DataArt

Microsoft Expertise

New York USA
London UK
Munich Germany
Zug Switzerland

DataArt is a global software engineering firm that takes a uniquely human approach to solving problems.

With over 20 years of experience, teams of highly-trained engineers around the world, deep industry sector knowledge and ongoing technology research, we help clients create custom software that improves their operations and opens new markets. Powered by our People First principle, we work with clients at any scale and on any platform and adapt alongside them as they evolve.

Software Design, Development, and Support

DataArt

25+ Global Locations:

USA	UAE
United Kingdom	Eastern Europe
EU	Latin America

5,500+
consultants & engineers

25 years
in operation

3,500+
successfully completed projects

Microsoft Partner since **2000**

Building on Azure since **2011**

USA · Serbia · Poland · Germany · United Kingdom · Switzerland · Portugal · Spain · Romania · Slovakia · Kazakhstan · Colombia · Bulgaria · Brazil · Armenia · UAE · Georgia · Ukraine · Argentina · Uruguay

■ Offices   ■ Under Construction

Microsoft Stack

DataArt

Most modern enterprises rely on **Microsoft technologies**, from business intelligence and productivity systems, to data management and development tools.

DataArt has extensive experience with Microsoft stack and helps clients **develop, integrate and optimize** Microsoft-based solutions that **drive innovation and growth.**

Microsoft Gold Partner

Microsoft Azure

Azure

Windows & Devices

Application Development

Cloud Platform   **SQL Server**

Office 365

Dynamics 365   **SharePoint**

Collaboration & Content

.NET   **Datacenter**

DevOps

Why DataArt & Microsoft?

- Microsoft **Gold** Partner
- **20 years** of partnership
- Certified Developers, Architects, and DevOps
- **Azure** consulting partner
- Building on Azure since **2011**
- Strong **cloud** expertise
- North America, UK, EMEA, LATAM
- Solutions and services on Microsoft stack: **DeviceHive**, **Atlas**, **Skillotron**, **Solution Trade Accelerator**
- DataArt is **a partner of choice** in various partnership activities (events, external workshops, programs)

Microsoft Gold Partner

DataArt

Gold and Silver certificates across all Microsoft competencies that let us demonstrate our areas of technical capability

- Gold Application Development
- Gold Application Integration
- Gold Cloud Platform
- Gold Datacenter
- Gold Windows and Devices
- Gold Cloud Productivity

- Silver Collaboration and Content
- Gold Data Analytics
- Gold Data Platform
- Gold DevOps
- Silver Messaging
- Silver Security

Working **across industries**, DataArt designs and scales Microsoft solutions that drive customer transformation
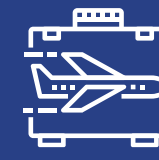
Finance

Insurance

Retail & Distribution

Travel & Hospitality

Healthcare & Life Sciences

Media & Entertainment

Azure Services and Competencies

DataArt

Azure Services

- Solution design and cloud architecture

- Analytics platform design and implementation

- Cost optimization

- Security testing

- Application modernization

- Data management and data warehousing

- Optimization of operations and security

Azure Competencies

Kubernetes Service and Container Instances

Azure Functions, AppService

Databricks, Data Explorer, HDInsights

ML and AI with CVS, NLTK

Data Warehouse, Data Lake, Synapse

Cosmos DB, Azure DB/SQL

Key Vaults, Firewall, VPN

Azure Blueprints, Templates, Terraform

Case Studies

Legacy Systems Transformation for Monex Europe

DataArt

Client

Monex Europe is a leading specialist in commercial foreign exchange. Headquartered in London, the company offers a suite of foreign exchange products designed for corporate clients and high net-worth individuals. A security audit revealed that some of Monex's systems were using SaaS services in Azure that were no longer supported and no longer receiving security updates from Microsoft.

DataArt was able to eliminate the need for classic Azure services by containerizing and deploying legacy applications in Service Fabric, a next-generation platform that makes it easy to package, deploy, and manage scalable and reliable application components. The bundling of Windows Docker (with IIS) with Service Fabric eliminated the need for classic Azure services without any significant investment in system overhauls.

Highlights

- Substantially increased efficiency
- Substantially reduced costs and infrastructure requirements
- Implementation of security best practices
- The ability to flexibly manage load distribution, ensure the security of inter-service communication, and maintain a high degree of fault tolerance with zero system down-time
- Added flexibility in system health monitoring and diagnostics
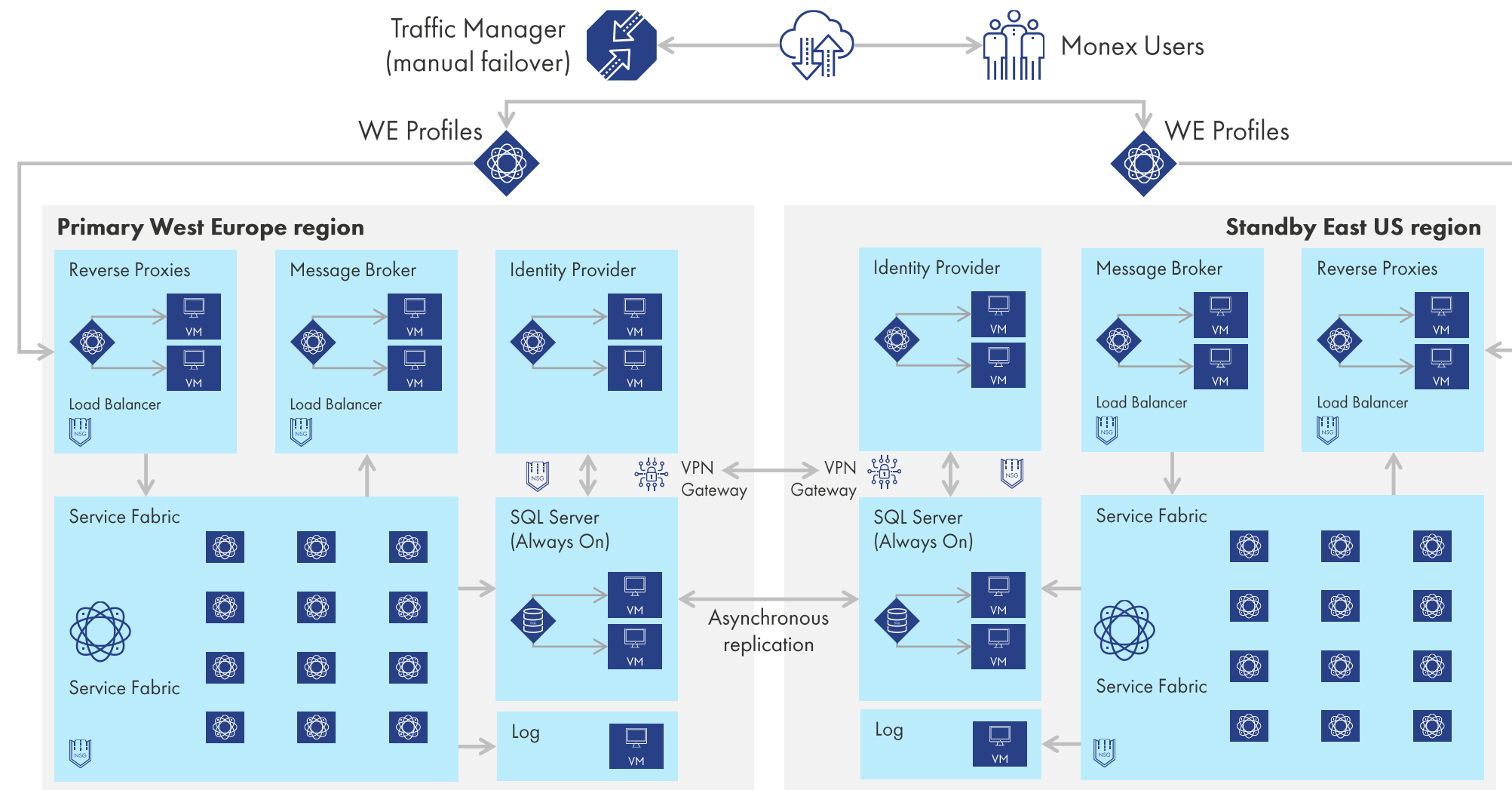
Application Suite for a Large Hedge Fund

