



WHITEPAPER

# Cloud Migration Roadmap



# Your essential cloud migration roadmap

In the past few years, cloud migration has bubbled up to the top of almost every CIO's to-do list. From the need to pivot to remote work due to Covid-19 to maintaining competitive advantage in a volatile business landscape, cloud migration is fast becoming an accepted best practice across all vertical industries.



But are companies who have been at the forefront of cloud migration getting the ROI they expected? According to a recent McKinsey study, 80% of CIOs who have moved operations to the cloud feel they have not reached the level of agility and business benefits they were aiming for.

So how can you avoid the pitfalls of a cloud investment that doesn't yield the bottom-line results you need? Our roadmap will help you get from zero-to-ROI smoothly.



# Cloud readiness: Where are you?

Before you get started on your migration journey, it's essential to establish where you stand today with regard to readiness, and to identify any gaps in your position. Let's take a look at some key questions to ask yourself:

- **Hardware and data:**  
Are they living 100% on-premises, 100% in the cloud—or a hybrid of the two?
- **Monitoring and logging:**  
How do you handle logging with regard to storage, quality control, and aggregation?
- **Software deployment and code rollouts:**  
Are your software and code deployments automated, manual, or a mix?
- **Virtualization:**  
Do you use a virtual environment, bare-metal, or an amalgam of both?
- **App hosting:**  
Do your apps live on a web server, in the cloud, or both?



## Understand your migration readiness

Review what others in your industry are doing with regard to the cloud, also think about the kind of regulatory mandates that impact your data, your organization size, and your growth rates.



# Getting stakeholder buy-in



Do you have a leadership team that's on board with a move to the cloud? Have they committed resources toward a migration project? If the answer is no, you'll need to make your case to the C Suite and other stakeholders to get the support you'll need for a cloud migration project.

More often than not, the people you'll be talking to will be business decision makers (BDMs). Because they are non-technical by nature, the way you approach these individuals for buy-in is different than it would be for an IT professional or technical decision maker (TDM or ITDM). Here are a few tips to get you started:



## Avoid diving into the weeds

Although it might be tempting to outline all the cool technical bells and whistles involved in moving to the cloud, resist. Non-technical stakeholders as a rule don't respond well to deep-dive conversations about servers, architecture, code, and other technical aspects of an IT project; in fact, too much technical detail can sometimes put them off of a project.



## Focus on business value

Give them plenty of information on bottom-line benefits like improved security, 24/7 global availability of resources, and cost savings.



## Talk about the "what," not the "how"

Tell them what it is (a cloud migration project) and what it does (moves data, apps, and other infrastructure from on-premises or third-party datacenters to the cloud) and avoid describing how it works in too much detail.





## Checklist: System & technologies

Make sure you and your team have a clear understanding of what elements of your infrastructure you'll be moving to the cloud.

The following checklist will give you some things to consider.

- **Cloud management:**  
Investigate whether your on-premises provider offers any management tools that can ease your transition to the cloud. You can also use a more cloud-native approach to refresh management systems for configuration, provisioning, logging, patching, and ticketing.
- **Data:**  
Databases, data warehouses (including analytics and reporting) are a challenge to migrate because they map to specific systems that also must be migrated. Look into the migration tools available that might ease the burden associated with relocating both data and systems to the cloud.
- **Developer components:**  
Migrating developer components such as source control systems, artifact repositories, and sandboxes is pretty clear-cut, but be aware that it can involve moving a high volume of data.
- **Security and identity management:**  
This presents another opportunity to add value and modernize the way your setup handles identity and security after shifting from on-premises to the cloud.



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- **LOB Systems:**  
Line of business systems can often be smoothly migrated together all at once. Two things to take into consideration here are:
  - Remember to migrate the middleware as well and make sure your LOB plan is set up to avoid downtime and data loss.
- **Networking:**  
When migrating networking assets and configurations (firewalls, VPNS, etc.), add more value by simplifying your setup by implementing a cloud-native approach to networking and security.
- **Storage:**  
File shares, archives, and other storage can be more challenging to migrate due to their sheer volume. Identify the type of storage you'll need (block, file, or object) and the level of performance required.
- **Technologies:**  
A bottom-up inventory will give you a clear idea of all the components you'll be migrating. Consider whether they are portable or whether you'll need to use VM/container migration tools.



