



Introducing HAKOM Time Series.

Company, Customers, Positioning, Functions, Architecture, Use Cases, Use Scenarios, Subscriptions.

THE COMPANY

WHAT WE DO

Time Series Technology.
We deal with the underlying data elements of the energy industry.

OUR MISSION

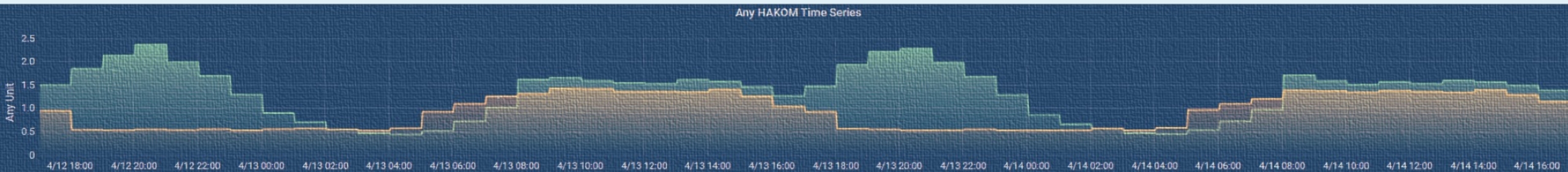
Making data valuable.

OUR TRACK RECORD

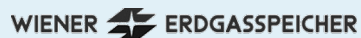
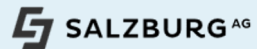
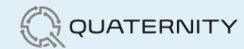
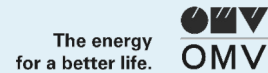
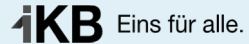
30 years HAKOM

