IBM Consulting

Windows and SQL Server Migration to Azure

Client Success Stories

IBM **Consulting**

Azure

UK’s Biggest Healthcare Trust

Program Overview - Define Target database platform for MSE with costing and other feature benefits , Build parallel data ingestion strategy for migrated databases to support MSE request., Unlock potential savings through zeroing out infra cost, Operational and management costs. Migrate the reporting platform to new modernized Power BI service

Single Server, multiple Instances, Age-old Database Services, No Encryption

Large Number of Unused or retired database

Total 30+ Databases sizing ~2TB

Modernize Jobs to run on the new Azure Data Factory Pipeline

Situation

- Several Healthcare databases are potentially unused on the existing on-premise server
- Integrates with multiple remote databases servers through linked services and many of them do not support encryption in transit . Some are not SQL type relational Databases and not directly supported by Azure SQL managed services
- Several SSIS packages that executes the Business process and data ingestion workflow. Many of them are run manually.
- Multiple consumer of the data hub, Different reporting users , Hospitals, Clinicians and data warehouse system accessing the database.
- Does not have any encryption at rest or in transit.
- Runs reporting system on SSRS or Qlik view technology platform.
- Need for database co-existence till the cut over

Solution

- Automated discovery and assessment using Microsoft Tooling capabilities.
- Modernization of IT infrastructure and moving existing databases to Azure SQL Managed PaaS platform
- Curated solution to archive unused databases to cold storage in order to save cost. Optimized database configuration and scaling on demand.
- Provisioning of Key Vault services to store the sensitive credential as a standard
- Power BI platform for one stop reporting solution. Reusing existing infrastructure for gateway cluster instead of provisioning new Cloud gateways.
- Data Factory pipeline conversion for existing SQL agent jobs in order to take benefit from the underlying Azure compute infrastructure.
- Parallel execution strategy for migrated database on new platform to support coexistence

Benefits of Migrating to Azure

- Creation of Strategic database platform to enable faster time to market
- Simplified database portfolio, optimized database usage.
  - 27 databases retired
  - 16 databases moved to Blob Cold storage and to be restored on demand
  - 30+ databases moved to new PaaS Database platform on cloud.
- Reduction of Technical Debt
  - Encryption at rest is auto enabled.
  - Reports running in older systems are remediated.
  - Modernized database features like encryption at rest, AD based security , logging and alerting.
  - Automated Backup , recovery and 99.90% guaranteed availability
  - Better role-based access control
- More Robust and secure cloud platform

British Multinational Telecommunications Company

Situation

- 182 Servers and 62 Applications
- 65 DBs from 6 Failover Clusters & 2 Always On SQL Clusters
- No understanding of Applications which were managed by external vendors
- Database Farm complexities:
  - DBs of 31 Apps hosted on the farm
  - Only 1/3rd of the SQL instances provisioned are in use
  - Availability Groups created with no database to manage
  - Improperly configured nodes of the cluster
- Application Clusters and COTS Apps in scope of migration

Solution

- IBM proposed a full scale move solution by adopting Garage Method
- Driven by Business objectives, migration strategies and approach were defined
  - Rehost (As-Is) of Application Servers to Azure
  - FCI SQL Server migration by using Azure Shared Disk
  - Parallel SQL Always On Availability Groups cluster to host DBs of various Apps
- Use of right set of migration tools to migrate the Clusters and standalone servers
- Redefined change management to expedite and optimize the approval process

Benefits of Migrating to Azure

- No delays incurred in exiting the DC resulted in cost savings for the client
- DB Farm migration to parallel Cluster reduced the DB footprint by 8 SQL instances
- The DB Migration strategy resulted in house keeping of DBs by cleaning up data (~2TB) and simplifying the target cluster(s)
- Builds & Service Management through Multi cloud Manager (VBMP) bringing in the Automation
- Application migrations implemented in less than 6 months going through full cycle of implementation

Health Care Data Company in North America

IBM were chosen by the client to migrate five (5) applications/services from the Data Center to Azure Cloud platform. It includes detailed design for application migration to the targeted cloud platform, migration planning, migration build/implementation per the detailed design, migration test planning and test implementation. At the end of application migration detailed design, client will approve the design and schedule and agree to proceed forward with the application build.

Standardize Platform, DB and Middleware

Reduce Cost of Operations

Improve Operational Efficiency

Reduce DC Footprint

Improve Release Cycles

Situation

- Choice of Cloud Platform – Azure vs AWS
- Data Intensive - 100 TB of data in SQL Server and over 500 TB of document data processed and stored in ISILON storage
- Continued costs of DC
- Lack of clear modernization strategy
- Reduce the risk of migration along with acceleration of new feature delivery

Solution

- POC to evaluate the key decision criteria and recommend the target cloud platform
- Future proofed Architecture
- Strong Azure DevOps experience & methodology
- Azure Cloud Migration Experience
- Consistent Delivery Performance
- Clear modernization approach
- Cloud Migration Factory toolset

Benefits of Migration to Azure

- Defined a new development experience with extensive use of PAAS services
- Reduction of Technical Debt by upgrading to Windows Server 2016 and SQL Server 2016
- A hub and spoke design model facilitating a highly secure environment
- Migrated applications to App Services running on an isolated(single-tenant) ASE with integration back to services running in on-prem
- Incremental Roll outs Plan for Dev, QA, UAT, Demo, Training and Production environments
- Design Reviews with Microsoft to validate IBMs approach

Regional Retailer Aims to Reinvest in New Growth by Leveraging Data to Reduce Operational Costs

Client's Challenge:

The client needed a modern, flexible data platform that could rapidly identify new areas for increased efficiencies, and lower operational costs in their store operations that was faster, more accurate, and scalable than their current on-prem system.

- Over 150 Extract, Transform, and load (ETL) packages needed to track the sales and operations data of its 2,100+ stores
- Relied on SQL Server Integration Services (SSIS) and Microsoft's on-prem analytics platform system (APS) to serve as its data warehouse and insights delivery tool

Solution:

The client leveraged Neudesic's insights development workbench framework to migrate over 150 SSIS ETL packages to a structured Azure Data Lake Storage (ADLS) for fast insights delivery to the business.

- An APS migration of over 7TB of data from 360 APS data warehouse tables into Azure Data Lake
- Nearly 600 data source objects now flow from Oracle, SQL server databases, flat files, and 3rd party APIs sources into Azure Databricks
- Security of sensitive data is maintained through an architecture built around Databricks secret scopes

Impact:

The client was able to reduce the cost of maintaining over 150 SSIS packages by 60% and accelerate the delivery of operations insights by 50%

- Architect and deploy enterprise Azure foundations for multiple environments using established best practices and automation
- The existing SSIS ETL logic used to populate APS, was refactored into Databricks notebooks
- Increased efficiencies and lower operational costs in-store operations. Earlier access to data insights by using a modern analytics platform.

Client Quick Stats

Industry: Retail

Organization Size: 17,000 employees

Annual Revenue: $9 Billion

Technologies in Focus: Azure Databricks, Azure Data Factory, Oracle, Microsoft Analytics Platform, SSIS, Azure SQL Database, Azure Synapse, Databricks Secret Scopes, Azure Data Lake (Gen2), Key Vault, ExpressRoute, Azure Automation, Azure Monitor and Alerts, Resource Manager

Azure Consumed Revenue

Project Highlights

60%

Cost reduction of maintaining 150 SSIS Packages

50%

Faster delivery of operational insights

600+

Data sources connected to Azure Databricks using Azure Data Factory