DataArt

Client

The client is a global independent asset manager with primary focus on credit-related activities, that has been serving various sectors of business for a few decades.

Business Challenges

- High cost of any errors and irregularities in the underlying data
- Many portfolio managers with very different needs
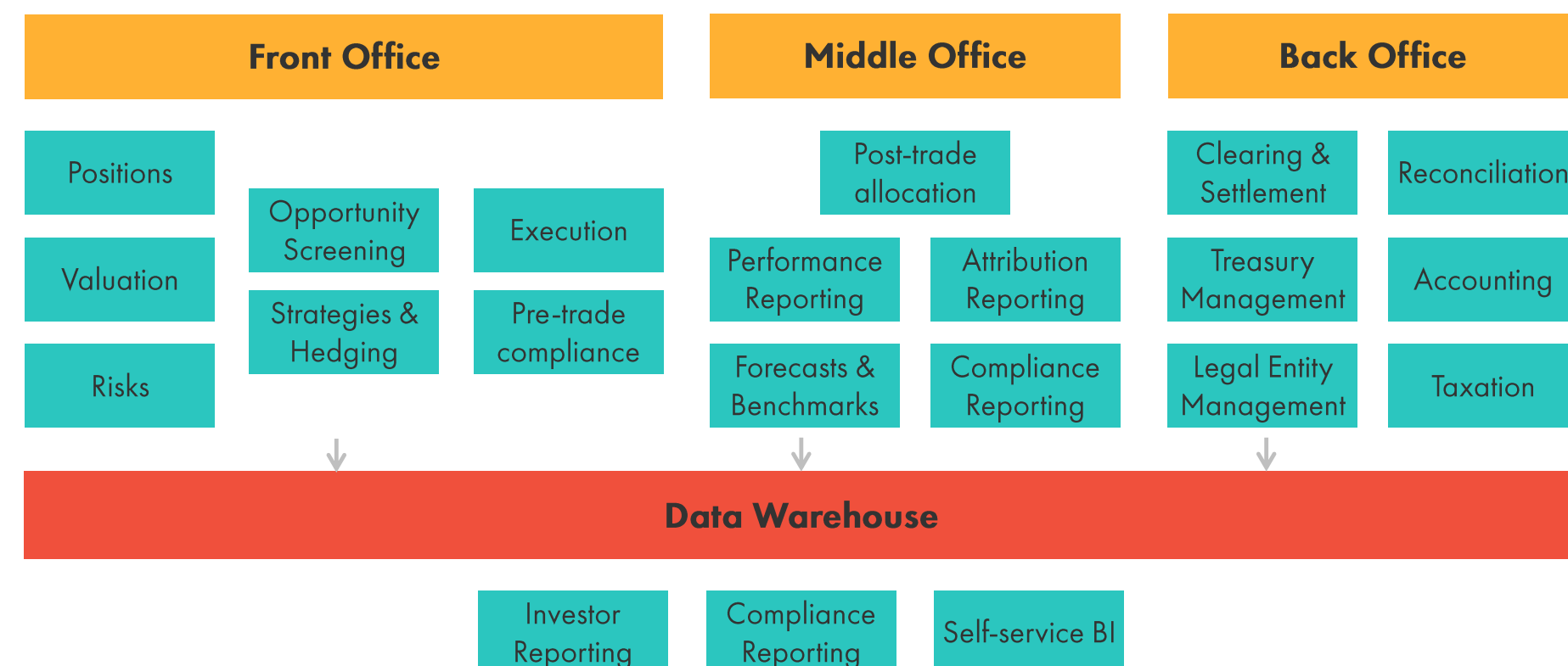- Continually expanding asset coverage and evolving investment strategies

Benefits

- Reduced operational overheads and seamless integration
- Increased transparency into fund raising, deal making and portfolio performance
- Flexible no code access to the crucial investment data
- Rapid onboarding of new asset classes and investment strategies

Technologies

Vue.js / Ag-Grid / Tableau / .NET 4.7 / ASP .NET MVC / SQL Server

Highlights

- Seamless integration with Charles Rivers, Wall Street Office, Broadridge Security Master, and other industry standard products and feeds
- Convenient workflow management tools providing unparalleled view into crucial business processes across the company
- Powerful data warehouse based on Tableau and Microsoft SQL Server
- Extensive and continually growing internal web application delivery platform

Front Office	Middle Office	Back Office
Positions		Post-trade allocation	Clearing & Settlement	Reconciliation
Valuation	Opportunity Screening	Execution	Performance Reporting	Attribution Reporting	Treasury Management	Accounting
Risks	Strategies & Hedging	Pre-trade compliance	Forecasts & Benchmarks	Compliance Reporting	Legal Entity Management	Taxation

Data Warehouse

Investor Reporting | Compliance Reporting | Self-service BI

Portfolio Analytics Platform: Cloud Migration and Optimization (1/2)

DataArt

Client

The client is a global alternative asset management company.

The client lift-and-shifted its portfolio analytics platform from on-prem to Microsoft Azure. Despite the fact that the client historically had been using Microsoft Stack, the processes still needed further streamlining.

DataArt implemented the best practices for cloud development and migration to optimize the deployment process, monitoring strategy, and performance of the environment. This optimization allowed the client to cut costs for migration and hosting.

Challenge

System requirements changed very quickly. The client needed to satisfy users' requirements instantly, so new features or customizations to existing functionality were to be released frequently and promptly

There was no CI/CD environment in place. The deployment was performed manually, hence was prone to issues

Solution

DataArt helped the client to develop a custom portfolio analytics platform to calculate the values of financial metrics and conduct their analysis.

Some of the platform's benefits included:

- Huge amount of portfolio calculations can be done overnight

- Azure cloud architecture enables virtual machines for calculations on-demand, which eliminates the need for on-premise servers

- Calculations can be done simultaneously, so they can take up to 10x less time than previously. This gives the client additional flexibility

DataArt also helped the client to create an independent data layer for the platform, which allowed portfolio calculations to be done at anytime.

DataArt implemented a modern CI/CD approach with testing and version control.