100+ customers in Europe
15 countries

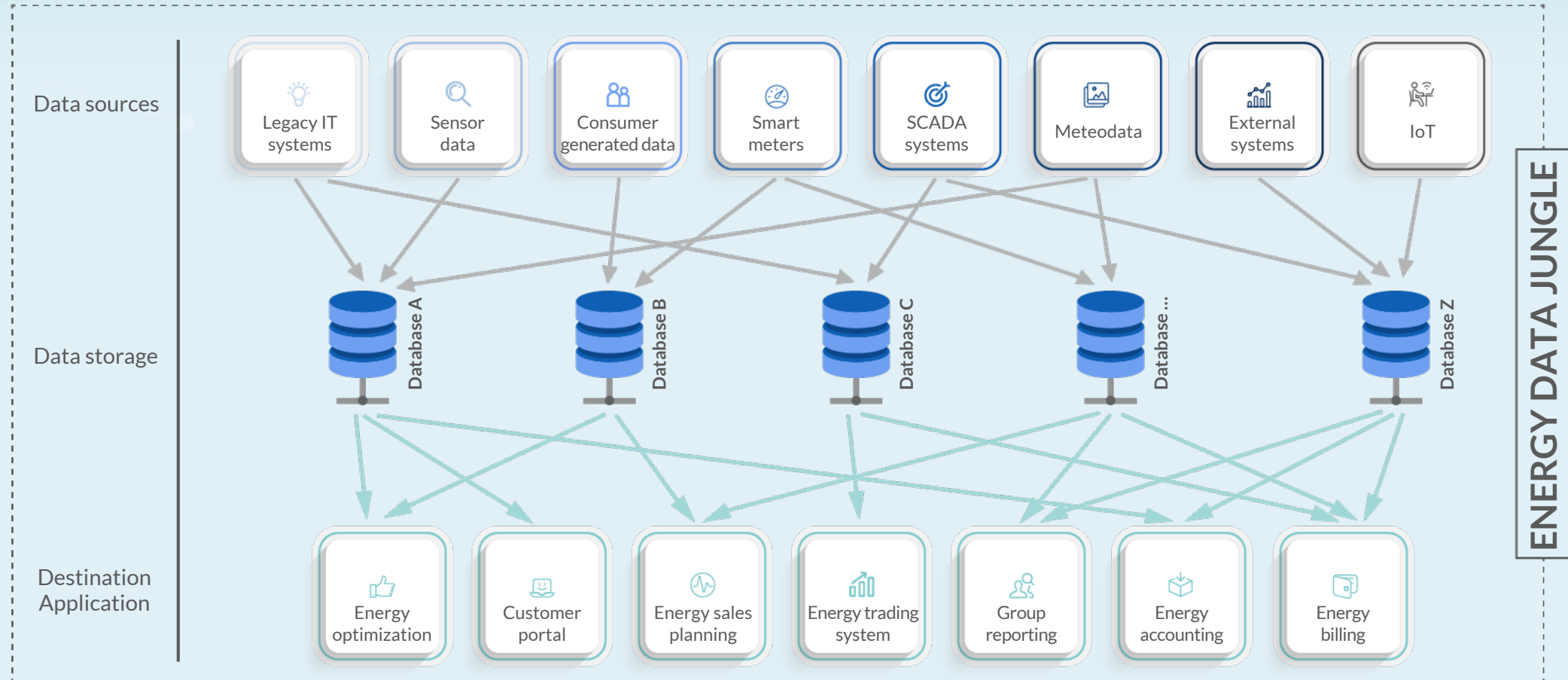
150+ successful projects



Some Customers



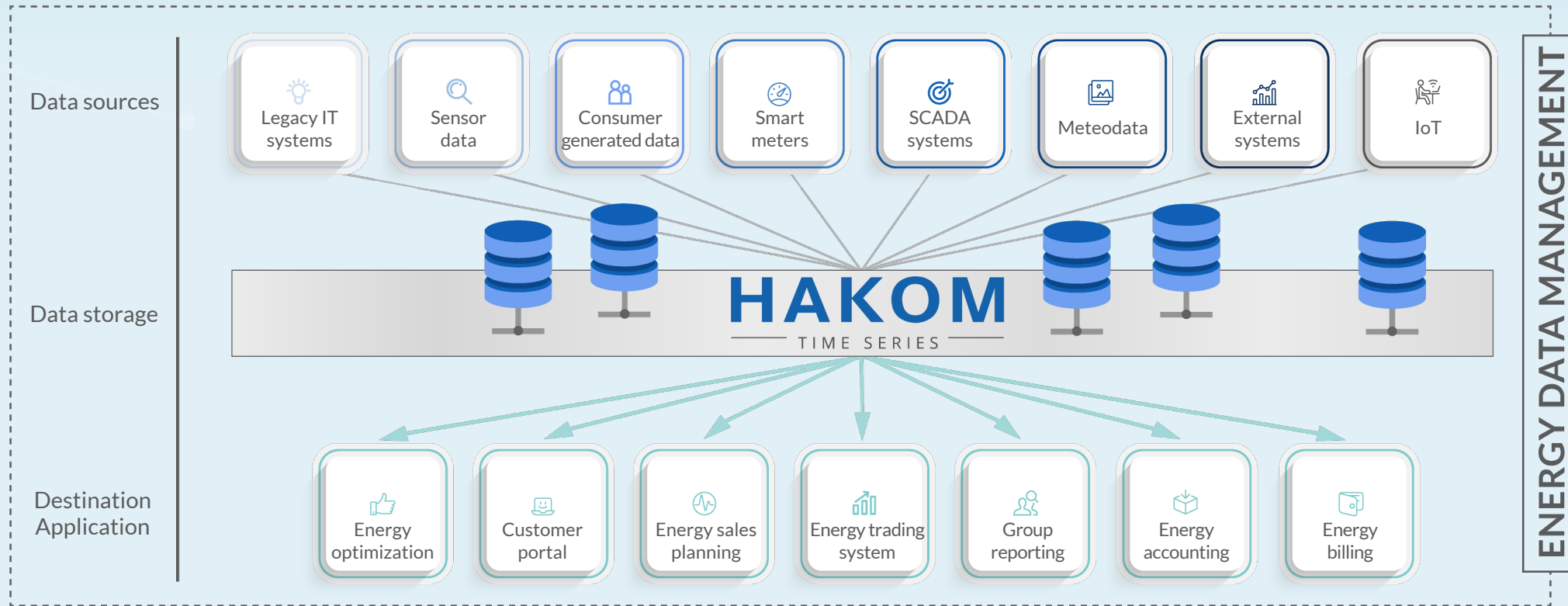
Data Processing Challenge



What most use cases need:

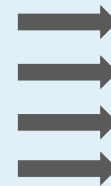
- Data from different sources
- Some of them near real time

HAKOM Solution



HAKOM Time Series is in the middle doing:

