend as a percentage of revenue
- Reduction in cost of goods sold (COGS) over time
- Cost of revenue over time
- Time to bring new services to market
- Compliance issues open
- Mean time to detect
- Customer satisfaction (typically using Net Promoter Score)

Kubernetes management

Seventy percent of enterprises are embracing containers and Kubernetes in the production of all net-new applications in 2022.³ Complexity in today’s app pipeline comes from a wide variety of policies, cloud services and operational pressures. If you’re already running Kubernetes, you know that managing and monitoring clusters is complicated. On top of that, the software supply chain has become new ground for cyberattacks.

When it comes to managing Kubernetes infrastructure and clusters, you need to be able to automate operations of your entire Kubernetes estate to manage risk and optimize performance. You also want to make sure that your data is secure at rest and in transit across services.

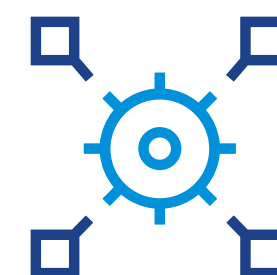
Because there are many moving parts, it is critical to track performance to make adjustments and optimize efficiency, security and costs. You need to monitor your entire Kubernetes cluster, so you can keep track of how many apps are running on each node, what resources you are using, and where you can make changes to better optimize.

Kubernetes KPIs your organization should be tracking



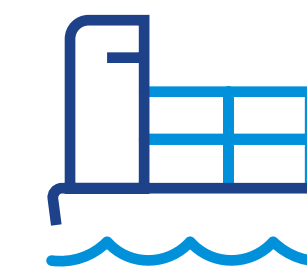
Kubernetes clusters and nodes

- > Node resource usage
- > Disk and memory usage
- > Number of running pods per node
- > Memory and CPU requests and limits
- > Network I/O pressure



Kubernetes deployment

- > Missing and failed pods
- > Pod restarts
- > Running vs. desired pods
- > RED metrics (request rate, error rate and duration)



Containers

- > Container CPU usage
- > Container memory usage
- > Network usage



Applications

- > Application availability
- > Application health and performance
- > RED metrics (request rate, error rate and duration)

³ VMware FY23 Q1 Executive Pulse. (N=341 Enterprise technology executives pursuing initiative.)

Operating a Cloud Center of Excellence

Many organizations have begun establishing a Cloud Center of Excellence (CCoE), sometimes known as a cloud business office, cloud strategy office or cloud program office, to define and track app performance, security and costs across clouds.

If your organization does not yet have a CCoE, we strongly recommend establishing this type of cross-functional working group to govern cloud usage across your organization and drive best practices across functions. Typically, a CCoE spans three core areas of excellence: **cloud financial management, cloud operations, and cloud security and compliance.**



Cloud financial management

Sometimes known as FinOps or cloud cost management, the goal is to align and develop financial goals, drive a cost-conscious culture through best practices, and establish guardrails to meet financial targets. A mature cloud financial management function must

- Understand how all components of a modern cloud environment contribute to TCO
- Make business decisions based on accurate ROI analysis
- Cultivate financial accountability and ownership across groups



Cloud operations

It is important to manage and deliver cloud services that meet the availability, performance, recoverability, quality and scalability needs of the business. Working with cross-functional teams, a mature cloud operations function must

- Ensure operations meet and exceed business requirements
- Identify and act on areas to improve operational efficiency
- Drive operational consistency across groups



Cloud security and compliance

A cloud security program protects data and infrastructure resources in public clouds, ensuring that cloud accounts and services are configured correctly to encrypt data, prevent unauthorized access to resources, and maintain regulatory compliance all without slowing down innovation. A mature cloud security and compliance function must

- Ensure continuous compliance with relevant standards
- Stay up to date with the changing threat and compliance landscape
- Translate business requirements into cloud security standards

