



01 | **NAVIGATING YOUR CLOUD JOURNEY IN ENGINEERING**

Assessment, Planning, and Migration Preparation

INTRODUCTION

The AEC industry is experiencing a pivotal moment in its digital transformation, with cloud computing emerging as a catalyst for innovation and efficiency. The first eBook in our three-part Engineering Cloud Journey series takes you through the initial steps towards cloud migration.

This ebook covers the following:

- **Phase 1:** Assessment and Planning
- **Phase 2:** Migration Preparation

You'll learn how to assess your current systems, define goals, and prepare a cloud migration roadmap tailored to engineering firms.



Figure 1. The six-phase cloud journey for AEC firms—from assessment to continuous improvement—guides the transition to a secure, collaborative, and AI-ready data environment.

As your engineering firm embarks on its cloud migration journey, it's essential to take a strategic approach to assessment and planning to overcome industry-specific challenges, such as limited access to large CAD and BIM files, fragmented collaboration between distributed teams, and the high cost of maintaining on-premises infrastructure. By evaluating your existing systems, pinpointing operational bottlenecks, and defining measurable objectives, you lay the groundwork for more efficient project execution, stronger version control, and enhanced collaboration across design and delivery teams. These improvements boost day-to-day performance and position your firm to leverage technologies like AI and automation.

The migration preparation phase helps you create a practical roadmap for transitioning core engineering workflows to the cloud. With deliberate planning, your team can unlock the full benefits of cloud computing—secure, real-time access to project data from the field or office, stronger data protection, and seamless integration with tools like Revit, AutoCAD, and analysis platforms. These capabilities help your practice modernize operations, support digital design innovation, and stay competitive in a fast-evolving, tech-driven market.

PHASES 1 & 2

Phases 1 & 2



Figure 2. Early cloud journey phases—assessment, planning, and preparation—focus on identifying inefficiencies, aligning goals, and securing a strong foundation for migration.

PHASE 1

Assessment and Planning

A successful cloud migration begins with setting clear operational goals and understanding your firm's IT environment and challenges. Let's review three key steps your engineering firm can take to ensure a smooth migration to the cloud.

1. Evaluate the existing infrastructure

- How is data stored?
- Who can access it?
- Where are the delays or frustrations?

Your evaluation should focus on identifying inefficiencies in data management, collaboration gaps, and scalability limitations.

2. Define goals for accessibility, collaboration, and cost reduction

Establish clear objectives based on business priorities. These goals—such as seamless access, enhanced collaboration, and cost efficiency—must reflect the daily realities of engineering teams. For many firms, these include:

- **Seamless remote access** to files across office and field teams
- **Improved collaboration** with consultants and contractors
- **Lower IT overhead** with more predictable operating costs

Defining these targets early creates a measurable roadmap for cloud migration success.

3. Conduct a cost-benefit analysis for cloud ROI

To create a business case for change that resonates with leadership and IT, translate your evaluation and goals into numbers:

- Compare the operational cost of on-premises systems to cloud subscriptions
- Estimate time saved in file retrieval and sharing
- Identify long-term gains like AI readiness and lower risk exposure

PHASE 2

Migration Preparation

Once your engineering firm has completed its system assessment and defined strategic goals for cloud adoption, the next critical step is translating that planning into action. The migration preparation phase involves designing a detailed, technically sound roadmap to move essential data and processes into a secure cloud environment. This phase addresses three key challenges engineering firms struggle with when migrating to the cloud:

1. Creating a clear and structured roadmap to assess, clean, and organize design and project data
2. Ensuring robust data security before, during, and after migration
3. Managing expectations, training users, and overcoming resistance to workflow changes



Real-World Insight

Dan Larson, CEO of American Engineering Testing (AET), offers a clear rationale for cloud migration:

“Technology has become crucial for our competitiveness. It helps us be more accurate, more timely, and more efficient in our service delivery. The cloud platform has particularly enhanced our ability to provide better service to our clients.”

Engineering firms should apply three key strategies to mitigate these risks and ensure a smooth transition.

1. Develop a comprehensive data assessment and optimization strategy

Begin by identifying the highest-impact assets for migration, such as current CAD files, project models, spec books, and consultant folders. Prioritize active project data and shared resources used across teams. Archive or eliminate redundant and outdated information. Engineering file structures are often deep and complex, so standardizing naming conventions and folder hierarchies beforehand ensures better navigation, faster access, and reduced storage bloat in the cloud.



2. Establish enterprise-grade security measures

Data protection is non-negotiable for engineering firms managing proprietary schematics, product specifications, and regulatory documentation. Choose a cloud platform that supports:

- Granular, role-based access controls
- Encryption both at rest and in transit
- Audit logs and secure sharing protocols
- Compliance with industry frameworks like ISO, NIST, or CMMC

This underscores the importance of balancing flexible access with stringent security to protect sensitive design IP and meet contractual obligations.

3. Prepare users for the transition and address adoption gaps

Migration success isn't purely technical—it's also behavioral. Engineers and project managers rely on established workflows, and change can create friction. Equip your team with hands-on training tailored to their roles and tools (e.g., AutoCAD, Bluebeam, project scheduling software). Use phased rollouts to minimize disruption, identify internal champions to lead adoption, and implement a feedback loop to surface issues early and iterate improvements.



Real-World Insight

Dewald Smith, Project Director at ALEC Engineering & Contracting, highlights the importance of not just adopting new technology but supporting your team through the transition to fully realize its benefits:

“Egnyte enables us to collaborate with clients with more transparency, and that has really built trust and strengthened those relationships... They make it easy for us to take on increasingly complex projects more quickly and effectively.”



CONCLUSION

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Mastering the assessment, planning, and migration preparation phases paves the way for your engineering firm to build a future-proof digital foundation and unlock strategic advantages that boost productivity, security, and innovation.

WHAT'S NEXT?

What's Next?

In the next part of our Engineering Cloud Journey series, [Executing Your Cloud Migration: Best Practices for Engineering Firms](#), we'll explore the implementation phases—diving into data migration strategies, cloud adoption best practices, and how your firm can leverage cloud technologies to drive operational success. Join us as we take the following steps on this cloud migration journey together!



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