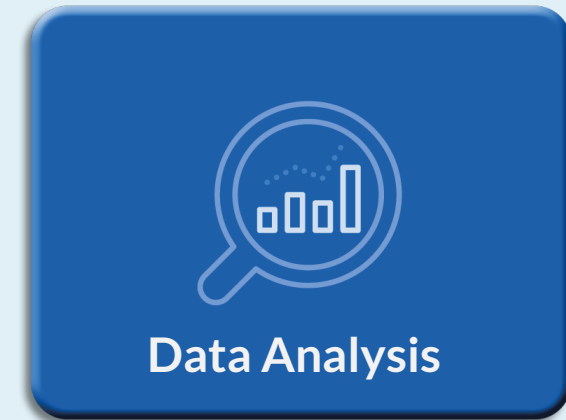
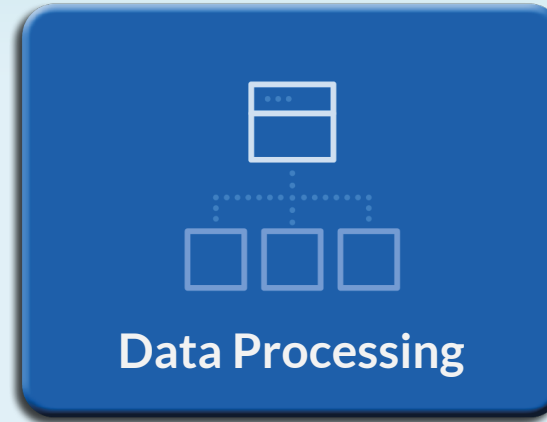
- Simultaneous and fast **collection**.
- **Harmonization**.
- **Validation**.
- **Preparation** to multiple third-party applications.



Save up to **80% of time** on crunching the data and have a clear understanding of it.

Full power to deeply analyze the data across three time dimensions.

Unlimited TSM Technology – FeasyUse[®] Functions



Unlimited TSM Technology – FeasyUse[®] Functions

- Flexible increments
ms -> y, cyclical, spontaneous
- Heritable Quality Information
- Any Attributes incl. Time Slices



- Conversions & Transformations
- Comprehensive Formula Engine
- Freely definable Formulas and Functions



