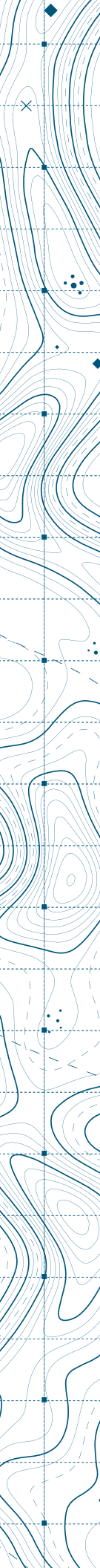




Data Center Consolidation AI Methodology



Data center consolidation and migration projects are complex endeavors. Traditional approaches often face challenges in speed, accuracy, and cost-effectiveness. In this white paper, we propose a three-phase consulting model that leverages AI and automated analysis to accelerate the discovery, planning, and execution phases of data center transformation. By harnessing our methodology, organizations can achieve faster time to value, optimize resource allocation, and minimize disruption during migration.

Challenges of traditional data center consolidation and migration



Time-consuming discovery and planning

Manually assessing hardware, software, and application dependencies can be laborious and error-prone.



Inaccurate workload mapping

Traditional methods for mapping workloads to target environments may miss critical details, leading to performance issues post-migration.



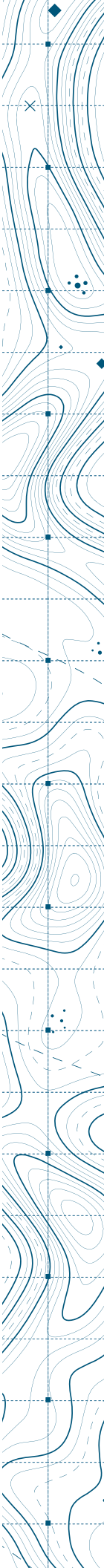
Inefficient resource allocation

Without precise data on resource utilization, overprovisioning can occur, increasing costs.



Disruption and risk

Manual processes and complex dependencies create a higher risk of downtime and data loss during migration.



Introducing the three-phase AI-powered consulting model

We use an application-centric methodology that leverages AI/ML models to drive a structured approach to data center consolidation and migration and streamline each phase.

Visibility of all your application portfolio and the characteristics of your applications is crucial in determining their importance to the business and its objectives. Conducting a thorough inventory of your applications, assessing their business value and technical fit, and calculating their total cost of ownership, provides crucial insights needed to make investment or divestment decisions about your application portfolio. Assessing future-state considerations, determining appropriate placement and hosting, and strategizing migration increases business value while potentially lowering or minimizing cost of ownership (CapEx and OpEx).

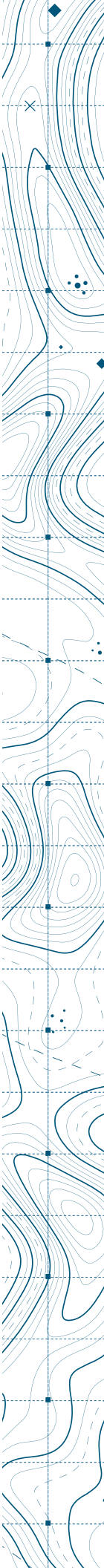
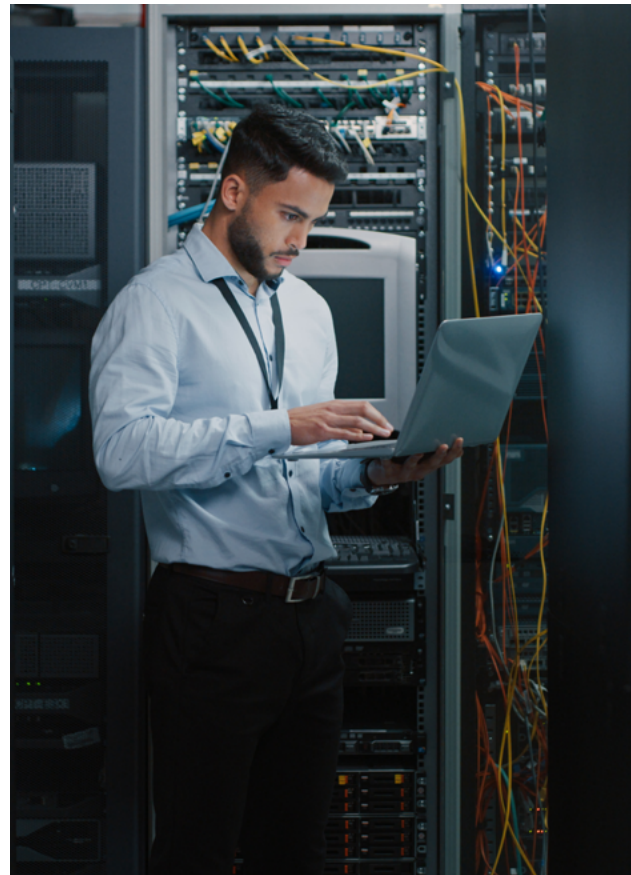
An efficient, AI-driven process can be used to develop transformation options that focus on:

- Identifying a prioritized view of non-core or low-priority apps that do not require modernization to support business requirements and can easily be rehosted or re-platformed to their future state.
- Identifying core legacy applications that require (complex) transformation to effectively drive current and future business requirements and the true ROI of the modernization into cloud-native apps.
- Scalability, security, availability, and cost containment options.

Gen AI and automation capabilities

Our generative AI/ML models and automation processes can:

- Scan environments to catalog current-state infrastructure and applications, map dependencies, and document suggested future-state architectures.
- Evaluate application compatibility with the target environment and business requirements to identify optimization opportunities, recommending consolidation, rearchitecting, and modernization options.
- Analyze system usage and dependency mapping to identify redundant, underutilized, or stand-alone apps to drive informed decisions on application retention, retirement, or further investment.
- Identify optimal migration paths, automate the migration, and provide secure configurations of workloads and infrastructure to the cloud.
- Model different architectural options, simulate their performance, and predict the best approaches for rearchitecting applications to fully leverage cloud-native capabilities.



Phase 1: Accelerated discovery and assessment

- **Inventory and dependency mapping:** Our algorithms tools automatically scan data center and, if applicable, cloud environments, creating a comprehensive inventory of hardware, software, and application dependencies. This eliminates manual data collection and minimizes errors.
- **Workstream characterization with gen AI:** By analyzing resource utilization patterns and performance metrics, our automated processes categorize workloads based on their suitability for on-premises, cloud, or hybrid deployment models.
- **Preliminary cost-benefit analysis:** We leverage our historical data repositories and industry benchmarks to generate a preliminary cost-benefit analysis to guide initial decision-making.

Benefits

- **Faster discovery:** Generative AI significantly reduces the time required for data collection and analysis.
- **Improved accuracy:** Automated processes minimize the risk of human error in dependency mapping and workload characterization.
- **Enhanced decision-making:** Data-driven insights provide a more accurate foundation for informed decision-making.



JumpStart discovery with Teton Cloud Consulting



Teton Cloud Consulting offers three JumpStart engagements to help you set expectations on migration complexity, estimate platforming costs, and map and inventory assets and dependencies.

1. **Application Rationalization Scorecard**
Gain a clear understanding of your current-state applications and workloads before moving forward with migration. Our application rationalization scorecard leverages a strategic questionnaire to help you determine how to disposition your applications following the 5 Rs methodology: rehost, refactor, rearchitect, rebuild, replace.
2. **Platform Costing Estimate**
Start your journey understanding what a platform migration might cost. Using your real infrastructure configuration is a great way to assess like-for-like solutions and pinpoint future opportunities for efficiency gains. This engagement offers a rapid review of platform options and cost estimates to help you find out how much it could cost to move forward with your data center consolidation.
3. **Inventory Discovery and Dependencies**
Grouping critical data is a cornerstone of a risk-mitigated and efficient consolidation or migration. Our methodology provides a fast, effective way to accurately and clearly inventory servers, applications and dependencies — streamlining a process that historically takes months down to mere weeks in many cases.

Phase 2: Optimized planning and design

- **Workload placement simulation:** We can simulate various migration scenarios, analyzing their impact on performance, scalability, and cost. This allows the prioritization and optimization of workload placement decisions.
- **Right-sizing target infrastructure:** Based on the workload characteristics identified in phase 1, our automated analysis recommends the optimal configuration for the target data center or cloud environment, ensuring efficient resource allocation.
- **Automated migration planning:** Our gen AI models can generate detailed migration plans and runbooks including sequencing, dependencies, and resource allocation.

