Driver & Vehicle Licensing Agency

METHODS ANALYTICS

methods

PROBLEM

The DVLA are in the process of modernising and migrating all of their existing systems, comprising of mainframes, bespoke applications and other technology, to a modern cloud-based platform.

Part of this is the requirement for a real time strategic data platform. Timely access to data, consistency of reporting and removal of redundant and siloed data sources were all cited as drivers for this change.

Methods Analytics, supported by Methods BDT, were asked to work alongside the DVLA's existing MiBI team to collaboratively develop functionality through a series of Proof of Concepts (PoCs) that would enable the DVLA to build a Strategic MiBI Data Platform.

We needed to work to identify and feed a pipeline of development work in order to feed data into an Azure based MiBI solution. This pipeline was to be defined as high-level epics, business/technology outcomes and detailed user stories/ requirements.

APPROACH

Using Agile methodology, our proposed solution was to supplement and up-skill their existing team and prototype build with experienced Azure resources with technical specialists in the Cortana analytics suite, working in their existing Azure tenant.

EVENT HUB
to ingest data

DATA FACTORY
to store data

ANALYSIS SERVICES
for ultimate display

The conceptual design involved using components within the Microsoft Azure Cortana/Synapse analytics suite, such as Event Hub to ingest data from a variety of sources (JSON, .CSV, RDBMS.. etc), stream analytics to process and store data in Data Factory and Azure SQL, through to Analysis services for ultimate display in multiple potential reporting suites such as Power BI.
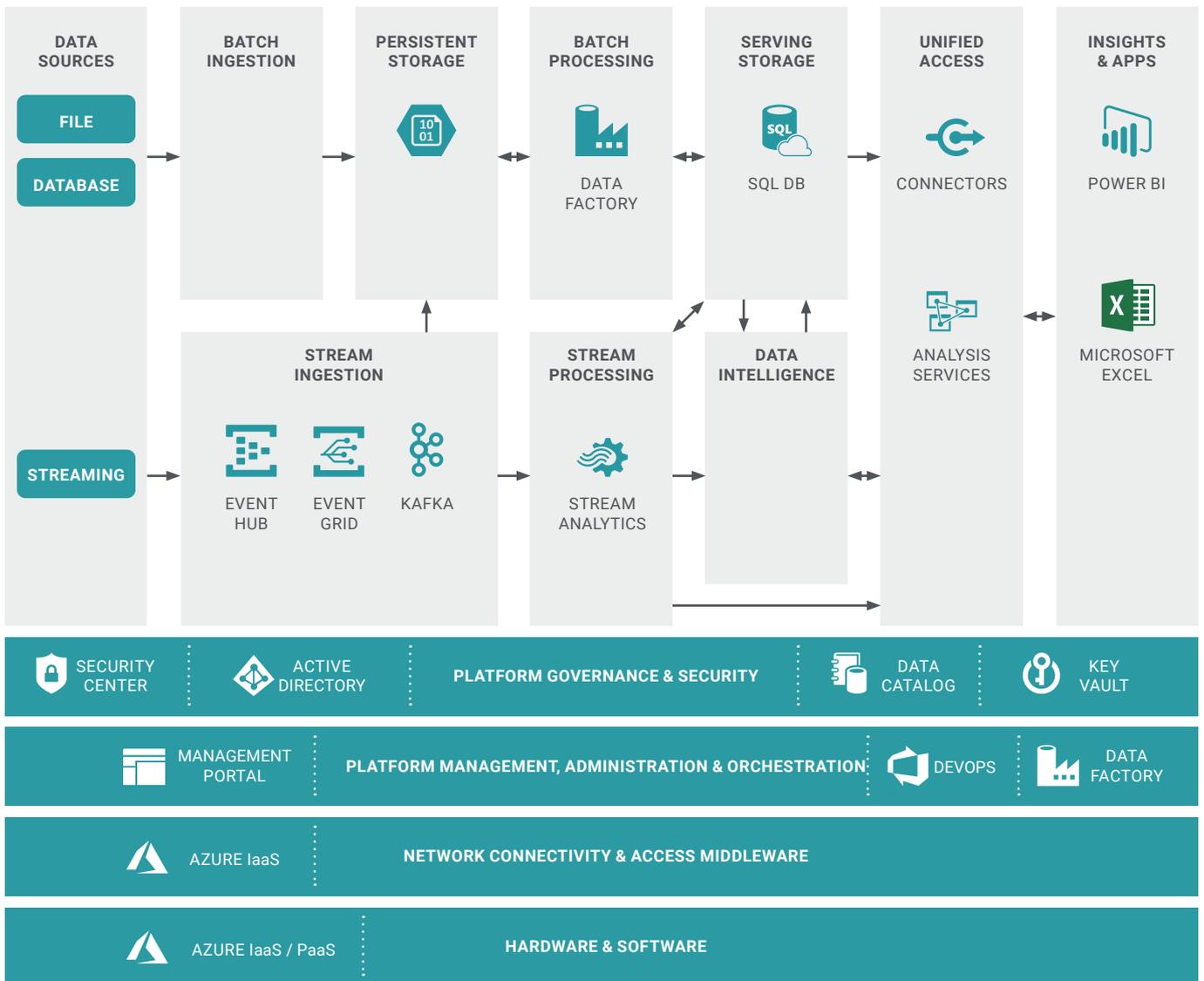
Our cloud and data architect initially validated this approach against reference architectures developed by Methods and utilised across many of our public sector clients.

Once accepted, we worked to build a series of PoCs to validate and demonstrate that the data platform could ingest data from any source system and output data through to the defined sets of users.

DVLA
MIBI Engineering Squad

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AIM

The aim was to architect and engineer a cloud hosted platform on Azure and establish a strategic MiBI data platform. This was to be built in the Azure/Cortana Analytics Suite, which utilises Microsoft's supported variants of many open source cloud technologies. The diagram below describes their target state.

DATA SOURCES	BATCH INGESTION	PERSISTENT STORAGE	BATCH PROCESSING	SERVING STORAGE	UNIFIED ACCESS	INSIGHTS & APPS
FILE			DATA FACTORY	SQL DB	CONNECTORS	POWER BI
DATABASE						
	STREAM INGESTION		STREAM PROCESSING	DATA INTELLIGENCE	ANALYSIS SERVICES	MICROSOFT EXCEL
STREAMING	EVENT HUB · EVENT GRID · KAFKA		STREAM ANALYTICS			

SECURITY CENTER	ACTIVE DIRECTORY	PLATFORM GOVERNANCE & SECURITY		DATA CATALOG	KEY VAULT
MANAGEMENT PORTAL		PLATFORM MANAGEMENT, ADMINISTRATION & ORCHESTRATION	DEVOPS	DATA FACTORY	
AZURE IaaS		NETWORK CONNECTIVITY & ACCESS MIDDLEWARE			
AZURE IaaS / PaaS		HARDWARE & SOFTWARE			

RESULT

The platform went live in December 2019 with its first source system which involved surfacing data from tachometers used on passenger carrying and goods vehicles. This represents a significant shift from taking snapshots at set intervals to real time event based processing, enabling faster visibility of the data and a higher degree of reporting accuracy at any given time. Further systems are being evaluated for on-boarding in the future as they come online.