



# CLOUD COMPUTING PLATTFORM

## AS A CENTRAL COMMUNICATION SYSTEM

### INITIAL SITUATION

Our customer is the energy group with the highest turnover and the second largest electricity producer in Germany. It supplies six million electricity and gas customers nationwide. The company focuses on the expansion of energy grids, forward-looking products innovative customer solutions, sustainable energy generation and decentralised solutions. Due to a company split, it became necessary to replace parts of the company-wide application landscape as well as part of the physical infrastructure. In the course of this reorganisation, our customer saw the opportunity to move to the cloud in order to achieve cost savings, higher availability and greater scalability of the systems.

Across Europe, the holding company uses more than 20 applications for trading, projections, accounting and information management. These applications are distributed on a wide variety of platforms both within the company and externally with partners and service providers. In order for these applications to communicate with each other, a communication system is required that receives or collects data from information-providing systems. The data must then be partially modified or restructured so that it can be forwarded to information-processing systems in a timely and appropriately formatted manner.

One of the most important requirements for the project was that the resources of the communication system should be able to scale quickly and at short notice depending on the quantity, size and speed of the incoming data and that communication channels should be put together as simply as possible within a workflow engine.

In addition to securing the data, the definition of data transfer points as well as data transformation and data enrichment had to be configurable as far as possible without intervention in the programming.

### APPROACH

Our team supported the project with the conception, design and development of a central EAI (Enterprise Application Integration). The communication system was designed and implemented entirely on the Azure platform. It is primarily a virtual infrastructure distributed across many facets, consisting of classic components such as databases, servers and load balancing. At the core of the application, however, is a large number of components of modern serverless technologies. WebApps, ApiApps, LogicApps, Enterprise Service Bus and Blob Storage have been implemented in such a way that both their processing capacity and the number of instances processing in parallel are freely and automatically scalable. This means that the system still has sufficient capacity to process all requests quickly, even under heavy load.

The incoming data from the sender is received by the input interface and transformed into so-called Canonical Information Models (CIMs). These are system-internal abstracted versions of the incoming and outgoing data structures of the data structures of the neighbouring systems involved. Depending on the source and target system, this enables the models to be processed via a uniform interface.

Thanks to a high level of test coverage and regular load tests, the behaviour of the system was

### ENERGY

**Modern energy management requires the use of a variety of different applications. Management tools such as SAP, as well as trading systems and external services are essential for bringing together and processing business-relevant information.**

**Various data formats come into play here. This data must be accepted, validated, standardised, expanded and distributed to all relevant parties and applications within the company. This is a major challenge. Our team of architects uses the Microsoft Azure cloud computing platform as a central communication system to distribute all data in real time and in an appropriate format to all target systems.**

### METHODS & TECHNOLOGIES

- Serverless
- Virtual Machines
- Azure Active Directory
- Enterprise Service Bus
- Cloud Automation
- Infrastructure as Code
- Terraform
- PowerShell
- Visual Studio Team Services