## Checklist: Refreshing processes

With your move to the cloud, your IT and your business will work more collaboratively.

Processes that cross over from the business side to the IT side (or vice-versa) will become more transparent, and those that had been roadblocks will no longer limit productivity. By refreshing some key processes, you can help smooth the way for your migration, and get a better result from your move. Here's a short checklist to help guide your refresh.

- **Request processes**  
Your shift to the cloud will enable you to originate, approve, and deploy changes with a continuous delivery approach. To ensure consistent high value in your updates and releases, modernize your automation pipeline to make sure that only solid, optimized code reaches production.
- **Incident responses**  
With your infrastructure in the distributed cloud, incident response protocols can become muddy if you have multiple people responding to issues. Make sure that your triage, notification, and service restoration tools evolve with your migration.
- **Configuration management**  
Moving your IT assets to the cloud will change the way you should be setting up, auditing, and managing them. Introduce automation to make it easier to keep your technologies and processes in check.



# Best practices: Cloud migration success

Ready to start your migration?

Here are eight ways to make it a better experience:

1

## Don't do it alone

Any major infrastructure shift is a challenge, but with your IT team already focusing on ongoing development and management projects, partnering with an experienced, specialized resource can help you navigate the process more efficiently, and with fewer hiccups.



2

## Create a shared infrastructure

A move to the cloud can deliver big improvements in management, security, and overhead, but the public cloud can also offer the opportunity for users to negate those improvements by going rogue.

Make sure you establish a clear foundation by creating a shared infrastructure that will set standards for important issues like identity management and persistent network/cloud connections.





# 3

## Use the methods that fit your needs

Use your migration as an opportunity to streamline your asset portfolio and make it more efficient. The approaches we're outlining here can be utilized alone or combined with others to achieve the best fit for your environment.



### Lift and shift

As-is migration to the cloud

Use for end-of-life workloads, or complete data center exits that must move rapidly to the cloud.

### Lift and optimize

Migration with infrastructure optimization

Use in situations requiring higher levels of cost savings and efficiency.

### Rebuild and replace

Rebuilding an app for the cloud to make workloads easier to change

Use for critical systems that need to evolve with your business.

### Move and improve

Appends the "lift-and-" methods with changes to applications

Use to change your applications to make them more cloud-native after migration.

### Improve and move

Precedes the "lift-and-" methods with changes to applications

Makes applications more cloud-native, but is preferable as changes are

### Retire-and-replace

Replacing systems and apps that are not compatible with the cloud

Use to update infrastructure with SaaS systems that are better suited to the cloud.



4

## Choose a cloud service

Decide which of your legacy software investments to keep, and which to replace with cloud-native.

Determine whether you want to/can self-manage, or if a managed services situation will work better. Every choice you make will present compromises on delivery, maintenance, and cost, so explore all of your options before committing.



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## Consider a vertical migration

A move to the cloud can deliver big improvements in management, security, and overhead, but the public cloud can also offer the opportunity for users to negate those improvements by going rogue.

Make sure you establish a clear foundation by creating a shared infrastructure that will set standards for important issues like identity management and persistent network/cloud connections. A horizontal (layer-based, moving up the stack) migration might be your team's first choice, but it leaves your system vulnerable if there are delays or something



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## Evolve process and workflows

A move to the cloud doesn't just affect your apps, tools, and systems; it also forces a change in the way your processes and workflows function. As part of your migration, audit your workflows and adjust, re-frame, or replace them so they will support your use of the cloud.