- Compressed Data Storage
- Parallelization of Calculations
- Linear Scaling



- FULL 3D Timescale
- Complete Audit
- Complete Versioning

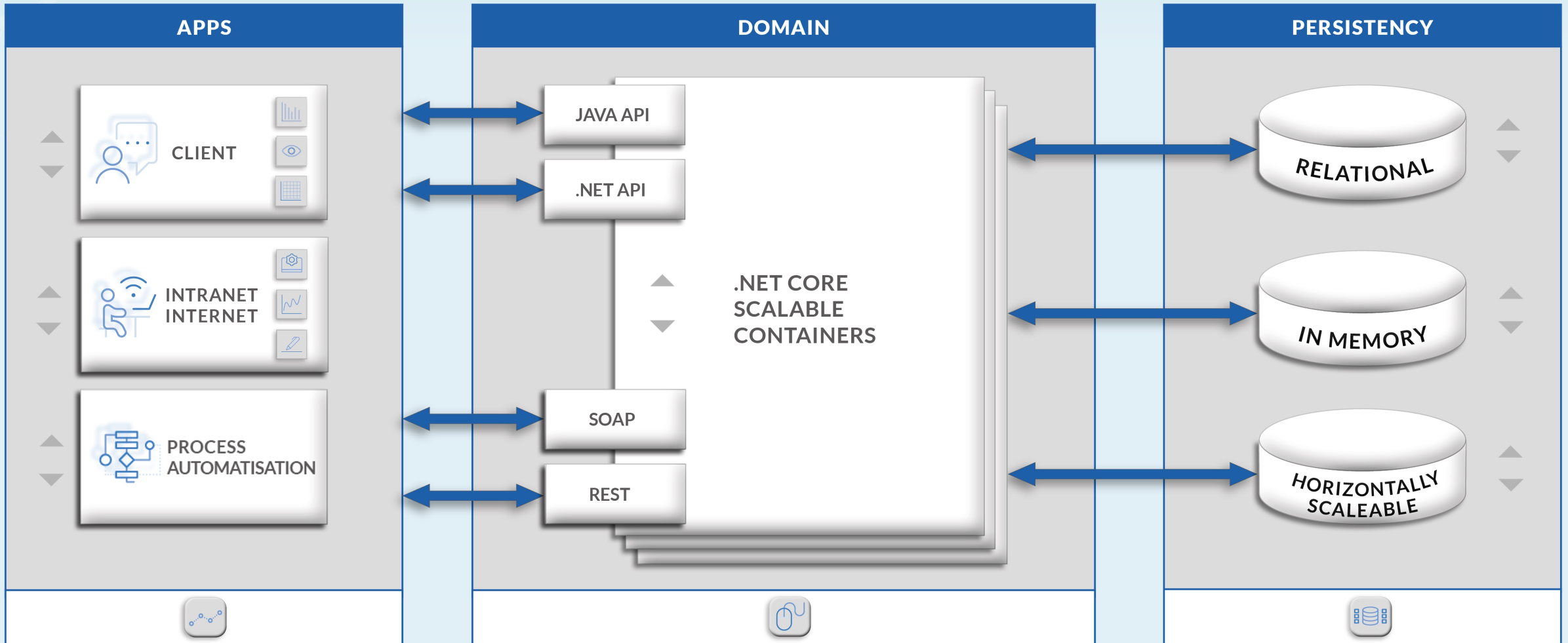


- REST API
- Bulk Operations
- Slim Response Format



- Python, Matlab, R
- Grafana
- PowerBI
- Excel
- ...





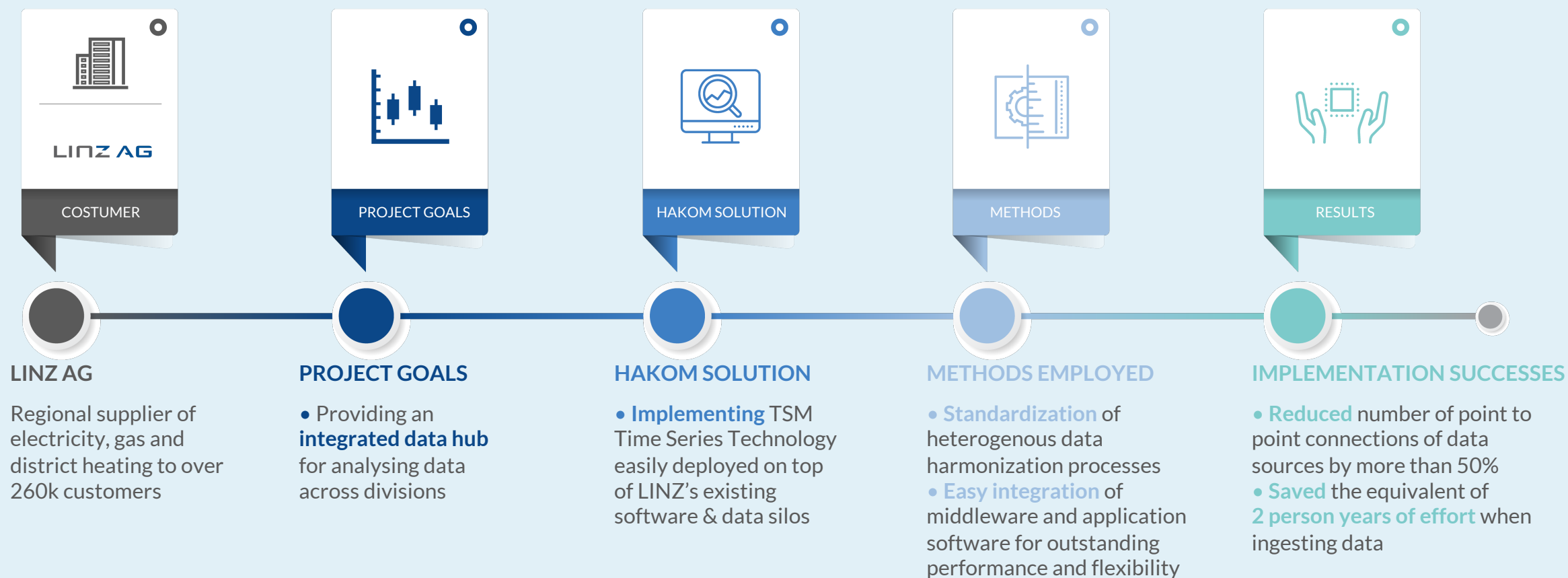
ENERGY PROVIDER USE CASE

Using HAKOM to uniformly collect data across databases to enhance accurate energy analytics

“It is crucial for us to know how we can economically optimize the use of our power plants and energy procurement. [...]

On an annual average, we save one working hour per day per energy division and employee. Another decisive aspect for us was that it was an open system: Should the need arise in the future, further procedures can be integrated at any time.”

