

Data Migration to Cloud Strategy

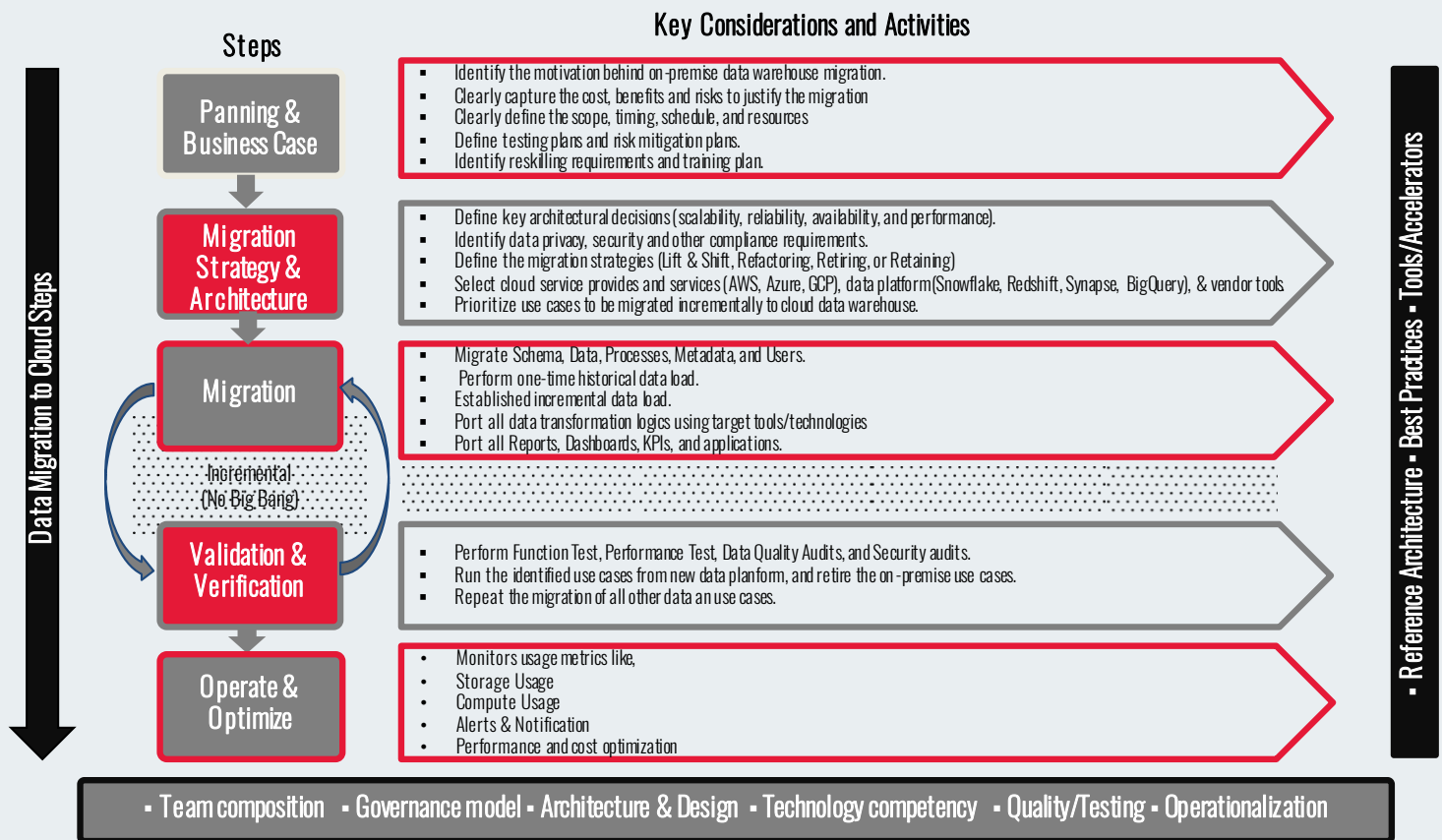
WHITEPAPER

Overview

The motivation to on-premise based data warehouse migration to cloud is not only limited to cost reduction or to achieve operational excellence. Instead, it is a complete business transformation journey to achieve various business goals. The motivation for cloud adaption varies from organization to organization. For some organizations, it could be a reduction in technologies and business agility. For others, it could arise for building capability around new-age tools and technologies such as advanced analytics. It is possible to have multiple business drivers, and it is critical to understand and prioritize these business drivers first and then analyze the corresponding impact on the business. Post a careful impact analysis; if cloud migration emerges as the answer, it's time to define the strategy, develop a holistic plan, and define a clear business outcome.

Data Migration Strategy

It is highly recommended to follow an iterative approach to migrate your data and associated business logic and applications to cloud. Organizations can choose to follow the big bang approach of migration in certain scenarios where disruption in business services is acceptable, e.g. moving historical or archived data and associated applications to cloud. There could be multiple steps involved in a migration journey; however, data warehouse migration journey can be broadly divided into the following five steps:



1. Planning & Business Case

This is the foundation step that is essential in understanding the overall scope of the migration journey. Generally, a data warehouse is built over several years, and the chances are that there exist tables, queries, or reports which are not or less frequently used and need not be migrated to the target

platform on the cloud. Or there could be a scenario where there are gaps that were never rectified in the existing system because of a potentially huge impact on other use cases, and this is the right time to rectify these flaws within the new solution. This phase helps to understand the

existing workload, data objects inventory, and list of applications that need to be migrated and those which need to be discarded.

2. Migration Strategy & Architecture

This is the phase where organizations define the type of migration to adopt, such as Lift & Shift, Refactoring, Retiring, or Retaining. It also involves drawing out the technical architecture of the solution and detailing the migration processes. Considering the design, the data to be pulled over, and the target system, you can begin to define timelines and project concerns. By the end of this step, the whole project should be documented, architecture captured, cloud and tool vendors identified. It's important to consider security plans for the data, and data that needs to be protected should be secured throughout the project duration.

3. Build & Migrate

Most of the data migration projects are complex in nature, and it makes sense to build and migrate your data and related applications iteratively. Typically, this step includes schema migration, SQL migration, Data migration and report migration. Each iteration should be followed with a validation and verification step to ensure the integrity and quality of migrated data.

4. Validation & Verification

The validation and verification step should run in parallel with the build and migrate step. Typically, this step includes Functional Test, Performance Test, Data Quality checks and Security audits to ensure the accuracy of the implementation and completeness of the application. Execution of identified use cases from new data platform and retire the on-premise use cases.

5. Operate & Optimize

Once migration is complete, it is important to manage and maintain your cloud data platform. You need to plan and train your operations team to manage the new data platform. This step involves monitoring and tracking of various cloud resources such as storage usage, compute usage to optimize the performance and cost. Review the application resource allocation and fine-tune for performance.

Conclusion

Day by day, cloud products and services are getting more and more mature. Also, data security and privacy is becoming more robust, and so is its ability to meet organizational security policies and guidelines. The data migration to cloud is in the mainstream, and organizations are increasingly adopting cloud-based data lake or data warehouse for their analytical needs. A properly planned and well-architected solution for data migration to cloud not only improves user experience but also prevents budget overruns or failure. It has been observed that a cloud-based data platform is able to reduce operational costs by over 50% and increased efficiency to onboard new use cases by 20%. Post the go-live stage, it's pertinent to implement proper data governance, and conduct a periodic security audit to ensure smooth, uninterrupted operations going forward.

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