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## Automate, automate, automate

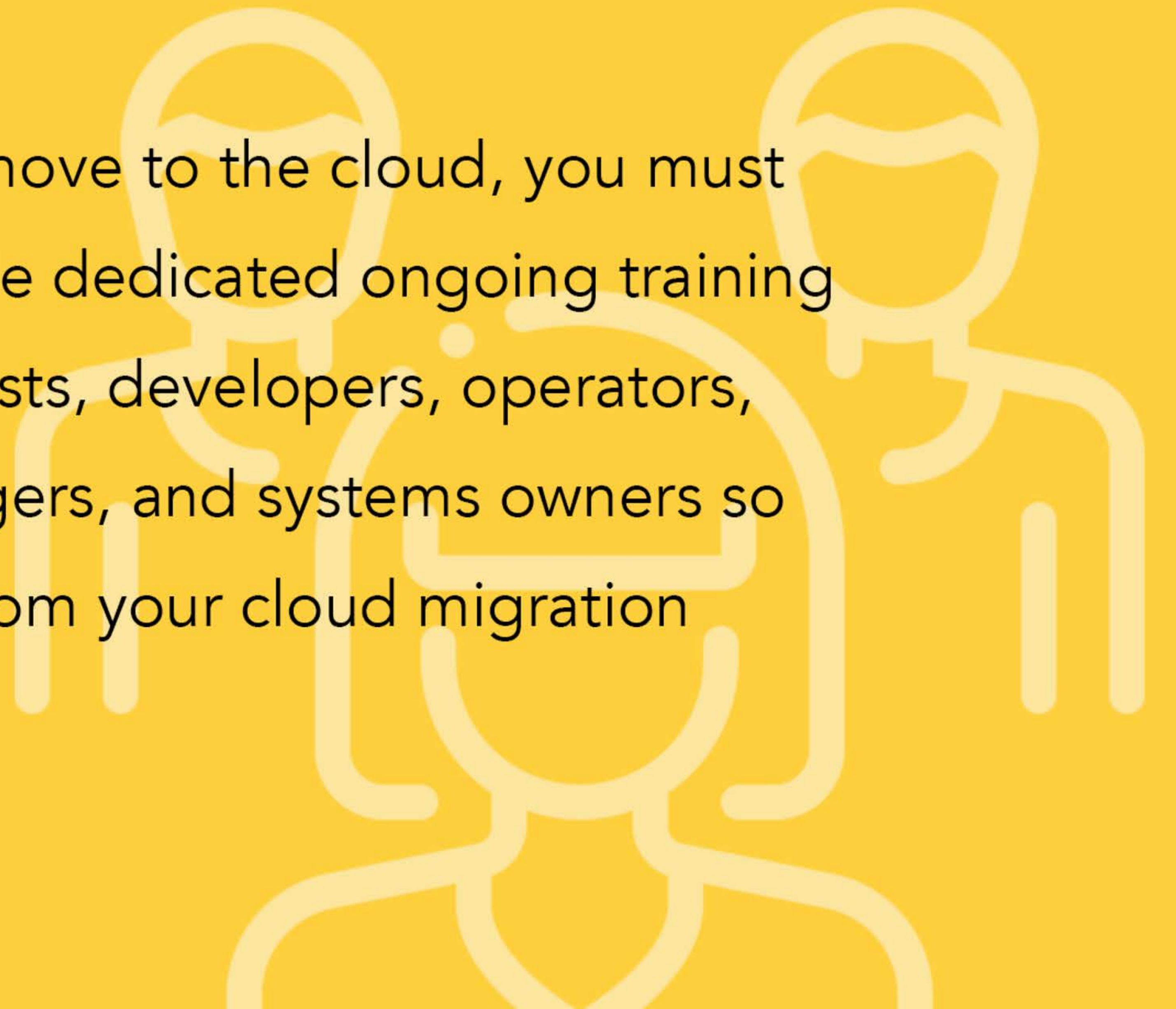
Doing business in the cloud requires easily repeatable processes and system accountability. Automate everything and you'll enjoy smoother audits, easier compliance, more efficient deployments, and more.