Helmut Krieger, Project Manager



TSO USE CASE

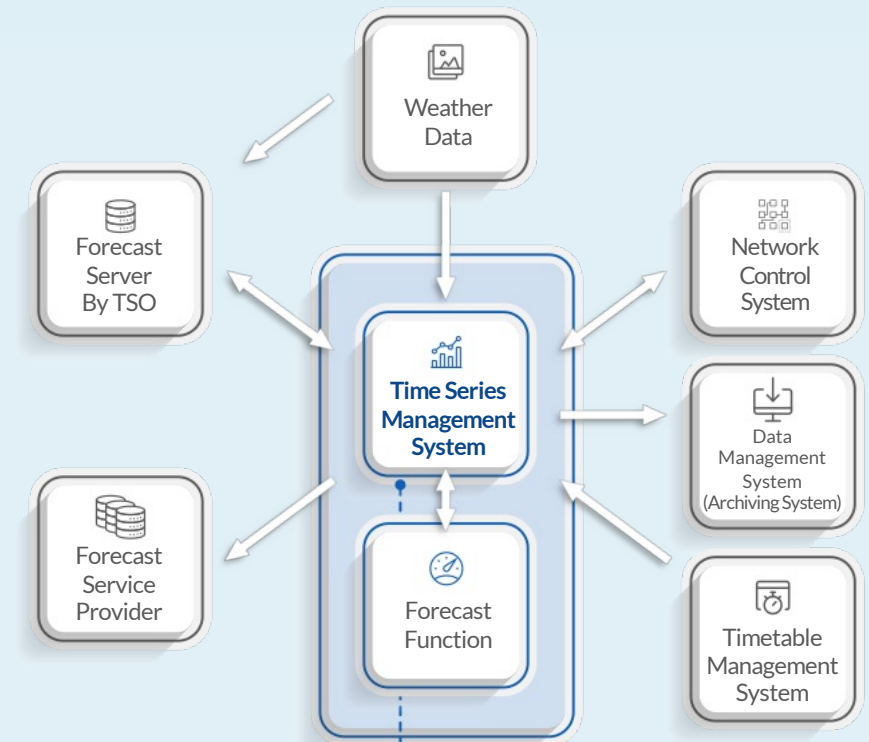
Aggregating data from external sources to enable time-critical demand forecasting & power quality analysis.

Quantity structure/Challenges

- 150,000 time series (1 min resolution)
- Full audit

Tasks

- Creation of next day forecasts & short-term forecasts
- Preparation of forecast data
 - Specific visualizations
 - Receipt control
 - Quality assurance / plausibility check
 - Anomaly corrections
 - Generation of combined forecast
 - Release for further processing



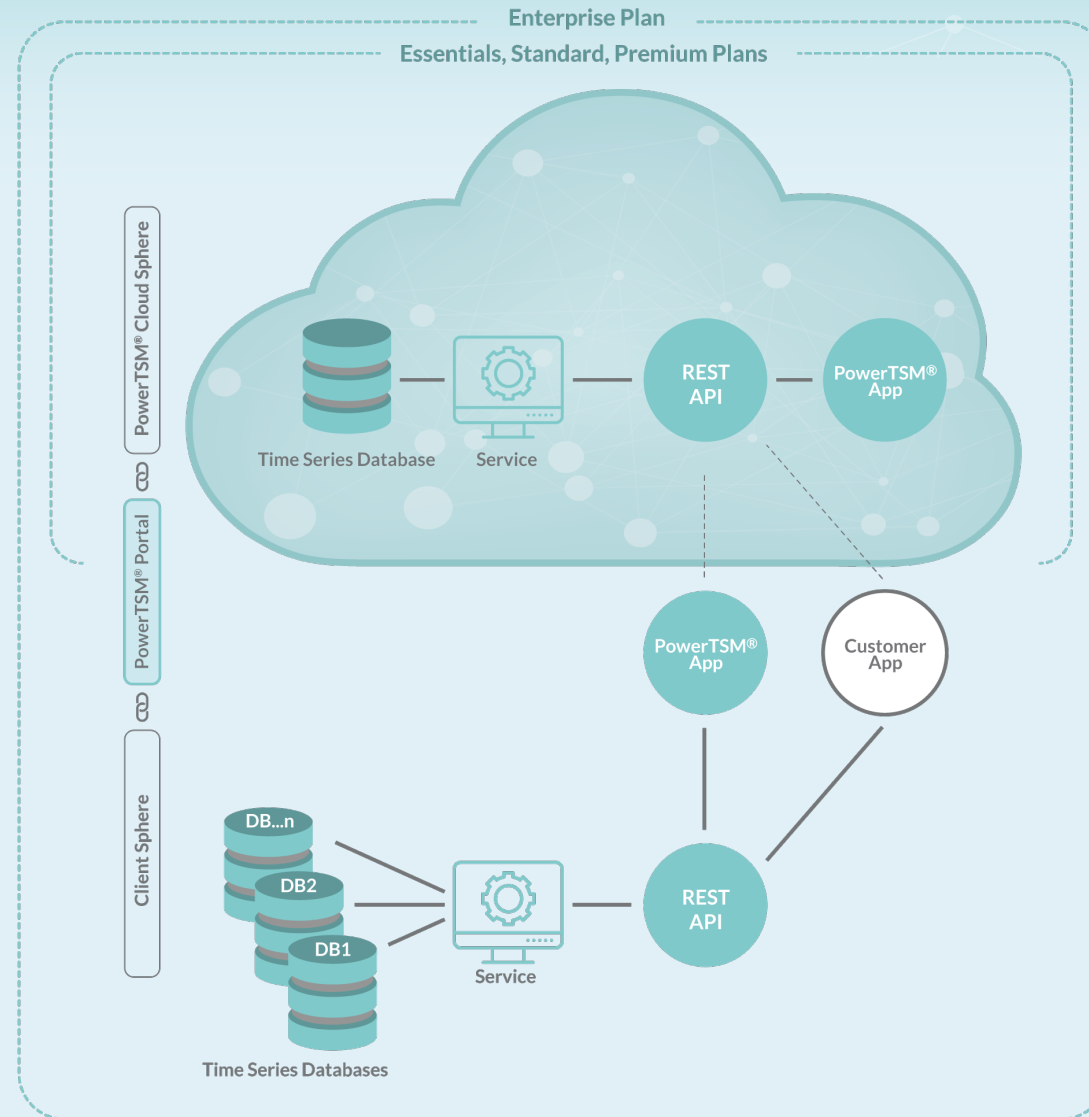
- Export to**
- TSO
 - Front office
 - Transparency platform

