



Persistent

**NEWS AMERICA
MARKETING**

Case Study

News America Marketing



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About the Client

News America Marketing (NAM) is a US-based advertising and marketing company. Their shopper media offering is built on an unmatched understanding of consumers in the shopper-first era. They provide instore marketing media options in over 60,000 stores in the United States and Canada. They also provide printed coupons which are distributed through SmartSource Magazine as well as mobile-first coupons on their proprietary Checkout51 app. Their omnichannel portfolio of products and solutions reaches shoppers with precision along the path to purchase, generates true ROI, and lifts incremental sales.

Problem Statement

NAM possesses over 10 years of historical operational data and had no formal analytics/reporting platform for that data. Their standard operational reporting was based on cycle, categories, region, division and CPG Client. NAM wanted a platform to do business analysis, data warehouse (DWH) design, ETL design, reports design including UX designs, development, and continuous integration on a DevOps enabled data reconciliation framework.

Specifically, NAM wanted to build a data analytics platform to store and blend information assets, and more efficiently calculate profitability by chain, product line, client, and store. The platform must provide rich visualizations, dashboarding capabilities, and be designed to add management in strategy, sales, operations and decision support. They also wanted the ability to deploy Informatica, Redshift and Tableau code in multiple environments, setup an end-to-end automated ETL pipeline for daily incremental data and automate database maintenance activities. They wanted the ability to do adhoc reporting analysis with near real time data to identify efficiency, activity measures, and KPIs for field execution and labor utilization metrics.

What we Proposed

Persistent partnered with NAM to develop a centralized data warehouse solution based on DevOps tools and best practices. The data platform set up source oracle database to extract, transform, load (ETL) the data to Redshift and set up an Oracle->Informatica->S3->Redshift ETL pipeline. It creates data models and populates aggregate tables in Redshift and creates a data reconciliation framework that validates the data loaded with Informatica using custom SQL queries.

Orchestration is setup using Informatica while Jenkins triggers the incremental load by starting the first Informatica workflow. The rest of the workflows are triggered within Informatica using command tasks. Tableau report extracts are refreshed after the ETL process completes and the platform also authors Tableau reports with dashboards and rich visualization.

Automation is done using various DevOps technologies and continuous delivery is done using Jenkins to achieve automated software release processes. Incremental data loading is done in an automated fashion with automated refresh for Tableau reports and vacuuming for Redshift databases.

How AWS services were used as part of the solution

- \ **Amazon S3** — Provides highly available, cost-effective block storage used to hold historical data used for batch processing.
- \ **Amazon Redshift** — Storage dense data warehouse for massive parallel processing of multiple data extracts on a daily basis.
- \ **Amazon EC2** — Cost effective and optimized compute performance.

How DevOps tools were used as part of the solution

- \ **Bitbucket** — Bitbucket is a robust revision control system which helped developers in their day-to-day tasks and was used for productive collaborative coding. Bitbucket repositories are integrated with Jenkins and helped smooth the functioning of continuous delivery pipeline.
- \ **Bash** — Bash scripts are used for performing task automation and release deployment and helped to fully automate AWS Infrastructure management.
- \ **AWS CLI** — AWS CLI tools are used to automate processes by setting up an interface to interact with AWS services. It is used to automate the entire process of controlling and managing AWS services through shell scripts.
- \ **Jenkins** — Jenkins is the primary tool used for automation and continuous delivery and is used for automated code deployment in multiple environments. Maintenance tasks such as vacuuming of database are scheduled as Jenkins jobs and the entire ETL pipeline setup is configured using Jenkins as an automation tool.
- \ **NewRelic** — NewRelic is used to monitor the entire AWS and infrastructure and applications.
- \ **Python** — Deployment scripts make use of AWS SDK for Python to automate deployment process and manage AWS resources automatically.

Outcome Results and Benefits

NAM now has a single source data platform for their financial numbers with a clear picture of closed and projected revenue, cost, and margin. The solution is completely hosted in AWS which has helped in reducing the time for development cycle by approximately 3 weeks. DevOps tools and practices helped the platform team to deploy Informatica and Redshift code from development to production environments with a one-click deploy method. This helped platform team to execute deployments smoothly in a controlled manner and saved approximately 50% of team efforts. The complexity of deploying ETL code to Informatica and Redshift has also been taken away. Time and cost savings of 30%-40% is realized with an automated ETL pipeline to load incremental data and scheduled maintenance of Redshift on a daily and weekly basis.

About Persistent

Persistent Systems (BSE & NSE: PERSISTENT) builds software that drives our customers' business; enterprises and software product companies with software at the core of their digital transformation.

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