Benefits

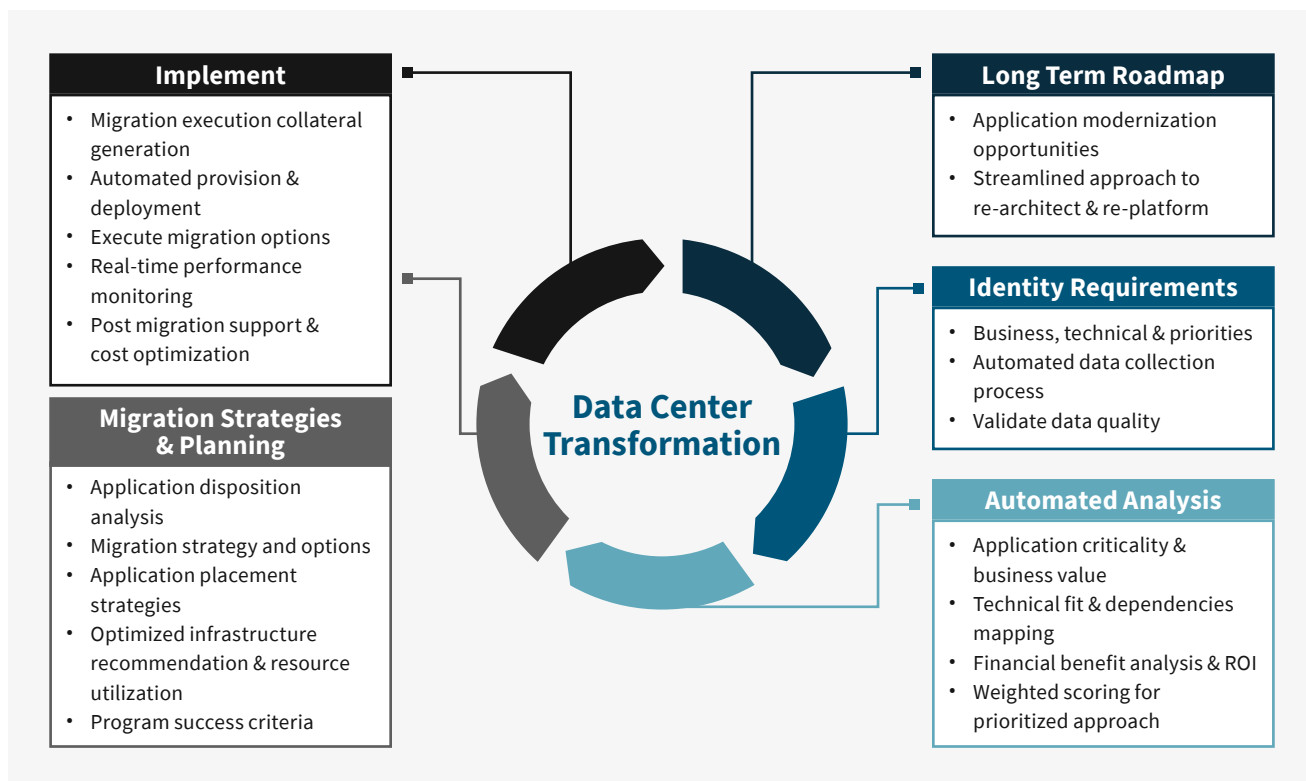
- **Reduced planning time:** Automating time-consuming tasks accelerates the planning process.
- **Optimized resource utilization:** Data-driven recommendations ensure resource allocation aligns with workload requirements.
- **Minimized risk:** A comprehensive migration plan with runbooks reduces the risk of disruption and downtime.

Phase 3: Efficient execution and ongoing optimization

- **Migration execution:** Automation of specific tasks within the migration process, such as infrastructure provision, application deployment, data migration, and configuration management, reduces manual effort and human error.
- **Real-time performance monitoring:** We leverage tools that can continuously monitor performance metrics in the post-migration environment, identifying potential bottlenecks and suggesting optimizations.
- **AI-powered cost management:** Resource utilization can be tracked post-migration, enabling ongoing cost optimization and resource allocation adjustments.

Benefits

- **Reduced migration errors:** Automation eliminates human error during migration execution.
- **Proactive performance management:** Proactively identifying performance issues ensures ongoing efficiency.
- **Continuous cost optimization:** Data-driven insights facilitate ongoing cost control.



Conclusion

By integrating AI and automated tools into the data center consolidation and migration process, organizations can achieve significant improvements in speed, accuracy, and cost-effectiveness. This three-phase consulting model offers a framework for harnessing the power of AI to streamline discovery, planning, and execution, ultimately leading to a smoother, faster, and more efficient data center transformation journey.

