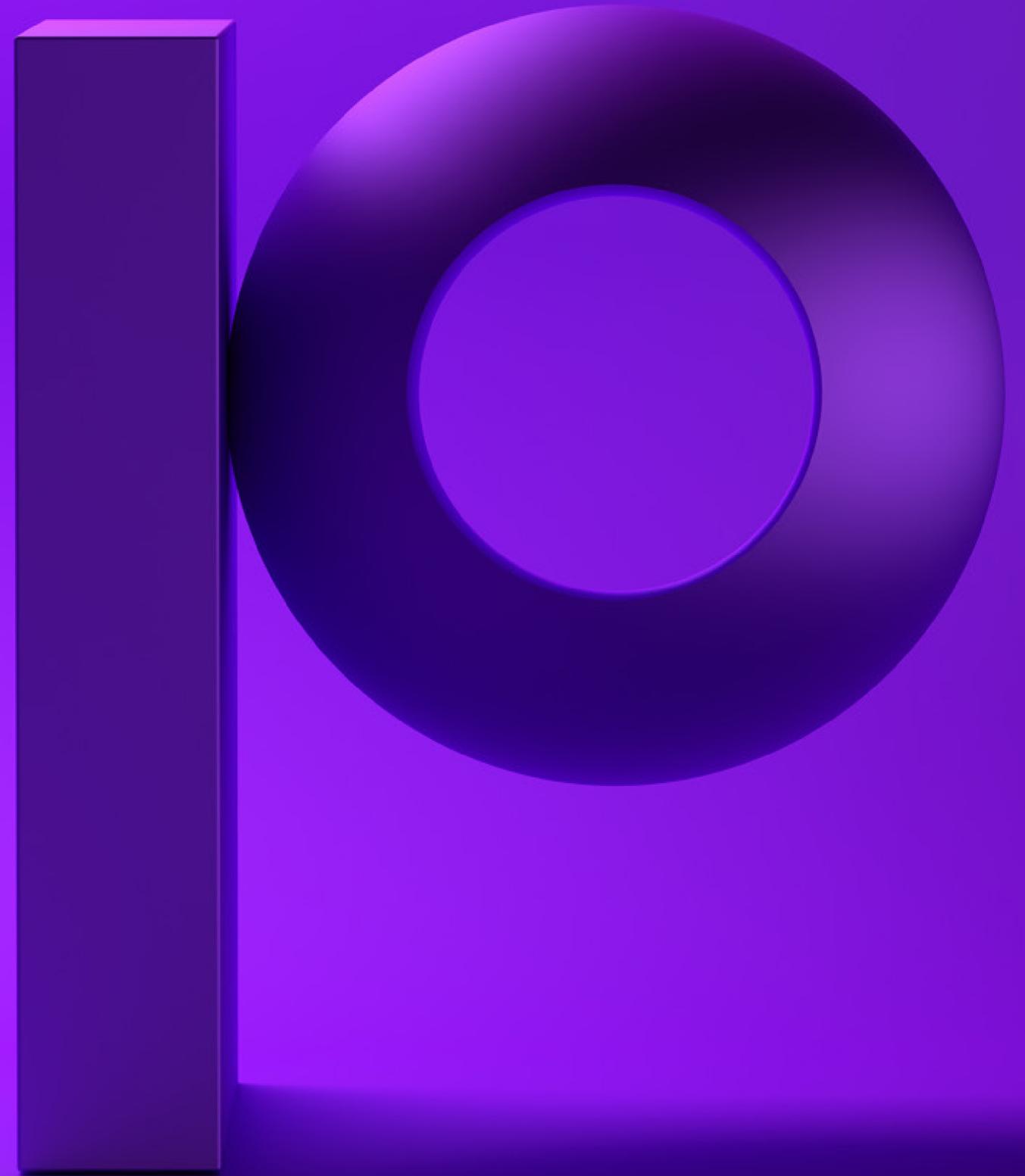


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# Mastering Data Integration for Cloud Migration

A guide to strategies for effective data  
integration for successful cloud migration





According to Gartner, an estimated 85% of organizations are expected to adopt a cloud-first strategy by 2025, driven primarily by the need for data modernization. Data integration plays a crucial role in cloud migration by ensuring that data from various sources is consolidated, consistent, and accessible as it moves to the cloud.

Data integration can be complex, but the right tools can facilitate the critical details of moving data. Tools can manage everything from data extraction to transformation and loading for seamless transfer and ensure formats are standardized, de-duplicated, and consistent so data in the cloud is reliable. For organizations that need real-time or near-real-time access, data integration tools can continuously synch data between on-premises and cloud systems and minimize downtime.

Once data is in the cloud, it becomes more accessible and manageable, allowing for a unified view that is essential to trustworthy analytics and business intelligence. Integration tools also help maintain data quality and compliance by offering features for monitoring and managing data. Automation through these tools reduces the risk of errors and lowers costs by optimizing cloud storage and processing.

# Top Considerations to Cloud Migration

## Cloud migration and modernization challenges

While migrating to the cloud can provide many benefits, cloud migration and modernization come with significant challenges that must be addressed to ensure a successful transition.

## Data governance and compliance

Weak data governance and compliance can result in security breaches, regulatory penalties, and operational interruptions. Additionally, they can drive up costs, heighten risks, and erode customer trust.

## Complexity

Managing application dependencies, transferring data, and addressing potential downtime can be complex and costly if not executed correctly.