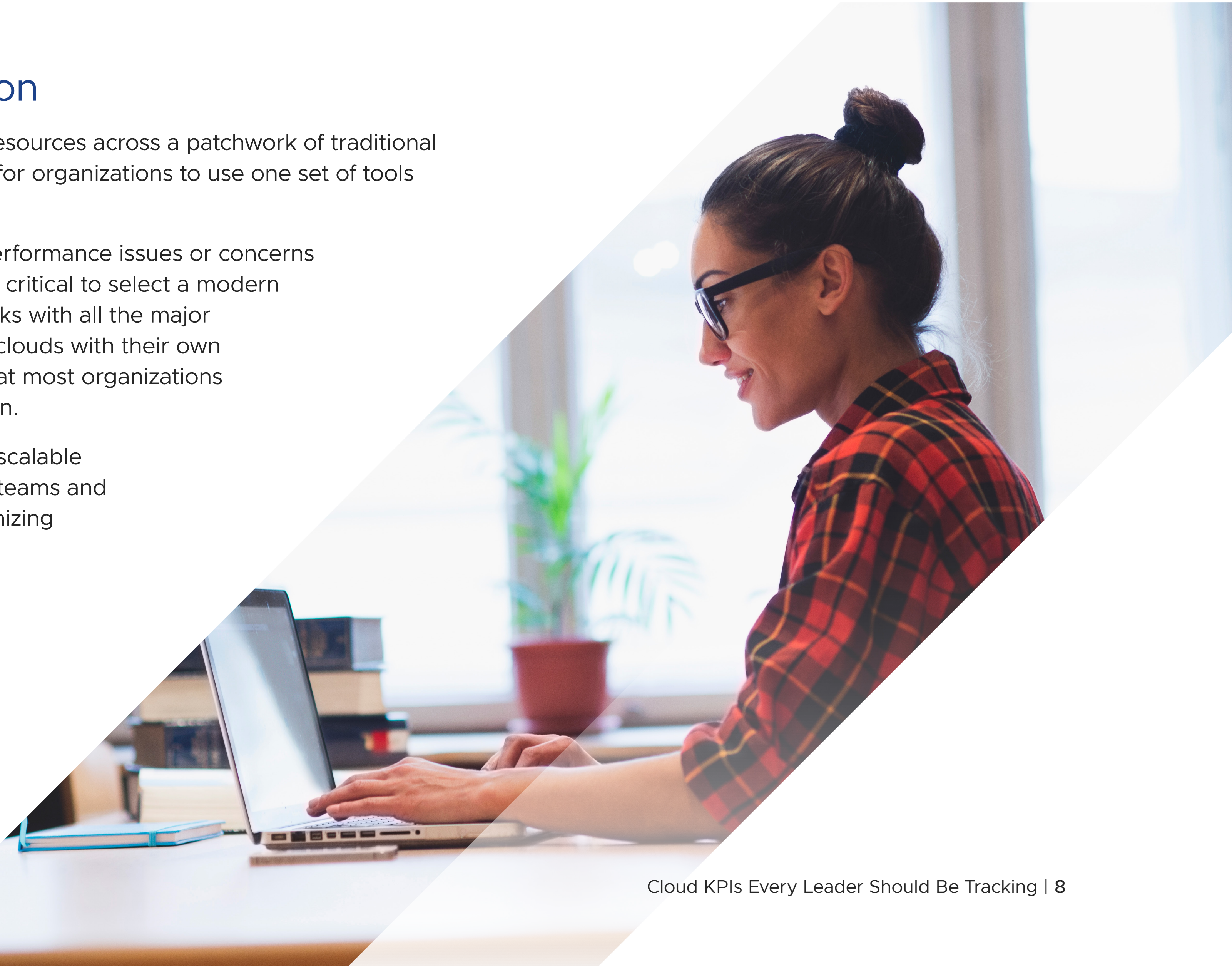
Choosing a cloud management solution

Most enterprises are running a mix of public, private and local resources across a patchwork of traditional and modern application architectures. This makes it impossible for organizations to use one set of tools to manage heterogeneous cloud environments.

To easily migrate workloads between multiple clouds without performance issues or concerns about data security, privacy, confidentiality and compliance, it is critical to select a modern multi-cloud platform and management solution vendor that works with all the major hyperscalers. Typically, cloud providers focus primarily on their clouds with their own tools, not multi-cloud models, which is in direct conflict with what most organizations need for successful cloud management and cloud transformation.

VMware cloud native platform solutions provide consistent and scalable development and operations across clouds and K8s, helping IT teams and developers boost the speed of modern app delivery while optimizing multi-cloud security, reliability and costs.

To learn more about VMware solutions to help you reach your KPIs, visit [CloudHealth by VMware Suite](#) or [VMware Tanzu for Kubernetes Operations](#).





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