Solving Migration Pipelines

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What is considered Migration

Data migration is the process of transferring data from one storage system or computing environment to another. There are many reasons your an organization might need to undertake a data migration project. For example, you might be replacing servers or storage devices or consolidating or decommissioning data center.

Major Types of Migrations

1) Database Migrations (between DBMS & NoSQL)

2) Cloud Migrations (between On-Premise to Cloud/ Cloud to another cloud provider)

3) Application Migration (between Platforms/Environments)

4) Business Process Migration (between SaaS tools)

5) Storage Migration

Migration Project Mantras

1) Assess First Plan next

2) Plan End to End

3) Execution is the easiest part

4) FoolProof Testing Mechanism

5) Secure & Govern all the way

6) Post migration Audit

Change Data Capture

Two Main Types of Change Data Capture:

1) Log Based

   Reverses log information to figure out the change and applies to the destination data

2) Query Based

   Discovers changes by Querying for the event changes happened between last query trigger to now and applies the changes to destination

Database Migrations

Complete: All data that is specified to be migrated is actually migrated. The specified data could be all data in a source database or a subset of the data.

Duplicate free: Each piece of data is migrated once, and only once. No duplicate data is introduced into the target database.

Ordered: The data changes in the source database are applied to the target database in the same order as the changes occurred in the source database. This aspect is essential to ensure data consistency.

Cloud Migrations

RE-HOST
"lift and shift," this is a basic strategy that involves lifting the stuff you currently host on-premise and shifting it to the cloud.

RE-FACTOR
by taking the time to re-factor your applications, they will be more compatible with future versions, and it can make them more accessible to accommodate future growth.

RE-PLATFORM
changes and adjustments to applications so they are optimized and will work better and faster when hosted on the cloud.

Six Rs

RETIRE
Some of your applications and services might not be useful anymore. There's no reason to migrate them to the cloud if they are not going to be of value to your customers.

RETAIN
If migrating to the cloud doesn't make sense for your company at this time, you can retain your current environment and revisit a move to the cloud later.

REPURCHASE
With repurchasing, you are moving your environment to a new, cloud-based product. One way to do this is to abandon your current applications and replace them with software as a service (SaaS) options.

Application Migrations

Move without conversions. Moving a primary asset, such as a website, from an on-premises environment to the public cloud—without changing anything about the asset—can result in significant savings. Using a public cloud also allows for additional support through built-in cloud optimization functionality like disaster recovery and on-demand capacity extension.

Choose a SaaS replacement. Finding an existing marketplace Software-as-a-Service (SaaS) offering that can already do what you need can reduce the burden of the migration process as well as free up on-premises resources for other workloads.

Application Migrations Cont.

Choose a PaaS replacement. Adopting an existing Platform-as-a-Service (PaaS) without adjusting any architecture can replace expensive on-premises server needs with a subscription-based service. A PaaS replacement often leads to increased agility during periods of high demand.

Re-architect. Modernizing an application or service through cloud migration can add new and improved functionality, add tangible product value, and give new life to an older but still valuable product.

Retire. If a given workload doesn't provide any business value, and it isn't intrinsic to another workload, retire it.

Business Process Migrations (SaaS)

1) Translate Business Language

2) Extract All Data with Business Meaning

3) Understand method of import

4) Perform Persona based testing

5) Go-Live and verify reports and analytics

Storage Migrations

Offline Storage Migration During a data migration with offline Storage Migration, the destination storage system views and copies the data in the source storage system. Because the data is migrated by the storage system, the migration time can be reduced. However, as is the case with migrations via a server, business operations must be stopped during a data migration to prevent the data from being changed.

Online Storage Migration allows the business server to read from and write to the destination storage system while data is being migrated from the source storage system. Operations can be resumed immediately after the cables are switched. Therefore, downtime can be reduced significantly with online Storage Migration. However, consider the effect on performance when business operations are performed at the same time since the load caused by data migrations affect the business operations.

Storage Migrations

1) Speed of Transfer

2) Mode of transport

3) Encryption on Data in transit and rest

4) Cold / Hot storage solutions in target

5) Persona Testing and Post Migration Audit