PowerTSM® Use Scenarios

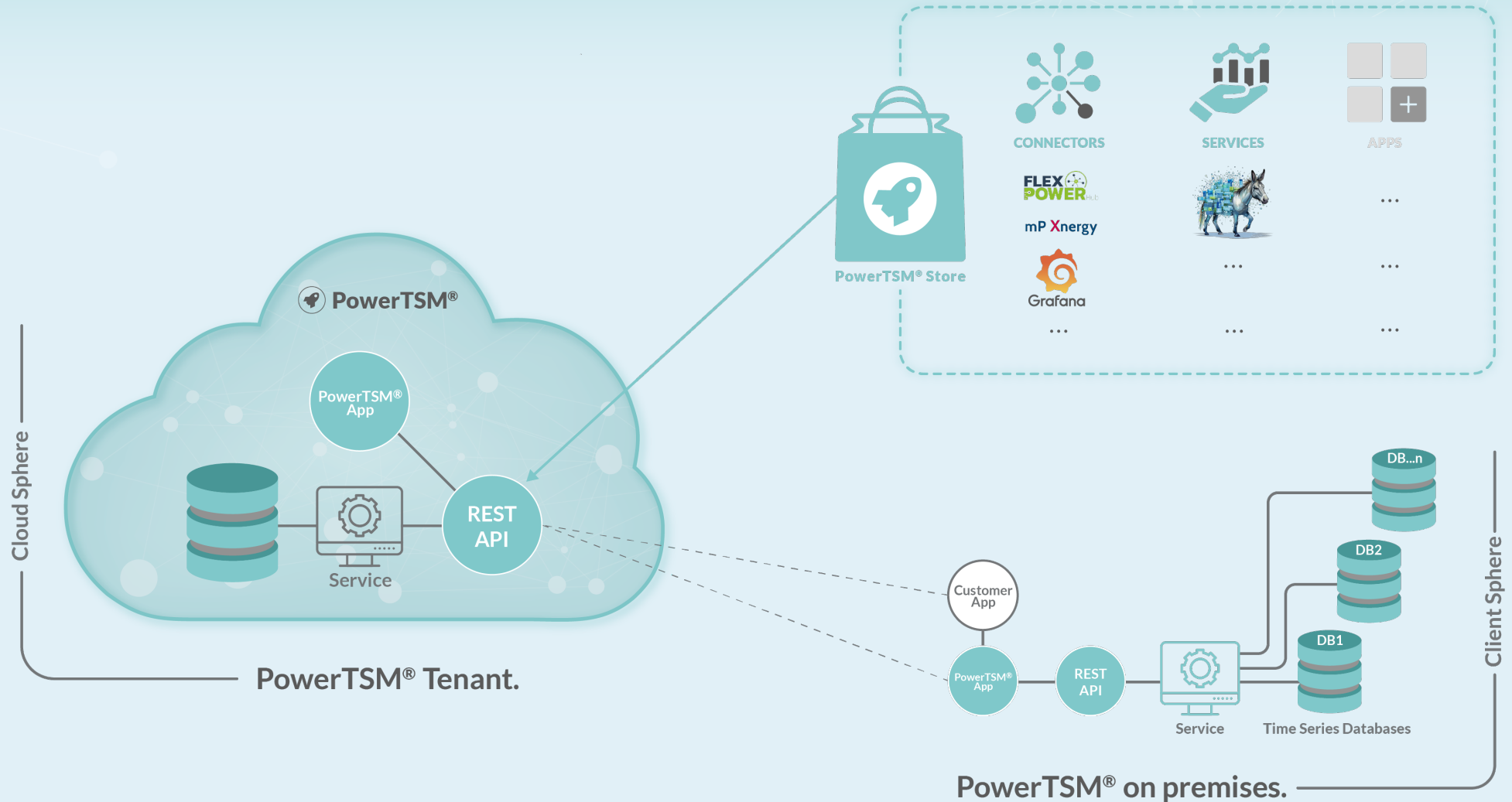