Portfolio Analytics Platform: Cloud Migration and Optimization (2/2)
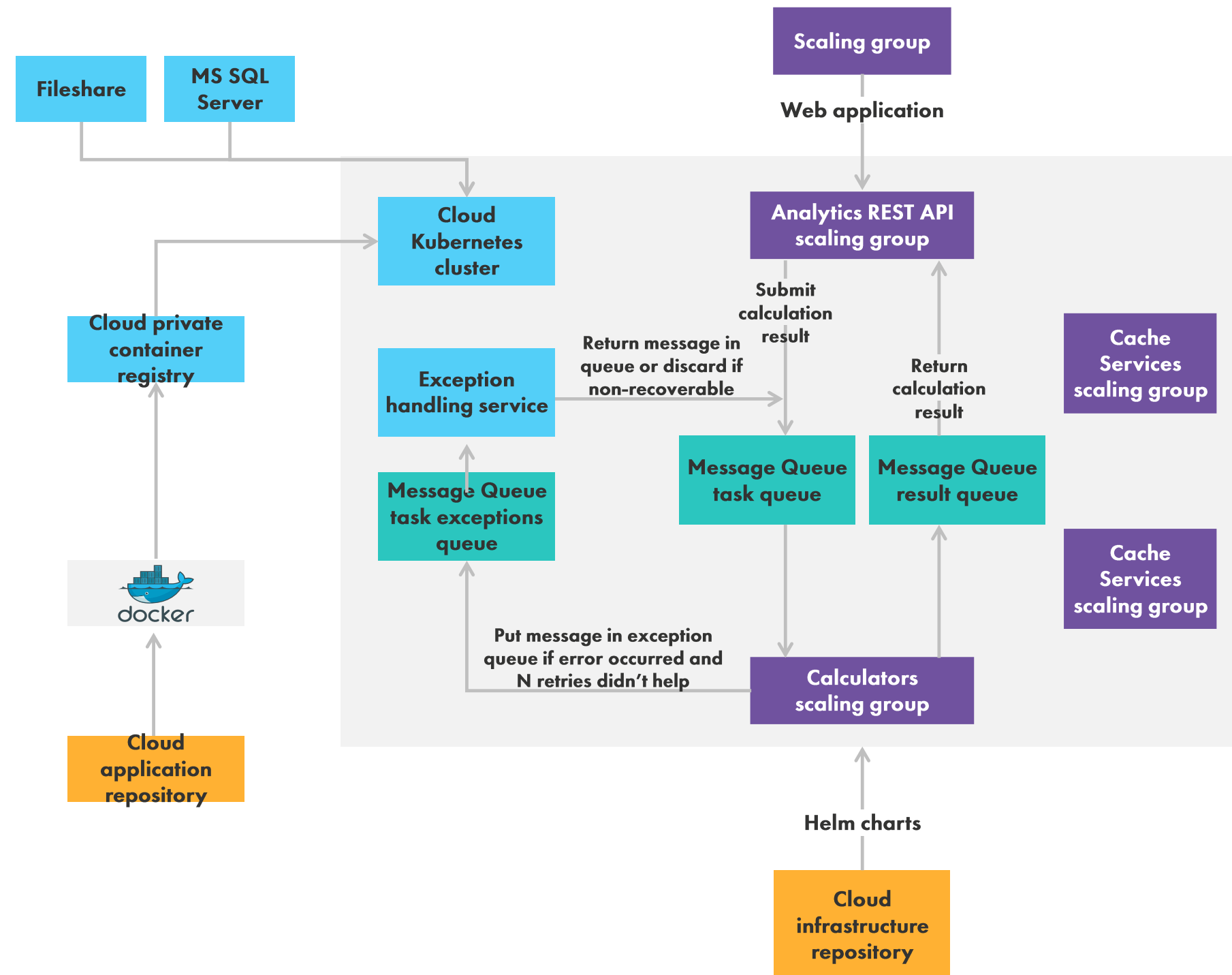
DataArt

Highlights

- Application and development process lifecycle adapted for Cloud
- Cost optimization and highly increased application performance
- Scalable architecture
- The ability of the platform to make calculations for data from different sources
- Calculations scheduling

Business Benefits

- Reduced cost on infrastructure maintenance in the long term
- A significant increase in the calculations volume
- Subsequent reduction of administration costs due to the transition to Azure Cloud and Managed Services
- Scalable architecture allows the business to grow along with the increasing number of portfolios

Online Banking and Payment Platform

DataArt

Client

An innovative U.S.-based provider of payment and money services management selected DataArt as a primary partner for end-to-end system implementation.

Highlights

- Customer portal and mobile application provides users with the ability to add an existing credit card to an account, depositing funds in the account, and making payments for various services
- Bank & network management
- Portfolio management
- Extensive consumer banking services
- Whitelabeling for businesses and financial institutions to deliver better banking and payment services to their consumers via web and mobile devices under their own brand

Business benefits

System is in production

Technology

Microsoft

Partner integration | **Mobile apps** | **Cardholders** | **Partners administrators**

Online banking platform

| REST APIs | Marketing portals | Cardholder dashboards | Control panel |

VISA

Card issuer

Bank

Business logic

Deposits/payments	Premium accounts	Identity check
Virtual checkbook	Reward programs	Fraud detection
Savings account	Viral marketing	Analytics
Fee engine	Promotions	Notifications

Third Party Systems

| Cash reloads | Check issuance | Mobile refills | Identity validation | GCM/ APNS |

Smart Lift-n-Shift from AWS to Azure

DataArt

Client

The client is a US based company that makes web-based clothes stores plugin. The plugin is used for further communication with end users and is platform agnostic. DataArt has been developing an application for the client for three years and has established great relationships and trust.

The client has been using AWS services, when Microsoft initiated an engagement and provided good discount to use Azure services. DataArt team performed lift-n-shift migration for the client from scratch, moving and adopting all his applications and services to Azure. During Migration, majority of systems were modernized and best practices were implemented.

Technologies and approaches

- AKS K8s orchestration is used in Azure instead of simple Docker containers in AWS
- Azure DevOps (10 pipelines) is used as CI/CD process instead of Jenkins in AWS
- Azure Functions are used instead of AWS Lambda functions
- Other Azure-native services used are Azure Service Bus, Blobs and more

Summary

Smart Lift-n-Shift was performed by DataArt from scratch without any POC or MVP etc.
It took a month to perform end-to-end flow from planning till finish of the move.

Business value

The client received a huge costs optimization using Microsoft proposition.
In addition, a modernization of client systems was performed, making value stream even better using latest Microsoft Azure Services.