## Performance and latency issues

When migrating services from on-premises to the cloud, improper resource allocation can lead to performance issues and inefficiencies.

## Data incompatibility

Data incompatibility can lead to performance issues, data loss, and operational disruptions. It can also increase costs, create security vulnerabilities, and complicate integration, maintenance, and compliance.

## Data inconsistency

Data corruption or loss during cloud migration can result in significant operational disruptions and inaccuracies, impacting business processes and decision-making. Additionally, it can lead to costly recovery efforts and damage to customer trust and regulatory compliance.

## Scalability and flexibility

If cloud setups aren't scalable or flexible, businesses may face performance issues and inefficiencies as they struggle to handle varying workloads and growth demands. This can lead to increased costs, reduced agility, and difficulty in adapting to changing business needs.

## Vendor lock-in

Excessive dependence on a single provider's proprietary technologies can reduce flexibility, increase costs, and introduce a single point of failure. Moving away from the platform can also be expensive and time-consuming.

## Disaster recovery and backup strategies

Migration can involve significant data loss risks and downtime, leading to lost revenue, productivity, and brand damage. Data loss and downtime that impacts compliance can result in significant face fines.

# Migrating Legacy Systems

Along with many of the challenges discussed, migrating legacy systems such as mainframes come with unique requirements and considerations. Mainframes often use architectures that may not seamlessly align with cloud environments. The mismatch requires substantial adaptation and custom solutions to ensure effective communication and data flow between legacy and modern systems.

Data migration may require data conversion to match cloud formats and ensure data consistency to prevent loss or corruption during the transition. Legacy applications might need to be rewritten, refactored, or rearchitected to fit cloud infrastructure. Preserving the original functionalities while incorporating new features can be time-consuming and expensive.

Legacy systems optimized for specific hardware may experience performance degradation or latency when moved to the cloud; replicating the high-performance environment of the legacy system in the cloud can be particularly challenging.

If legacy modernization is not done correctly, it can be time-consuming and expensive, leaving you stuck in migration limbo.





## 1. Assess project scope and strategy

When moving your data to the cloud, taking the time to assess project scope and strategy is important. Start by getting a clear picture of your data—understand its structure, quality, and how relevant it is to your business. This helps you figure out which data is priority and should be migrated first and which can wait.

Next, choose an integration strategy that matches your business goals and the specifics of your data. Depending on what fits best, you may opt for a lift-and-shift approach, re-platforming, or refactoring. This upfront work streamlines the migration and ensures you're maximizing your cloud investment.



## 2. Choose the right tools

Choosing the right tools is essential for data integration during cloud migration. Look for data integration tools and platforms that offer automation features. These can help you maintain data quality and governance and manage metadata more efficiently.

Since moving to a cloud-native or cloud-first approach is a gradual process, you need tools that can evolve with your needs. Consider how your architecture might change over time and how much redevelopment or customization might be necessary. Opt for tools that make it easy to adapt and deploy modular updates so you can handle changes smoothly and keep your migration on track. This way, you'll set yourself up for long-term success and make the whole transition smoother.



### 3. Develop a clear framework

Start by setting up a plan for exactly how your data will be moved, transformed, and integrated into the cloud environment. Managing metadata effectively is also crucial because it gives you essential context about your data sources, their structures, and how they relate to each other. This ensures that your data is mapped and transformed accurately, which helps everything fit together seamlessly in the cloud.



## 4. Implement robust security measures

Make sure your plan includes robust security measures to protect your data throughout the process. This means implementing strong encryption to keep data safe, setting up strict access controls to limit who can view or modify the data, and ensuring you're compliant with all relevant regulations and standards. By focusing on these security aspects from the start, you'll safeguard your data against breaches and ensure a smoother, more secure migration.



## 5. Identify data transformations

This step involves figuring out how your data needs to be changed to fit the new cloud architecture. You might need to adjust data formats, structures, or schemas to ensure everything works seamlessly and performs well in the cloud environment.



## 6. Perform testing

It's not enough to test once; you must test before, during, and after the migration. Start with unit testing to check individual components, move on to integration testing to see how everything works together, and then conduct performance testing to ensure everything runs smoothly and efficiently in the cloud environment. This thorough testing process helps you catch any issues early so your data is accurately and seamlessly migrated and integrated.



## 7. Continuously monitor

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## Summary

Getting data integration right is crucial to a successful cloud migration. However, it's complex. Navigating issues like data governance, compliance, and the complexities of managing app dependencies and potential downtime is challenging. Migrating legacy systems can be particularly tricky, often requiring many adjustments to avoid performance issues.

Moving to the cloud is all about ensuring your data from different sources merges smoothly, stays consistent, and remains easy to access. Using data integration tools with automation features helps efficiently handle tasks like data extraction, transformation, and loading. These tools also keep your data clean and synchronized in real-time, minimizing downtime and ensuring everything runs seamlessly. By following these best-practice steps, you'll set yourself up for a smoother transition and ensure your data stays reliable and your operations run efficiently.





## About Precisely

As a global leader in data integrity, Precisely ensures that your data is accurate, consistent, and contextual. Our portfolio, including the Precisely Data Integrity Suite, helps integrate your data, improve data quality, govern data usage, geocode and analyze location data, and enrich it with complementary datasets for confident business decisions. Over 12,000 organizations in more than 100 countries, including 93 of the Fortune 100, trust Precisely software, data, and strategy services to power AI, automation, and analytics initiatives. Learn more at [www.precisely.com](http://www.precisely.com).

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