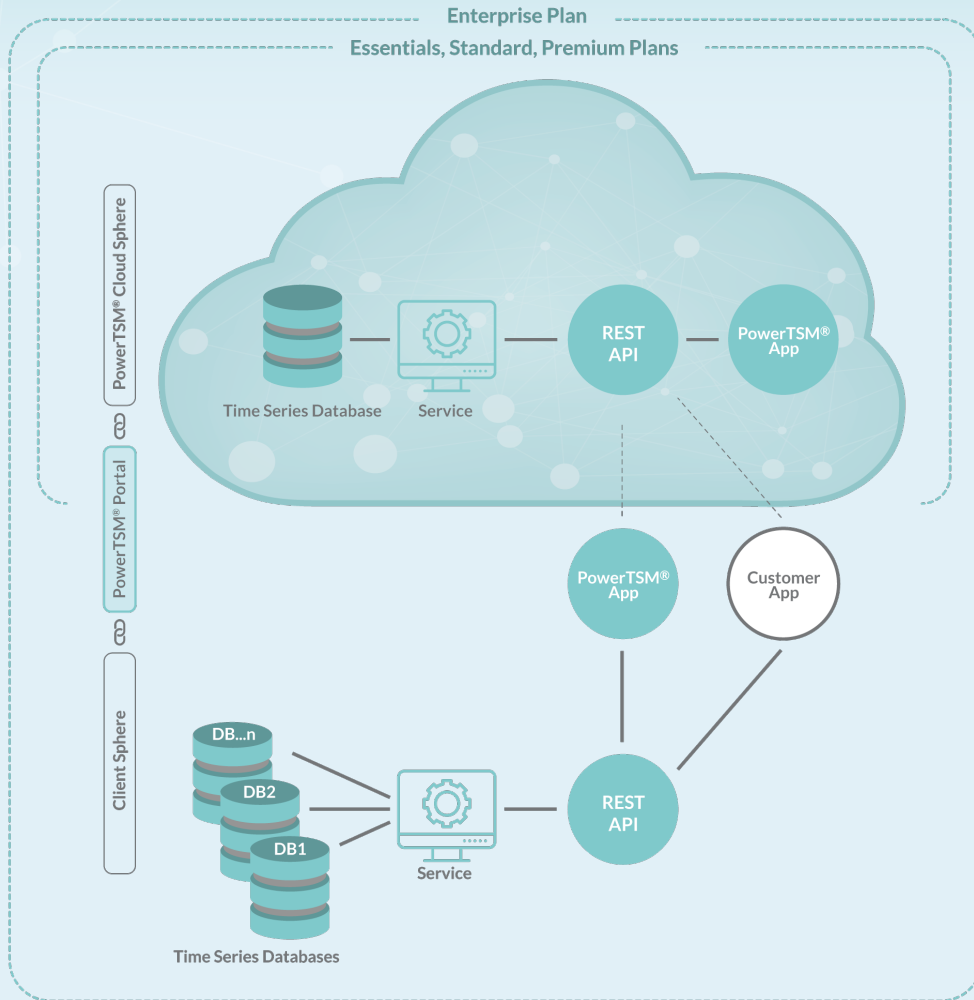
PowerTSM® can be used
as SaaS alone...