Microsoft Azure

aws
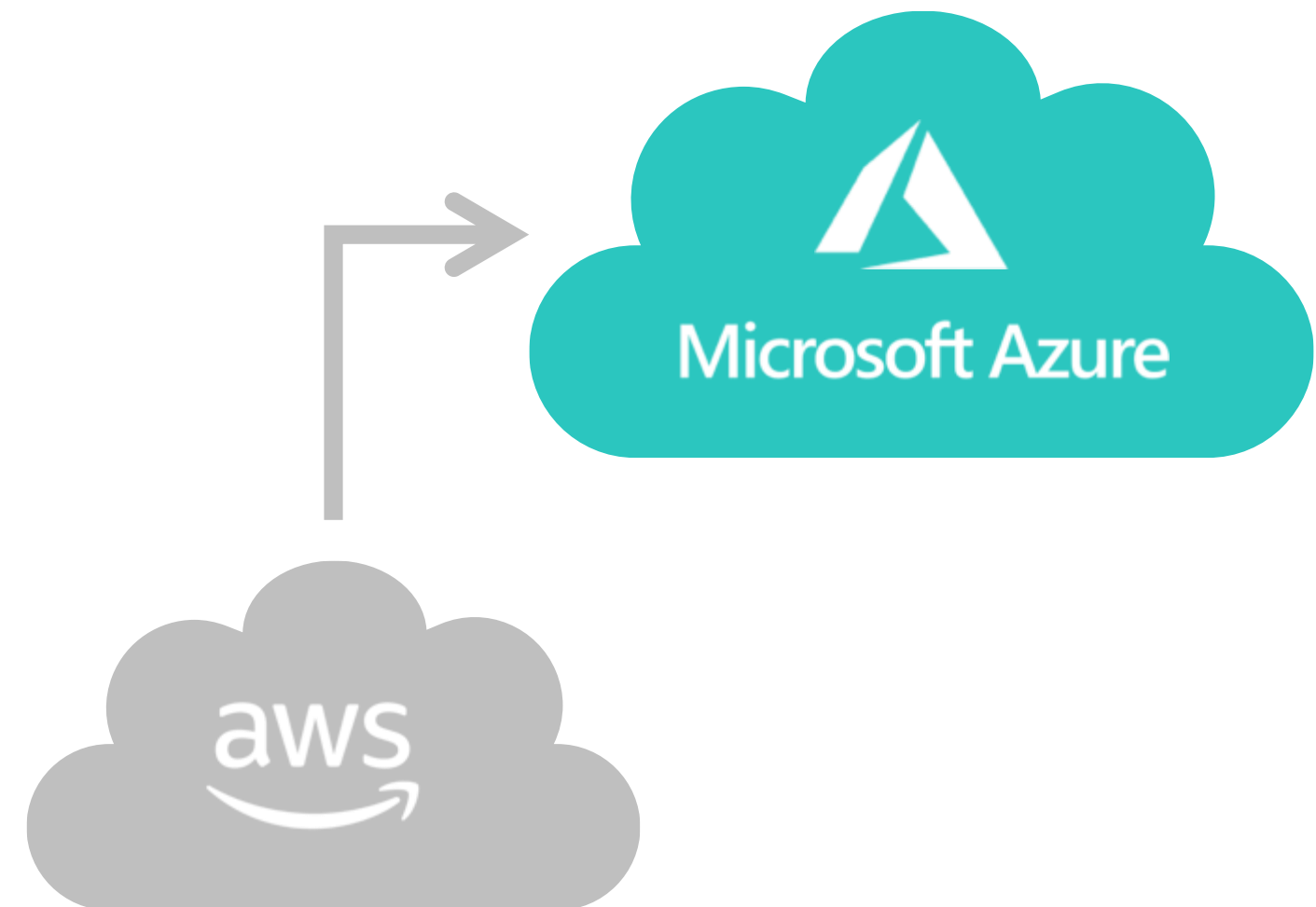
Data and Portfolio Analytics

DataArt

Client

The client wanted to redesign the existing in-house system and to expand its functionality, make it scalable and further provide it as a service to other equity funds.

Highlights

- Performance monitoring (with a diverse metrics array) for invested businesses

- All information submitted by portfolio companies is stored in the database and automatically updated information on a client can include up to 150 different details

- A powerful, user-friendly, centralized server storage with files available in Excel format

- System supports multiple types of Excel spreadsheet templates

- Prefabricated, new, custom spreadsheets can contain intricate calculation formulas

- Report aggregation functionality makes it possible to merge multiple spreadsheets into a single printable file

- Spreadsheets can be exported to SAC and Microsoft Document Imaging (MDI) format

- Intricate multi-level approval workflow

Technology

Integration with Active Directory, Excel, Cognos, Open ID, Live ID, Sharepoint
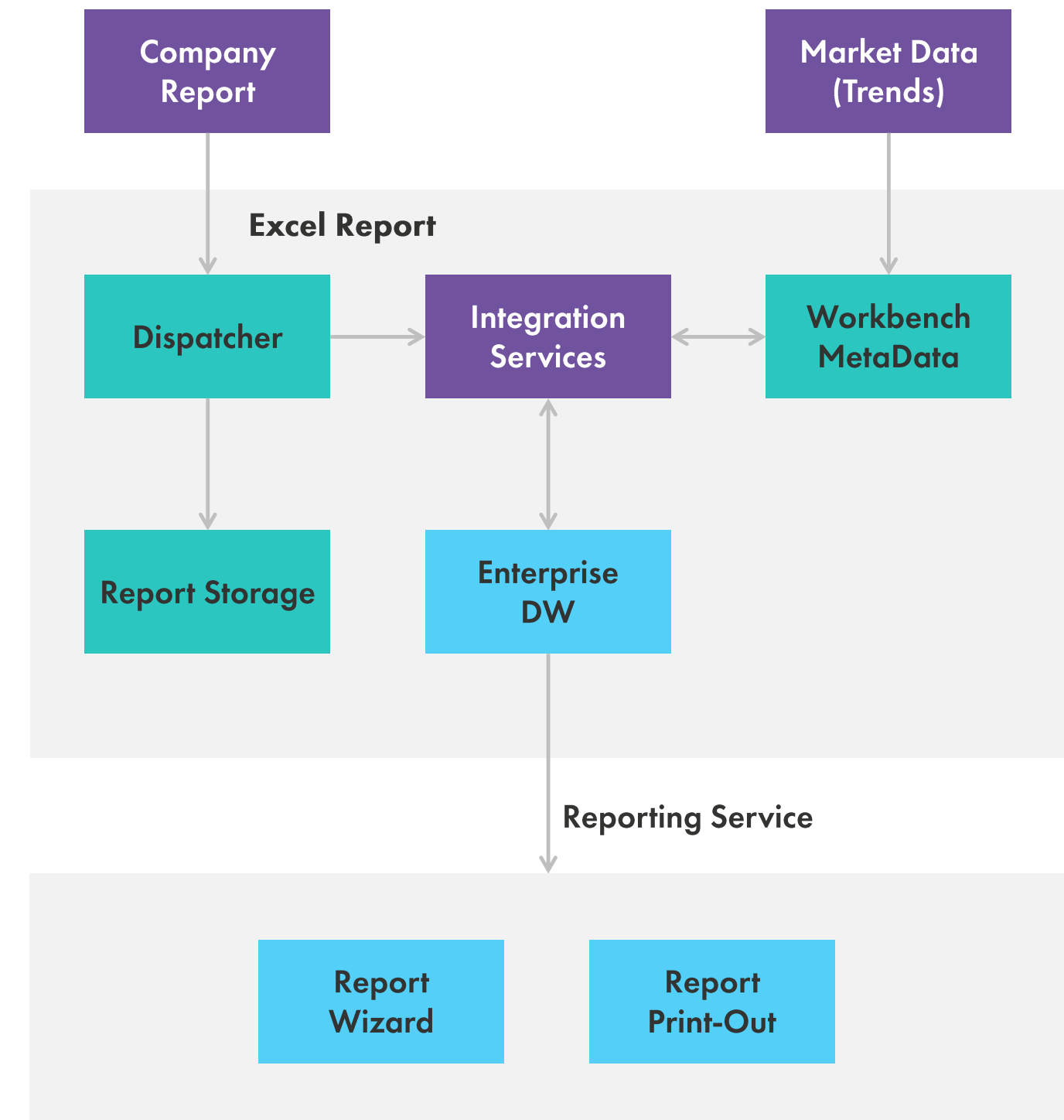
Blockchain-Based Loyalty App for 3M

DataArt

Client

3M is a global corporation that applies science in collaborative ways to improve lives every day. With $32 billion in sales, its 91,000 employees connect

with customers all around the world. DataArt developed an app that helps 3M chart regional demand and enhance interaction with customers.

