

CUSTOMER: ENERSIS SUISSE AG

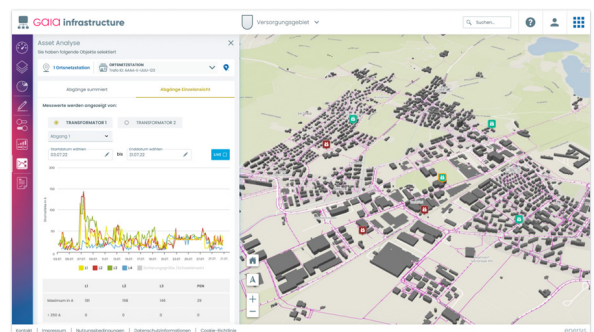
From zero to net-zero

Energy transition acceleration towards climate neutrality powered by AWS

Enersis is a purpose-driven company that tackles one of the world's greatest problems: climate change. Their software suite gaia provides tooling and insights to energy suppliers and grid operators, cities and entire regions as well as planning and consulting companies that are involved in energy transition. gaia's core is a digital twin of the real world, containing data and visualizations of the CO2 emissions of individual buildings, energy plants and other infrastructure. It allows for status quo analysis and reporting according to national standards in various countries, and has integrated project management capabilities to coordinate time, costs and stakeholders of the actions taken on the path to climate neutrality.

Single-tenancy approach for strong isolation

Naturally, in-depth data about the CO2 emissions of individual buildings are sensitive. Thus, the software presents data only in an aggregated way wherever it is required to ensure that it complies with data protection requirements. However, the system also needs the raw data for its internal processing. To make sure that data is never mixed between clients, Enersis followed tecRacer's recommendation and opted for a single-tenancy architecture, meaning that dedicated infrastructure and software installations are provided to each of their customers. Several shared services run centrally to provide the same seamless experience to all the customers.

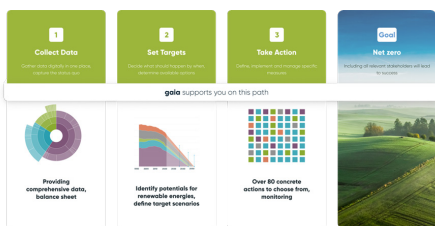


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The single-tenancy approach brings further benefits: It allows for independent release cycles of the individual tenant environments as well as customizations on the infrastructure and software level. Besides, access management and cost control can be performed based on individual tenant environments. AWS Well-Architected Framework Reviews (WAFR) have been conducted multiple times during the project to assess the conformance with AWS Best Practices and identify areas for improvement.

New environments in less than a day

Managing numerous single-tenant systems can increase the operational efforts. Hence, full automation for spinning up and maintaining tenants was a prerequisite to take this path. Enersis uses Terraform not only to create AWS accounts, network configurations and the tenant infrastructure consisting of services such as Amazon Elastic Kubernetes Services (EKS), Amazon RDS Aurora PostgreSQL and Amazon MemoryDB for Redis in a fully automated way. They even fork a github repository and configure Flux CD to automatically apply Kubernetes manifests from the repository to the new environment – in the same step! Thanks to tecRacer's contribution, all hardware and software components for a new environment are functional within hours instead of weeks. Only the data for the new tenant must be added, which is handled by ETL jobs managed by Apache Airflow.



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As managed as possible, as flexible as needed

While AWS is the preferred target platform for gaia, Enersis needs to remain able to deploy the software in private data centers as well due to customer demands and requirements. On the other hand, the amount of time for managing infrastructure shall be kept minimal so Enersis staff can channel their efforts on making the product even better. Therefore, special emphasis has been put on the question of where to leverage AWS Managed Services, or building a custom solution based on open-source components instead. A decision matrix classifies each component of the system to provide the right answer. As a result, Enersis found the sweet spot of managed cloud services and platform independence for their product. On top of that, Enersis leverages tecRacer's ISO 27001 certified and AWS audited IT Service Management (ITSM) for managing the AWS cloud environments to further decrease administrative efforts. This is based on a flexible contract that tecRacer specifically tailored for Enersis' needs and growth plans, as the pricing is completely based on the number of Enersis' customers at any point in time. We grow together!

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Andreas Jaus, CIO of Enersis:

„Due to rapid growth in new customers and complex technical requirements for a digital twin, it was necessary to bring our gaia platform and the underlying cloud infrastructure to an automatable and scalable level. tecRacer supported us optimally in the project with know-how and understanding of our architecture requirements. The partnership with tecRacer was also an enrichment for our internal team, so that we can now also continue to work together in operations and benefit from their expertise.“



Project Goals

- Finding the sweet spot between standardization and flexibility for individual tenant environments
- Ensuring compliance with regulation and best practices
- Minimize operational efforts to be able to focus on product development

Project Duration

March 2022 to March 2023

Project contribution by tecRacer

- Multi-Account setup with Single Sign-On and network concept (AWS Landing Zone)
- Design and implementation of fully-integrated infrastructure and software deployment stack
- Setup and configuration of tenant environments
- ISO 27001 certified IT Service Management (ITSM) for managing the AWS cloud environments
- AWS Well-Architected Framework Reviews (WAFR)

Tools

- Terraform, Github, Flux CD
- Amazon Elastic Kubernetes Services (EKS), Amazon RDS Aurora PostgreSQL and Amazon MemoryDB for Redis as well as self-hosted versions of these in Kubernetes
- AWS IAM Identity Center, AWS Transit Gateway, AWS Secrets Manager
- Kubernetes, Helm, Nginx, Airflow, Grafana, Loki, Prometheus

About tecRacer

tecRacer, headquartered in Hannover and with locations in Duisburg, Frankfurt, Hamburg, Mannheim, Munich, Vienna, Lucerne, Geneva and Lisbon, offers Amazon Web Services Consulting (AWS) & Training Services from a single source - seamlessly integrated, across the entire cloud lifecycle - from strategy to implementation to operation.

The strategy also remains the clear focus on Amazon Web Services. Here, according to an independent study by Crisp Research, tecRacer is probably the most competent and important partner in Germany. And the focus on AWS proves tecRacer right: As part of the AWS Partner Summit 2021, tecRacer received the „AWS Consulting Partner of the Year“ award. The owner-managed company, which was awarded as a Top Employer for medium-sized companies, now employs more than 150 permanent staff, has trained more than 12,000 participants in AWS and has already successfully implemented more than 250 AWS Consulting projects.

For more information, visit www.tecracer.com. Or contact us at aws-sales@tecracer.com.