... managed by the client ...



...and parallel.

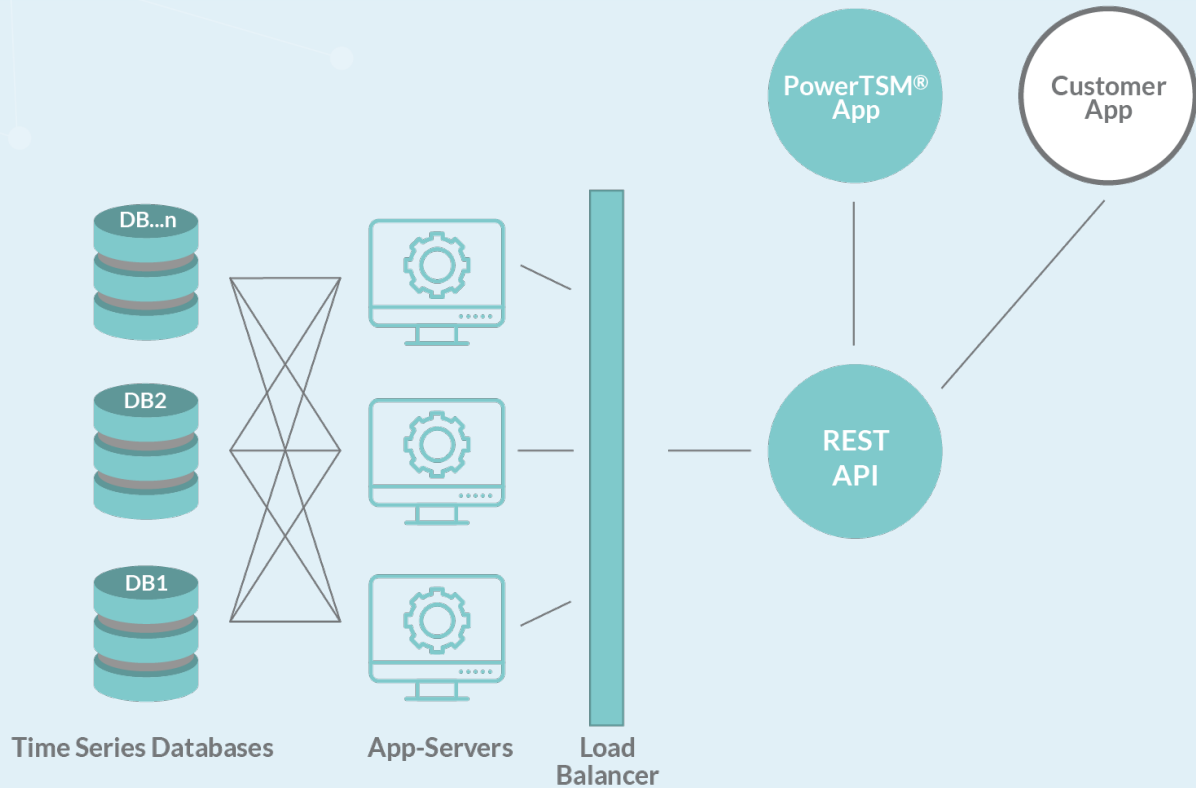




Prices*	Tenants	Users	Repositories	Storage / GB	Traffic / GB	100 DTU ¹	2 vCPU ²
Essentials	390,00 €	39,00 €	-	100,00 €	1,00 €	-	-
Standard	990,00 €	99,00 €	25,00 €	10,00 €	0,10 €	390,00 €	190,00 €
Premium	1.990,00 €	199,00 €	20,00 €	1,00 €	0,01 €	390,00 €	190,00 €
Enterprise	2.990,00 €	299,00 €	20,00 €	1,00 €	0,01 €	390,00 €	190,00 €

* all prices monthly and net without VAT.
¹ Database Transaction Unit | ² virtual Central Processing Unit.

PowerTSM® Enterprise Upscaling



App-Server Bundles	Standard	Performance	Big Data
1	€ 590	€ 890	€ 1.290
3	€ 1.180	€ 1.780	€ 2.580
10	€ 1.770	€ 2.670	€ 3.870
30	€ 2.950	€ 4.450	€ 6.450
100	€ 5.900	€ 8.900	€ 12.900

Licensing for 2 kernels, all prices monthly and net.

Performance: Standard plus Compression & Parallelizing

Big Data: Performance plus Horizontally Scalable Database

Start your mission.

PowerTSM®.