Highlights

- Visibility and accountability across supply chains

- Increased number of products registered in the loyalty program
  by 4 times; active users – by 3 times

- Increased end-user loyalty

- Better understanding of end users and geographical distribution of products

- 3M Products with RFID NFC labels on blockchain

- Through the app's NFC (near field communication) technology,
  3M customers can access product information and tips on their phones

- The app is built on a Verisium blockchain platform and Microsoft Azure
  making all data storage immutable and compliant

- Always updated content in customers' smartphones

- Users can message 3M, request further information, or call

- "Advance with 3M!" loyalty program offering reward points
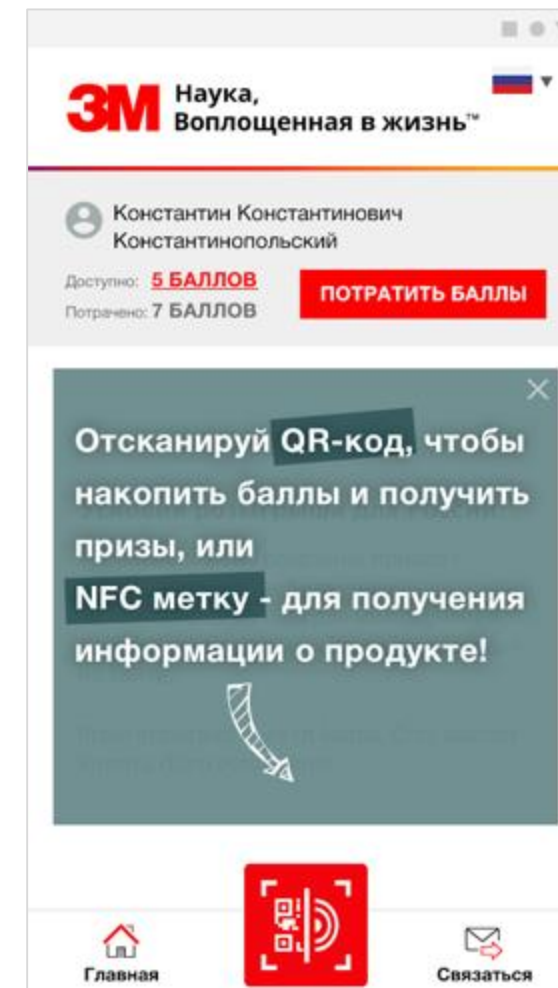
3M-Auto mobile application
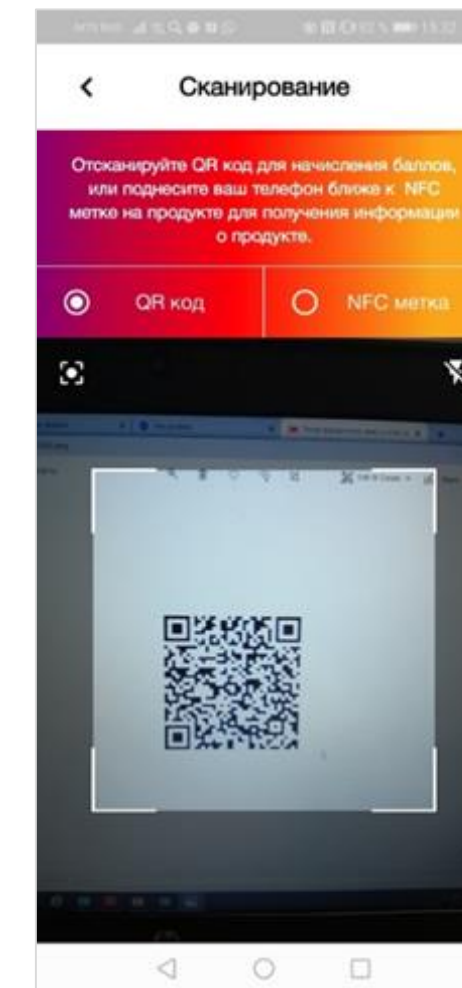
Customers scan QR-codes with 3M-Auto mobile App
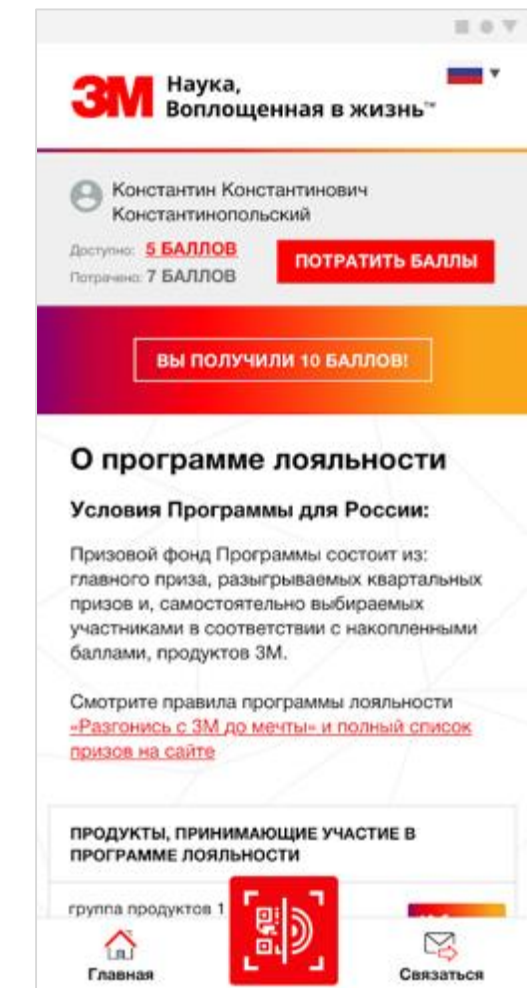
Personal Scans History for Every Customer

Analytics Platform for Guest Experience System

DataArt

Client

The client is a leading hospitality technology solutions company that offers SaaS platform to major hotel groups. The platform offers end-to-end solutions and support, transforming guest experience and improving operational efficiency, leading to higher market share and profit margins.

Solution

DataArt designed and implemented Data and Analytics components of the platform. Engagement began with POC focused on de-risking core technology decisions, comparing several implementation options (Data Lake + SAAS + DW, Azure Data Warehouse, Traditional Data Warehouse) and validating core requirements fit:

- Multi-tenancy at database level

- End-to-end integration data flow

- Authentication in Power BI

- Infrastructure cost optimization

Several month later, data and analytics platform based on proposed architecture was successfully implemented.