8

## Invest in your people

To receive the full benefit of the move to the cloud, you must actively upskill your teams. Provide dedicated ongoing training for your architects, business analysts, developers, operators, product managers, project managers, and systems owners so they can help you get the most from your cloud migration





# 9

## Hybrid and multi-cloud strategies

To keep your enterprise future-proof once you've migrated to the cloud, it's critical to build hybrid and multi-cloud strategies upfront. Here from our experts are some tips on how to make that happen.

### 1. Address data silos

Whether in standalone relational databases, or block storage like persistent disks and data warehouses, over time, silos erode productivity and can lead to costly mistakes. Data silos can be addressed in two primary ways: Integration or data lakes. Integration is a workaround for siloed data, connecting the silos with extract transform load (ETL) pipelines to gather dispersed data for analysis. Data lakes house all formats of raw data and offer a single source of truth for organizations opting for a cloud-first approach.



### 2. Make

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## 2. Make strategic vendor choices

Work with vendors that offer platform-agnostic services. This helps you avoid getting locked into long-term relationships that could become a roadblock when you decide to move to a new platform. Specifically avoid platform-as-a-service (PaaS) and pass on platform-specific offerings for your AI and machine learning applications.



## 3. Avoid

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### 3. Avoid over-taxing your decisions

Choose the faster and less resource-intensive path of focusing on a solution that will help you achieve a short list of your top strategic outcomes. Getting too granular about finding a solution that will deliver on every need--no matter how minor—may leave some value on the table but will burn through time and resources and deliver only a small amount of value.



### 4. Don't

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## 4. Don't "set it and forget it"

Make sure your IT team stays on top of what's going on with your cloud system. It's a complex environment with multiple point of failure, so it's essential to remain diligent with ongoing insight into integrations, security, and structural patterns that may need attention.



## 5. Security

Any transition  
can expose  
for exploitation  
migration, a



## 5. Security in the cloud

Any transition from on-premises to cloud infrastructure can expose vulnerabilities. Code can break, opportunities for exploitation can open up, and during a complex migration, anomalies can be inadvertently overlooked.







# Security in the cloud

As your apps, systems, and data make their way to the cloud, your security and DevOps teams must take steps to keep your business secure using our six pillars of cloud security:

## ➤ Identity

Set up a centralized identity source for authenticating users.

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Use role-based access control for groups to avoid one-off permissions.

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Employ multi-factor identification for securing hybrid and multi-cloud systems

