

Conquering Complex Migration

How Enquizit Helped the Department of
Transportation Transition to the AWS Cloud



For large organizations balancing departmental and centralized control, the move to the cloud can be daunting. Organizations attempting to go it alone will quickly discover that top-down migration strategies that work for some departments can be counterproductive for others. On the other hand, allowing each department to make their own move to the cloud means a lack of centralized control and visibility, along with limited support for small departments that don't have the resources to develop their own migration plan.

While migrations like this can feel impossible, they don't have to be. What does it look like to conquer complex migration? In this e-book, we'll take a deep dive into Enquizit's migration process to uncover best practices for organizations attempting to strike a balance between departmental freedom and centralized visibility.

Along the way, you'll hear the story of our partnership with the Department of Transportation (DOT). Though the DOT is a government organization, their work with Enquizit is a valuable example of what complex cloud migration can look like for any large government or commercial organization navigating the push and pull of a multi-department structure.

Step 1 Portfolio Discovery

In 2018, the Department of Transportation (DOT) approached Enquizit for assistance with cloud migration. From the start, our team knew this would be a unique project. The DOT wanted a centralized cloud setup to support its entire organization – but the many agencies comprising the larger DOT umbrella organization were all in various stages of cloud adoption. Smaller agencies within the DOT needed help getting set up in the cloud quickly, while some larger agencies had already migrated and were using their own cloud solutions. With fully operational, independent networks, these larger departments

had no interest in another time-consuming migration – or the desire to make adjustments to a system that was already working for them.

To solve this problem of moving a patchwork of departments, competencies, and apps over to one centralized solution, the Enquizit team needed to develop a migration roadmap that would work for all of the various stakeholders. To begin, we initiated a readiness assessment – a “portfolio discovery” report card that indicates how ready the DOT's system was for cloud migration.

Without the right tools, portfolio discovery is incredibly labor intensive. It requires searching through an organization's existing tools and systems looking for gaps, redundancies, and required patches. To simplify the process, we leveraged SkyMap, our versatile cloud migration planning software.

SkyMap utilizes tool-based discovery, crawling an organization's network to identify gaps before creating a holistic report of current system capabilities. Using SkyMap, our team was able

Enquizit's portfolio discovery process was able to save the DOT countless hours of time and research. Along with SkyMap's readiness assessment, our team of migration experts quickly and efficiently made thousands of small decisions at a much more rapid pace than the DOT would have been able to make on their own. The team's deep knowledge allowed them to serve as a guiding hand, bringing two or three top options to the table to solve specified pain points, rather than forcing DOT staff to sift through and differentiate between dozens of possible solutions.



to efficiently identify redundant or defunct apps that the DOT could immediately eliminate to save money. SkyMap was also able to identify over-provisioned systems that could be sized-down.

Though the SkyMap readiness assessment is an invaluable first step, human usage of applications isn't always reflected in system data. So, as part of portfolio discovery, we augment SkyMap data with conversations with staff about how and when tools are utilized. For example, though the initial SkyMap report identifies a finance app as a business-critical tool, it may only be used at the end of every month to generate reports. Knowing when applications are heavily used and when they are dormant is a pivotal part of migration planning.

Step 2 Migration Planning

After assessing the current landscape, it's time to develop a road map. As an Advanced Consulting Partner with AWS, Enquizit has years of experience articulating common migration patterns. To guide the DOT's migration process, we used a series of pre-planned pathways developed by Enquizit and AWS, with

the option to alter or develop new pathways based on any unique departmental needs. Given the varying levels of cloud usage among the DOT's agencies, our team placed each department into one of three categories that would help define their migration process:

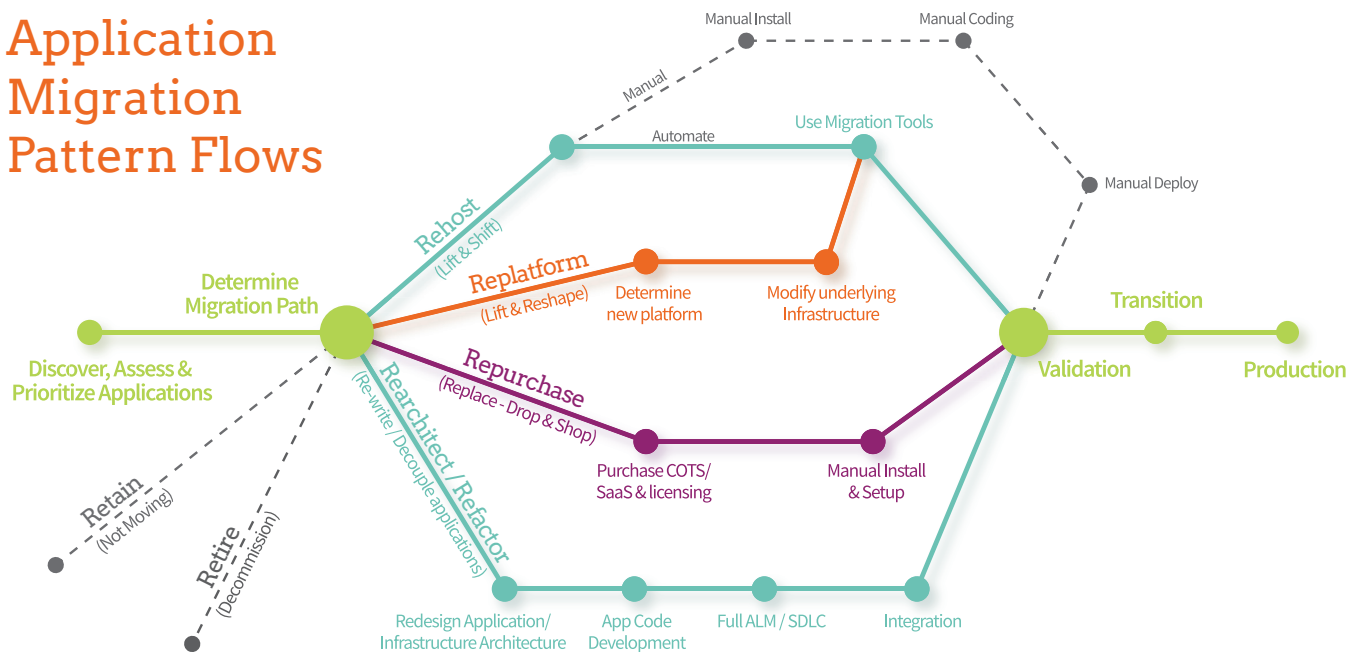
Category 1 Greenfield

In the first category, the Enquizit team grouped small departments with limited resources. These departments were waiting for a centralized migration plan from the DOT because they didn't have the dedicated IT staff to coordinate their own move to the cloud. For this group, the goal is simple: build something that works in the cloud so they can move and set up quickly. Because this group had little experience with the cloud, they also needed more staff training and upskilling.

Category 2 Transitional

The second category included all recent movers or transitional departments. We defined a recent mover as a department that had moved to the cloud less than 18 months before the centralized migration. For this group, the focus was on modernizing the

Application Migration Pattern Flows



current setup and rapidly moving what they'd already built into the DOT infrastructure for visibility. For some departments, there were concerns about maintaining and improving compliance, and this became a primary focus. Essentially, the goal for all transitional accounts was to strengthen the walls and provide any supplemental training to optimize and complete their transition.

Category 3 Mass Workload Migration

The final category was for mass workload migrations. These were large, complex departments that had already transitioned to the cloud and had been fully operational for more than 18 months. For these accounts, the focus was on maintaining compliance and uptime. The Enquizit team needed to ensure that these departments could continue to run while gradually integrating into the DOT infrastructure.

By separating each department into its own category, Enquizit was better able to coordinate the specific migration pathways each department needed in order to migrate. Once each department had its own roadmap, it was time to put the plan to the test.

Step 3 Migration Process

After extensive portfolio discovery and planning, the migration planning process acts as a rehearsal for mass migration. The first step is to migrate a few representative applications as proof of concept (POC) to reveal any flaws in the migration plan so they can be addressed before mass migration. For the DOT, this meant Enquizit could test tooling and processes before undertaking widespread implementation, removing the risk of extended downtime during migrations.

Again, SkyMap was at the core of the migration work – this time offering an intuitive dashboard where stakeholders could track processes in real-time. With SkyMap, project leaders can see necessary approvals, reviews, and ongoing and completed

Security underlies every part of Enquizit's services. For a government agency like the DOT, which requires earning an Authority to Operate and Authority to Test (ATO/ATT) before operating, security is not just important – it's essential. The DOT anticipated that proving ATO/ATT compliance would be a huge part of their migration process. The Enquizit team sped up and simplified this process, providing 80% of the material the DOT needed to achieve their cloud infrastructure ATO – ahead of time.

processes. SkyMap ensures that the migration process is completely transparent for all involved.

Once the POC has been tested and runs smoothly, it's time to migrate other systems. At the foundation of each of these technical migration processes, however, are people. To ensure a smooth and effective transition, Enquizit integrates upskilling into each migration, which we've broken into its own segment below.

Step 4 Upskilling Staff

The final part of the process is all about human capital. It's important for your team to feel empowered to manage their new solution – otherwise, you will never maximize all of its offerings. At Enquizit, our services include a variety of training, ranging from HR and managerial training to understanding and rewriting job descriptions for cloud utilization. For the DOT, our training offerings were tailored to the needs of the departments in the three categories.



For staff with no experience using AWS, a 101 training offered a rapid-fire introduction to AWS offerings. It also focused on how staff members could, and should, utilize AWS services – educating staff on how they can adapt their specific daily tasks to the cloud to optimize cost and ensure consistency across the organization.

The Enquizit team leverages agile best practices throughout our training and migration processes, teaching them to our customer as we go. With agile, organizations incrementally deliver new features in continuous consultation with the end user. For the DOT, rather than collecting a laundry list of requirements and building a system that may or not may not meet end-user needs, we gathered continuous feedback, shifting priorities based on user concerns and experience. Part of upskilling staff is showcasing agile as a model and encouraging agile implementation across departments – particularly for future rollouts in the cloud.

Security training is also a necessity. The AWS Cloud offers powerful security settings that make it easy to meet compliance requirements. However, the AWS security toolset can be challenging to navigate without expertise. As an expert partner, our team rapidly set up and trained DOT security professionals on AWS security offerings, cutting down on time and acting as a trusted partner for all security and compliance concerns. Because the standard had already been set for basic security compliance, this training focused on maintaining a secure environment and improving security posturing as standards change.

Expert Guidance for Complex Projects

With Enquizit's help, the DOT transformed from a decentralized patchwork of disparate departments without internal transparency to an upskilled, security-compliant setup operating efficiently on the AWS Cloud. Some of the highlights of the migration success include:

- The entire transformation took only six short months from start to finish – including a six-week government shutdown in the middle of migration.
- At the time of launch, the DOT had five active AWS accounts. A year later there are more than 60 open accounts, and that number is still growing.
- With help from Enquizit, the DOT was able to not only migrate to the cloud but establish an efficient system for growth – for example, the organization can now generate new accounts in as little as 45 minutes, a process that formerly took months.

This partnership between Enquizit and the DOT is emblematic not just of complex government projects, but of any large organization's migration to the AWS Cloud.

To learn more about how Enquizit can help your organization make the transition, visit enquizit.com/services/cloud-migration-services/.