Technology

Azure, Elastic Database Pool, Functions App, Data Lake and Blob Storage, Power BI Embedded
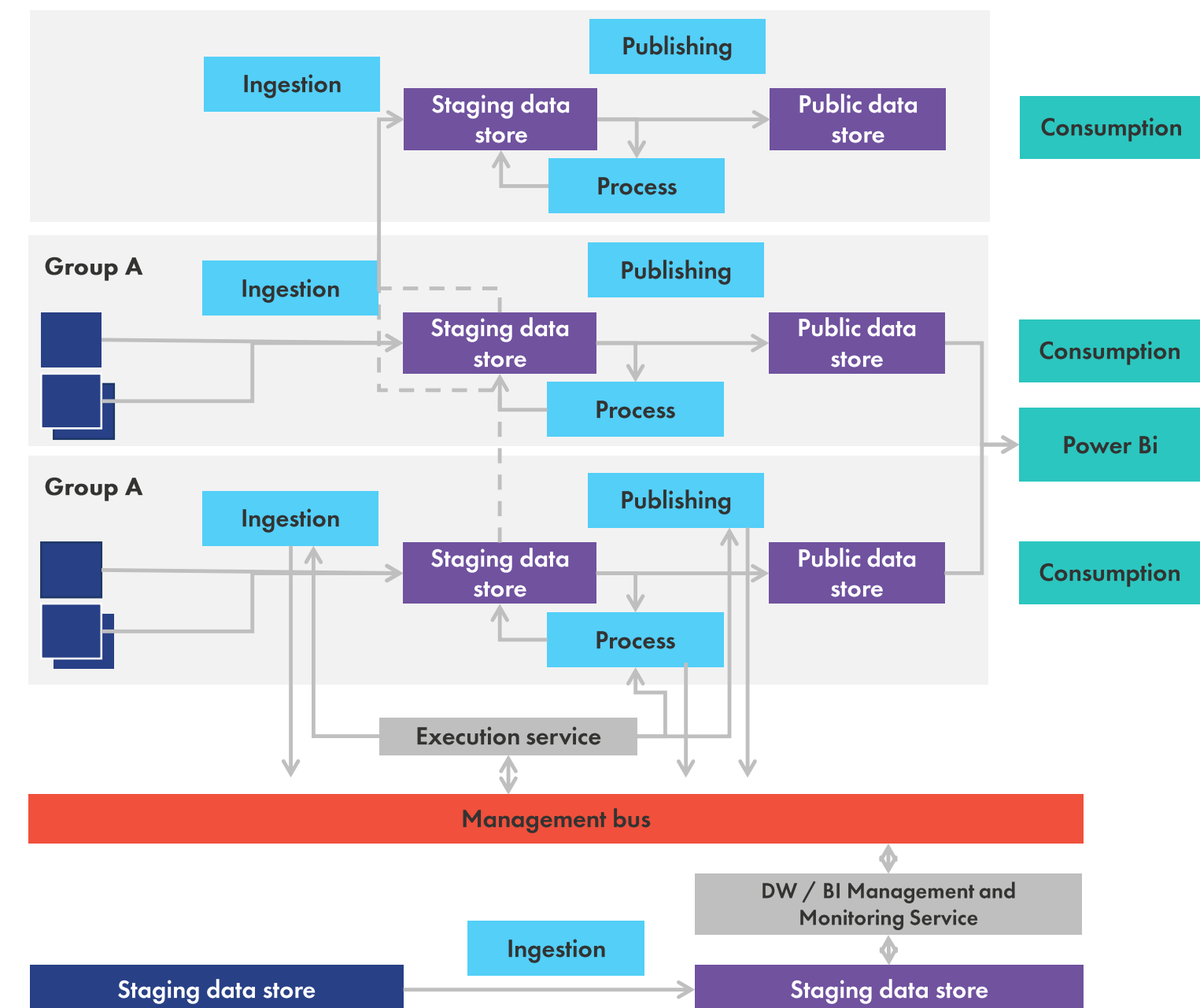
Presentation Recording Application

DataArt

Client

DataArt's client focuses on helping their customers to automate conference organizing process. The company runs an abstract management software that makes it possible for users to manage calls for abstracts, speakers and presentations.

We enhanced the software with a presentation recording application that allows users to upload their PDF or PPTX presentations, record voice or video narrations, and save the presentations as video files.

Highlights

- Standalone web application
- Integration with the client's abstract management application
- Integration with Video.js web video player
- Video recording with a computer microphone and webcam
- Automatic scaling in the cloud based on users' needs
- Optimized load balancing for efficient resource usage
- Optimized recording settings
- No file size and time limits
- Cloud file storage

Technology

Jitsi, Jibri, Video.JS, Azure VM, Azure Blob Storage
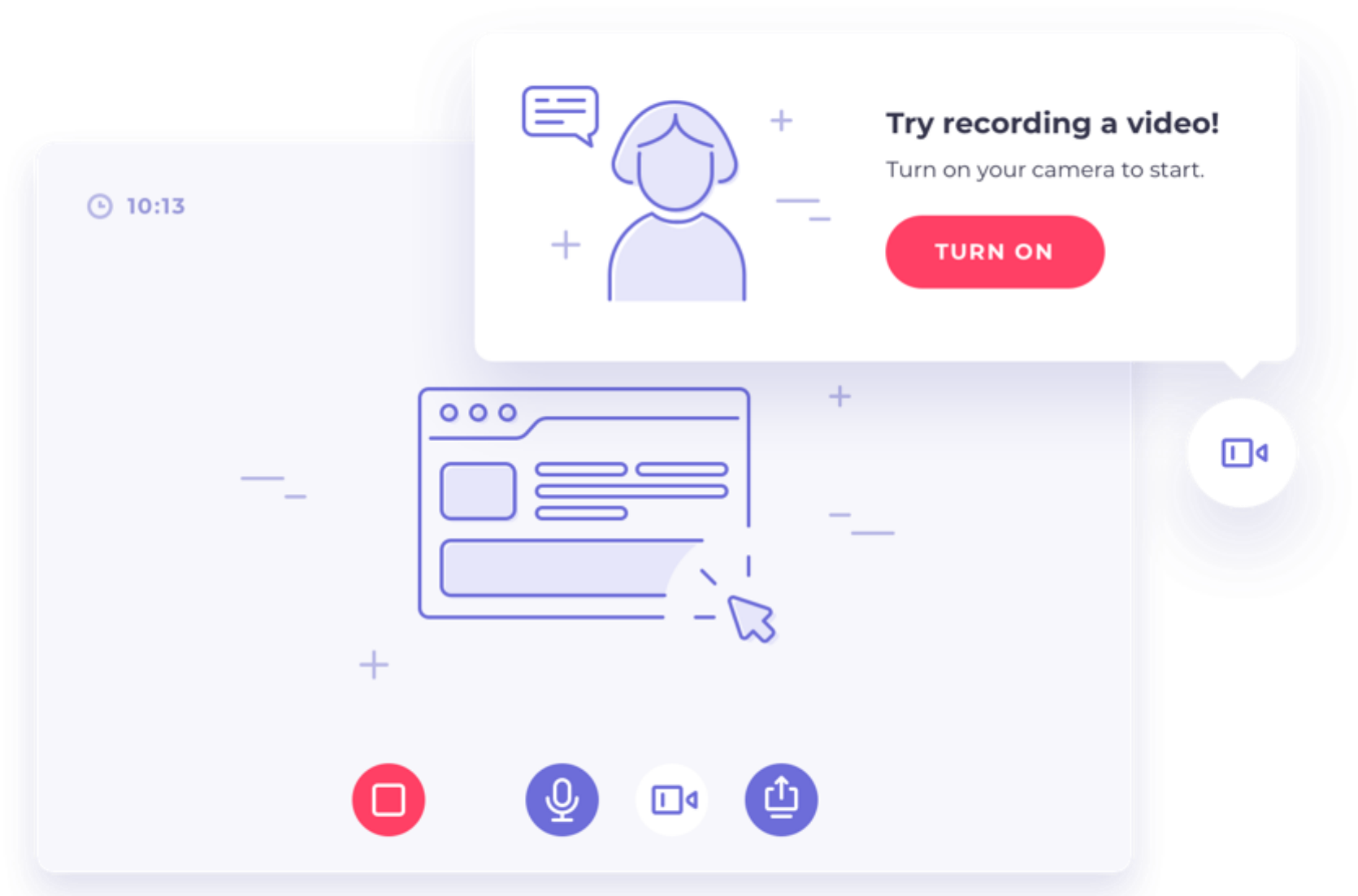
Commercial Exchange Platform