## ➤ Data

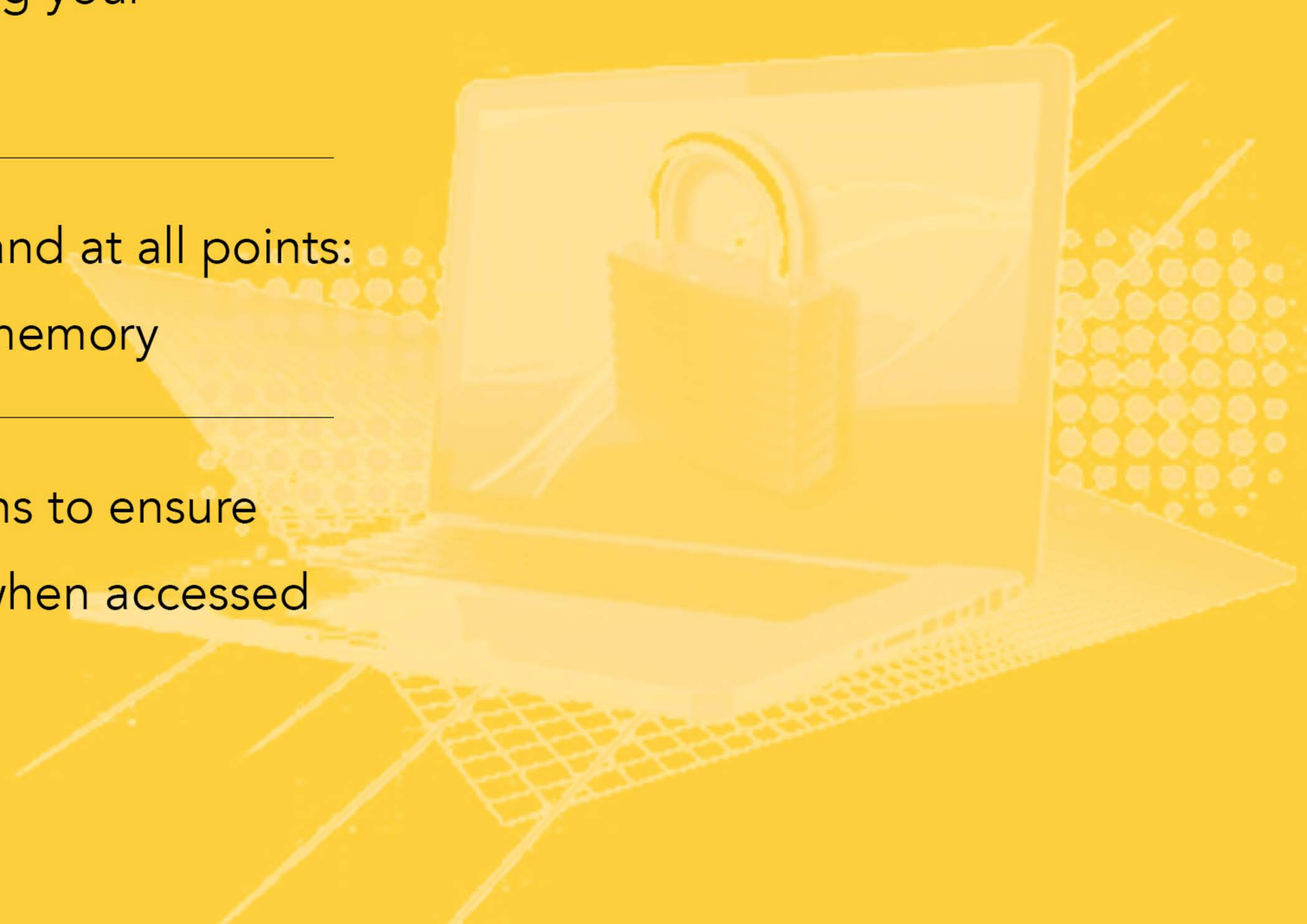
Focus efforts on protecting your data—not the data store

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Encrypt data at all times and at all points:  
At rest, in transit, and in memory

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Simplify data classifications to ensure that data is secure even when accessed on a desktop





# Security in the cloud

As your apps, systems, and data make their way to the cloud, your security and DevOps teams must take steps to keep your business secure using our six pillars of cloud security:

## ➤ **Infrastructure**

Layer your defense, but keep it precise and uncomplicated

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Less troubleshooting will be required if the structure of your security is less complex

## ➤ **Automation**

The best places to integrate automation are policy and compliance

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Incorporate security into pipeline updates prior to deployment

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Even when automate, include sanity checks and manual gates in the process





# Security in the cloud

As your apps, systems, and data make their way to the cloud, your security and DevOps teams must take steps to keep your business secure using our six pillars of cloud security:

## ➤ **Collaboration**

In a hybrid or multi-cloud security situation, utilize cross-team collaboration

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Being both DevOps and security to the table in the beginning to facilitate setting mutual, end-to-end goals for your migration process