DataArt

Client

DataArt provided full line of IT Services to Europe's leading FX specialist to design and build a platform that provides confidential, same day spot and forward FX contracts to a client base of large corporations and financial institutions.

Highlights

- Azure-based cloud platform, multi-regional deployment
- High-performance
- Compliance with recent & upcoming regulatory change
- Payments delivery for all jurisdictions in multiple regions
- Increased client retention and acquisition rate

Technology

- Microsoft stack
- Azure Cloud Services
- Azure Service Fabric
- Active Directory
- SQL Service (Always On)
- RabbitMQ

Traffic Manager (manual failover) — Users

WE Profiles — WE Profiles

Primary West Europe region

Reverse Proxies | Message Broker | Identity Provider
Load Balancer | Load Balancer

Service Fabric
Service Fabric

SQL Server (Always On)

VPN Gateway — VPN Gateway

Asynchronous replication

Log

Standby East US region

Identity Provider | Message Broker | Reverse Proxies
Load Balancer | Load Balancer

SQL Server (Always On)

Service Fabric
Service Fabric

Log

Crypto Custody Solution. Azure Platform

DataArt

Solution

The solution is a financial instrument, a cryptocurrency storage depository built on Azure Platform.

Highlights

- A fully automated and secured platform

- Provides adequate protection

- Stores clients' crypto assets in a secure and risk-free way

- The system is divided into several independent layers, each with a certain level of safety

- Complete protection against natural damage, human error, and virtual attacks

- Decentralized administrative access to separate parts of the solution

- The use of Azure Key Vault provides protection for the private keys
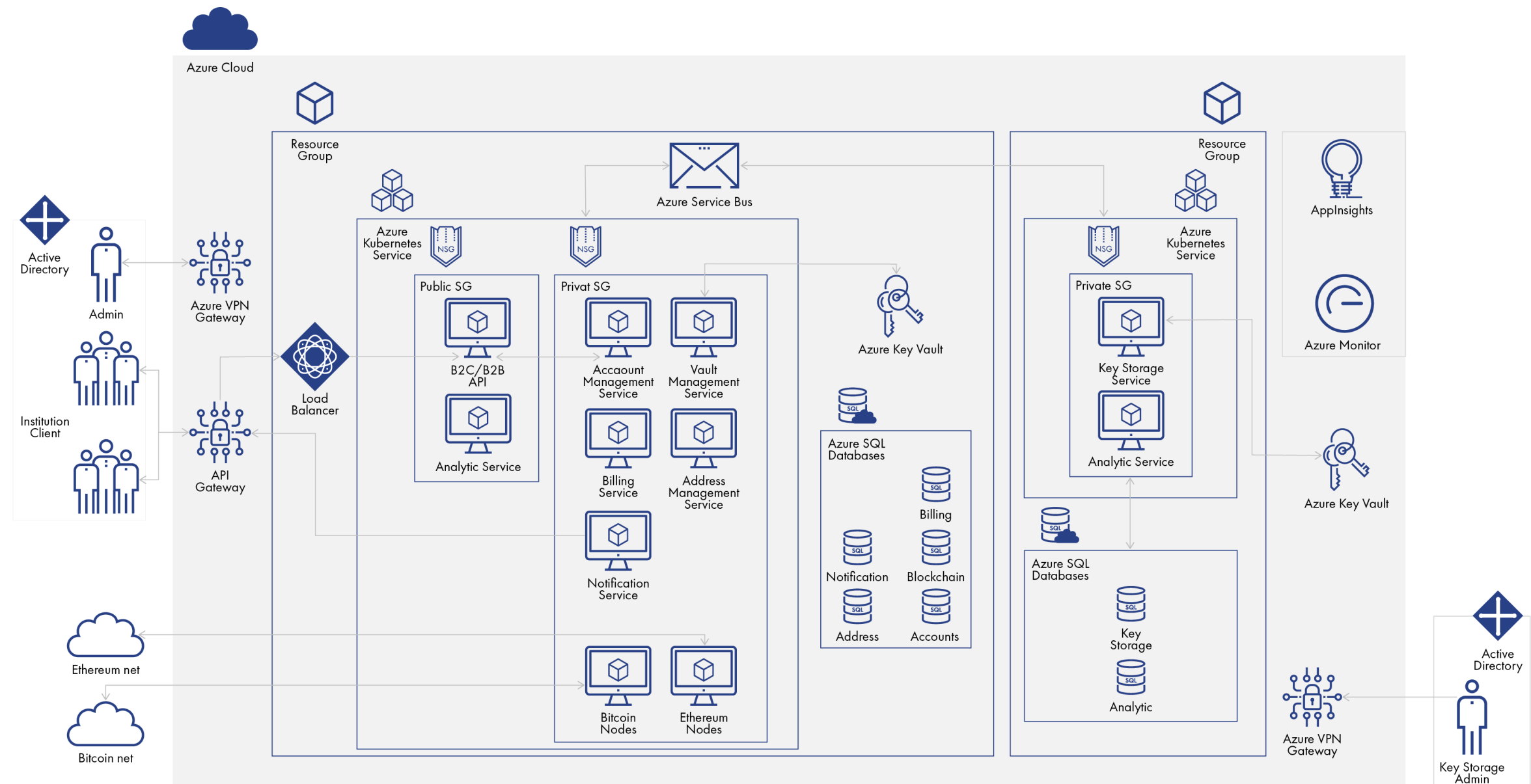
Investment Management Platform (1/2)

DataArt

Solution

An integrated, modular, turn-key, all-in-one, front-to-back investment management platform, supporting a broader range of asset classes than any other portfolio management system on the market. The only system of its kind to support crypto assets in production. Platform is steeped in years of real-world usage at some of the world's largest and most complex financial institutions.

Functionality Highlights

- Multi-tenancy

- Real-time P/L (Listed + OTC)

- Mobile and Desktop Interfaces

- Real-time Sensitivities

- Real-time VaR and Vol

- Template-based OTC Trade Entry

- OMS/EMS Integration (FIX)

- Automated Trade Allocations

- Customized Portfolio Reporting

- Calibrated Curves and Surfaces

Investment Management Platform (2/2)

DataArt

Technology and Architecture Highlights

- Multi-tenancy
- Azure cloud
- Azure Key Vault for Secrets Management
- Azure DevOps for CI/CD
- System monitoring with Azure Log Alerts
- Reliability with VM Backups on Azure Backup Vaults
- Azure VNET Peering
- .Net Stack
- Custom configurable BI and Visualizations

Backend/Frontend Subscription Virtual Network
Client's Web Application

DevOps and TeamLeads

Client production VM loc 1

DNS Name Connection Using tls 1.2 and NSG

Users
Internet

VM backup vault loc 1
VM backup vault loc 2

Alert Monitoring Log Analytics

Logic Apps Alert View

VNET peering connection

DevOps and TeamLeads

DevOps and TeamLeads

Dev Users

Backend Subscription Virtual Network

VM backup vault loc 1
VM backup vault loc 2

Alert Monitoring Log Analytics

Logic Apps Alert View

MS SQL   Secret

Service Bus   Team City

AzureDevOps CI/CD

VNET peering connection

Dev Subscription (Backend/Frontend subscription Virtual Network clone) Clinet's Web Application

Client production VM loc 1

DNS Name Connection Using tls 1.2 and NSG

VM backup vault loc 1
VM backup vault loc 2

Alert Monitoring Log Analytics

Logic Apps Alert View

Service Bus   Service Bus

Dev Users

VNET peering connection

Internet
Dev Users

Internet
DevOps and TeamLeads

Live Events Management Platform

DataArt

Client

The client is a premier technical production and event management firm that works with entertainment and marketing agencies to realize "big vision" event concepts through project management and the execution of technical elements. As full-time production managers, the client needed a software solution to help them manage live events.

Solution

Majority of the products on the market were designed for traditional corporate project management, which is significantly different from live event project management. After exploring dozens of off-the-shelf products the Client came to DataArt for help build a custom Web-based solution encompassing all features crucial for effective live events management.

Technology

- Front-end with rich UI implemented using the following technologies:

- Backbone and Marionette

- Styling: Bootstrap 3 and jQuery UI.

- Precompilers: TypeScript

- Back-end: .NET, Azure (SQL Database, Web-sites), EF5, ASP.NET MVC 5, WebAPI

- Hosting on Microsoft Azure (cloud application platform)

- Billing platform: Recurly

- Email Solution: Sendgrid (cloud-based platform)
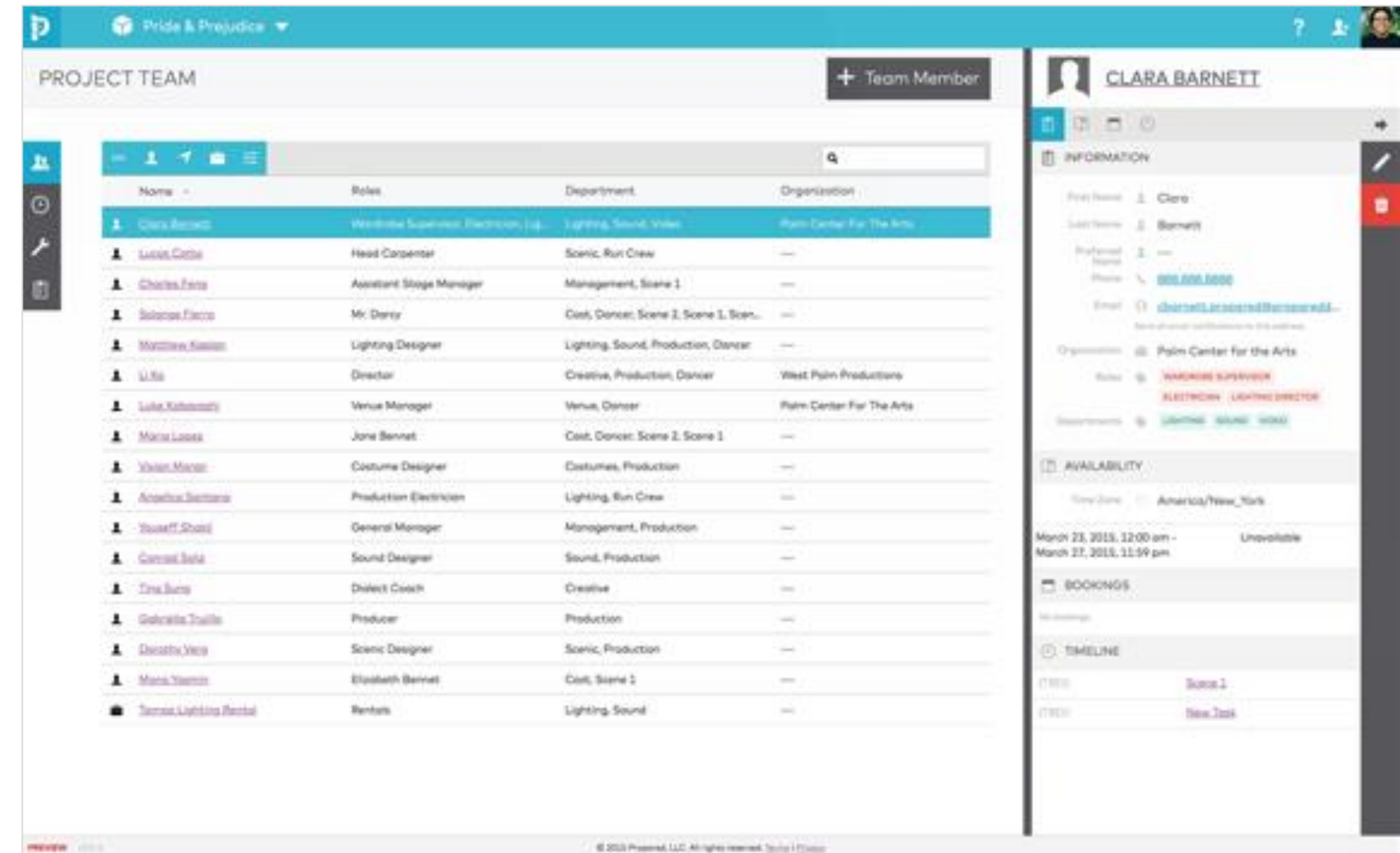
Cloud Migration for Music Analytics Platform

DataArt

Challenge

A leading data and analytics provider for the music industry chose DataArt as a vendor for a major data migration from on-premise data centers to the cloud. The DataArt team conducted a thorough audit of the client's existing infrastructure and designed migration roadmap and a new cloud-based architecture based on Azure and Snowflake. As a result, DataArt performed a seamless migration of all systems that power the client's innovative analytical platform.

Highlights

- High availability, resilience, fault tolerance, and disaster recovery with the new cloud infrastructure

- Over 50 data sources integrated

- 40 TB transactional data & 70 TB metadata in the system

- 40 GB of raw data & 4 GB of metadata ingested daily

- Detailed analysis for geographical, ethnographic, and worldwide data for specific artist, album, song or media
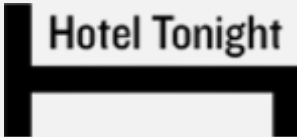
Technology Stack

Python, Javascript, Perl, Kubernetes, Azure Storage, Azure DevOps, Terraform, Ansible, Airflow, MySQL, Snowflake, PostgreSQL, Couchbase, Redis

Success Stories

DataArt

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