## ➤ **Analytics**

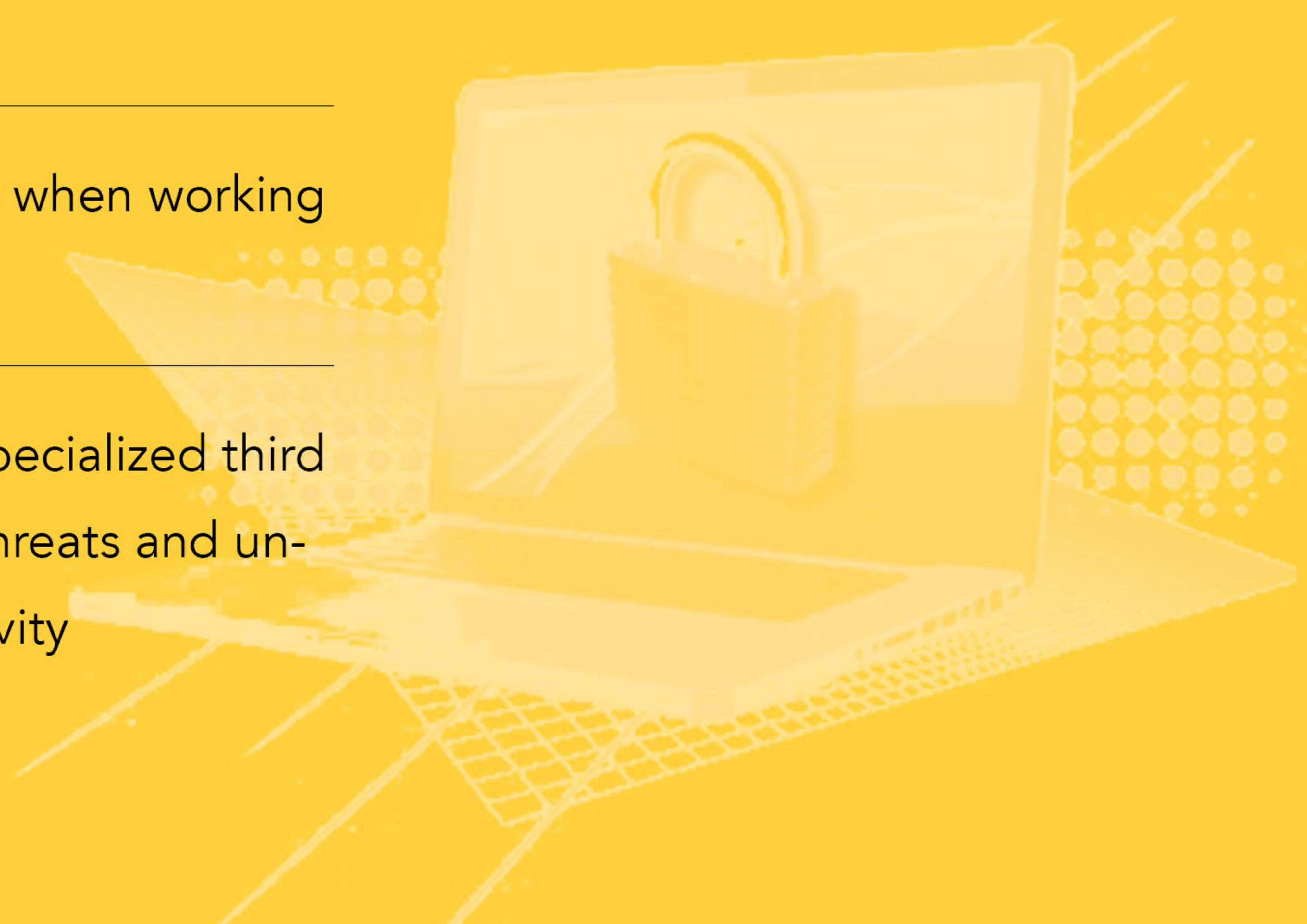
Standardize on a platform to ingest and analyze your logs

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Use third-party platforms when working with multiple clouds

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Outsource analysis to a specialized third party for help in finding threats and understanding all cloud activity





# Got cloud migration questions?

Our cloud development methodologies, created and refined over years in the industry, are designed to ensure that every project maximizes your business potential. Find out how Pegasus One cloud consulting can help you achieve your goals without the headache, hassle, and cost of traditional outsourcing.



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We are a CMMI Level 5 company with high focus on quality and ROI.

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